veri on

GTE Operations Support Incorporated
One Verizon Way (VC34W453)
Basking Ridge, New Jersey 07920
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July 3, 2007

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
Region One Headquarters
SUNY @ Stony Brook
50 Circle Road
Stony Brook, New York 11790-3409

Re: **Voluntary Cleanup Agreement**
For: Former Sylvania Electric Products Incorporated Facility
By: GTE Operations Support Incorporated
Site #: V-00089-1 Index #: W1-0844-98-08 and W1-0903-01-12

Phase I Soil Remediation Database Report

Dear Mr. Stewart:

Enclosed are 3 copies of the Phase I Soil Remediation Database. This report will be submitted only in electronic format. The CD has the data in a "locked down" format, that is, the data cannot be altered. Users wishing to manipulate the data, such as sorting or performing queries, may copy the database into a new workbook and then perform various operations to satisfy their needs.

Sincerely,

Jean M. Agostinelli
Vice President and Controller

213565

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URS Corporation

Geophysical Surveys,

Former GTE Sylvania Facility, Hicksville, New York

Submitted by

Dillon Consulting Limited

02-9873

January 2002

verizon

GTE Operations Support Incorporated
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April 9, 2002

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Re: Geophysical Surveys

At the request of Bob Stewart, enclosed are copies of the Geophysical Surveys report recently performed at our Hicksville site.

If you have any questions, please contact me at (972) 718-4621.

Sincerely,

Alvin E. Ludwig
Vice President - Controller

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INTRODUCTION

Dillon Consulting Limited was contracted by URS Corporation (URS) of Rolling Meadows, Illinois, to conduct a geophysical investigation at 140 Cantiague Rock Road, Hicksville, New York. The geophysical investigation was divided into two parts; a ground-penetrating radar (GPR) survey inside the eastern end of the building, and an electromagnetic (EM) investigation to the east and southeast of the building on site. The geophysical surveys were undertaken to:

1. locate geophysical anomalies that might be indicative of buried piping, leaching 'pools', or other drainage features; and to,
2. provide a reconnaissance level geophysical characterization of the subsurface at the site, differentiating between shallow (upper 2 metre) and deep (2-5 metre) features.

6' ~6-18'

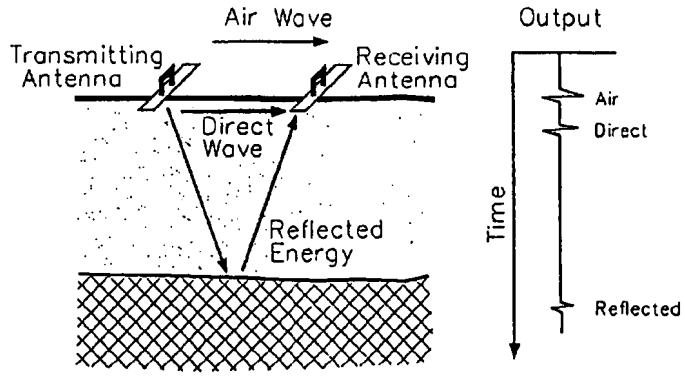
SCOPE OF WORK

The location of both the indoor GPR and outdoor EM survey areas were specified during initial communications with URS Corporation and verified with an onsite URS representative. The GPR was used to survey a section of flat, concrete floor at the eastern-most edge of the building on site which measured approximately fourteen (14) by twenty-eight (28) metres in area. The EM survey took place over a paved parking area approximately 0.5 hectare in size immediately east and south east of the building on site. A 'Noggin SmartCart' was used to collect the GPR data and an electromagnetic terrain conductivity meter was used for the outdoor investigation. The vertical differentiation of terrain conductivity was to be accomplished by using two instruments that operate on the same basic principles, the EM38 for shallow data and the EM31 for deeper penetration. Technical difficulties occurred with the EM38 and it did not meet on site quality control checks. Because of time constraints and other site activities, replacement was not the most desirable option. Our contingency of collecting the EM31 data in both vertical and horizontal modes was employed to allow for differentiation with depth. The GPR and EM data were collected on December 18 and 19, 2001, respectively.

EQUIPMENT AND THEORY

For the ground-penetrating radar portion of the geophysical survey, a Noggin Plus Smart Cart System, built by Sensors and Software Limited of Mississauga, Ontario, was used. The 'Smart Cart' uses two antennae, one to transmit radar pulses and another to detect the signals reflected back from boundaries existing between materials of varying dielectric constants. These reflective boundaries usually coincide with buried objects or changes in geologic materials. The attenuation of the radar signal will increase dramatically as the conductivity of the underlying material increases. Hence, in the presence of a conductive material, such as clay, slag or conductive porewater, the signal may be strongly attenuated, creating a zone, or "shadow" after which no, or only weak, reflections would appear. The system used has a 100-volt pulser and a shielded antenna with a frequency of 500MHz.

The time required for a radar pulse to travel to a reflector and back to the antenna is a function of the velocity of radar propagation and thickness of the overlying material. The velocity will vary with the frequency of the signal and the dielectric constant of the material. By moving the transmitter-receiver pair laterally at fixed intervals, changes in reflector depth are displayed as changes in the time required for the reflected pulse to return to the receiver. Repeated measurements along a line produce a cross sectional view, or pseudo-section, of the radar reflectors below. By collecting the data at an adequately dense line spacing, the area of interest can be imaged in three dimensions as a "cube".



$$\sigma_a = \sigma_1[1 - R(z_1)] + \sigma_2[R(z_1) - R(z_2)] + \sigma_3[R(z_2) - R(z_3)] + \ldots + \sigma_n R(z_n) \qquad \text{Eq.1}$$

Where: σ_a is the apparent conductivity reading

σ_1, σ_n is the true layer conductivity

$R()$ is the instrument response (see Figure 2)

z_n is normalised depth or depth divided by inter-coil spacing

Although the antenna shape dictates the transmitted wave front, a portion of the radar signal propagates in all directions. As a consequence reflections from objects above the ground will be superimposed on events created by geologic boundaries. Power lines, fences, pipes, etc. will create "cultural interference", which can mask the reflectors of most interest. To minimize the effects from above, shielded antennas were used to collect the data.

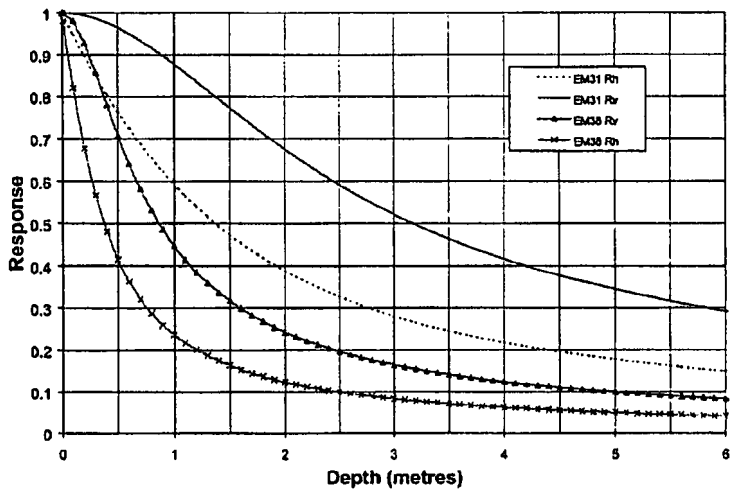
The EM survey was carried out with the *GEONICS* EM31. The EM31 is a frequency domain electromagnetic device designed for measuring apparent electrical conductivity and is also well suited for buried metal detection. The EM31 utilizes the principle of electromagnetic induction to measure the electrical properties of the earth.

This instrument generates an electromagnetic field by passing a current through a transmitter coil. As the field passes through the ground it induces a small current flow within the ground. These ground currents create a secondary EM field in the ground. The receiver coil measures the combined primary (produced by instrument) and secondary (produced by the surrounding materials) EM fields. The instrument converts the quadrature component of the EM field into apparent electrical conductivity measurements of the subsurface in units of milliSiemens per metre (mS/m). Note however that in the presence of an extreme conductor (such as a buried metal object) the quadrature/apparent conductivity relationship is no longer valid. The inphase component of the EM field is also recorded in units of parts per thousand (ppt) of the primary field and is generally more susceptible to metal and less affected by changes in ground

conductivity. For a complete description of the theory of operation and technical details of the EM31 refer to McNeil, 1980[1].

The value for the bulk apparent electrical conductivity of the ground in the vertical mode represents a roughly hemispherical volume of radius 5 to 6 metres centred at the operator. The penetration depth can be effectively halved by measuring the instrument in horizontal mode. EM31 apparent conductivity data can be modelled for a horizontally layered earth. In order to utilise the model the terrain must be well defined over a lateral distance of 4 to 5 metres. Graph1 illustrates the response of the EM31 is either of it two operating modes – vertical and horizontal dipoles. The apparent conductivity reading results from a weighted contribution from each layer, as given by:

Graph 1 Instrument Response Curves



The initial project plan was to collect conductivity data with both the EM31 and the EM38 to achieve a form of depth discrimination. The EM38 operates along the same basic principles as does the EM31, except that the coil spacing is less and the penetration depth correspondingly smaller. The response curves of the EM38 have also been shown on Graph 1. The EM38 does not however read both conductivity and inphase values simultaneously.

[1] McNeill, J.D. 1980. Electromagnetic Terrain Conductivity Measurements at Low Induction Numbers. Geonics Ltd., Note TN-6, 16 pp.

FIELD PROCEDURES

The GPR survey grid origin was established at the south wall, directly south of the second-from-last (west to east) 'I-beam' located at the eastern end of the building and marked with paint. Fifteen (15) lines of radar data were collected in a north-south orientation and twenty-nine (29) lines were collected in an west-east orientation. The data were collected at approximately 0.025 metre station spacings. The location of the GPR lines are shown on Figure 8.

The 500 MHz antennas were deemed to provide adequate resolution (laterally and vertically) while penetrating to the a depth of beyond 8 metres. The transmitter and receiver antennas were oriented across-line and mounted on the Noggin Cart 0.28 metres (centre to centre distance) apart by the manufacturer. The antenna array was wheeled along the survey lines and the station separation measured with an odometer wheel. At each station the radar data was stacked 4 times over a time window of 67 nanoseconds.

The EM31 survey grid was established at the site using the south-east corner of the Former GTE Sylvania Facility as the grid origin [0E, 0N]. For both the vertical and horizontal surveys, both the apparent conductivity and inphase data were simultaneously collected at approximately a ¾ metre station interval along lines spaced approximately 2 metres apart (Figure 1). Base and tie lines were marked with paint in order to locate possible anomalies in the future.

As the surveys progressed, comments denoting surficial objects (manholes, vehicles, etc.) that may explain anomalous responses were entered into the data logger. These comments are included on all figures using appropriate symbols.

DATA PROCESSING AND PRESENTATION

The radar data for all lines was processed in an identical manner. Diffraction patterns created by buried objects were used to estimate an overburden velocity (i.e. Velocity = depth/time). It is important to note that the radar data is collected on a time basis, not depth (see discussion on equipment and theory); therefore all depths are based on a calculated velocity.

Using this technique, overburden material velocities were found to vary from 0.09 to 0.11 metres per nanosecond along the survey lines. These values are consistent with the expected range of velocities for unsaturated sand and gravel. For the majority of the survey area the average velocity of the overburden appears to be approximately 0.1 m/ns. Therefore this value has been extrapolated across the entire area.

The data were filtered and plotted in pseudo-section form using a SEC gain control to compensate for losses and dissipation of the radar signal. A gain was chosen to allow relative reflector strengths to be differentiated. The data was then plotted with a color scale of intensity (Figure 8). Red portions of the signal represent the strong positive portion of the pulse and black the strong negatives, or more generally geologic boundaries, within the subsurface. Another aspect of the ground penetrating radar survey is that boulders, fractures, and other buried non-

continuous features (such as tanks and pipes) may also be detected. These types of features are manifested as 'hyperbolic' diffraction patterns in the data. The data was also examined for 3 dimensional relationships by creating and slicing a cube. The results of that process are included as an"avi" file on the accompanying CD.

Upon completion of the surveys, the EM31 data were transferred from the data logger to a portable computer and the survey station locations were adjusted as required. The data were then sorted, gridded, contoured, and plotted at an appropriate scale using *Geosoft*™ data imaging software.

A colour scheme was used to highlight the variations in the data. The EM31 survey apparent conductivity and inphase (Figures 2 through 5) data are displayed as colour, contoured plots. The data are coloured and contoured to represent the complete range of values. Background values are generally shown in green. Red and blue areas represent anomalous readings above and below background, respectively.

RESULTS

EM31

A background conductivity value of 4 to 6 mS/m has been used in the interpretation for both the 'deep' and 'shallow' EM31 data. An inphase background value of 0 to 1 ppt has been estimated for the site interpretations. Broad areas where instrument readings deviate from these background values are considered anomalous and have been designated with the letters "**C**" and "**Z**" on the interpretation diagrams, respectively.

The apparent conductivity and inphase response can also be used to detect metal related features. Typically, moderate sized buried metallic objects will produce a decreased (blue) instrument response with the EM31. However, it is our experience that large buried metallic objects may produce a localized extremely positive (magenta) inphase response. A number of factors influence the size of an anomaly resulting from a buried metallic object including, depth of burial, type of fill (background values), cultural interference, and the instrument's orientation relative to the buried metallic object. Interpreted metal related anomalies would be labelled using the letter "**M**". Linear anomalies or lineations observed in the data are labelled using the letter "**L**" on the interpretation map.

Interference from surface metal, fencing, etc. will affect the instrument's response to nearby subsurface anomalous features. Therefore, anomalous conditions located next to or directly below the source of interference may go undetected.

Anomalous areas ***not*** attributed to cultural interference, or other explainable sources, are labelled and highlighted on the interpretation maps (Vertical mode - Figure 6, Horizontal mode - Figure 7). A brief description of identified anomalies follows below:

Deep EM Anomalies (Figure 6)

M1 and **M2** are examples of metal related anomalies that are recorded as a decreased or negative response in the inphase data. These anomalies are interpreted to result from a singular large deeply buried metallic object and/or numerous smaller metallic objects buried in close proximity to one another.

Z1 is a discrete metal related anomaly located immediately south of the chain-link fence at the north end of the survey area. This anomalous response is observed as a increased or positive response in the apparent conductivity and inphase data and is interpreted to result from a singular large deeply buried metallic object and/or numerous smaller metallic objects buried in close proximity to one another.

C1 through **C3** are broad zones of elevated apparent conductivity (>8 mS/m) found across the site. Due to the shape and location of these anomalies, these zones are considered suspect and are interpreted to possibly result from anomalous porewater/fill. **C1** and **C2** do not remain consistent in shape or magnitude of response and appear to extend away from the immediately adjacent building. Similarly, the anomaly identified as **C3**, while likely resulting primarily from the effects of the nearby fence, does not remain consistent along its length.

C4 through **C10** are additional zones of elevated apparent conductivity (>8 mS/m) found across the site. While these zones may contain anomalous porewater/fill, it is likely that these responses are attributable to cultural interference (ie., **C4** through **C6** - metallic chain-link fence, **C7** through **C10** - vehicles) or may partially result from the shoulder effect[2]/interference from nearby fences or interpreted pipes/utilities (**L**). However, **C4**, **C5**, and **C6** are not uniform in their response along the length of the features, possibly indicating an additional source of instrument response.

C11 through **C17** are zones of decreased apparent conductivity (<2 mS/m) identifed on site. These zones are interpreted to result from a change in fill and are likely due to previous excavations or significant changes in site geology. Given that the locations **C11a,b,c** and **C12a,b** coincide strongly with former structures on site, these anomalies are likely attributeable to the use of a gravel(or other resistive) backfill material.

L1 is an example of a moderately strong linear anomaly observed in both the apparent conductivity and inphase response data. This feature exists between the decreased conductivity features identified as **C12a** and **C13**, and may identify a former foundation wall or associated feature. **L1** may also result from buried pipes/utilities or similarly proportioned linear objects.

[2] The "shoulder effect" general occurs when the instrument is passed over a buried metallic object. As the instrument approaches the object a positive response is initially observed, this is then followed by a negative response directly over the object, and then another positive response as the instrument moves away from the object. The positive shoulders created on either side, adjacent to the negative response is termed the "shoulder effect". (see L1, Figure 2).

L2 represents a weak linear anomaly observed in the apparent conductivity data. **L2** may result from more deeply buried pipes/utilities or similarly proportioned linear objects (as compared to **L1**). **L2** may also represent a weak continuation of the conductivity anomaly identified as **C1**.

Shallow EM Anomalies (Figure 7)

SM1 through **SM6** are examples of numerous metal related anomalies scattered about the survey area. Similar to **Z1** (Figure 6), these events are recorded as an increased inphase response in the data. These anomalous responses are interpreted to result from a singular buried metallic object and/or numerous small metallic objects buried in close proximity to one another. However, as compared to **M1**, **M2**, and **Z1**, these metallic related anomalies are likely shallower in depth. **SM1** is considered extremely suspect due to its location immediately adjacent to an identified manhole on surface and within an area identified as a former building structure. **SM2** is also considered very suspect due to its size and shape and the fact that it lies immediately adjacent to an area identified as a former building structure. It should be noted that **SM2** and **SM3** correlate strongly with metallic anomalies identified as **M1** and **M2** in the vertical (deep) mode (Figure 6) and are considered extremely suspect. **SM4** through **SM6** are likely attributable to surface features, however the instrument response does not remain consistent along the length of these anomalies, indicating the possibility of an additional source.

SC1 through **SC5** are broad zones of shallow elevated apparent conductivity (>10 mS/m) found across the site. These zones are interpreted to result from anomalous porewater/fill in the upper 2 metres of the soil.

SC6 through **SC13** are additional zones of shallow elevated apparent conductivity (>10 mS/m) found across the site. These anomalies may partially result from the shoulder effect/interference from nearby fences or interpreted pipes/utilities (**L**). However these anomalous zones are not uniform along the length of the surface features possibly indicating an additional source.

SL1 is an example of a moderately strong linear anomaly observed in both the apparent conductivity and inphase response data. This lineation likley results from buried pipes/utilities or similarly proportioned linear objects.

SL1a through **SL3** are examples of moderate to weak linear anomalies observed in the data. These anomalies likely result from buried pipes/utilities or similarly proportioned linear objects (former trench, former excavations, etc.). **SL1a** through **SL1f** appear to be associated with the anomaly identified as **SL1** and possibly the adjacent wall as well. Similar to **L2** (Figure 6), **SL2** and **SL3** may also represent weak linear continuations of conductivity anomalies.

GPR Data

Reinforcing bars/beams, pipes, foundations and other "cultural" objects can create interference in GPR data in the form of either horizontal banding or strong parabolic reflectors. When interpreting GPR data it is critical to bear in mind that **radar data is collected in time and presented as depth by estimating an average propagation velocity**. The velocity will vary both laterally and vertically with varying materials and degrees of saturation.

The strength of a reflector is a function of the contrast in the dielectric properties of materials on either side of the boundary. Boundaries between materials of similar water content will tend to create weak reflections. Significant changes in material properties such as between bedrock and sand will create strong reflections. The key observations are summarized as follows:

1. Resolution is excellent
2. Estimated propagation velocity 0.1 m/nanosecond. Sections image to approximately 2.7 metres
3. A strong, continuous reflector occurs at approximately 2.2 metres deep. Based on the nature of the reflector it is likely man-made and could be a concrete floor. ~7.0
4. Several linear reflectors exist below which likely represent pipes.
5. The material above changes at a depth of approximately 1-1.2 metres. The upper portion is layered with several sub parallel layers. The upper boundary of the lower portion has several depressions within it (see Figure 9). The reflectivity of the boundary also changes which indicates a change in the material or porewater above or below the interface.
6. A pipe was encountered during an excavation. The gpr anomaly created by the pipe (see Figure 9) is very weak. The pipe is also imaged in the horizontal slice in Figure 10. The pipe was described as "a 3-inch diam steel pipe with polyurethane-like foam cover", 24" below the slab. We are uncertain as to why the reflector is as weak as it is. Clearly a steel pipe would normally create a strong parabolic reflector (as is the case with other, deeper reflectors off pipes in this data). We can only postulate that the coating has either scattered or absorbed the signal or, alternatively, destructive interference between the reflection off the top of the coating and the pipe below is cancelling the signal.

Some features are best observed in a 3-dimensional perspective. Observations to note regarding the AVI files are:

EW Lines (looking southeast)

Time	Comment
0:00	The upper surface is the floor, the view is to the south-east. Both the deep and intermediate reflectors are distinctly visible
0:19, 0:22	Note a depression and increased reflectivity of intermediate boundary approximately 1/3 of the way in from right hand side
0:42	Beginning to slice from the surface down, initial patterns are within concrete floor.
0:45	Lineations resulting from either pipes or re-enforcing steel
0:46	Reflectivity immediately below floor varies as broad areas, could result either from changes in floor thickness or differences in the

	materials below
0:53	Cuts the surface of the intermediate layer (slightly below 1 metre) note the circular outline of two depressions (dark blue with yellow edges) in the surface, one at x= 18 and y=480, and the other at x=9 and y=120
0:58	Three anomalous zones, x=12,y=490: x=22,y=480: x=19,y=20
1:02	Irregularities in the deep reflector

NS Lines (looking northwest)

Time	Comment
0:00	The upper surface is the floor, the view is to the north-west. Both the deep and intermediate reflectors are distinctly visible. Note irregularities along intermediate boundaries mid-way along next to front face (wall)
0:07.5	Depression in intermediate boundary at z=6, y=500,y=1000
0:12.5	Intermediate layer depressions y=700
0:21.5	Beginning to slice from the surface down, initial patterns are within concrete floor.
0:23	Note three rectangular "holes" in re-enforcing near front edge.
0:28.5	Note two distinct anomalies
0:30.05	Patterns within deep layer
0:31	Lineations below deep layer are likely pipes or utilities.

There also exist a number of localised "spot" reflectors the manifest as "bright" spots, these are buried "objects", boulders, pieces of concrete or possible metal.

The geophysical surveys highlight a number of site features that should be considered prior to and during excavation. Some of these (metal objects, pipes etc.) are clearly man-made. Others such as subtle variations in conductivity and/or reflectors indicative of depressions may be either natural or man-made. If they are manmade, we cannot disconcern whether these are created during original construction or are secondary excavations.

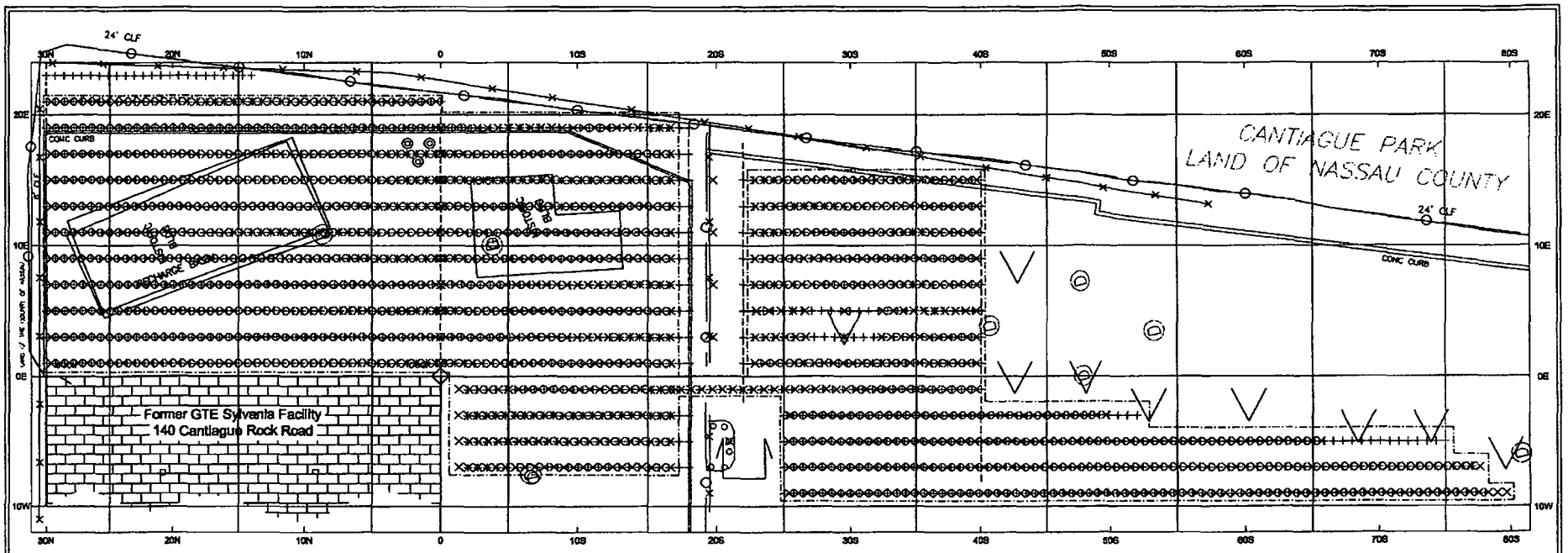
LIMITATIONS

This report was prepared by Dillon Consulting Limited for URS Corporation. The material in this report reflects Dillon's best judgement in context of the information available at the time of preparation. This report is based on data and information collected during the investigation conducted by Dillon Consulting Limited personnel and is based solely on the conditions of the property at the time of the site reconnaissance, as described in this report. No intrusive, or direct, sampling was conducted as part of this survey.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any suffered by any third party as a result of decisions made or actions based on this report.

Dillon makes no warranty, expressed or implied, and assumes no liability with respect to the use of information contained within this report. No changes to the report form or content may be made without Dillon's written approval.

Figures



Legend

- survey limits
- tie line
- fence
- building
- manhole
- cylinder storage
- pipe/pole
- vehicle
- data point (Vertical mode)
- data point (Horizontal mode)

Scale 1:300

5 0 5 10

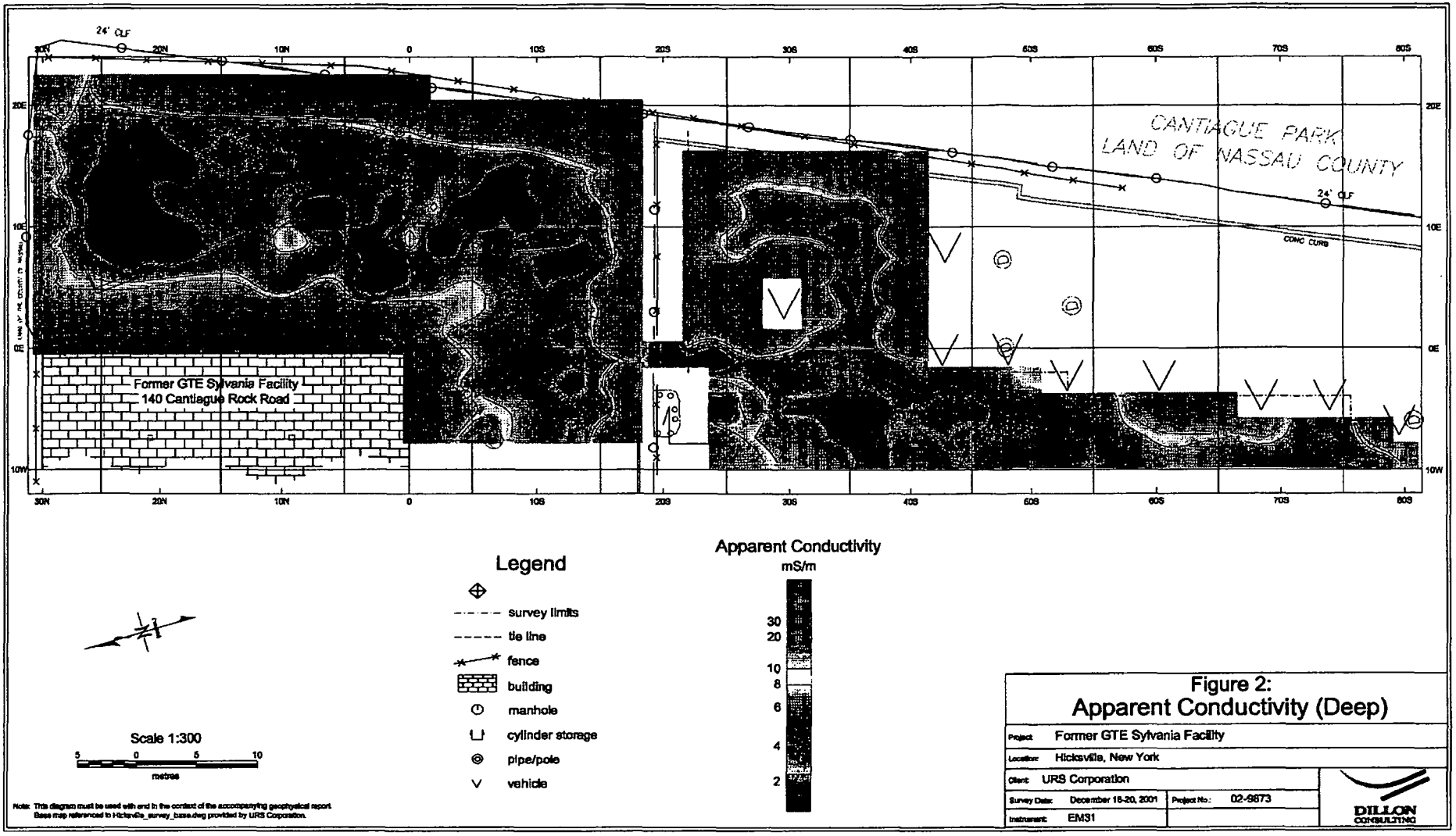
metres

Note: This diagram must be used with and in the context of the accompanying geophysical report.
Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 1: Survey Stations

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-9873
Instrument:	EM31

DILLON CONSULTING

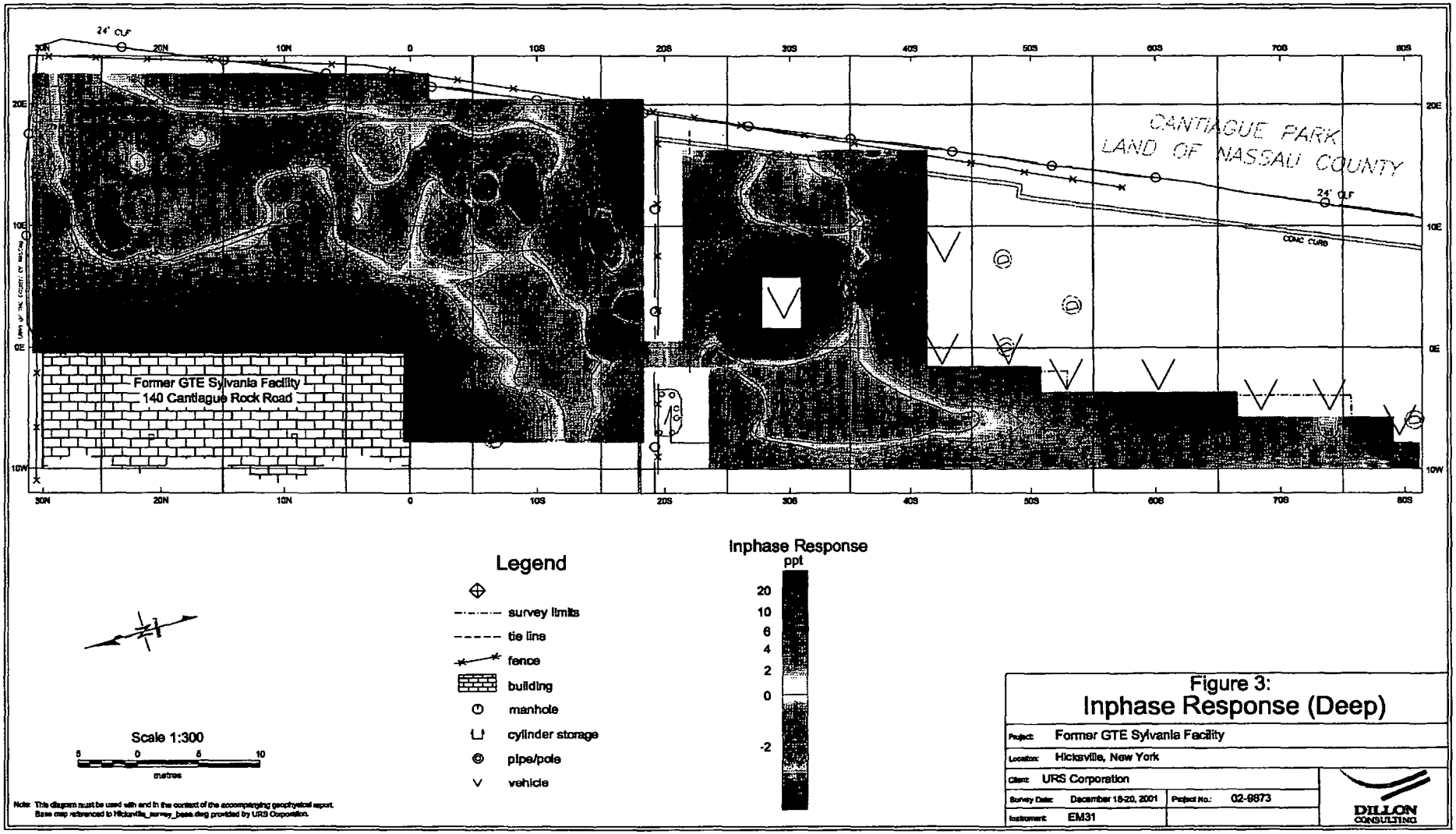


Note: This diagram must be used with and in the context of the accompanying geophysical report.
Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 2:
Apparent Conductivity (Deep)

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-9873
Instrument:	EM31

DILLON CONSULTING

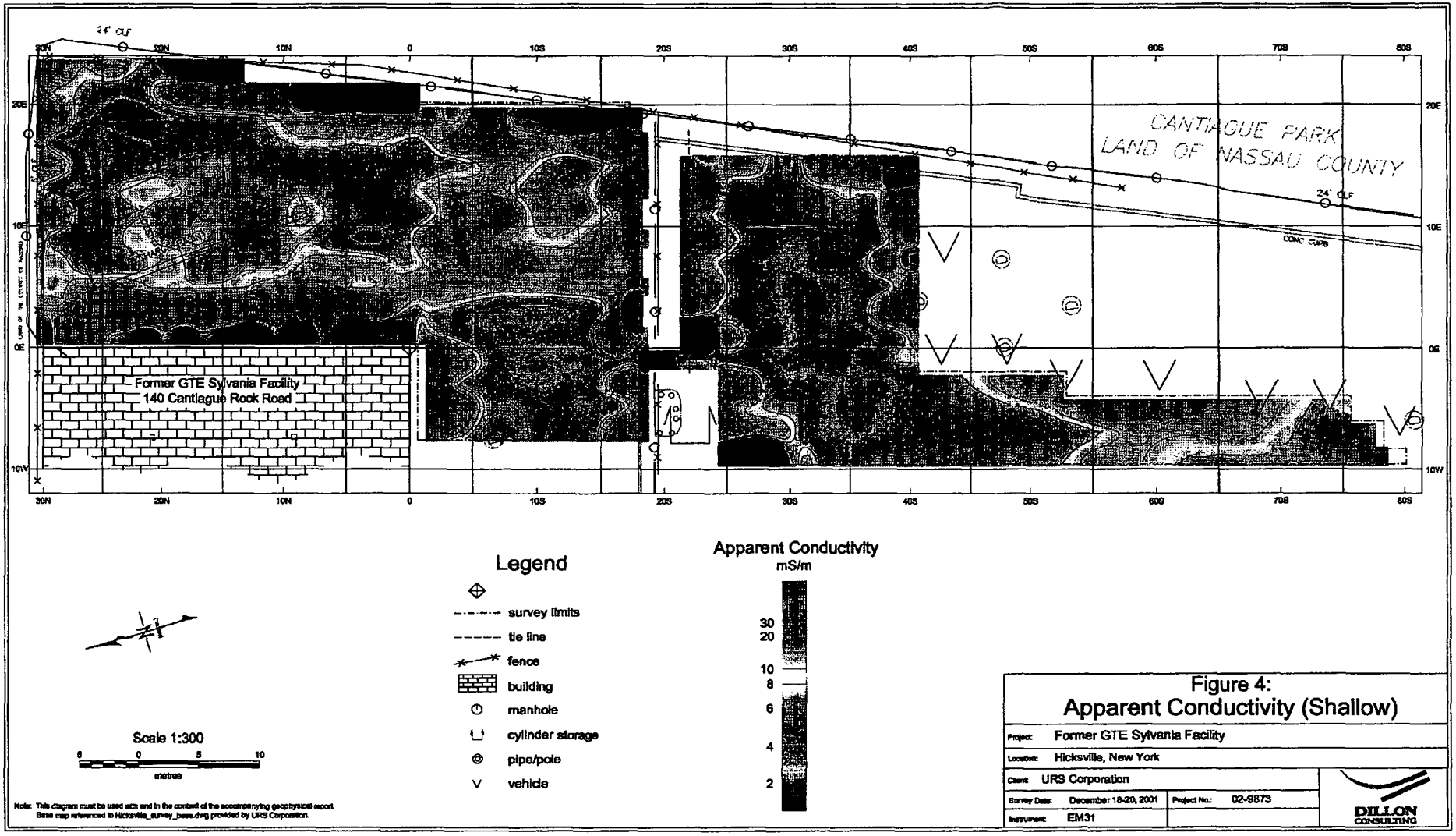


Note: This diagram must be used with and in the context of the accompanying geophysical report. Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 3:
Inphase Response (Deep)

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-8873
Instrument:	EM31

DILLON CONSULTING

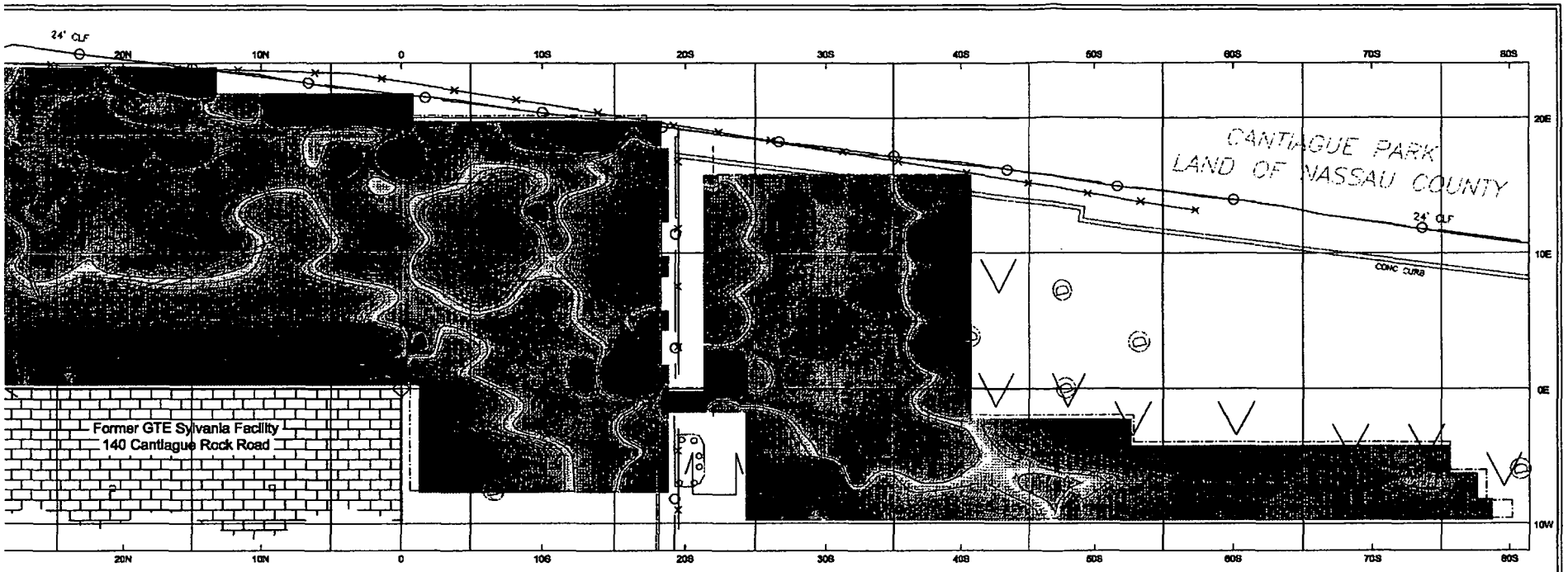


Note: This diagram must be used with and in the context of the accompanying geophysical report.
Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 4: Apparent Conductivity (Shallow)

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-8873
Instrument:	EM31

DILLON CONSULTING



Legend

- survey limits
- tie line
- fence
- building
- manhole
- cylinder storage
- pipe/pole
- vehicle

Inphase Response
ppt

20
10
6
4
2
0
-2

Scale 1:300

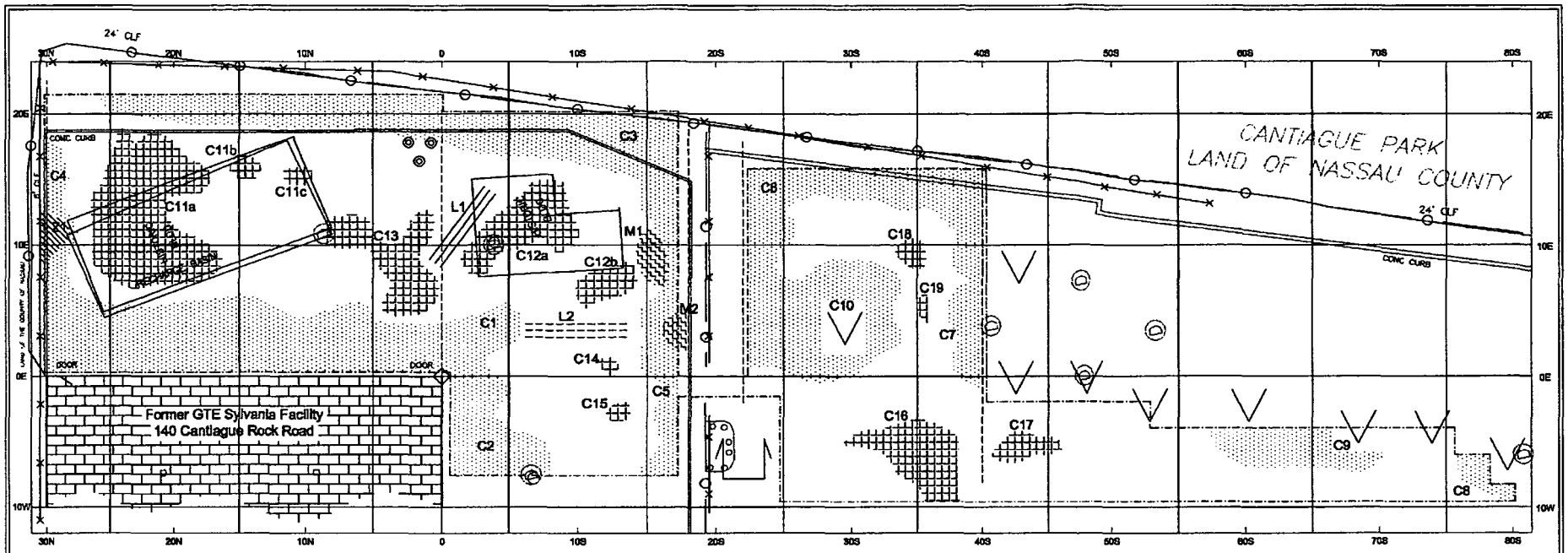
5 0 5 10
metres

Diagram must be used with and in the context of the accompanying geophysical report.
Map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 5:
Inphase Response (Shallow)

Project:	Former GTE Sylvania Facility		
Location:	Hicksville, New York		
Client:	URS Corporation		
Survey Date:	December 18-20, 2001	Project No.:	02-6873
Instrument:	EM31		

DILLON CONSULTING



Legend

- survey limits
- tie line
- fence
- building
- manhole
- cylinder storage
- pipe/pole
- vehicle

Anomalies

- elevated conductivity
- decreased conductivity
- elevated inphase response (metal related)
- decreased inphase response (metal related)
- strong lineation/trend
- moderate to weak lineation/trend

Scale 1:300

5 0 5 10

metres

Note: This diagram must be used with and in the context of the accompanying geophysical report. Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 6: Interpretation (Deep)

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-9873
Instrument:	EM31

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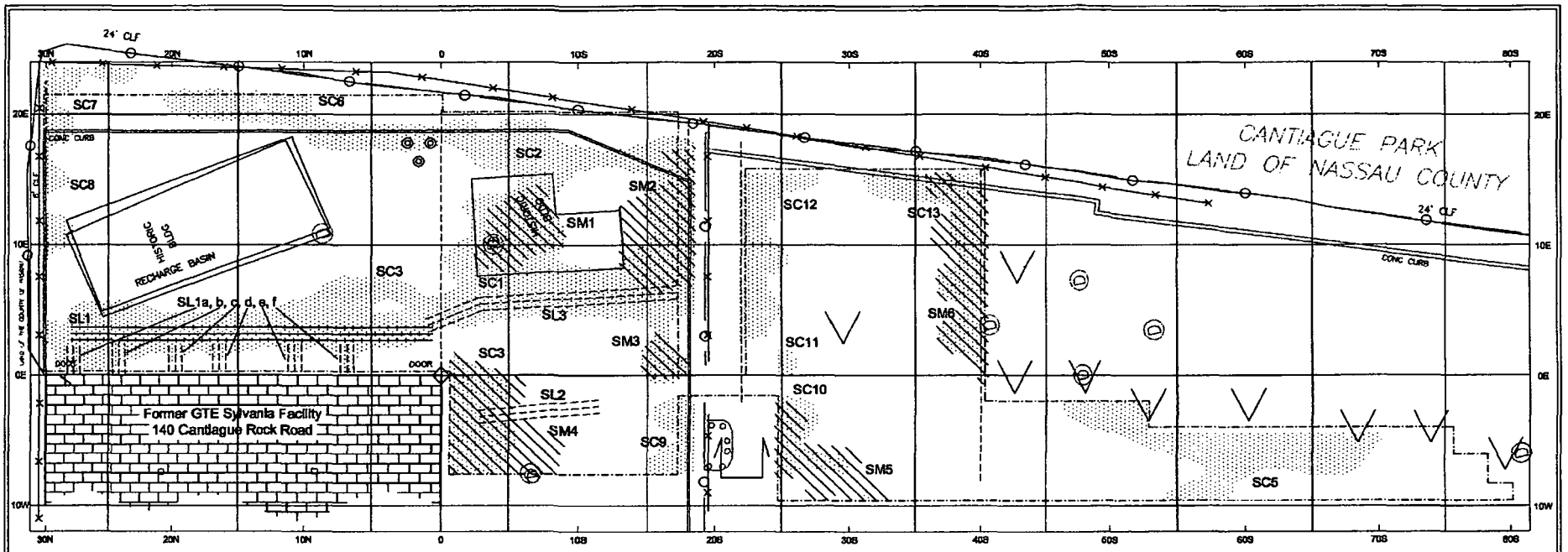


Legend

- survey limits
- tie line
- fence
- building
- manhole
- cylinder storage
- pipe/pole
- vehicle

Anomalies

- elevated conductivity
- decreased conductivity
- elevated inphase response (metal related)
- decreased inphase response (metal related)
- strong lineation/trend
- moderate to weak lineation/trend

Scale 1:300

5 0 5 10

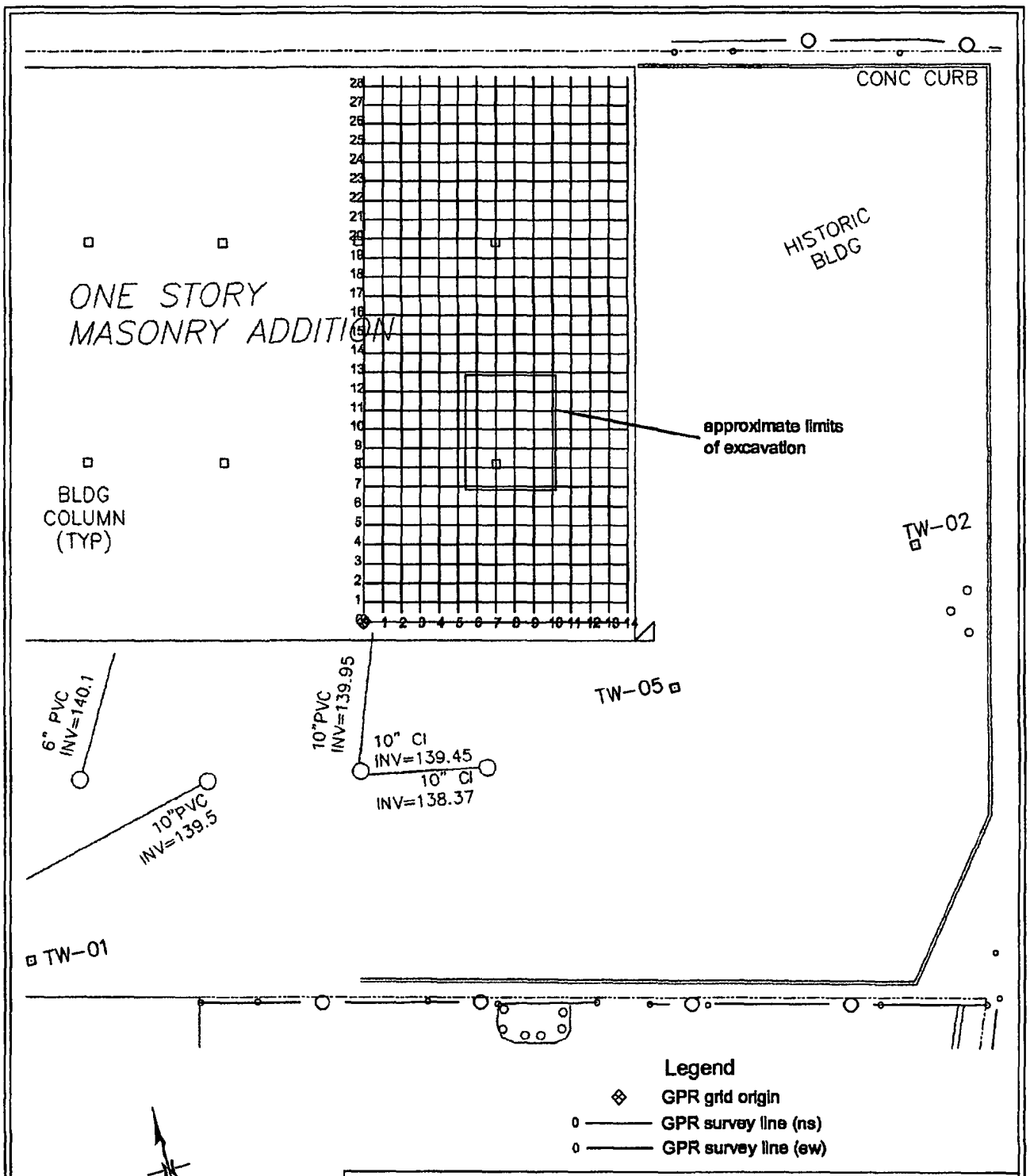
metres

Note: This diagram must be used with and in the context of the accompanying geophysical report. Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure 7: Interpretation (Shallow)

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-9873
Instrument:	EM31

DILLON CONSULTING

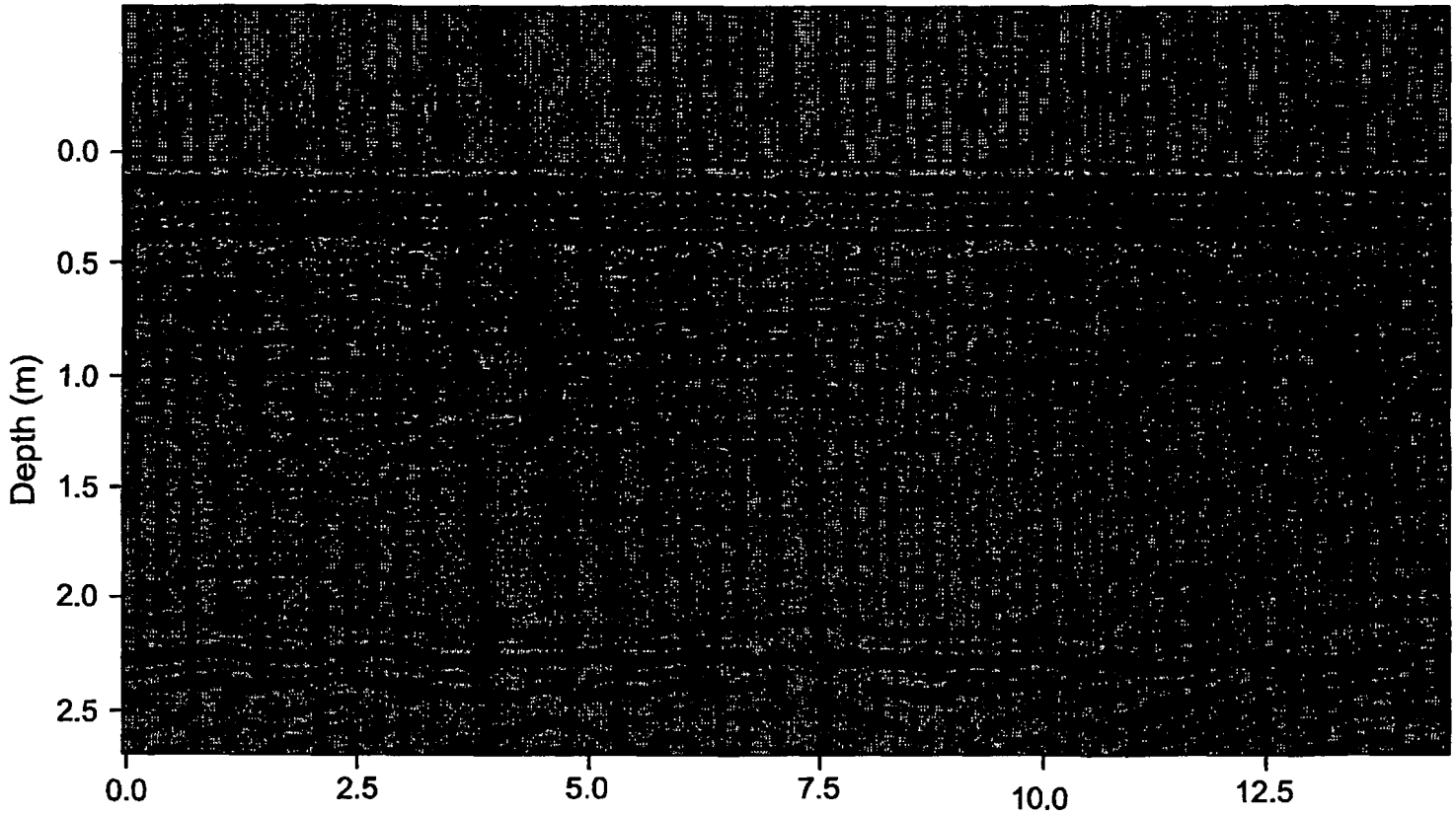


Note: This diagram must be used with and in the context of the accompanying geophysical report.

Figure: 8
GPR Survey Lines

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18, 2001
Project No.:	02-9873
Instrument:	GPR

DILLON CONSULTING

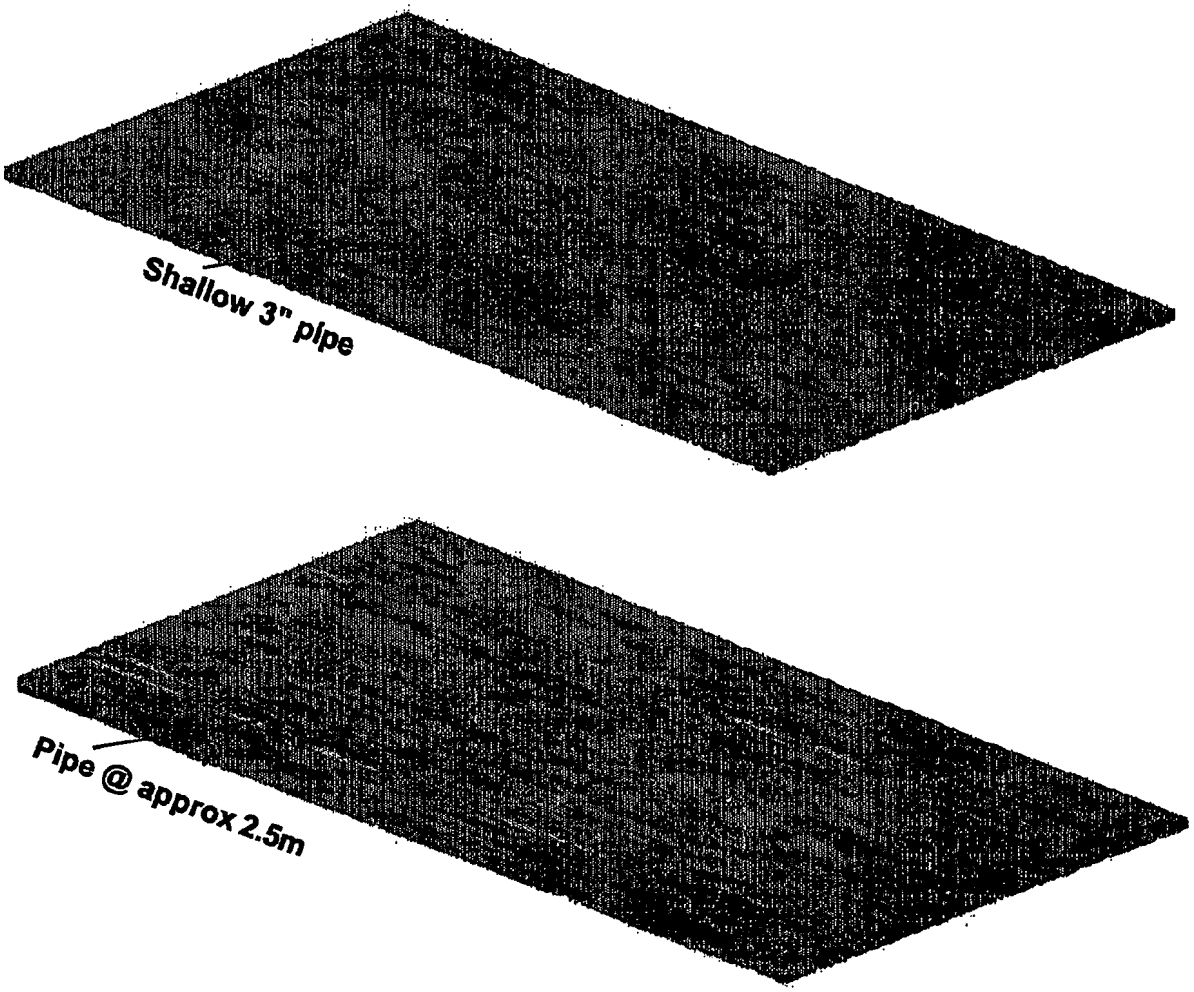


Note: This diagram must be used with and in the context of the accompanying geophysical report.
Base map referenced to Hicksville_survey_base.dwg provided by URS Corporation.

Figure: 9
Line 11 East - West

Project:	Former GTE Sylvania Facility
Location:	Hicksville, New York
Client:	URS Corporation
Survey Date:	December 18-20, 2001
Project No.:	02-9873
Instrument:	GPR

DILLON CONSULTING



Note: This diagram must be used with and in the context of the accompanying geophysical report.

Figure: 10 Slices through GPR data cube			
Project:	Former GTE Sylvania Facility		
Location:	Hicksville, New York		
Client:	URS Corporation		
Survey Date:	December 18, 2001	Project No.:	02-9873
Instrument:	GPR		

DILLON CONSULTING

GPR Survey at a
Former GTE Sylvania Facility
Hicksville, New York
for
URS Corporation
December, 2001

This data must be used with and in the context of the accompanying geophysical report.

J404-H 1021630073B09

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GPR
MAGNETICS
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UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

Results of Geophysical Investigation

Portions of a Former Sylvania Electric Products Facility
70, 100, and 140 Cantiague Rock Road
Hicksville, New York

Prepared for: **Malcolm Pirnie, Inc.**
Fairlawn, New Jersey

Dates of Investigation: **July 12, 13 and 17, 2003**

Prepared by:

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Results of Geophysical Investigation
Portions of a Former Sylvania Electric Products Facility
70, 100, and 140 Cantiague Rock Road
Hicksville, New York

1.0 Introduction

1.1 Purpose

On July 12, 13 and 17, 2003, NAEVA Geophysics Inc. conducted geophysical investigations on portions of a former Sylvania Electric Products facility located at 70, 100 and 140 Cantiague Rock Road in Hicksville, New York. The purpose of the investigation was to mark out the locations of suspected buried objects such as underground storage tanks (USTs), drums, and abandoned utilities (particularly non-metallic drain lines).

1.2 Areas of investigation

Three areas of the former facility were investigated. The first was the front (street-side) parking lot of 100 Cantiague Rock Road (Building 100), followed by the front parking lot of 140 Cantiague Rock Road (Building 140), both of which are vacant commercial properties. The third area to be investigated was the front side of 70 Cantiague Rock Road (Building 70), a commercial property currently occupied by Air Techniques, Inc. The areas of investigation were approximately 80 by 280 feet, 80 by 165 feet, and 25 by 270 feet, respectively.

The Building 100 area (see Plate 1) was bounded to the north, south and west by chain-link fencing and gates. The east side of the area of investigation was bounded by the building itself, as well as fencing and a gate to the area south of the building. The area contained several potential obstructions to the investigation, including landscaping and stored metallic equipment along the front of the building, as well as one parked car which could not be removed prior to our investigation.

The Building 140 area (see Plate 2) was bounded to the north, south and west by chain-link fencing and gates. The eastern side of the area of investigation was bounded by the building itself, as well as fencing and a gate to the south side of the building. Aside from a security booth at the gate, the area was clear of obstructions.

The Building 70 area (see Plate 3) was bounded to the north and south by driveways, to the west by Cantiague Rock Road, and to the east by hedges, chain-link fencing, and the building. The area contained obstacles such as trees, hedges, signs, and a flagpole, and also contained sections of reinforced concrete pavement.

2.0 Instrumentation

2.1 Equipment

The equipment selected for this investigation included a Geonics EM-61 electromagnetic (EM) metal-detector, a Fisher TW-6 M-Scope metal-detector, a Sensors & Software Noggin^{Plus} Smart Cart 250 ground penetrating radar (GPR) system, and Subsite 950R/950T and 3M Dynatel 2250 utility locating instruments.

2.2 EM-61

The EM-61 is a high-resolution time-domain electromagnetic (EM) metal-detector that is capable of detecting both ferrous and non-ferrous metallic objects. The EM-61 consists of three major parts: a hand-pulled cart housing a twin transmitter/receiver coil assembly; a backpack containing the battery and processing electronics; and a digital data recorder.

The EM-61's transmitter generates a pulsed primary EM field, which then induces eddy currents in nearby metallic objects. The decay of these eddy currents is measured by each of two spatially separated receiver coils. By taking these measurements at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground. The coils' responses are displayed and recorded on an integrated data logger. The response curves from the receiver coils are typically well-defined positive peaks that allow accurate lateral location of targets.

2.3 TW-6

The Fisher TW-6 is a type of hand-held electromagnetic metal-detector. The instrument consists of a transmitter coil and a receiver coil mounted at opposite ends of a 4-foot horizontal staff. The transmitter is fixed in a vertical position. The receiver's orientation is then adjusted to the horizontal, exactly perpendicular to the transmitter. When the receiver is in this perpendicular orientation, its response to the transmitter is at a minimum. Metallic objects in the vicinity of the instrument pick up the transmitted signal, and acting as secondary transmitters, cause detectable interference at the receiver. Although the TW-6 does not have the sensitivity of the EM-61, by adjusting the gain of the instrument, as well as its position relative to a buried metallic object, an experienced operator can often obtain information as to the size or shape of a detectable target.

2.4 Ground Penetrating Radar

The Sensors & Software Smart Cart GPR system is used to image subsurface objects. The GPR antenna radiates short pulses of electromagnetic energy into the ground. Whenever these pulses strike an interface having variant dielectric properties,

part of the wave is reflected back and detected at the surface. These profiles are then examined for reflections that could be interpreted as representing underground storage tanks, subsurface utilities, or other buried objects. Due to the reliance of other utility location instruments on metallic targets, GPR is often useful for delineating non-metallic utilities and features.

2.5 Utility Locating Instruments

The equipment used for this portion of the investigation included the aforementioned Fisher TW-6 Pipe and Cable Locator, a Subsite 950 utility locator, and a 3M Dynatel 2250 cable locator. Each of these instruments works on the principle of applying a radio frequency signal onto a metallic/electrically conductive line and then tracing the signal at the surface using a specialized receiver. The Subsite is useful for locating the surface trace of a variety of buried utilities. The Dynatel 2250 is particularly suited to locating the surface trace of telephone and other narrow-gauge wiring, but it can also detect larger metallic piping and linear structures.

3.0 Methods

3.1 EM-61

Survey grids of north/south lines spaced five feet apart were established throughout accessible portions of the three areas. Grid north is approximately parallel to Cantiague Rock Road. The purpose of a grid is to facilitate a systematic approach to EM data collection and to allow the reacquisition of sample locations. It was expected that the 5-foot line spacing would make it possible to locate buried metallic objects large enough to be a drum or UST, within the depth range of the instrument.

The EM-61, operating in the wheel-triggered mode, collected data at approximately 0.7-foot intervals along each grid line. The line number, sampling direction, and starting location were entered into the instrument at the beginning of each line. Once all the data had been collected, it was transferred from the digital recorder to a laptop computer and processed using Geonics' DAT61W software. To correct for odometer inaccuracy caused by topography, the end points of each line were checked against those recorded in the written field notebook. The software then automatically adjusted the location of the data between end points by either compressing or expanding them. The data were converted to a spreadsheet format compatible with Surfer Mapping Software for contouring. The EM-61 data for this report are presented as contour maps of the bottom coil data (see Plates 4, 5, and 6).

Using the grid coordinates as a guide, significant EM-61 targets were reacquired in the field. The area surrounding each EM anomaly was visually inspected for evidence of cultural features that could represent the source of the anomaly, such as fencing or

metallic debris. When no obvious surface cultural sources could be identified, the anomalies were investigated using the TW-6 metal-detector in an attempt to identify an underground source and delineate its approximate surface trace.

3.2 Ground Penetrating Radar

GPR was used both to follow-up on EM anomalies as well as to investigate the areas for possible abandoned non-metallic drain lines which were thought to run east/west through the areas of concern. In the former case, data profiles were collected along bi-directional traverses centered over the anomalies for further characterization. In the latter case, data profiles were collected along four north/south traverses spaced five feet apart, coinciding with the EM-61 survey grid, and running to the limits of the areas. The profiles were inspected for evidence of parabolic reflections that are often characteristic of conduits, as well as evidence of trenching. The locations of these reflections were marked on the ground. Once completed, reflections showing linear trends were selected for continuing investigation and, if determined to likely represent conduits, were painted on the ground and mapped.

3.3 Utility Location

The areas were first visually inspected for evidence of subsurface utilities, such as meter pits, manholes, and power drops. Whenever a metallic/electrically conductive utility was noted, a radio-frequency signal was induced onto the line using one of the utility locating instruments' transmitters. This signal was then used to trace out the utility.

Many utilities carry electric currents, and therefore produce electromagnetic fields that can be detected at the surface. In addition, buried metallic conduits, acting as antennas, often pick up background commercial radio signals and re-radiate them. The site was investigated for evidence of these signals using the Subsite operating in several passive modes. The TW-6 was used to check for evidence of buried metallic structures or utilities having no surface expression.

We also investigated the areas of concern by using the Dynatel 2250 in a split-box fashion. Two operators, one carrying the transmitter and one carrying the receiver, walked bi-directionally across portions of the site at a fixed distance to one another while listening for increases in signal strength that would suggest possible subsurface utilities. Where signal increases were noted, they were further investigated in an attempt to discern a signal propagating utility.

4.0 Results

4.1 EM-61

Building 100 Area

A total of 10 targets of over 25 milliVolts (mV) that could not be explained by cultural effects were identified on the EM-61 bottom coil data contour map. During follow-up operations using the TW-6, nine of these anomalies were detected and their approximate edges, as defined by this metal-detector, were marked on the ground using pink paint. The other target was undetectable using the TW-6.

Five targets, #1, 3, 5, 8 and 9, as labeled on the attached contour map, were considered particularly significant. Target #1, with an anomaly of approximately 300 mV and an areal extent of roughly 15 by 10 feet, showed a distribution of small reflections at 1 to 2 feet on the GPR profiles. Target #3, with an anomaly of 40 mV, was undetectable with the TW-6 and could not be imaged with the GPR. Target #5 produced an anomaly of 250 mV and a TW-6 anomaly measuring 3.5 feet in diameter. Its GPR profile showed a small reflector at a depth of roughly 1 foot. Although no characteristic "shadow" zone could be seen below the reflector, the size of the EM-61 and TW-6 anomalies are consistent with those of a cesspool. Target #8 produced a TW-6 anomaly and GPR profiles consistent with a UST measuring roughly 11.5 by 5.5 feet, and buried at a depth of 2 feet. Target #9 produced an EM-61 anomaly of 1500 mV with an areal extent of roughly 10 by 4 feet. Its western edge could not be delineated due to the proximity of the fence. GPR profiles showed a possible flat-topped reflector at a depth of less than 1 foot.

Targets #2, 4, 6, 7 and 10 were found to have TW-6 anomalies of less than 1 foot in diameter, and based on their GPR profiles were shallowly buried, making them unlikely to be related to drums or USTs.

Cultural features causing noticeable anomalies on the contour map include five manhole covers over dry wells, a water vault and its manhole cover, signposts and bollards, chain-link fencing, a parked car and truck, and stored metal equipment.

Building 140 Area

A total of 7 targets of over 25 mV that could not be explained by cultural effects were identified on the EM-61 bottom coil data contour map. During follow-up operations using the TW-6, five of these anomalies were detected and their approximate edges were marked-out. The other two targets were undetectable using the TW-6.

Targets #1, 2 and 3 showed anomalies of between 600 and 700 mV. Their TW-6 anomalies measured approximately 3 by 5.5 feet, 6 by 7 feet, and 4 by 5 feet, respectively. Follow-up with the GPR showed flat-topped reflectors buried at 1 to 2 feet in each case. Target #4, with an EM-61 anomaly of roughly 500 mV and edges measuring 1 by 4 feet, is mostly likely the result of a flat-topped and slightly dipping reflector buried at about 1 foot. The geometric pattern of these four anomalies suggest that they may represent a leach pool field, although no characteristic "shadow" zone was evident on the GPR profiles.

Target #5, located in the northern part of the parking lot and close to a sewer cleanout, showed an anomaly of approximately 600 mV. The TW-6 showed a target of roughly 1.5 feet in diameter. GPR profiles collected over the target showed reflections typical of a cesspool, with a small and shallow horizontal reflector over a larger and deeper "shadow" zone. The proximity of the sewer vault for Building 140, as well as the sewer cleanout, lend more credibility to this supposition.

Target #6, a linear east/west feature of 90 mV and undetectable using the TW-6, may be associated with the sewer system judging by its location directly between the sewer vault and sewer cleanout. Target #7, a linear east/west feature roughly 12 feet south of and similar to target #6, was also undetectable using the TW-6. GPR profiles over both targets were inconclusive.

Cultural features that cause interference on the contour map include two manhole covers, three cut-off sign posts and the surrounding chain-link fencing, as well as the linear east/west anomalies interpreted to be associated with the natural gas and water lines crossing the area.

Building 70 Area

A total of 8 anomalies of over 25 mV that could not be explained by cultural effects were identified on the EM-61 data contour map. During follow-up operations using the TW-6, six of these anomalies were detected and their approximate edges were marked-out. The other two targets were undetectable using the TW-6.

The most significant targets are #3 and 8, as no evidence was found to rule them out as being drums or USTs. Neither target was detectable using the TW-6, and their GPR profiles were inconclusive. The relatively strong EM-61 anomaly of Target #8, 180 mV, and its small lateral extent, suggest a small but shallow metallic target. Target #3, with an anomaly of only 60 mV, is more suspicious due to its larger area, suggesting a possibly larger and deeper target.

Targets #4, 5 and 6 seem to represent EM peaks along a single continuous anomaly. The largest peak, #6, is located adjacent to the sewer vent on the side of the building, suggesting that the targets may be a part of the sewer system. The anomaly runs roughly 24 feet west from the building and then south for roughly 30 feet. The TW-

6 anomalies for targets #4 and 5 were 1-foot in diameter while that of target #6 was roughly 1 by 4 feet, with a less distinct boundary to the west.

Targets #1 and 7 were found to most likely be dry wells or cesspools, judging by their GPR profiles. GPR profiles collected over target #2 showed a reflector buried at approximately 1 foot that had a TW-6 anomaly measuring roughly 1 by 3 feet.

Surface cultural features reflected in the contour map include water and telephone vaults with their associated manhole covers, signs, a flagpole, a utility pole; chain-link fencing, and reinforced concrete.

4.2 Ground Penetrating Radar

Although GPR profiles throughout the site showed that depths of penetration exceeding six feet were possible, the disturbed and possibly bouldery nature of the subsurface resulted in an excess of radar wave reflections. The high number of reflections from these non-target objects made the investigation for abandoned utilities particularly difficult. While performing this GPR investigation, it was found that even previously marked out, in-use utilities such as the water and gas lines, were not consistently able to be imaged. These results made it highly unlikely that a non-metallic drain line, which does not produce GPR reflections nearly as strong as metal, could be discovered.

Five possible conduits of undetermined use were found during the GPR survey. Four anomalies running east/west were located in the Building 70 area of investigation, as shown on the site map. The suspected lines were estimated to be buried at depths, from south to north, of roughly 6, 2, 3 and 4 feet. The fifth possible conduit was found near the northern end of the Building 100 area of investigation, just north of the water lines. Although only detected at three locations, its consistent depth of burial and strong reflection makes it a possible target.

Two other linear anomalies were found in the Building 100 area, but their location between the two water lines make it possible that the anomalies are associated with the water lines or their associated trenches.

4.3 Utility Location

Utilities were marked out in the three areas primarily to aid in the interpretation of GPR and EM-61 data, and are shown on the three attached site maps.

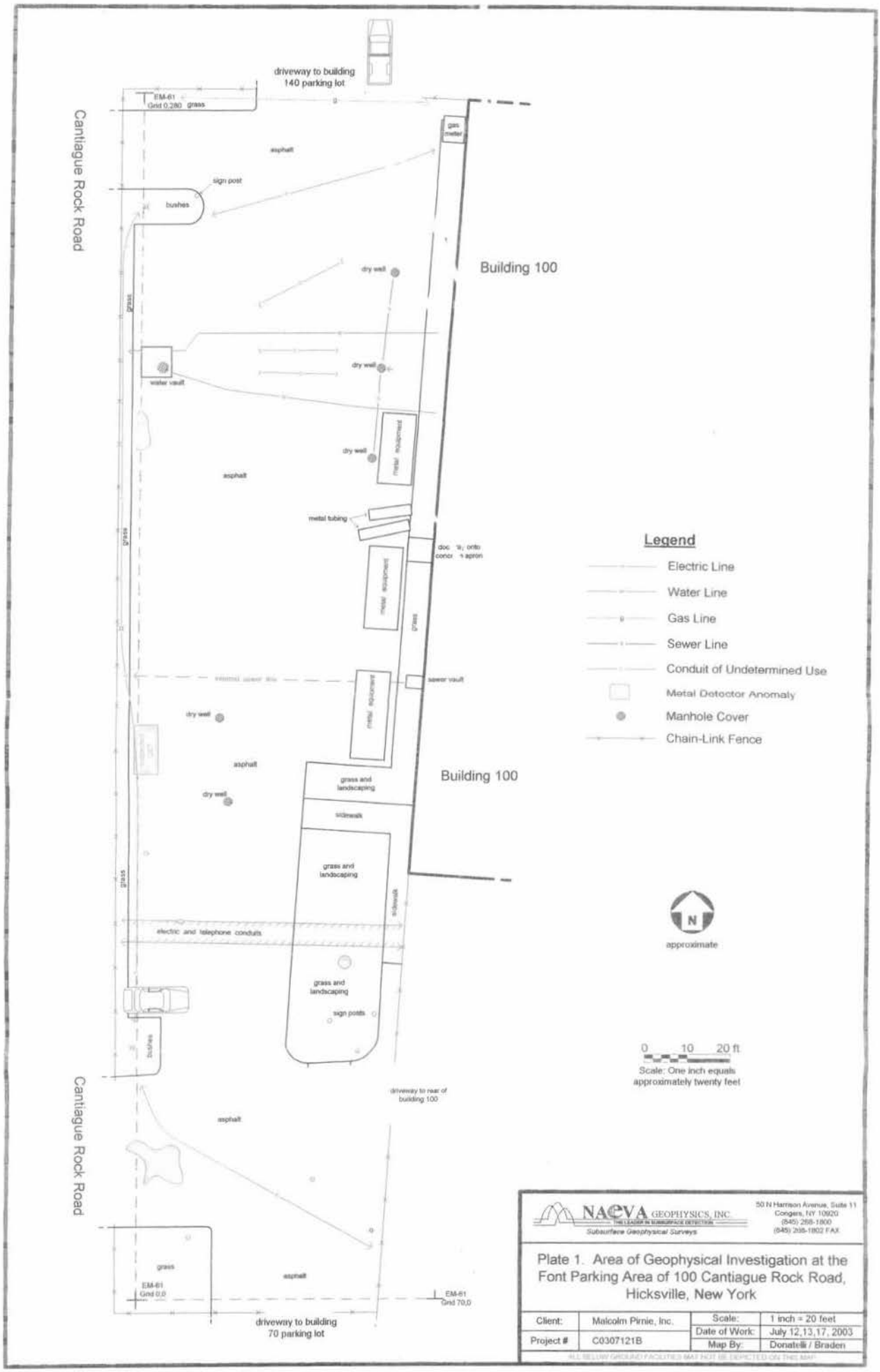

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Plate 1. Area of Geophysical Investigation at the Font Parking Area of 100 Cantiague Rock Road, Hicksville, New York

Client:	Malcolm Pirnie, Inc.	Scale:	1 inch = 20 feet
		Date of Work:	July 12,13,17, 2003
Project #	C0307121B	Map By:	Donatelli / Braden

ALL BELOW GROUND FACILITIES MAY NOT BE DEPICTED ON THIS MAP

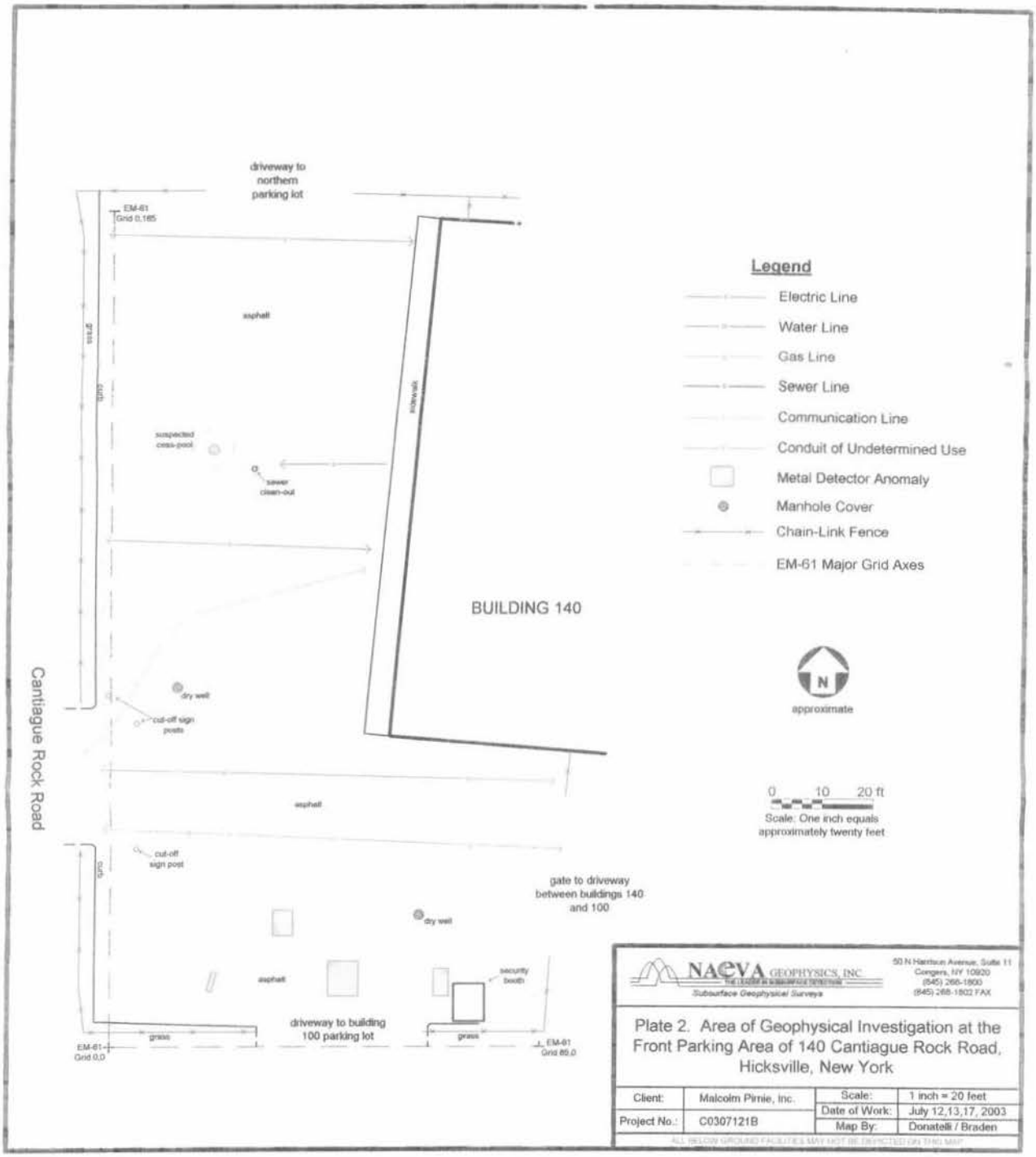
driveway to northern parking lot
EM-61 Grid 0,185
asphalt
grass
curb
suspected cess-pool
sewer clean-out
sidewalk
BUILDING 140
dry well
cut-off sign posts
Cantiague Rock Road
asphalt
cut-off sign post
curb
gate to driveway between buildings 140 and 100
dry well
asphalt
security booth
driveway to building 100 parking lot
grass
grass
EM-61 Grid 0,0
EM-61 Grid 85,0
Legend
Electric Line
Water Line
Gas Line
Sewer Line
Communication Line
Conduit of Undetermined Use
Metal Detector Anomaly
Manhole Cover
Chain-Link Fence
EM-61 Major Grid Axes
N
approximate
0 10 20 ft
Scale: One inch equals approximately twenty feet
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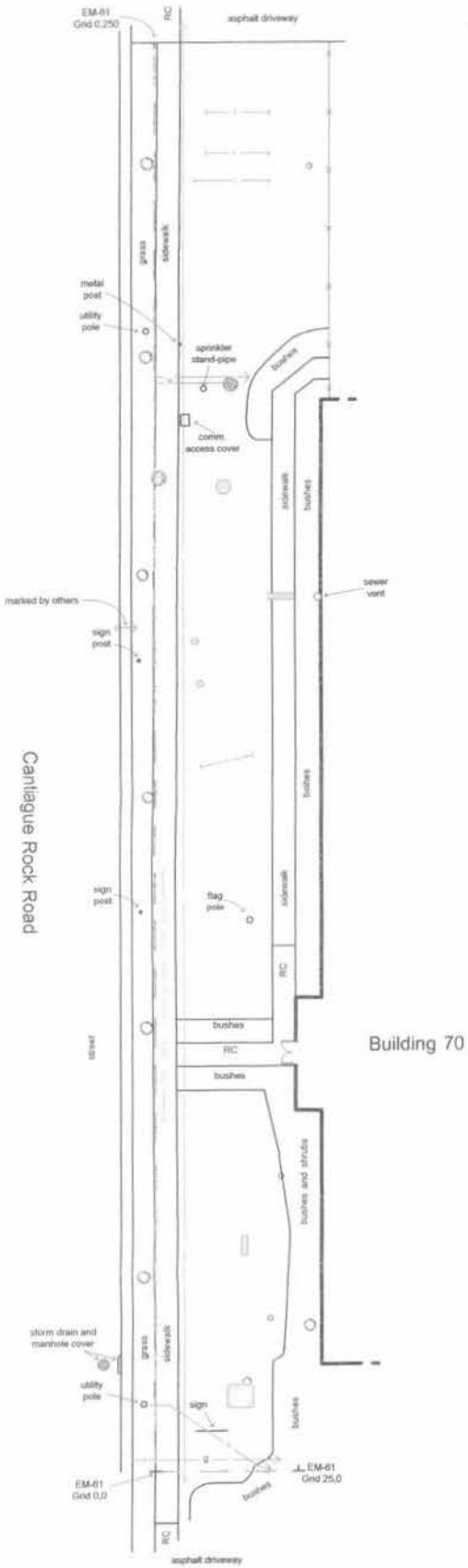
Plate 2. Area of Geophysical Investigation at the Front Parking Area of 140 Cantiague Rock Road, Hicksville, New York
Client: Malcolm Pirnie, Inc.
Scale: 1 inch = 20 feet
Date of Work: July 12,13,17, 2003
Project No.: C0307121B
Map By: Donatelli / Braden
ALL BELOW GROUND FACILITIES MAY NOT BE DEPICTED ON THIS MAP



Legend

- Electric Line
- Water Line
- Gas Line
- Sewer Line
- Communication Line
- Conduit of Undetermined Use
- Metal Detector Anomalies
- RC — Reinforced Concrete Sidewalk Section
- Tree
- Chain-Link Fence
- EM-61 Major Grid Axes

N

approximate

0 10 20 ft

Scale: One inch equals approximately twenty feet

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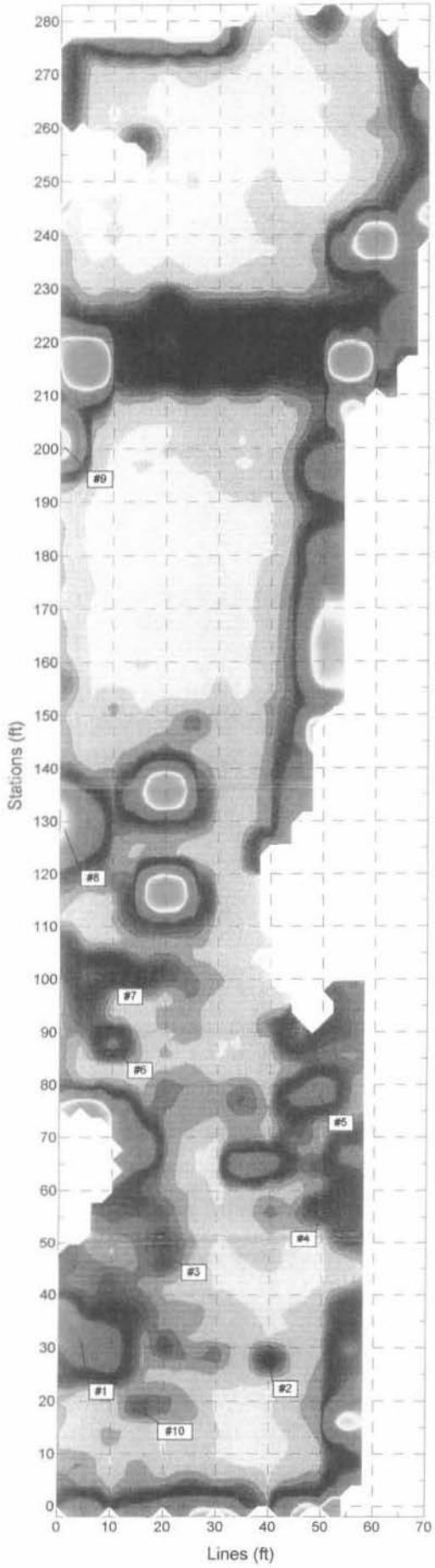
Plate 3. Area of Geophysical Investigation on the East Side of 70 Cantiague Rock Road, Hicksville, New York

Client:	Malcolm Pirnie, Inc.	Scale:	1 inch = 20 feet
		Date of Work:	July 12,13,17, 2003
Project #	C0307121B	Map By:	Jeremy Haney

ALL BELOW GROUND FACILITIES MAY NOT BE DEPICTED ON THIS MAP



Response (milliVolts)

6500
6250
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
-250
-500

N
approximate

0 10 20 ft
Scale: One inch equals approximately twenty feet

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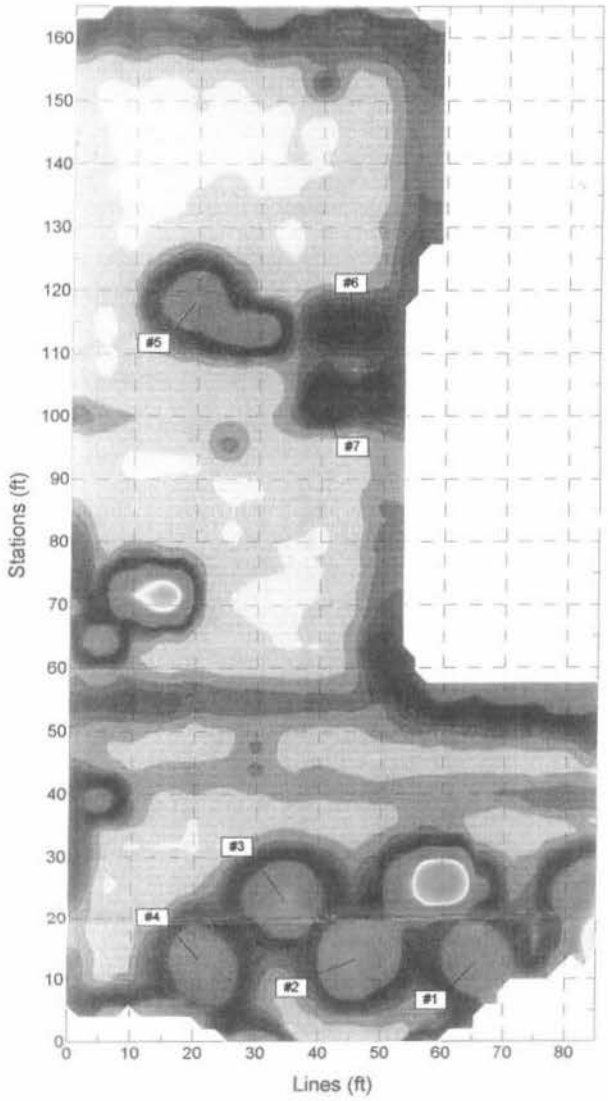
Plate 4. EM-61 Bottom Coil Data Contour Map, Front Parking Area of 100 Cantiague Rock Road, Hicksville, New York

Client:	Malcolm Pirnie, Inc.	Scale:	1inch = 20 feet
Project No.:	C0307121B	Date of Work:	July 12,13,17, 2003
		Map By:	Marc Braden

ALL BELOW GROUND FACILITIES MAY NOT BE DEPICTED ON THIS MAP



Response (milliVolts)

6500
6250
6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
-250
-500

N

approximate

0 10 20 ft

Scale: One inch equals approximately twenty feet

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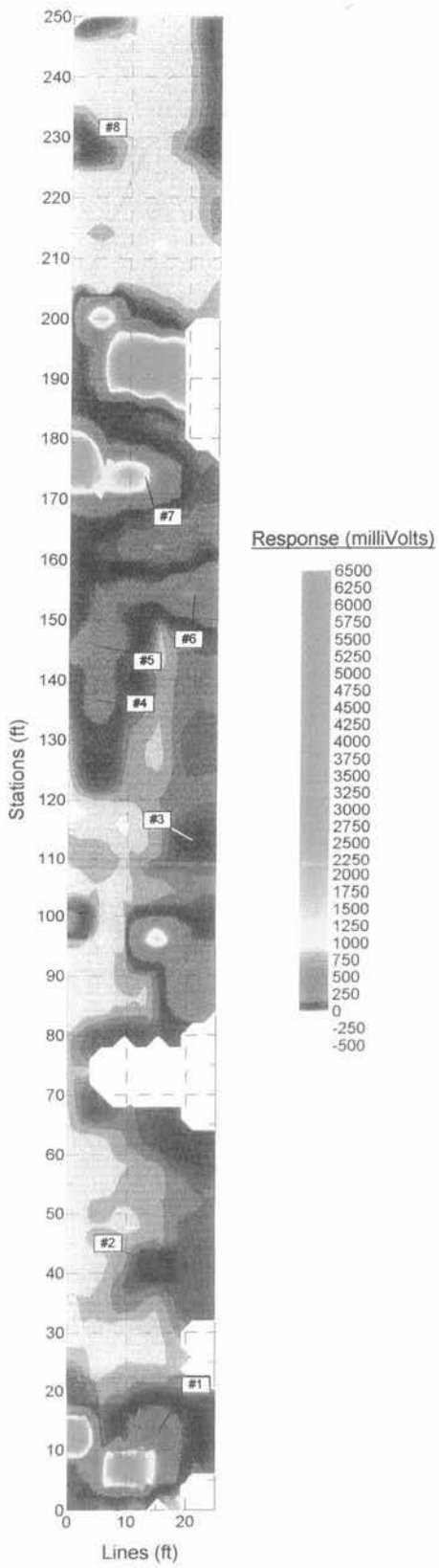
Plate 5. EM-61 Bottom Coil Data Contour Map, Front Parking Area of 140 Cantiague Rock Road, Hicksville, New York

Client:	Malcolm Pirnie, Inc.	Scale:	1 inch = 20 feet
Project No.:	C0307121B	Date of Work:	July 12,13,17, 2003
		Map By:	Marc Braden

ALL BELOW GROUND FACILITIES MAY NOT BE DEPICTED ON THIS MAP



approximate

0 10 20 ft

Scale: One inch equals approximately twenty feet

NACVA GEOPHYSICS, INC.
THE LEADER IN SUBSURFACE DETECTION
Subsurface Geophysical Surveys

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Plate 6. EM-61 Bottom Coil Data Contour Map, East Side of 70 Cantiague Rock Road, Hicksville, New York

Client:	Malcolm Pirnie, Inc.	Scale:	1 inch = 20 feet
		Date of Work:	July 12,13,17, 2003
Project No.:	C0307121B	Map By:	Marc Braden

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SYSTEMATIC SUBSURFACE SOIL SAMPLING AND ANALYSIS REPORT

INVESTIGATION BENEATH THE 100 BUILDING (SURVEY UNITS 03, 04 AND 05)

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V 00089-1

Prepared by
URS Corporation
and
Envirocon, Inc.

For:

GTE Operations Support Incorporated
600 Hidden Ridge Drive
Irving, Texas 75038

November 2005

This Investigation Beneath the 100 Building (Survey Units 03, 04 and 05) Report has been reviewed by URS Corporation – New York, and I am in agreement with the conclusions.

URS Corporation – New York

Robert D. Brathovde, P.E.
Engineer of Record

This Investigation Beneath the 100 Building (Survey Units 03, 04 and 05) Report has been reviewed by Professional Radiation Consulting, Inc. (PRCI), and I am in agreement with the conclusions.

Professional Radiation Consulting, Inc.

Shane Brightwell, CHP
President

This Investigation Beneath the 100 Building (Survey Units 03, 04 and 05) Report has been reviewed by Envirocon, Inc. and I am in agreement with the conclusions.

Envirocon, Inc.

Richard Hafner
Radiation Safety Officer

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Appendix A: Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building, November 2004

Appendix B: Correspondence regarding the Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building, November 2004

Appendix C: Boring Logs (Boring Logs are included as Appendix C on the enclosed CD. The enclosed CD includes a complete electronic copy of this report.)

Appendix D: MARSSIM and *COMPASS Software* Evaluations

1.0 INTRODUCTION

This report provides the results, data assessments and conclusions made with respect to the characterization of surface and subsurface soils pursuant to the *Systematic Subsurface Soil Sampling and Analysis Plan, Beneath the 100 Building* (SSSA Plan), dated November 2004 (**Appendix A**) at the Former Sylvania Electric Products Incorporated (Sylvania) facility located at 140, 100 and 70 Cantiague Rock Road, Hicksville, New York (the Site). The New York State Department of Environmental Conservation (NYSDEC) provided comments on the SSSA Plan in a letter dated December 20, 2004. GTE Operations Support Incorporated (GTEOSI) responded to the NYSDEC comments in a letter dated January 20, 2005. The SSSA Plan was approved by NYSDEC in a letter dated January 31, 2005. These letters are included in **Appendix B**.

The areas investigated were designated as Survey Units (SUs) as defined in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual* (the MARSSIM). The areas designated as SU03, SU04 and SU05 are located in the eastern, central, and western portions, respectively, of the 100 Building (**Figure 1**). This investigation commenced on February 16, 2005 and sampling was completed on April 28, 2005.

Included in this report are sample analytical results, data assessments and conclusions regarding radiological, volatile organic compounds (VOCs) and nickel (Ni) data. Also reported herein are the analytical results for beryllium (Be).

Summaries of related activities in addition to those specified in the SSSA Plan, include:

- 100 Building informal investigation and focused sampling (Section 4.1);
- Historic leach pool (LPH) investigation (Section 4.2);
- Cell 9 investigation (Section 4.3);
- Delineation of soil boring 009 (Section 4.4);
- Additional borings advanced at NYSDEC's request (Section 4.5); and
- Investigation of an underground storage tank (UST) discovered during sampling operations (Section 4.6).

2.0 SCREENING AND SAMPLING

A systematic triangular sampling pattern was used to provide uniform lateral coverage of the SUs. Soil borings were advanced and soil samples were collected continuously, beginning at ground surface (just below the bottom of the concrete slab) to 30 feet below ground surface (bgs). The sampling pattern grid, rows and boring locations are shown in **Figure 1**.

A 2-foot (ft) long split spoon sampling device was advanced for soil retrieval. The recovered soils were screened using a photoionization detector (PID) for VOCs and a 3-inch sodium iodide (NaI) detector for radioactivity prior to sample collection.

The samples designated as sample point (SP) samples were collected at intervals that were vertically staggered by 1 meter (m) (approximately 3 ft). SP samples were collected in 2-ft increments to maximize sample volume. This additional volume of soil was needed to perform

both on-Site and off-Site analyses. Row 1 borings had SP samples at 1 ft, 11 ft and 21 ft; Row 2 borings had SP samples at 4 ft, 14 ft and 24 ft; and Row 3 borings had SP samples at 7 ft, 17 ft and 27 ft. In addition, each boring had an SP sample at 30 ft. Intervals, increments and analyses for each row type are summarized on **Figure 2**.

Samples designated as delineation (DL) samples were collected in 1-ft increments between the staggered SP sample intervals.

Samples were analyzed both on Site to guide investigation and off Site at Severn Trent Laboratories, Inc. (STL) of Earth City, Missouri for final verification. The sample analytical results were compared to the Site cleanup levels specified in the approved *Comprehensive Soil Remediation Program Work Plan, Former Sylvania Electric Products Facility, January 18, 2002 (Revision 5: June 2003)* (Work Plan).

A field geologist classified the soils in general accordance with the Unified Soil Classification System (USCS). Sample descriptions included soil type, color, moisture, and visual observations. Boring Logs are provided in **Appendix C**.

2.1 RADIONUCLIDES

DL samples were homogenized and analyzed on Site by gamma spectroscopy for thorium (Th-232) and uranium (U-238).

SP samples were homogenized and split. One portion was analyzed on Site by gamma spectroscopy and the other portion was sent off Site to STL for alpha spectroscopy analysis. STL performed isotopic thorium analysis using National Academy of Science (NAS)/Department of Energy (DOE) 3004/RP-725 and isotopic uranium analysis using NAS/DOE 3050/RP-725.

2.2 VOLATILE ORGANIC COMPOUNDS

DL samples were collected and analyzed for VOCs if PID readings were greater than 25 parts per million (ppm) or if visual observations (e.g., staining) warranted. DL samples were to be analyzed on Site by Stone Environmental Inc. (SEI) for trichloroethene (TCE) and tetrachloroethene (PCE) using solid phase microextraction and capillary gas chromatography. Based on field screening results as noted in the boring logs (**Appendix C**), there were no DL samples analyzed for VOCs from SU03 and SU05. There were eight field readings greater than 25 ppm on the PID in SU04. These eight locations were sampled and analyzed on Site by SEI for TCE and PCE.

Two samples were collected at each SP interval for VOC analysis. One sample was analyzed on Site by SEI. The other sample was sent off Site to STL for VOC analysis using United States Environmental Protection Agency (USEPA) Method 8260B.

2.3 METALS

DL samples were collected for Ni analysis at alternating 1-ft intervals between SP samples. If sample recovery was insufficient, analysis could not be performed. In such an event, a sample for Ni was collected at the next available interval and at alternate intervals thereafter. Ni DL samples were analyzed on Site using x-ray fluorescence spectroscopy (XRF) by SEI.

Two samples were collected at each SP interval for metals analysis. One sample was analyzed on Site by SEI for Ni. The other sample was sent off Site to STL for analysis of Ni and Be using USEPA Method 6010B.

2.4 SAMPLING SUMMARY

The SSSA Plan was designed to allow flexibility to respond to field conditions (e.g., boring relocation and insufficient sample recovery). Fifteen soil borings had to be moved from their proposed locations due to limited access (e.g., utilities and obstructions). The relocations were within the limits specified in the SSSA Plan. Five of the 15 soil borings could not be relocated within the limits specified in the SSSA Plan due to obstructions and were eliminated (soil borings 017 and 021 in SU03; and soil borings 015, 016 and 020 in SU05). These obstructions, each designated as an "interference area" in **Figure 1**, consisted of areas inaccessible to large equipment. Each soil boring location was surveyed using the laser positioning system (LPS).

In SU03 a total of 21 soil borings were advanced resulting in the recovery of 84 SP samples, 465 radionuclide DL samples and 252 Ni DL samples. In SU04 a total of 22 soil borings were advanced resulting in the recovery of 85 SP samples, 517 radionuclide DL samples, 8 VOC DL samples and 264 Ni DL samples. In SU05 a total of 21 soil borings were advanced resulting in the recovery of 84 SP samples, 505 radionuclide DL samples and 257 Ni DL samples.

3.0 ANALYTICAL RESULTS/ASSESSMENTS

The results of the DL and SP sample analyses from SU03, SU04 and SU05 are summarized in **Table 1**. The results of the SP sample analyses from SU03, SU04 and SU05 are summarized in **Table 2**. Statistical assessments of radiological off-Site SP data were performed with applicable methods specified in the MARSSIM and analytical results were also compared to Site cleanup levels. VOC and Ni results were compared to the Site cleanup levels. Be results were compared to the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 values and other published literature sources for New York State soils. These assessments are described herein.

3.1 RADIOLOGICAL

A statistical assessment of radiological SP data (with the exception of samples from the final depth) was performed using the MARSSIM methods. SP samples at the final depth (30 ft) were compared to the Site cleanup levels in the Work Plan.

3.1.1 Survey Unit Assessment

Each SU was characterized vertically at 3-m (10-ft) staggered depths. Since the MARSSIM provides characterization and final verification guidance primarily on surface soils, each 3-m (10-ft) SU interval was evaluated independently as if that SU interval was representative of an undulating soil surface. For the purposes of the assessment, the 0- to 3-m (0- to 10-ft) SU interval was labeled SU Interval 1, the 3- to 6-m (11- to 20-ft) was SU Interval 2, and the 6- to 9-m (21- to 30-ft) was SU Interval 3. Thus, for the 21 borings advanced in SU03, 63 samples were used in the MARSSIM assessment of the three SU intervals. For the 22 borings advanced in SU04, 62 samples were used in the MARSSIM assessment of the three SU intervals. For the 21 borings advanced in SU05, 63 samples were used in the MARSSIM assessment of the three SU intervals.

The assessment of the SU interval data sets was performed using the *COMPASS Software*. The *COMPASS Software* allows the user to set up the analytical data for all radiological analytes in a readable input file format, and then evaluate the data set using the applicable MARSSIM methods. The *COMPASS Software* evaluations of each of the three SU intervals are in **Appendix D**.

The Work Plan specifies Site cleanup levels for three radionuclides (Th-232, U-234 and U-238). The MARSSIM addresses evaluation of multiple radionuclides by employing the Sum of Ratios (SOR) Method. First, for SP samples, the ratio of the concentration for each radionuclide to its corresponding Site cleanup level is calculated. The ratios for all three radionuclides are then summed for a single sample. This results in a single unitless SOR value for each sample. The samples in a given SU interval are then evaluated using the statistical methods inherent in the *COMPASS Software*.

3.1.1.1 SU03 Assessment

Evaluation of the DL and SP samples in SU03 indicates that the concentrations are below the radionuclide Site cleanup levels. In soil boring 010 at 4 ft below the bottom of the concrete slab disturbed material (fill) is above the Site cleanup level for Th-232 and U-238 (10.99 picoCuries per gram [pCi/g] and 65.18 J pCi/g respectively). In soil boring 019 at 2 ft below the bottom of the concrete slab the fill is above the Site cleanup level for U-238 (50.34 J pCi/g). Two soil borings (014 and 022) at 4 ft below the bottom of the concrete slab had concentrations of U-238 approaching 50 percent of the Site cleanup levels.

3.1.1.2 SU04 Assessment

Evaluation of the DL and SP samples in SU04 indicates that the concentrations are below the radionuclide Site cleanup levels. In soil boring 020 at 6 ft below the bottom of the concrete slab the fill is above the Site cleanup level for U-238 (78.88 pCi/g). Two soil borings (020 and 021) from depths 0 to 5 ft below the bottom of the concrete slab had concentrations of U-238 approaching 50 percent of the Site cleanup level.

3.1.1.3 SU05 Assessment

Evaluation of the DL and SP samples in SU05 indicates that the concentrations are below the radionuclide Site cleanup levels. Two soil boring (004 and 012) from depths of 6 to 7 ft below the bottom of the concrete slab had concentrations of Th-232 approaching 50 percent of the Site cleanup level.

3.1.2 Decision Analysis

The decision analysis for the radiological analytical results was based on the default null hypothesis recommended in the MARSSIM, which states: "The residual radioactivity in the survey unit exceeds the release criterion." The MARSSIM "Sign Test" (assuming no contribution from background radionuclides) was used to reject the null hypothesis. When the null hypothesis is rejected, the SU passes and qualifies for release. If the null hypothesis cannot be rejected, further investigation or remedial action may be necessary.

As stated earlier, each of the three intervals was evaluated independently in each SU. Therefore, there were a total of nine independent evaluations (three intervals within each SU). The following table summarizes the results of the *COMPASS Software* evaluations.

SU	SU Interval	Depth Range (ft)	# Samples (N)		Sum of Ratios		Null Hypothesis	SU Interval Status
			Required	Actual	Avg	Max		
03	1	0-10	13	21	0.46	0.91	Rejected	Passes
	2	11-20	13	21	0.10	0.40	Rejected	Passes
	3	21-30	13	21	0.10	0.33	Rejected	Passes
04	1	0-10	13	18	0.32	0.62	Rejected	Passes
	2	11-20	13	22	0.12	0.45	Rejected	Passes
	3	21-30	13	22	0.10	0.36	Rejected	Passes
05	1	0-10	13	21	0.28	0.59	Rejected	Passes
	2	11-20	13	21	0.09	0.14	Rejected	Passes
	3	21-30	13	21	0.09	0.23	Rejected	Passes

The evaluation of the SP analytical results for SU03, SU04 and SU05 using the *COMPASS Software* indicated that the average concentrations of Th-232, U-234 and U-238 in the soils beneath the 100 Building are below the Site cleanup levels.

3.2 VOLATILE ORGANIC COMPOUNDS

The VOC analytical results of TCE and PCE were compared to the Site cleanup levels of 0.7 milligrams per kilogram (mg/kg) and 1.82 mg/kg, respectively. The following table provides the highest concentrations of VOC sample analytical results from **Table 1**.

SU	Depth Range (ft)	TCE (mg/kg)	PCE (mg/kg)
03	0-10	0.110 J	5.1 J
	11-20	0.0045J	0.0020 J
	21-30	0.0012 J	0.0011 J
04	0-10	0.0016 J	0.032 J
	11-20	0.201	0.900 J
	21-30	0.206	0.720
05	0-10	0.0028 U	0.019 J
	11-20	0.0028 U	0.0028 U
	21-30	0.0028 U	0.0028 U

Notes: U – not detected J – estimated value

Based on a review of DL and SP analytical data, TCE was not detected above the Site cleanup level. PCE was detected above the Site cleanup level in one soil boring, 013 (4 ft bgs), located in SU03 at an estimated concentration of 5.1 J mg/kg.

3.3 METALS

The Ni analytical results were compared to the Site cleanup level (560 mg/kg) while the Be results were compared to NYSDEC TAGM #4046 values (0.16 mg/kg or Site background) and other published literature sources for New York State soils. The following table provides the highest concentrations of Ni and Be from **Table 1**.

SU	Depth Range (ft)	Ni (mg/kg)	Be (mg/kg)
03	0-10	190	0.85
	11-20	5.1	0.30 J
	21-30	4.9	0.43 J
04	0-10	330	0.75
	11-20	41.4 J	0.37 J
	21-30	3.2 J	0.29 J
05	0-10	68.3 J	0.43 J
	11-20	4.0 J	0.30 J
	21-30	6.2	0.31 J

Based on a review of DL and SP analytical data, Ni was not detected above the Site cleanup level. Several samples had concentrations of Be above the TAGM value of 0.16 mg/kg. However, Be concentrations in New York soils are reported to range between 0 to 7 mg/kg[1, 2]. The Be soil results are interpreted to be within the reported range for soils in New York State.

4.0 ADDITIONAL INVESTIGATIONS

Prior to and concurrent with the Systematic Subsurface Soil Sampling and Analysis investigation, the following investigations beneath the 100 Building were performed.

- An informal investigation and focused sampling was performed beneath the 100 Building prior to the SU characterizations. The results of the investigation are included in Section 4.1 of this report.
- An investigation was performed concurrent with the SU characterizations to identify and delineate contaminants associated with suspected LPHs beneath the 100 Building pursuant to the *Systematic Subsurface Soil Sampling and Analysis Plan Historic Leach Pools, September 2004, Revision 1: October 2004* (LPH Plan). The results of the investigation are summarized in Section 4.2 of this report.
- An investigation was performed concurrent with the SU characterizations to identify and delineate contaminants that originated from the LPHs removed during the remediation in Cell 9 south of the 100 Building. The results of the investigation are summarized in Section 4.3 of this report.
- Additional sampling was conducted in SU04, soil boring 009, to further delineate residual PCE concentrations identified during the SU investigation. The results of the investigation are summarized in Section 4.4 of this report.
- Additional borings were requested by NYSDEC to supplement the SSSA Plan grid. The results of the investigation are summarized in Section 4.5 of this report.
- An investigation was performed relating to a UST that was encountered in SU03. The results of the investigation are summarized in Section 4.6 of this report.

4.1 100 BUILDING INFORMAL INVESTIGATION AND FOCUSED SAMPLING

The objective of the informal investigation was to assess the potential contaminants beneath the 100 Building and determine if further investigation was warranted. This investigation, conducted from March 25, 2004 to April 9, 2004, included reviewing historic documents and investigating areas where residual concentrations of U-238 and PCE may be present. The focused sampling of these areas was conducted in and around suspected historic features including building footprints, building floor drains, catch basins and leach pools (**Figure 3**). The boring locations were selected in the areas of:

---

[1] Schacklette, H.T., and J.G. Boerngen. 1984. *Elemental Concentrations in Soils and Other Surficial Materials of the Conterminous United States*. US Geological Survey. Pub. 1270.

[2] Dragun, J. and A. Chiasson. 1991. *Elements in North American Soils*. Hazardous Materials Control Resources Institute. Greenbelt, Maryland

- Suspected historic floor drains (subcell G16, soil borings DL12, DL17 and DL18 and subcell G18 soil borings DL01 and DL02);
- Suspected historic catch basins (subcell H18, soil boring DL15 and subcell H19, soil boring DL09);
- LPH01 (subcell I11, soil boring DL03);
- LPH03 (subcells K14, soil boring DL14 and subcell L14, soil borings DL05 and DL19);
- LPH04 (subcell M14, soil boring DL06);
- LPH05 (subcell N15, soil boring DL07 and subcell O15, soil boring DL16); and
- LPH06 (subcell O18, soil borings DL10 and DL13).

Three locations outside the footprint of the historic building were investigated:

- Subcell C12, soil boring DL21;
- Subcell D13, soil boring DL20; and
- Subcell I19, soil boring DL11.

A total of 19 soil borings were advanced in these locations. Hand augering was used to collect the samples in 1-ft increments. Trenching was also used to collect samples. The recovered soils and exposed soil surfaces were screened using a PID for VOCs and a NaI detector for radioactivity prior to sample collection.

The samples were analyzed for Th-232 and U-238 using the on-Site gamma spectroscopy system and for TCE and PCE by SEI analytical service. The SP samples were analyzed off Site by STL for radionuclides, VOCs and Ni.

The soils directly below the bottom of the concrete slab to an estimated 6 to 7 ft bgs (excluding the LPH locations) were classified as fill. This layer of soil may have been placed within the footprint of the 100 Building as construction fill material.

Of the 19 soil borings investigated, 11 had Th-232 and U-238 above the Site cleanup levels and 13 at 50% of the Site cleanup levels. Three of the soil borings had TCE or PCE above the Site cleanup levels and two soil borings had Ni above the Site cleanup level. **Table 3** provides the analytical results of this investigation.

4.2 HISTORIC LEACH POOLS

Pursuant to the LPH Plan there were 14 suspected LPHs investigated, seven of which were expected to be located either partially or entirely beneath the 100 Building: three in SU03 (LPH03 in subcell L14, LPH04 in subcell M14 and LPH05 in subcell N15), two in SU04 (LPH01 and LPH02 in subcell I11), and two in SU05 (LPH12 in subcell A19 and LPH13 in subcell Z68). **Figure 4** and **Table 4** provide the anticipated locations and the analytical results, respectively, for the seven LPHs beneath the 100 Building.

Of the seven LPHs beneath the 100 Building, LPH03 and LPH04 had contaminants above the Site cleanup levels. The remaining LPHs did not have contaminants above the Site cleanup levels.

4.2.1 LPH03

LPH03 had PCE above Site cleanup levels at 6 and 16 ft bgs. Field screening for VOCs prompted DL sample collection in the central boring location (soil boring 01) at 6 ft bgs for on-Site VOC analysis. The results indicated a PCE concentration of 1.982 mg/kg. Field screening of soils collected in the other four boring locations in LPH03 surrounding soil boring 01 did not indicate residual PCE at 6 ft bgs. Additionally, field screening for VOCs prompted DL sample collection in soil boring 05 at 16 ft bgs for on-Site VOC analysis. The results indicated a PCE concentration of 12.370 mg/kg. Field screening of soils collected in the soil boring locations to the east of soil boring 05 did not indicate residual PCE.

4.2.2 LPH04

LPH04 had U-238 and PCE above Site cleanup levels in the central boring location (soil boring 01) at 22 ft bgs. The on-Site gamma spectroscopy analysis results for the radiological DL sample had U-238 at 79.12 pCi/g. Field screening for VOCs prompted DL sample collection for on-Site VOC analysis. The results had a PCE concentration of 6.364 mg/kg. Radiological DL samples and VOC field screening of soils collected in the other four soil boring locations in LPH04 surrounding soil boring 01 did not indicate the presence of residual U-238 or PCE at 22 ft bgs.

4.3 CELL 9 INVESTIGATION

The investigation of contaminants in soils remaining after Cell 9 remediation resulted in the advancement of additional soil borings inside the 100 Building. Of the 15 borings advanced in the 100 Building during the Cell 9 investigation, five had contaminants above Site cleanup levels.

Soil boring DL01 in subcell G18 had an estimated concentration of Ni at 921 J at 3 ft bgs. Soil boring DL01 in subcell G18 also had U-238 at 70.01 pCi/g and Ni at 728 mg/kg at 7 ft bgs. This layer of soil may have been placed within the footprint of the 100 Building as construction fill material. Soil boring DL01 in subcell D17 had U-238 at 53.55 pCi/g at 46 ft bgs. Soil boring DL02 in subcell D18 had U-238 at 75.37 pCi/g at 47 ft bgs. Soil boring DL03 in subcell D18 had an estimated concentration of U-238 at 66.77 J pCi/g at 47 ft bgs. Soil boring DL03 in subcell E18 had U-238 at 52.75 pCi/g at 47 ft bgs. **Figure 5** and **Table 5** provide the soil boring locations and analytical results, respectively, for the soil borings advanced during the Cell 9 investigation beneath the 100 Building.

Residual U was encountered in subcells D17, D18 and E18 at approximately 47 ft bgs during the Cell 9 investigation. Additional DL samples collected above and below 47 ft bgs had residual U-238 below the Site cleanup level.

4.4 SU04, SOIL BORING LOCATION 009 DELINEATION

Low level VOCs were detected during field screening of samples in SU04, soil boring location 009, from 16 to 30 ft bgs. Subsequent on-Site analysis indicated residual TCE and PCE concentrations. The lateral and vertical extent of TCE and PCE in surrounding soil was delineated by advancing six additional soil borings. Subsequent on-Site analysis identified one sample, in subcell G13 from soil boring DL01 (2 ft bgs) with TCE (1.202 mg/kg) above Site cleanup levels. This layer of soil may have been placed within the footprint of the 100 Building as construction fill material. There were no other radiological, VOC or Ni analytical results above Site cleanup levels encountered during this delineation. The soil boring locations are shown on **Figure 1.** The analytical results for these soil borings are provided in **Table 6**.

4.5 NYSDEC-REQUESTED ADDITIONAL BORINGS

Based on a December 20, 2004, NYSDEC letter and subsequent discussions with NYSDEC staff, ten additional soil borings were requested to further investigate shallow soils beneath the 100 Building. After review of analytical data adjacent to proposed soil borings DECA, DECE, DECG, and DECJ, these four soil borings were found to be redundant with existing, planned borings and therefore eliminated. Additionally, based on the discovery of a UST during the advancement of soil boring DECH, NYSDEC verbally requested two additional soil borings (designated as DECK and DECL). The locations of these eight soil borings are shown on **Figure 1,** labeled DECB (subcell I19), DECC (subcell K17), DECD (subcell J19), DECF (subcell N12), DECH (subcell L17), DECI (subcell M19), DECK (subcell L16), and DECL (subcell L17). Of the eight soil borings requested by NYSDEC, seven had contaminants above the Site cleanup level for PCE. The analytical results for these soil borings are provided in **Table 7**.

4.6 UNDERGROUND STORAGE TANK

On April 29, 2005, while advancing soil boring DECH (subcell L17), a UST was encountered approximately 5.5 ft below the bottom of the concrete slab. The UST was labeled UST H. The UST is approximately 5 ft in diameter and 15 ft long with an approximate capacity of 2,500 gallons. The UST contained an estimated 150 gallons of liquid and 250 gallons of sludge. Samples were collected from the liquid (4-inch thick) and sludge (10-inch thick) and sent to STL for analysis.

The liquid and the sludge contained PCE and TCE above Site cleanup levels with substantially more PCE than TCE and cis-1,2 dichloroethene. Also detected were U, various metals and PCB Arochlor® 1260. The UST appeared intact, with no visible punctures, signs of leakage, or product release.

Due to the location of the UST, it could not be removed without affecting the building integrity. As a result, on May 4, 2005, with the concurrence of NYSDEC, an emulsifier (Liqui-Sorb® 200-gel polymer) was added to the UST to solidify and thereby immobilize the contents and prevent a potential release. See **Figure 1** for the location and orientation of UST H.

At the request of NYSDEC, two soil borings were advanced adjacent to the UST. Soil boring DECK was advanced approximately 6 ft north of DECH and DECL was advanced approximately 8 ft south of DECH. Soil samples were collected to 15 ft below the concrete slab at both locations. The analytical results for these soil borings are provided in **Table 7**. The UST contents analytical results were submitted to NYSDEC on June 3, 2005.

5.0 CONCLUSIONS

The evaluation of the SP radiological analytical results for SU03, SU04 and SU05 using the *COMPASS Software* indicated that the average concentrations of Th-232, U-234 and U-238 in the soils beneath the 100 Building are below the Site cleanup levels. Additionally, the SP analytical results from SU03, SU04 and SU05 for TCE and Ni are below the Site cleanup levels. However, the following were identified:

- Although the SUs passed the *COMPASS Software* evaluation, there were three DL sample locations (SU03, soil boring 010 at 4 ft, SU03, soil boring 019, at 2 ft and SU04, soil boring 020 at 6 ft) where one or more radiological constituent concentrations was above the Site cleanup levels.
- One SP sample result (SU03, soil boring 013 at 4 ft bgs) was above the Site cleanup level for PCE.
- Several locations had Be in excess of the TAGM values but are within the reported range for soils in New York State.

Additional investigations conducted indicated the following:

- The informal investigation and focused sampling indicated the soils associated with the historic features beneath the 100 Building had contaminants above Site cleanup levels for radionuclides and VOCs;
- Of the seven suspected LPHs investigated, two had contaminants above Site cleanup levels for radionuclides and PCE. The results of the LPH investigation are detailed in the *Systematic Subsurface Sampling and Analysis Report, Historic Leach Pools*;
- Of the 15 soil borings advanced beneath the 100 Building in the Cell 9 investigation following the remediation of Cell 9, four had contaminants above Site cleanup levels for radionuclides and one had contaminants above Site cleanup levels for Ni;
- Of the 6 soil borings advanced in SU04, soil boring location 009, one had a concentration of TCE above the Site cleanup level;
- Of the eight soil borings advanced as requested by NYSDEC, seven had contaminants above Site cleanup levels for PCE; and
- UST H appeared intact with no related contaminants to surrounding soils.

TABLES

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	001	26649	0.0	0.86		1.18 J				
03	001	26650	1.0	0.84 J		7.16			<100	
03	001	26651	3.0	0.06		2.85			<100	
03	**001**	**26658**	**4.0**	**0.45**	**0.85**	**0.42**	**0.0025 U**	**0.0025 U**	**2.3 J**	**0.14 J**
03	001	26659	6.0	0.42 J		0.82				
03	001	26660	7.0	0.83		3.21			<100	
03	001	26661	8.0	1.09		4.52				
03	001	26662	9.0	0.46 J		0.47			<100	
03	001	26667	10.0	0.11 UJ		1.69 J				
03	001	26668	11.0	0.19		0.39			<100	
03	001	26671	12.0	0.20		0.74 J				
03	001	26672	13.0	0.35 J		0.45			<100	
03	**001**	**26673**	**14.0**	**0.306**	**0.51**	**0.382**	**0.0026 U**	**0.0026 U**	**1.3 J**	**0.17 J**
03	001	26674	16.0	0.28		1.45				
03	001	26675	17.0	0.23 J		1.40 J			<100	
03	001	26676	19.0	0.22		0.84 J			<100	
03	001	26678	20.0	0.25		0.52				
03	001	26679	21.0	0.35 J		1.33			<100	
03	001	26691	23.0	0.32		0.25			<100	
03	**001**	**26698**	**24.0**	**0.120**	**0.173**	**0.178**	**0.0027 U**	**0.0027 U**	**1.5 J**	**0.14 J**
03	001	26699	26.0	0.27 J		1.52				
03	001	26700	27.0	0.15		0.38 J			<100	
03	001	26707	28.0	0.15		0.93 J				
03	001	26708	29.0	0.23		0.97			<100	
03	**001**	**26709**	**30.0**	**0.094 J**	**0.121**	**0.136**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.15 J**
03	002	26411	0.0	1.18 J		2.87			<100	
03	**002**	**26414**	**1.0**	**0.81**	**9.8**	**6.50**	**0.0025 U**	**0.0027 U**	**6.8**	**0.34 J**
03	002	26421	3.0	1.15		1.58 J				
03	002	26422	4.0	1.03 J		11.58			<100	
03	002	26427	5.0	0.82 J		7.01				
03	002	26428	6.0	1.16		2.62 J			<100	
03	002	26433	8.0	0.61 J		1.33 J			<100	
03	002	26436	9.0	1.14 J		4.23				
03	002	26437	10.0	0.32 J		0.35			<100	
03	**002**	**26446**	**11.0**	**0.144**	**0.209**	**0.186**	**0.0026 U**	**0.0026 U**	**1.3 J**	**0.13 J**
03	002	26451	13.0	0.48 J		0.71				
03	002	26452	14.0	0.33 J		0.64			<100	
03	002	26459	15.0	0.30		1.05 J				
03	002	26460	16.0	1.11 J		2.49 J			<100	
03	002	26467	18.0	0.24 J		0.57 J			<100	
03	002	26478	20.0	0.06 UJ		1.43 J			<100	
03	**002**	**26479**	**21.0**	**0.119**	**0.158**	**0.199**	**0.00075 J**	**0.0025 U**	**1.6 J**	**0.087 J**
03	002	26484	23.0	0.27		0.41 UJ				
03	002	26485	24.0	0.28		0.39 J			<100	
03	002	26486	25.0	0.36 J		0.70				
03	002	26498	26.0	0.05 UJ		0.48			<100	
03	002	26499	27.0	0.25 J		0.92 J				
03	002	26505	28.0	0.07		0.47 UJ			<100	
03	002	26506	29.0	0.29 J		0.77 J				
03	**002**	**26504**	**30.0**	**0.218**	**0.153**	**0.172**	**0.0012 J**	**0.0026 U**	**2.3 J**	**0.16 J**
03	003	26522	0.0	1.03		3.17 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	003	26531	1.0	0.84		2.67 J				
03	003	26532	2.0	0.99		3.57 J			<100	
03	003	26533	3.0	0.81		1.60 J				
03	003	26534	4.0	0.69		1.39 J			<100	
03	003	26535	5.0	0.47		0.49 UJ				
03	003	26536	6.0	0.33		0.96 J			<100	
03	**003**	**26539**	**7.0**	**0.87**	**0.55**	**0.72**	**0.0026 U**	**0.0026 U**	**2.9 J**	**0.14 J**
03	003	26540	10.0	1.08		1.99 J			<100	
03	003	26549	12.0	0.40		0.37			<100	
03	003	26556	13.0	0.40		1.41 J				
03	003	26557	14.0	0.62		1.92 J			<100	
03	003	26562	15.0	0.27		0.43				
03	003	26563	16.0	0.24		1.32 J			<100	
03	**003**	**26566**	**17.0**	**0.151**	**0.215**	**0.188**	**0.0026 U**	**0.0026 U**	**4.8**	**0.19 J**
03	003	26567	20.0	0.23		0.83 J			<100	
03	003	26584	21.0	0.22		0.45 J				
03	003	26585	22.0	0.29		1.45 J			<100	
03	003	26586	24.0	0.33		1.23 J			<100	
03	003	26593	25.0	0.36		1.08 J				
03	003	26594	26.0	0.27		0.28			<100	
03	**003**	**26617**	**27.0**	**0.207**	**0.171**	**0.202**	**0.0026 U**	**0.0026 U**	**1.7 J**	**0.13 J**
03	003	26618	29.0	0.31		1.90				
03	**003**	**26619**	**30.0**	**0.148**	**0.218**	**0.186**	**0.0027 U**	**0.0027 U**	**2.3 J**	**0.15 J**
03	004	26722	0.0	0.94		3.78			<100	
03	**004**	**26723**	**1.0**	**0.95**	**9.2**	**5.87**	**0.0076 J**	**0.042**	**10.1**	**0.55 J**
03	004	26730	3.0	0.96		3.07				
03	004	26731	4.0	0.40		1.20 J			<100	
03	004	26744	5.0	0.49		4.06 J				
03	004	26745	6.0	0.08		1.16 J			<100	
03	004	26764	8.0	0.52		1.11 J			<100	
03	004	26765	9.0	1.31		2.36 J				
03	004	26766	10.0	0.36		1.27 J			<100	
03	**004**	**26779**	**11.0**	**0.137**	**0.290**	**0.253**	**0.0025 R**	**0.0025 U**	**1.1 J**	**0.082 J**
03	004	26780	13.0	0.52		2.84				
03	004	26781	14.0	0.31		1.44			<100	
03	004	26792	15.0	0.27		0.65 J				
03	004	26793	16.0	0.21		0.91 J			<100	
03	004	26796	17.0	0.29		0.68 J				
03	004	26797	18.0	0.32		1.71			<100	
03	004	26798	19.0	0.24		0.85 J				
03	004	26799	20.0	0.20		0.46			<100	
03	**004**	**26813**	**21.0**	**0.177**	**0.151**	**0.155**	**0.0025 R**	**0.0025 U**	**1.1 J**	**0.088 J**
03	004	26814	23.0	0.29		1.80				
03	004	26823	24.0	NS		NS			<100	
03	004	26824	25.0	0.24		1.40 J				
03	004	26826	26.0	0.24		0.50			<100	
03	004	26827	27.0	0.18		0.68 J				
03	004	26828	28.0	0.29		0.37 J			<100	
03	004	26829	29.0	0.30 J		1.36				
03	**004**	**26832**	**30.0**	**0.143**	**0.212**	**0.246**	**0.0025 R**	**0.0025 U**	**1.6 J**	**0.11 J**
03	005	26833	0.0	0.78		0.73 UJ			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	005	26836	2.0	1.22		11.42			<100	
03	005	26842	4.0	1.14		12.50			<100	
03	005	26843	6.0	1.28		12.29			<100	
03	**005**	**26856**	**7.0**	**0.66**	**2.32**	**1.82**	**0.0028 U**	**0.0028 U**	**11.9**	**0.85**
03	005	26857	9.0	1.04 J		2.47				
03	005	26858	10.0	0.36		1.13			<100	
03	005	26863	11.0	0.41 J		0.96				
03	005	26864	12.0	0.27		0.84 J			<100	
03	005	26871	13.0	0.35		1.99				
03	005	26872	14.0	0.35 J		2.00			<100	
03	005	26885	15.0	0.35 J		0.77 J				
03	005	26886	16.0	0.26		0.94 J			<100	
03	**005**	**26896**	**17.0**	**0.168**	**0.192**	**0.144**	**0.0025 U**	**0.0025 U**	**2.3 J**	**0.24 J**
03	005	26897	19.0	0.16 J		0.65				
03	005	26898	20.0	0.25 J		0.64 J			<100	
03	005	26901	21.0	0.34		1.62 J				
03	005	26902	22.0	0.24		0.36			<100	
03	005	26905	23.0	0.48		2.34				
03	005	26906	24.0	0.17 J		0.34			<100	
03	005	26918	25.0	0.31		0.65				
03	005	26919	26.0	0.23 J		0.74 J			<100	
03	**005**	**26926**	**27.0**	**0.152**	**0.173**	**0.122**	**0.0025 U**	**0.0025 U**	**1.5 J**	**0.21 J**
03	005	26927	29.0	0.24		0.69 J				
03	**005**	**26936**	**30.0**	**0.162**	**0.197**	**0.186**	**0.0025 U**	**0.0025 U**	**2.7 J**	**0.32 J**
03	006	27072	1.0	0.93		2.41			<100	
03	006	27073	3.0	0.99 J		4.81 J			<100	
03	**006**	**27089**	**4.0**	**0.81**	**6.33**	**5.31**	**0.0016 J**	**0.022 J**	**9.2**	**0.36 J**
03	006	27090	7.0	0.69		5.61			<100	
03	006	27091	9.0	1.10		4.05			<100	
03	006	27113	11.0	0.33		0.74 J			<100	
03	006	27114	13.0	0.28		3.15 J			<100	
03	**006**	**27118**	**14.0**	**0.206**	**0.291**	**0.286**	**0.0025 U**	**0.0025 U**	**1.9 J**	**0.26 J**
03	006	27130	16.0	0.21		0.29 J				
03	006	27131	17.0	0.24		1.05 J			<100	
03	006	27132	19.0	0.27		0.55 J			<100	
03	006	27133	20.0	0.26 J		1.22 J				
03	006	27134	21.0	0.19		0.31 J			<100	
03	006	27135	23.0	0.07 UJ		0.36 J			<100	
03	**006**	**27166**	**24.0**	**0.256**	**0.54**	**0.51**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.17 J**
03	006	27167	26.0	0.22		0.71 J				
03	006	27168	27.0	0.16 J		0.35 J			<100	
03	006	27169	28.0	0.29		0.56				
03	006	27170	29.0	0.04		1.08			<100	
03	**006**	**27171**	**30.0**	**0.429**	**0.64**	**0.58**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.19 J**
03	007	27724	0.0	0.68		2.13			<100	
03	007	27725	1.0	1.27		13.71				
03	007	27726	2.0	0.98		13.19			<100	
03	007	27734	3.0	0.86		1.46 J				
03	007	27735	4.0	1.08		9.31			<100	
03	007	27736	5.0	0.50		3.60				
03	007	27737	6.0	0.53		0.83 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	**007**	**27738**	**7.0**	**1.17**	**2.05**	**1.65**	**0.0025 U**	**0.0025 UJ**	**4.0 J**	**0.27 J**
03	007	27744	9.0	0.04		1.23 J				
03	007	27745	10.0	1.06		2.74			<100	
03	007	27746	11.0	0.06		0.55				
03	007	27747	12.0	0.31		2.22			<100	
03	007	27748	13.0	0.07		0.76				
03	007	27749	14.0	0.27		1.25			<100	
03	007	27750	15.0	0.20		0.54 J				
03	007	27751	16.0	0.23		1.48			<100	
03	**007**	**27752**	**17.0**	**0.240**	**0.323**	**0.297**	**0.0026 U**	**0.0026 U**	**0.95 J**	**0.083 J**
03	007	27753	19.0	0.25		2.22				
03	007	27754	20.0	0.24		1.71			<100	
03	007	27755	21.0	0.21		1.03				
03	007	27756	22.0	0.19		0.41			<100	
03	007	27757	23.0	0.07		1.07 J				
03	007	27758	24.0	0.06		0.70			<100	
03	007	27759	25.0	0.27		0.58 J				
03	007	27760	26.0	0.30 J		2.21			<100	
03	**007**	**27761**	**27.0**	**0.273**	**0.220**	**0.236**	**0.0025 U**	**0.0025 U**	**1.4 J**	**0.13 J**
03	007	27762	29.0	0.30		1.08				
03	**007**	**27766**	**30.0**	**0.174**	**0.170**	**0.211**	**0.00048 J**	**0.00065 J**	**2.4 J**	**0.13 J**
03	008	27624	0.0	0.97		14.06				
03	008	27625	1.0	0.70		1.94			<100	
03	008	27627	2.0	1.06		11.89				
03	008	27628	3.0	0.79		6.72			<100	
03	**008**	**27626**	**4.0**	**0.95**	**1.06**	**1.00**	**0.00095 J**	**0.020 U**	**8.7**	**0.51 J**
03	008	27643	6.0	0.94		6.08				
03	008	27644	7.0	0.12		1.33 J			<100	
03	008	27645	8.0	0.67		1.95 J				
03	008	27646	9.0	0.85		4.78			<100	
03	008	27655	11.0	0.34		2.67			<100	
03	008	27656	12.0	0.39		0.44				
03	008	27657	13.0	0.41		4.99			<100	
03	**008**	**27658**	**14.0**	**0.254**	**0.79**	**0.47**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.16 J**
03	008	27659	16.0	0.29		1.13				
03	008	27660	17.0	0.03		0.66 J			<100	
03	008	27673	19.0	0.04		1.16			<100	
03	008	27674	20.0	0.34		1.97				
03	008	27675	21.0	0.16		1.24			<100	
03	008	27676	22.0	0.31		1.82 J				
03	008	27677	23.0	0.19		1.35 J			<100	
03	**008**	**27678**	**24.0**	**0.231**	**0.422**	**0.258**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.13 J**
03	008	27679	26.0	0.19		0.28				
03	008	27680	27.0	0.04		0.91 J			<100	
03	008	27695	28.0	0.04		0.78 J				
03	008	27696	29.0	0.24		0.48 J			<100	
03	**008**	**27697**	**30.0**	**0.142**	**0.233**	**0.198**	**0.0025 U**	**0.0025 UJ**	**1.4 J**	**0.19 J**
03	009	27400	0.0	0.67		0.85 UJ			<100	
03	**009**	**27404**	**1.0**	**0.68**	**5.79**	**3.92**	**0.0013 J**	**0.019**	**18.5**	**0.43 J**
03	009	27408	3.0	0.70		3.26 J				
03	009	27405	4.0	0.94		13.39 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	009	27409	5.0	0.99		13.62 J				
03	009	27410	6.0	0.81		7.93 J			<100	
03	009	27411	7.0	0.66		2.24 J				
03	009	27412	8.0	0.61		2.37 J			<100	
03	009	27413	9.0	0.42		3.43 J				
03	009	27414	10.0	0.44		2.63 J			<100	
03	**009**	**27426**	**11.0**	**0.378**	**1.86**	**1.49**	**0.0025 U**	**0.0025 U**	**1.7 J**	**0.22 J**
03	009	27427	13.0	0.31		1.94				
03	009	27428	14.0	0.31 J		1.97 J			<100	
03	009	27429	15.0	0.30		2.58				
03	009	27430	16.0	0.26 J		1.45			<100	
03	009	27434	17.0	0.25		0.63 J				
03	009	27435	18.0	0.19		0.62			<100	
03	009	27437	19.0	0.20 J		0.24				
03	009	27438	20.0	0.03		0.84 J			<100	
03	**009**	**27439**	**21.0**	**0.196**	**0.422**	**0.447**	**0.0025 U**	**0.0025 U**	**1.1 J**	**0.11 J**
03	009	27443	23.0	0.18		1.67				
03	009	27444	24.0	0.26		0.54 J			<100	
03	009	27445	25.0	0.16		0.93 J				
03	009	27446	26.0	0.27 J		0.88			<100	
03	009	27447	27.0	0.18		0.47 J				
03	009	27448	28.0	0.15		1.20			<100	
03	009	27449	29.0	0.38 J		0.61 J				
03	**009**	**27452**	**30.0**	**0.212**	**0.71**	**0.67**	**0.0026 U**	**0.0026 U**	**2.5 J**	**0.20 J**
03	010	27234	0.0	0.86		0.89 J			<100	
03	010	27243	1.0	0.76		2.73				
03	010	27244	2.0	1.02		8.00 J			<100	
03	010	27254	3.0	1.20		19.51				
03	010	27255	4.0	10.99		65.18 J			<100	
03	**010**	**27256**	**7.0**	**0.62**	**2.59**	**2.66**	**0.0025 U**	**0.0060**	**2.7 J**	**0.26 J**
03	010	27259	10.0	0.29		2.64			<100	
03	010	27262	11.0	0.08		3.14 J				
03	010	27263	12.0	0.32		1.06 J			<100	
03	010	27268	13.0	0.52		3.95				
03	010	27269	14.0	0.27		4.11			<100	
03	010	27270	15.0	0.26		1.51				
03	010	27271	16.0	0.39		1.07 J			<100	
03	**010**	**27280**	**17.0**	**0.107**	**0.429**	**0.401**	**0.0025 U**	**0.0025 U**	**1.1 J**	**0.041 J**
03	010	27285	19.0	0.05		0.59 J				
03	010	27286	20.0	0.39		0.36 UJ			<100	
03	010	27287	21.0	0.17		1.07 J				
03	010	27288	22.0	0.07		2.14 J			<100	
03	010	27289	24.0	0.22		1.18 J			<100	
03	010	27294	25.0	0.24		2.02 J				
03	010	27295	26.0	0.30		0.62 J			<100	
03	**010**	**27298**	**27.0**	**0.329**	**0.35**	**0.221**	**0.0026 U**	**0.0026 U**	**1.2 J**	**0.51 U**
03	010	27299	29.0	0.32		0.67 J				
03	**010**	**27300**	**30.0**	**0.291**	**0.229**	**0.237**	**0.0025 U**	**0.0025 U**	**1.5 J**	**0.081 J**
03	011	27854	-1.0	0.68		1.05 J				
03	011	27855	0.0	0.66		1.70 J			<100	
03	**011**	**27856**	**1.0**	**0.58**	**4.92**	**3.37**	**0.00053 J**	**0.0017 J**	**26.0**	**0.31 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	011	27857	3.0	0.50		7.56				
03	011	27858	4.0	0.63		2.63 J			<100	
03	011	27859	5.0	1.25		8.04				
03	011	27860	6.0	0.68		5.12			<100	
03	011	27861	7.0	0.73		5.98				
03	011	27862	8.0	0.84		8.18 J			<100	
03	011	27863	9.0	0.19		1.27 J				
03	011	27864	10.0	0.37		2.08			<100	
03	**011**	**27867**	**11.0**	**0.277**	**0.61**	**0.53**	**0.0026 U**	**0.0026 U**	**2.3 J**	**0.23 J**
03	011	27871	13.0	0.31		1.59				
03	011	27872	14.0	0.32		2.75			<100	
03	011	27873	15.0	0.25		1.87				
03	011	27874	16.0	0.32 J		1.91			<100	
03	011	27875	17.0	0.26		1.53 J				
03	011	27876	18.0	0.20		1.67			<100	
03	011	27883	19.0	0.39		2.47				
03	011	27884	20.0	0.41		1.96			<100	
03	**011**	**27885**	**21.0**	**0.160**	**0.77**	**0.57**	**0.0025 U**	**0.0025 U**	**1.3 J**	**0.19 J**
03	011	27889	23.0	0.36		2.56				
03	011	27891	24.0	0.23		2.24			<100	
03	011	27892	25.0	0.24		3.95				
03	011	27893	26.0	0.43		2.82			<100	
03	011	27894	27.0	0.24		4.39 J				
03	011	27895	28.0	0.22		2.10			<100	
03	011	27896	29.0	0.18		2.34				
03	**011**	**27912**	**30.0**	**0.152**	**1.46**	**1.30**	**0.0025 U**	**0.0025 U**	**2.1 J**	**0.21 J**
03	012	27458	0.0	0.78		3.92			<100	
03	012	27459	1.0	0.41 J		2.21				
03	012	27460	2.0	0.85		10.81			<100	
03	012	27465	3.0	0.41		0.93 J				
03	012	27466	4.0	0.98		0.89			<100	
03	012	27471	5.0	0.49 J		0.62 J				
03	012	27472	6.0	0.54		1.02 J			<100	
03	**012**	**27474**	**7.0**	**0.59**	**0.49**	**0.359**	**0.0025 U**	**0.00062 J**	**3.7 J**	**0.23 J**
03	012	27475	9.0	0.29 J		0.94 J				
03	012	27476	10.0	0.06		1.64			<100	
03	012	27485	11.0	0.31		0.93 J				
03	012	27486	12.0	0.43		1.22 J			<100	
03	012	27487	14.0	0.03 UJ		1.31			<100	
03	012	27495	15.0	0.25		1.66				
03	012	27496	16.0	0.25		0.71			<100	
03	**012**	**27497**	**17.0**	**0.126**	**0.138**	**0.118**	**0.0025 U**	**0.0025 U**	**0.71 J**	**0.080 J**
03	012	27498	19.0	0.23 J		0.68 J				
03	012	27499	20.0	0.21		0.57 J			<100	
03	012	27504	21.0	0.22		1.27 J				
03	012	27505	22.0	0.30 J		0.95			<100	
03	012	27510	23.0	0.18 J		0.54 J				
03	012	27511	24.0	0.18 J		1.63			<100	
03	012	27523	25.0	0.06 UJ		0.63 J				
03	012	27524	26.0	0.25		0.46			<100	
03	**012**	**27533**	**27.0**	**0.201**	**0.190**	**0.193**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.13 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	012	27534	29.0	0.24		0.31				
03	**012**	**27535**	**30.0**	**0.130**	**0.170**	**0.157**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.13 J**
03	013	27316	0.0	0.85		1.97 J				
03	013	27317	1.0	1.09		3.68 J			<100	
03	013	27319	2.0	0.66		1.61 J				
03	013	27320	3.0	0.87		4.64 J			<100	
03	**013**	**27321**	**4.0**	**0.82**	**6.74**	**6.38**	**0.110 J**	**5.1 J**	**34.3 J**	**0.36 J**
03	013	27325	6.0	0.52		0.95 UJ				
03	013	27326	7.0	1.04		22.15 J			108	
03	013	27327	9.0	0.76		6.07 J			<100	
03	013	27328	10.0	0.36		1.32 J				
03	013	27329	11.0	0.23		0.80 J			<100	
03	013	27331	12.0	0.25		0.79 J				
03	013	27332	13.0	0.29		1.23 J			<100	
03	**013**	**27336**	**14.0**	**0.184**	**0.80**	**0.84**	**0.0026 U**	**0.00068 J**	**1.9 J**	**0.19 J**
03	013	27337	16.0	0.30		0.50 J				
03	013	27338	17.0	0.21		0.76 J			<100	
03	013	27348	18.0	0.28		2.40 J				
03	013	27349	19.0	0.19		1.25 J			<100	
03	013	27350	20.0	0.37		2.20 J				
03	013	27351	21.0	0.07		0.59 UJ			<100	
03	013	27352	22.0	0.31		1.00 J				
03	013	27353	23.0	0.03		1.23 J			<100	
03	**013**	**27366**	**24.0**	**0.268**	**0.258**	**0.212**	**0.0025 U**	**0.0011 J**	**1.5 J**	**0.13 J**
03	013	27371	26.0	0.16		1.25 J				
03	013	27372	27.0	0.29		1.00 J			<100	
03	013	27380	28.0	0.07		0.31 UJ				
03	013	27381	29.0	0.02		0.56 J			<100	
03	**013**	**27382**	**30.0**	**0.224**	**0.241**	**0.128**	**0.0025 U**	**0.0025 U**	**1.6 J**	**0.15 J**
03	014	28109	-1.0	0.94		2.56				
03	014	28110	0.0	0.84		17.61			<100	
03	014	28111	1.0	0.50		2.46				
03	014	28112	2.0	1.00		2.44			<100	
03	014	28119	4.0	1.75		28.62			79.1 J	
03	014	28132	5.0	1.05		16.59				
03	014	28133	6.0	0.99		19.39			<100	
03	**014**	**28134**	**7.0**	**0.41**	**4.97**	**5.12**	**0.00059 J**	**0.0025 U**	**3.9 J**	**0.15 J**
03	014	28135	9.0	0.06		5.55				
03	014	28136	10.0	0.30		3.49			<100	
03	014	28137	11.0	0.25		3.02				
03	014	28138	12.0	0.29		2.91			<100	
03	014	28139	13.0	0.31		1.96				
03	014	28140	14.0	0.33		2.19			<100	
03	014	28146	15.0	0.05		9.80				
03	014	28147	16.0	0.26		0.83 J			<100	
03	**014**	**28152**	**17.0**	**0.136**	**0.78**	**0.71**	**0.00045 J**	**0.0025 U**	**1.7 J**	**0.12 J**
03	014	28153	20.0	0.19		1.47			<100	
03	014	28161	21.0	0.25		2.76				
03	014	28162	22.0	0.19		1.28 J			<100	
03	014	28166	23.0	0.34		2.27				
03	014	28167	24.0	0.03		0.93 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	014	28168	25.0	0.22		1.01				
03	014	28169	26.0	0.24		1.44			<100	
03	**014**	**28170**	**27.0**	**0.164**	**0.61**	**0.61**	**0.0025 U**	**0.0025 U**	**1.4 J**	**0.13 J**
03	014	28174	29.0	0.21		0.91				
03	**014**	**28175**	**30.0**	**0.153**	**0.307**	**0.347**	**0.0025 U**	**0.0025 U**	**2.0 J**	**0.21 J**
03	015	27939	-1.0	0.73		1.38			<100	
03	015	27942	0.0	0.84		8.03				
03	015	27943	1.0	0.81		2.66			139	
03	015	27944	2.0	0.81		6.02				
03	015	27945	3.0	0.86		2.37			<100	
03	**015**	**27958**	**4.0**	**0.79**	**9.0**	**8.0**	**0.0055**	**0.390 U**	**37.8**	**0.39 J**
03	015	27959	6.0	0.09		0.89				
03	015	27960	7.0	0.77		1.80 J			<100	
03	015	27965	8.0	0.48		1.74				
03	015	27966	9.0	0.11		2.75 J			<100	
03	015	27967	10.0	0.40		3.09				
03	015	27968	11.0	0.25		2.22			<100	
03	015	27969	12.0	0.36		2.04				
03	015	27970	13.0	0.35		2.26			<100	
03	**015**	**27974**	**14.0**	**0.123**	**1.06**	**0.94**	**0.0025 U**	**0.0025 U**	**5.1**	**0.20 J**
03	015	27975	16.0	0.20		1.40 J				
03	015	27976	17.0	0.38		1.47 J			<100	
03	015	27980	18.0	0.26		2.04				
03	015	27981	19.0	0.23		1.63			<100	
03	015	27982	21.0	0.27		0.86 J			<100	
03	015	27987	22.0	0.33		1.98				
03	015	27988	23.0	0.30		2.28 J			<100	
03	**015**	**27998**	**24.0**	**0.191**	**0.431**	**0.468**	**0.0025 U**	**0.0025 U**	**3.6 J**	**0.43 J**
03	015	27999	26.0	0.25		0.87 J				
03	015	28000	27.0	0.20		0.63 J			<100	
03	015	28001	28.0	0.40		0.79 J				
03	015	28002	29.0	0.32		0.57 J			<100	
03	**015**	**28011**	**30.0**	**0.162**	**0.320**	**0.268**	**0.0025 U**	**0.0025 U**	**3.2 J**	**0.26 J**
03	016	27565	-1.0	0.83 J		5.43				
03	016	27566	0.0	0.64 J		1.96 J			42.7 J	
03	**016**	**27567**	**1.0**	**0.87**	**8.6**	**7.9**	**0.0027 R**	**0.0027 R**	**5.6**	**0.28 J**
03	016	27568	3.0	1.39 J		2.27				
03	016	27569	4.0	1.50 J		6.83			<100	
03	016	27570	5.0	0.77 J		9.33				
03	016	27571	6.0	0.46 J		2.14			<100	
03	016	27572	7.0	0.05 UJ		1.80 J				
03	016	27573	8.0	1.20 J		4.44			<100	
03	016	27574	9.0	0.05 UJ		1.53				
03	016	27575	10.0	0.12 UJ		1.88			<100	
03	**016**	**27576**	**11.0**	**0.142**	**0.82**	**0.76**	**0.0025 U**	**0.0020 J**	**1.4 J**	**0.14 J**
03	016	27577	13.0	0.28 J		2.75				
03	016	27578	14.0	0.41 J		1.60			<100	
03	016	27579	15.0	0.27 J		1.35				
03	016	27580	16.0	0.25 J		2.31			<100	
03	016	27581	17.0	0.32 J		2.22				
03	016	27582	18.0	0.22 J		1.83			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	016	27588	19.0	0.30 J		1.01 J				
03	016	27589	20.0	0.25 J		1.95			<100	
03	**016**	**27590**	**21.0**	**0.148**	**0.52**	**0.62**	**0.0025 U**	**0.0025 U**	**0.81 J**	**0.081 J**
03	016	27595	23.0	0.25 J		0.84				
03	016	27600	24.0	0.31 J		1.30			<100	
03	016	27601	25.0	0.33 J		1.35				
03	016	27602	26.0	0.17 J		1.41			<100	
03	016	27603	27.0	0.38 J		0.60				
03	016	27604	28.0	0.23 J		1.25 J			<100	
03	016	27605	29.0	0.26 J		1.85				
03	**016**	**27606**	**30.0**	**0.203**	**0.236**	**0.284**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.12 J**
03	018	28018	-1.0	1.00		14.40				
03	018	28019	0.0	1.07		1.80 J			190	
03	**018**	**28020**	**1.0**	**0.61**	**2.10**	**2.08**	**0.0026 U**	**0.0066**	**21.5**	**0.36 J**
03	018	28021	3.0	1.06		2.62				
03	018	28022	4.0	0.87		3.11 J			<100	
03	018	28024	5.0	0.75		0.88 J				
03	018	28025	6.0	0.79		4.58			<100	
03	018	28028	7.0	0.53		1.43 J				
03	018	28029	8.0	0.83		2.62 J			<100	
03	018	28034	9.0	0.32		5.50				
03	018	28035	10.0	0.39		1.36 J			<100	
03	**018**	**28041**	**11.0**	**0.174**	**8.2**	**8.9**	**0.0025 U**	**0.0025 U**	**10.3**	**0.30 J**
03	018	28042	13.0	0.42		6.43				
03	018	28043	14.0	0.27		6.32			<100	
03	018	28055	15.0	0.03		6.31				
03	018	28056	16.0	0.34		5.15 J			<100	
03	018	28057	18.0	0.25		5.81			<100	
03	018	28058	19.0	0.22		4.57				
03	018	28059	20.0	0.39		6.61 J			<100	
03	**018**	**28060**	**21.0**	**0.447**	**4.31**	**4.18**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.22 J**
03	018	28072	23.0	0.28		3.32				
03	018	28075	24.0	0.32		3.53			<100	
03	018	28076	25.0	0.04		1.87 J				
03	018	28077	26.0	0.03		2.39			<100	
03	018	28078	27.0	0.04		5.16				
03	018	28079	28.0	0.16		4.44 J			<100	
03	018	28080	29.0	0.21		4.17				
03	**018**	**28081**	**30.0**	**0.194**	**2.58**	**2.57**	**0.0025 U**	**0.0025 U**	**4.9**	**0.24 J**
03	019	28200	-1.0	1.37		3.58 J				
03	019	28201	0.0	0.78 J		2.24 J			<100	
03	019	28208	1.0	0.97 J		7.44				
03	019	28209	2.0	0.92		50.34 J			<100	
03	019	28210	3.0	0.94		13.95 J				
03	019	28211	4.0	1.44 J		4.52			<100	
03	019	28214	5.0	0.75		12.83 J				
03	019	28215	6.0	1.17		1.41 J			<100	
03	**019**	**28216**	**7.0**	**1.59**	**1.22**	**1.36**	**0.0011 J**	**0.0010 J**	**10.4**	**0.62**
03	019	28224	9.0	0.86		3.88 J				
03	019	28225	10.0	0.31 J		3.69			<100	
03	019	28226	11.0	0.29		1.13 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	019	28227	12.0	0.38		0.63 UJ			<100	
03	019	28228	13.0	0.43 J		0.65 J				
03	019	28229	14.0	0.34		1.50 J			<100	
03	019	28239	15.0	0.34		1.62				
03	019	28240	16.0	0.20		2.52			<100	
03	**019**	**28241**	**17.0**	**0.139**	**0.279**	**0.296**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.058 J**
03	019	28242	19.0	0.06		0.81 J				
03	019	28243	20.0	0.25		1.24			<100	
03	019	28258	21.0	0.26		1.21				
03	019	28259	22.0	0.30		1.98 J			<100	
03	019	28260	24.0	0.38		2.00			<100	
03	019	28261	25.0	0.20		2.59				
03	019	28262	26.0	0.23		0.50			<100	
03	**019**	**28263**	**27.0**	**0.178**	**0.313**	**0.235**	**0.0025 U**	**0.0025 U**	**2.9 J**	**0.12 J**
03	019	28269	29.0	0.20		1.15				
03	**019**	**28270**	**30.0**	**0.217**	**0.383**	**0.394**	**0.0026 U**	**0.0026 U**	**3.0 J**	**0.24 J**
03	020	28327	1.0	0.83		2.00 J			<100	
03	020	28328	3.0	1.01 J		5.28			<100	
03	**020**	**28329**	**4.0**	**0.74**	**3.60**	**3.23**	**0.00082 J**	**0.034**	**4.4**	**0.25 J**
03	020	28330	6.0	0.77		2.41 J				
03	020	28331	7.0	0.87		0.99 J			<100	
03	020	28332	8.0	0.51 J		2.49				
03	020	28333	9.0	0.30		1.24 J			<100	
03	020	28334	10.0	0.32		1.23 J				
03	020	28335	11.0	0.46 J		1.42 J			<100	
03	020	28339	12.0	0.31		1.91 J				
03	020	28340	13.0	0.45		0.87 J			<100	
03	**020**	**28341**	**14.0**	**0.271**	**0.51**	**0.411**	**0.0025 U**	**0.0025 U**	**1.7 J**	**0.18 J**
03	020	28343	16.0	0.35 J		0.74 J				
03	020	28344	17.0	0.24		0.42 UJ			<100	
03	020	28345	18.0	0.37		0.95 J				
03	020	28346	19.0	0.07 UJ		1.79			<100	
03	020	28347	20.0	0.26		1.74 J				
03	020	28348	21.0	0.27		0.64 UJ			<100	
03	020	28349	22.0	0.08 UJ		3.01				
03	020	28350	23.0	0.36		0.52 UJ			<100	
03	**020**	**28351**	**24.0**	**0.266**	**0.185**	**0.219**	**0.0026 U**	**0.0026 U**	**1.3 J**	**0.093 J**
03	020	28360	26.0	0.29		1.67 J				
03	020	28361	27.0	0.22 J		1.05 J			<100	
03	020	28362	28.0	0.19		1.28 J				
03	020	28363	29.0	0.24		1.18 J			<100	
03	**020**	**28364**	**30.0**	**0.163**	**0.186**	**0.165**	**0.0025 U**	**0.0025 U**	**2.1 J**	**0.12 J**
03	022	28274	0.0	0.67		2.60			<100	
03	**022**	**28275**	**1.0**	**0.73**	**16.2**	**16.3**	**0.0052 U**	**0.087 U**	**105**	**0.43 J**
03	022	28276	4.0	1.03		46.33			<100	
03	022	28279	6.0	0.91		12.49			<100	
03	022	28280	7.0	0.35		0.70 J				
03	022	28281	8.0	0.82		1.60			<100	
03	022	28282	9.0	0.66		0.67				
03	022	28283	10.0	0.42		1.00 J			<100	
03	**022**	**28284**	**11.0**	**0.177**	**0.381**	**0.304**	**0.0025 U**	**0.0025 U**	**2.0 J**	**0.15 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	022	28285	13.0	0.23		2.16				
03	022	28286	14.0	0.36		1.63			<100	
03	022	28287	15.0	0.06		0.42				
03	022	28288	16.0	0.27		0.62 J			<100	
03	022	28289	18.0	0.19		1.19			<100	
03	022	28290	19.0	0.28		0.59				
03	022	28291	20.0	0.22		1.55			<100	
03	**022**	**28300**	**21.0**	**0.240**	**0.139**	**0.209**	**0.0025 U**	**0.0025 U**	**1.0 J**	**0.12 J**
03	022	28310	23.0	0.26		1.09				
03	022	28311	24.0	NS		NS			<100	
03	022	28312	25.0	0.14		0.34				
03	022	28313	26.0	0.33		1.66			<100	
03	022	28314	27.0	0.18		1.84 J				
03	022	28315	28.0	0.25		1.74 J			<100	
03	022	28316	29.0	0.24		1.23 J				
03	**022**	**28317**	**30.0**	**0.229**	**0.212**	**0.197**	**0.0026 U**	**0.0026 U**	**2.6 J**	**0.18 J**
03	023	28372	0.0	1.13 J		3.08			<100	
03	023	28373	2.0	0.70		14.26 J			<100	
03	023	28374	3.0	0.86		1.36 UJ				
03	023	28375	4.0	0.84		2.43 J			<100	
03	023	28380	5.0	0.80		1.73 J				
03	023	28381	6.0	0.75		0.92 J			<100	
03	**023**	**28385**	**7.0**	**0.75**	**0.58**	**0.55**	**0.0025 U**	**0.0025 U**	**2.5 J**	**0.13 J**
03	023	28386	9.0	0.45 J		1.47 J				
03	023	28387	10.0	0.25		0.58 UJ			<100	
03	023	28388	11.0	0.32		0.80 J				
03	023	28389	12.0	0.24		0.80 J			<100	
03	023	28390	14.0	0.16		1.01 J			<100	
03	023	28391	15.0	0.19 J		1.00 J				
03	023	28392	16.0	0.08		0.65 UJ			<100	
03	**023**	**28393**	**17.0**	**0.208**	**0.246**	**0.209**	**0.0025 U**	**0.0025 U**	**2.3 J**	**0.13 J**
03	023	28394	19.0	0.32		0.65 J				
03	023	28395	20.0	0.05 UJ		0.79 J			<100	
03	023	28397	22.0	0.20 J		1.46 J			<100	
03	023	28399	23.0	0.40		1.70 J				
03	023	28400	24.0	0.28 J		1.52			<100	
03	023	28401	25.0	0.19		1.26				
03	023	28402	26.0	0.32		1.62			<100	
03	**023**	**28405**	**27.0**	**0.151**	**0.131**	**0.157**	**0.0026 U**	**0.0026 U**	**3.6 J**	**0.14 J**
03	023	28406	29.0	0.17		0.32				
03	**023**	**28411**	**30.0**	**0.258**	**0.236**	**0.247**	**0.0025 U**	**0.0025 U**	**4.8**	**0.17 J**
04	001	28904	-1.0	0.65		1.09 J			<100	
04	001	28905	0.0	0.87		3.48				
04	001	28906	1.0	1.04		1.02			<100	
04	001	28907	2.0	0.51		1.66 J				
04	001	28908	3.0	1.10		1.67 J			<100	
04	**001**	**28913**	**4.0**	**0.363**	**0.332**	**0.369**	**0.0028 U**	**0.0028 U**	**2.5 J**	**0.17 J**
04	001	28923	6.0	0.65		1.55 J				
04	001	28924	7.0	0.45		1.44			<100	
04	001	28925	8.0	0.07		1.61 J				
04	001	28926	9.0	0.36		0.64 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	001	28931	10.0	0.61		1.05 J				
04	001	28932	11.0	0.25 J		1.28			<100	
04	001	28937	12.0	0.31		1.23				
04	001	28938	13.0	0.29		0.61 J			<100	
04	**001**	**28939**	**14.0**	**0.283**	**0.144**	**0.225**	**0.0026 U**	**0.0026 U**	**1.6 J**	**0.15 J**
04	001	28940	16.0	0.34		1.06 J				
04	001	28941	17.0	0.24		0.47			<100	
04	001	28954	18.0	0.31		0.66 J				
04	001	28955	19.0	0.28		0.54 J			<100	
04	001	28956	20.0	0.41		0.25				
04	001	28957	21.0	0.25		0.39			<100	
04	001	28958	22.0	0.29		1.11 J				
04	001	28959	23.0	0.38		0.66 J			<100	
04	**001**	**28960**	**24.0**	**0.241 J**	**0.177**	**0.171**	**0.0027 U**	**0.0027 U**	**1.2 J**	**0.059 J**
04	001	28965	26.0	0.21		0.79 J				
04	001	28966	27.0	0.20		0.45 UJ			<100	
04	001	28967	28.0	0.34		1.32				
04	001	28968	29.0	0.25		0.44 UJ			<100	
04	**001**	**28970**	**30.0**	**0.134**	**0.114**	**0.136**	**0.0026 U**	**0.0026 U**	**2.5 J**	**0.13 J**
04	002	28749	-1.0	0.63		1.84 J				
04	002	28750	0.0	0.88		6.20 J			<100	
04	**002**	**28756**	**1.0**	**1.00**	**0.95**	**0.85**	**0.0030 U**	**0.0033**	**9.9**	**0.75**
04	002	28757	3.0	0.61		2.15 J				
04	002	28758	4.0	0.42		0.31 UJ			<100	
04	002	28759	5.0	0.47		0.93 J				
04	002	28760	6.0	0.12 UJ		2.71			<100	
04	002	28761	7.0	0.68		1.24				
04	002	28762	8.0	0.26		1.25 J			<100	
04	002	28769	9.0	0.31		1.48				
04	002	28770	10.0	0.05		0.71 J			<100	
04	**002**	**28773**	**11.0**	**0.203**	**0.187**	**0.176**	**0.0026 U**	**0.0026 U**	**1.6 J**	**0.12 J**
04	002	28774	13.0	0.40		0.68 J				
04	002	28775	14.0	0.29		0.67			<100	
04	002	28776	15.0	0.20 J		0.50				
04	002	28777	16.0	0.30		0.76 J			<100	
04	002	28783	17.0	0.30 J		0.29				
04	002	28784	18.0	0.19		1.03 J			<100	
04	002	28785	19.0	0.30 J		1.25				
04	002	28786	20.0	0.24		0.81 J			<100	
04	**002**	**28789**	**21.0**	**0.163**	**0.178**	**0.177**	**0.0026 U**	**0.0026 U**	**0.99 J**	**0.11 J**
04	002	28790	23.0	0.20		0.40 J				
04	002	28791	24.0	0.27 J		1.08 J			<100	
04	002	28792	25.0	0.16 J		0.38 J				
04	002	28795	26.0	0.17		0.39 J			<100	
04	002	28796	27.0	0.16 J		0.79 J				
04	002	28797	28.0	0.15		0.62 J			<100	
04	002	28799	29.0	0.19		0.96				
04	**002**	**28798**	**30.0**	**0.228**	**0.263**	**0.171**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.20 J**
04	003	28704	-1.0	1.06		3.05 J				
04	003	28705	0.0	1.14		5.93 J			<100	
04	003	28709	1.0	1.04		1.55 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	003	28710	2.0	0.83		2.88 J			40.5 J	
04	003	28711	3.0	1.11		3.76 J				
04	003	28712	4.0	0.61		3.52 J			<100	
04	003	28715	5.0	0.75		2.32 J				
04	003	28716	6.0	0.91		4.29 J			<100	
04	**003**	**28718**	**7.0**	**0.230**	**0.66**	**0.89**	**0.0026 U**	**0.0026 U**	**2.7 J**	**0.26 J**
04	003	28719	9.0	0.42		2.15 J				
04	003	28720	10.0	0.30		0.47 UJ			<100	
04	003	28721	11.0	0.30		2.52 J				
04	003	28722	12.0	0.36		2.64 J			<100	
04	003	28729	13.0	0.26		1.23 J				
04	003	28730	14.0	0.26		1.90 J			<100	
04	003	28731	16.0	0.28		1.61 J			<100	
04	**003**	**28733**	**17.0**	**0.158**	**0.216**	**0.175**	**0.0027 U**	**0.0027 U**	**1.6 J**	**0.22 J**
04	003	28734	19.0	0.40		0.41 UJ				
04	003	28735	20.0	0.22		0.27 UJ			<100	
04	003	28736	21.0	0.29		1.24 J				
04	003	28737	22.0	0.19		0.58 J			<100	
04	003	28738	23.0	0.25		0.60 UJ				
04	003	28739	24.0	0.05		0.90 J			<100	
04	003	28740	25.0	0.21		0.79 J				
04	003	28741	26.0	0.21		0.25 UJ			<100	
04	**003**	**28742**	**27.0**	**0.124**	**0.146**	**0.186**	**0.0026 U**	**0.0026 U**	**0.95 J**	**0.20 J**
04	003	28743	29.0	0.24		2.08 J				
04	**003**	**28744**	**30.0**	**0.138**	**0.242**	**0.184**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.18 J**
04	004	28980	-1.0	0.91		1.40 UJ				
04	004	28981	0.0	0.80		0.97 UJ			<100	
04	004	28982	4.0	0.88		7.38 J			<100	
04	004	28987	5.0	0.71		2.93 J				
04	004	28988	6.0	0.34		1.62 J			<100	
04	004	28989	7.0	0.60		1.51 J				
04	004	28990	8.0	0.29		1.21 J			<100	
04	004	28997	9.0	0.73		1.15 J				
04	004	28998	10.0	0.07		0.59 J			<100	
04	**004**	**29001**	**11.0**	**0.249**	**0.303**	**0.315**	**0.0025 U**	**0.0025 U**	**1.2 J**	**0.15 J**
04	004	29002	13.0	0.31		1.26 J				
04	004	29003	14.0	0.30		0.85 J			<100	
04	004	29007	15.0	0.33		0.92 J				
04	004	29008	16.0	0.21		0.46 UJ			<100	
04	004	29009	17.0	0.28		0.59 J				
04	004	29010	18.0	0.25		2.02 J			<100	
04	004	29011	19.0	0.32		0.60 J				
04	004	29012	20.0	0.22		1.14 J			<100	
04	**004**	**29013**	**21.0**	**0.406 J**	**0.288**	**0.294**	**0.0026 U**	**0.0026 U**	**1.8 J**	**0.15 J**
04	004	29014	23.0	0.05		0.38 UJ				
04	004	29015	24.0	0.30		1.37 J			<100	
04	004	29016	25.0	0.31		2.16 J				
04	004	29017	26.0	0.22		1.73 J			<100	
04	004	29018	27.0	0.20		2.42 J				
04	004	29023	28.0	0.30		1.03 J			<100	
04	004	29024	29.0	0.19		1.53 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	**004**	**29025**	**30.0**	**0.237**	**0.77**	**0.293**	**0.0026 U**	**0.0026 U**	**1.7 J**	**0.13 J**
04	005	28804	-1.0	0.83		1.06 J				
04	005	28805	0.0	0.86		2.34			<100	
04	005	28806	2.0	0.70		1.05 J			<100	
04	005	28807	3.0	0.75 J		2.70 J				
04	005	28808	4.0	0.76		0.86			<100	
04	005	28809	5.0	0.58		0.46				
04	005	28810	6.0	0.67		0.91 J			<100	
04	**005**	**28814**	**7.0**	**0.192**	**0.274**	**0.338**	**0.0026 U**	**0.0026 U**	**2.8 J**	**0.27 J**
04	005	28815	9.0	0.51		1.81 J				
04	005	28816	10.0	0.22		1.40			<100	
04	005	28817	11.0	0.35 J		1.37 J				
04	005	28818	12.0	0.55		0.39			<100	
04	005	28819	13.0	0.39 J		0.75 J				
04	005	28820	14.0	0.27		0.97			<100	
04	005	28824	15.0	0.24		0.37				
04	005	28825	16.0	0.37		2.04			<100	
04	**005**	**28826**	**17.0**	**0.188**	**0.129**	**0.161**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.089 J**
04	005	28827	19.0	0.28 J		1.20				
04	005	28828	20.0	0.21		0.43			<100	
04	005	28836	21.0	0.27		1.02 J				
04	005	28837	22.0	0.40		0.49 J			<100	
04	005	28838	23.0	0.05 UJ		0.75 J				
04	005	28839	24.0	0.22		0.81 J			<100	
04	005	28840	25.0	0.27		0.68 J				
04	005	28841	26.0	0.03 UJ		0.25			<100	
04	**005**	**28849**	**27.0**	**0.106**	**0.143**	**0.115**	**0.0026 U**	**0.0026 U**	**2.1 J**	**0.15 J**
04	005	28855	29.0	0.23		2.72				
04	**005**	**28856**	**30.0**	**0.185**	**0.182**	**0.253**	**0.0026 U**	**0.0026 U**	**2.4 J**	**0.22 J**
04	006	28860	-1.0	0.63		0.80 J			<100	
04	006	28861	0.0	0.46		1.83 J				
04	006	28862	1.0	1.06		4.04			<100	
04	006	28870	2.0	0.86		0.96 J				
04	006	28871	3.0	1.06		1.16 J			<100	
04	**006**	**28872**	**4.0**	**0.56**	**0.324**	**0.339**	**0.0025 U**	**0.0025 U**	**2.6 J**	**0.16 J**
04	006	28873	6.0	1.04		2.07				
04	006	28874	7.0	0.44		1.27 J			<100	
04	006	28878	8.0	0.33		0.97 J				
04	006	28879	9.0	0.35 J		1.47 J			<100	
04	006	28880	10.0	0.54		1.32 J				
04	006	28881	11.0	0.03		0.45			<100	
04	006	28882	12.0	0.43		0.51 J				
04	006	28883	13.0	0.27		2.68			<100	
04	**006**	**28884**	**14.0**	**0.220**	**0.201**	**0.159**	**0.0025 U**	**0.0025 U**	**2.5 J**	**0.15 J**
04	006	28885	16.0	0.31		1.03 J				
04	006	28886	17.0	0.16 J		0.29			<100	
04	006	28887	18.0	0.04		2.07				
04	006	28888	19.0	0.28		0.81 J			<100	
04	006	28889	20.0	0.30		1.85 J				
04	006	28890	21.0	0.22		0.89 J			<100	
04	006	28891	22.0	0.25		0.57 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	006	28892	23.0	0.31		0.88 J			<100	
04	**006**	**28893**	**24.0**	**0.276**	**0.194**	**0.195**	**0.0026 U**	**0.0026 U**	**0.90 J**	**0.070 J**
04	006	28896	26.0	0.23		0.52 J				
04	006	28897	27.0	0.35		0.64 J			<100	
04	006	28898	28.0	0.27		1.24				
04	006	28899	29.0	0.22		0.24			<100	
04	**006**	**28900**	**30.0**	**0.126 J**	**0.151**	**0.18**	**0.0026 U**	**0.0026 U**	**2.5 J**	**0.16 J**
04	007	28430	0.0	0.84		5.06			<100	
04	**007**	**28431**	**1.0**	**0.82**	**7.85**	**4.71**	**0.0016 J**	**0.012 U**	**8.8**	**0.40 J**
04	007	28432	3.0	0.83		6.82 J				
04	007	28433	4.0	0.43		1.39 J			<100	
04	007	28434	5.0	0.78		4.08				
04	007	28435	6.0	0.33		0.87 J			<100	
04	007	28436	7.0	0.57		1.65 J				
04	007	28437	8.0	0.69		0.89 J			<100	
04	007	28438	9.0	0.46		1.02 J				
04	007	28439	10.0	0.18		0.67 J			<100	
04	**007**	**28440**	**11.0**	**0.265**	**0.360**	**0.267**	**0.0025 U**	**0.0025 U**	**2.1 J**	**0.18 J**
04	007	28441	13.0	0.47		1.87				
04	007	28442	14.0	0.24		0.37			<100	
04	007	28443	15.0	0.32		2.25				
04	007	28444	16.0	0.24		1.26			<100	
04	007	28445	17.0	0.26		0.50 UJ				
04	007	28446	18.0	0.24		0.88			<100	
04	007	28452	19.0	0.22		0.56 J				
04	007	28453	20.0	0.23		0.58 J			<100	
04	**007**	**28454**	**21.0**	**0.124**	**0.180**	**0.153**	**0.0025 U**	**0.0025 U**	**1.3 J**	**0.13 J**
04	007	28455	23.0	0.23		0.46 J				
04	007	28459	24.0	0.23		1.11 J			<100	
04	007	28460	25.0	0.14		0.60 J				
04	007	28465	26.0	NS		NS			<100	
04	007	28464	27.0	0.18		0.90 J				
04	007	28466	28.0	0.19 J		0.39			<100	
04	007	28467	29.0	0.20 J		0.50				
04	**007**	**28468**	**30.0**	**0.108**	**0.143**	**0.199**	**0.0025 U**	**0.0025 U**	**0.38 J**	**0.12 J**
04	008	29108	-1.0	0.82 J		1.43 J			<100	
04	008	29109	1.0	0.85		3.40 J			<100	
04	008	29110	3.0	1.10 J		2.25 J			<100	
04	**008**	**29112**	**4.0**	**0.432 J**	**0.47**	**0.44**	**0.0025 U**	**0.0025 U**	**1.1 J**	**0.27 J**
04	008	29113	6.0	0.53		2.84 J				
04	008	29114	7.0	0.75		1.42 J			<100	
04	008	29119	8.0	0.36		1.87 J				
04	008	29120	9.0	0.30		1.41 J			<100	
04	008	29123	10.0	0.37		1.06 J				
04	008	29124	11.0	0.32		2.07 J			<100	
04	008	29125	12.0	0.30 J		1.26 J				
04	008	29126	13.0	0.38		0.78 J			<100	
04	**008**	**29132**	**14.0**	**0.162 J**	**0.191**	**0.185**	**0.0025 U**	**0.0025 U**	**1.4 J**	**0.089 J**
04	008	29136	16.0	0.28 J		1.85 J				
04	008	29137	17.0	0.22		0.83 J			<100	
04	008	29138	18.0	0.30		1.06 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	008	29139	19.0	0.03		1.65 J			<100	
04	008	29145	20.0	0.24		1.75 J				
04	008	29146	21.0	0.07 UJ		1.43 J			<100	
04	008	29147	22.0	0.27		0.80 J				
04	008	29148	23.0	0.14 J		0.81 J			<100	
04	**008**	**29149**	**24.0**	**0.151 J**	**0.231**	**0.168**	**0.0025 U**	**0.0025 U**	**0.75 J**	**0.5 U**
04	008	29154	26.0	0.22		0.94 J				
04	008	29155	27.0	0.23		0.97 J			<100	
04	008	29158	28.0	0.28		1.76 J				
04	008	29159	29.0	0.04 UJ		0.57 J			<100	
04	**008**	**29164**	**30.0**	**0.130 J**	**0.197**	**0.184**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.11 J**
04	009	29052	0.0	0.70		1.10 J			<100	
04	**009**	**29053**	**1.0**	NS	NS	NS	**0.0027 R**	**0.0027 R**	**8.6**	**0.49 J**
04	009	29054	4.0	0.85		6.11			42.4	
04	009	29058	6.0	NS		NS			<100	
04	009	29060	7.0	1.50		2.12 J				
04	009	29059	8.0	0.46		0.93 J			<100	
04	009	29061	9.0	0.49		1.49 J				
04	009	29062	10.0	0.30		1.55			<100	
04	**009**	**29063**	**11.0**	**0.183 J**	**0.381**	**0.303**	**0.0025 U**	**0.0025 U**	**1.8 J**	**0.12 J**
04	009	29064	13.0	0.34		1.93				
04	009	29065	14.0	0.41		1.09 J			<100	
04	009	29070	15.0	0.35		0.59				
04	009	29071	16.0	0.27		1.15 J	0.100	0.100	<100	
04	009	29072	17.0	0.05		0.36				
04	009	29073	18.0	0.30		1.48	0.095	0.477 J	<100	
04	009	29074	19.0	0.34		1.75				
04	009	29075	20.0	0.30		0.28	0.201	0.900 J	<100	
04	**009**	**29078**	**21.0**	**0.174 J**	**0.293**	**0.281**	**0.00075 J**	**0.470 J**	**0.74 J**	**0.16 J**
04	009	29081	23.0	0.29		0.55	0.178	0.451 J		
04	009	29082	24.0	0.35		0.83 J			<100	
04	009	29083	25.0	0.20		1.64	0.186	0.720 J		
04	009	29090	26.0	0.22		0.69 J			<100	
04	009	29091	27.0	0.24		0.73 J	0.206	0.595 J		
04	009	29092	28.0	0.26		0.76 J			<100	
04	009	29093	29.0	0.25		1.51 J	0.189	0.399 J		
04	**009**	**29094**	**30.0**	**0.201 J**	**0.265**	**0.239**	**0.0025 U**	**0.032**	**1.0 J**	**0.12 J**
04	010	28481	-1.0	0.68 J		1.72 J				
04	010	28482	0.0	0.84 J		5.99			<100	
04	010	28483	1.0	0.80 J		2.81				
04	010	28484	2.0	0.86 J		3.64			<100	
04	010	28486	4.0	0.43 J		0.45			<100	
04	010	28490	5.0	0.55 J		3.35				
04	010	28491	6.0	0.60		4.12			<100	
04	**010**	**28492**	**7.0**	**0.68**	**0.69**	**0.61**	**0.0025 U**	**0.0025 U**	**2.7 J**	**0.24 J**
04	010	28493	9.0	0.44 J		1.43 J				
04	010	28494	10.0	0.31 J		1.51			<100	
04	010	28495	11.0	0.05		1.19 J				
04	010	28496	12.0	0.32 J		2.38			<100	
04	010	28497	13.0	0.35 J		1.00 J				
04	010	28498	14.0	0.26		2.16			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	010	28499	15.0	0.34		1.06				
04	010	28500	16.0	0.31 J		0.85 J			<100	
04	**010**	**28501**	**17.0**	**0.200**	**0.49**	**0.62**	**0.0025 U**	**0.0020 J**	**0.68 J**	**0.085 J**
04	010	28502	19.0	0.25		1.45 J				
04	010	28503	20.0	0.26 J		3.21			<100	
04	010	28504	21.0	0.32		2.09				
04	010	28505	22.0	0.03 UJ		0.60 J			<100	
04	010	28508	23.0	0.26 J		1.43				
04	010	28509	24.0	0.27		0.91 J			<100	
04	010	28510	25.0	0.39 J		0.99				
04	010	28511	26.0	0.16 J		0.52			<100	
04	**010**	**28512**	**27.0**	**0.267**	**0.301**	**0.296**	**0.0025 U**	**0.0025 U**	**2.3 J**	**0.13 J**
04	010	28513	29.0	0.19		0.28				
04	**010**	**28516**	**30.0**	**0.280**	**0.260**	**0.349**	**0.0025 U**	**0.00089 J**	**1.7 J**	**0.29 J**
04	011	29411	0.0	0.67		1.78			<100	
04	**011**	**29412**	**1.0**	**0.70**	**0.96**	**0.73**	**0.0027 U**	**0.0022 J**	**5.0**	**0.29 J**
04	011	29413	4.0	0.71		4.04			<100	
04	011	29414	5.0	0.59		2.24				
04	011	29415	6.0	0.71		3.01 J			<100	
04	011	29417	7.0	0.57		1.03 J				
04	011	29418	8.0	0.54		1.42 J			<100	
04	011	29419	9.0	0.28		0.90 J				
04	011	29420	10.0	0.06		3.01 J			<100	
04	**011**	**29426**	**11.0**	**0.184**	**0.238**	**0.222**	**0.0025 U**	**0.0025 UJ**	**1.6 J**	**0.13 J**
04	011	29427	13.0	0.43		2.41				
04	011	29428	14.0	0.45		0.87 J			<100	
04	011	29433	15.0	0.26		1.67 J				
04	011	29434	16.0	0.45		0.96 J			<100	
04	011	29435	17.0	0.33		1.98				
04	011	29436	18.0	0.60		2.74 J			<100	
04	011	29437	19.0	0.34		1.23				
04	011	29438	20.0	0.26		0.36 J			<100	
04	**011**	**29439**	**21.0**	**0.249**	**0.198**	**0.208**	**0.0025 U**	**0.0025 UJ**	**0.89 J**	**0.10 J**
04	011	29443	23.0	0.32		1.75				
04	011	29444	24.0	0.06		0.44			<100	
04	011	29445	25.0	0.19		0.61 J				
04	011	29446	26.0	0.23		0.79 J			<100	
04	011	29447	27.0	0.25		2.15 J				
04	011	29448	28.0	0.27		1.46 J			<100	
04	011	29449	29.0	0.18		0.79 J				
04	**011**	**29450**	**30.0**	**0.228**	**0.192**	**0.136**	**0.0025 U**	**0.0025 UJ**	**0.78 J**	**0.093 J**
04	012	29367	-1.0	0.89 J		6.84				
04	012	29368	0.0	0.78		1.20 J			<100	
04	012	29369	1.0	1.07 J		2.95				
04	012	29370	2.0	0.63 J		1.45 J			<100	
04	012	29371	3.0	0.50		1.78				
04	012	29372	4.0	0.84		0.66 J			<100	
04	012	29375	5.0	0.63		1.10 J				
04	012	29376	6.0	0.42		1.47			<100	
04	**012**	**29377**	**7.0**	**0.85**	**0.53**	**0.66**	**0.0027 U**	**0.0027 U**	**4.2**	**0.26 J**
04	012	29381	9.0	0.29		0.40 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	012	29382	10.0	0.63		1.54 J			<100	
04	012	29383	11.0	0.32		1.93				
04	012	29384	12.0	0.09		1.10 J			<100	
04	012	29385	13.0	0.29		1.04 J				
04	012	29386	14.0	0.33		1.19 J			<100	
04	012	29387	15.0	0.24		1.23 J				
04	012	29388	16.0	0.34		1.41			<100	
04	**012**	**29389**	**17.0**	**0.155**	**0.205**	**0.165**	**0.0025 U**	**0.0025 U**	**1.1 J**	**0.055 J**
04	012	29390	19.0	0.24		0.55				
04	012	29391	20.0	0.34		1.57			<100	
04	012	29392	21.0	0.27		1.09 J				
04	012	29393	22.0	0.31		0.30			<100	
04	012	29394	23.0	0.24		1.47				
04	012	29395	24.0	0.21		1.31			<100	
04	012	29396	25.0	0.23		1.33 J				
04	012	29397	26.0	0.18		0.61			<100	
04	**012**	**29398**	**27.0**	**0.094 J**	**0.122**	**0.130**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.22 J**
04	012	29399	29.0	0.19		1.36 J				
04	**012**	**29400**	**30.0**	**0.097 J**	**0.075 J**	**0.123**	**0.0025 U**	**0.0025 UJ**	**2.0 J**	**0.21 J**
04	013	29292	-1.0	0.66		2.38 J			<100	
04	013	29293	0.0	0.96		9.40				
04	013	29294	1.0	0.88		6.57			<100	
04	013	29295	2.0	1.15		5.06 J				
04	013	29296	3.0	0.51		1.35			<100	
04	**013**	**29299**	**4.0**	**0.478 J**	**0.85**	**0.65**	**0.0025 U**	**0.0025 U**	**4.1**	**0.19 J**
04	013	29300	6.0	0.30		1.35				
04	013	29301	7.0	1.23		2.13			<100	
04	013	29302	8.0	0.69		1.07 J				
04	013	29303	9.0	0.43		0.85 J			<100	
04	013	29304	10.0	0.23		1.08 J				
04	013	29305	11.0	0.60		2.39 J			<100	
04	013	29315	12.0	0.35		1.31 J				
04	013	29316	13.0	0.33 J		2.57			<100	
04	**013**	**29319**	**14.0**	**0.233 J**	**0.202**	**0.194**	**0.0025 U**	**0.0025 U**	**1.6 J**	**0.11 J**
04	013	29323	16.0	0.30		1.14 J				
04	013	29324	17.0	0.28		0.57 J			<100	
04	013	29325	18.0	0.40 J		1.45 J				
04	013	29326	19.0	0.28 J		1.21			<100	
04	013	29330	20.0	0.32 J		0.51				
04	013	29331	21.0	0.31 J		1.76			<100	
04	013	29335	22.0	0.25 J		2.03				
04	013	29336	23.0	0.04 UJ		0.83 J			<100	
04	**013**	**29337**	**24.0**	**0.233**	**0.185**	**0.203**	**0.0025 U**	**0.0025 U**	**1.4 J**	**0.11 J**
04	013	29338	26.0	0.25 J		0.52 J				
04	013	29339	27.0	0.25 J		0.63 J			<100	
04	013	29342	28.0	0.30 J		0.52	0.098	0.098		
04	013	29343	29.0	0.20 J		0.75 J			<100	
04	**013**	**29344**	**30.0**	**0.176**	**0.147**	**0.161**	**0.0025 U**	**0.0025 U**	**1.9 J**	**0.10 J**
04	014	28534	-1.0	0.73		3.11				
04	014	28535	0.0	0.72 J		1.28 J			<100	
04	**014**	**28536**	**1.0**	**0.46**	**1.78**	**1.53**	**0.0026 U**	**0.014**	**14.6**	**0.34 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	014	28537	4.0	0.10 UJ		3.63			<100	
04	014	28543	5.0	0.56		1.67 J				
04	014	28544	6.0	0.49		1.45 J			<100	
04	014	28545	7.0	0.42		2.31				
04	014	28546	8.0	0.48		1.15 J			<100	
04	014	28547	9.0	0.35		1.05 J				
04	014	28548	10.0	0.32		1.08 J			<100	
04	**014**	**28550**	**11.0**	**0.196**	**0.406**	**0.420**	**0.0025 U**	**0.0025 U**	**0.83 J**	**0.14 J**
04	014	28554	13.0	0.36		2.53 J				
04	014	28555	14.0	0.23		1.32			<100	
04	014	28556	15.0	0.32		2.66 J				
04	014	28557	16.0	0.33		1.88 J			<100	
04	014	28558	17.0	0.25		0.46				
04	014	28559	18.0	0.25		1.74 J			<100	
04	014	28560	19.0	0.40		0.80 J				
04	014	28561	20.0	0.25		0.29			<100	
04	**014**	**28562**	**21.0**	**0.168**	**0.408**	**0.335**	**0.0025 U**	**0.0025 U**	**4 U**	**0.051 J**
04	014	28563	23.0	0.26		1.91 J				
04	014	28564	24.0	0.20		0.51 UJ			<100	
04	014	28565	25.0	0.25		0.49				
04	014	28566	26.0	0.24		1.49 J			<100	
04	014	28567	27.0	0.21		0.90 J				
04	014	28568	28.0	0.20		0.46 J			<100	
04	014	28569	29.0	0.22		0.43 J				
04	**014**	**28570**	**30.0**	**0.216**	**0.347**	**0.366**	**0.0025 U**	**0.0025 U**	**0.46 J**	**0.076 J**
04	015	29703	4.0	0.74		3.06			<100	
04	015	29704	5.0	0.46		1.67				
04	015	29705	6.0	0.44		0.89 J			<100	
04	015	29706	7.0	1.04		11.25				
04	015	29707	8.0	0.44		2.64			<100	
04	015	29708	9.0	0.84		3.72				
04	015	29709	10.0	1.29		4.25			<100	
04	**015**	**29712**	**11.0**	**0.84**	**1.47**	**1.49**	**0.0029 U**	**0.0029 UJ**	**12.3**	**0.37 J**
04	015	29713	13.0	0.32		2.34 J				
04	015	29714	14.0	0.28		0.64 J			<100	
04	015	29719	15.0	0.81		2.68				
04	015	29718	16.0	0.23		0.73 J			<100	
04	015	29720	17.0	0.06		0.86 J				
04	015	29721	18.0	0.25		0.51 J			<100	
04	015	29722	19.0	0.10		0.66				
04	015	29723	20.0	0.22		0.93 J			<100	
04	**015**	**29731**	**21.0**	**0.200**	**0.256**	**0.342**	**0.0025 U**	**0.0025 UJ**	**1.6 J**	**0.16 J**
04	015	29735	23.0	0.22		0.91				
04	015	29736	24.0	0.05		1.62			<100	
04	015	29737	25.0	0.26		2.09				
04	015	29742	26.0	0.15		0.28			<100	
04	015	29743	27.0	0.26		1.40 J				
04	015	29747	28.0	0.27		0.91 J			<100	
04	015	29748	29.0	0.23		1.78				
04	**015**	**29749**	**30.0**	**0.171**	**0.289**	**0.282**	**0.0025 U**	**0.0025 UJ**	**1.8 J**	**0.18 J**
04	**016**	**29655**	**4.0**	**0.76**	**5.82**	**5.64**	**0.0027 U**	**0.0027 J**	**6.2**	**0.37 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	016	29658	6.0	0.44		3.24				
04	016	29659	7.0	0.35		1.90			<100	
04	016	29660	8.0	0.68		0.68				
04	016	29661	9.0	0.58		1.11			<100	
04	016	29662	12.0	0.44		2.25				
04	016	29663	13.0	0.46		1.93 J			<100	
04	**016**	**29668**	**14.0**	**0.179**	**0.81**	**0.71**	**0.0025 U**	**0.0025 UJ**	**1.5 J**	**0.16 J**
04	016	29674	17.0	0.30		0.56 J			<100	
04	016	29675	18.0	0.03		0.90 J				
04	016	29676	19.0	0.25		1.71 J			<100	
04	016	29682	20.0	0.22		1.00 J				
04	016	29683	21.0	0.22		1.59			<100	
04	016	29684	22.0	0.06		1.91 J				
04	016	29685	23.0	0.24		0.46 J			<100	
04	**016**	**29686**	**24.0**	**0.142**	**0.236**	**0.234**	**0.0025 U**	**0.0025 UJ**	**1.4 J**	**0.14 J**
04	016	29690	26.0	0.23		0.38 J				
04	016	29691	27.0	0.18		0.53			<100	
04	016	29695	28.0	0.30		1.27				
04	016	29696	29.0	0.23		0.45			<100	
04	**016**	**29697**	**30.0**	**0.126**	**0.331**	**0.233**	**0.0025 U**	**0.0025 UJ**	**2.0 J**	**0.14 J**
04	017	29540	-1.0	0.86		1.41 J				
04	017	29541	0.0	1.41		18.58			<100	
04	**017**	**29542**	**1.0**	**0.81**	**8.0**	**7.6**	**0.0014 J**	**0.032 J**	**30.8**	**0.34 J**
04	017	29543	4.0	0.44		3.10			<100	
04	017	29602	6.0	0.53		6.58			<100	
04	017	29603	7.0	0.52		3.78				
04	017	29604	8.0	0.65		1.74			<100	
04	017	29605	9.0	0.50		2.43				
04	017	29606	10.0	0.22		0.94 J			<100	
04	**017**	**29607**	**11.0**	**0.289**	**0.55**	**0.54**	**0.0026 U**	**0.0026 UJ**	**0.98 J**	**0.13 J**
04	017	29608	13.0	0.06		1.52				
04	017	29609	14.0	0.29		1.32 J			<100	
04	017	29610	15.0	0.03		0.62 J				
04	017	29611	16.0	0.31		1.03 J			<100	
04	017	29612	17.0	0.44		1.80				
04	017	29613	18.0	0.24		0.80 J			<100	
04	017	29614	19.0	0.35		3.02				
04	017	29615	20.0	0.22		0.79 J			<100	
04	**017**	**29616**	**21.0**	**0.202**	**0.424**	**0.45**	**0.0026 U**	**0.0026 UJ**	**1.0 J**	**0.17 J**
04	017	29617	23.0	0.31		0.40				
04	017	29621	24.0	0.25		0.29			<100	
04	017	29622	25.0	0.32		0.97 J				
04	017	29623	26.0	0.22		1.12			<100	
04	017	29624	27.0	0.24		1.02 J				
04	017	29625	28.0	0.23		0.91 J			<100	
04	017	29626	29.0	0.30		1.42 J				
04	**017**	**29627**	**30.0**	**0.126**	**0.268**	**0.226**	**0.0026 U**	**0.0026 UJ**	**1.3 J**	**0.15 J**
04	018	28633	-1.0	1.10		2.78 J				
04	018	28634	0.0	0.97		10.80			<100	
04	018	28641	1.0	0.76		7.72				
04	018	28642	2.0	0.85		4.55 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	018	28647	3.0	1.08		3.90				
04	018	28648	4.0	0.83		5.17			<100	
04	018	28652	5.0	0.52		2.97 J				
04	018	28653	6.0	0.49		1.04 J			<100	
04	**018**	**28654**	**7.0**	**0.341**	**0.52**	**0.48**	**0.0025 U**	**0.0025 U**	**3.1 J**	**0.22 J**
04	018	28655	9.0	0.25		1.23 J				
04	018	28656	10.0	0.32		1.68 J			<100	
04	018	28657	11.0	0.38		1.74				
04	018	28658	12.0	0.10		1.72			<100	
04	018	28659	13.0	0.33		2.20 J				
04	018	28660	14.0	0.37		2.69			<100	
04	018	28665	15.0	0.07		1.08				
04	018	28666	16.0	0.06		0.63 J			<100	
04	**018**	**28668**	**17.0**	**0.202**	**0.48**	**0.388**	**0.0025 U**	**0.0025 U**	**0.28 J**	**0.066 J**
04	018	28669	19.0	0.32		1.97				
04	018	28670	20.0	0.32		1.76			<100	
04	018	28675	21.0	0.30		0.68 UJ				
04	018	28676	22.0	0.20		0.60 J			<100	
04	018	28677	23.0	0.28		1.22				
04	018	28678	24.0	0.24		1.49 J			<100	
04	018	28679	25.0	0.03		1.54				
04	018	28680	26.0	0.37		0.66 J			<100	
04	**018**	**28681**	**27.0**	**0.112**	**0.268**	**0.230**	**0.0025 U**	**0.0025 U**	**2.4 J**	**0.12 J**
04	018	28683	29.0	0.20		0.73 J				
04	**018**	**28684**	**30.0**	**0.168**	**0.361**	**0.288**	**0.0026 U**	**0.0056**	**3.0 J**	**0.15 J**
04	019	29755	2.0	1.16		16.63			170	
04	019	29756	3.0	0.78		16.36				
04	019	29757	4.0	0.47		2.30			<100	
04	019	29758	5.0	0.92		18.02				
04	019	29759	6.0	0.61		6.37			<100	
04	019	29760	7.0	0.90		11.11				
04	019	29761	8.0	0.52		2.23			<100	
04	019	29762	9.0	0.40		2.65				
04	019	29763	10.0	0.50		0.63 J			<100	
04	**019**	**29764**	**11.0**	**0.242**	**1.49**	**1.42**	**0.0026 U**	**0.0026 UJ**	**3.3 J**	**0.22 J**
04	019	29765	13.0	0.38		3.90				
04	019	29766	14.0	0.05		2.53 J			<100	
04	019	29768	15.0	0.29		3.61				
04	019	29767	16.0	0.26		1.78			<100	
04	019	29769	17.0	0.34		3.65				
04	019	29770	18.0	0.30		4.67			<100	
04	019	29771	19.0	0.27		4.37				
04	019	29772	20.0	0.22		5.39			<100	
04	**019**	**29773**	**21.0**	**0.134**	**6.24**	**6.32**	**0.0025 U**	**0.0025 UJ**	**2.1 J**	**0.12 J**
04	019	29776	23.0	0.25		7.28				
04	019	29777	24.0	0.36		11.38			<100	
04	019	29778	25.0	0.04		10.83				
04	019	29779	26.0	0.38		14.83			<100	
04	019	29780	27.0	0.21		16.56				
04	019	29781	28.0	0.28		11.04			<100	
04	019	29782	29.0	0.26		1.13				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	**019**	**29783**	**30.0**	**0.142**	**2.01**	**2.34**	**0.0025 U**	**0.0025 UJ**	**3.2 J**	**0.19 UJ**
04	020	29788	2.0	1.04		17.13			103	
04	020	29792	3.0	0.83		10.60				
04	020	29793	4.0	0.62		27.48			50.2 J	
04	020	29796	5.0	0.54		47.10				
04	020	29797	6.0	0.43		78.88			82.0 J	
04	**020**	**29798**	**7.0**	**0.222**	**14.1**	**12.7**	**0.0025 U**	**0.0025 UJ**	**102 J**	**0.14 UJ**
04	020	29805	9.0	0.48		11.09				
04	020	29806	10.0	0.29		8.21			95.4 J	
04	020	29807	11.0	0.39		6.95				
04	020	29808	12.0	0.28		7.74			<100	
04	020	29809	13.0	0.32		10.91				
04	020	29810	14.0	0.27		15.10			41.4 J	
04	020	29811	15.0	0.07		12.36				
04	020	29812	16.0	0.23		12.52			<100	
04	**020**	**29813**	**17.0**	**0.211**	**9.2**	**9.3**	**0.0025 U**	**0.0025 UJ**	**2.5 J**	**0.083 UJ**
04	020	29816	19.0	0.33		7.40				
04	020	29817	20.0	0.32		7.10			<100	
04	020	29824	21.0	0.30		6.47				
04	020	29825	22.0	0.30		7.53			<100	
04	020	29826	23.0	0.30		7.40				
04	020	29827	24.0	0.34		10.89			<100	
04	020	29828	25.0	0.24		7.69				
04	020	29829	26.0	0.20		8.95			<100	
04	**020**	**29830**	**27.0**	**0.124**	**7.7**	**8.1**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.15 UJ**
04	020	29831	29.0	0.37		13.13				
04	**020**	**29832**	**30.0**	**0.247**	**9.9**	**10.7**	**0.0026 U**	**0.0026 UJ**	**1.8 J**	**0.18 J**
04	021	29484	-1.0	1.05		3.96			51.6	
04	021	29487	0.0	0.74		30.99				
04	021	29488	1.0	1.14		20.49			330	
04	021	29489	2.0	1.19		11.27				
04	021	29490	3.0	0.80		10.09			<100	
04	**021**	**29495**	**4.0**	**0.61**	**9.1**	**8.9**	**0.0027 U**	**0.010 J**	**42.3**	**0.35 J**
04	021	29496	6.0	0.45		7.60				
04	021	29497	7.0	0.67		8.93			<100	
04	021	29498	8.0	0.36		2.01				
04	021	29499	9.0	0.06		5.52			<100	
04	021	29501	10.0	0.34		2.28				
04	021	29502	11.0	0.42		2.25			<100	
04	021	29504	12.0	0.38		1.56				
04	021	29505	13.0	0.08		1.09 J			<100	
04	**021**	**29508**	**14.0**	**0.236**	**1.11**	**1.26**	**0.0026 U**	**0.0026 UJ**	**3.0 J**	**0.13 J**
04	021	29509	16.0	0.25		2.81				
04	021	29510	17.0	0.22		2.38			<100	
04	021	29511	18.0	0.20		2.28				
04	021	29512	19.0	0.24		0.96 J			<100	
04	021	29521	20.0	0.07		2.31				
04	021	29522	21.0	0.22		0.65			<100	
04	021	29523	23.0	0.05		1.00 J			<100	
04	**021**	**29526**	**24.0**	**0.167**	**0.70**	**0.75**	**0.0026 U**	**0.0026 UJ**	**0.56 J**	**0.088 J**
04	021	29527	26.0	0.08		0.60 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	021	29528	27.0	0.21		1.23			<100	
04	021	29536	28.0	0.24		1.31				
04	021	29537	29.0	0.27		1.30 J			<100	
04	**021**	**29538**	**30.0**	**0.361**	**0.465**	**0.326**	**0.0025 U**	**0.0025 UJ**	**2.2 J**	**0.16 J**
04	022	28576	-1.0	0.73		2.01				
04	022	28577	0.0	1.10		20.81 J			274	
04	**022**	**28575**	**1.0**	**0.66**	**2.05**	**2.14**	**0.00064 J**	**0.023**	**1.1 J**	**0.16 J**
04	022	28583	3.0	0.60		2.32 J				
04	022	28584	4.0	0.68		0.60 J			<100	
04	022	28585	5.0	0.63		5.00 J				
04	022	28586	6.0	0.44		1.65 J			<100	
04	022	28587	7.0	0.42		1.91 J				
04	022	28588	8.0	0.37		2.58 J			<100	
04	022	28589	9.0	0.27		1.38 J				
04	022	28590	10.0	0.24		0.43			<100	
04	**022**	**28593**	**11.0**	**0.168**	**0.350**	**0.308**	**0.0025 U**	**0.0025 U**	**5.5**	**0.29 J**
04	022	28594	13.0	0.26		2.12 J				
04	022	28595	14.0	0.31		0.67 J			<100	
04	022	28596	15.0	0.24		0.73				
04	022	28597	16.0	0.21		0.87 J			<100	
04	022	28598	17.0	0.25		1.26 J				
04	022	28599	18.0	0.20		0.48			<100	
04	022	28602	19.0	0.31		1.92 J				
04	022	28603	20.0	0.32		1.74 J			<100	
04	**022**	**28604**	**21.0**	**0.125**	**0.268**	**0.203**	**0.0025 U**	**0.0025 U**	**1.1 J**	**0.12 J**
04	022	28609	23.0	0.30		1.10				
04	022	28610	24.0	0.19		0.69 J			<100	
04	022	28611	25.0	0.18		0.48 J				
04	022	28618	26.0	0.39		1.22 J			<100	
04	022	28619	27.0	0.21		2.26				
04	022	28620	28.0	0.25		1.00 J			<100	
04	022	28621	29.0	0.24		0.52 J				
04	**022**	**28622**	**30.0**	**0.135**	**0.155**	**0.172**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.13 J**
05	001	30363	-1.0	0.88		2.86				
05	001	30364	0.0	0.58		2.20			<100	
05	**001**	**30367**	**1.0**	**0.383**	**0.58**	**0.59**	**0.0026 R**	**0.0026 R**	**2.9 J**	**0.20 J**
05	001	30368	3.0	0.43		0.80 J				
05	001	30369	4.0	0.43		1.26 J			<100	
05	001	30373	5.0	0.78		1.09 J				
05	001	30374	6.0	1.17		3.60			<100	
05	001	30375	7.0	0.51		1.05 J				
05	001	30376	8.0	0.24		0.62			<100	
05	001	30377	9.0	0.07		1.00 J				
05	001	30378	10.0	0.05		0.94 J			<100	
05	**001**	**30379**	**11.0**	**0.311**	**0.271**	**0.203**	**0.0025 U**	**0.0025 UJ**	**2.7 J**	**0.19 J**
05	001	30380	13.0	0.44		1.22 J				
05	001	30381	14.0	0.22		1.02 J			<100	
05	001	30382	15.0	0.47		0.89 J				
05	001	30383	16.0	0.28		0.88			<100	
05	001	30384	17.0	0.33		0.80 J				
05	001	30385	18.0	0.17		1.23			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	001	30399	19.0	0.24		0.60				
05	001	30400	20.0	0.30		1.54			<100	
05	**001**	**30401**	**21.0**	**0.245**	**0.196**	**0.198**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.15 J**
05	001	30402	23.0	0.26		0.41				
05	001	30403	24.0	0.40		1.19 J			<100	
05	001	30404	25.0	0.33		0.86 J				
05	001	30405	26.0	0.26		0.93 J			<100	
05	001	30406	27.0	0.06		1.42				
05	001	30407	28.0	0.02		0.39			<100	
05	001	30408	29.0	0.28		0.44				
05	**001**	**30409**	**30.0**	**0.127**	**0.174**	**0.105**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.14 J**
05	002	30323	-1.0	0.74		0.89 J				
05	002	30324	0.0	0.44		1.14 J			<100	
05	002	30325	1.0	0.59		2.70				
05	002	30326	2.0	0.74		0.78 J			<100	
05	002	30327	3.0	0.59		2.43				
05	002	30328	4.0	1.14		1.90 J			<100	
05	002	30329	5.0	0.58		2.58				
05	002	30330	6.0	1.07		1.23 J			<100	
05	**002**	**30331**	**7.0**	**0.54**	**0.346**	**0.43**	**0.0025 U**	**0.0025 UJ**	**1.4 J**	**0.13 J**
05	002	30332	9.0	0.32		0.80 J				
05	002	30333	10.0	0.32		1.65 J			<100	
05	002	30334	11.0	0.32		2.29				
05	002	30335	12.0	0.29		1.87			<100	
05	002	30336	13.0	0.32		0.44				
05	002	30337	14.0	0.31		1.53			<100	
05	002	30338	15.0	0.37		1.63				
05	002	30339	16.0	0.17		0.58			<100	
05	**002**	**30340**	**17.0**	**0.158**	**0.200**	**0.138**	**0.0025 U**	**0.0025 UJ**	**1.8 J**	**0.12 J**
05	002	30341	19.0	0.40		0.96 J				
05	002	30342	20.0	0.32		1.90			<100	
05	002	30343	21.0	0.26		0.84 J				
05	002	30344	22.0	0.33		1.64 J			<100	
05	002	30345	23.0	0.04		0.60				
05	002	30346	24.0	0.33		0.46			<100	
05	002	30347	25.0	0.37		1.86				
05	002	30348	26.0	0.30		1.23 J			<100	
05	**002**	**30350**	**27.0**	**0.202**	**0.155**	**0.182**	**0.0025 U**	**0.0025 UJ**	**1.4 J**	**0.12 J**
05	002	30349	29.0	0.24		0.77 J				
05	**002**	**30351**	**30.0**	**0.129**	**0.182**	**0.162**	**0.0025 U**	**0.0025 UJ**	**2.7 J**	**0.15 J**
05	003	30034	-1.0	0.44		1.89 J			<100	
05	003	30035	0.0	0.69		1.52 J				
05	003	30036	1.0	0.77		9.40			<100	
05	003	30039	3.0	0.49		10.87			<100	
05	**003**	**30040**	**4.0**	**0.375**	**2.79**	**2.80**	**0.0025 U**	**0.0025 UJ**	**2.3 J**	**0.21 J**
05	003	30042	6.0	1.30		1.95 J				
05	003	30043	7.0	1.03		1.21 J			<100	
05	003	30047	8.0	0.50		1.28 J				
05	003	30048	9.0	0.37		0.80 J			<100	
05	003	30049	10.0	0.35		2.83				
05	003	30050	11.0	0.26		1.64 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	003	30051	12.0	0.30		1.75				
05	003	30052	13.0	0.31		1.33			<100	
05	**003**	**30055**	**14.0**	**0.212**	**0.79**	**0.80**	**0.0026 U**	**0.0026 UJ**	**4.0 J**	**0.30 J**
05	003	30064	16.0	0.23		2.63				
05	003	30065	17.0	0.30		0.49			<100	
05	003	30066	18.0	0.07		0.85 J				
05	003	30067	19.0	0.02		0.15			<100	
05	003	30068	20.0	0.25		2.48				
05	003	30069	21.0	0.24		0.60 J			<100	
05	003	30070	23.0	0.41		1.33 J			<100	
05	**003**	**30075**	**24.0**	**0.172**	**0.185**	**0.169**	**0.0026 U**	**0.0026 UJ**	**1.7 J**	**0.11 J**
05	003	30084	26.0	0.06		1.16 J				
05	003	30085	27.0	0.23		0.90 J			<100	
05	003	30082	28.0	0.19		0.60 J				
05	003	30083	29.0	0.15		0.95 J			<100	
05	**003**	**30086**	**30.0**	**0.149**	**0.340**	**0.46**	**0.0026 U**	**0.0026 UJ**	**2.6 J**	**0.18 J**
05	004	29983	-1.0	0.68		1.59 J				
05	004	29984	0.0	0.59		5.50 J			<100	
05	**004**	**29985**	**1.0**	**0.54**	**6.81**	**6.87**	**0.0027 U**	**0.00068 J**	**15.2**	**0.27 J**
05	004	29986	4.0	0.53		4.27			<100	
05	004	29987	5.0	0.52		3.47 J				
05	004	29988	6.0	0.50		1.14 J			<100	
05	004	29989	7.0	1.69		3.19				
05	004	29990	8.0	0.36		0.58 J			<100	
05	004	29991	9.0	0.35		2.20				
05	004	29992	10.0	0.22		1.29 J			<100	
05	**004**	**29993**	**11.0**	**0.193**	**0.38**	**0.44**	**0.0026 U**	**0.0026 UJ**	**1.5 J**	**0.20 J**
05	004	29996	13.0	0.34		0.60 UJ				
05	004	29997	14.0	0.29		1.80			<100	
05	004	29998	15.0	0.41		1.32 J				
05	004	29999	16.0	0.31		0.89 J			<100	
05	004	30002	17.0	0.28		1.08				
05	004	30003	18.0	0.27		0.92 J			<100	
05	004	30004	19.0	0.34		0.62				
05	004	30005	20.0	0.40		0.62			<100	
05	**004**	**30017**	**21.0**	**0.197**	**1.29**	**1.17**	**0.0026 U**	**0.0026 UJ**	**2.7 J**	**0.15 J**
05	004	30018	23.0	0.30		0.83				
05	004	30020	24.0	0.18		0.65 UJ			<100	
05	004	30021	25.0	0.19		0.40				
05	004	30022	26.0	0.36		1.74			<100	
05	004	30023	27.0	0.26		1.25 J				
05	004	30030	28.0	0.32		1.37 J			<100	
05	004	30031	29.0	0.19		0.54 J				
05	**004**	**30032**	**30.0**	**0.147**	**0.51**	**0.44**	**0.0026 U**	**0.0026 UJ**	**2.6 J**	**0.31 J**
05	005	29891	-1.0	1.05		3.21				
05	005	29892	0.0	0.58		2.67 J			<100	
05	005	29893	1.0	0.80		18.15				
05	005	29894	2.0	0.82		19.04			<100	
05	005	29895	4.0	0.72		9.73			<100	
05	005	29896	5.0	0.96		4.82				
05	005	29897	6.0	1.20		4.68			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	**005**	**29898**	**7.0**	**0.281**	**0.43**	**0.42**	**0.0025 U**	**0.0025 UJ**	**0.86 J**	**0.10 J**
05	005	29899	9.0	0.33		1.35				
05	005	29900	10.0	0.30		0.53			<100	
05	005	29901	11.0	0.28		0.62 J				
05	005	29902	12.0	0.26		2.11 J			<100	
05	005	29903	13.0	0.22		0.50				
05	005	29904	14.0	0.28		1.31 J			<100	
05	005	29905	15.0	0.22		0.51				
05	005	29906	16.0	0.30		2.11 J			<100	
05	**005**	**29907**	**17.0**	**0.308**	**0.57**	**0.68**	**0.0028 U**	**0.0028 UJ**	**1.6 J**	**0.11 J**
05	005	29908	19.0	0.30		2.74				
05	005	29909	20.0	0.27		0.56 J			<100	
05	005	29913	21.0	0.46		1.71				
05	005	29914	22.0	0.25		0.28			<100	
05	005	29915	23.0	0.23		1.44				
05	005	29916	24.0	0.26		1.03 J			<100	
05	005	29922	25.0	0.31		1.19 J				
05	005	29923	26.0	0.33		0.48 J			<100	
05	**005**	**29924**	**27.0**	**0.158**	**0.310**	**0.280**	**0.0026 U**	**0.0026 UJ**	**2.0 J**	**0.13 J**
05	005	29925	29.0	0.18		1.02 J				
05	**005**	**29929**	**30.0**	**0.254**	**1.53**	**1.53**	**0.0026 U**	**0.0026 UJ**	**3.1 J**	**0.11 J**
05	006	30430	-1.0	0.51		0.59 UJ			<100	
05	006	30431	0.0	1.07		3.37				
05	006	30432	1.0	0.65		1.17 J			<100	
05	006	30433	2.0	0.58		1.97 J				
05	006	30434	3.0	0.35		1.69			<100	
05	**006**	**30435**	**4.0**	**0.91**	**0.66**	**0.66**	**0.0027 U**	**0.0027 UJ**	**6.9**	**0.39 J**
05	006	30439	6.0	1.40		2.89				
05	006	30440	7.0	0.98		2.10 J			<100	
05	006	30441	8.0	0.44		1.68 J				
05	006	30442	9.0	0.42		0.66 UJ			<100	
05	006	30448	10.0	0.34		0.91 J				
05	006	30449	11.0	0.26		2.11			<100	
05	006	30450	12.0	0.04		1.10 J				
05	006	30451	13.0	0.36		1.41 J			<100	
05	**006**	**30452**	**14.0**	**0.300**	**0.210**	**0.219**	**0.0026 U**	**0.0026 UJ**	**1.4 J**	**0.11 J**
05	006	30453	16.0	0.54		1.44 J				
05	006	30454	17.0	0.33		0.75 J			<100	
05	006	30455	18.0	0.27		0.74 J				
05	006	30456	19.0	0.34		0.78 J			<100	
05	006	30457	20.0	0.33		1.01 J				
05	006	30458	21.0	0.24		0.87 J			<100	
05	006	30459	22.0	0.37		0.61 J				
05	006	30460	23.0	0.46		1.63 J			<100	
05	**006**	**30461**	**24.0**	**0.115**	**0.187**	**0.268**	**0.0026 U**	**0.0026 UJ**	**1.1 J**	**0.099 J**
05	006	30462	26.0	0.27		0.90 J				
05	006	30463	27.0	0.26		0.58 J			<100	
05	006	30464	28.0	0.26		0.78 J				
05	006	30465	29.0	0.04		0.46 UJ			<100	
05	**006**	**30466**	**30.0**	**0.174**	**0.193**	**0.166**	**0.0028 U**	**0.0028 UJ**	**2.2 J**	**0.22 J**
05	007	30276	-1.0	0.76		1.78 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	007	30277	0.0	0.89		7.78			<100	
05	**007**	**30282**	**1.0**	**0.409**	**2.94**	**2.79**	**0.0025 U**	**0.0025 UJ**	**4.3 J**	**0.37 J**
05	007	30283	3.0	0.37		1.98				
05	007	30284	4.0	0.62		3.29			<100	
05	007	30285	5.0	0.53		2.89				
05	007	30286	6.0	0.44		0.77 J			<100	
05	007	30287	7.0	0.90		3.15				
05	007	30288	8.0	0.62		2.31			<100	
05	007	30289	9.0	0.34		1.82				
05	007	30290	10.0	0.51		0.89 J			<100	
05	**007**	**30291**	**11.0**	**0.209**	**0.292**	**0.237**	**0.0025 U**	**0.0025 UJ**	**3.4 J**	**0.20 J**
05	007	30292	13.0	0.08		0.49				
05	007	30293	14.0	0.28		1.32 J			<100	
05	007	30294	15.0	0.04		1.61 J				
05	007	30295	16.0	0.25		1.23			<100	
05	007	30300	17.0	0.26		1.20				
05	007	30301	18.0	0.03		2.03			<100	
05	007	30302	19.0	0.25		1.80				
05	007	30303	20.0	0.27		1.08			<100	
05	**007**	**30304**	**21.0**	**0.288**	**0.192**	**0.213**	**0.0025 U**	**0.0025 U**	**2.0 J**	**0.22 J**
05	007	30305	23.0	0.39		1.90 J				
05	007	30311	24.0	0.26		1.04 J			<100	
05	007	30312	25.0	0.44		0.95 J				
05	007	30313	26.0	0.05		0.20			<100	
05	007	30314	27.0	0.35		1.02 J				
05	007	30317	28.0	0.25		1.98			<100	
05	007	30318	29.0	0.21		0.73 J				
05	**007**	**30319**	**30.0**	**0.212**	**0.175**	**0.200**	**0.0025 U**	**0.0025 UJ**	**2.7 J**	**0.16 J**
05	008	30089	-1.0	1.06		3.33 J				
05	008	30090	0.0	0.52		0.85			<100	
05	008	30091	2.0	0.62		7.23			<100	
05	008	30092	3.0	0.56		1.65 J				
05	008	30093	4.0	0.94		2.76 J			<100	
05	008	30096	5.0	0.60		5.48				
05	008	30097	6.0	0.62		0.95 UJ			<100	
05	**008**	**30098**	**7.0**	**0.60**	**1.66**	**1.54**	**0.0026 U**	**0.0026 UJ**	**2.0 J**	**0.18 J**
05	008	30099	9.0	0.30		1.89				
05	008	30<100	10.0	0.34		0.48 UJ			<100	
05	008	30101	11.0	0.33		0.44 UJ				
05	008	30102	12.0	0.43		1.42 J			<100	
05	008	30104	13.0	0.31		1.52 J				
05	008	30105	14.0	0.25		1.78 J			<100	
05	008	30111	15.0	0.28		0.53 J				
05	008	30112	16.0	0.27		1.47			<100	
05	**008**	**30113**	**17.0**	**0.069 J**	**0.52**	**0.54**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.11 J**
05	008	30114	19.0	0.40		1.70 J				
05	008	30115	20.0	0.25		0.70			<100	
05	008	30116	21.0	0.29 J		0.78 J				
05	008	30117	22.0	0.05		1.00 J			<100	
05	008	30118	23.0	0.34		1.74				
05	008	30119	24.0	0.33		1.55 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	008	30123	25.0	0.23		1.68				
05	008	30124	26.0	0.19		1.46			<100	
05	**008**	**30127**	**27.0**	**0.120**	**0.203**	**0.228**	**0.0026 U**	**0.0026 UJ**	**1.8 J**	**0.16 J**
05	008	30132	29.0	0.24		1.54 J				
05	**008**	**30133**	**30.0**	**0.146 J**	**0.55**	**0.54**	**0.0026 U**	**0.0026 UJ**	**1.9 J**	**0.20 J**
05	009	29947	-1.0	0.87		2.16 J			<100	
05	009	29948	0.0	0.91		0.54 UJ				
05	009	29949	1.0	0.88		3.64			<100	
05	009	29950	2.0	0.72		19.72 J				
05	009	29952	3.0	0.58		10.67			<100	
05	**009**	**29951**	**4.0**	**0.85**	**1.57**	**1.57**	**0.0025 U**	**0.0025 UJ**	**2.4 J**	**0.11 J**
05	009	29953	6.0	0.71		1.04 J				
05	009	29954	7.0	0.89		1.12 J			<100	
05	009	29955	8.0	0.55		2.18 J				
05	009	29956	9.0	0.35		1.60			<100	
05	009	29957	10.0	0.32		2.03				
05	009	29958	11.0	0.35		1.06 J			<100	
05	009	29959	12.0	0.36		0.47				
05	009	29960	13.0	0.38		0.64 UJ			<100	
05	**009**	**29961**	**14.0**	**0.212**	**0.234**	**0.261**	**0.0025 U**	**0.0025 UJ**	**2.5 J**	**0.19 J**
05	009	29962	16.0	0.32		0.50 J				
05	009	29963	17.0	0.20		1.34 J			<100	
05	009	29964	18.0	0.34		0.51 UJ				
05	009	29965	19.0	0.36		1.26 J			<100	
05	009	29966	20.0	0.33		1.25 J				
05	009	29967	21.0	0.29		2.08			<100	
05	009	29968	22.0	0.30		2.30 J				
05	009	29969	23.0	0.19		1.16 J			<100	
05	**009**	**29970**	**24.0**	**0.250**	**0.177**	**0.142**	**0.0026 U**	**0.0026 UJ**	**1.2 J**	**0.11 J**
05	009	29971	26.0	0.43		1.16 J				
05	009	29972	27.0	0.21		1.03 J			<100	
05	009	29973	28.0	0.24		1.29 J				
05	009	29974	29.0	0.15		1.38			<100	
05	**009**	**29975**	**30.0**	**0.210**	**0.105**	**0.151**	**0.0026 U**	**0.0026 UJ**	**1.5 J**	**0.14 J**
05	010	30467	-1.0	0.52		1.53 J				
05	010	30468	0.0	1.03		0.83			<100	
05	**010**	**30469**	**1.0**	**0.62**	**0.40**	**0.46**	**0.0028 U**	**0.00070 J**	**3.5 J**	**0.34 J**
05	010	30470	3.0	0.58		0.59 UJ				
05	010	30471	4.0	0.41		0.86 J			<100	
05	010	30472	5.0	0.36		1.97				
05	010	30473	6.0	1.09		1.94 J			<100	
05	010	30480	7.0	0.56		0.80 J				
05	010	30481	8.0	0.05		1.10 J			<100	
05	010	30482	9.0	0.39		2.65				
05	010	30483	10.0	0.46		0.58 UJ			<100	
05	**010**	**30484**	**11.0**	**0.166**	**0.198**	**0.195**	**0.0025 U**	**0.0025 UJ**	**2.0 J**	**0.11 J**
05	010	30488	13.0	0.28		1.23				
05	010	30489	14.0	0.34		0.66 J			<100	
05	010	30490	15.0	0.29		1.01 J				
05	010	30491	16.0	0.31		1.65			<100	
05	010	30492	17.0	0.29		0.60 UJ				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	010	30493	18.0	0.25		2.13 J			<100	
05	010	30497	19.0	0.07		2.14				
05	010	30498	20.0	0.22		1.48			<100	
05	**010**	**30499**	**21.0**	**0.176**	**0.147**	**0.182**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.13 J**
05	010	30500	23.0	0.07		0.45 UJ				
05	010	30501	24.0	0.04		0.47 UJ			<100	
05	010	30502	25.0	0.28		0.77 J				
05	010	30515	26.0	0.19		0.62 J			<100	
05	010	30516	27.0	0.29		1.82 J				
05	010	30517	28.0	0.28		0.51			<100	
05	010	30518	29.0	0.03		1.29 J				
05	**010**	**30519**	**30.0**	**0.173**	**0.200**	**0.164**	**0.0026 U**	**0.0026 UJ**	**2.8 J**	**0.16 J**
05	011	30526	-1.0	0.47		1.79 J				
05	011	30527	0.0	0.75		2.19			<100	
05	011	30528	1.0	0.57		1.85 J				
05	011	30529	2.0	0.76		3.02 J			<100	
05	011	30530	3.0	0.89		2.38				
05	011	30531	4.0	1.21		1.91 J			<100	
05	011	30532	5.0	1.15		2.04 J				
05	011	30533	6.0	1.46		1.93 J			<100	
05	**011**	**30539**	**7.0**	**0.86**	**0.76**	**0.68**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.14 J**
05	011	30538	9.0	0.38		2.26				
05	011	30540	10.0	0.38		1.59 J			<100	
05	011	30545	11.0	0.08		3.14 J				
05	011	30546	12.0	0.37		1.07 J			<100	
05	011	30547	13.0	0.51		0.83 J				
05	011	30548	14.0	0.34		1.44 J			<100	
05	011	30553	15.0	0.35		1.39				
05	011	30554	16.0	0.25		1.71 J			<100	
05	**011**	**30564**	**17.0**	**0.265**	**0.41**	**0.42**	**0.0025 U**	**0.0025 UJ**	**0.69 J**	**0.083 J**
05	011	30565	19.0	0.41		0.96 J				
05	011	30566	20.0	0.16		0.39			<100	
05	011	30567	22.0	0.26		0.68 J			<100	
05	011	30568	23.0	0.03		0.62 UJ				
05	011	30569	24.0	0.50		1.51 J			<100	
05	011	30570	25.0	0.27		0.58 J				
05	011	30571	26.0	0.19		0.24 UJ			<100	
05	**011**	**30572**	**27.0**	**0.317**	**0.174**	**0.236**	**0.0025 U**	**0.0025 UJ**	**2.4 J**	**0.26 J**
05	011	30573	29.0	0.16		0.31				
05	**011**	**30574**	**30.0**	**0.316**	**0.228**	**0.247**	**0.0026 U**	**0.0026 UJ**	**5.2**	**0.29 J**
05	012	30204	-1.0	0.68		1.86 J			<100	
05	012	30205	0.0	0.50		1.45				
05	012	30206	1.0	0.74		5.32			<100	
05	012	30207	2.0	0.76		4.55 J				
05	012	30209	3.0	0.84		14.87 J			<100	
05	**012**	**30217**	**4.0**	**0.83**	**7.3**	**7.6**	**0.0028 U**	**0.0028 UJ**	**7.3**	**0.43 J**
05	012	30218	6.0	1.77		5.99				
05	012	30219	7.0	1.43		2.86			<100	
05	012	30220	8.0	1.47		2.74 J				
05	012	30221	9.0	0.37		1.15 J			<100	
05	012	30224	10.0	0.42		2.94				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	012	30225	11.0	0.06		1.98 J			<100	
05	012	30226	12.0	0.38		1.03 J				
05	012	30227	13.0	0.06		0.86 J			<100	
05	**012**	**30236**	**14.0**	**0.245**	**0.39**	**0.329**	**0.0025 U**	**0.0025 UJ**	**2.3 J**	**0.23 J**
05	012	30237	16.0	0.33		0.78 J				
05	012	30238	17.0	0.30		0.73 J			<100	
05	012	30242	18.0	0.37		1.09 J				
05	012	30243	19.0	0.29		0.84 J			<100	
05	012	30244	20.0	0.37		1.18				
05	012	30245	21.0	0.37		1.26 J			<100	
05	012	30254	22.0	0.36		0.92 J				
05	012	30255	23.0	0.22		0.88 J			<100	
05	**012**	**30256**	**24.0**	**0.162**	**0.51**	**0.58**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.18 J**
05	012	30257	26.0	0.26		1.47 J				
05	012	30258	27.0	0.17		0.63 J			<100	
05	012	30259	28.0	0.25		1.27				
05	012	30260	29.0	0.05		2.16			<100	
05	**012**	**30261**	**30.0**	**0.140**	**0.185**	**0.186**	**0.0025 U**	**0.0025 UJ**	**1.6 J**	**0.15 J**
05	013	30147	-1.0	1.10		5.16				
05	013	30148	0.0	1.19		4.35 J			<100	
05	**013**	**30149**	**1.0**	**0.81**	**1.03**	**0.88**	**0.0027 U**	**0.0015 J**	**4.2 J**	**0.37 J**
05	013	30150	3.0	0.75		1.70 J				
05	013	30151	4.0	0.43		1.16 J			<100	
05	013	30152	5.0	0.48		1.30 J				
05	013	30153	6.0	0.68		0.66			<100	
05	013	30155	7.0	0.86		1.90 J				
05	013	30156	8.0	1.06		1.27 J			<100	
05	013	30157	9.0	0.99		2.06				
05	013	30158	10.0	0.27		0.70			<100	
05	**013**	**30159**	**11.0**	**0.278**	**0.247**	**0.265**	**0.0025 U**	**0.0025 UJ**	**2.1 J**	**0.22 J**
05	013	30160	13.0	0.26		1.98				
05	013	30161	14.0	0.36		0.81 J			<100	
05	013	30162	15.0	0.07		1.37 J				
05	013	30163	16.0	0.21		0.44 J			<100	
05	013	30174	17.0	0.33		0.59 J				
05	013	30175	18.0	0.36		1.01 J			<100	
05	013	30182	19.0	0.03		2.00 J				
05	013	30183	20.0	0.26		1.06 J			<100	
05	**013**	**30184**	**21.0**	**0.61**	**0.307**	**0.262**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.17 J**
05	013	30185	23.0	0.37		0.91 J				
05	013	30186	24.0	0.08		2.45			<100	
05	013	30187	25.0	0.30		0.97 J				
05	013	30188	26.0	0.22		1.16 J			<100	
05	013	30189	27.0	0.29		0.91 J				
05	013	30198	28.0	0.25		0.70 J			<100	
05	013	30199	29.0	0.21		0.97				
05	**013**	**30200**	**30.0**	**0.216**	**0.199**	**0.155**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.15 J**
05	014	29910	-1.0	0.74		1.27 J				
05	014	29911	0.0	0.85		3.02 J			<100	
05	014	29912	2.0	0.93		3.10 J			<100	
05	014	29919	3.0	0.74		1.31 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	014	29917	4.0	0.97		4.37 J			<100	
05	014	29920	5.0	0.71		1.08 UJ				
05	014	29918	6.0	0.60		0.98 J			<100	
05	**014**	**29921**	**7.0**	**0.446**	**0.52**	**0.51**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.061 J**
05	014	29926	9.0	0.48		3.90				
05	014	29927	10.0	0.27		1.72 J			<100	
05	014	29928	12.0	0.35		0.77 J			<100	
05	014	29930	13.0	0.40		2.23				
05	014	29931	14.0	0.35		0.69 J			<100	
05	014	29932	15.0	0.25		0.41 UJ				
05	014	29933	16.0	0.30		1.34			<100	
05	**014**	**29934**	**17.0**	**0.212**	**0.220**	**0.330**	**0.0025 U**	**0.0025 UJ**	**1.5 J**	**0.12 J**
05	014	29935	19.0	0.43		1.28 J				
05	014	29936	20.0	0.35		2.47			<100	
05	014	29937	21.0	0.33		2.96 J				
05	014	29938	22.0	0.32		1.33 J			<100	
05	014	29939	24.0	0.29		1.99			<100	
05	014	29940	25.0	0.20		0.64 J				
05	014	29941	26.0	0.02		2.27 J			<100	
05	**014**	**29942**	**27.0**	**0.173**	**0.241**	**0.277**	**0.0025 U**	**0.0025 UJ**	**1.9 J**	**0.13 J**
05	014	29944	29.0	0.27		0.68 J				
05	**014**	**29943**	**30.0**	**0.195**	**0.238**	**0.280**	**0.0025 U**	**0.0025 UJ**	**1.2 J**	**0.12 J**
05	017	30587	-1.0	0.62		1.85 J				
05	017	30588	0.0	0.71		2.31 J			<100	
05	**017**	**30589**	**1.0**	**0.59**	**1.38**	**1.17**	**0.0028 U**	**0.0038 J**	**4.0 J**	**0.39 J**
05	017	30590	3.0	0.72		2.43 J				
05	017	30591	4.0	0.67		1.12 J			<100	
05	017	30592	5.0	0.67		1.87 J				
05	017	30593	6.0	1.01		1.86 J			<100	
05	017	30594	7.0	0.71		1.20 J				
05	017	30595	8.0	1.02		1.05 UJ			<100	
05	017	30596	9.0	0.41		0.57 UJ				
05	017	30597	10.0	0.24		0.37 UJ			<100	
05	**017**	**30598**	**11.0**	**0.247**	**0.280**	**0.221**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.13 J**
05	017	30599	13.0	0.37		0.89 J				
05	017	30600	14.0	0.32		0.31 UJ			<100	
05	017	30601	15.0	0.30		1.31 J				
05	017	30602	16.0	0.30		3.01 J			<100	
05	017	30603	17.0	0.29		1.47 J				
05	017	30604	18.0	0.23		0.44 UJ			<100	
05	017	30605	20.0	0.23		1.37 J			<100	
05	**017**	**30606**	**21.0**	**0.204**	**0.199**	**0.140**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.15 J**
05	017	30607	23.0	0.29		1.16 J				
05	017	30608	24.0	0.27		1.55 J			<100	
05	017	30609	25.0	0.19		0.57 J				
05	017	30610	26.0	0.17		1.40			<100	
05	017	30611	27.0	0.16		0.42 J				
05	017	30612	28.0	0.26		1.53 J			<100	
05	017	30613	29.0	0.29		0.35 J				
05	**017**	**30616**	**30.0**	**0.166**	**0.223**	**0.179**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.12 J**
05	018	30632	-1.0	0.63		1.63 J				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	018	30633	0.0	0.14 UJ		3.23			<100	
05	018	30634	1.0	0.79		2.36				
05	018	30635	2.0	0.83 J		7.89			<100	
05	018	30636	3.0	0.62		1.24 J				
05	018	30637	4.0	0.46		1.66			<100	
05	018	30638	5.0	0.48 J		1.98				
05	018	30639	6.0	0.75		0.45			<100	
05	**018**	**30640**	**7.0**	**0.316**	**0.37**	**0.35**	**0.0025 U**	**0.0025 UJ**	**2.8 J**	**0.12 J**
05	018	30646	9.0	0.47 J		0.45				
05	018	30647	10.0	0.25		1.40			<100	
05	018	30648	11.0	0.42 J		0.80 J				
05	018	30649	12.0	0.10		0.55			<100	
05	018	30650	13.0	0.28 J		0.67 J				
05	018	30651	14.0	0.26 J		0.93 J			<100	
05	018	30652	15.0	0.40		2.41				
05	018	30653	16.0	0.40		0.89 J			<100	
05	**018**	**30654**	**17.0**	**0.190**	**0.232**	**0.174**	**0.0025 U**	**0.0025 UJ**	**1.1 J**	**0.12 J**
05	018	30656	19.0	0.32 J		0.62				
05	018	30657	20.0	0.03		1.21 J			<100	
05	018	30658	21.0	0.22 J		0.78 J				
05	018	30659	22.0	0.19		0.52 J			<100	
05	018	30660	23.0	0.32		0.33				
05	018	30661	24.0	0.36 J		1.36			<100	
05	018	30664	25.0	0.23		1.01				
05	018	30665	26.0	0.32		1.27 J			<100	
05	**018**	**30666**	**27.0**	**0.211**	**0.193**	**0.203**	**0.0025 U**	**0.0025 UJ**	**1.2 J**	**0.21 J**
05	018	30669	29.0	0.07 UJ		1.71				
05	**018**	**30670**	**30.0**	**0.203**	**0.228**	**0.213**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.13 J**
05	019	30706	-1.0	0.72		2.61			<100	
05	019	30707	0.0	0.70		2.12 J				
05	019	30708	1.0	0.71		1.68 J			<100	
05	019	30709	2.0	0.93		1.69				
05	019	30710	3.0	0.99		3.88			<100	
05	**019**	**30711**	**4.0**	**0.45**	**0.94**	**0.83**	**0.0025 U**	**0.0025 UJ**	**2.5 J**	**0.21 J**
05	019	30714	6.0	0.40		1.25 J				
05	019	30715	7.0	0.32		1.37 J			<100	
05	019	30716	8.0	0.42		1.24 J				
05	019	30717	9.0	0.43		1.56 J			<100	
05	019	30718	10.0	0.34		1.20 J				
05	019	30719	11.0	0.37		0.46			<100	
05	019	30720	12.0	0.28		1.94 J				
05	019	30721	13.0	0.37		0.40			<100	
05	**019**	**30728**	**14.0**	**0.224**	**0.185**	**0.261**	**0.0025 U**	**0.0025 UJ**	**1.7 J**	**0.17 J**
05	019	30729	16.0	0.37		1.40 J				
05	019	30730	17.0	0.08		1.87			<100	
05	019	30732	18.0	0.08		1.49 J				
05	019	30731	19.0	0.40		1.15 J			<100	
05	019	30735	20.0	0.31		0.55				
05	019	30736	21.0	0.28		0.82			<100	
05	019	30737	22.0	0.20		0.49				
05	019	30738	23.0	0.31		1.57			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	**019**	**30739**	**24.0**	**0.125**	**0.105**	**0.133**	**0.0026 U**	**0.0026 UJ**	**1.4 J**	**0.12 J**
05	019	30740	26.0	0.27		1.20				
05	019	30741	27.0	0.20		0.48 J			<100	
05	019	30742	28.0	0.31		1.29 J				
05	019	30743	29.0	0.29		1.05 J			<100	
05	**019**	**30744**	**30.0**	**0.109**	**0.207**	**0.160**	**0.0026 U**	**0.0026 UJ**	**3.2 J**	**0.13 J**
05	021	30410	-1.0	0.59		1.29 J				
05	021	30411	0.0	0.87		2.96			<100	
05	021	30412	2.0	0.79		1.97			<100	
05	021	30413	3.0	0.79		2.33				
05	021	30414	4.0	0.80		1.26			<100	
05	021	30415	5.0	0.60		1.84 J				
05	021	30416	6.0	0.29		1.53			<100	
05	**021**	**30417**	**7.0**	**0.73**	**0.83**	**0.79**	**0.0025 U**	**0.0025 UJ**	**3.3 J**	**0.27 J**
05	021	30418	9.0	1.13		0.80 J				
05	021	30419	10.0	0.83		2.53			<100	
05	021	30420	11.0	0.67		0.63				
05	021	30421	12.0	0.26		0.52			<100	
05	021	30422	13.0	0.50		1.63				
05	021	30423	14.0	0.27		1.02 J			<100	
05	021	30424	16.0	0.33		1.38 J			<100	
05	**021**	**30425**	**17.0**	**0.167**	**0.211**	**0.173**	**0.0026 U**	**0.0026 UJ**	**2.0 J**	**0.21 J**
05	021	30426	19.0	0.25		2.27 J				
05	021	30427	20.0	0.24		0.39			<100	
05	021	30428	21.0	0.23		0.98 J				
05	021	30429	22.0	0.29		1.08 J			<100	
05	021	30436	24.0	0.33		1.31 J			<100	
05	021	30437	25.0	0.29		2.63				
05	021	30438	26.0	0.33		2.17 J			<100	
05	**021**	**30443**	**27.0**	**0.218**	**0.290**	**0.227**	**0.0025 U**	**0.0025 UJ**	**5.7**	**0.20 J**
05	021	30444	29.0	0.25		1.96				
05	**021**	**30447**	**30.0**	**0.174**	**0.273**	**0.257**	**0.0026 U**	**0.0026 UJ**	**6.2**	**0.15 J**
05	022	30352	-1.0	0.51		0.76			<100	
05	022	30353	1.0	0.99		2.46 J			<100	
05	022	30354	2.0	0.85		8.21				
05	022	30355	3.0	0.95		4.20			<100	
05	**022**	**30356**	**4.0**	**0.74**	**0.58**	**0.57**	**0.0025 U**	**0.0025 UJ**	**7.4**	**0.43 J**
05	022	30357	6.0	1.42		2.04				
05	022	30358	7.0	1.17		2.61 J			<100	
05	022	30359	8.0	0.82		1.90 J				
05	022	30360	9.0	0.57		0.66			<100	
05	022	30361	10.0	1.26		3.24				
05	022	30362	11.0	0.89		3.68			<100	
05	022	30365	12.0	0.78		2.76 J				
05	022	30366	13.0	0.24		0.68 J			<100	
05	**022**	**30370**	**14.0**	**0.156**	**0.37**	**0.36**	**0.0025 U**	**0.0025 UJ**	**2.2 J**	**0.15 J**
05	022	30371	16.0	0.48		1.52 J				
05	022	30372	17.0	0.23		1.32 J			<100	
05	022	30386	18.0	0.26		1.24				
05	022	30387	19.0	0.33		1.47			<100	
05	022	30388	21.0	0.32		0.78 J			<100	

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	022	30389	22.0	0.27		0.58				
05	022	30390	23.0	0.29		0.36			<100	
05	**022**	**30391**	**24.0**	**0.125**	**0.230**	**0.188**	**0.0025 U**	**0.0025 UJ**	**1.3 J**	**0.13 J**
05	022	30392	26.0	0.33		2.40				
05	022	30393	27.0	0.48		0.83 J			<100	
05	022	30396	28.0	0.36		1.23				
05	022	30397	29.0	0.19		1.50 J			<100	
05	**022**	**30398**	**30.0**	**0.219**	**0.176**	**0.173**	**0.0025 U**	**0.0025 UJ**	**2.2 J**	**0.13 J**
05	023	30678	0.0	0.65		0.70			<100	
05	**023**	**30679**	**1.0**	**0.63**	**0.89**	**0.81**	**0.0028 U**	**0.019 J**	**5.3 J**	**0.41 J**
05	023	30680	3.0	0.48		1.33 J				
05	023	30681	4.0	0.77		1.27 J			<100	
05	023	30682	5.0	0.54		2.33				
05	023	30683	6.0	0.67 J		2.20			<100	
05	023	30684	7.0	0.60		0.78 J				
05	023	30685	8.0	1.19 J		1.64 J			<100	
05	023	30686	9.0	1.08		3.37				
05	023	30687	10.0	0.26		0.68 J			<100	
05	**023**	**30688**	**11.0**	**0.199**	**0.295**	**0.213**	**0.0026 U**	**0.0026 UJ**	**1.9 J**	**0.14 J**
05	023	30689	13.0	0.34		1.84				
05	023	30690	14.0	0.38 J		1.36 J			<100	
05	023	30691	15.0	0.47		0.47				
05	023	30692	16.0	0.31		1.05 J			<100	
05	023	30693	17.0	0.22		2.41				
05	023	30694	18.0	0.21		1.56 J			<100	
05	023	30695	19.0	0.28		1.33 J				
05	023	30696	20.0	0.07		0.47 J			<100	
05	**023**	**30697**	**21.0**	**0.252**	**0.176**	**0.264**	**0.0026 U**	**0.0026 UJ**	**0.82 J**	**0.088 J**
05	023	30698	23.0	0.24		0.56 J				
05	023	30699	24.0	0.27		0.53			<100	
05	023	30700	25.0	0.21		1.41				
05	023	30701	26.0	0.21		1.34			<100	
05	023	30702	27.0	0.25		0.74 J				
05	023	30703	28.0	0.32		1.77			<100	
05	023	30704	29.0	0.24 J		1.07 J				
05	**023**	**30705**	**30.0**	**0.263**	**0.236**	**0.231**	**0.0026 U**	**0.0026 UJ**	**1.0 J**	**0.16 J**
05	024	29836	2.0	0.78		20.57			<100	
05	024	29837	4.0	0.65		4.67			68.3 J	
05	024	29842	5.0	0.48		4.22				
05	024	29843	6.0	0.95		0.80 J			<100	
05	**024**	**29847**	**7.0**	**0.95**	**0.93**	**0.84**	**0.0026 U**	**0.0026 UJ**	**4.1 J**	**0.31 J**
05	024	29848	9.0	0.47		2.15 J				
05	024	29849	10.0	0.24		2.36			<100	
05	024	29850	11.0	0.39		1.59				
05	024	29851	12.0	0.35		0.53			<100	
05	024	29852	13.0	0.49		1.73				
05	024	29853	14.0	0.34		0.39			<100	
05	024	29854	15.0	0.07		2.07				
05	024	29855	16.0	0.21		0.32			<100	
05	**024**	**29862**	**17.0**	**0.227**	**0.46**	**0.333**	**0.0025 U**	**0.0025 UJ**	**1.2 J**	**0.13 J**
05	024	29867	19.0	0.25		1.82				

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	024	29868	20.0	0.24		0.28 J			<100	
05	024	29869	21.0	0.28		1.59				
05	024	29870	22.0	0.17		0.49			<100	
05	024	29871	23.0	0.29		1.90				
05	024	29872	24.0	0.26		0.46 J			<100	
05	024	29877	25.0	0.25		5.41				
05	024	29878	26.0	0.22		0.64			<100	
05	**024**	**29881**	**27.0**	**0.212**	**0.212**	**0.190**	**0.0025 U**	**0.0025 UJ**	**2.1 J**	**0.17 J**
05	024	29882	29.0	0.21		1.10				
05	**024**	**29883**	**30.0**	**0.211**	**0.252**	**0.212**	**0.0025 U**	**0.0025 UJ**	**1.6 J**	**0.13 J**

Table 1
SU03, SU04 and SU05 Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

R - Validation qualifier used to indicate that the result is considered unusable.
U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection lin of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).
DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.
SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.
NS - Not sampled due to insufficient recovery.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.
[ ] Result is above Site cleanup level.

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	001	26658	4.0	0.45	0.85	0.42	0.0025 U	0.0025 U	2.3 J	0.14 J
03	001	26673	14.0	0.306	0.51	0.382	0.0026 U	0.0026 U	1.3 J	0.17 J
03	001	26698	24.0	0.120	0.173	0.178	0.0027 U	0.0027 U	1.5 J	0.14 J
03	001	26709	30.0	0.094 J	0.121	0.136	0.0026 U	0.0026 U	1.4 J	0.15 J
03	002	26414	1.0	0.81	9.8	6.50	0.0025 U	0.0027 U	6.8	0.34 J
03	002	26446	11.0	0.144	0.209	0.186	0.0026 U	0.0026 U	1.3 J	0.13 J
03	002	26479	21.0	0.119	0.158	0.199	0.00075 J	0.0025 U	1.6 J	0.087 J
03	002	26504	30.0	0.218	0.153	0.172	0.0012 J	0.0026 U	2.3 J	0.16 J
03	003	26539	7.0	0.87	0.55	0.72	0.0026 U	0.0026 U	2.9 J	0.14 J
03	003	26566	17.0	0.151	0.215	0.188	0.0026 U	0.0026 U	4.8	0.19 J
03	003	26617	27.0	0.207	0.171	0.202	0.0026 U	0.0026 U	1.7 J	0.13 J
03	003	26619	30.0	0.148	0.218	0.186	0.0027 U	0.0027 U	2.3 J	0.15 J
03	004	26723	1.0	0.95	9.2	5.87	0.0076 J	0.042	10.1	0.55 J
03	004	26779	11.0	0.137	0.290	0.253	0.0025 R	0.0025 U	1.1 J	0.082 J
03	004	26813	21.0	0.177	0.151	0.155	0.0025 R	0.0025 U	1.1 J	0.088 J
03	004	26832	30.0	0.143	0.212	0.246	0.0025 R	0.0025 U	1.6 J	0.11 J
03	005	26856	7.0	0.66	2.32	1.82	0.0028 U	0.0028 U	11.9	0.85
03	005	26896	17.0	0.168	0.192	0.144	0.0025 U	0.0025 U	2.3 J	0.24 J
03	005	26926	27.0	0.152	0.173	0.122	0.0025 U	0.0025 U	1.5 J	0.21 J
03	005	26936	30.0	0.162	0.197	0.186	0.0025 U	0.0025 U	2.7 J	0.32 J
03	006	27089	4.0	0.81	6.33	5.31	0.0016 J	0.022 J	9.2	0.36 J
03	006	27118	14.0	0.206	0.291	0.286	0.0025 U	0.0025 U	1.9 J	0.26 J
03	006	27166	24.0	0.256	0.54	0.51	0.0026 U	0.0026 U	1.4 J	0.17 J
03	006	27171	30.0	0.429	0.64	0.58	0.0025 U	0.0025 U	1.8 J	0.19 J
03	007	27738	7.0	1.17	2.05	1.65	0.0025 U	0.0025 UJ	4.0 J	0.27 J
03	007	27752	17.0	0.240	0.323	0.297	0.0026 U	0.0026 U	0.95 J	0.083 J
03	007	27761	27.0	0.273	0.220	0.236	0.0025 U	0.0025 U	1.4 J	0.13 J
03	007	27766	30.0	0.174	0.170	0.211	0.00048 J	0.00065 J	2.4 J	0.13 J
03	008	27626	4.0	0.95	1.06	1.00	0.00095 J	0.020 U	8.7	0.51 J
03	008	27658	14.0	0.254	0.79	0.47	0.0025 U	0.0025 UJ	1.7 J	0.16 J
03	008	27678	24.0	0.231	0.422	0.258	0.0025 U	0.0025 UJ	1.3 J	0.13 J
03	008	27697	30.0	0.142	0.233	0.198	0.0025 U	0.0025 UJ	1.4 J	0.19 J
03	009	27404	1.0	0.68	5.79	3.92	0.0013 J	0.019	18.5	0.43 J
03	009	27426	11.0	0.378	1.86	1.49	0.0025 U	0.0025 U	1.7 J	0.22 J
03	009	27439	21.0	0.196	0.422	0.447	0.0025 U	0.0025 U	1.1 J	0.11 J
03	009	27452	30.0	0.212	0.71	0.67	0.0026 U	0.0026 U	2.5 J	0.20 J
03	010	27256	7.0	0.62	2.59	2.66	0.0025 U	0.0060	2.7 J	0.26 J
03	010	27280	17.0	0.107	0.429	0.401	0.0025 U	0.0025 U	1.1 J	0.041 J
03	010	27298	27.0	0.329	0.35	0.221	0.0026 U	0.0026 U	1.2 J	0.51 U
03	010	27300	30.0	0.291	0.229	0.237	0.0025 U	0.0025 U	1.5 J	0.081 J
03	011	27856	1.0	0.58	4.92	3.37	0.00053 J	0.0017 J	26.0	0.31 J
03	011	27867	11.0	0.277	0.61	0.53	0.0026 U	0.0026 U	2.3 J	0.23 J
03	011	27885	21.0	0.160	0.77	0.57	0.0025 U	0.0025 U	1.3 J	0.19 J
03	011	27912	30.0	0.152	1.46	1.30	0.0025 U	0.0025 U	2.1 J	0.21 J
03	012	27474	7.0	0.59	0.49	0.359	0.0025 U	0.00062 J	3.7 J	0.23 J
03	012	27497	17.0	0.126	0.138	0.118	0.0025 U	0.0025 U	0.71 J	0.080 J
03	012	27533	27.0	0.201	0.190	0.193	0.0025 U	0.0025 U	1.8 J	0.13 J
03	012	27535	30.0	0.130	0.170	0.157	0.0025 U	0.0025 U	1.8 J	0.13 J
03	013	27321	4.0	0.82	6.74	6.38	0.110 J	5.1 J	34.3 J	0.36 J
03	013	27336	14.0	0.184	0.80	0.84	0.0026 U	0.00068 J	1.9 J	0.19 J
03	013	27366	24.0	0.268	0.258	0.212	0.0025 U	0.0011 J	1.5 J	0.13 J
03	013	27382	30.0	0.224	0.241	0.128	0.0025 U	0.0025 U	1.6 J	0.15 J

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
03	014	28134	7.0	0.41	4.97	5.12	0.00059 J	0.0025 U	3.9 J	0.15 J
03	014	28152	17.0	0.136	0.78	0.71	0.00045 J	0.0025 U	1.7 J	0.12 J
03	014	28170	27.0	0.164	0.61	0.61	0.0025 U	0.0025 U	1.4 J	0.13 J
03	014	28175	30.0	0.153	0.307	0.347	0.0025 U	0.0025 U	2.0 J	0.21 J
03	015	27958	4.0	0.79	9.0	8.0	0.0055	0.390 U	37.8	0.39 J
03	015	27974	14.0	0.123	1.06	0.94	0.0025 U	0.0025 U	5.1	0.20 J
03	015	27998	24.0	0.191	0.431	0.468	0.0025 U	0.0025 U	3.6 J	0.43 J
03	015	28011	30.0	0.162	0.320	0.268	0.0025 U	0.0025 U	3.2 J	0.26 J
03	016	27567	1.0	0.87	8.6	7.9	0.0027 R	0.0027 R	5.6	0.28 J
03	016	27576	11.0	0.142	0.82	0.76	0.0025 U	0.0020 J	1.4 J	0.14 J
03	016	27590	21.0	0.148	0.52	0.62	0.0025 U	0.0025 U	0.81 J	0.081 J
03	016	27606	30.0	0.203	0.236	0.284	0.0026 U	0.0026 U	1.5 J	0.12 J
03	018	28020	1.0	0.61	2.10	2.08	0.0026 U	0.0066	21.5	0.36 J
03	018	28041	11.0	0.174	8.2	8.9	0.0025 U	0.0025 U	10.3	0.30 J
03	018	28060	21.0	0.447	4.31	4.18	0.0025 U	0.0025 U	1.8 J	0.22 J
03	018	28081	30.0	0.194	2.58	2.57	0.0025 U	0.0025 U	4.9	0.24 J
03	019	28216	7.0	1.59	1.22	1.36	0.0011 J	0.0010 J	10.4	0.62
03	019	28241	17.0	0.139	0.279	0.296	0.0025 U	0.0025 U	1.8 J	0.058 J
03	019	28263	27.0	0.178	0.313	0.235	0.0025 U	0.0025 U	2.9 J	0.12 J
03	019	28270	30.0	0.217	0.383	0.394	0.0026 U	0.0026 U	3.0 J	0.24 J
03	020	28329	4.0	0.74	3.60	3.23	0.00082 J	0.034	4.4	0.25 J
03	020	28341	14.0	0.271	0.51	0.411	0.0025 U	0.0025 U	1.7 J	0.18 J
03	020	28351	24.0	0.266	0.185	0.219	0.0026 U	0.0026 U	1.3 J	0.093 J
03	020	28364	30.0	0.163	0.186	0.165	0.0025 U	0.0025 U	2.1 J	0.12 J
03	022	28275	1.0	0.73	16.2	16.3	0.0052 U	0.087 U	105	0.43 J
03	022	28284	11.0	0.177	0.381	0.304	0.0025 U	0.0025 U	2.0 J	0.15 J
03	022	28300	21.0	0.240	0.139	0.209	0.0025 U	0.0025 U	1.0 J	0.12 J
03	022	28317	30.0	0.229	0.212	0.197	0.0026 U	0.0026 U	2.6 J	0.18 J
03	023	28385	7.0	0.75	0.58	0.55	0.0025 U	0.0025 U	2.5 J	0.13 J
03	023	28393	17.0	0.208	0.246	0.209	0.0025 U	0.0025 U	2.3 J	0.13 J
03	023	28405	27.0	0.151	0.131	0.157	0.0026 U	0.0026 U	3.6 J	0.14 J
03	023	28411	30.0	0.258	0.236	0.247	0.0025 U	0.0025 U	4.8	0.17 J
04	001	28913	4.0	0.363	0.332	0.369	0.0028 U	0.0028 U	2.5 J	0.17 J
04	001	28939	14.0	0.283	0.144	0.225	0.0026 U	0.0026 U	1.6 J	0.15 J
04	001	28960	24.0	0.241 J	0.177	0.171	0.0027 U	0.0027 U	1.2 J	0.059 J
04	001	28970	30.0	0.134	0.114	0.136	0.0026 U	0.0026 U	2.5 J	0.13 J
04	002	28756	1.0	1.00	0.95	0.85	0.0030 U	0.0033	9.9	0.75
04	002	28773	11.0	0.203	0.187	0.176	0.0026 U	0.0026 U	1.6 J	0.12 J
04	002	28789	21.0	0.163	0.178	0.177	0.0026 U	0.0026 U	0.99 J	0.11 J
04	002	28798	30.0	0.228	0.263	0.171	0.0026 U	0.0026 U	1.5 J	0.20 J
04	003	28718	7.0	0.230	0.66	0.89	0.0026 U	0.0026 U	2.7 J	0.26 J
04	003	28733	17.0	0.158	0.216	0.175	0.0027 U	0.0027 U	1.6 J	0.22 J
04	003	28742	27.0	0.124	0.146	0.186	0.0026 U	0.0026 U	0.95 J	0.20 J
04	003	28744	30.0	0.138	0.242	0.184	0.0026 U	0.0026 U	1.5 J	0.18 J
04	004	29001	11.0	0.249	0.303	0.315	0.0025 U	0.0025 U	1.2 J	0.15 J
04	004	29013	21.0	0.406 J	0.288	0.294	0.0026 U	0.0026 U	1.8 J	0.15 J
04	004	29025	30.0	0.237	0.77	0.293	0.0026 U	0.0026 U	1.7 J	0.13 J
04	005	28814	7.0	0.192	0.274	0.338	0.0026 U	0.0026 U	2.8 J	0.27 J
04	005	28826	17.0	0.188	0.129	0.161	0.0026 U	0.0026 U	1.4 J	0.089 J
04	005	28849	27.0	0.106	0.143	0.115	0.0026 U	0.0026 U	2.1 J	0.15 J
04	005	28856	30.0	0.185	0.182	0.253	0.0026 U	0.0026 U	2.4 J	0.22 J
04	006	28872	4.0	0.56	0.324	0.339	0.0025 U	0.0025 U	2.6 J	0.16 J

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	006	28884	14.0	0.220	0.201	0.159	0.0025 U	0.0025 U	2.5 J	0.15 J
04	006	28893	24.0	0.276	0.194	0.195	0.0026 U	0.0026 U	0.90 J	0.070 J
04	006	28900	30.0	0.126 J	0.151	0.180	0.0026 U	0.0026 U	2.5 J	0.16 J
04	007	28431	1.0	0.82	7.85	4.71	0.0016 J	0.012 U	8.8	0.40 J
04	007	28440	11.0	0.265	0.360	0.267	0.0025 U	0.0025 U	2.1 J	0.18 J
04	007	28454	21.0	0.124	0.180	0.153	0.0025 U	0.0025 U	1.3 J	0.13 J
04	007	28468	30.0	0.108	0.143	0.199	0.0025 U	0.0025 U	0.38 J	0.12 J
04	008	29112	4.0	0.432 J	0.47	0.44	0.0025 U	0.0025 U	1.1 J	0.27 J
04	008	29132	14.0	0.162 J	0.191	0.185	0.0025 U	0.0025 U	1.4 J	0.089 J
04	008	29149	24.0	0.151 J	0.231	0.168	0.0025 U	0.0025 U	0.75 J	0.5 U
04	008	29164	30.0	0.130 J	0.197	0.184	0.0025 U	0.0025 U	1.8 J	0.11 J
04	009	29053	1.0	NS	NS	NS	0.0027 R	0.0027 R	8.6	0.49 J
04	009	29063	11.0	0.183 J	0.381	0.303	0.0025 U	0.0025 U	1.8 J	0.12 J
04	009	29078	21.0	0.174 J	0.293	0.281	0.00075 J	0.470 J	0.74 J	0.16 J
04	009	29094	30.0	0.201 J	0.265	0.239	0.0025 U	0.032	1.0 J	0.12 J
04	010	28492	7.0	0.68	0.69	0.61	0.0025 U	0.0025 U	2.7 J	0.24 J
04	010	28501	17.0	0.200	0.49	0.62	0.0025 U	0.0020 J	0.68 J	0.085 J
04	010	28512	27.0	0.267	0.301	0.296	0.0025 U	0.0025 U	2.3 J	0.13 J
04	010	28516	30.0	0.280	0.260	0.349	0.0025 U	0.00089 J	1.7 J	0.29 J
04	011	29412	1.0	0.70	0.96	0.73	0.0027 U	0.0022 J	5.0	0.29 J
04	011	29426	11.0	0.184	0.238	0.222	0.0025 U	0.0025 UJ	1.6 J	0.13 J
04	011	29439	21.0	0.249	0.198	0.208	0.0025 U	0.0025 UJ	0.89 J	0.10 J
04	011	29450	30.0	0.228	0.192	0.136	0.0025 U	0.0025 UJ	0.78 J	0.093 J
04	012	29377	7.0	0.85	0.53	0.66	0.0027 U	0.0027 U	4.2	0.26 J
04	012	29389	17.0	0.155	0.205	0.165	0.0025 U	0.0025 U	1.1 J	0.055 J
04	012	29398	27.0	0.094 J	0.122	0.130	0.0025 U	0.0025 UJ	1.9 J	0.22 J
04	012	29400	30.0	0.097 J	0.075 J	0.123	0.0025 U	0.0025 UJ	2.0 J	0.21 J
04	013	29299	4.0	0.478 J	0.85	0.65	0.0025 U	0.0025 U	4.1	0.19 J
04	013	29319	14.0	0.233 J	0.202	0.194	0.0025 U	0.0025 U	1.6 J	0.11 J
04	013	29337	24.0	0.233	0.185	0.203	0.0025 U	0.0025 U	1.4 J	0.11 J
04	013	29344	30.0	0.176	0.147	0.161	0.0025 U	0.0025 U	1.9 J	0.10 J
04	014	28536	1.0	0.46	1.78	1.53	0.0026 U	0.014	14.6	0.34 J
04	014	28550	11.0	0.196	0.406	0.420	0.0025 U	0.0025 U	0.83 J	0.14 J
04	014	28562	21.0	0.168	0.408	0.335	0.0025 U	0.0025 U	4 U	0.051 J
04	014	28570	30.0	0.216	0.347	0.366	0.0025 U	0.0025 U	0.46 J	0.076 J
04	015	29712	11.0	0.84	1.47	1.49	0.0029 U	0.0029 UJ	12.3	0.37 J
04	015	29731	21.0	0.200	0.256	0.342	0.0025 U	0.0025 UJ	1.6 J	0.16 J
04	015	29749	30.0	0.171	0.289	0.282	0.0025 U	0.0025 UJ	1.8 J	0.18 J
04	016	29655	4.0	0.76	5.82	5.64	0.0027 U	0.0027 J	6.2	0.37 J
04	016	29668	14.0	0.179	0.81	0.71	0.0025 U	0.0025 UJ	1.5 J	0.16 J
04	016	29686	24.0	0.142	0.236	0.234	0.0025 U	0.0025 UJ	1.4 J	0.14 J
04	016	29697	30.0	0.126	0.331	0.233	0.0025 U	0.0025 UJ	2.0 J	0.14 J
04	017	29542	1.0	0.81	8.0	7.6	0.0014 J	0.032 J	30.8	0.34 J
04	017	29607	11.0	0.289	0.55	0.54	0.0026 U	0.0026 UJ	0.98 J	0.13 J
04	017	29616	21.0	0.202	0.424	0.45	0.0026 U	0.0026 UJ	1.0 J	0.17 J
04	017	29627	30.0	0.126	0.268	0.226	0.0026 U	0.0026 UJ	1.3 J	0.15 J
04	018	28654	7.0	0.341	0.52	0.48	0.0025 U	0.0025 U	3.1 J	0.22 J
04	018	28668	17.0	0.202	0.48	0.388	0.0025 U	0.0025 U	0.28 J	0.066 J
04	018	28681	27.0	0.112	0.268	0.230	0.0025 U	0.0025 U	2.4 J	0.12 J
04	018	28684	30.0	0.168	0.361	0.288	0.0026 U	0.0056	3.0 J	0.15 J
04	019	29764	11.0	0.242	1.49	1.42	0.0026 U	0.0026 UJ	3.3 J	0.22 J
04	019	29773	21.0	0.134	6.24	6.32	0.0025 U	0.0025 UJ	2.1 J	0.12 J

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
04	019	29783	30.0	0.142	2.01	2.34	0.0025 U	0.0025 UJ	3.2 J	0.19 UJ
04	020	29798	7.0	0.222	14.1	12.7	0.0025 U	0.0025 UJ	102 J	0.14 UJ
04	020	29813	17.0	0.211	9.2	9.3	0.0025 U	0.0025 UJ	2.5 J	0.083 UJ
04	020	29830	27.0	0.124	7.7	8.1	0.0025 U	0.0025 UJ	1.9 J	0.15 UJ
04	020	29832	30.0	0.247	9.9	10.7	0.0026 U	0.0026 UJ	1.8 J	0.18 J
04	021	29495	4.0	0.61	9.1	8.9	0.0027 U	0.010 J	42.3	0.35 J
04	021	29508	14.0	0.236	1.11	1.26	0.0026 U	0.0026 UJ	3.0 J	0.13 J
04	021	29526	24.0	0.167	0.70	0.75	0.0026 U	0.0026 UJ	0.56 J	0.088 J
04	021	29538	30.0	0.361	0.465	0.326	0.0025 U	0.0025 UJ	2.2 J	0.16 J
04	022	28575	1.0	0.66	2.05	2.14	0.00064 J	0.023	1.1 J	0.16 J
04	022	28593	11.0	0.168	0.350	0.308	0.0025 U	0.0025 U	5.5	0.29 J
04	022	28604	21.0	0.125	0.268	0.203	0.0025 U	0.0025 U	1.1 J	0.12 J
04	022	28622	30.0	0.135	0.155	0.172	0.0026 U	0.0026 U	1.4 J	0.13 J
05	001	30367	1.0	0.383	0.58	0.59	0.0026 R	0.0026 R	2.9 J	0.20 J
05	001	30379	11.0	0.311	0.271	0.203	0.0025 U	0.0025 UJ	2.7 J	0.19 J
05	001	30401	21.0	0.245	0.196	0.198	0.0025 U	0.0025 UJ	1.9 J	0.15 J
05	001	30409	30.0	0.127	0.174	0.105	0.0025 U	0.0025 UJ	1.9 J	0.14 J
05	002	30331	7.0	0.54	0.346	0.43	0.0025 U	0.0025 UJ	1.4 J	0.13 J
05	002	30340	17.0	0.158	0.200	0.138	0.0025 U	0.0025 UJ	1.8 J	0.12 J
05	002	30350	27.0	0.202	0.155	0.182	0.0025 U	0.0025 UJ	1.4 J	0.12 J
05	002	30351	30.0	0.129	0.182	0.162	0.0025 U	0.0025 UJ	2.7 J	0.15 J
05	003	30040	4.0	0.375	2.79	2.80	0.0025 U	0.0025 UJ	2.3 J	0.21 J
05	003	30055	14.0	0.212	0.79	0.80	0.0026 U	0.0026 UJ	4.0 J	0.30 J
05	003	30075	24.0	0.172	0.185	0.169	0.0026 U	0.0026 UJ	1.7 J	0.11 J
05	003	30086	30.0	0.149	0.340	0.46	0.0026 U	0.0026 UJ	2.6 J	0.18 J
05	004	29985	1.0	0.54	6.81	6.87	0.0027 U	0.00068 J	15.2	0.27 J
05	004	29993	11.0	0.193	0.38	0.44	0.0026 U	0.0026 UJ	1.5 J	0.20 J
05	004	30017	21.0	0.197	1.29	1.17	0.0026 U	0.0026 UJ	2.7 J	0.15 J
05	004	30032	30.0	0.147	0.51	0.44	0.0026 U	0.0026 UJ	2.6 J	0.31 J
05	005	29898	7.0	0.281	0.43	0.42	0.0025 U	0.0025 UJ	0.86 J	0.10 J
05	005	29907	17.0	0.308	0.57	0.68	0.0028 U	0.0028 UJ	1.6 J	0.11 J
05	005	29924	27.0	0.158	0.310	0.280	0.0026 U	0.0026 UJ	2.0 J	0.13 J
05	005	29929	30.0	0.254	1.53	1.53	0.0026 U	0.0026 UJ	3.1 J	0.11 J
05	006	30435	4.0	0.91	0.66	0.66	0.0027 U	0.0027 UJ	6.9	0.39 J
05	006	30452	14.0	0.300	0.210	0.219	0.0026 U	0.0026 UJ	1.4 J	0.11 J
05	006	30461	24.0	0.115	0.187	0.268	0.0026 U	0.0026 UJ	1.1 J	0.099 J
05	006	30466	30.0	0.174	0.193	0.166	0.0028 U	0.0028 UJ	2.2 J	0.22 J
05	007	30282	1.0	0.409	2.94	2.79	0.0025 U	0.0025 UJ	4.3 J	0.37 J
05	007	30291	11.0	0.209	0.292	0.237	0.0025 U	0.0025 UJ	3.4 J	0.20 J
05	007	30304	21.0	0.288	0.192	0.213	0.0025 U	0.0025 U	2.0 J	0.22 J
05	007	30319	30.0	0.212	0.175	0.200	0.0025 U	0.0025 UJ	2.7 J	0.16 J
05	008	30098	7.0	0.60	1.66	1.54	0.0026 U	0.0026 UJ	2.0 J	0.18 J
05	008	30113	17.0	0.069 J	0.52	0.54	0.0025 U	0.0025 UJ	1.3 J	0.11 J
05	008	30127	27.0	0.120	0.203	0.228	0.0026 U	0.0026 UJ	1.8 J	0.16 J
05	008	30133	30.0	0.146 J	0.55	0.54	0.0026 U	0.0026 UJ	1.9 J	0.20 J
05	009	29951	4.0	0.85	1.57	1.57	0.0025 U	0.0025 UJ	2.4 J	0.11 J
05	009	29961	14.0	0.212	0.234	0.261	0.0025 U	0.0025 UJ	2.5 J	0.19 J
05	009	29970	24.0	0.250	0.177	0.142	0.0026 U	0.0026 UJ	1.2 J	0.11 J
05	009	29975	30.0	0.210	0.105	0.151	0.0026 U	0.0026 UJ	1.5 J	0.14 J
05	010	30469	1.0	0.62	0.40	0.46	0.0028 U	0.00070 J	3.5 J	0.34 J
05	010	30484	11.0	0.166	0.198	0.195	0.0025 U	0.0025 UJ	2.0 J	0.11 J
05	010	30499	21.0	0.176	0.147	0.182	0.0025 U	0.0025 UJ	1.3 J	0.13 J

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Survey Unit	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
05	010	30519	30.0	0.173	0.200	0.164	0.0026 U	0.0026 UJ	2.8 J	0.16 J
05	011	30539	7.0	0.86	0.76	0.68	0.0025 U	0.0025 UJ	1.9 J	0.14 J
05	011	30564	17.0	0.265	0.41	0.42	0.0025 U	0.0025 UJ	0.69 J	0.083 J
05	011	30572	27.0	0.317	0.174	0.236	0.0025 U	0.0025 UJ	2.4 J	0.26 J
05	011	30574	30.0	0.316	0.228	0.247	0.0026 U	0.0026 UJ	5.2	0.29 J
05	012	30217	4.0	0.83	7.3	7.6	0.0028 U	0.0028 UJ	7.3	0.43 J
05	012	30236	14.0	0.245	0.39	0.329	0.0025 U	0.0025 UJ	2.3 J	0.23 J
05	012	30256	24.0	0.162	0.51	0.58	0.0025 U	0.0025 UJ	1.7 J	0.18 J
05	012	30261	30.0	0.140	0.185	0.186	0.0025 U	0.0025 UJ	1.6 J	0.15 J
05	013	30149	1.0	0.81	1.03	0.88	0.0027 U	0.0015 J	4.2 J	0.37 J
05	013	30159	11.0	0.278	0.247	0.265	0.0025 U	0.0025 UJ	2.1 J	0.22 J
05	013	30184	21.0	0.61	0.307	0.262	0.0025 U	0.0025 UJ	1.3 J	0.17 J
05	013	30200	30.0	0.216	0.199	0.155	0.0025 U	0.0025 UJ	1.9 J	0.15 J
05	014	29921	7.0	0.446	0.52	0.51	0.0025 U	0.0025 UJ	1.7 J	0.061 J
05	014	29934	17.0	0.212	0.220	0.330	0.0025 U	0.0025 UJ	1.5 J	0.12 J
05	014	29942	27.0	0.173	0.241	0.277	0.0025 U	0.0025 UJ	1.9 J	0.13 J
05	014	29943	30.0	0.195	0.238	0.280	0.0025 U	0.0025 UJ	1.2 J	0.12 J
05	017	30589	1.0	0.59	1.38	1.17	0.0028 U	0.0038 J	4.0 J	0.39 J
05	017	30598	11.0	0.247	0.280	0.221	0.0025 U	0.0025 UJ	1.3 J	0.13 J
05	017	30606	21.0	0.204	0.199	0.140	0.0025 U	0.0025 UJ	1.7 J	0.15 J
05	017	30616	30.0	0.166	0.223	0.179	0.0025 U	0.0025 UJ	1.7 J	0.12 J
05	018	30640	7.0	0.316	0.37	0.35	0.0025 U	0.0025 UJ	2.8 J	0.12 J
05	018	30654	17.0	0.190	0.232	0.174	0.0025 U	0.0025 UJ	1.1 J	0.12 J
05	018	30666	27.0	0.211	0.193	0.203	0.0025 U	0.0025 UJ	1.2 J	0.21 J
05	018	30670	30.0	0.203	0.228	0.213	0.0025 U	0.0025 UJ	1.3 J	0.13 J
05	019	30711	4.0	0.45	0.94	0.83	0.0025 U	0.0025 UJ	2.5 J	0.21 J
05	019	30728	14.0	0.224	0.185	0.261	0.0025 U	0.0025 UJ	1.7 J	0.17 J
05	019	30739	24.0	0.125	0.105	0.133	0.0026 U	0.0026 UJ	1.4 J	0.12 J
05	019	30744	30.0	0.109	0.207	0.160	0.0026 U	0.0026 UJ	3.2 J	0.13 J
05	021	30417	7.0	0.73	0.83	0.79	0.0025 U	0.0025 UJ	3.3 J	0.27 J
05	021	30425	17.0	0.167	0.211	0.173	0.0026 U	0.0026 UJ	2.0 J	0.21 J
05	021	30443	27.0	0.218	0.290	0.227	0.0025 U	0.0025 UJ	5.7	0.20 J
05	021	30447	30.0	0.174	0.273	0.257	0.0026 U	0.0026 UJ	6.2	0.15 J
05	022	30356	4.0	0.74	0.58	0.57	0.0025 U	0.0025 UJ	7.4	0.43 J
05	022	30370	14.0	0.156	0.37	0.36	0.0025 U	0.0025 UJ	2.2 J	0.15 J
05	022	30391	24.0	0.125	0.230	0.188	0.0025 U	0.0025 UJ	1.3 J	0.13 J
05	022	30398	30.0	0.219	0.176	0.173	0.0025 U	0.0025 UJ	2.2 J	0.13 J
05	023	30679	1.0	0.63	0.89	0.81	0.0028 U	0.019 J	5.3 J	0.41 J
05	023	30688	11.0	0.199	0.295	0.213	0.0026 U	0.0026 UJ	1.9 J	0.14 J
05	023	30697	21.0	0.252	0.176	0.264	0.0026 U	0.0026 UJ	0.82 J	0.088 J
05	023	30705	30.0	0.263	0.236	0.231	0.0026 U	0.0026 UJ	1.0 J	0.16 J
05	024	29847	7.0	0.95	0.93	0.84	0.0026 U	0.0026 UJ	4.1 J	0.31 J
05	024	29862	17.0	0.227	0.46	0.333	0.0025 U	0.0025 UJ	1.2 J	0.13 J
05	024	29881	27.0	0.212	0.212	0.190	0.0025 U	0.0025 UJ	2.1 J	0.17 J
05	024	29883	30.0	0.211	0.252	0.212	0.0025 U	0.0025 UJ	1.6 J	0.13 J

Table 2
SU03, SU04 and SU05 Soil Boring Sample Results
Severn Trent Laboratories, Inc.

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

R - Validation qualifier used to indicate that the result is considered unusable.
U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.
NS - Not sampled due to insufficient recovery.
Blank cell indicates analysis was not performed.
Result is above Site cleanup level.

Table 3
100 Building Focused Sampling Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
C12	DL21	12521	1.0	0.66		5.14			
C12	DL21	12544	2.0	0.61		4.28			
C12	DL21	12576	3.0	0.45		10.49			
C12	DL21	12578	4.0	0.17		25.87			
C12	DL21	12579	5.0	0.29		4.69			
C12	DL21	12580	6.0	0.05		3.27			
C12	DL21	12602	7.0	0.50		3.93			
C12	DL21	12603	8.0	0.55		4.55			
C12	DL21	12604	9.0	0.44		7.31 J			
C12	**DL21**	**12600**	**10.0**	**0.54**	**3.15**	**3.18**	**0.0026 U**	**0.0020 J**	**6.7**
D13	DL20	12601	1.0	0.73		4.79			
G16	DL12	12144	1.0	0.86		9.06 J			
G16	DL12	12145	2.0	0.86		28.85			
G16	DL12	12193	3.0	0.65		5.77			
G16	DL12	12211	4.0	0.81		11.73			
G16	DL12	12216	5.0	0.82		9.38			
G16	DL12	12227	6.0	0.64		5.02			
G16	DL12	12247	7.0	0.79		6.88			
G16	DL12	12248	8.0	0.47		4.29			
G16	DL12	12256	9.0	0.39		4.37 J			
G16	**DL12**	**12257**	**10.0**	**0.66**	**2.03**	**1.34**	**0.0025 U**	**0.0025 UJ**	**3.4 J**
G16	DL18	12530	1.0	0.73		4.38			
G16	DL18	12536	2.0	0.81		25.40			
G17	DL17	12525	1.0	0.50		5.48			
G17	DL17	12526	2.0	0.90		16.41			
G17	DL17	12528	3.0	0.52		4.83			
G17	DL17	12582	4.0	0.79		15.34			
G18	DL01	12101	1.0	1.06		5.27			
G18	DL01	12102	2.0	0.78		13.47			
G18	DL01	12103	3.0	0.84		19.20			
G18	DL01	12429	4.0	0.07		34.12			
G18	DL01	12430	5.0	0.74 J		4.46			
G18	DL01	12431	6.0	0.38		3.96			
G18	DL01	12432	7.0	0.05 UJ		8.07			
G18	DL01	12433	8.0	0.54		14.93			
G18	DL01	12434	9.0	0.40 J		7.75			
G18	DL01	12435	10.0	0.44		15.14			
G18	DL01	12443	11.0	0.27		9.82			
G18	DL01	12444	12.0	0.25		3.06			
G18	DL01	12445	13.0	0.26		2.78			
G18	DL01	12446	14.0	0.03		5.51 J			
G18	**DL01**	**12447**	**15.0**	**0.30 J**	**2.05**	**2.20**	**0.0026 U**	**0.00098 J**	**21.8**
G18	DL02	12064	1.0	0.97		6.69 J			
G18	DL02	12065	2.0	1.37		28.12			
G18	DL02	12084	3.0	0.62		4.36			
G18	DL02	12085	4.0	1.03		6.02			
G18	DL02	12086	5.0	0.48		3.61			
G18	DL02	12087	6.0	0.30		3.40			
G18	DL02	12088	7.0	0.35		11.59			
G18	DL02	12092	8.0	0.37		8.12			

Table 3
100 Building Focused Sampling Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
G18	DL02	12097	9.0	0.49		5.20			
G18	DL02	12100	10.0	0.33		3.50			
G18	DL02	12448	11.0	0.20 J		3.17			
G18	DL02	12450	12.0	0.46 J		3.84			
G18	DL02	12451	13.0	0.03 UJ		3.08			
G18	DL02	12452	14.0	0.21		5.45			
G18	**DL02**	**12453**	**15.0**	**0.35 J**	**4.18**	**3.92**	**0.0027 U**	**0.0051 J**	**3.4 J**
H18	DL15	12440	0.0	0.56		4.13			
H18	DL15	12441	1.0	0.72		5.40			
H18	DL15	12442	2.0	0.91 J		10.36			
H18	DL15	12449	3.0	0.65		11.54			
H18	DL15	12454	4.0	0.88		25.28			
H18	DL15	12455	5.0	6.04		107.42			
H18	DL15	12456	6.0	0.81		20.62			
H19	DL09	12132	1.0	1.32		17.84			
H19	DL09	12133	2.0	0.92		22.36			
H19	DL09	12425	3.0	0.98		27.85			
H19	**DL09**	**12422**	**4.0**	2.81 J		221.46	**3.8 J**	**380 U**	**1630**
H19	DL09	12436	5.0	1.11		78.27			
H19	DL09	12437	6.0	1.43 J		36.86	0.507 J	43.195	
H19	DL09	12438	7.0	1.68		6.13			
H19	DL09	12439	8.0	1.01 J		4.72			
I11	DL03	12142	0.0	0.84		4.80			
I11	DL03	12143	1.0	0.85		4.65			
I11	DL03	12166	2.0	0.55		4.63			
I11	DL03	12167	3.0	0.34		3.30			
I11	DL03	12168	4.0	0.42		3.43			
I11	DL03	12169	5.0	0.44		8.55			
I11	DL03	12172	6.0	0.40		6.34			
I11	**DL03**	**12359**	**17.0**	0.34		8.96			**2.3 J**
I11	DL03	12360	18.0	0.21		3.09			
I11	DL03	12361	19.0	0.16		2.43			
I19	DL11	12119	1.0	1.17		23.44			
I19	DL11	12131	2.0	0.70		9.93			
I19	DL11	12426	3.0	0.59		11.54			
I19	DL11	12427	4.0	0.95 J		4.03			
I19	DL11	12428	5.0	0.96		7.16 J			
I19	DL11	12401	6.0	0.58		3.67			
I19	DL11	12403	7.0	0.40		4.00 J			
I19	DL11	12404	8.0	0.05		3.73			
I19	DL11	12405	9.0	0.26		2.60			
I19	DL11	12408	10.0	0.32		3.19			
I19	DL11	12409	11.0	0.29		3.18			
I19	DL11	12411	12.0	0.20		2.43			
I19	DL11	12412	13.0	0.22		3.63			
I19	DL11	12419	14.0	0.40		4.15			
I19	**DL11**	**12420**	**15.0**	**0.43**	**1.15**	**1.07**	**0.0026 U**	**0.00057 J**	**3.6 J**
K14	DL14	12396	1.0	1.03		5.08			
K14	DL14	12397	2.0	0.78		7.46			
K14	DL14	12398	3.0	1.35		12.46			

Table 3
100 Building Focused Sampling Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
K14	DL14	12399	4.0	0.72		4.95			
K14	DL14	12400	5.0	0.59		4.22			
L14	DL05	12352	1.0	0.76		5.52			
L14	DL05	12353	2.0	0.88		4.94			
L14	DL05	12354	3.0	1.76		12.21			
L14	DL05	12372	4.0	1.46		17.22			
L14	DL05	12373	5.0	0.93 J		11.67			
L14	DL05	12374	6.0	0.56		10.16 J			
L14	DL05	12375	7.0	0.41		6.31 J			
L14	DL05	12376	8.0	0.46		3.53 UJ			
L14	DL05	12377	9.0	0.39		3.45 UJ			
L14	DL05	12378	10.0	0.54		6.68 J			
L14	DL05	12379	11.0	0.40		3.37 UJ			
L14	DL05	12380	12.0	0.38		3.86 UJ			
L14	DL05	12381	13.0	0.44		3.89			
L14	DL05	12382	14.0	0.28		3.45			
L14	DL05	12383	15.0	0.28		3.14 UJ			
L14	DL05	12384	16.0	0.32		5.84 J	0.105	0.105	
L14	DL05	12385	17.0	0.32		4.26 J			
L14	DL05	12388	18.0	0.19		3.08 UJ			
L14	DL05	12391	19.0	0.06 UJ		3.66			
L14	**DL05**	**12392**	**20.0**	**0.30 J**	**1.42**	**0.74**	**0.0025 U**	**0.0013 J**	**0.38 J**
L14	DL19	12481	0.0	0.51		3.34			
L14	DL19	12482	1.0	1.13		4.94			
L14	DL19	12484	2.0	1.05		6.59			
L14	DL19	12488	3.0	0.97		10.47			
L14	DL19	12494	4.0	1.47		19.76			
L14	DL19	12546	6.0	1.15		10.14			
L14	DL19	12547	7.0	0.32		3.32			
L14	DL19	12548	8.0	0.36		3.69			
L14	DL19	12549	9.0	0.45		3.82			
L14	DL19	12553	10.0	0.39		4.01 J			
L14	DL19	12554	11.0	0.46		4.62			
L14	DL19	12555	12.0	0.31		2.86			
L14	DL19	12556	13.0	0.29		2.50			
L14	DL19	12557	14.0	0.27		3.15			
L14	DL19	12558	15.0	0.30		3.15			
L14	**DL19**	**12586**	**15.5**	**0.36 J**	**11.6**	**0.91**	**0.0026 U**	**0.0077 J**	**2.5 J**
M14	DL06	11830	1.0	0.74		4.30			
M14	DL06	11831	2.0	0.66		8.42 J			
M14	DL06	11832	3.0	1.00		5.42			
M14	DL06	11843	4.0	0.76		6.38			
M14	DL06	12293	5.0	1		10.26 J			
M14	DL06	12297	6.0	1.47 J		11.61			
M14	DL06	12299	7.0	0.81 J		9.65			
M14	DL06	12300	8.0	0.93		15.07			
M14	DL06	12309	9.0	0.79		4.15			
M14	DL06	12310	10.0	0.93 J		7.30			
M14	DL06	12402	11.0	0.65		5.40			
M14	DL06	12406	12.0	0.71		9.01			

Table 3
100 Building Focused Sampling Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
M14	DL06	12407	13.0	0.62		5.81			
M14	DL06	12410	14.0	0.76		7.23			
M14	DL06	12415	15.0	0.67		8.30			
M14	DL06	12416	16.0	0.57		5.16			
M14	DL06	12417	17.0	0.63		6.13			
N15	DL07	12364	0.0	0.57 J		4.35			
N15	DL07	12365	1.0	0.65		4.26			
N15	DL07	12366	2.0	1.05 J		10.90			
N15	DL07	12367	3.0	0.96		22.00			
N15	DL07	12368	4.0	0.92		10.27 J			
N15	DL07	12369	5.0	0.40		3.14			
N15	DL07	12370	6.0	0.52		6.68			
N15	DL07	12371	7.0	0.65		5.60			
N15	**DL07**	**12386**	**24.0**	1.68		124.79 J			**955 J**
N15	DL07	12387	24.5	1.53		119.27			
N15	DL07	12389	25.0	0.47		9.38	0.095	6.132	
N15	DL07	12390	26.0	0.26		6.85 J			
N15	**DL07**	**12393**	**27.0**	**0.41**	**8.26**	**8.31**	**0.00064 J**	**0.190 J**	**10.0**
N15	DL07	12413	27.5	0.21		5.48			
N15	DL07	12414	28.0	0.29		3.51			
N15	DL07	12418	29.0	0.14		2.52			
N15	**DL07**	**12421**	**30.0**	**0.34 J**	**3.49**	**3.25**	**0.0026 U**	**0.015 J**	**2.1 J**
O15	DL16	12457	1.0	0.90		7.87			
O15	DL16	12458	2.0	0.76		4.19			
O15	DL16	12459	3.0	1.21		7.60			
O15	DL16	12460	4.0	0.79 J		5.44			
O15	DL16	12461	5.0	0.75		8.06 J			
O15	DL16	12462	6.0	0.40 J		4.73 J			
O15	DL16	12463	7.0	0.26		2.72			
O15	DL16	12464	8.0	0.31		3.72			
O15	DL16	12465	9.0	0.40		3.15			
O15	DL16	12466	10.0	0.24		2.53			
O15	DL16	12470	11.0	0.25		3.32			
O15	DL16	12469	12.0	0.12		2.25			
O15	DL16	12476	13.0	0.20 J		2.77			
O18	DL10	12199	0.0	0.64		3.99			
O18	DL10	12200	1.0	0.54		5.41			
O18	DL10	12204	2.0	0.95		17.99			
O18	DL10	12209	3.0	0.94		19.96			
O18	DL10	12210	4.0	0.79		8.02			
O18	DL10	12218	5.0	0.44		3.37			
O18	DL10	12219	6.0	0.62		15.47			
O18	DL10	12231	7.0	0.59		8.31			
O18	DL10	12232	8.0	1.10		13.93			
O18	DL10	12237	9.0	0.69		24.17			
O18	DL10	12238	10.0	0.73		74.78			
O18	DL10	12239	11.0	0.69		81.39			
O18	DL10	12255	12.0	0.57 J		51.24			
O18	DL10	12258	13.0	0.47		37.52			
O18	DL10	12273	14.0	0.30		40.30			

Table 3
100 Building Focused Sampling Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
O18	DL10	12274	15.0	0.40		51.62			
O18	DL10	12285	16.0	0.31		42.36			
O18	DL10	12286	17.0	0.19		36.72			
O18	DL10	12291	18.0	0.20		23.02			
O18	DL10	12292	19.0	0.19 J		11.03			
O18	DL10	12298	20.0	0.20		11.15			
O18	**DL10**	**12313**	**20.5**	**0.50**	**32.7**	**34.4**	**0.0026 U**	**0.0084 J**	**17.3**
O18	DL13	12311	0.0	0.72		12.03			
O18	DL13	12312	1.0	0.94 J		19.60			
O18	DL13	12316	2.0	0.65		7.34			
O18	DL13	12317	3.0	0.76 J		10.91			
O18	DL13	12336	4.0	0.70		4.23			
O18	DL13	12337	5.0	0.76		5.87			
O18	DL13	12342	6.0	0.46		4.31			
O18	DL13	12343	7.0	0.72		4.45			
O18	DL13	12344	8.0	0.38		6.31			
O18	DL13	12345	9.0	0.39		9.66			
O18	DL13	12346	10.0	0.51		11.09			
O18	DL13	12347	11.0	0.71		19.26			
O18	DL13	12348	12.0	0.43		20.72			
O18	DL13	12349	13.0	0.45		21.96			
O18	DL13	12350	14.0	0.24		82.70			
O18	DL13	12351	15.0	0.24		71.52			
O18	DL13	12355	16.0	0.19		13.07			
O18	DL13	12356	17.0	0.29		18.42			
O18	DL13	12357	18.0	0.38		24.56			
O18	DL13	12358	19.0	0.23		7.95			
O18	DL13	12362	20.0	0.20		9.28			
O18	**DL13**	**12363**	**20.5**	**0.23 J**	**24.4**	**24.3**	**0.0026 U**	**0.0039 J**	**4.4**

Table 3
100 Building Focused Sampling Sample Results

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 3 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.
SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I11	01	01	20994	15.0	NS		NS			<100	
I11	**01**	**01**	**21018**	**16.0**	**1.60**	**0.166**	**0.185**	**0.0027 U**	**0.0028**	**12.5**	**0.53 UJ**
I11	01	01	21019	19.0	0.29		2.08			<100	
I11	01	01	21020	21.0	NS		NS			<100	
I11	01	01	21021	22.0	0.36		2.11				
I11	01	01	21022	23.0	0.21		0.31			<100	
I11	01	01	21032	25.0	0.35		1.11			<100	
I11	01	01	21033	26.0	0.34		0.73 J				
I11	01	01	21034	27.0	0.22		1.18 J			<100	
I11	01	01	21043	28.0	0.20		1.64				
I11	01	01	21044	29.0	0.20		0.47 J			<100	
I11	**01**	**01**	**21059**	**30.0**	**0.145**	**0.202**	**0.165**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.51 UJ**
I11	01	02	21064	1.0	1.03		0.86 J			<100	
I11	01	02	21067	3.0	0.78		6.27			<100	
I11	01	02	21073	5.0	1.00		2.54			<100	
I11	01	02	21078	6.0	0.43		1.42				
I11	01	02	21079	7.0	0.49		1.83 J			40.5 J	
I11	01	02	21086	9.0	0.54		2.55			<100	
I11	01	02	21087	11.0	0.36 J		1.42			<100	
I11	01	02	21116	13.0	0.37		1.02 J			<100	
I11	01	02	21117	15.0	0.72 J		5.11			<100	
I11	01	02	21118	16.0	0.36 J		2.09				
I11	01	02	21119	17.0	0.36		0.80 J			<100	
I11	01	02	21132	18.0	0.23		0.88				
I11	01	02	21133	19.0	0.31 J		0.85 J			<100	
I11	01	02	21134	20.0	0.15		1.53				
I11	01	02	21135	21.0	0.19 J		1.59			<100	
I11	01	02	21141	22.0	0.25		0.77 J				
I11	01	02	21142	23.0	0.27		0.79			<100	
I11	01	02	21150	25.0	0.17 J		0.93 J			<100	
I11	01	02	21151	26.0	0.27 J		1.29 J				
I11	01	02	21152	27.0	0.26 J		0.89			<100	
I11	01	02	21176	28.0	0.16		1.55				
I11	01	02	21177	29.0	0.28 J		1.02 J			<100	
I11	**01**	**02**	**21178**	**30.0**	**0.267**	**0.224**	**0.235**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.52 U**
I11	01	03	21291	1.0	0.96		3.09 J			<100	
I11	01	03	21292	2.0	0.70		6.08 J				
I11	01	03	21293	3.0	0.51 J		1.03 J			<100	
I11	01	03	21300	5.0	0.95		3.14 J			<100	
I11	01	03	21301	6.0	0.68 J		2.10				
I11	01	03	21302	7.0	0.29		0.55			<100	
I11	01	03	21303	9.0	0.79		1.31 J			<100	
I11	01	03	21309	11.0	0.31 J		3.84			<100	
I11	01	03	21310	12.0	0.29		1.24				
I11	01	03	21311	13.0	0.23		1.66 J			<100	
I11	01	03	21312	15.0	0.40 J		2.55 J			<100	
I11	01	03	21313	16.0	0.31		1.67				
I11	01	03	21314	17.0	0.23		0.51 UJ			<100	
I11	01	03	21315	19.0	0.06 UJ		0.38			<100	
I11	01	03	21316	21.0	0.19		0.54 J			<100	
I11	01	03	21317	22.0	0.30		0.51 J				
I11	01	03	21318	23.0	0.17		0.26			<100	
I11	01	03	21319	25.0	0.26 J		1.14 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I11	01	03	21323	26.0	0.33		2.14				
I11	01	03	21324	27.0	0.27		0.93 J			<100	
I11	01	03	21333	29.0	0.32		0.51			<100	
I11	**01**	**03**	**21338**	**30.0**	**0.168**	**0.193**	**0.209**	**0.0026 U**	**0.0026 U**	**1.1 J**	**0.078 J**
I11	01	04	21345	1.0	1.10 J		3.93			<100	
I11	01	04	21346	2.0	0.74		1.16				
I11	01	04	21347	3.0	0.99		7.08			<100	
I11	01	04	21354	4.0	1.20		2.49				
I11	01	04	21355	5.0	0.94		1.83			<100	
I11	01	04	21364	6.0	0.64		1.75				
I11	01	04	21365	7.0	0.04 UJ		1.35 J			<100	
I11	01	04	21366	9.0	0.62		1.99			<100	
I11	01	04	21367	11.0	0.03 UJ		0.75			<100	
I11	01	04	21369	12.0	0.19		0.94 J				
I11	01	04	21370	13.0	0.34		0.78 J			<100	
I11	01	04	21371	15.0	0.40 J		1.16 J			<100	
I11	01	04	21372	16.0	0.32		1.59				
I11	01	04	21373	17.0	0.29 J		1.15 J			<100	
I11	01	04	21390	19.0	0.21		0.36			<100	
I11	01	04	21393	21.0	0.38		0.84			<100	
I11	01	04	21394	22.0	0.17		0.72 J				
I11	01	04	21395	23.0	0.17		0.77			<100	
I11	01	04	21396	25.0	0.08 UJ		0.62			<100	
I11	01	04	21397	26.0	0.26		1.29				
I11	01	04	21398	27.0	0.27		0.53			<100	
I11	01	04	21422	29.0	0.27 J		0.68 J			<100	
I11	**01**	**04**	**21423**	**30.0**	**0.194**	**0.126**	**0.148**	**0.0026 U**	**0.0026 U**	**1.6 J**	**0.080 J**
I11	01	05	21203	1.0	1.05 J		1.22 J			<100	
I11	01	05	21204	2.0	1.37		3.85				
I11	01	05	21205	3.0	1.15 J		2.35			<100	
I11	01	05	21217	4.0	1.01		2.17				
I11	01	05	21218	5.0	1.08		1.94			<100	
I11	01	05	21227	7.0	0.55 J		1.09 J			<100	
I11	01	05	21228	9.0	0.85		1.94			<100	
I11	01	05	21243	11.0	0.31		1.84			<100	
I11	01	05	21244	12.0	0.49 J		1.06				
I11	01	05	21245	13.0	0.25 J		2.08			<100	
I11	01	05	21246	15.0	0.27		0.68 J			<100	
I11	01	05	21247	16.0	0.27 J		0.64				
I11	01	05	21248	17.0	0.06 UJ		0.53 J			<100	
I11	01	05	21251	19.0	0.03 UJ		0.57			<100	
I11	01	05	21252	21.0	0.19		1.91 J			<100	
I11	01	05	21253	22.0	0.18		1.06 J				
I11	01	05	21254	23.0	0.21		1.06			<100	
I11	01	05	21256	24.0	0.19		0.91 J				
I11	01	05	21257	25.0	0.05		1.26 J			<100	
I11	01	05	21274	27.0	0.30		0.75 J			<100	
I11	01	05	21275	28.0	0.15		0.37 UJ				
I11	01	05	21276	29.0	0.18 J		0.65 J			<100	
I11	**01**	**05**	**21278**	**30.0**	**0.143**	**42.1**	**35.8**	**0.0026 U**	**0.0026 U**	**1.2 J**	**0.51 U**
I11	02	01	20847	7.0	1.39		10.34			<100	
I11	02	01	20848	9.0	NS		NS			<100	
I11	02	01	20849	11.0	NS		NS			41.8 J	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I11	02	01	20850	13.0	1.01		9.62			44.9 J	
I11	02	01	20859	14.0	0.57		4.77				
I11	02	01	20860	15.0	0.29		2.54			<100	
I11	02	01	20884	16.0	0.20		2.00				
I11	02	01	20885	17.0	0.20		0.74			<100	
I11	02	01	20886	18.0	0.30		1.31				
I11	02	01	20887	19.0	0.06		1.26			<100	
I11	02	01	20888	20.0	0.05		0.92 J				
I11	02	01	20889	21.0	0.25		0.79 J			<100	
I11	02	01	20893	22.0	0.03		2.26 J				
I11	02	01	20894	23.0	0.25		0.43 J			<100	
I11	02	01	20900	24.0	0.05		0.38				
I11	02	01	20901	25.0	0.06		0.58 J			<100	
I11	02	01	20902	26.0	0.29		0.98 J				
I11	02	01	20903	27.0	0.27		2.02			<100	
I11	02	01	20908	28.0	0.18 J		0.99 J				
I11	02	01	20909	29.0	0.20		0.64 J			<100	
I11	**02**	**01**	**20910**	**30.0**	**0.112**	**0.131**	**0.123 J**	**0.0026 U**	**0.0026 U**	**1.9 J**	**0.52 UJ**
I11	02	02	20989	1.0	1.51		2.39			<100	
I11	02	02	20990	2.0	0.64		1.80				
I11	02	02	20991	3.0	0.83		2.06			<100	
I11	02	02	20997	5.0	0.71		2.28 J			<100	
I11	02	02	20998	6.0	0.66		0.93 J				
I11	02	02	20999	7.0	0.73		1.12 J			<100	
I11	02	02	21001	10.0	0.28		0.52 J				
I11	02	02	21002	11.0	0.29		0.55			<100	
I11	02	02	21004	13.0	0.22		0.65			<100	
I11	02	02	21005	14.0	0.38		1.62				
I11	02	02	21006	15.0	0.27		0.25			<100	
I11	02	02	21009	16.0	0.23		1.47				
I11	02	02	21010	17.0	0.21		0.41			<100	
I11	02	02	21012	18.0	0.32		0.97				
I11	02	02	21013	19.0	0.29		0.99 J			<100	
I11	02	02	21016	20.0	0.22		0.87 J				
I11	02	02	21017	21.0	0.30		0.57 J			<100	
I11	02	02	21023	22.0	0.32		0.47 J				
I11	02	02	21024	23.0	0.20		0.51 J			<100	
I11	02	02	21026	24.0	0.27		0.28				
I11	02	02	21027	25.0	0.26		1.08 J			<100	
I11	02	02	21028	26.0	0.20		0.22				
I11	02	02	21029	27.0	0.03		0.59 J			<100	
I11	02	02	21045	28.0	0.24		0.76 J				
I11	02	02	21046	29.0	0.24		0.32 J			<100	
I11	**02**	**02**	**21048**	**30.0**	**0.115**	**0.138**	**0.143**	**0.0026 U**	**0.0026 U**	**1.7 J**	**0.51 U**
I11	02	03	20920	4.0	0.70		1.86 J				
I11	02	03	20921	5.0	0.45		1.47 J			<100	
I11	02	03	20922	7.0	0.52		1.54			<100	
I11	02	03	20927	9.0	0.66		1.55 J			<100	
I11	02	03	20928	11.0	0.26		2.47			<100	
I11	02	03	20935	12.0	0.20		0.35				
I11	02	03	20936	13.0	0.19		1.29			<100	
I11	02	03	20937	14.0	0.40		0.66				
I11	02	03	20938	15.0	0.26		3.13			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
I11	02	03	20939	16.0	0.34		1.85				
I11	02	03	20940	17.0	0.21		0.74 J			<100	
I11	02	03	20945	18.0	0.03		2.43				
I11	02	03	20946	19.0	0.07		2.35 J			<100	
I11	02	03	20947	20.0	0.29		2.16				
I11	02	03	20948	21.0	0.04		1.14			<100	
I11	02	03	20959	22.0	0.16		1.36				
I11	02	03	20960	23.0	0.25		1.39			<100	
I11	02	03	20961	24.0	0.42		1.42 J				
I11	02	03	20962	25.0	0.19		1.38			<100	
I11	02	03	20963	26.0	0.23		0.78				
I11	02	03	20964	27.0	0.26		0.37			<100	
I11	02	03	20971	28.0	0.21		1.07 J				
I11	02	03	20972	29.0	0.29		0.62			<100	
I11	**02**	**03**	**20978**	**30.0**	**0.111**	**0.158**	**0.140**	**0.0026 U**	**0.0026 U**	**1.3 J**	**0.51 U**
I11	02	05	21069	4.0	0.61		1.99				
I11	02	05	21070	5.0	0.30		2.70			<100	
I11	02	05	21071	6.0	0.43		0.55 J				
I11	02	05	21072	7.0	0.76		0.90			<100	
I11	02	05	21074	8.0	0.25		0.70 J				
I11	02	05	21075	9.0	0.42		0.95 J			<100	
I11	02	05	21076	10.0	0.23		0.40				
I11	02	05	21077	11.0	0.29		1.33			<100	
I11	02	05	21084	12.0	0.29		1.26 J				
I11	02	05	21085	13.0	0.32		2.89 J			<100	
I11	02	05	21088	14.0	0.23		0.45 J				
I11	02	05	21089	15.0	0.29 J		0.42 J			<100	
I11	02	05	21090	16.0	0.28 J		0.76 J				
I11	02	05	21091	17.0	0.21 J		1.20			<100	
I11	02	05	21093	18.0	0.22		0.44				
I11	02	05	21092	19.0	0.28 J		0.32			<100	
I11	02	05	21094	20.0	0.48 J		0.56				
I11	02	05	21095	21.0	0.23 J		0.63 J			<100	
I11	02	05	21110	22.0	0.16		0.23				
I11	02	05	21111	23.0	0.21 J		0.51 J			<100	
I11	02	05	21112	24.0	0.31 J		1.23				
I11	02	05	21113	25.0	0.26 J		0.72 J			<100	
I11	02	05	21114	26.0	0.15		0.41				
I11	02	05	21115	27.0	0.18 J		0.81 J			<100	
I11	02	05	21121	28.0	0.20		0.49 J				
I11	02	05	21122	29.0	0.20		1.75			42.5 J	
I11	**02**	**05**	**21123**	**30.0**	**0.163**	**0.140**	**0.108 J**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.52 U**
L14	03	01	21510	5.0	0.98 J		7.28			<100	
L14	03	01	21511	6.0	NS		NS	0.105	1.982		
L14	03	01	21512	7.0	0.40 J		5.19			<100	
L14	03	01	21516	9.0	0.62		6.33 J			<100	
L14	03	01	21519	11.0	0.82		4.57			<100	
L14	03	01	21520	13.0	NS		NS			50.4 J	
L14	03	01	21537	15.0	NS		NS			<100	
L14	03	01	21538	17.0	0.46		9.86			<100	
L14	03	01	21539	19.0	0.06		1.73			<100	
L14	03	01	21547	21.0	0.25		2.30			<100	
L14	03	01	21554	22.0	0.22		1.54				

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
L14	03	01	21555	23.0	0.28		1.35 J			<100	
L14	03	01	21580	25.0	0.25		1.50			<100	
L14	03	01	21581	26.0	0.21		2.19				
L14	03	01	21582	27.0	0.06		0.58 J			<100	
L14	03	01	21598	29.0	0.07		0.45			<100	
L14	**03**	**01**	**21599**	**30.0**	**0.150**	**0.199 J**	**0.199 J**	**0.113**	**0.113**	**1.5 J**	**0.085 J**
L14	03	02	21731	1.0	0.88		3.56			<100	
L14	03	02	21732	3.0	NS		NS			<100	
L14	03	02	21733	5.0	0.96		11.75			<100	
L14	03	02	21734	7.0	0.55		2.16			<100	
L14	03	02	21735	9.0	NS		NS			<100	
L14	03	02	21740	11.0	0.77		1.66			<100	
L14	03	02	21741	13.0	0.67		2.57			<100	
L14	03	02	21746	14.0	0.26		1.39				
L14	03	02	21747	15.0	0.31		1.85			<100	
L14	03	02	21748	16.0	0.35		2.77 J				
L14	03	02	21749	17.0	0.38		1.59			<100	
L14	03	02	21756	18.0	0.33		0.66				
L14	03	02	21757	19.0	0.20		1.35			<100	
L14	03	02	21758	20.0	0.19		1.28				
L14	03	02	21759	21.0	0.06		0.80 J			<100	
L14	03	02	21760	22.0	0.28		1.46 J				
L14	03	02	21761	23.0	0.24		1.06 J			<100	
L14	03	02	21765	25.0	0.40		0.61			<100	
L14	03	02	21766	26.0	0.25		1.00				
L14	03	02	21767	27.0	0.19		0.35			<100	
L14	03	02	21768	28.0	0.26		0.58 J				
L14	03	02	21769	29.0	0.33		0.40			<100	
L14	**03**	**02**	**21770**	**30.0**	**0.146**	**0.152**	**0.134**	**0.0025 U**	**0.0025 U**	**1.3 R**	**0.060 J**
L14	03	03	21618	1.0	0.86		0.92 J			<100	
L14	03	03	21619	2.0	0.79		3.31				
L14	03	03	21620	3.0	1.07		5.83			<100	
L14	03	03	21621	5.0	0.57		1.30 J			<100	
L14	03	03	21637	6.0	0.80		1.76				
L14	03	03	21638	7.0	0.73		2.38			<100	
L14	03	03	21639	8.0	0.28		0.90 J				
L14	03	03	21640	9.0	0.38		3.35 J			<100	
L14	03	03	21641	11.0	0.33		0.90 J			<100	
L14	03	03	21646	13.0	0.11		1.22 J			<100	
L14	03	03	21649	15.0	0.05		0.65 J			<100	
L14	03	03	21650	16.0	0.42		1.44 J				
L14	03	03	21651	17.0	0.27		1.80			<100	
L14	03	03	21654	19.0	0.25		1.82 J			<100	
L14	03	03	21655	21.0	0.39		1.42			<100	
L14	03	03	21656	22.0	0.24		0.58 J				
L14	03	03	21657	23.0	0.30		0.14			<100	
L14	03	03	21664	25.0	0.22		0.43			<100	
L14	03	03	21665	26.0	0.26		1.67 J				
L14	03	03	21666	27.0	0.32		1.18			<100	
L14	03	03	21669	28.0	0.15		0.93 J				
L14	03	03	21670	29.0	0.25		0.74 J			<100	
L14	**03**	**03**	**21673**	**30.0**	**0.187**	**0.127**	**0.140**	**0.0026 U**	**0.0026 U**	**1.1 R**	**0.066 J**
L14	03	04	21773	1.0	0.59		1.47 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
L14	03	04	21774	3.0	0.83		14.30			42.2 J	
L14	03	04	21776	5.0	0.68		10.59			<100	
L14	03	04	21784	6.0	0.74		3.61				
L14	03	04	21785	7.0	0.10		0.84			<100	
L14	03	04	21786	8.0	0.56		0.74 J				
L14	03	04	21787	9.0	0.48		0.91 J			<100	
L14	03	04	21788	11.0	0.27		1.32 J			<100	
L14	03	04	21789	13.0	0.34		0.60			<100	
L14	03	04	21790	15.0	0.30		1.41			<100	
L14	03	04	21801	16.0	0.24		1.40 J				
L14	03	04	21802	17.0	0.31		1.25			<100	
L14	03	04	21807	19.0	0.25		0.38 J			<100	
L14	03	04	21810	21.0	0.29		1.29 J			<100	
L14	03	04	21815	22.0	0.20		0.37 J				
L14	03	04	21816	23.0	0.06		0.85 J			<100	
L14	03	04	21827	25.0	0.21		2.19			<100	
L14	03	04	21828	26.0	0.24		0.97 J				
L14	03	04	21829	27.0	0.21		1.48			<100	
L14	03	04	21830	29.0	0.30		0.56 J			<100	
L14	**03**	**04**	**21832**	**30.0**	**0.218**	**0.203**	**0.166**	**0.0025 U**	**0.0025 U**	**1.1 R**	**0.086 J**
L14	03	05	21675	1.0	1.10		2.56 J			<100	
L14	03	05	21676	3.0	1.05		9.31			<100	
L14	03	05	21677	4.0	0.60		3.87				
L14	03	05	21678	5.0	0.70		0.65			<100	
L14	03	05	21683	7.0	0.56		1.71			<100	
L14	03	05	21688	9.0	0.67		4.63			<100	
L14	03	05	21689	10.0	0.75		7.48				
L14	03	05	21690	11.0	1.84		16.91			<100	
L14	03	05	21691	13.0	0.95		16.64			<100	
L14	03	05	21696	15.0	0.78		4.01			<100	
L14	03	05	21698	16.0	NS		NS	0.133	12.370		
L14	03	05	21697	17.0	0.25		2.04			<100	
L14	03	05	21703	18.0	0.21		1.40				
L14	03	05	21704	19.0	0.24		1.47			<100	
L14	03	05	21705	21.0	0.28		3.45			<100	
L14	03	05	21717	22.0	0.19		1.96				
L14	03	05	21718	23.0	0.25		3.36			<100	
L14	03	05	21719	25.0	0.19		1.01			<100	
L14	03	05	21724	26.0	0.21		0.85 J				
L14	03	05	21725	27.0	0.15		0.49 J			<100	
L14	03	05	21726	28.0	0.25		0.53 J				
L14	03	05	21727	29.0	0.25		1.04 J			<100	
L14	**03**	**05**	**21730**	**30.0**	**0.179**	**0.179**	**0.181**	**0.0025 U**	**0.0025 U**	**1.4 R**	**0.055 J**
M14	04	01	21906	5.0	0.97		1.30			<100	
M14	04	01	21907	9.0	NS		NS			<100	
M14	04	01	21908	11.0	0.60		6.94			<100	
M14	04	01	21909	13.0	0.93		14.02			<100	
M14	04	01	21916	15.0	0.87		17.31			<100	
M14	04	01	21924	16.0	0.84		14.05				
M14	04	01	21925	17.0	0.77		5.21 J			<100	
M14	04	01	21928	19.0	0.74		10.13 J			<100	
M14	04	01	21934	21.0	NS		NS			<100	
M14	04	01	21947	22.0	0.97		79.12	0.176	6.364		

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
M14	04	01	21948	23.0	0.28		1.35 J			<100	
M14	04	01	21949	24.0	0.82		40.70				
M14	04	01	21950	25.0	0.21		7.69			<100	
M14	04	01	21959	27.0	0.16		5.74			<100	
M14	04	01	21960	29.0	0.31		1.13 J			<100	
M14	**04**	**01**	**21975**	**30.0**	**0.164**	**1.59**	**0.83**	**0.0026 U**	**0.0026 U**	**1.5 J**	**0.051 J**
M14	04	02	22171	1.0	0.63		1.32 J			<100	
M14	04	02	22172	3.0	0.90		1.92			<100	
M14	04	02	22173	5.0	1.21		13.44			<100	
M14	04	02	22191	7.0	1.00		9.79			<100	
M14	04	02	22200	9.0	0.64		4.32			<100	
M14	04	02	22201	11.0	0.43		2.91 J			45.0 J	
M14	04	02	22204	13.0	0.44		3.94	0.094	1.573	<100	
M14	04	02	22205	15.0	NS		NS			<100	
M14	04	02	22206	17.0	0.30		2.54			<100	
M14	04	02	22207	19.0	0.29		2.16			<100	
M14	04	02	22208	21.0	0.20		3.56	0.097	1.680	<100	
M14	04	02	22209	23.0	0.24		0.90			<100	
M14	04	02	22210	25.0	0.21		0.39 J			<100	
M14	04	02	22211	26.0	0.18		2.07 J				
M14	04	02	22212	27.0	0.16		2.36			<100	
M14	04	02	22214	29.0	0.30		2.08			<100	
M14	**04**	**02**	**22215**	**30.0**	**0.166**	**1.30**	**1.29**	**0.0026 U**	**0.0026 U**	**1.6 J**	**0.10 J**
M14	04	03	21980	1.0	0.69		1.47			<100	
M14	04	03	21981	3.0	0.79		3.43			<100	
M14	04	03	21994	5.0	0.15 UJ		11.32			<100	
M14	04	03	22009	7.0	0.94 J		11.96			<100	
M14	04	03	22010	9.0	0.70		2.99			<100	
M14	04	03	22011	10.0	0.07		0.87 J				
M14	04	03	22012	11.0	0.50 J		0.73 J			<100	
M14	04	03	22017	13.0	0.36		1.10 J			<100	
M14	04	03	22022	15.0	0.35 J		0.75 J			<100	
M14	04	03	22023	17.0	0.30		0.76 J			<100	
M14	04	03	22024	19.0	0.24		0.62 J			<100	
M14	04	03	22025	21.0	0.02 UJ		1.47	0.099	0.099	<100	
M14	04	03	22026	23.0	0.19		1.57 J			<100	
M14	04	03	22037	25.0	0.17 J		1.16			<100	
M14	04	03	22038	26.0	0.20		1.13 J				
M14	04	03	22039	27.0	0.18		1.13			<100	
M14	04	03	22048	29.0	0.31 J		1.03 J			<100	
M14	**04**	**03**	**22057**	**30.0**	**0.136**	**0.325**	**0.298**	**0.0026 U**	**0.0026 U**	**3.6 J**	**0.096 J**
M14	04	04	22064	1.0	0.86		1.45 J			<100	
M14	04	04	22065	3.0	1.13		2.08 J			<100	
M14	04	04	22072	5.0	0.96		4.62			<100	
M14	04	04	22073	7.0	1.22		6.30			<100	
M14	04	04	22074	9.0	0.70		1.38 J			<100	
M14	04	04	22091	11.0	0.03		2.14			<100	
M14	04	04	22096	13.0	0.27		1.87			<100	
M14	04	04	22097	15.0	0.26		0.75 J			<100	
M14	04	04	22098	16.0	0.37		0.74 J				
M14	04	04	22099	17.0	0.07		1.35 J			<100	
M14	04	04	22121	19.0	0.24		0.59			<100	
M14	04	04	22125	21.0	0.30		0.68 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
M14	04	04	22123	22.0	0.23		1.06 J				
M14	04	04	22124	23.0	0.06		0.54 J			<100	
M14	04	04	22132	25.0	0.04		0.59 J			<100	
M14	04	04	22133	26.0	0.23		2.10 J				
M14	04	04	22134	27.0	0.22		1.96			<100	
M14	04	04	22135	29.0	0.21		0.53			<100	
M14	**04**	**04**	**22153**	**30.0**	**0.152**	**0.255**	**0.193**	**0.0026 U**	**0.0026 U**	**1.8 J**	**0.094 J**
M14	04	05	22216	1.0	1.13		1.89 J			<100	
M14	04	05	22217	2.0	0.96		4.51				
M14	04	05	22218	3.0	1.10		12.39			40.1 J	
M14	04	05	22219	5.0	1.42		15.75			<100	
M14	04	05	22220	7.0	0.90		6.28			<100	
M14	04	05	22221	9.0	1.28		2.94			<100	
M14	04	05	22226	11.0	0.49		1.49			<100	
M14	04	05	22227	13.0	0.49		2.15			<100	
M14	04	05	22228	15.0	0.40		2.05			<100	
M14	04	05	22231	16.0	0.27		1.97				
M14	04	05	22232	17.0	0.29		3.27			<100	
M14	04	05	22233	18.0	0.03		2.23				
M14	04	05	22234	19.0	0.32		1.95			<100	
M14	04	05	22241	20.0	0.17		0.94				
M14	04	05	22242	21.0	0.07		1.97			<100	
M14	04	05	22250	22.0	0.28		1.14				
M14	04	05	22251	23.0	0.34		0.55 J			<100	
M14	04	05	22252	25.0	0.21		0.61 J			<100	
M14	04	05	22255	26.0	0.29		0.29				
M14	04	05	22256	27.0	0.22		2.94			<100	
M14	04	05	22265	28.0	0.18		1.40				
M14	04	05	22266	29.0	0.17		0.50			<100	
M14	**04**	**05**	**22270**	**30.0**	**0.161**	**0.276**	**0.249**	**0.0025 U**	**0.0025 U**	**1.9 J**	**0.089 J**
M14	04	06	22289	1.0	0.85		0.82			<100	
M14	04	06	22290	2.0	1.35		7.33				
M14	04	06	22291	3.0	0.99		2.47			<100	
M14	04	06	22296	5.0	1.10		15.01			45.1 J	
M14	04	06	22331	7.0	0.78		7.52			<100	
M14	04	06	22332	9.0	0.78		2.00			<100	
M14	04	06	22333	11.0	0.30		1.87			<100	
M14	04	06	22334	13.0	0.30		1.15 J			<100	
M14	04	06	22335	14.0	0.28		1.51				
M14	04	06	22336	15.0	0.21		1.08 J			<100	
M14	04	06	22337	16.0	0.36		0.80 J				
M14	04	06	22338	17.0	0.28		0.81 J			<100	
M14	04	06	22344	19.0	0.24		0.95			<100	
M14	04	06	22356	21.0	0.24		1.16			<100	
M14	04	06	22357	22.0	0.15		0.87 J				
M14	04	06	22358	23.0	0.30		1.48			<100	
M14	04	06	22367	25.0	0.27		1.38			<100	
M14	04	06	22378	26.0	0.32		2.22				
M14	04	06	22379	27.0	0.23		1.07			<100	
M14	04	06	22380	29.0	0.25		3.75			<100	
M14	**04**	**06**	**22394**	**30.0**	**0.114**	**0.98**	**0.98**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.062 J**
M14	04	07	22548	1.0	0.74		1.54 J			<100	
M14	04	07	22549	2.0	0.69		2.23				

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
M14	04	07	22550	3.0	1.10		3.59 J			<100	
M14	04	07	22557	4.0	0.99		10.84				
M14	04	07	22558	5.0	0.97		13.46			<100	
M14	04	07	22565	7.0	0.73		3.81 J			<100	
M14	04	07	22566	9.0	1.02		5.58	0.097	1.256	<100	
M14	04	07	22571	11.0	0.29		0.66 J			<100	
M14	04	07	22574	13.0	0.06		0.74 J			<100	
M14	04	07	22575	15.0	0.34		1.42 J			<100	
M14	04	07	22576	16.0	0.03		0.78 J				
M14	04	07	22577	17.0	0.29		1.67			<100	
M14	04	07	22582	19.0	0.29		2.49			<100	
M14	04	07	22583	21.0	0.27		0.42			<100	
M14	04	07	22584	22.0	0.23		0.93 J				
M14	04	07	22585	23.0	0.29		0.45			<100	
M14	04	07	22586	25.0	0.30		0.68 J			<100	
M14	04	07	22588	26.0	0.21		1.07 J				
M14	04	07	22589	27.0	0.22		0.81 J			<100	
M14	04	07	22590	28.0	0.22		0.57 J				
M14	04	07	22591	29.0	0.25		0.41			<100	
M14	**04**	**07**	**22592**	**30.0**	**0.121**	**0.070 J**	**0.080 J**	**0.0025 U**	**0.0025 U**	**2.2 J**	**0.11 J**
M14	04	08	22476	1.0	0.87		1.54 J			<100	
M14	04	08	22481	2.0	1.05		1.35				
M14	04	08	22482	3.0	1.25		22.97 J			<100	
M14	04	08	22483	5.0	0.96		1.73 J			<100	
M14	04	08	22491	7.0	0.46		0.69 J			<100	
M14	04	08	22506	9.0	0.45		1.01 J			<100	
M14	04	08	22507	11.0	0.36		1.23 J			<100	
M14	04	08	22509	13.0	0.34		0.94 J			<100	
M14	04	08	22510	15.0	0.24		0.51 UJ			<100	
M14	04	08	22519	17.0	0.25		0.96 J			<100	
M14	04	08	22522	19.0	0.33		1.55 J			<100	
M14	04	08	22523	21.0	0.34		0.92 J			<100	
M14	04	08	22525	22.0	0.18		0.53 J				
M14	04	08	22526	23.0	0.25		0.38 J			<100	
M14	04	08	22527	25.0	0.21		1.12 J			<100	
M14	04	08	22538	26.0	0.26		1.07 J				
M14	04	08	22539	27.0	0.22		1.33 J			<100	
M14	04	08	22542	29.0	0.05		0.51 J			<100	
M14	**04**	**08**	**22545**	**30.0**	**0.173**	**0.188**	**0.121**	**0.0026 U**	**0.0026 U**	**0.84 J**	**0.17 J**
M14	04	09	22417	1.0	0.71		0.65 J			<100	
M14	04	09	22418	3.0	0.90		6.81			<100	
M14	04	09	22422	5.0	0.75		5.01			<100	
M14	04	09	22424	7.0	0.96		2.39			<100	
M14	04	09	22425	9.0	0.64		1.47			40.8 J	
M14	04	09	22426	11.0	0.60		1.45			<100	
M14	04	09	22432	13.0	0.36		1.38 J			<100	
M14	04	09	22433	15.0	0.24		1.15 J			<100	
M14	04	09	22434	16.0	0.05		0.61 J				
M14	04	09	22435	17.0	0.20		0.45			<100	
M14	04	09	22437	19.0	0.29		0.24			<100	
M14	04	09	22438	21.0	0.33		0.53 J			<100	
M14	04	09	22446	22.0	0.32		0.76 J				
M14	04	09	22447	23.0	0.24		0.39			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
M14	04	09	22448	25.0	0.34		1.95			<100	
M14	04	09	22459	26.0	0.22		0.87 J				
M14	04	09	22460	27.0	0.23		0.45 J			<100	
M14	04	09	22464	29.0	0.20		1.27			<100	
M14	**04**	**09**	**22465**	**30.0**	**0.215**	**0.402**	**0.305**	**0.0026 U**	**0.0026 U**	**1.2 J**	**0.12 J**
N15	05	01	22596	1.0	0.06		2.63			<100	
N15	05	01	22597	3.0	0.99		0.95 J			<100	
N15	05	01	22599	5.0	NS		NS			<100	
N15	05	01	22605	25.0	NS		NS			50.2 J	
N15	05	01	22606	27.0	0.29		6.76			<100	
N15	**05**	**01**	**22607**	**28.0**	**0.165**	**2.31**	**2.20**	**0.0026 U**	**0.042**	**2.3 J**	**0.11 J**
N15	**05**	**01**	**22617**	**30.0**	**0.193**	**1.21**	**1.13**	**0.0026 U**	**0.016**	**2.5 J**	**0.11 J**
N15	05	01	22641	32.0	0.25 J		1.61				
N15	05	01	22642	33.0	0.25		0.42			<100	
N15	05	01	22650	35.0	0.37		0.65 J			<100	
N15	05	01	22651	37.0	0.25 J		1.32 J			<100	
N15	05	01	22664	39.0	0.43		0.58			<100	
N15	05	01	22673	41.0	0.28		0.77			<100	
N15	05	01	22688	42.0	0.16		0.77				
N15	05	01	22689	43.0	0.22 J		0.47 J			<100	
N15	05	01	22698	45.0	0.24		1.08			<100	
N15	05	01	22701	46.0	0.20 J		0.87 J				
N15	05	01	22702	47.0	0.30		1.77			<100	
N15	05	01	22705	48.0	0.55		0.51				
N15	05	01	22706	49.0	0.34		1.63			<100	
N15	05	01	22715	50.0	0.35		1.47				
N15	05	01	22716	51.0	0.90		5.59			<100	
N15	05	01	22731	52.0	0.55		1.53				
N15	05	01	22732	53.0	0.90		5.07	0.103	0.103	<100	
N15	05	01	22733	54.0	0.73		5.13				
N15	05	01	22734	55.0	0.56		10.18			<100	
N15	05	01	22735	56.0	0.58		4.70				
N15	05	01	22736	57.0	0.39		3.15			<100	
N15	05	01	22737	58.0	0.46		3.70				
N15	05	01	22738	59.0	0.26		1.53			<100	
N15	05	01	22757	60.0	0.35		2.63				
N15	05	01	22758	61.0	0.34		3.88			<100	
N15	05	01	22765	62.0	0.35		1.82				
N15	05	01	22766	63.0	0.38		1.25			<100	
N15	**05**	**01**	**22800**	**64.0**	**0.109**	**0.344**	**0.386**	**0.0026 U**	**0.0026 U**	**0.50 J**	**0.52 U**
N15	05	02	22633	1.0	0.68 J		2.18			<100	
N15	05	02	22634	3.0	1.20		9.42			<100	
N15	05	02	22808	4.0	1.26		9.07				
N15	05	02	22809	5.0	1.23		1.24 J			<100	
N15	05	02	22810	7.0	0.36		0.50			<100	
N15	05	02	22816	9.0	1.01		0.98 J			<100	
N15	05	02	22819	11.0	0.35		0.69			<100	
N15	05	02	22824	13.0	0.48		1.21			<100	
N15	05	02	22826	15.0	0.72		0.92 J			<100	
N15	05	02	22827	16.0	0.45		1.99				
N15	05	02	22828	17.0	0.24		1.20			<100	
N15	05	02	22830	19.0	0.31		0.27			<100	
N15	05	02	22839	21.0	0.32		1.11 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
N15	05	02	22842	22.0	0.18		0.96 J				
N15	05	02	22843	23.0	0.25		1.70			<100	
N15	05	02	22848	25.0	0.46		1.34			<100	
N15	05	02	22849	26.0	0.34		1.16 J				
N15	05	02	22850	27.0	0.24		0.82 J			<100	
N15	05	02	22859	29.0	0.31		0.41			<100	
N15	**05**	**02**	**22862**	**30.0**	**0.115**	**0.150**	**0.108**	**0.0026 U**	**0.0026 U**	**1.4 J**	**0.063 J**
N15	05	03	22922	1.0	NS		NS			<100	
N15	05	03	22923	2.0	1.24		1.73 J				
N15	05	03	22924	3.0	1.01		6.44			<100	
N15	05	03	22929	4.0	0.97		6.62				
N15	05	03	22930	5.0	1.51		4.52 J			<100	
N15	05	03	22931	6.0	0.55		1.35				
N15	05	03	22932	7.0	0.66		0.84 J			<100	
N15	05	03	22935	9.0	0.96		1.65 J			<100	
N15	05	03	22940	11.0	0.34		1.07			<100	
N15	05	03	22945	12.0	0.37		0.53 J				
N15	05	03	22946	13.0	0.46		1.72 J			<100	
N15	05	03	22961	15.0	0.27		1.09 J			<100	
N15	05	03	22963	16.0	0.25		1.34				
N15	05	03	22964	17.0	0.26		1.08 J			<100	
N15	05	03	22965	19.0	0.27		0.89 J			<100	
N15	05	03	22966	20.0	0.18		1.01				
N15	05	03	22967	21.0	0.23		1.63			<100	
N15	05	03	22972	23.0	0.22		0.44			<100	
N15	05	03	22981	25.0	0.21		1.13 J			<100	
N15	05	03	22982	26.0	0.17		0.62 J				
N15	05	03	22983	27.0	0.26		1.14 J			<100	
N15	05	03	22984	29.0	0.21		0.86 J			<100	
N15	**05**	**03**	**22989**	**30.0**	**0.129**	**0.246**	**0.255**	**0.0026 U**	**0.00094 J**	**2.0 J**	**0.17 J**
N15	05	04	23150	1.0	0.52		2.14			<100	
N15	05	04	23151	3.0	1.26		7.63			56.6 J	
N15	05	04	23152	4.0	1.03		7.47				
N15	05	04	23153	5.0	1.15		2.67			<100	
N15	05	04	23154	7.0	0.49		1.09 J			<100	
N15	05	04	23155	9.0	0.66		1.18 J			<100	
N15	05	04	23156	10.0	0.42		1.10 J				
N15	05	04	23157	11.0	0.40		0.87 J			<100	
N15	05	04	23163	13.0	0.21		0.60 J			<100	
N15	05	04	23176	15.0	0.28		2.99 J			<100	
N15	05	04	23177	16.0	0.30		1.07				
N15	05	04	23178	17.0	0.25		1.74			<100	
N15	05	04	23186	19.0	0.28		2.00 J			<100	
N15	05	04	23187	20.0	0.22		1.18				
N15	05	04	23188	21.0	0.28		0.73 J			<100	
N15	05	04	23205	23.0	0.26		1.54 J			<100	
N15	05	04	23206	25.0	0.42		1.99			<100	
N15	05	04	23213	26.0	0.34		1.01 J				
N15	05	04	23214	27.0	0.23		1.14			<100	
N15	05	04	23228	29.0	0.28		1.22			<100	
N15	**05**	**04**	**23233**	**30.0**	**0.171**	**0.250**	**0.244**	**0.0026 U**	**0.018 J**	**1.4 J**	**0.51 U**
N15	05	05	23000	1.0	0.75		0.76			<100	
N15	05	05	23001	3.0	0.96		1.18			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
N15	05	05	23013	4.0	0.93		1.44 J				
N15	05	05	23014	5.0	1.37		1.87			<100	
N15	05	05	23021	7.0	0.52		0.66			<100	
N15	05	05	23023	8.0	0.42		1.29				
N15	05	05	23024	9.0	0.47		1.99 J			<100	
N15	05	05	23025	11.0	0.33		1.91 J			<100	
N15	05	05	23026	13.0	0.27		1.08 J			<100	
N15	05	05	23038	15.0	0.36		0.57 UJ			<100	
N15	05	05	23039	16.0	0.20		0.82 J				
N15	05	05	23040	17.0	0.22 J		1.08 J			<100	
N15	05	05	23043	19.0	0.17		0.75 J			<100	
N15	05	05	23044	21.0	0.33		2.42 J			<100	
N15	05	05	23045	22.0	0.32		0.96 J				
N15	05	05	23046	23.0	0.26		1.72 J			<100	
N15	05	05	23057	25.0	0.33		0.86			<100	
N15	05	05	23058	26.0	0.25		2.44 J				
N15	05	05	23059	27.0	0.03		0.83			<100	
N15	05	05	23072	29.0	0.25		1.25 J			<100	
N15	**05**	**05**	**23079**	**30.0**	**0.168**	**0.227**	**0.210**	**0.0025 U**	**0.0063 J**	**1.4 J**	**0.20 J**
A19	12	01	18224	4.0	1.22		8.79				
A19	12	01	18230	5.0	0.57		3.73			<100	
A19	12	01	18231	6.0	0.54		2.76				
A19	12	01	18232	7.0	0.53		1.23 J			<100	
A19	12	01	18233	8.0	0.08		1.30				
A19	**12**	**01**	**18234**	**9.0**	0.30		2.52 J			**2.0 J**	
A19	12	01	18244	10.0	0.48		2.65 J				
A19	12	01	18245	11.0	0.32 J		2.19			<100	
A19	12	01	18246	12.0	0.39		2.66				
A19	12	01	18247	13.0	0.43		0.85 J			<100	
A19	12	01	18248	14.0	0.36		0.50				
A19	12	01	18249	15.0	0.08		1.32 J			<100	
A19	12	01	18250	16.0	0.32		1.03 J				
A19	12	01	18251	17.0	0.22		0.51 J			<100	
A19	12	01	18267	18.0	0.22		0.35				
A19	12	01	18268	19.0	0.33		0.96			<100	
A19	12	01	18269	20.0	0.16 J		0.77 J				
A19	12	01	18270	21.0	0.22		0.97 J			<100	
A19	12	01	18271	22.0	0.29		0.45 J				
A19	12	01	18272	23.0	0.27		0.30 J			<100	
A19	12	01	18273	24.0	0.24		0.37 J				
A19	12	01	18274	25.0	0.31		0.46			<100	
A19	12	01	18275	26.0	0.19		0.64 J				
A19	12	01	18276	27.0	0.22		1.05			<100	
A19	12	01	18282	28.0	0.33		0.55 J				
A19	12	01	18283	29.0	0.36		2.00			<100	
A19	**12**	**01**	**18284**	**30.0**	**0.141**	**0.156**	**0.164**	**0.0026 U**	**0.0026 U**	**4.2 U**	**0.25 J**
A19	12	03	18403	1.0	0.95		7.58			133	
A19	12	03	18404	2.0	0.99		6.69				
A19	12	03	18405	3.0	0.59		6.25			<100	
A19	12	03	18406	4.0	0.59		4.38				
A19	12	03	18407	5.0	0.56		1.51 J			<100	
A19	12	03	18408	6.0	0.33		0.54 J				
A19	12	03	18409	7.0	0.54		1.38 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
A19	12	03	18416	8.0	0.52		2.89				
A19	12	03	18417	9.0	0.72		1.46 J			<100	
A19	12	03	18418	10.0	0.38		1.53				
A19	12	03	18419	11.0	0.38		0.45			<100	
A19	12	03	18420	12.0	0.51		1.62				
A19	12	03	18421	13.0	0.35		0.46			<100	
A19	12	03	18431	14.0	0.46		0.66				
A19	12	03	18432	15.0	0.25		0.53 J			<100	
A19	12	03	18433	16.0	0.28		0.46 J				
A19	12	03	18434	17.0	0.25		0.33			<100	
A19	12	03	18439	18.0	0.36		1.92				
A19	**12**	**03**	**18440**	**19.0**	0.25		1.48			**4.1 U**	
A19	12	03	18441	20.0	0.27		0.33				
A19	12	03	18442	21.0	0.25		1.64			<100	
A19	12	03	18446	22.0	0.19		0.76 J				
A19	12	03	18447	23.0	0.58		2.70 J			<100	
A19	12	03	18456	24.0	0.18		0.50 J				
A19	12	03	18457	25.0	0.20		0.29			<100	
A19	12	03	18458	26.0	0.32		0.97 J				
A19	12	03	18459	27.0	0.22		1.41			<100	
A19	12	03	18462	28.0	0.19		0.23				
A19	12	03	18463	29.0	0.19		1.62			<100	
A19	**12**	**03**	**18464**	**30.0**	**0.137**	**0.154**	**0.122 J**	**0.0026 U**	**0.0026 U**	**2.0 J**	**0.52 U**
A19	12	04	18480	1.0	0.55		3.26			<100	
A19	12	04	18483	3.0	0.65		1.15			<100	
A19	12	04	18494	4.0	0.30		0.92				
A19	12	04	18495	5.0	0.66		0.73			<100	
A19	12	04	18496	6.0	1.05		1.69 J				
A19	12	04	18497	7.0	0.61		2.16			<100	
A19	12	04	18498	8.0	0.42		1.99				
A19	12	04	18499	9.0	0.36		0.87 J			<100	
A19	12	04	18500	10.0	0.36		0.62				
A19	12	04	18501	11.0	0.38		0.26			<100	
A19	12	04	18504	12.0	0.29		0.90 J				
A19	12	04	18505	13.0	0.54		1.80			<100	
A19	12	04	18506	14.0	0.37		0.92 J				
A19	12	04	18507	15.0	0.42		0.64 J			<100	
A19	12	04	18508	16.0	0.27		1.01 J				
A19	12	04	18509	17.0	0.32		1.09 J			<100	
A19	12	04	18511	18.0	0.23		1.18				
A19	12	04	18512	19.0	0.17		0.40 J			<100	
A19	12	04	18513	20.0	0.25		1.76 J				
A19	12	04	18514	21.0	0.22		0.93			<100	
A19	12	04	18515	22.0	0.17		0.85				
A19	12	04	18516	23.0	0.21		2.74			<100	
A19	12	04	18519	24.0	0.17		0.56 J				
A19	12	04	18520	25.0	0.22		0.73 J			<100	
A19	12	04	18521	26.0	0.25		1.26 J				
A19	12	04	18522	27.0	0.30		1.40			<100	
A19	12	04	18523	28.0	0.06		0.70 J				
A19	12	04	18524	29.0	0.24		1.01			<100	
A19	**12**	**04**	**18525**	**30.0**	**0.207**	**0.144**	**0.122 J**	**0.0026 U**	**0.0026 U**	**2.2 J**	**0.51 U**
A19	12	05	18301	1.0	1.21		6.76			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
A19	12	05	18315	2.0	0.88		5.25				
A19	12	05	18316	3.0	0.86		4.35			44.2 J	
A19	12	05	18317	4.0	0.77		6.10				
A19	12	05	18318	5.0	0.61		1.95			<100	
A19	12	05	18319	6.0	0.44		1.71 J				
A19	12	05	18320	7.0	0.38		1.20 J			<100	
A19	12	05	18339	8.0	0.98		2.09				
A19	12	05	18340	9.0	0.51		1.00 J			<100	
A19	12	05	18341	10.0	0.90		2.41 J				
A19	12	05	18342	11.0	0.55		1.02 J			<100	
A19	12	05	18343	12.0	0.33		1.11 J				
A19	12	05	18344	13.0	0.25		1.07 J			<100	
A19	12	05	18354	14.0	0.43		1.45 J				
A19	12	05	18355	15.0	0.42		0.66			<100	
A19	12	05	18352	16.0	0.38		0.48 J				
A19	12	05	18353	17.0	0.43		1.76 J			<100	
A19	12	05	18356	18.0	0.40		0.41				
A19	12	05	18357	19.0	0.37		0.86 J			<100	
A19	12	05	18364	20.0	0.38		0.44				
A19	12	05	18365	21.0	0.49		2.09			<100 UJ	
A19	12	05	18372	22.0	0.16		0.69 J				
A19	12	05	18373	23.0	0.24		0.30			<100 UJ	
A19	12	05	18374	24.0	0.20		0.67				
A19	12	05	18375	25.0	0.43		0.24			<100 UJ	
A19	12	05	18378	26.0	0.23		0.68 J				
A19	12	05	18379	27.0	0.24		0.70 J			<100	
A19	12	05	18380	28.0	0.29		1.36				
A19	12	05	18381	29.0	0.24		1.30 J			<100	
A19	**12**	**05**	**18382**	**30.0**	**0.136**	**0.218**	**0.213**	**0.0026 U**	**0.0026 U**	**4.1 U**	**0.52 U**
Z68	13	01	18540	4.0	0.71		3.96				
Z68	13	01	18541	5.0	0.49		1.89			<100	
Z68	13	01	18542	6.0	0.44		0.94 J				
Z68	13	01	18543	7.0	0.81		0.67			<100	
Z68	13	01	18547	8.0	0.91		1.77 J				
Z68	13	01	18548	9.0	0.69		1.12 J			<100	
Z68	13	01	18553	10.0	0.31		1.14 J				
Z68	13	01	18554	11.0	0.36		0.64 J			<100	
Z68	13	01	18559	12.0	0.28		0.61				
Z68	13	01	18560	13.0	0.34		1.38			<100	
Z68	13	01	18573	14.0	0.24		0.71 J				
Z68	13	01	18574	15.0	0.35		1.58			<100	
Z68	13	01	18578	16.0	0.32		0.35 J				
Z68	13	01	18579	17.0	0.04		0.54 J			<100	
Z68	13	01	18588	18.0	0.19		0.48 J				
Z68	13	01	18589	19.0	0.29		1.53 J			<100	
Z68	13	01	18590	20.0	0.22		0.69 J				
Z68	13	01	18591	21.0	0.26		0.34			<100	
Z68	13	01	18606	22.0	0.21		0.90 J				
Z68	13	01	18607	23.0	0.23		1.17 J			<100	
Z68	13	01	18608	24.0	0.31		0.37				
Z68	13	01	18609	25.0	0.28		0.75			<100	
Z68	13	01	18610	26.0	0.06		0.50 J				
Z68	13	01	18611	27.0	0.18		0.90 J			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
Z68	13	01	18612	28.0	0.29		1.16				
Z68	13	01	18613	29.0	0.31		0.62			<100	
Z68	**13**	**01**	**18614**	**30.0**	**0.108**	**0.189**	**0.159**	**0.0026 U**	**0.0026 U**	**2.7 J**	**0.52 U**
Z68	13	04	18701	1.0	0.72		3.93 J			<100	
Z68	13	04	18702	2.0	0.60		1.27 UJ				
Z68	13	04	18703	3.0	0.76		12.00			41.9 J	
Z68	13	04	18704	4.0	0.74		1.68 J				
Z68	13	04	18705	5.0	0.48		1.22 J			<100	
Z68	13	04	18706	7.0	0.74		0.75			<100	
Z68	13	04	18707	8.0	0.59		3.14 J				
Z68	13	04	18708	9.0	0.48		0.62 J			<100	
Z68	13	04	18709	10.0	0.48		0.69 UJ				
Z68	13	04	18710	11.0	0.28		0.26 UJ			<100	
Z68	13	04	18711	12.0	0.37		0.53 UJ				
Z68	13	04	18712	13.0	0.38		0.62 J			<100	
Z68	13	04	18716	14.0	0.25		1.04 J				
Z68	**13**	**04**	**18717**	**15.0**	0.21		1.44 J			**4 U**	
Z68	13	04	18718	17.0	0.28		0.56 J			<100	
Z68	13	04	18719	18.0	0.34		0.51 UJ				
Z68	13	04	18720	19.0	0.17		1.03 J			<100	
Z68	13	04	18721	20.0	0.15		0.53 J				
Z68	13	04	18722	21.0	0.29		1.53			<100	
Z68	13	04	18728	22.0	0.18		1.02 J				
Z68	13	04	18729	23.0	0.22		0.65 J			<100	
Z68	13	04	18730	24.0	0.20		1.31 J				
Z68	13	04	18731	25.0	0.03		0.83 J			<100	
Z68	13	04	18732	26.0	0.18		0.55 J				
Z68	13	04	18743	28.0	0.18		0.45 UJ				
Z68	13	04	18744	29.0	0.25		0.52			<100	
Z68	**13**	**04**	**18745**	**30.0**	**0.142**	**0.198**	**0.164**	**0.0026 U**	**0.0026 U**	**3.4 J**	**0.51 U**
Z68	13	05	18619	1.0	0.11		4.42			<100	
Z68	13	05	18620	2.0	0.75		14.24 J				
Z68	13	05	18621	3.0	0.62		6.59 J			<100	
Z68	13	05	18622	4.0	0.68		2.06				
Z68	13	05	18623	5.0	0.78		1.95 J			<100	
Z68	13	05	18624	6.0	0.51		1.06 J				
Z68	13	05	18625	7.0	0.67		1.68 J			<100	
Z68	13	05	18633	8.0	1.19		1.04 J				
Z68	13	05	18634	9.0	0.51		1.88 J			<100	
Z68	13	05	18635	10.0	0.63		1.72 J				
Z68	13	05	18636	11.0	0.31		0.49			<100	
Z68	13	05	18637	12.0	0.42		1.65 J				
Z68	13	05	18638	13.0	0.26		1.08 J			<100	
Z68	13	05	18651	14.0	0.38		0.81 J				
Z68	13	05	18652	15.0	0.26		0.56			<100	
Z68	13	05	18663	16.0	0.30		0.28 UJ				
Z68	13	05	18664	17.0	0.33		1.77 J			<100	
Z68	13	05	18671	19.0	0.05		0.97 J			<100	
Z68	13	05	18682	20.0	0.37		1.44				
Z68	13	05	18683	21.0	0.28		1.49 J			<100	
Z68	13	05	18686	22.0	0.21		1.03				
Z68	13	05	18687	23.0	0.29		1.29 J			<100	
Z68	13	05	18688	25.0	0.22		0.51			<100	

Table 4
LPH Soil Boring Sample Results

Subcell	LPH	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
Z68	13	05	18689	26.0	0.17		1.13 J				
Z68	13	05	18690	27.0	0.34		1.52 J			<100	
Z68	13	05	18696	28.0	0.23		1.37 J				
Z68	13	05	18697	29.0	0.06		1.21 J			<100	
Z68	**13**	**05**	**18698**	**30.0**	**0.195**	**0.539**	**0.577**	**0.0026 U**	**0.0026 U**	**4.1 U**	**0.51 U**

Table 4
LPH Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

R - Validation qualifier used to indicate that the result is considered unusable.
U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 4 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).
DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.
SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.
NS - Not sampled due to insufficient recovery.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.
Result is above Site cleanup level.

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	C17	DL01	25425	3.0	1.15		12.50			154	
XX	C17	DL01	25426	4.0	0.64		4.14 J				
XX	C17	DL01	25427	5.0	0.50		1.46 J			<100	
XX	C17	DL01	25432	7.0	0.39		0.80 J			<100	
XX	C17	DL01	25436	8.0	0.73		2.21				
XX	C17	DL01	25437	9.0	0.12		1.31 J			<100	
XX	C17	DL01	25442	11.0	0.33		0.61 UJ			<100	
XX	C17	DL01	25443	13.0	0.31		1.44			<100	
XX	C17	DL01	25447	14.0	0.27		0.87 J				
XX	C17	DL01	25448	15.0	0.20		1.69			<100	
XX	C17	DL01	25449	17.0	0.28		1.65 J			<100	
XX	C17	DL01	25460	18.0	0.16		1.65				
XX	C17	DL01	25461	19.0	0.39		2.10 J			<100	
XX	C17	DL01	25462	21.0	0.22		0.43 J			<100	
XX	C17	DL01	25463	23.0	0.20		0.97 J			<100	
XX	C17	DL01	25464	24.0	0.34		0.66 J				
XX	C17	DL01	25465	25.0	0.32		0.28 UJ			<100	
XX	C17	DL01	25474	27.0	0.07		1.06 J			<100	
XX	C17	DL01	25475	28.0	0.19		0.79				
XX	C17	DL01	25476	29.0	0.17		0.94 J			<100	
XX	C17	DL01	25477	30.0	0.33		2.13 J				
XX	C17	DL01	25478	31.0	0.06		0.31			<100	
XX	C17	DL01	25479	32.0	0.07		0.51				
XX	C17	DL01	25480	33.0	0.30		0.28 UJ			<100	
XX	C17	DL01	25489	34.0	0.31		1.01 J				
XX	C17	DL01	25490	35.0	0.29		1.84 J			<100	
XX	C17	DL01	25501	37.0	0.26 J		0.57			<100	
XX	C17	DL01	25502	38.0	0.23		0.70 J				
XX	C17	DL01	25503	39.0	0.30		0.34			<100	
XX	C17	DL01	25504	40.0	0.31 J		1.96 J				
XX	C17	DL01	25505	41.0	0.45 J		0.83			<100	
XX	C17	DL01	25508	43.0	0.72		0.95 J			<100	
XX	C17	DL01	25532	44.0	0.26 J		0.32				
XX	C17	DL01	25533	45.0	0.29		5.49			<100	
XX	C17	DL01	25534	47.0	0.43		4.40			<100	
XX	C17	DL01	25535	48.0	0.34 J		7.54				
XX	C17	DL01	25536	49.0	1.08		13.28			<100	
XX	C17	DL01	25540	50.0	1.36		8.25				
XX	C17	DL01	25541	51.0	0.63		3.20 J			<100	
XX	C17	DL01	25542	53.0	0.71		1.08 J			<100	
XX	C17	DL01	25551	54.0	0.39 J		0.81 J				
XX	C17	DL01	25552	55.0	0.48		1.73			<100	
XX	C17	DL01	25557	56.0	0.41		0.81 J				
XX	C17	DL01	25558	57.0	0.37		1.29 J			<100	
XX	C17	DL01	25563	58.0	0.53 J		2.14				
XX	C17	DL01	25564	59.0	0.06		1.63			<100	
XX	C17	DL01	25565	60.0	0.41 J		1.35 J				
XX	C17	DL01	25566	61.0	0.31		1.76			<100	
XX	C17	DL01	25567	62.0	0.41		1.63				
XX	C17	DL01	25568	63.0	0.48		3.48			<100	
XX	**C17**	**DL01**	**25573**	**64.0**	**0.290**	**1.06**	**0.87**	**0.0026 U**	**0.0026 U**	**0.49 J**	**0.11 J**
XX	**C18**	**DL01**	**25098**	**1.0**	NS		NS			**127**	
XX	C18	DL01	25099	2.0	1.33		25.07				
XX	C18	DL01	25100	3.0	0.71		16.11			65.8 J	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	C18	DL01	25109	5.0	0.64 J		7.83			84.5 J	
XX	C18	DL01	25116	6.0	0.95 J		7.30				
XX	C18	DL01	25117	7.0	1.35 J		2.55			<100	
XX	C18	DL01	25118	8.0	0.10		3.58				
XX	C18	DL01	25119	9.0	0.27 J		0.67 J			<100	
XX	C18	DL01	25120	11.0	0.29 J		2.78			<100	
XX	C18	DL01	25123	12.0	0.25		2.24				
XX	C18	DL01	25124	13.0	0.31 J		0.95 J			<100	
XX	C18	DL01	25125	15.0	0.33 J		1.87			<100	
XX	C18	DL01	25126	16.0	0.32		1.33				
XX	C18	DL01	25127	17.0	0.30		1.23			<100	
XX	C18	DL01	25135	18.0	0.23 J		1.22 J				
XX	C18	DL01	25136	19.0	0.31 J		0.72 J			<100	
XX	C18	DL01	25137	21.0	0.32 J		0.73 J			<100	
XX	C18	DL01	25138	22.0	0.19 J		0.69 J				
XX	C18	DL01	25139	23.0	0.05		0.94 J			<100	
XX	C18	DL01	25141	25.0	0.04		0.56 J			<100	
XX	C18	DL01	25142	26.0	0.16 J		0.62				
XX	C18	DL01	25143	27.0	0.07 UJ		1.85			<100	
XX	C18	DL01	25144	28.0	0.03		0.87				
XX	C18	DL01	25145	29.0	0.31 J		1.48			<100	
XX	C18	DL01	25146	31.0	0.20 J		0.50			<100	
XX	C18	DL01	25147	32.0	0.24		0.69 J				
XX	C18	DL01	25148	33.0	0.23 J		0.91 J			<100	
XX	C18	DL01	25149	35.0	0.26 J		0.66 J			<100	
XX	C18	DL01	25150	36.0	0.04 UJ		1.51				
XX	C18	DL01	25151	37.0	0.25 J		1.03 J			<100	
XX	C18	DL01	25152	39.0	0.24		1.37			<100	
XX	C18	DL01	25159	41.0	0.46		1.03 J			<100	
XX	C18	DL01	25162	42.0	0.23		2.71				
XX	C18	DL01	25163	43.0	0.48		0.85 J			<100	
XX	C18	DL01	25168	45.0	0.43		10.35 J			96.3 J	
XX	C18	DL01	25173	46.0	0.37		6.94 J				
XX	C18	DL01	25174	47.0	1.40		30.94 J			103	
XX	C18	DL01	25180	48.0	1.12		19.30				
XX	C18	DL01	25181	49.0	1.33		17.13 J			<100	
XX	C18	DL01	25182	50.0	1.20		7.23 J				
XX	C18	DL01	25183	51.0	1.04		3.89 J			<100	
XX	C18	DL01	25190	52.0	0.53		0.81 UJ				
XX	C18	DL01	25191	53.0	0.68		5.17 J			<100	
XX	C18	DL01	25192	54.0	0.91		5.20				
XX	C18	DL01	25193	55.0	0.67		7.35 J			<100	
XX	C18	DL01	25200	56.0	0.34		2.28 J				
XX	C18	DL01	25201	57.0	0.38		2.29 J			<100	
XX	C18	DL01	25204	58.0	0.49		4.80 J				
XX	C18	DL01	25205	59.0	0.67		12.18 J			<100	
XX	C18	DL01	25210	61.0	0.22		1.55			<100	
XX	C18	DL01	25213	62.0	0.31		2.33				
XX	C18	DL01	25214	63.0	0.57		3.02 J			76.2 J	
XX	**C18**	**DL01**	**25217**	**64.0**	**0.281**	**1.34**	**1.33**	**0.013**	**0.0026 U**	**61.9 J**	**0.041 J**
XX	C18	DL02	25258	3.0	1.18		10.18			97.9 J	
XX	C18	DL02	25263	4.0	0.92		10.06 J				
XX	C18	DL02	25264	5.0	0.35		2.29			<100	
XX	C18	DL02	25265	7.0	0.82		0.87 J			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	C18	DL02	25266	8.0	0.67		2.72				
XX	C18	DL02	25267	9.0	0.69 J		0.93			<100	
XX	C18	DL02	25268	11.0	0.20		1.36			<100	
XX	C18	DL02	25277	12.0	0.34		1.94				
XX	C18	DL02	25278	13.0	0.09 UJ		1.72 J			<100	
XX	C18	DL02	25283	14.0	0.45		1.03 J				
XX	C18	DL02	25284	15.0	0.31 J		0.49			<100	
XX	C18	DL02	25285	17.0	0.26		0.51 UJ			<100	
XX	C18	DL02	25286	18.0	0.22		0.66 J				
XX	C18	DL02	25287	19.0	0.21 J		0.73 J			<100	
XX	C18	DL02	25288	21.0	0.29		0.92 J			<100	
XX	C18	DL02	25289	22.0	0.21		0.76 J				
XX	C18	DL02	25290	23.0	0.27 J		1.34 J			<100	
XX	C18	DL02	25294	25.0	0.36 J		0.95 J			<100	
XX	C18	DL02	25295	27.0	0.19		0.50 UJ			<100	
XX	C18	DL02	25296	28.0	0.19		0.82 J				
XX	C18	DL02	25297	29.0	0.19 J		1.54			<100	
XX	C18	DL02	25300	31.0	0.22 J		0.43			<100	
XX	C18	DL02	25305	32.0	0.02		0.39 UJ				
XX	C18	DL02	25306	33.0	0.20 J		0.72 J			<100	
XX	C18	DL02	25310	34.0	0.46		0.63				
XX	C18	DL02	25311	35.0	0.40 J		0.63			<100	
XX	C18	DL02	25312	37.0	0.18		0.83 J			<100	
XX	C18	DL02	25315	38.0	0.23		0.89 J				
XX	C18	DL02	25316	39.0	0.20		1.16 J			<100	
XX	C18	DL02	25319	40.0	0.42		1.76 J				
XX	C18	DL02	25320	41.0	0.38 J		1.26 J			<100	
XX	C18	DL02	25329	42.0	0.07 UJ		0.54				
XX	C18	DL02	25330	43.0	0.50		0.72 J			<100	
XX	C18	DL02	25331	44.0	0.29		2.41				
XX	C18	DL02	25332	45.0	0.48 J		15.64			47.4 J	
XX	C18	DL02	25333	47.0	1.20		15.78 J			<100	
XX	C18	DL02	25334	48.0	0.98		10.48 J				
XX	C18	DL02	25335	49.0	1.55 J		22.47			77.5 J	
XX	C18	DL02	25340	50.0	1.68		18.04				
XX	C18	DL02	25341	51.0	1.18 J		7.97			<100	
XX	C18	DL02	25353	52.0	0.88		5.74				
XX	C18	DL02	25354	53.0	0.51 J		1.89			<100	
XX	C18	DL02	25363	54.0	0.54		2.00				
XX	C18	DL02	25364	55.0	0.75 J		3.38			<100	
XX	C18	DL02	25365	56.0	0.58		3.57 J				
XX	C18	DL02	25366	57.0	0.42		2.29			<100	
XX	C18	DL02	25371	58.0	0.07		1.33 J				
XX	C18	DL02	25372	59.0	0.32		1.66			<100	
XX	C18	DL02	25393	60.0	0.57		2.49				
XX	C18	DL02	25394	61.0	0.87 J		6.39			<100	
XX	C18	DL02	25395	62.0	0.49		2.78 J				
XX	C18	DL02	25396	63.0	0.35		2.00			<100	
XX	**C18**	**DL02**	**25405**	**64.0**	**0.204**	**0.86**	**0.89**	**0.00058 J**	**0.0025 U**	**0.29 J**	**0.067 J**
XX	D16	DL01	25854	3.0	1.01		6.77			<100	
XX	D16	DL01	25855	4.0	0.18		4.44				
XX	D16	DL01	25856	5.0	0.71		2.95			<100	
XX	D16	DL01	25857	6.0	0.66		3.16				
XX	D16	DL01	25858	7.0	0.97		0.98 J			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	D16	DL01	25861	8.0	0.72		1.67 J				
XX	D16	DL01	25862	9.0	0.52		1.31 J			<100	
XX	D16	DL01	25871	11.0	0.07		0.29			<100	
XX	D16	DL01	25872	13.0	0.41		1.64 J			<100	
XX	D16	DL01	25877	14.0	0.23		0.35				
XX	D16	DL01	25878	15.0	0.32		0.94 J			<100	
XX	D16	DL01	25879	17.0	0.27		0.35			<100	
XX	D16	DL01	25884	18.0	0.15		2.11				
XX	D16	DL01	25885	19.0	0.26		1.75 J			<100	
XX	D16	DL01	25913	20.0	0.39		0.79				
XX	D16	DL01	25914	21.0	0.21		0.94			<100	
XX	D16	DL01	25915	23.0	0.21		0.62 J			<100	
XX	D16	DL01	25916	24.0	0.33		1.65 J				
XX	D16	DL01	25917	25.0	0.29		0.46			<100	
XX	D16	DL01	25918	26.0	0.38		1.17				
XX	D16	DL01	25919	27.0	0.39		0.61 J			<100	
XX	D16	DL01	25924	28.0	0.30		1.83				
XX	D16	DL01	25925	29.0	0.26		1.10 J			<100	
XX	D16	DL01	25933	31.0	0.07		1.42			<100	
XX	D16	DL01	25934	32.0	0.02		0.99				
XX	D16	DL01	25935	33.0	0.34		0.46 J			<100	
XX	D16	DL01	25944	34.0	0.15		1.08				
XX	D16	DL01	25945	35.0	0.31		2.30			<100	
XX	D16	DL01	25946	36.0	0.02		1.12 J				
XX	D16	DL01	25947	37.0	0.34		1.96			<100	
XX	D16	DL01	25952	38.0	0.29		1.13 J				
XX	D16	DL01	25953	39.0	0.24		1.08			<100	
XX	D16	DL01	25957	40.0	0.22		2.30				
XX	D16	DL01	25958	41.0	0.22		0.36			<100	
XX	D16	DL01	25960	42.0	0.27		1.36				
XX	D16	DL01	25961	43.0	0.26		1.13 J			<100	
XX	D16	DL01	25967	44.0	0.38		0.41				
XX	D16	DL01	25968	45.0	0.28		5.96			<100	
XX	D16	DL01	25975	47.0	0.31		4.30			<100	
XX	D16	DL01	25978	48.0	1.13		14.43				
XX	D16	DL01	25979	49.0	1.27		10.81			<100	
XX	D16	DL01	25984	50.0	1.44		15.78				
XX	D16	DL01	25985	51.0	0.77		2.24			<100	
XX	D16	DL01	26005	52.0	0.62		3.25 J				
XX	D16	DL01	26006	53.0	0.48		0.85 J			<100	
XX	D16	DL01	26007	54.0	0.53		2.98 J				
XX	D16	DL01	26008	55.0	0.73 J		4.38 J			<100	
XX	D16	DL01	26021	56.0	0.46		1.99 J				
XX	D16	DL01	26022	57.0	0.45		0.76 J			<100	
XX	D16	DL01	26023	58.0	0.08 UJ		1.23 J				
XX	D16	DL01	26024	59.0	0.49		1.07 J			<100	
XX	D16	DL01	26043	60.0	0.40		0.82 J				
XX	D16	DL01	26044	61.0	0.29		0.57 J			<100	
XX	D16	DL01	26055	62.0	0.36		0.77 J				
XX	D16	DL01	26056	63.0	0.38		0.74 J			<100	
XX	**D16**	**DL01**	**26059**	**64.0**	**0.203**	**0.316**	**0.440**	**0.0042**	**0.0026 UJ**	**1.1 J**	**0.23 J**
XX	D17	DL01	24739	3.0	1.10		11.47			<100	
XX	D17	DL01	24741	4.0	0.30		1.71				
XX	D17	DL01	24742	5.0	0.94		4.75 J			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	D17	DL01	24743	7.0	0.41		0.54 UJ			<100	
XX	D17	DL01	24744	8.0	0.57		2.26				
XX	D17	DL01	24745	9.0	0.46		0.70			<100	
XX	D17	DL01	24746	10.0	0.12		1.73 J				
XX	D17	DL01	24747	11.0	0.25		0.62 J			<100	
XX	D17	DL01	24748	12.0	0.31		2.61 J				
XX	D17	DL01	24749	13.0	0.47 J		1.54 J			<100	
XX	D17	DL01	24752	14.0	0.08		3.00				
XX	D17	DL01	24753	15.0	0.28		2.49			<100	
XX	D17	DL01	24754	17.0	0.19		4.72 J			<100	
XX	D17	DL01	24755	18.0	0.28		1.63				
XX	D17	DL01	24756	19.0	0.20 J		3.21			<100	
XX	D17	DL01	24757	20.0	0.24		2.09 J				
XX	D17	DL01	24758	21.0	NS		NS			<100	
XX	D17	DL01	24759	22.0	0.20		0.41				
XX	D17	DL01	24760	23.0	0.23 J		0.43			<100	
XX	D17	DL01	24761	25.0	0.26 J		0.49 J			<100	
XX	D17	DL01	24767	27.0	0.27		1.15 J			<100	
XX	D17	DL01	24768	28.0	0.18 J		0.65				
XX	D17	DL01	24769	29.0	0.22		1.04 J			<100	
XX	D17	DL01	24778	30.0	0.18		0.62 J				
XX	D17	DL01	24779	31.0	NS		NS			<100	
XX	D17	DL01	24780	32.0	0.36		0.51 J				
XX	D17	DL01	24781	33.0	0.36		1.32			<100	
XX	D17	DL01	24792	34.0	0.36 J		0.93 J				
XX	D17	DL01	24793	35.0	0.58		3.55			<100	
XX	D17	DL01	24794	36.0	0.26		2.52 UJ				
XX	D17	DL01	24795	37.0	0.34		4.89 J			<100	
XX	D17	DL01	24800	38.0	0.18 J		2.77				
XX	D17	DL01	24801	39.0	0.33		5.03			<100	
XX	D17	DL01	24802	40.0	0.35		3.52 J				
XX	D17	DL01	24805	41.0	0.36		2.86 J			<100	
XX	D17	DL01	24806	42.0	0.52		5.02 J				
XX	D17	DL01	24811	43.0	0.31 J		2.17			<100	
XX	D17	DL01	24814	44.0	0.59		2.91 J				
XX	D17	DL01	24815	45.0	0.31 J		3.22			47.7 J	
XX	D17	DL01	24821	46.0	0.72		53.55				
XX	D17	DL01	24822	47.0	0.45		6.85 J			42.7 J	
XX	D17	DL01	24823	48.0	0.54 J		16.56				
XX	D17	DL01	24824	49.0	1.30		17.79			49.3 J	
XX	D17	DL01	24826	50.0	1.29		14.43				
XX	D17	DL01	24829	51.0	1.16		9.35			<100	
XX	D17	DL01	24830	52.0	0.75		6.35				
XX	D17	DL01	24831	53.0	0.70 J		2.82			<100	
XX	D17	DL01	24833	54.0	0.63		0.87				
XX	D17	DL01	24834	55.0	0.45		0.73 J			<100	
XX	D17	DL01	24835	56.0	0.49 J		1.69				
XX	D17	DL01	24836	57.0	0.43		0.82			<100	
XX	D17	DL01	24837	58.0	0.65		3.67				
XX	D17	DL01	24838	59.0	0.27 J		0.47 J			<100	
XX	D17	DL01	24854	60.0	0.52		3.38				
XX	D17	DL01	24852	61.0	0.54		3.44			<100	
XX	D17	DL01	24853	62.0	0.58		2.60				
XX	D17	DL01	24855	63.0	0.19 J		1.52			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	**D17**	**DL01**	**24884**	**64.0**	**0.272**	**0.84**	**0.77**	**0.0026 U**	**0.0026 U**	**0.44 J**	**0.047 J**
XX	D18	DL01	23836	2.0	1.55		23.06				
XX	D18	DL01	23837	3.0	0.93		12.70			165	
XX	D18	DL01	23851	5.0	0.46		2.65 J			<100	
XX	D18	DL01	23852	7.0	0.34		0.41			<100	
XX	D18	DL01	23864	8.0	0.51		2.17				
XX	D18	DL01	23865	9.0	0.51		1.65			<100	
XX	D18	DL01	23866	11.0	0.07		0.97 J			<100	
XX	D18	DL01	23873	12.0	0.29		0.45				
XX	D18	DL01	23874	13.0	0.27		1.29 J			<100	
XX	D18	DL01	23883	15.0	0.29		0.66 J			<100	
XX	D18	DL01	23884	17.0	0.05		4.24			<100	
XX	D18	DL01	23890	18.0	0.27		6.45				
XX	D18	DL01	23889	19.0	0.05		12.04			<100	
XX	D18	DL01	23899	21.0	0.25		6.95			<100	
XX	D18	DL01	23909	22.0	0.24		5.60				
XX	D18	DL01	23910	23.0	0.26		4.94			<100	
XX	D18	DL01	23911	25.0	0.34		4.98			<100	
XX	D18	DL01	23918	27.0	0.29		3.35			<100	
XX	D18	DL01	23919	28.0	0.26		2.48				
XX	D18	DL01	23920	29.0	0.35		0.44 UJ			<100	
XX	D18	DL01	23925	31.0	0.27		1.45			<100	
XX	D18	DL01	23926	32.0	0.27		1.17 J				
XX	D18	DL01	23927	33.0	0.19		1.56 J			<100	
XX	D18	DL01	23941	35.0	0.73		1.55 J			<100	
XX	D18	DL01	23942	37.0	0.28		2.75 J			<100	
XX	D18	DL01	23947	38.0	0.26		3.27 J				
XX	D18	DL01	23948	39.0	0.29		2.85			<100	
XX	D18	DL01	23964	41.0	0.23		0.55 J			<100	
XX	D18	DL01	23965	42.0	0.41		0.72				
XX	D18	DL01	23966	43.0	0.06		1.59 J			<100	
XX	D18	DL01	23979	45.0	0.31		17.91			113	
XX	D18	DL01	23989	47.0	0.35		39.74 J			178	
XX	D18	DL01	23990	48.0	0.40		11.76				
XX	D18	DL01	23991	49.0	1.00		12.43			82.5 J	
XX	D18	DL01	23995	50.0	1.68		24.84 J				
XX	D18	DL01	23996	51.0	1.10		10.33			<100	
XX	D18	DL01	24007	52.0	1.42		7.51				
XX	D18	DL01	24008	53.0	0.54		2.21 J			<100	
XX	D18	DL01	24009	55.0	0.44		2.17			<100	
XX	D18	DL01	24015	57.0	0.38		0.97			<100	
XX	D18	DL01	24018	58.0	0.37		3.56 J				
XX	D18	DL01	24019	59.0	0.40		2.09			<100	
XX	D18	DL01	24030	61.0	0.31		3.86 J			<100	
XX	D18	DL01	24033	62.0	0.43		1.48				
XX	D18	DL01	24034	63.0	0.45		2.64			<100	
XX	**D18**	**DL01**	**24049**	**64.0**	**0.442**	**0.99**	**1.04**	**0.0026 U**	**0.0026 U**	**0.33 J**	**0.51 U**
XX	D18	DL02	23664	1.0	1.31 J		13.98			168	
XX	D18	DL02	23665	2.0	0.75 J		6.54				
XX	D18	DL02	23666	3.0	0.52 J		5.73			64.1 J	
XX	D18	DL02	23667	5.0	0.63		3.87			<100	
XX	D18	DL02	23668	6.0	0.70 J		2.27				
XX	D18	DL02	23669	7.0	0.33 J		0.66			<100	
XX	D18	DL02	23670	9.0	0.29 J		1.87			41.1 J	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	D18	DL02	23671	11.0	0.60		1.22			<100	
XX	D18	DL02	23672	13.0	0.46 J		5.12			46.7 J	
XX	D18	DL02	23676	15.0	0.38 J		5.70			<100	
XX	D18	DL02	23677	16.0	0.28		5.23				
XX	D18	DL02	23678	17.0	0.06 UJ		3.06			<100	
XX	D18	DL02	23690	19.0	0.20 J		3.63			<100	
XX	D18	DL02	23691	20.0	0.21 J		1.91				
XX	D18	DL02	23692	21.0	0.17 J		2.48			<100	
XX	D18	DL02	23693	22.0	0.23		2.18				
XX	D18	DL02	23694	23.0	0.16 J		4.96			<100	
XX	D18	DL02	23695	25.0	0.25		7.10			<100	
XX	D18	DL02	23696	26.0	0.34 J		7.35				
XX	D18	DL02	23697	27.0	0.40		9.73			<100	
XX	D18	DL02	23700	29.0	0.26 J		0.52			<100	
XX	D18	DL02	23701	31.0	0.21 J		2.80			43.7 J	
XX	D18	DL02	23710	33.0	0.35		7.32 J			<100	
XX	D18	DL02	23723	35.0	0.30		8.15 J			<100	
XX	D18	DL02	23724	36.0	0.28		5.06				
XX	D18	DL02	23725	37.0	0.16		1.86 J			<100	
XX	D18	DL02	23742	39.0	0.24		6.15 J			<100	
XX	D18	DL02	23745	41.0	0.29		1.94 J			<100	
XX	D18	DL02	23746	42.0	0.20		1.85 J				
XX	D18	DL02	23747	43.0	0.39		2.03 J			<100	
XX	D18	DL02	23766	45.0	0.25		21.32 J			226	
XX	D18	DL02	23767	46.0	0.31		29.81 J				
XX	D18	DL02	23768	47.0	0.99		75.37			<100	
XX	D18	DL02	23779	48.0	1.00		17.40 J				
XX	D18	DL02	23780	49.0	1.50		23.32 J			145	
XX	D18	DL02	23786	50.0	0.68		4.44 J				
XX	D18	DL02	23787	51.0	1.05		22.39			<100	
XX	D18	DL02	23788	52.0	0.95		5.89 J				
XX	D18	DL02	23789	53.0	0.40		1.18 J			<100	
XX	D18	DL02	23795	54.0	0.50		1.56				
XX	D18	DL02	23796	55.0	0.63		2.90			<100	
XX	D18	DL02	23807	56.0	0.54		3.54 J				
XX	D18	DL02	23808	57.0	0.41		1.96 J			<100	
XX	D18	DL02	23815	58.0	0.29		2.16				
XX	D18	DL02	23816	59.0	0.28		0.75 J			<100	
XX	D18	DL02	23818	60.0	0.26		1.32				
XX	D18	DL02	23819	61.0	0.52		1.18 J			<100	
XX	D18	DL02	23823	62.0	0.39		1.28				
XX	D18	DL02	23824	63.0	0.50		2.18			<100	
XX	**D18**	**DL02**	**23825**	**64.0**	**0.223**	**0.361**	**0.428**	**0.0026 U**	**0.0026 U**	**0.31 J**	**0.041 J**
XX	D18	DL03	24914	1.0	1.15		14.97			81.7 J	
XX	D18	DL03	24915	3.0	0.80		8.85			72.4 J	
XX	D18	DL03	24916	5.0	0.89 J		7.08			47.0 J	
XX	D18	DL03	24923	7.0	0.81		15.03			81.7 J	
XX	D18	DL03	24926	9.0	0.29		1.63			<100	
XX	D18	DL03	24927	11.0	0.28		2.39 J			<100	
XX	D18	DL03	24930	12.0	0.34		4.34				
XX	D18	DL03	24931	13.0	0.37		2.34 J			<100	
XX	D18	DL03	24936	15.0	0.30		2.95			<100	
XX	D18	DL03	24937	16.0	0.47		3.35 J				
XX	D18	DL03	24938	17.0	0.24		0.61			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	D18	DL03	24945	19.0	0.19		1.46			<100	
XX	D18	DL03	24946	21.0	0.28		3.65 J			<100	
XX	D18	DL03	24947	22.0	0.37		1.10 J				
XX	D18	DL03	24948	23.0	0.27		2.10			<100	
XX	D18	DL03	24951	25.0	0.20		4.79			<100	
XX	D18	DL03	24952	26.0	0.30		6.48 J				
XX	D18	DL03	24953	27.0	0.26		6.45			<100	
XX	D18	DL03	24956	29.0	0.23		0.80 J			<100	
XX	D18	DL03	24959	31.0	0.24		0.88 J			<100	
XX	D18	DL03	24961	32.0	0.25		2.04				
XX	D18	DL03	24962	33.0	0.19		1.08 J			<100	
XX	D18	DL03	24965	35.0	0.27		0.56 J			<100	
XX	D18	DL03	24966	36.0	0.31		1.26 J				
XX	D18	DL03	24967	37.0	0.24		1.17 J			<100	
XX	D18	DL03	24974	39.0	0.04		2.62 J			<100	
XX	D18	DL03	24975	41.0	0.11		1.21 J			<100	
XX	D18	DL03	24976	42.0	0.32		0.69 J				
XX	D18	DL03	24977	43.0	0.51		2.79 J			<100	
XX	D18	DL03	24988	44.0	0.38		22.46				
XX	D18	DL03	24989	45.0	0.29		19.58			163	
XX	D18	DL03	24990	47.0	0.98		66.77 J			199	
XX	D18	DL03	24996	48.0	1.44		25.92 J				
XX	D18	DL03	24997	49.0	1.27		25.99			63.5 J	
XX	D18	DL03	25001	50.0	1.20		12.90				
XX	D18	DL03	25002	51.0	1.13		2.81			<100	
XX	D18	DL03	25003	52.0	0.77		4.05				
XX	D18	DL03	25004	53.0	0.28		1.65			<100	
XX	D18	DL03	25007	54.0	0.62		4.63				
XX	D18	DL03	25008	55.0	0.50		2.98			<100	
XX	D18	DL03	25013	56.0	0.59		5.88				
XX	D18	DL03	25014	57.0	0.64		1.90 J			<100	
XX	D18	DL03	25042	58.0	0.68		1.57				
XX	D18	DL03	25043	59.0	0.37 J		44.79			<100	
XX	D18	DL03	25044	60.0	0.35		22.63				
XX	D18	DL03	25045	61.0	0.24		14.62			<100	
XX	D18	DL03	25052	62.0	0.49		13.02				
XX	D18	DL03	25053	63.0	0.45 J		9.29			<100	
XX	**D18**	**DL03**	**25061**	**64.0**	**0.390**	**2.52**	**2.48**	**0.0026 U**	**0.0026 U**	**0.48 J**	**0.092 J**
XX	E17	DL01	24518	3.0	1.05 J		12.09 J			46.5 J	
XX	E17	DL01	24519	5.0	0.66 J		10.63 J			75.1 J	
XX	E17	DL01	24520	7.0	0.66		6.18 J			42.1 J	
XX	E17	DL01	24521	9.0	0.21 J		2.41 J			42.1 J	
XX	E17	DL01	24522	11.0	0.24 J		1.68 J			<100	
XX	E17	DL01	24523	13.0	0.26		1.77 J			<100	
XX	E17	DL01	24524	15.0	0.30		3.73			<100	
XX	E17	DL01	24525	17.0	0.31		2.85 J			<100	
XX	E17	DL01	24526	18.0	0.08 UJ		2.61 J				
XX	E17	DL01	24527	19.0	0.22		2.88			<100	
XX	E17	DL01	24528	21.0	0.23		2.62			<100	
XX	E17	DL01	24536	22.0	0.26		2.38 J				
XX	E17	DL01	24537	23.0	0.17		4.73			<100	
XX	E17	DL01	24542	25.0	0.30		4.79			<100	
XX	E17	DL01	24543	27.0	0.22		6.44			<100	
XX	E17	DL01	24559	28.0	0.26		5.36 J				

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	E17	DL01	24560	29.0	0.22		6.71			<100	
XX	E17	DL01	24585	31.0	0.28		3.61			<100	
XX	E17	DL01	24586	32.0	0.05		0.87 J				
XX	E17	DL01	24587	33.0	0.29		1.49 J			<100	
XX	E17	DL01	24588	35.0	0.35		0.45			<100	
XX	E17	DL01	24598	37.0	0.27		1.92 J			<100	
XX	E17	DL01	24599	38.0	0.27		0.70 J				
XX	E17	DL01	24600	39.0	0.26		1.84 J			<100	
XX	E17	DL01	24601	40.0	0.34		2.29				
XX	E17	DL01	24606	41.0	NS		NS			<100	
XX	E17	DL01	24607	42.0	0.27		2.01				
XX	E17	DL01	24612	43.0	0.13		2.98 J			<100	
XX	E17	DL01	24613	44.0	0.24		3.98				
XX	E17	DL01	24626	45.0	0.35		11.71			<100	
XX	E17	DL01	24634	46.0	0.24		10.70				
XX	E17	DL01	24635	47.0	1.25		20.11			84.0 J	
XX	E17	DL01	24644	48.0	0.45		8.65				
XX	E17	DL01	24645	49.0	0.95		13.03 J			70.5 J	
XX	E17	DL01	24653	50.0	1.07		15.34				
XX	E17	DL01	24654	51.0	1.21		12.97			<100	
XX	E17	DL01	24657	52.0	1.08		10.17 J				
XX	E17	DL01	24658	53.0	1.23		6.82 J			<100	
XX	E17	DL01	24659	54.0	0.53		3.41				
XX	E17	DL01	24660	55.0	0.42		3.11 J			<100	
XX	E17	DL01	24661	57.0	0.54		1.49			<100	
XX	E17	DL01	24674	58.0	0.40		3.20 J				
XX	E17	DL01	24675	59.0	0.51		3.88			<100	
XX	E17	DL01	24690	60.0	0.37		5.65 J				
XX	E17	DL01	24699	61.0	0.31		2.14			<100	
XX	E17	DL01	24700	62.0	0.39		0.93 J				
XX	E17	DL01	24701	63.0	0.36		2.84 J			<100	
XX	**E17**	**DL01**	**24717**	**64.0**	**0.143**	**0.470**	**0.395**	**0.0026 U**	**0.0026 R**	**0.21 J**	**0.52 U**
XX	E17	DL02	25015	3.0	0.86		1.21			<100	
XX	E17	DL02	25016	4.0	0.70		4.82 J				
XX	E17	DL02	25017	5.0	0.47		2.52			<100	
XX	E17	DL02	25022	6.0	0.10		2.07				
XX	E17	DL02	25023	7.0	0.73		0.96			<100	
XX	E17	DL02	25024	8.0	0.36		0.69				
XX	E17	DL02	25025	9.0	0.54		1.08 J			<100	
XX	E17	DL02	25026	10.0	0.21		1.14				
XX	E17	DL02	25027	11.0	0.35		2.77			<100	
XX	E17	DL02	25036	12.0	0.09		2.57				
XX	E17	DL02	25037	13.0	0.05		1.14 J			<100	
XX	E17	DL02	25038	14.0	0.32		0.83				
XX	E17	DL02	25039	15.0	0.42 J		1.55			<100	
XX	E17	DL02	25040	16.0	0.39		0.82 J				
XX	E17	DL02	25041	17.0	0.03		1.46 J			<100	
XX	E17	DL02	25046	18.0	0.26 J		1.28				
XX	E17	DL02	25047	19.0	0.07		1.08 J			<100	
XX	E17	DL02	25048	20.0	0.32		0.85 J				
XX	E17	DL02	25049	21.0	0.29 J		1.61			<100	
XX	E17	DL02	25050	22.0	0.23		1.46 J				
XX	E17	DL02	25051	23.0	0.18 J		0.82 J			<100	
XX	E17	DL02	25060	25.0	0.32		0.74 J			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	E17	DL02	25062	26.0	0.40		1.93 J				
XX	E17	DL02	25063	27.0	0.30		2.15			<100	
XX	E17	DL02	25064	28.0	0.31		2.09				
XX	E17	DL02	25065	29.0	0.32 J		1.86 J			<100	
XX	E17	DL02	25066	30.0	0.25		1.62				
XX	E17	DL02	25067	31.0	0.05 UJ		1.28 J			<100	
XX	E17	DL02	25068	32.0	0.22		0.95 J				
XX	E17	DL02	25069	33.0	0.27		1.76			<100	
XX	E17	DL02	25070	34.0	0.22 J		0.99 J				
XX	E17	DL02	25071	35.0	0.54		2.55			<100	
XX	E17	DL02	25072	36.0	0.25		0.52				
XX	E17	DL02	25073	37.0	0.04 UJ		0.94 J			<100	
XX	E17	DL02	25074	38.0	0.42		1.56				
XX	E17	DL02	25075	39.0	0.21		1.97			<100	
XX	E17	DL02	25076	40.0	0.42 J		0.60				
XX	E17	DL02	25077	41.0	0.44		2.07			<100	
XX	E17	DL02	25078	42.0	0.30		2.09				
XX	E17	DL02	25079	43.0	0.24 J		1.74 J			<100	
XX	E17	DL02	25080	44.0	0.38		6.36				
XX	E17	DL02	25081	45.0	0.45		2.36			<100	
XX	E17	DL02	25082	46.0	0.50 J		9.87				
XX	E17	DL02	25083	47.0	0.34 J		3.57			<100	
XX	E17	DL02	25084	48.0	0.65		6.99				
XX	E17	DL02	25085	49.0	1.11 J		12.02			50.4 J	
XX	E17	DL02	25086	50.0	1.19 J		11.80				
XX	E17	DL02	25087	51.0	0.96		7.45			<100	
XX	E17	DL02	25092	52.0	1.23		4.38				
XX	E17	DL02	25093	53.0	0.79 J		3.49			<100	
XX	E17	DL02	25103	54.0	0.47		3.42				
XX	E17	DL02	25104	55.0	0.37 J		1.86			<100	
XX	E17	DL02	25105	56.0	0.42 J		1.62				
XX	E17	DL02	25106	57.0	0.39 J		1.33			<100	
XX	E17	DL02	25121	58.0	0.36 J		2.76				
XX	E17	DL02	25122	59.0	0.55		3.17 J			<100	
XX	E17	DL02	25131	60.0	0.28		2.07				
XX	E17	DL02	25132	61.0	0.57 J		3.55			<100	
XX	E17	DL02	25133	62.0	0.34 J		3.47				
XX	E17	DL02	25134	63.0	0.31		1.07			<100	
XX	**E17**	**DL02**	**25140**	**64.0**	**0.230**	**0.79**	**0.69**	**0.0026 U**	**0.0026 U**	**0.34 J**	**0.52 U**
XX	E18	DL02	24101	3.0	0.87		13.26			98.7 J	
XX	E18	DL02	24102	5.0	0.34		18.89			206	
XX	E18	DL02	24103	7.0	0.35		4.51			84.5 J	
XX	E18	DL02	24104	8.0	0.37 J		7.16				
XX	E18	DL02	24105	9.0	0.41		4.95			<100	
XX	E18	DL02	24106	11.0	0.03		2.21			<100	
XX	E18	DL02	24113	12.0	0.36		5.36				
XX	E18	DL02	24114	13.0	0.19		5.37			<100	
XX	E18	DL02	24121	15.0	0.30 J		2.78			<100	
XX	E18	DL02	24122	17.0	0.36		1.71			<100	
XX	E18	DL02	24123	18.0	0.31 J		2.39				
XX	E18	DL02	24124	19.0	0.34		5.32			<100	
XX	E18	DL02	24125	21.0	0.27 J		3.99			<100	
XX	E18	DL02	24126	22.0	0.25		4.85				
XX	E18	DL02	24127	23.0	0.05		5.45			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	E18	DL02	24128	25.0	0.25 J		10.99			<100	
XX	E18	DL02	24129	27.0	0.25		11.66			<100	
XX	E18	DL02	24130	28.0	0.32		21.05				
XX	E18	DL02	24131	29.0	0.05 UJ		7.60			<100	
XX	E18	DL02	24135	31.0	0.20		6.87			<100	
XX	E18	DL02	24136	32.0	0.06 UJ		6.36				
XX	E18	DL02	24137	33.0	0.15		2.45			<100	
XX	E18	DL02	24141	35.0	0.26		5.52			<100	
XX	E18	DL02	24142	37.0	0.23 J		8.55			<100	
XX	E18	DL02	24143	38.0	0.15		7.64				
XX	E18	DL02	24144	39.0	0.15 J		7.15			<100	
XX	E18	DL02	24160	41.0	0.31 J		7.44			<100	
XX	E18	DL02	24167	42.0	0.33		2.09				
XX	E18	DL02	24168	43.0	0.25		5.76			<100	
XX	E18	DL02	24191	45.0	0.31		9.75			147	
XX	E18	DL02	24192	46.0	0.37		13.41				
XX	E18	DL02	24193	47.0	0.92 J		22.54			199	
XX	E18	DL02	24213	49.0	0.78		11.11			<100	
XX	E18	DL02	24214	50.0	1.34		9.58				
XX	E18	DL02	24215	51.0	1.55 J		4.89			<100	
XX	E18	DL02	24221	52.0	0.74		3.44				
XX	E18	DL02	24222	53.0	1.08 J		6.25			<100	
XX	E18	DL02	24227	55.0	0.48		0.95 J			<100	
XX	E18	DL02	24229	57.0	0.73 J		4.13			<100	
XX	E18	DL02	24232	58.0	0.64 J		4.85				
XX	E18	DL02	24233	59.0	0.34		2.66			<100	
XX	E18	DL02	24238	61.0	0.38 J		1.61			<100	
XX	E18	DL02	24245	62.0	0.08 UJ		1.94				
XX	E18	DL02	24246	63.0	0.41		2.57			<100	
XX	**E18**	**DL02**	**24252**	**64.0**	**0.334**	**0.80**	**0.75**	**0.0026 U**	**0.0026 U**	**0.58 J**	**0.52 U**
XX	**E18**	**DL03**	**23399**	**1.0**	2.31		26.67 J			**382 J**	
XX	E18	DL03	23400	3.0	1.22		29.38			88.6 J	
XX	E18	DL03	23401	4.0	0.80		12.16 J			86.8 J	
XX	E18	DL03	23402	6.0	0.75		9.40 J				
XX	E18	DL03	23403	7.0	0.59		4.46			70.6 J	
XX	E18	DL03	23434	9.0	0.31		2.20			<100	
XX	E18	DL03	23435	11.0	0.31		2.33			<100	
XX	E18	DL03	23436	12.0	0.32		3.55 J				
XX	E18	DL03	23437	13.0	0.23		3.72			<100	
XX	E18	DL03	23440	15.0	0.42		4.33 J			<100	
XX	E18	DL03	23441	16.0	0.35		4.10				
XX	E18	DL03	23442	17.0	0.30		3.49			<100	
XX	E18	DL03	23461	19.0	0.29		5.92			<100	
XX	E18	DL03	23462	21.0	0.20		5.41			<100	
XX	E18	DL03	23469	22.0	0.29		4.60				
XX	E18	DL03	23470	23.0	0.27		8.05 J			<100	
XX	E18	DL03	23471	25.0	0.31		7.33			<100	
XX	E18	DL03	23476	26.0	0.20		7.22 J				
XX	E18	DL03	23477	27.0	0.26		8.41			<100	
XX	E18	DL03	23484	29.0	0.30		12.10			<100	
XX	E18	DL03	23485	31.0	0.20		5.45			<100	
XX	E18	DL03	23492	32.0	0.19		5.97				
XX	E18	DL03	23493	33.0	0.38		9.69 J			<100	
XX	E18	DL03	23494	35.0	0.21		4.70			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	E18	DL03	23495	36.0	0.30		8.62				
XX	E18	DL03	23496	37.0	0.06		11.22			<100	
XX	E18	DL03	23514	39.0	0.34		8.93			<100	
XX	E18	DL03	23523	40.0	0.05		5.78				
XX	E18	DL03	23524	41.0	0.41		14.49			<100	
XX	E18	DL03	23525	42.0	0.23		6.99				
XX	E18	DL03	23526	43.0	0.26		12.31			<100	
XX	E18	DL03	23532	44.0	0.26		23.20				
XX	E18	DL03	23533	45.0	0.16		8.02			152	
XX	E18	DL03	23534	46.0	0.29		16.69				
XX	E18	DL03	23535	47.0	0.80		52.75			145	
XX	E18	DL03	23536	48.0	0.77		16.06				
XX	E18	DL03	23537	49.0	1.58		18.12			68.2 J	
XX	E18	DL03	23542	50.0	1.43		15.20				
XX	E18	DL03	23543	51.0	0.83		2.07			<100	
XX	E18	DL03	23549	52.0	0.66		3.62				
XX	E18	DL03	23550	53.0	0.51		1.93			<100	
XX	E18	DL03	23562	54.0	0.50		1.91 J				
XX	E18	DL03	23563	55.0	0.36		1.29 J			<100	
XX	E18	DL03	23564	56.0	0.63		4.21 J				
XX	E18	DL03	23565	57.0	0.58		4.00			<100	
XX	E18	DL03	23590	58.0	0.29		1.80				
XX	E18	DL03	23591	59.0	0.33		0.70 J			<100	
XX	E18	DL03	23602	60.0	0.33		1.27 J				
XX	E18	DL03	23603	61.0	0.46		1.22 J			<100	
XX	E18	DL03	23612	62.0	0.37		0.61 J				
XX	E18	DL03	23613	63.0	0.41		3.23			<100	
XX	**E18**	**DL03**	**23614**	**64.0**	**0.326**	**0.537**	**0.592**	**0.0026 U**	**0.0026 U**	**0.39 J**	**0.075 J**
XX	F18	DL01	25635	-1.0	0.91		4.38			<100	
XX	F18	DL01	25636	1.0	1.07		14.63			195	
XX	F18	DL01	25647	3.0	NS		NS			<100	
XX	F18	DL01	25648	5.0	0.29 J		3.85			<100	
XX	F18	DL01	25649	6.0	0.47		2.22				
XX	F18	DL01	25650	7.0	0.31		2.41			<100	
XX	F18	DL01	25662	9.0	0.34		1.67			<100	
XX	F18	DL01	25663	10.0	0.18 J		3.47				
XX	F18	DL01	25664	11.0	0.23		1.41			<100	
XX	F18	DL01	25671	12.0	0.31		1.93				
XX	F18	DL01	25672	13.0	0.28		2.33			<100	
XX	F18	DL01	25678	14.0	0.25		2.04				
XX	F18	DL01	25679	15.0	0.26 J		1.64			<100	
XX	F18	DL01	25680	17.0	0.24		1.52			<100	
XX	F18	DL01	25681	19.0	0.06		1.98			<100	
XX	F18	DL01	25684	20.0	0.30		2.16 J				
XX	F18	DL01	25685	21.0	0.03 UJ		1.60			<100	
XX	F18	DL01	25686	23.0	0.32		1.67			<100	
XX	F18	DL01	25691	24.0	0.33 J		1.88				
XX	F18	DL01	25692	25.0	0.19		1.88			<100	
XX	F18	DL01	25695	27.0	0.39		1.66 J			<100	
XX	F18	DL01	25696	28.0	0.06		6.52				
XX	F18	DL01	25697	29.0	0.30 J		2.64			<100	
XX	F18	DL01	25698	30.0	0.28		3.46				
XX	F18	DL01	25699	31.0	0.26		2.25			<100	
XX	F18	DL01	25706	32.0	0.03 UJ		0.40 J				

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	F18	DL01	25707	33.0	0.15		0.76 J			<100	
XX	F18	DL01	25720	34.0	0.19		0.27				
XX	F18	DL01	25721	35.0	0.24 J		0.50 J			<100	
XX	F18	DL01	25722	36.0	0.20		0.61 J				
XX	F18	DL01	25723	37.0	0.29		0.41			<100	
XX	F18	DL01	25724	38.0	0.18 J		1.66				
XX	F18	DL01	25725	39.0	0.15		1.12			<100	
XX	F18	DL01	25736	40.0	0.24		0.85 J				
XX	F18	DL01	25735	41.0	0.24		1.01 J			<100	
XX	F18	DL01	25741	42.0	0.16 J		0.97 J				
XX	F18	DL01	25742	43.0	0.21		0.42			<100	
XX	F18	DL01	25747	44.0	0.24 J		1.00 J				
XX	F18	DL01	25748	45.0	0.51		3.89			<100	
XX	F18	DL01	25749	46.0	1.60		11.64				
XX	F18	DL01	25750	47.0	0.59		8.31			79.2 J	
XX	F18	DL01	25757	48.0	1.17 J		15.65 J				
XX	F18	DL01	25758	49.0	1.25		13.26			82.2 J	
XX	F18	DL01	25767	50.0	1.24		12.25				
XX	F18	DL01	25768	51.0	1.34 J		8.50 J			<100	
XX	F18	DL01	25769	52.0	0.85		4.04 J				
XX	F18	DL01	25770	53.0	0.93 J		3.31 J			<100	
XX	F18	DL01	25779	54.0	0.30		2.26 J				
XX	F18	DL01	25780	55.0	0.65		1.00 J			<100	
XX	F18	DL01	25787	56.0	0.61 J		6.80 J				
XX	F18	DL01	25788	57.0	0.38		0.96 J			<100	
XX	F18	DL01	25789	58.0	0.31		2.64 J				
XX	F18	DL01	25790	59.0	0.32 J		1.70 J			<100	
XX	F18	DL01	25810	60.0	0.43		1.49				
XX	F18	DL01	25811	61.0	0.30 J		1.21 J			<100	
XX	F18	DL01	25817	62.0	0.32		0.68 J				
XX	F18	DL01	25818	63.0	0.28		0.76 J			<100	
XX	**F18**	**DL01**	**25819**	**64.0**	**0.285**	**0.70**	**0.68**	**0.0035 U**	**0.0025 U**	**0.25 J**	**0.52 U**
XX	G18	DL01	24281	-1.0	0.92		2.01 J			<100	
XX	G18	DL01	24282	1.0	0.92 J		36.18			42.1 J	
XX	**G18**	**DL01**	**24291**	**3.0**	NS		NS			**921 J**	
XX	G18	DL01	24292	5.0	1.74		39.65			473	
XX	G18	DL01	24295	7.0	2.71		70.01			728	
XX	G18	DL01	24296	9.0	0.09		10.71			<100	
XX	G18	DL01	24300	10.0	0.41		10.44				
XX	G18	DL01	24301	11.0	0.44		10.16			80.8 J	
XX	G18	DL01	24305	13.0	0.33 J		6.81			<100	
XX	G18	DL01	24306	14.0	0.34		8.13				
XX	G18	DL01	24307	15.0	0.20		7.62			134	
XX	G18	DL01	24312	17.0	0.50 J		3.12			<100	
XX	G18	DL01	24313	19.0	0.30		3.45			<100	
XX	G18	DL01	24319	20.0	0.29 J		3.75				
XX	G18	DL01	24320	21.0	0.18		3.18			<100	
XX	G18	DL01	24321	23.0	0.41 J		2.95			<100	
XX	G18	DL01	24329	24.0	0.20		2.51				
XX	G18	DL01	24330	25.0	0.27		2.61 J			<100	
XX	G18	DL01	24331	27.0	0.30 J		6.29			<100	
XX	G18	DL01	24336	29.0	0.03		4.11			<100	
XX	G18	DL01	24347	30.0	0.25		3.94				
XX	G18	DL01	24348	31.0	0.21		2.88			<100	

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	G18	DL01	24349	33.0	0.30 J		3.44			<100	
XX	G18	DL01	24355	34.0	0.44		2.16 J				
XX	G18	DL01	24356	35.0	0.25		1.56			<100	
XX	G18	DL01	24364	37.0	0.22 J		1.68 J			<100	
XX	G18	DL01	24365	39.0	0.20		1.56			<100	
XX	G18	DL01	24371	40.0	0.28		2.71				
XX	G18	DL01	24373	41.0	0.22 J		1.85 J			<100	
XX	G18	DL01	24376	43.0	0.38 J		1.85			50.9 J	
XX	G18	DL01	24390	44.0	0.42		2.91				
XX	G18	DL01	24391	45.0	0.53		4.41			<100	
XX	G18	DL01	24398	46.0	0.88		11.57				
XX	G18	DL01	24399	47.0	0.51		11.78			53.3 J	
XX	G18	DL01	24413	49.0	1.22		21.26			<100	
XX	G18	DL01	24414	51.0	1.57 J		16.32			99.1 J	
XX	G18	DL01	24425	52.0	0.70		7.65				
XX	G18	DL01	24426	53.0	0.72		3.65			<100	
XX	G18	DL01	24427	54.0	0.37 J		2.68				
XX	G18	DL01	24428	55.0	0.57		4.18			<100	
XX	G18	DL01	24431	57.0	0.86		6.08			<100	
XX	G18	DL01	24432	58.0	0.54		4.29				
XX	G18	DL01	24433	59.0	0.57		1.53			<100	
XX	G18	DL01	24438	60.0	0.47		2.21				
XX	G18	DL01	24439	61.0	0.51		2.08			<100	
XX	G18	DL01	24454	63.0	0.57		1.46 J			<100	
XX	**G18**	**DL01**	**24455**	**64.0**	**0.279**	**1.52**	**1.51**	**0.0026 U**	**0.0026 U**	**0.27 J**	**0.52 U**
XX	H18	DL01	24842	-1.0	1.03 J		4.68			45.3 J	
XX	H18	DL01	24843	1.0	0.96		43.18			115	
XX	H18	DL01	24862	5.0	0.77		22.79			48.2 J	
XX	H18	DL01	24863	7.0	0.08		14.10			59.7 J	
XX	H18	DL01	24864	8.0	0.06 UJ		3.82				
XX	H18	DL01	24865	9.0	0.28		6.66			<100	
XX	H18	DL01	24866	10.0	0.34		3.01				
XX	H18	DL01	24867	11.0	0.32		3.85			49.2 J	
XX	H18	DL01	24868	12.0	0.25		5.89				
XX	H18	DL01	24869	13.0	0.32 J		4.66			41.5 J	
XX	H18	DL01	24870	14.0	0.24 J		3.00				
XX	H18	DL01	24871	15.0	0.36		4.08			<100	
XX	H18	DL01	24885	16.0	0.30 J		3.79				
XX	H18	DL01	24886	17.0	0.28		4.96			<100	
XX	H18	DL01	24887	18.0	0.30		2.33				
XX	H18	DL01	24888	19.0	0.26		6.06			<100	
XX	H18	DL01	24894	20.0	0.23		4.40				
XX	H18	DL01	24895	21.0	0.05 UJ		3.28			<100	
XX	H18	DL01	24898	22.0	0.27		4.54				
XX	H18	DL01	24899	23.0	0.28 J		2.49			<100	
XX	H18	DL01	24900	24.0	0.27		3.45				
XX	H18	DL01	24901	25.0	0.29		3.41			<100	
XX	H18	DL01	24902	26.0	0.23 J		3.40				
XX	H18	DL01	24903	27.0	0.24		3.36			<100	
XX	H18	DL01	24907	28.0	0.26		3.06				
XX	H18	DL01	24908	29.0	0.20 J		2.44			<100	
XX	H18	DL01	24917	30.0	0.23		2.55				
XX	H18	DL01	24918	31.0	0.06		2.56			<100	
XX	H18	DL01	24919	32.0	0.33 J		1.16 J				

Table 5
Cell 9 Soil Boring Sample Results

Cell	Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
XX	H18	DL01	24920	33.0	0.27 J		1.60			<100	
XX	H18	DL01	24921	34.0	0.31		2.50				
XX	H18	DL01	24922	35.0	0.27		2.14			<100	
XX	H18	DL01	24924	36.0	0.32		3.19				
XX	H18	DL01	24925	37.0	0.13 J		1.17 J			<100	
XX	H18	DL01	24928	38.0	0.04		1.38				
XX	H18	DL01	24929	39.0	0.32		1.76			<100	
XX	H18	DL01	24932	40.0	0.26		2.10 J				
XX	H18	DL01	24933	41.0	0.21		1.96 J			<100	
XX	H18	DL01	24934	42.0	0.06		0.77 J				
XX	H18	DL01	24935	43.0	0.24		1.24			<100	
XX	H18	DL01	24939	44.0	0.37		2.86				
XX	H18	DL01	24940	45.0	0.46		4.15 J			<100	
XX	H18	DL01	24941	46.0	0.63		5.64				
XX	H18	DL01	24942	47.0	1.06		14.25			<100	
XX	H18	DL01	24943	48.0	1.22		14.48 J				
XX	H18	DL01	24944	49.0	0.90		3.78			<100	
XX	H18	DL01	24949	50.0	0.87		6.45 J				
XX	H18	DL01	24950	51.0	1.62		4.24			<100	
XX	H18	DL01	24954	52.0	0.73		1.04				
XX	H18	DL01	24955	53.0	0.83		2.07 J			<100	
XX	H18	DL01	24957	54.0	0.78		5.05				
XX	H18	DL01	24958	55.0	0.65		6.45 J			<100	
XX	H18	DL01	24963	56.0	0.36		2.82				
XX	H18	DL01	24964	57.0	0.55		3.21			<100	
XX	H18	DL01	24968	58.0	0.35		0.67 UJ				
XX	H18	DL01	24969	59.0	0.46		3.35			<100	
XX	H18	DL01	24970	60.0	0.60		4.16 J				
XX	H18	DL01	24971	61.0	0.48		4.09			<100	
XX	H18	DL01	24972	62.0	0.58		3.84				
XX	H18	DL01	24973	63.0	0.61		1.73 J			<100	
XX	**H18**	**DL01**	**24978**	**64.0**	**0.270**	**0.98**	**0.92**	**0.0026 U**	**0.0026 U**	**0.99 J**	**0.11 J**

Table 5
Cell 9 Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

R - Validation qualifier used to indicate that the result is considered unusable.
U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 5 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).
Supplemental DL sample is analyzed for Ni off Site by Severn Trent Laboratories, Inc. and the result is bold.
SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.
NS - Not sampled due to insufficient recovery.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.
Result is above Site cleanup level.

Table 6
SU04 009 Delineation Soil Boring Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
G14	DL01	30037	0.0	0.86		4.18	0.082	0.082		
G14	DL01	30038	2.0	1.00		4.04 J	0.091	0.091		
G14	DL01	30041	3.0	1.07		9.72			<100	
G14	DL01	30044	5.0	NS		NS			<100	
G14	DL01	30045	6.0	NS		NS	0.089	0.249		
G14	DL01	30046	7.0	0.91		7.52			<100	
G14	DL01	30053	8.0	1.07		3.55	0.088	0.213		
G14	DL01	30054	9.0	0.65		3.07			<100	
G14	**DL01**	**30056**	**10.0**	0.28		2.34	**0.012 U**	**0.0093 J**		
G14	DL01	30057	11.0	0.08		0.94			<100	
G14	DL01	30058	12.0	0.31		1.90	0.086	0.148		
G14	DL01	30059	13.0	0.32		0.56			<100	
G14	DL01	30060	14.0	0.07		1.37 J	0.095	0.258 J		
G14	DL01	30061	15.0	0.07		0.78 J			<100	
G14	DL01	30062	16.0	0.40		1.34	0.185	0.542 J		
G14	DL01	30063	17.0	0.09		1.53 J			<100	
G14	DL01	30071	18.0	0.37		1.37 J	0.185	0.277 J		
G14	DL01	30072	19.0	0.23		1.87 J			<100	
G14	**DL01**	**30073**	**20.0**	0.23		0.61	**0.0025 U**	**0.<100 U**		
G14	DL01	30074	21.0	0.28		1.29			<100	
G14	DL01	30076	22.0	NS		NS	0.194	0.232 J		
G14	DL01	30077	23.0	0.05		0.95 J			<100	
G14	DL01	30078	24.0	NS		NS	0.178	0.382 J		
G14	DL01	30079	25.0	0.05		1.87 J			<100	
G14	DL01	30080	26.0	0.27		1.25 J	0.193	0.488 J		
G14	DL01	30081	27.0	0.27		0.60 UJ			<100	
G14	DL01	30087	29.0	0.30		0.88 J			<100	
G14	**DL01**	**30088**	**30.0**	**0.158**	**0.57**	**0.500**	**0.0025 U**	**0.071 U**	**2.3 J**	**0.16 J**
G14	DL01	30614	33.0	0.20		1.54 J			<100	
G14	DL01	30615	34.0	0.26		1.39	0.185	0.274		
G14	DL01	30617	35.0	0.20		0.61 J			<100	
G14	DL01	30618	36.0	NS		NS	0.206	0.341 J		
G14	DL01	30619	37.0	0.31		0.74 J			<100	
G14	DL01	30620	38.0	0.35		0.77 UJ	0.222	0.316 J		
G14	DL01	30621	39.0	0.04		1.14 J			<100	
G14	**DL01**	**30622**	**40.0**	0.25		2.02 J	**0.013 U**	**0.110 J**		
G14	DL01	30623	41.0	0.03		1.90 J			<100	
G14	DL01	30624	42.0	0.58		0.87 J	0.218	0.218		
G14	DL01	30625	43.0	0.39		0.93 J			<100	
G14	DL01	30626	44.0	0.08		1.61 J	0.226	0.226		
G14	DL01	30627	45.0	1.14		2.53			<100	
G14	DL01	30628	46.0	0.93		3.06	0.108	0.108		
G14	DL01	30629	47.0	0.47 J		3.49			<100	
G14	DL01	30630	48.0	0.69		1.05	0.222	0.222		
G14	DL01	30631	49.0	0.51		3.63			<100	
G14	**DL01**	**30641**	**50.0**	0.55		1.08	**0.015 U**	**0.015 UJ**		
G14	DL01	30642	51.0	1.49 J		2.03 J			<100	
G14	DL01	30645	52.0	0.58		2.06	0.085	0.085		
G14	DL01	30655	53.0	0.70 J		0.60			<100	
G14	DL01	30662	54.0	0.67		3.18 J	0.112	0.112		

Table 6
SU04 009 Delineation Soil Boring Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
G14	DL01	30663	55.0	0.35		0.45			<100	
G14	DL01	30667	56.0	0.57		0.92 J	0.108	0.108		
G14	DL01	30668	57.0	0.43 J		0.71			<100	
G14	DL01	30671	58.0	0.09		0.45 J	0.096	0.096		
G14	DL01	30672	59.0	0.51		1.82			<100	
G14	DL01	30673	60.0	0.38 J		0.56	0.114	0.114		
G14	DL01	30674	61.0	0.40		1.17 J			<100	
G14	DL01	30675	62.0	NS		NS	0.116	0.116		
G14	DL01	30676	63.0	0.10		1.22			<100	
G14	**DL01**	**30677**	**64.0**	**0.187**	**0.134 J**	**0.172**	**0.013 U**	**0.013 UJ**	**0.40 J**	**0.065 J**
G14	DL02	29976	0.0	0.81		2.57 J	0.086	0.086		
G14	DL02	29977	2.0	0.90		6.07	0.093	0.093		
G14	DL02	29978	3.0	1.25		12.63 J			49.1 J	
G14	DL02	29979	4.0	0.75		2.86 J	0.094	0.094		
G14	DL02	29980	5.0	0.70		6.59 J			<100	
G14	DL02	29981	6.0	0.77		6.56	0.089	0.167		
G14	DL02	29982	7.0	0.66		2.17			<100	
G14	DL02	30000	8.0	0.97		8.18 J	0.090	0.090		
G14	DL02	30001	9.0	1.06		3.72 J			<100	
G14	**DL02**	**30006**	**10.0**	1.07		2.19 J	**0.0028 U**	**0.0028 UJ**		
G14	DL02	30007	11.0	0.37		2.86			<100	
G14	DL02	30008	12.0	NS		NS	0.098	0.098		
G14	DL02	30009	13.0	0.26		0.27			<100	
G14	DL02	30010	14.0	0.43		1.53 J	0.111	0.111		
G14	DL02	30011	15.0	0.27		1.96			<100	
G14	DL02	30012	16.0	0.40		1.18 J	0.096	0.096		
G14	DL02	30013	17.0	0.22		0.46 J			<100	
G14	DL02	30014	19.0	0.22		0.53 J			<100	
G14	**DL02**	**30015**	**20.0**	0.33		1.70	**0.0025 U**	**0.0025 UJ**		
G14	DL02	30016	21.0	0.26		1.07 J			<100	
G14	DL02	30019	23.0	0.28		0.56 J			<100	
G14	DL02	30027	24.0	NS		NS	0.098	0.098		
G14	DL02	30024	25.0	0.30		2.89			<100	
G14	DL02	30025	26.0	0.05		0.35	0.103	0.103		
G14	DL02	30026	27.0	0.31		1.64 J			<100	
G14	DL02	30028	28.0	0.36		1.71 J	0.093	0.093		
G14	DL02	30029	29.0	0.28		1.68			<100	
G14	**DL02**	**30033**	**30.0**	**0.145**	**0.246**	**0.239**	**0.0026 U**	**0.0026 UJ**	**2.3 J**	**0.13 J**
G14	DL03	30094	-1.0	0.88		1.23			<100	
G14	DL03	30095	0.0	0.76		4.67	0.094	0.094		
G14	DL03	30103	2.0	0.85		3.68	0.090	0.112		
G14	DL03	30106	3.0	0.73		1.43 J			<100	
G14	DL03	30107	4.0	1.08		2.55 J	0.092	0.092		
G14	DL03	30108	5.0	0.83		4.49			<100	
G14	DL03	30109	6.0	0.79		2.78	0.093	0.756		
G14	DL03	30110	7.0	0.64		1.71			<100	
G14	DL03	30120	9.0	1.52		3.20			<100	
G14	**DL03**	**30121**	**10.0**	0.81		2.08 J	**0.0026 U**	**0.0026 UJ**		
G14	DL03	30122	11.0	0.36		1.08			<100	
G14	DL03	30125	12.0	NS		NS	0.095	0.095		

Table 6
SU04 009 Delineation Soil Boring Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
G14	DL03	30126	13.0	0.57		1.31 J			<100	
G14	DL03	30128	14.0	0.38		2.14 J	0.095	0.095		
G14	DL03	30129	15.0	0.38		0.65			<100	
G14	DL03	30130	16.0	0.55		2.21	0.095	0.095		
G14	DL03	30131	17.0	0.31		1.45 J			<100	
G14	DL03	30134	18.0	0.22		0.89 J	0.099	0.099		
G14	DL03	30135	19.0	0.42		0.90			<100	
G14	**DL03**	**30136**	**20.0**	NS		NS	**0.0025 U**	**0.0025 UJ**		
G14	DL03	30137	21.0	0.21		0.69 J			<100	
G14	DL03	30138	22.0	0.28		1.75	0.096	0.096		
G14	DL03	30139	23.0	0.23		1.08			<100	
G14	DL03	30140	24.0	NS		NS	0.093	0.093		
G14	DL03	30141	25.0	0.24		0.88 J			<100	
G14	DL03	30142	26.0	0.30		1.07 J	0.099	0.099		
G14	DL03	30143	27.0	0.30		0.87 J			<100	
G14	DL03	30144	28.0	0.04		0.39 UJ	0.095	0.095		
G14	DL03	30145	29.0	0.30		0.72 J			<100	
G14	**DL03**	**30146**	**30.0**	**0.272**	**0.188**	**0.159**	**0.0025 U**	**0.0025 UJ**	**2.6 J**	**0.16 J**
G13	DL01	30534	-1.0	0.97		1.26 J			<100	
G13	DL01	30535	0.0	1.05		7.84 J	0.091	0.091		
G13	DL01	30536	2.0	1.07		9.26	**1.202**	0.966		
G13	DL01	30537	3.0	1.07		12.97 J			<100	
G13	DL01	30541	4.0	NS		NS	0.092	0.092		
G13	DL01	30542	5.0	0.65		2.29 J			<100	
G13	DL01	30543	6.0	0.42		1.81 J	0.086	0.086		
G13	DL01	30544	7.0	0.64		1.49 J			<100	
G13	DL01	30549	8.0	1.00		9.07 J	0.109	0.476		
G13	DL01	30550	9.0	0.69		3.28 J			<100	
G13	**DL01**	**30551**	**10.0**	NS		NS	**0.0025 U**	**0.0025 UJ**		
G13	DL01	30552	11.0	0.32		1.22 J			<100	
G13	DL01	30557	12.0	0.53		2.48 J	0.111	0.111		
G13	DL01	30558	13.0	0.39		0.88 J			<100	
G13	DL01	30559	14.0	0.42		1.94 J	0.094	0.094		
G13	DL01	30560	15.0	0.04		1.21 J			<100	
G13	DL01	30561	16.0	0.35		3.46 J	0.090	0.090		
G13	DL01	30562	17.0	0.30		1.40 J			<100	
G13	DL01	30563	19.0	0.25		1.74 J			<100	
G13	**DL01**	**30575**	**20.0**	NS		NS	**0.00076 J**	**0.00099 J**		
G13	DL01	30576	21.0	0.31		1.62 J			<100	
G13	DL01	30577	23.0	0.09		1.17 J			<100	
G13	DL01	30580	24.0	0.09		1.29 J	0.087	0.087		
G13	DL01	30581	25.0	0.31		0.82 J			<100	
G13	DL01	30582	26.0	0.32		1.67 J	0.099	0.099		
G13	DL01	30583	27.0	0.23		0.95 J			<100	
G13	DL01	30584	28.0	0.25		1.17 J	0.092	0.092		
G13	DL01	30585	29.0	0.26		1.24 J			<100	
G13	**DL01**	**30586**	**30.0**	**0.149**	**0.284 J**	**0.257**	**0.0026 U**	**0.0026 UJ**	**1.8 J**	**0.13 J**
F14	DL01	30154	0.0	0.69		2.38 J	0.091	0.091		
F14	DL01	30164	2.0	NS		NS	0.091	0.091		
F14	DL01	30165	3.0	NS		NS			<100	

Table 6
SU04 009 Delineation Soil Boring Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
F14	DL01	30166	5.0	NS		NS			<100	
F14	DL01	30167	7.0	NS		NS			<100	
F14	DL01	30168	8.0	0.91		3.36	0.080	0.317		
F14	DL01	30169	9.0	0.59		1.85 J			<100	
F14	**DL01**	**30170**	**10.0**	0.44		2.70 J	**0.0025 U**	**0.0025 UJ**		
F14	DL01	30171	11.0	0.23		1.22 J			<100	
F14	DL01	30172	12.0	NS		NS	0.090	0.090		
F14	DL01	30173	13.0	0.41		1.05 J			<100	
F14	DL01	30176	14.0	0.37		2.22 J	0.091	0.091		
F14	DL01	30177	15.0	0.34		0.60			<100	
F14	DL01	30178	16.0	0.06		0.94 J	0.095	0.095		
F14	DL01	30179	17.0	0.32		1.99 J			<100	
F14	DL01	30180	18.0	NS		NS	0.092	0.092		
F14	DL01	30181	19.0	0.18		0.78 J			<100	
F14	**DL01**	**30190**	**20.0**	NS		NS	**0.0025 U**	**0.0020 J**		
F14	DL01	30191	21.0	0.06		2.52			<100	
F14	DL01	30192	22.0	NS		NS	0.086	0.086		
F14	DL01	30193	23.0	0.29		1.50 J			<100	
F14	DL01	30194	24.0	NS		NS	0.094	0.094		
F14	DL01	30195	25.0	0.28		1.36			<100	
F14	DL01	30196	26.0	0.05		0.96 J	0.095	0.346 J		
F14	DL01	30197	27.0	0.27		0.67 J			<100	
F14	DL01	30201	28.0	0.30		0.49	0.099	0.203 J		
F14	DL01	30202	29.0	0.05		1.49 J			<100	
F14	**DL01**	**30203**	**30.0**	**0.128**	**0.189**	**0.126**	**0.0025 U**	**0.0033 U**	**2.6 J**	**0.18 J**
F13	DL01	30475	-1.0	NS		NS			<100	
F13	DL01	30476	0.0	0.96		2.56	0.088	0.088		
F13	DL01	30477	2.0	NS		NS	0.103	0.103		
F13	DL01	30478	3.0	1.13		3.06 J			<100	
F13	DL01	30479	5.0	0.79		0.62			<100	
F13	DL01	30485	6.0	0.45		2.76 J	0.101	0.101		
F13	DL01	30486	7.0	0.90		2.20			<100	
F13	DL01	30487	9.0	0.41		1.18 J			<100	
F13	DL01	30494	11.0	0.25		1.29 J			<100	
F13	DL01	30495	12.0	0.64		1.84 J	0.102	0.102		
F13	DL01	30496	13.0	1.09		1.67 J			<100	
F13	DL01	30503	14.0	0.72		2.37 J	0.090	0.090		
F13	DL01	30504	15.0	0.06		0.91 J			<100	
F13	DL01	30505	16.0	0.50		2.29	0.094	0.094		
F13	DL01	30506	17.0	0.06		1.86 J			<100	
F13	DL01	30508	19.0	0.19		0.94 J			<100	
F13	**DL01**	**30509**	**20.0**	NS		NS	**0.0025 U**	**0.0025 UJ**		
F13	DL01	30510	21.0	0.32		0.61 J			<100	
F13	DL01	30511	22.0	NS		NS	0.093	0.093		
F13	DL01	30512	23.0	0.21		0.97 J			<100	
F13	DL01	30513	24.0	0.31		2.04	0.091	0.091		
F13	DL01	30514	25.0	0.06		1.04 J			<100	
F13	DL01	30520	26.0	0.38		2.27 J	0.095	0.095		
F13	DL01	30521	27.0	0.39		1.01 J			<100	
F13	DL01	30522	28.0	0.36		3.40 J	0.089	0.089		

Table 6
SU04 009 Delineation Soil Boring Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)	Be (mg/kg)
F13	DL01	30523	29.0	0.23		1.31 J			<100	
F13	**DL01**	**30524**	**30.0**	**0.137**	**0.159 J**	**0.149**	**0.0025 U**	**0.0025 UJ**	**2.0 J**	**0.15 J**

Table 6
SU04 009 Delineation Soil Boring Sample Results

Analytes:

Th-232 - Thorium-232
U-234 - Uranium-234
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel
Be - Beryllium

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

U - Validation qualifier used to indicate that the result was qualified as non-detect.
J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).
DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.
DL sample at 10 feet bgs and 20 feet bgs is analyzed for volatile organic compounds (TCE and PCE) off Site by Severn Trent Laboratories, Inc. and the result is bold.
SP sample result is bold and indicates that analysis was performed off Site by Severn Trent Laboratories, Inc.
NS - Not sampled due to insufficient recovery.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.
[ ] Result is above Site cleanup level.

Table 7
NYSDEC Additional Borings Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
I19	DECB	30722	-1.0	0.83	1.66 J	0.091	0.091	
I19	DECB	30723	0.0	0.89	8.02			71.8 J
I19	DECB	30724	1.0	1.12	20.07	0.085	**2.704**	
I19	DECB	30725	5.0	0.71	3.42	0.093	0.093	
I19	DECB	30726	6.0	1.07	3.62			<100
I19	DECB	30727	7.0	0.87	4.16	0.093	0.093	
I19	DECB	30733	8.0	NS	NS			<100
I19	DECB	30734	9.0	0.35	2.06	0.092	0.092	
K17	DECC	30760	-1.0	0.79	0.83	0.086	0.086	
K17	DECC	30759	1.0	1.17	9.70	0.087	0.087	
K17	DECC	30761	2.0	0.96	12.55			89.6 J
K17	DECC	30762	3.0	0.91	5.56	0.085	**6.352**	
K17	DECC	30763	5.0	0.65	5.45	0.081	1.809	
K17	DECC	30764	7.0	0.82	9.42	0.091	1.252	
K17	DECC	30765	8.0	0.28	1.51			<100
K17	DECC	30766	9.0	0.29	1.91	0.094	0.094	
J19	DECD	30745	-1.0	0.72	3.16 J	0.087	0.087	
J19	DECD	30746	0.0	NS	NS			<100
J19	DECD	30747	1.0	1.14	14.37	0.089	1.320	
J19	DECD	30748	3.0	0.41	5.99	0.093	**1.988**	
J19	DECD	30749	5.0	NS	NS	0.098	0.211	
J19	DECD	30750	7.0	1.29	3.00	0.086	0.086	
J19	DECD	30752	8.0	0.72	4.42			<100
J19	DECD	30753	9.0	0.61	2.17	0.086	0.086	
N12	DECF	30751	-1.0	0.75	1.71	0.079	0.079	
N12	DECF	30754	1.0	0.75	1.18 J	0.079	0.079	
N12	DECF	30755	5.0	0.72	3.54	0.087	0.777	
N12	DECF	30756	7.0	0.72	1.04 J	0.089	0.320	
N12	DECF	30757	8.0	0.72	1.12 J			<100
N12	DECF	30758	9.0	0.49	1.13 J	0.089	0.089	
L17	DECH	30778	-1.0	0.92	1.67	0.088	0.088	
L17	DECH	30779	0.0	NS	NS			<100
L17	DECH	30780	1.0	1.09	10.46	0.091	0.114	
L17	DECH	30781	2.0	NS	NS			<100
L17	DECH	30782	3.0	1.23	18.46	0.226	**3.753**	
L17	DECH	30783	4.0	NS	NS			<100
L17	DECH	30784	5.0	NS	NS	0.074	**2.104 J**	61.8 J
M19	DECI	30767	-1.0	1.22	4.16	0.083	0.083	
M19	DECI	30768	0.0	1.14	4.31			<100
M19	DECI	30769	1.0	1.06	12.51	0.093	**4.221**	
M19	DECI	30770	2.0	1.24	2.36 J			<100
M19	DECI	30771	3.0	1.17	2.52 J	0.081	0.215	
M19	DECI	30772	4.0	1.25	3.82			<100
M19	DECI	30773	5.0	1.11	2.48	0.082	0.131	
M19	DECI	30774	6.0	1.32	1.19			<100
M19	DECI	30775	7.0	0.83	1.83	0.085	0.105	
M19	DECI	30776	8.0	0.79	2.30			<100

Table 7
NYSDEC Additional Borings Sample Results

Subcell	Boring Location	Sample ID	Depth (feet)	Th-232 (pCi/g)	U-238 (pCi/g)	TCE (mg/kg)	PCE (mg/kg)	Ni (mg/kg)
M19	DECI	30777	9.0	0.23	0.56 J	0.101	0.101	
L16	DECK	30788	-1.0	0.76	2.45			<100
L16	DECK	30789	0.0	0.99	3.12	0.099	0.099	
L16	DECK	30790	1.0	0.95	6.98			<100
L16	DECK	30791	2.0	0.79	12.24	0.377 J	**13.158 J**	
L16	DECK	30792	4.0	1.28	8.68	0.103	**4.282**	
L16	DECK	30793	5.0	1.11	9.69			<100
L16	DECK	30794	6.0	0.42	1.16 J	0.099	0.099	
L16	DECK	30795	7.0	NS	NS			<100
L16	DECK	30796	8.0	0.57	1.34 J	0.105	0.105	
L16	DECK	30797	9.0	NS	NS			<100
L16	DECK	30798	10.0	0.20	1.16	0.092	0.092	
L16	DECK	30799	11.0	0.34	3.18 J			<100
L16	DECK	30800	12.0	0.33	0.62 J	0.091	0.091	
L16	DECK	30801	13.0	NS	NS			<100
L16	DECK	30802	14.0	0.35	0.84 J	0.092	0.092	
L17	DECL	30803	-1.0	NS	NS			<100
L17	DECL	30804	0.0	1.04	3.83	0.092	0.233	
L17	DECL	30805	2.0	1.24	2.89	0.096	**3.919**	
L17	DECL	30806	3.0	1.40	6.69 J			<100
L17	DECL	30807	4.0	0.98	33.64	0.162	**4.286**	
L17	DECL	30808	5.0	0.62	9.33			<100
L17	DECL	30809	6.0	0.72	4.40 J	0.097	0.097	
L17	DECL	30810	7.0	0.62	5.89			<100
L17	DECL	30811	8.0	0.60	5.47	0.095	0.095	
L17	DECL	30812	9.0	NS	NS			<100
L17	DECL	30813	10.0	0.23	2.05	0.092	0.092	
L17	DECL	30814	11.0	NS	NS			<100
L17	DECL	30815	12.0	0.37	4.06	0.094	0.094	
L17	DECL	30816	13.0	0.27	3.14			<100
L17	DECL	30817	14.0	0.29	0.77 UJ	0.096	0.096	

Table 7
NYSDEC Additional Borings Sample Results

Analytes:

Th-232 - Thorium-232
U-238 - Uranium-238
TCE - Trichloroethene
PCE - Tetrachloroethene
Ni - Nickel

Units:

pCi/g - picoCurie/gram
mg/kg - milligram/kilogram

Qualifiers:

J - Validation qualifier used to indicate that the result is considered an estimate.
UJ - Validation qualifier used to indicate that the result was qualified as non-detect and the associated reporting limit is considered an estimate.

Notes:

See Figure 1 for boring locations.
DL sample is analyzed on Site for radionuclides (Th-232 and U-238) using the gamma spectroscopy system.
DL sample is analyzed on Site for Ni using x-ray fluorescence spectroscopy by Stone Environmental Inc. Ni result that is between the detection limit of 40 mg/kg and the reporting limit of 100 mg/kg is estimated. Ni result that is less than the detection limit of 40 mg/kg is reported as less than the reporting limit (<100 mg/kg).
DL sample is analyzed for volatile organic compounds (TCE and PCE) using solid phase microextraction and capillary gas chromatography by Stone Environmental Inc.
NS - Not sampled due to insufficient recovery.
Due to an artifact in the laboratory data reporting program, the on-Site analytical data should be interpreted to two significant figures.
Blank cell indicates analysis was not performed.
[ ] Result is above Site cleanup level.

FIGURES

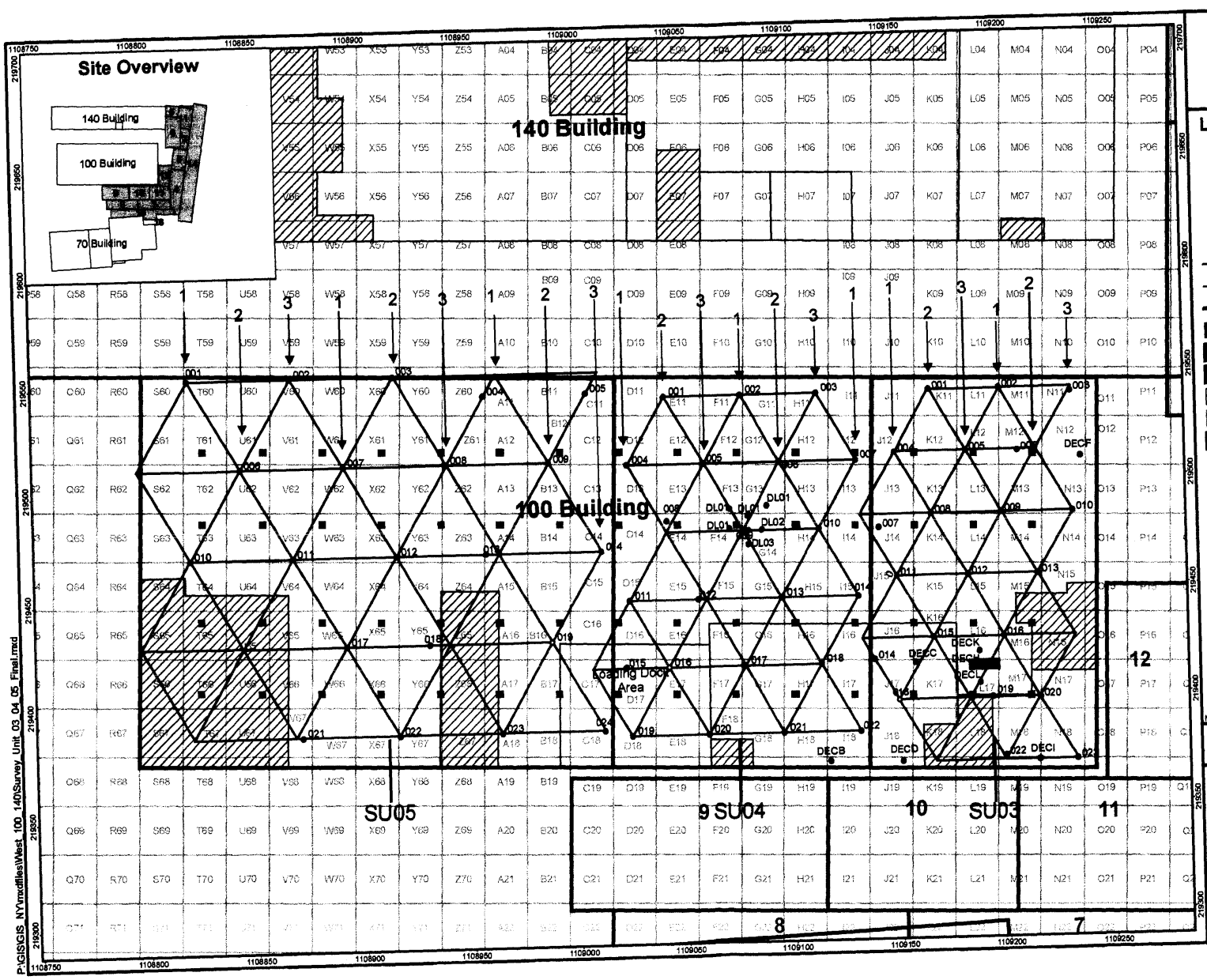

Figure 1
SU03, SU04 and SU05 Systematic Sampling Locations

Legend

- Boring Location
- Random Sample Start Point
- Delineation Boring Location
- NYSDEC-Requested Boring Location
- Building Column
- Systematic Sampling Grid
- Building
- Property Line
- Building 100 UST
- Class 1 Survey Unit
- Class 2 Survey Unit
- Interference Area
- Subcell Boundary
- Cell Boundary

Row 1 SP samples at 1-3', 11-13', 21-23'
Row 2 SP samples at 4-6', 14-16', 24-26'
Row 3 SP samples at 7-9',17-19', 27-29'
All Rows SP sample at 30-32'
All Rows DL samples at 1' increments between SP samples

See Table 1, Table 6 and Table 7 for summarized sample results.

N

Feet
0 50 100

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

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Figure 2

Intervals, Increments and Analyses for Samples

	Row 1			Row 2			Row 3		
SU Interval 1	0	--	No sample	0	--	No sample	0	--	No sample
	1	SP		1	DL	Rad	1	DL	Rad
	2			2	DL	Rad	2	DL	Rad & Nickel
	3	DL	Rad	3	DL	Rad & Nickel	3	DL	Rad
	4	DL	Rad & Nickel	4	SP		4	DL	Rad & Nickel
	5	DL	Rad	5			5	DL	Rad
	6	DL	Rad & Nickel	6	DL	Rad	6	DL	Rad & Nickel
	7	DL	Rad	7	DL	Rad & Nickel	7	SP	
	8	DL	Rad & Nickel	8	DL	Rad	8		
	9	DL	Rad	9	DL	Rad & Nickel	9	DL	Rad
SU Interval 2	10	DL	Rad & Nickel	10	DL	Rad	10	DL	Rad & Nickel
	11	SP		11	DL	Rad & Nickel	11	DL	Rad
	12			12	DL	Rad	12	DL	Rad & Nickel
	13	DL	Rad	13	DL	Rad & Nickel	13	DL	Rad
	14	DL	Rad & Nickel	14	SP		14	DL	Rad & Nickel
	15	DL	Rad	15			15	DL	Rad
	16	DL	Rad & Nickel	16	DL	Rad	16	DL	Rad & Nickel
	17	DL	Rad	17	DL	Rad & Nickel	17	SP	
	18	DL	Rad & Nickel	18	DL	Rad	18		
	19	DL	Rad	19	DL	Rad & Nickel	19	DL	Rad
SU Interval 3	20	DL	Rad & Nickel	20	DL	Rad	20	DL	Rad & Nickel
	21	SP		21	DL	Rad & Nickel	21	DL	Rad
	22			22	DL	Rad	22	DL	Rad & Nickel
	23	DL	Rad (1' spoon)	23	DL	Rad & Nickel	23	DL	Rad
	24	DL	Rad	24	SP		24	DL	Rad & Nickel
	25	DL	Rad & Nickel	25			25	DL	Rad
	26	DL	Rad	26	DL	Rad	26	DL	Rad & Nickel
	27	DL	Rad & Nickel	27	DL	Rad & Nickel	27	SP	
	28	DL	Rad	28	DL	Rad	28		
	29	DL	Rad & Nickel	29	DL	Rad & Nickel	29	DL	Rad (1' spoon)
	30	SP		30	SP		30	SP	
	31			31			31		
	32			32			32		

Notes:

Solid lines indicate the spoon increment (2')
Zero indicates the ground surface
Maximum depth at 30' bgs

Overview:

Row 1 = SP's (1-3', 11-13', 21-23' and 30-32')
Row 2 = SP's (4-6', 14-16', 24-26' and 30-32')
Row 3 = SP's (7-9', 17-19', 27-29' and 30-32')
All Rows = DL's at 1' increments between SP's

Analyses Intervals:

SU Interval 01:
All SP samples from rows 1, 2 and 3 that were collected between 0 - 10' bgs
SU Interval 02:
All SP samples from rows 1, 2 and 3 that were collected between 11 -20' bgs
SU Interval 03:
All SP samples from rows 1, 2 and 3 that were collected between 21 -30' bgs

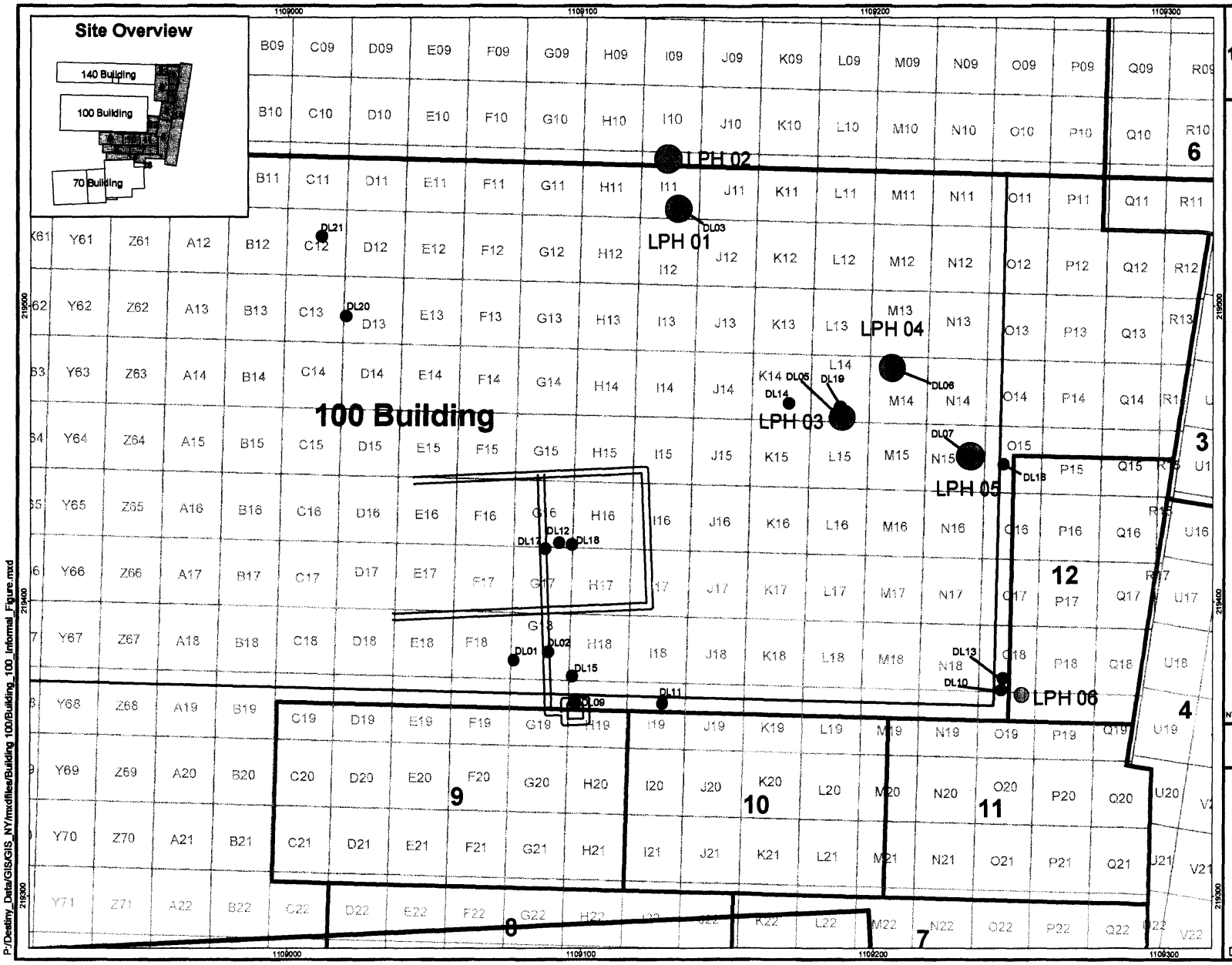

Figure 3
100 Building Focused Sampling Soil Boring Locations

Legend

- Boring Location
- Building
- Property Line
- Historic Floor Drain
- Historic Leach Pool
- Subcell Boundary
- Cell Boundary

See Table 3 for summarized sample results.

Note: Leach pool data provided by available historic maps.

N

Feet

0 30 60

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1 UR827010-039

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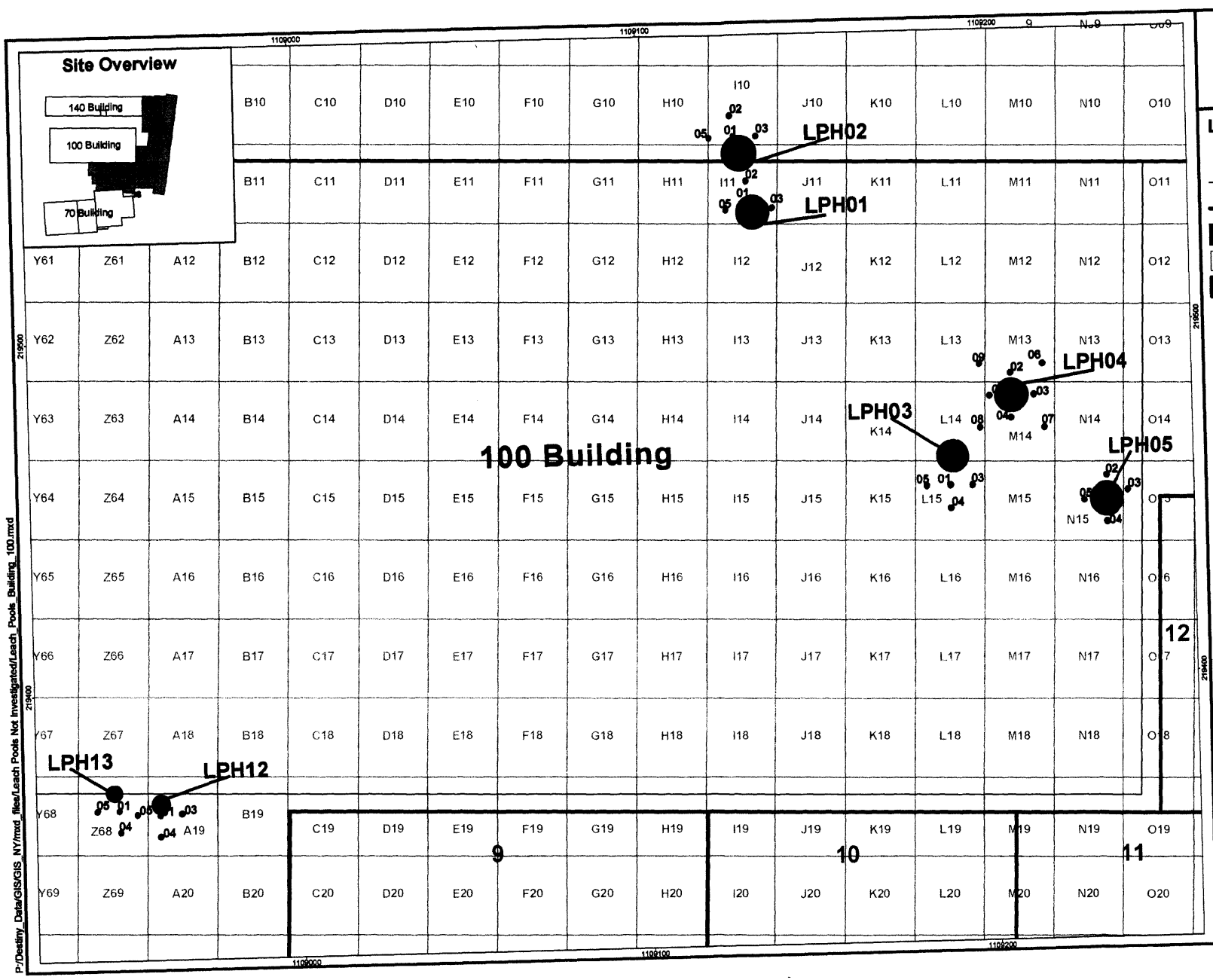

Figure 4
LPH Soil Boring Sample Locations

Legend

- Boring Location
- Building
- Property Line
- Historic Leach Pool
- Subcell Boundary
- Cell Boundaries

See Table 4 for summarized sample results.

Note: Leach pool data provided by available historical maps.

N

Feet

0 25 50

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

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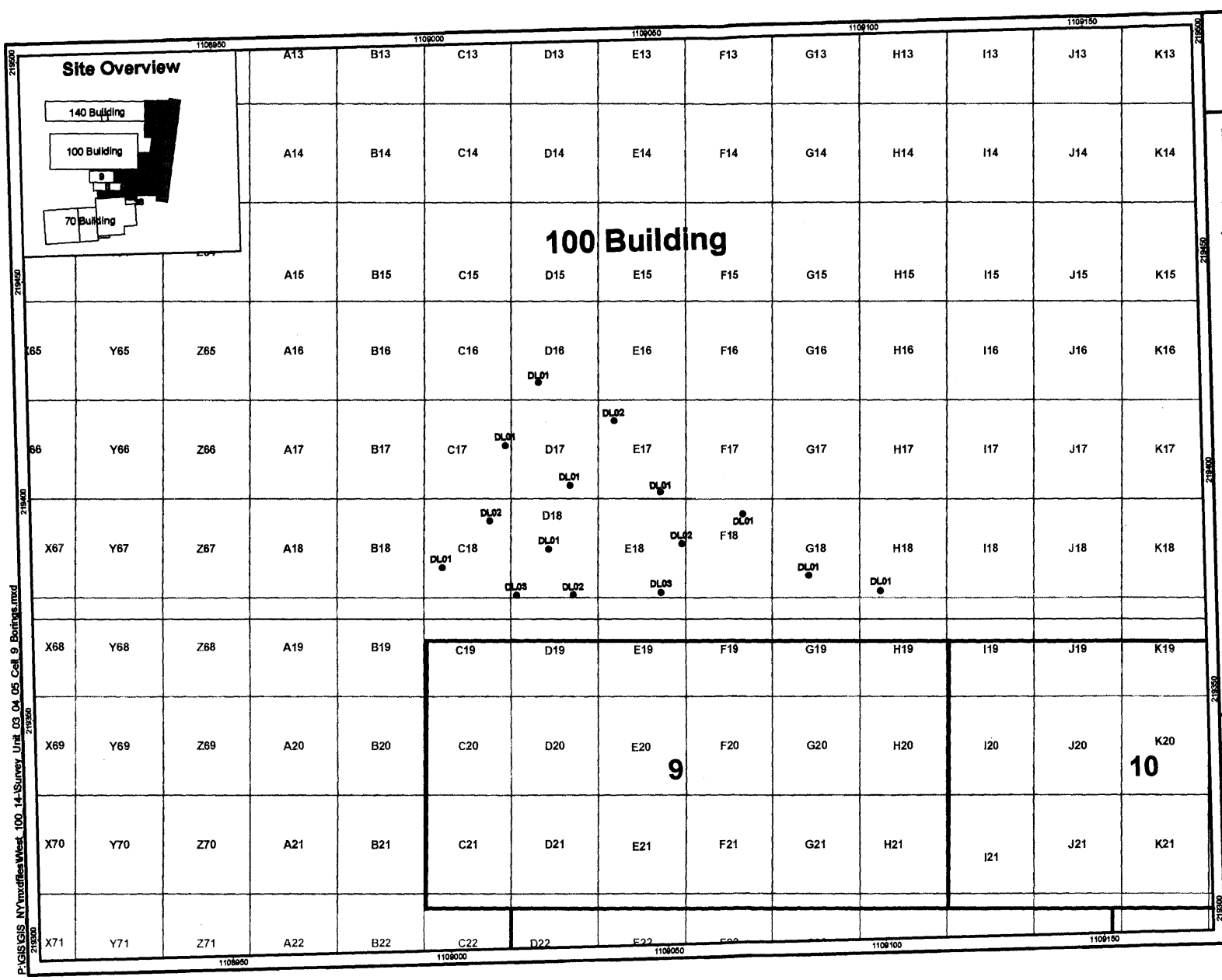

Figure 5
Cell 9
Soil Boring Locations

Legend

- Boring Location
- Building
- Property Line
- Subcell Boundary
- Cell Boundary

See Table 5 for summarized sample results.

N

Feet

0 20 40

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1

URS27010-039

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DRI ID: 1006.H6760

September 29, 2005

APPENDIX A

Systematic
Subsurface Soil Sampling and Analysis Plan
Beneath the 100 Building

Former Sylvania Electric Products Incorporated Facility
Hicksville, New York
GTE Operations Support Incorporated

November 2004

NYSDEC: V-00089-1; URS: 27020-039

This Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building has been reviewed by URS Corporation – New York, and I am in agreement with the methods and cedures to be used in this investigation.

URS Corporation – New York

Robert D. Brathvode, P.E.
Engineer of Record

This Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building has been reviewed by Professional Radiation Consulting, Inc. (PRCI) in accordance with Envirocon's New York State Department of Labor Radioactive Materials License No. 3095-4330, and I am in agreement with the methods and procedures to be used in this investigation.

CHP for Shane Brightwell

Shane Brightwell, CHP
President, PRCI
RSO, Radioactive Materials License No. 3095-4330

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FIGURES

Figure 1 – Survey Units Beneath the 100 Building

1.0 INTRODUCTION

This Systematic "Subsurface Soil Sampling and Analysis Plan" (SSSAP) has been prepared to characterize the soils in accessible areas beneath the 100 Building. This SSSAP describes applicable guidance, characterization (i.e., survey, design and sampling protocols), and laboratory analysis for the soils. The results of this SSSAP will enable GTE Operations Support Incorporated (GTEOSI) to determine the extent to which remedial activities may be necessary beneath the 100 Building.

During the last two years, soils containing residual radionuclides of uranium (U) and thorium (Th); were excavated from the Former Sylvania Electric Products Incorporated (Sylvania) property in Hicksville, New York (the Site) and shipped off Site to an approved disposal facility. To date, remediation activities at the Site have focused primarily on the eastern portions of the 100 and 140 Properties. This eastern focus has been based on what is known regarding historical Sylvania facilities and operations, and findings of previous Site investigations. Limited subsurface investigation has occurred under the 100 Building.

The various sections of this SSSAP present the steps to be implemented to characterize the subsurface soils in the areas below the 100 Building. The characterization will include not only radionuclides, but also certain volatile organic compounds (VOCs) [(tetrachloroethene (PCE) and trichloroethene (TCE)] and nickel (Ni) (collectively, "target analytes"). Modifications to the steps will be permitted when field conditions or sample results indicate the modifications would better support the intent and objective of this plan as stated in Section 2.0 below. All modifications to steps in this SSSAP shall be made with the prior concurrence of the Radiation Safety Officer (or his designated alternate) and the prior approval of the Project Coordinator.

2.0 OBJECTIVE

The objective of this SSSAP is the characterization of soils in specified areas as shown in Figure 1. For radiological characterization purposes, these areas are referred to as "survey units" (SUs) as defined in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM). The 100 Building comprises approximately 80,100 (ft^2) and is the subject of this Plan.

Note: The area designated as SU03 is the approximate eastern one-quarter of the 100 Building. Within SU03, portions of the southeastern and southern areas (tool storage and office areas) of the survey unit are not readily accessible for characterization (i.e., building alterations would be required prior to employing the prescribed sampling equipment). The area designated as SU04 lies to the west of SU03, and comprises slightly more than one-quarter of the 100 Building area. Only a small portion of the survey unit adjacent to the south wall of the building (utility room) is not readily accessible for characterization. The third survey unit is designated SU05 and includes approximately the western one-half of Building 100. Two areas in the southern and the southwestern corner (office areas) of this survey unit are not readily accessible for characterization (Figure 1).

3.0 APPLICABLE GUIDANCE

This SSSAP was prepared in accordance with Voluntary Cleanup Agreement, Site V-00089-1, Index W1-0903-01-12, between New York State Department of Environmental Conservation (NYSDEC) and GTEOSI. Field procedures and analytical methods identified in the Site's approved *Comprehensive Soil Remediation Work Plan, (Revision 5: June 2003)* (Work Plan) have been incorporated in this SSSAP

where appropriate. Guidance specific to radiological and chemical characterization is described in their associated sections, as applicable.

4.0 CHARACTERIZATION

The soils within SU03 and SU04 are anticipated to contain some residual target analytes based on investigations conducted in 2004. SU05 is expected to exhibit radioactivity at natural background concentrations or residual radioactivity below the cleanup levels. (Note: the target cleanup levels are defined in the Work Plan). To ensure adequate characterization of the SUs shown in Figure 1, the following sources were reviewed during preparation of this SSSAP:

- **Historic maps, aerial photos, and historic documents** – These sources indicate that buildings in which uranium fuel element fabrication occurred during the 1950s and 1960s covered significant portions of SU03 and SU04.

- **Prior preliminary biased investigation performed beneath the 100 Building** – Preliminary biased investigation conducted in SU03 indicates the presence of target analytes above cleanup levels.

- **Excavation in adjacent cells** – Field surveys and sampling south of Building 100 associated with Cell 9 and east of Building 100 associated with Cell 12 indicates the potential for target analytes above the cleanup levels in SU03 and SU04.

The radiological characterization is designed using guidance provided in MARSSIM as discussed below (Section 4.1). Concurrently, VOCs and Ni soil residuals will be characterized as described in Section 4.2.

4.1 RADIOLOGICAL

The following sections describe the radiological guidance and sampling parameters to be used to execute this SSSAP. This SSSAP has been developed using a combination of applicable MARSSIM guidance, historic documents, and knowledge of Site subsurface conditions gained during investigations and remediation.

4.1.1 Applicable Radiological Guidance

The investigation of soils to determine the presence (if any), concentrations, extent, and boundaries of radionuclides is termed a *characterization* survey. The principles for a characterization survey described in Chapter 5 of MARSSIM have been considered in developing this SSSAP. Specific methods recommended in MARSSIM for subsurface soil sampling have also been incorporated in this SSSAP.

4.1.2 Survey Unit

Classification

The SUs were designated as MARSSIM Class 1 for SU03 and SU04 since they have a potential to contain soils with target analytes at concentrations that exceed the cleanup levels. SU05 was designated as MARSSIM Class 2 since target analytes in soil are not expected to exceed the cleanup levels. A systematic triangular sampling pattern will be used to provide uniform lateral coverage of these SUs. This triangular grid based system, as prescribed by MARSSIM for Class 1 and Class 2 SUs, is useful as it accommodates both the radiological and chemical sampling.

Layout

SU03 is approximately 1,755 square meters (m^2) or 18,894 ft^2. Of this total area, 1,559 m^2 (16,775 ft^2) are readily accessible for characterization. SU04 is approximately 2,011 m^2 or 21,655 ft^2. Of this total area, 1,988 m^2 (21,408 ft^2) are readily accessible for characterization. SU05 is approximately 3,673 m^2 (39,539 ft^2). Of this total area, 2,945 m^2 (31,695 ft^2) are readily accessible for characterization. As indicated in Section 4.1.3, a triangular grid system will be used and nomenclature will be adopted from the Site grid system described below.

The Site is on a northing/easting planar grid coordinate system. The Site grid pattern was developed to accommodate excavation cells, and each cell is divided into subcells. Each subcell has a north-south length of 6.7 meters (m) or 22 feet (ft) and an east-west width of 6.1 m (20 ft). The subcells are uniquely identified by letter designations for north-south columns and number designations for east-west rows. This grid coordinate system will be used for defining the sample nomenclature within the SUs.

4.1.3 Sample Locations

Number of Horizontal Sample Locations

MARSSIM bases the number of samples (N) in a SU on how close the average expected concentration in the SU is to the cleanup level, how much variation there is in the observed or expected concentrations, and the sensitivity of equipment scanning capabilities with respect to the cleanup levels. For SU03 and SU04, the minimum number of samples to be collected in each SU is 17. Although MARSSIM indicates only 17 samples are sufficient, 20 sample locations in each SU were selected to provide lateral coverage and to ensure that the minimum number of 17 samples can be collected in the event field conditions do not allow collection of soil samples at all 20 locations. For SU05, the minimum number of samples is 13. Although MARSSIM indicates only 13 samples are sufficient, 16 sample locations were selected to provide lateral coverage and to ensure that the minimum number of 13 samples can be collected in the event field conditions do not allow collection of soil samples at all 16 locations. If sample locations fall outside the SU boundary due to the grid orientation, they may be relocated inside the grid using the criteria described below.

Sample Start Point

MARSSIM suggests establishing a systematic sampling pattern using a random start point. A random number generator was used to select planar coordinates within the footprint of each of the SU boundaries. The associated systematic triangular sample pattern, as described below, was established in each SU by placing one of the sample locations at the start point coordinates.

Horizontal Sample Locations

For each SU, once N, the SU size, the grid system pattern, and the start point were established, the sample locations were then selected and mapped. The calculated maximum east-west distance between sampling locations (L_N) and the north-south distance between sampling rows (L'_N) are listed below.

Survey Unit	N (Samples)	L_N (meters)	L'_N (meters)
SU03	20	10.07	8.72
SU04	20	10.71	9.28
SU05	16	14.58	12.63

Some of the sample locations may have to be modified to avoid obstructions encountered in the field (i.e., utilities). Any sample location that must be relocated up to one-third of the diagonal distance between planned sample locations [≤3.4 m (11.2 ft) in SU03, ≤3.6 m (11.7 ft) in SU04, and ≤4.9 m (16.1 ft) in SU05] will be relocated accordingly. Any sample location that must be relocated a distance greater than the applicable distance specified above will be either eliminated or randomly relocated using the method for generating random coordinates as described previously.

If a sample location falls just outside of the SU boundary, the sample may be evaluated for relocation to within the SU boundary, depending on the required distance and obstructions. The result may be that the SU has more than the minimum number of sampling locations in order to provide as uniform coverage as practical. The addition of sample points does not reduce the effectiveness of the methods described in MARSSIM.

Vertical Sampling Depth

Vertical sampling and excavation depths on Site have been measured in feet below ground surface (bgs); therefore, vertical units are expressed here in both meters and feet (in parentheses). Based on the results of subsurface soil investigations and excavations, most impacts occur from the surface down to about 7.3 m (24 ft) bgs, with infrequent impacts identified greater than 7.3 m (24 ft) bgs. Impacts below 7.3 m (24 ft) bgs were usually identified based on shallow indicators. Given this history, a target maximum sampling depth of approximately 9 m (30 ft) bgs has been established to provide an additional 2-m (6-ft) buffer and to accommodate the pattern of the vertical sampling intervals as described below. If exceedences of the cleanup objectives are encountered at 9 m (30 ft) bgs, additional sampling will continue to define the vertical extent of impacts.

Vertical Sample Intervals

Based on the results of excavation and subsurface soil investigations performed during remediation on Site, impacts may be present in relatively thin soil veins. Specifically, concentrations may increase from not detected to greater than the cleanup levels in the next lower 0.3-m (1-ft) interval. Within the same boring, the concentrations may then decrease rapidly over the next 0.3- or 0.6-m (1- or 2-ft) intervals. Note that the measured depths of the soil layers with elevated radiological impacts may vary due to both depositional nature of the impacts and the assumption that the surface is a uniform elevation (measured bgs).

Based on the above information, the following subsurface soil sampling parameters were established.

- Characterization/Final Verification samples will be collected at 3-m (10-ft) intervals. These samples will be collected, documented, labeled, and analyzed by on-Site and off-Site analytical methods as Sample Point (SP) samples. SP samples are treated the same as Confirmation/Verification (CF/VF) samples as described in the Work Plan.

- The SP sample pattern was established so that each sample at the corner of an equilateral triangle is vertically staggered by 1 m (3.3 ft). For example:

    1. The first triangle corner (#1) sampling location will have SP samples collected from the top 1-ft segment of the 1-, 4-, and 7-m (1-, 11-, and 21-ft) intervals;

    2. The second triangle corner (#2) sampling location will have SP samples collected from the top 1-ft segment of the 2-, 5-, and 8-m (4-, 14-, and 24-ft) intervals; and

3. The third triangle corner (#3) sampling location will have SP samples collected from the top 1-ft segment of the 3-, 6-, and 9-m (7-, 17-, and 27-ft) intervals.

The staggered vertical sample pattern result for a single set of three adjacent sample locations resembles a triangular "staircase" or helical pattern. This pattern works as follows*:

a) The sample locations in the westernmost north-south oriented column are all sampled at the intervals outlined in #1 above;

b) The sample locations in the second north-south oriented column to the east are all sampled at intervals outlined in #2 above;

c) The sample locations in the third north-south oriented column to the east are all sampled at the intervals outlined in #3 above;

d) The sample locations in the fourth north-south oriented column to the east are all sampled at the intervals outlined in #1 above;

e) The sample locations in the fifth north-south oriented column to the east are all sampled at the intervals outlined in #2 above; and

f) The sample locations in the sixth north-south oriented column to the east are all sampled at the intervals outlined in #3 above.

* The pattern repeats after every third column.

- The 0.3-m (1-ft) interval samples between the SP sample intervals will be collected and analyzed on Site as Delineation (DL) Samples. This will provide additional assurance that any relatively thin veins of impacts present between the SP interval samples will be identified.

4.2 CHEMICAL

As indicated in the introduction of this SSSAP, the potential for residual VOC and Ni impacts in the SUs will be evaluated concurrently with the radiological impacts. The triangular grid system established under MARSSIM and the vertical interval sampling were evaluated for this purpose and accepted. This system provides both vertical and lateral coverage to adequately evaluate the potential for chemical impacts. If elevated concentrations of VOCs and/or Ni are detected, the soils around the location will be considered for additional investigation or remedial action, as appropriate.

4.3 MATERIALS AND METHODS

The following narrative describes the sample collection, analysis, and evaluation methodology to be used to execute this SSSAP.

4.3.1 Soil Sampling Equipment

A hollow-stem auger drill rig with split-spoon sampling capabilities will be used to collect soil samples. The split spoon [0.6 m (2 ft) in length and 0.08 m (3 inches) in diameter] will be advanced in 0.6-m (2-ft) intervals. Two, 0.3-m (1-ft) interval samples will be collected per split-spoon.

4.3.2 Sample Field Screening and Preparation

Each sample will be initially field-screened with a 3-inch sodium iodide (NaI) gamma detector to evaluate potential residual radiological impacts and a photoionization detector (PID) to evaluate the presence of VOCs. In addition, an x-ray fluorescence (XRF) spectrometer will be used on Site to screen samples for Ni. Sample descriptions and field observations will be documented on the boring logs.

4.3.3 Sample Collection

A minimum of two samples will be collected per split spoon barring loss or incomplete recovery. These samples will be designated as either DL or SP, as applicable. DL samples will be collected at the intervals between SP samples from the surface down to the bottom sampling depth of approximately 9 m (30 ft) bgs.

Samples collected for radiological analysis will be placed in 1-liter Marinelli containers. DL samples will be used for radiological screening and analyzed on Site using gamma spectroscopy. The SP samples will be analyzed for radionuclides on Site and off Site, consistent with the Work Plan criteria for CF/VF sampling.

Samples collected for chemical analysis will be placed in pre-preserved methanol vials and non-preserved 40-ml vials. DL samples are not analyzed for VOCs or Ni unless field screening/observations support collection of a chemical sample. DL samples with PID screening readings of 50 parts per million (ppm) or higher will be collected for VOC analysis by Severn Trent Laboratories (STL), Earth City, Missouri. The SP samples will be collected for analysis of VOCs both on Site and off Site, consistent with the Work Plan criteria for CF/VF sampling.

A geologist will describe the samples in general accordance with the Unified Soil Classification System (USCS). Sample descriptions will include soil type, color, moisture, and other visual observations and field readings. This information will be documented on soil boring logs.

All samples will be logged into the Site sample tracking and barcode system.

4.3.4 Sample Analysis

Each DL sample will be analyzed for 10 minutes by on-Site gamma spectroscopy (providing a nominal detection limit of approximately 0.014 pCi/g for Th-232 and 3.6 pCi/g for U-238, both of which are far below the Site cleanup levels) to quantify the concentrations of target radionuclides of U and Th. Each SP sample will be analyzed for 30 minutes by on-Site gamma spectroscopy (providing a nominal detection limit of approximately 0.008 pCi/g for Th-232 and 2.0 pCi/g for U-238, both of which are far below the Site cleanup levels) as well as by alpha spectroscopy at STL for isotopic U and Th.

If DL samples are collected for chemical analyses, they may be screened using XRF for Ni and analyzed for VOCs on Site by Stone Environmental. Each SP sample will be analyzed for VOCs on Site by Stone Environmental as well as by STL for VOCs and Ni. SP samples will also be analyzed for beryllium (Be).

5.0 SAMPLING/ANALYSIS PROCEDURE

The following is the step-by-step procedure for sample collection and subsequent analysis.

1. The applicable Chemical/Radiological Work Permit (C/RWP) and Activity Hazards Analysis (AHA) will be in place prior to commencement of sampling.

2. The field crew will be briefed on this procedure prior to commencement of sampling.

3. Each sampling location will be located and surveyed in the field using either a laser positioning system (LPS) or global positioning system (GPS) surveying system.

4. Each sample location will be investigated for utilities and obstructions prior to saw cutting any pavement or commencement of sampling. If a sample location is in an area where utilities or obstructions have been identified, then the sample location shall be adjusted to a safe, practical location as close to the proposed location as possible, but no more distant than 3.4 m (11.2 ft) in SU03, 3.6 m (11.7 ft) in SU04, or 4.9 m (16.1 ft) in SU05. Any sample location that cannot be relocated within these criteria will be eliminated or randomly relocated per Section 4.1.3.

5. The split-spoon sampler will be advanced to the predetermined maximum depth range of approximately 9 m (30 ft) bgs, in 0.6-m (2-ft) intervals, collecting two, 0.3-m (1-ft) samples per sampling cycle.

6. Radiological field screening of samples will be conducted on each sample using a NaI gamma detector.

7. Chemical field screening of samples for VOCs will be conducted on each sample using a PID. An XRF spectrometer will be used for on-Site Ni screening of every other sample beginning with the second sample in the boring, continuing with the fourth sample, sixth sample, etc. Soil samples (~100 g) for Ni screening by XRF will be collected in Ziploc® bags if the soils are relatively dry and in glass jars if the moisture content is approximately 20% or higher. The samples will be delivered to Stone Environmental for either direct screening by XRF, or for drying in an oven, and then screening by XRF. For those DL quality control (QC) samples to be submitted to STL, the soils will be transferred from the Ziploc® bags to 40-ml glass vials in the sample preparation area. For QC purposes, every tenth sample will be screened by XRF and then submitted to STL for duplicate analysis. SP samples will be analyzed for Be.

8. A geologist will log the borings and record observations and measurements consistent with the USCS nomenclature and procedures, noting indications of soil impacts by chemicals and other potential contributors to contamination.

9. DL screening samples will be collected at the intervals between SP samples prescribed in Section 4.1.3. Radiological DL samples will be analyzed by on-Site gamma spectroscopy for a 10-minute count time. If field conditions warrant and chemical DL samples are collected, they will be analyzed for VOCs on Site by Stone Environmental Chemical DL samples with PID readings of 50 ppm or greater will be submitted for analysis to STL.

10. SP samples will be collected at the intervals prescribed in Section 4.1.3 and will be treated in the same manner as CF/VF samples. Radiological SP samples will be analyzed by on-Site gamma spectroscopy for a 30-minute count time as well as off-Site isotopic analyses by STL. Chemical SP samples will be collected and placed in vials with methanol for on-Site analysis by

Stone Environmental and in 40-ml glass vials for submission to STL for analysis of VOCs, Ni, and Be.

11. If oily soils are encountered, they will be collected while sampling as either DL or SP samples. Pursuant to the NYSDEC request, these soils will be submitted to STL for analysis of polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) base/neutral fraction. The soils collected for PCBs and SVOC analyses will be placed in 250-ml glass jars; a minimum of 100 g is needed to accommodate both analyses. The containers for the other analyses will follow the instructions provided above. (If sufficient sample volume of oily soils is not available, the chemical analyses for VOCs, SVOCs, PCBs, Ni and Be will take precedence over samples for radiological analyses.

12. After the completion of sampling from a given location, the borehole will be backfilled with clean cuttings and/or clean on-Site backfill material to within 0.1 to 0.15 m (4 to 6 inches) of the top of the borehole. The remaining 0.1 to 0.15 m (4 to 6 inches) will be filled with asphalt or other applicable surfacing material.

13. Decontamination of sampling equipment will be performed in accordance with SOP-RAD-011, *Equipment Decontamination* and in accordance with the chemical decontamination procedures.

6.0 TARGET CONCENTRATIONS

The soil concentrations will be compared to the Site cleanup levels as defined in the Work Plan.

7.0 ASSESSMENT

Currently, the SUs are beneath Building 100. As a result, performing surface radiation scans as surveys are not practical to detect the presence of surface or subsurface radiological impacts in excess of cleanup criteria. MARSSIM allows for modifications to the survey design to address subsurface soils. However, in order to classify SUs as non-impacted, or to facilitate remediation planning, subsurface characterization is required. In addition, the data quality objectives process also allows that, based on the data needs for a survey, the decision can be made that sampling and analysis are necessary.

7.1 RADIOLOGICAL

7.1.1 Survey Unit Assessment

Each SU will be characterized/verified vertically at 3-m (10-ft) staggered intervals. This approach for subsurface soils is not directly addressed in MARSSIM, which provides characterization and final verification guidance primarily on surface soils. Therefore, each 3-m (10-ft) depth interval will be evaluated independently as if that interval were representative of an undulating soil surface, using the MARSSIM approach to surface soils. The SP samples within each 3-m (10-ft) depth interval will be treated as if they were collected from a continuous varying surface that existed at their corresponding depths [i.e., all samples in the 0 to 3-m (0 to 10-ft) interval will be evaluated independently using a MARSSIM statistical test and all samples in the 3- to 6-m (10- to 20-ft) interval will be evaluated independently using the MARSSIM statistical test]. This approach will be used for each of the 3-m (10-ft) intervals.

7.1.2 Decision Analysis

The radiological analytical results will be evaluated using the default null hypothesis recommended in MARSSIM, which states: "The residual radioactivity in the survey unit exceeds the release criterion." The MARSSIM "Sign Test" (assuming no contribution from background radionuclides) will be used to reject the null hypothesis. When the null hypothesis is rejected, then the SU will pass and qualify for release. If the null hypothesis cannot be rejected, further investigation or remedial action may be necessary.

As stated earlier, each 3-m (10-ft) sampling interval data set will be evaluated independently as a soil (undulating planar) surface sample set generated from all SP samples within that 3-m (10-ft) interval. Therefore, there will be at least three independent evaluations of the surface and subsurface soils within each SU.

7.2 CHEMICAL

The chemical analytical results will be evaluated independently and compared to the Site cleanup levels specified in the Work Plan, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4060, or Site background concentrations. Exceedences will be considered for additional investigation or remedial action, as appropriate.

8.0 SCHEDULE

The work described in this SSSAP is scheduled to start in December 2004.

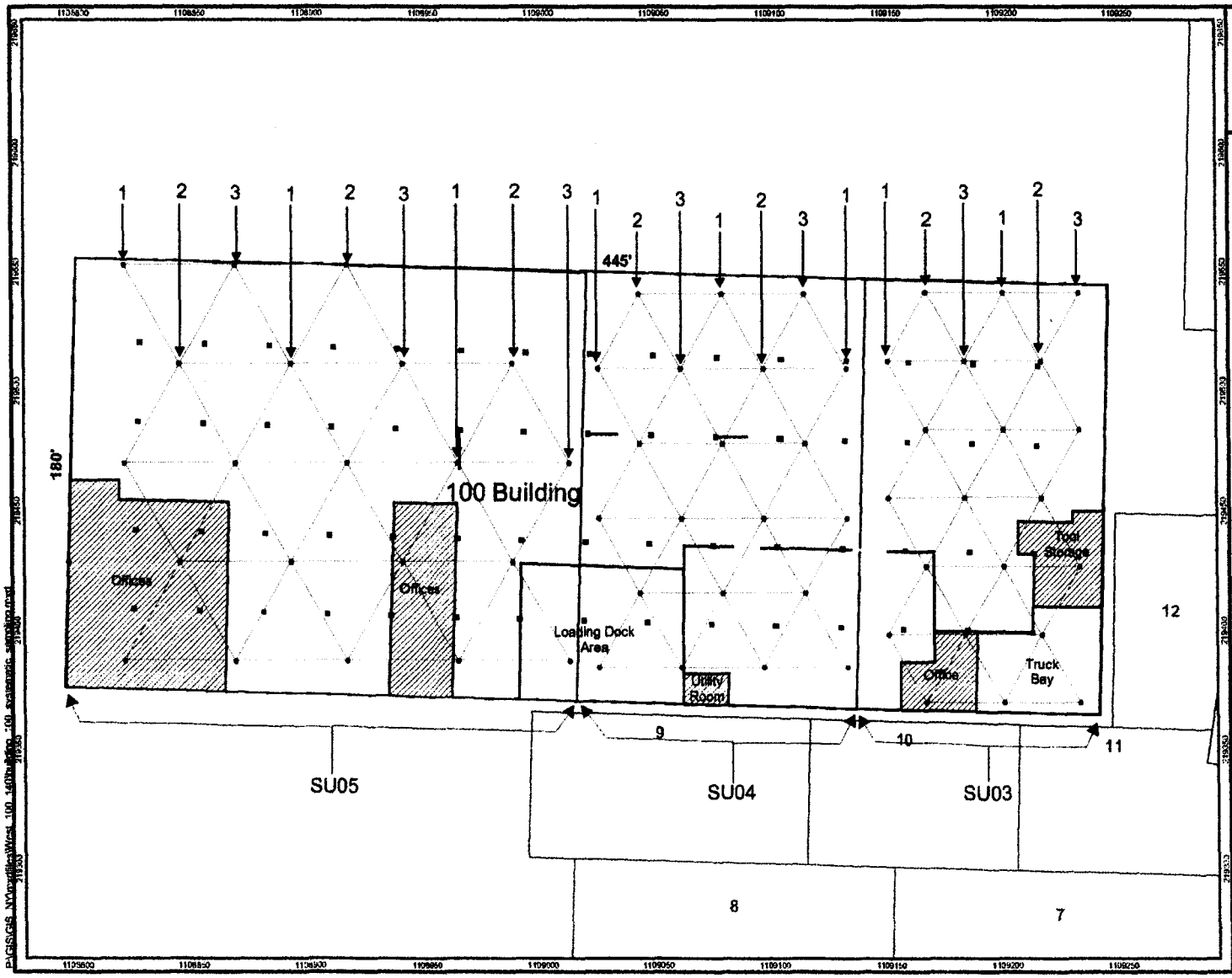

Figure 1
Survey Units - Beneath the 100 Building

Legend

- Random Sample Starting Points
- Sample Locations
- Sample Grid Layout
- Structure Columns Building 100
- Class 1 Survey Unit
- Class 2 Survey Unit
- Not Readily Accessible to Drilling Equipment
- Cell Boundaries

Cell Number

1 1-Meter Vertical Sampling Start Interval
2 2-Meter Vertical Sampling Start Interval
3 3-Meter Vertical Sampling Start Interval

Feet
0 50 100

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00049.1 URS27010-059

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

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RESOURCES, INC.

DRI ID: 1006.H6246 November 03, 2004

APPENDIX B

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region One
Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone: (631) 444-0240 • FAX: (631) 444-0248
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

RECEIVED
DEC 28 2004
By

December 20, 2004

Jean Agostinelli
Vice President - Controller
GTE Operations Support Inc.
600 Hidden Ridge Drive (HQE03E75)
Irving, TX 75038

Re: Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building
Former Sylvania Electric Products Facility, #V00089-1

Dear Ms. Agostinelli:

The Department offers the following comments on the subject documents:

1) 100 Building - Vertical Sampling Depth

Please clarify ground surface reference point particularly as it relates to the loading dock area of the 100 property. The loading dock floor is approximately four to five feet below the 100 building's floor. The Department wants to ensure that the six foot buffer built into your sampling plan is not lost.

2) Soil Gas Sampling

Based on a preliminary analysis of the groundwater sampling results, there may still be undiscovered source areas for chlorinated solvents in the western and central portions of the site. As another tool in identifying the location of these volatile organic compounds, the Department requests that a soil gas sample be collected from each borehole after the proposed shallow samples have been removed. Please propose a depth at which to collect these soil gas samples which is somewhere between three feet and ten feet below the building slab. The samples could be analyzed by a PID in a head space sample or by your on-site laboratory, whichever you prefer.

3) Additional Investigation Borings Between Survey Units SU05 and SU04 and Between Survey Units SU04 and SU05 for the 100 Building

There is a space between survey units SU04 and SU05 and between SU03 and SU04. It is not necessary to alter the survey units. However, I am requesting five additional investigation

borings at the locations shown in the attached figure to give better coverage.

The space between SU04 and SU05 is by western portion of the chemical processing area for the former AEC building on the south portion of the gap and by an historical metal storage tank and stucco building on the north portion of the gap. Groundwater data suggests the presence of potential nickel and VOC source areas near this gap. The nickel and radiological contamination found in cell 9 probably extends to under the 100 building.

The space between SU03 and SU04 is just north of the process tank found in the northwest corner of cell 10 and is near the eastern wall of the former AEC building. The piping leading from the 100 building to the former reservoir in the rear of the 100 property apparently originated near the northeast corner of the AEC building. Based on an old figure, there was a pump in the cellar of this portion of the building which probably was used to pump water to the reservoir. This area is of interest due to contamination discovered in the reservoir. Additionally, the source of the radiological contamination in MW-2, which is downgradient of this area, has apparently not been found yet.

It is for the above reasons that I am requesting the additional investigation borings.

4) Historical Leaching Pool by the 140 Building Loading Dock

There is one historical leaching reportedly located inside the 140 building, just west of the loading dock, that was not investigated in the recent leaching pool investigation. It is just west of the former Building 2, the earlier commercial manufacturing building, and just east of a two-story frame building which I believe to be the "farm house". The farm house may have been used historically for machining operations. In SU07 for the 140 building, the survey point in the southeast corner of this survey unit comes very near the location of this former leaching pool. Please move this survey point slightly so that is located over the expected center of this pool. This pool must be investigated due to the high concentrations of PCE that were detected in nearby LPH21. Since the sediment sample in LPH21 detected percent concentrations, degreasing operations were most likely located historically somewhere near this pool. The leaching pool apparently is within the area identified as the "Lunch Room" on your figure. Please let me know if this presents a difficulty in investigating this pool.

If high soil gas readings are detected in any of the grid samples near the "Safety Cage" by the western portion of Building 2, additional borings will be requested around this area later. The western portion of that building would be the most likely source of the solvents that were found in LPH21.

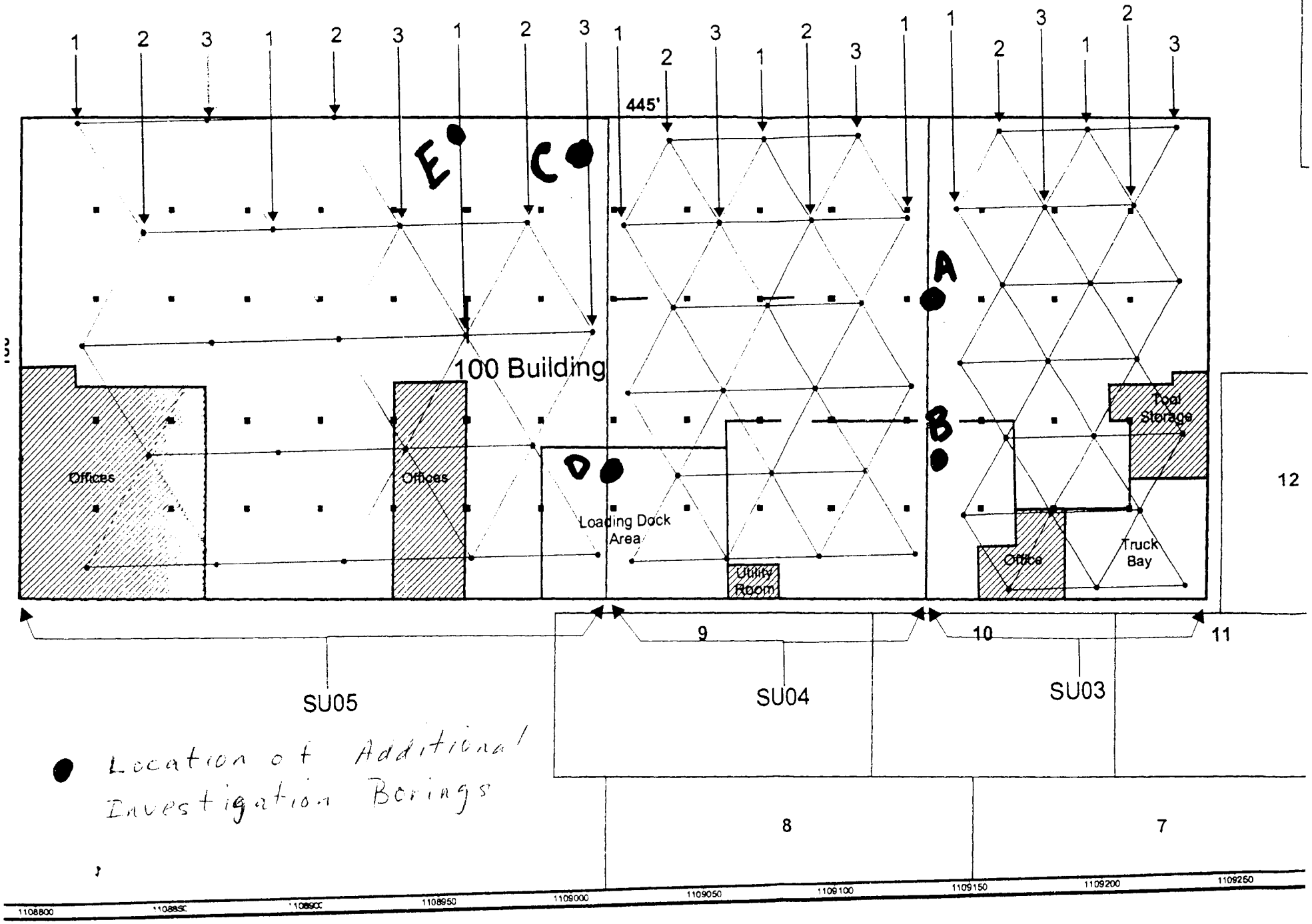
Please address these comments in a revised work plan to be submitted within 30 days of your receipt of this letter. Please do not hesitate to call me at (631) 444-0244 if you have any questions or disagree with these comments.

Sincerely,

Robert R. Stewart
Environmental Engineer I

Enclosure

cc: W. Parish
K. Carpenter
J. Riggi
J. Nealon, NYSDOH


445'
100 Building
Offices
Offices
Loading Dock Area
Utility Room
Office
Truck Bay
Tool Storage
A
B
C
D
E
SU05
SU04
SU03
9
10
11
12
8
7
1108800
1108850
1108900
1108950
1109000
1109050
1109100
1109150
1109200
1109250
Location of Additional Investigation Borings

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E75)
Irving, Texas 75038
(972) 718-4806

January 20, 2005

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: **Response to NYSDEC Comments of December 20, 2004 on the**
Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building
Former Sylvania Electric Products Facility, #V00089-1

Dear Mr. Stewart:

Thank you for your December 20, 2004 response to our November 17, 2004 submittal of the referenced Work Plans. To address your comments, the following responses have been prepared for your consideration. The comment responses are presented below, in full or in part, in the order that they appeared in your letter.

Comment 1: 100 Building - Vertical Sampling Depth

Please clarify ground surface reference point particularly as it relates to the loading dock area of the 100 property. The loading dock floor is approximately four to five feet below the 100 building's floor. The Department wants to ensure that the six foot buffer built into your sampling plan is not lost.

Response: *We are standardizing these borings to a baseline elevation on Site, therefore we will be able to maintain a consistent sampling depth interval applicable to the survey units. Based on this approach, the 6-foot buffer described in the* ***Vertical Sampling Depth*** *section of both plans is preserved.*

Comment 2: Soil Gas Sampling

Based on a preliminary analysis of the groundwater sampling results, there may still be undiscovered source areas for chlorinated solvents in the western and central portions of the site. As another tool in identifying the location of these volatile organic compounds, the Department requests that a soil gas sample be collected from each borehole after the proposed shallow samples have been removed.

Please propose a depth at which to collect these soil gas samples which is somewhere between three feet and ten feet below the building slab. The samples could be analyzed by a PID in a head space sample or by your on-site laboratory, whichever you prefer.

Response: *As part of the standard operating procedures for sample recovery, every soil sample that is recovered is screened for soil gases using a PID as the sampler is opened. If a sample shows indications of volatile organic compounds above 10 parts per million, an additional soil sample is sent to the on-Site laboratory for analysis. The depths of sample recovery are defined within the plans and all sample locations in the Systematic Subsurface Soil Sampling protocol have at least one sample recovered from the 3- to 10-foot depth interval as requested.*

After the analytical data is available, we can evaluate the need for additional information with the NYSDEC.

Comment 3: Additional Investigation Borings Between Survey Units SU03 and SU04 and Between Survey Units SU04 and SU05 for the 100 Building

There is a space between survey units SU04 and SU05 and between SU03 and SU04. It is not necessary to alter the survey units. However, I am requesting five additional investigation borings at the locations shown in the attached figure to give better coverage.

The space between SU04 and SU05 is by western portion of the chemical processing area for the former AEC building on the south portion of the gap and by an historical metal storage tank and stucco building on the north portion of the gap. Groundwater data suggests the presence of potential nickel and VOC source areas near this gap. The nickel and radiological contamination found in cell 9 probably extends to under the 100 building.

The space between SU03 and SU04 is just north of the process tank found in the northwest corner of cell 10 and is near the eastern wall of the former AEC building. The piping leading from the 100 building to the former reservoir in the rear of the 100 property apparently originated near the northeast corner of the AEC building. Based on an old figure, there was a pump in the cellar of this portion of the building which probably was used to pump water to the reservoir. This area is of interest due to contamination discovered in the reservoir. Additionally, the source of the radiological contamination in MW-2, which is downgradient of this area, has apparently not been found yet.

It is for the above reasons that I am requesting the additional investigation borings.

Response: *We will add Borings A and B to SU03. Boring D will be added as a biased sample location in SU04 since it will not fall into the Systematic Sampling Protocol. Borings C and E will be added to SU05. The borings will be renamed to comply with the existing boring nomenclature used for the survey units, assigned to appropriate sampling interval columns, and sampled in accordance with the Systematic Sampling Protocol.*

Comment 4: Historical Leaching Pool by the 140 Building Loading Dock

There is one historical leaching reportedly located inside the 140 building, just west of the loading dock, that was not investigated in the recent leaching pool investigation. It is just west of the former Building 2, the earlier commercial manufacturing building, and just east of a two-story frame building which I believe to be the "farm house". The farm house may have been used historically for machining operations. In SU07 for the 140 building, the survey point in the southeast corner of this survey unit comes very near the location of this former leaching pool. Please move this survey point slightly so that is located over the expected center of this pool. This pool must be investigated due to the high concentrations of PCE that were detected in nearby LPH21. Since the sediment sample in LPH21 detected percent concentrations, degreasing operations were most likely located historically somewhere near this pool. The leaching pool apparently is within the area identified as the "Lunch Room" on your figure. Please let me know if this presents a difficulty in investigating this pool.

If high soil gas readings are detected in any of the grid samples near the "Safety Cage" by the western portion of Building 2, additional borings will be requested around this area later. The western portion of that building would be the most likely source of the solvents that were found in LPH21.

Response: *This historic leaching pool, designated as LPH34, will be added and evaluated under the LPH Sampling Protocol. Reasonable attempts will be made to locate LPH34 and sample as many locations as possible using the LPH Sampling Protocol; however, several obstructions are present in this area (lunch room, loading dock, safety cage, equipment, etc.) that may impede access. Please note that we do not have any information regarding the historical use of this LPH.*

This letter will be attached as an addendum to the referenced work plans. We plan to begin work described in the subject work plans in mid January.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at (214) 724-2506 or via facsimile (972) 719-0065.

Sincerely,

Jean M. Agostinelli
Vice President and Controller

Walter Perish
Division of Environmental Remediation,
Region One
New York State Department of
Environmental Conservation
Building 40 – SUNY
Stony Brook, NY 11790-0248

Jacquelyn Nealon
Bureau of Environmental Exposure
Investigation
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Jerry Riggi
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste & Radiation
Management
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-7255

Kevin Carpenter
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-7015

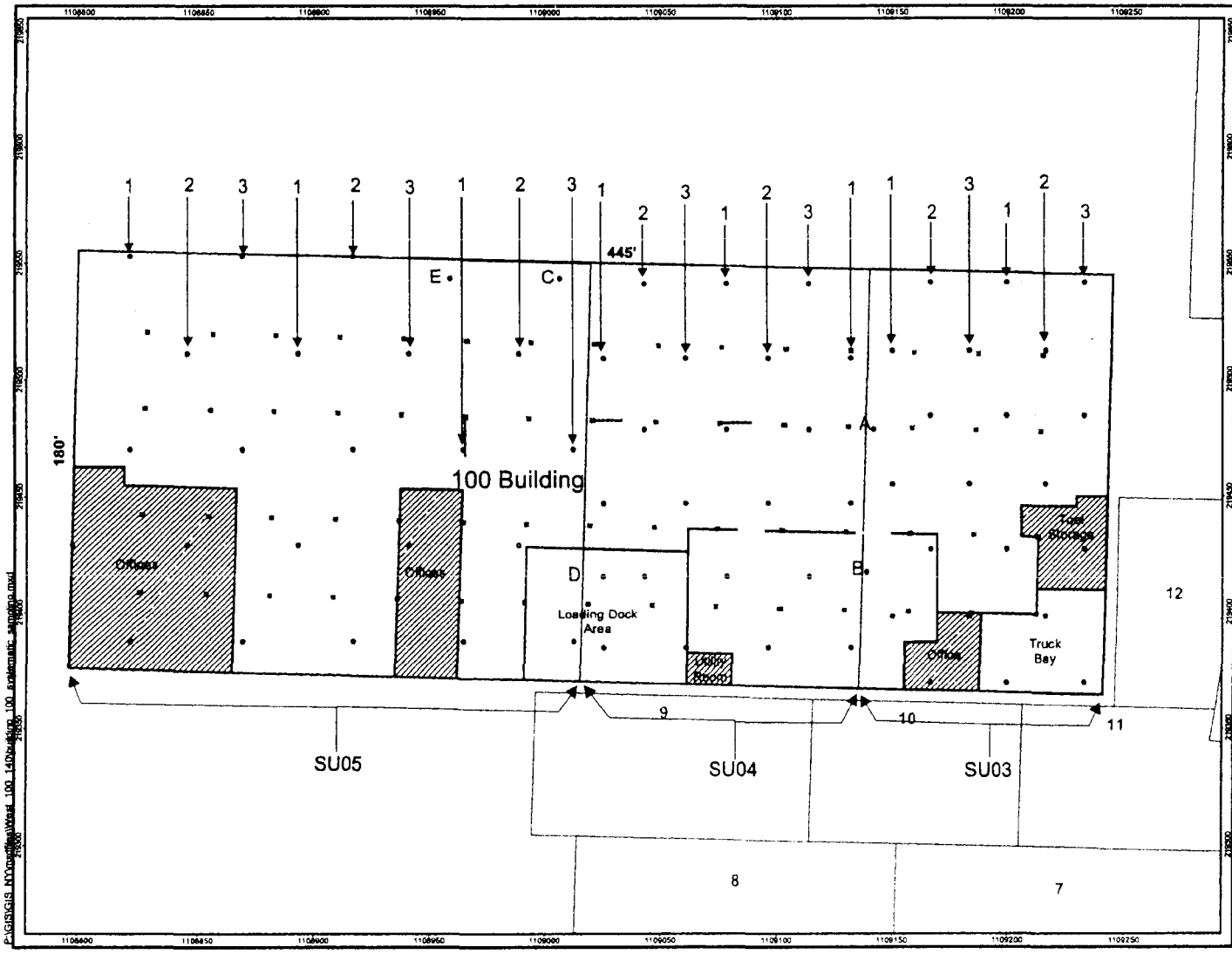

Figure 1
Survey Units - Beneath the 100 Building

Legend

- Random Sample Starting Points
- Sample Locations
- Sample Grid Layout
- Doors
- Structure Columns Building 100
- Class 1 Survey Unit
- Class 2 Survey Unit
- Not Readily Accessible to Drilling Equipment
- Cell Boundaries
- Cell Number
- 1 — 1-Meter Vertical Sampling Start Interval
- 2 — 2-Meter Vertical Sampling Start Interval
- 3 — 3-Meter Vertical Sampling Start Interval
- A — Location of Additional Investigation Borings Requested by NYSDEC

Feet
0 50 100

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1 UR52770 10-039

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HICKSVILLE, NEW YORK

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DRI ID: 1008 H6246 January 20, 2005

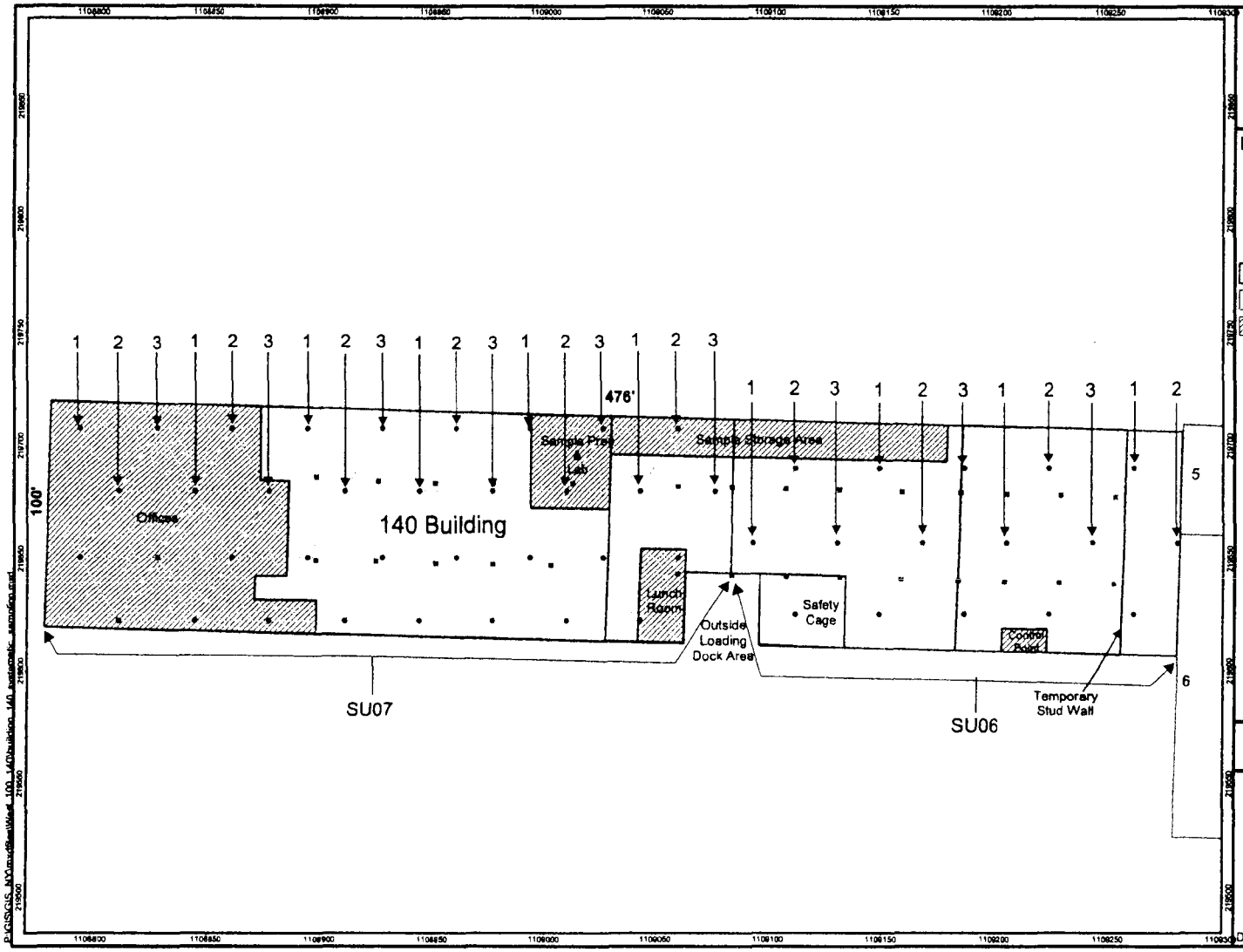

Figure 1
Survey Units - Beneath the 140 Building

Legend

- Random Sample Starting Points
- Sample Locations
- Sample Grid Layout
- Structure Columns Building 140
- Class 2 Survey Unit
- Cell Boundaries
- Not Accessible to Drilling Equipment
- Cell Number
- 1 — 1-Meter Vertical Sampling Start Interval
- 2 — 2-Meter Vertical Sampling Start Interval
- 3 — 3-Meter Vertical Sampling Start Interval

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00088-1 URS27010-039

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

ENVIROCON

DESTINY RESOURCES, INC.

DRI_ID: 1006.H6245 November 03, 2004

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region One
Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone: (631) 444-0240 • **FAX:** (631) 444-0248
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

RECEIVED
FEB 03 2005
By

January 31, 2005

Jean Agostinelli
Vice President - Controller
GTE Operations Support, Inc.
600 Hidden Ridge Drive (HQE03E75)
Irving, TX 75038

Re: January 20, 2005 Response to NYSDEC Comments of December 20, 2004 on the SSSAP Beneath the 140 Building and the SSSAP Beneath the 100 Building
Former Sylvania Electric Products Facility; Site # V00089-1

Dear Ms. Agostinelli:

As indicated in my conference call with your staff, the proposed changes to the Subsurface Soil Sampling and Analysis Plan (SSSAP) Beneath the 140 Building, November 2004 and the SSSAP Beneath the 100 Building, November 2004, as stated in your letter dated January 20, 2005 are acceptable. With a copy of the January 20, 2005 letter attached to each of the November 2004 SSSA Plans, these documents are both hereby approved.

As you know, the Department requested that a soil gas survey be performed in conjunction with the two investigations noted above. However, your staff indicated that it would be difficult to add this sampling to the proposed work. Instead, you have committed to perform a soil gas survey on a grid later to evaluate soil gases beneath the buildings. I am attaching a copy of an e-mail message documenting your commitment to perform the soil gas survey.

You may proceed with these investigations. I am requesting that after you complete each borehole that you backfill them with clean, sandy fill of the similar porosity in each boring. If this presents any difficulties to you, please let me know. After you have completed each survey unit, the Department plans to perform a preliminary soil gas survey for each survey unit by inserting a soil gas probe into the backfilled soils to approximately 31 inches in each borehole. The soils will be pushed down around the probe at the surface to prevent drawing in vapors from above the borehole. The soil probe will be connected to an HNu with a 10.2 eV probe calibrated to benzene. Peak and steady-state soil gas readings will be recorded. The purpose of these preliminary soil gas surveys for SU-03 through SU-07 is to help determine the grid spacing and analytical requirements for the subsequent soil gas surveys for these survey units that you will perform later. It is also expected that the results of the preliminary soil gas surveys will help the Department with its interpretation of the results of your soil sampling for volatile organic compounds. Of course, you may oversee this sampling and I'll share my results with you.

The Department realizes that the preliminary soil gas surveys performed by the Department are just a preliminary screening tool. Consequently, no formal report will be prepared.

If you have any questions, please do not hesitate to call me.

Sincerely,

Robert R. Stewart
Environmental Engineer I

Enclosure

cc: W. Parish
J. Riggi
K. Carpenter
J. Nealon, NYSDOH

From: <elie.a.ghannoum@verizon.com>
To: "Robert Stewart" <rrstewar@gw.dec.state.ny.us>, "Walter Parish" <wjparish@gw.dec.state.ny.us>
Date: 1/27/05 1:38PM
Subject: January 26, 05 Conference Call

Bob, per our conference call as of yesterday (1/26/05) with you and Walter, if the Department feels that it is necessary to conduct soil vapor sampling within the survey units 3 through 7 of the 140 and 100 Buildings once the soil investigation beneath the Buildings are completed and the results of the investigation are presented to the Department, GTEOSI will submit to NYSDEC a sampling grid pattern and established protocol by which such sampling will be conducted. With the understanding as described above, GTEOSI, with your approval, will commence the work as outlined in our letter to you dated November 17, 2004 and our January 20, 2005 response to your comments of December 20, 2004 on the Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 140 Building and Systematic Subsurface Soil Sampling and Analysis Plan Beneath the 100 Building.

Thanks

Elie

(Embedded image moved to file: pic06903.gif)

CC: "Lucky Tabor" <LTabor@envirocon.com>, <Rob_Brathovde@URSCorp.com>, <Carol_Scholl@URSCorp.com>, <Michael_Ander@URSCorp.com>, <jean.agostinelli@verizon.com>

APPENDIX C

Appendix C – Boring Logs

Boring Logs are available for review on CD provided.

Appendix C –Boring Logs

This section provides the boring logs from the systematic subsurface soil sampling inside of the 100 building, delineation borings around boring location 009, NYSDEC requested borings, and select borings from the leach pool investigation and cell 9 delineation. Borings were advanced using hollow-stem auger drilling rigs. Boring logs are provided in sequential order; first by survey unit number (SU03, SU04, SU05), then by sampling identification number (001 through 030), the 009 delineation borings, the NYSDEC requested borings, the leach pool borings and the cell 9 delineation borings follow the systematic borings respectively.

The main lithologic group name with the appropriate group symbol is described at the top of each stratum. The main lithologic group is in capital letters and bold font. Minor variations within the soil stratum are called out at the approximate elevation in which they occur, and the main lithologic group is not repeated nor any variations above the one identified.

Fill is defined as non-native material (evidenced by color, texture, structure, or miscellaneous debris), other than the material GTEOSI used to backfill excavations, which is noted as 'backfill' in the logs.

A plus sign (+) is used in the 'Notes' or 'Remarks' column of the boring logs and indicates a depth above ground surface. A minus sign (-) displayed in the 'Depth (feet)' column has the same meaning (depth above ground surface) but is used due to program restrictions.

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

SOIL CLASSIFICATION CHART

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE*	MILLIMETERS	SIEVE SIZE*
SAND				
FINE	.074	#200*	0.42	#40*
MEDIUM	0.42	#40*	2.00	#10*
COARSE	2.00	#10*	4.76	#4*
GRAVEL				
FINE	4.76	#4*	19.1	3/4"•
COARSE	19.1	3/4"•	76.2	3"•
COBBLES	76.2	3"•	304.8	12•
BOULDERS	304.8	12•	914.4	36"

*U.S. STANDARD •CLEAR SQUARE OPENINGS

GRADATION CHART

Notes:

1. Dual symbols are used to indicate borderline classifications or intermixed strata.

2. Soil descriptions and classification are based on field observations, not on laboratory testing of soil physical properties.

3. When used on the boring logs, the following terms are used to describe the consistency of cohesive soils and the relative compactness of cohesionless soils:

Cohesive Soils	Cohesionless Soils
Very Soft	*Very Loose*
Soft	*Loose*
Medium Stiff	*Medium Dense*
Stiff	*Dense*
Very Stiff	*Very Dense*
Hard	

4. When used on the boring logs, the following terms indicate the volume percentage of the minor soil components estimated in the field based on visual observations:
trace: 1 to 10% little: 10 to 20% some: 20 to 35% and: 35 to 50%.

5. Moisture Content:
Dry: Absence of moisture, dusty, dry to the touch
Moist: Damp but no visible water
Wet: Visible free water, usually soil is below the water table

UNIFIED SOIL CLASSIFICATION SYSTEM AND KEY TO BORING LOGS

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 001 - K11
Date Drilled: 2/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0						**FILL**, brown, silty sand, some fine to coarse gravel, moist	
1			20	24	0.0		
2						Dark brown	
3			17	16	0.0	Brown to dark brown, fine to medium sand, trace silt, some fine to coarse gravel, moist	
4							
5			16	22	0.0	Light brown to brown, silt grades out	
6						Dark brown fine to coarse sand with fine to coarse gravel, moist	
7			16	22	0.6	Light brown to brown, little fine to coarse gravel 2" brown, silty sand lens at 7.2' 4" brown, silty sand layer at 7.8'	
8						Brown, sandy silt, some fine to coarse gravel, moist	
9			26	24	0.3	Brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	
10	SP					Sand with fine to coarse gravel, trace cobbles, very dense	
11			68	22	0.0		
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 001 - K11
Date Drilled: 2/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
13	SP		43	20	0.0	Brown, fine to medium **SAND** with fine to coarse gravel, trace cobbles, dense, moist	
14							
15			28	18	0.0	Little fine to coarse gravel, medium dense	
16							
17			32	20	0.0	Dense	
18	SW						
19			16	16	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
20							
21			14	20	0.0		
22							
23			10	16	0.0	With gravel grading to brown, fine to medium sand, little fine to coarse gravel	
24	SP					Brown fine to medium **SAND**, little fine to coarse gravel	
25	SW		26	20	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 001 - K11
Date Drilled: 2/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
26	SP		34	18	0.0	Light brown, fine to medium **SAND**, medium dense, moist Dense	
27							
28	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist Brown, gravelly sand, medium dense	
29	SP		17	20	0.0	Brown grading to dark brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
30							
31	SW		30	20	0.0	Brown to dark brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/18/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 2/25/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 002 - L11
Date Drilled: 2/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			16*	12	0.0	**FILL**, brown, sandy silt, trace fine to coarse gravel, moist	* Blow counts from 0-1'
1							
2			15	24	0.0	Dark brown, some coarse sand and fine gravel, trace coarse gravel, dry	
3						Brown, moist	
4			10	18	0.0		
5						1.5" black layer	
6			9	21	0.0	Orange-brown, fine to medium **SAND**, trace coarse sand, loose, moist 1/2" fine gravel seam at 6.25' 1/2" fine gravel seam at 6.75', dense	
7	SP						
8			40	15	0.0		
	SW					Orange-brown, fine to coarse **SAND**, trace fine gravel, dense, moist	
9	ML					Brown, **SILT**, trace gravel, medium dense, moist	
10			33	20	0.0	Brown grading to orange-brown, fine to coarse **SAND** with fine gravel, dense, moist, coarse gravel layer at 9.7'	
11	SW					Brown grading to orange-brown grading to brown, trace coarse gravel	
12			48	21	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 002 - L11
Date Drilled: 2/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Brown, fine to coarse **SAND** with fine gravel, trace coarse gravel, dense, moist	
13						Medium dense	
14			28	20	0.0		
15						Increasing coarse gravel with depth, dense	
16	ML		36	20	0.0	1/2" black silty seam at 15.85'	
17	SW					Brown to light brown, trace fine gravel, coarse gravel grades out, medium dense	
18			16	19	0.0		
19						Fine gravelly sand	
20			21	20	0.0		
						Decreasing gravel with depth	
21						Light brown, fine gravelly, trace coarse gravel	
22			23	20	0.0	3" fine to medium sand layer at 21.75'	
23						Trace dark brown	* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
			16*	12*	0.0		
24							
25			26	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 002 - L11
Date Drilled: 2/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND,** some fine gravel, trace coarse gravel, medium dense, moist	
	SP						
26						Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, dense, moist	
27	SW		39	24	0.0	Light brown, fine to coarse **SAND** with fine gravel, trace coarse gravel, dense, moist	
28						Gravel grades out, medium dense	
29	SP		22	23	0.0	Light brown with dark brown 1/8" laminations, fine to medium **SAND**, medium dense, moist	
30	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
31			30	24	0.0	With fine gravel, dense	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/16/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 2/25/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 003 - N11
Date Drilled: 2/17/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			27*	12	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	* Blow count from 0-1'
1							
2			16	20	0.0	Dark brown to black	
3							
4			20	20	0.2	Concrete dust from 3.5 - 3.7' Black, sandy silt, trace cobbles Brown to dark brown, silty sand with fine to coarse gravel, moist	
5							
6			44	22	0.9	Light brown to brown, fine to medium sand, little fine gravel, trace coarse gravel, moist	
7						With cobbles	
8			44	18	0.0		
9						Dark brown, sandy silt with fine to coarse gravel, moist	
10			38	16	0.0		
11						2" concrete layer Brown, silty sand, some fine to coarse gravel, moist	
	SW					Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, dense, moist	
12			34	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 003 - N11
Date Drilled: 2/17/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, dense, moist	
13							
						Brown to dark brown, some fine to coarse gravel, medium dense	
14			18	20	0.0		
15						3" dark brown sand, trace silt lens at 14.7'	
						Dark brown, little fine to coarse gravel, grading to light brown, some fine to coarse gravel, trace cobbles	
16			24	20	0.5		
17	SW						
18			25	18	0.6		
19							
20			15	16	0.0		
21						Light brown to brown	
22			14	20	2.2		
23							
24			27	14	0.4		
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 003 - N11
Date Drilled: 2/17/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW		37	22	1.6	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, dense, moist	
27							
28	SP		28	19	0.8	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
29	SW					Brown, fine to coarse **SAND** with fine to coarse gravel, trace silt, medium dense, moist	
			13*	11*	0.3	2" dark brown, gravelly sand lens at 29.6'	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			28	22	0.5		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/17/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 2/25/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 004 - J12
Date Drilled: 2/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			26*	11	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	*Blow counts from 0-1'
1						Dark brown to black	
2			25	20	0.0	2" gravelly sand lens at 2.1'	
3						Brown, trace fine gravel, coarse gravel grades out	
4			14	20	0.0	Light brown, fine to medium sand, some fine to coarse gravel, moist	
5						Dense	
6			42	22	0.0		
7							
8			34	16	0.0		
9						Brown, silty sand, moist	
10			31	21	0.1	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
11	SW					Some cobbles	
12			34	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 004 - J12
Date Drilled: 2/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, dense, moist	
13							
14	SP		30	19	0.0	Brown, fine to medium **SAND**, little fine to coarse gravel, dense, moist	
15							
16			34	20	0.0	Dark brown, gravellyfine to coarse **SAND**, dense, moist Light brown to brown, some fine to coarse gravel	
17	SW					Medium dense	
18			19	20	0.0		
	SP					Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
19							
20	SW		22	20	0.0	Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
	SP					Light brown, fine to medium **SAND**, little gravel, medium dense, moist	
21							
22	SW		22	18	0.0	Light brown, fine to coarse **SAND**, little gravel, medium dense, moist	
23			16*	8*	0.0		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
24							
25			21	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 004 - J12
Date Drilled: 2/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW					Light brown, fine to coarse **SAND**, little gravel, medium dense, moist 1" black at 25.3' 1" dark brown at 25.7'	
27			34	20	0.0	Light brown to brown, with fine to coarse gravel	
28	SP					Light brown, fine to medium **SAND**, little fine gravel, dense, moist	
29			28	20	0.0		
30	SW					Light brown to brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist Some fine to coarse gravel, trace cobbles	
31			28	20	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/21/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/21/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 005 - L12
Date Drilled: 2/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			19*	8	0.0	**FILL**, brown to dark brown, silty sand with fine to coarse gravel, some cobbles, moist	*Blow counts from 0-1'
1						Dark brown to black, some fine to coarse gravel	
2			11	20	0.2		
3							
4			7	16	0.0		
5						Trace cobbles 5" light brown, layer at 5.6'	
6			6	16	0.5		
7						Medium dense	
8			28	22	0.2	Light brown, fine to medium sand, some coarse gravel, moist	
9						Brown, silty sand, trace fine gravel, moist Some fine to coarse gravel	
10			35	20	0.0		
	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, dense, moist	
11							
	SM					1" dark brown, silty sand lens at 11.4'	
12	SW		32	20	0.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 005 - L12
Date Drilled: 2/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, dense, moist	
13	SP					Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
14	SW		23	19	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
15							
16			25	22	0.8		
17							
18			23	19	0.1		
19							
20			13	18	0.2		
21						With fine to coarse gravel	
22			17	22	0.0		
23						3" dark brown, gravelly sand at 23.5'	
24			20	20	0.0		
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 005 - L12
Date Drilled: 2/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW		41	18	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
27							
28			32	18	0.0		
29	SP		23*	11*	0.0	Light brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30	SW		27	20	0.0	Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
	SP					Light brown to dark brown, fine to medium **SAND**, medium dense, moist	
31	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/22/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/7/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 006 - M12
Date Drilled: 2/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0						**FILL**, brown, sandy silt/ silty sand with fine gravel, moist	Original boring location moved approximately 8' west due to refusal
1			15	16	0.0		
2							
3			10	16	0.0		
4						Dark brown to black, large concrete debris	
5			10	16	0.0		
6						Dark brown with trace brown, trace coarse gravel, debris grades out	
7			6	16	1.2		
8						Coarse gravel grades out grading to sandy silt	
9			5	20	1.3	Dark brown, sandy silt with fine gravel, moist Asphalt debris from 9.25-10'	
10						Light brown, gravelly fine to coarse **SAND**, trace coarse gravel, gneiss fragments, medium dense, dry	
11	SW		16	15	1.2		
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 006 - M12
Date Drilled: 2/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
13	SP		21	15	2.0	Light brown, fine to medium **SAND** grading to fine sand at 14', occasional fine gravel, trace coarse sand, medium dense, moist	
14							
15	SW		25	21	0.8	Brown, fine to coarse **SAND** with fine gravel, medium dense, dry	
16						With fine gravel	
17			28	21	4.0		
18							
19	SP		14	23	3.3	Light brown, fine **SAND**, medium dense, moist	
20	SW					Light brown, fine to coarse **SAND** with fine gravel, medium dense, moist	
21			20	21	3.2	Occasional coarse gravel, moist	
22						Fine gravelly, coarse gravel grades out	
23			21	19	1.0		
24	SP					Light brown, fine to medium **SAND**with some to trace coarse sand and fine gravel, medium dense, moist	
25	SW		28	16	0.0	Light brown, fine gravelly **SAND**, occasional coarse gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 006 - M12
Date Drilled: 2/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW					Light brown, fine gravelly **SAND,** occasional coarse gravel, medium dense, moist	
						Decreasing gravel and coarse sand with depth, dense	
27			46	24	1.4		
28	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, dense, moist	
						Grading to fine sand, medium dense	
29			26	20	1.7	Dark brown, silty laminations from 28.67 - 29' 2" coarse sand layer at 28.45'	
30	SW					Brown, fine to coarse **SAND** with fine gravel, trace coarse gravel, medium dense, moist	
						With fine gravel, occasional coarse gravel, dense	
31			35	19	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/24/05, due to refusal 2. Groundwater not encountered 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4', 14', 24' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 006 - M12 (refusal)
Date Drilled: 2/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0						**FILL**, brown to dark brown, silty sand with fine to coarse gravel, some cobbles, moist	
1			21	22	0.0		
2							
3			26	12	0.0		
4						No recovery	
5			13	0	0.0		
6							
7			5	6	0.0	Dark brown, sandy silt with fine to coarse gravel, trace cobbles, dry	
8						Trace brick debris	
9			5	12	0.0		
10	EOB					NOTES: 1. Boring completed to a depth of 9.5' below reference on 2/23/05, due to refusal 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 2/23/05 4. Analytical samples collected where sufficient recovery from 0-9': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	Refusal at 9.5', boring could not be completed to 32'
11							
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 007 - J14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			18*	11	0.0	**FILL**, brown, silty sand, little fine to coarse gravel, moist	*Blow counts from 0-1'
1							
2			16	20	0.7	Dark brown to black, some fine to coarse gravel, asphalt debris	
3							
4			13	22	0.4		
	SP					Light brown to brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
5							
6	SW		28	22	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist 3" light brown, fine sand layer at 6.4'	
7	ML					Dark brown to black, sandy **SILT**, little fine to coarse gravel, dense	
8	SW		35	24	0.0	Light brown, fine to coarse **SAND**, little fine to coarse gravel Dark brown laminations from 8-8.6'	
9	SM					Brown, silty **SAND** with fine to coarse gravel, some cobbles, medium dense, moist	
10			28	20	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, medium dense, moist	
11	SW						
12			16	19	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 007 - J14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, medium dense, moist	
13							
14	SW		17	22	0.0		
15							
16			20	22	0.0	2" tan, with fine to coarse gravel layer at 16.1'	
17							
18	SP		11	20	0.0	Tan, fine to medium **SAND**	
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, medium dense, moist	
19							
20			12	20	0.3		
21	SW						
22			10	19	0.0		
23						Light brown to brown, cobbles grade out	
24			11	20	0.0		
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 007 - J14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
26			19	22	0.0		
	SP					Light brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	
27							
28			14	22	0.3		
						Brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
29							
			17*	12*	0.0		*1' Spoon driven from 29-30' in order to return to even numbered sampling intervals
30	SW						
31			19	20	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/7/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/23/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 7', 17', 27' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 008 - K14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			8	20	0.0	**FILL**, brown, silty sand, trace fine to coarse gravel, moist Dark brown to black, little fine to coarse gravel	
2							
3			15	20	0.6		
4						3" brown layer at 3.7'	
5			7	20	0.0	Brown, sandy silt, trace fine gravel, moist	
6						Dark brown to black, silty sand, some fine to coarse gravel, moist	
7			9	20	0.0	Brown, fine to medium **SAND**, little fine to coarse gravel, loose, moist	
8	SP					Medium dense 3" dark brown to black, silty sand layer at 8.1'	
9			26	22	0.0		
	SM					Brown, silty **SAND**, some fine to coarse gravel and cobbles, medium dense, moist	
10						Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
11	SW		28	16	0.0		
12							
13	SP		11	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 008 - K14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist Dark brown laminations from 12.7-13.8'	
14	SW		21	20	0.0	Tan, fine to coarse **SAND**, little fine gravel, medium dense, moist	
15	SP					Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
16	SW		19	20	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist Trace cobbles	
17							
18			9	16	0.0	Loose	
19							
20			11	18	0.0	Medium dense	
21							
22			7	17	0.0	Loose	
23							
24			20	22	1.3	Some cobbles, medium dense	
25							
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 008 - K14
Date Drilled: 3/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense, moist	
27			30	20	0.5	1" dark brown silty sand layer at 26.5'	
						Light brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
28	SP					Little fine gravel	
29			19	20	0.0		
						Brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
30						Light brown to brown, little fine to coarse gravel	
	SM					1" dark brown, silty sand lens at 30.6'	
31	SW		16	22	0.0	Dark brown laminations from 30.8 - 31.5'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/4/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/14/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4', 14', 24' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 009 - M13
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			19*	11	0.0	**FILL**, brown, silty sand, some coarse gravel, moist	* Blow counts from 0-1'
1						With concrete debris	
2			19	22	0.0	Dark brown to black, little fine to coarse gravel	
3						Trace cobbles	
4			8	18	1.8		
5							
6			14	20	3.7		
7						Light brown, fine to medium sand, trace silt and fine gravel, moist	
8			16	20	0.3	Brown, silty sand, some fine to coarse gravel, moist	
9	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
10			14	22	0.2	Light brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	
11	SP						
12			13	22	0.4		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 009 - M13
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13						Loose	
14			8	20	1.2		
15	SW						
16			9	20	0.8		
17							
18			8	18	3.5		
19							
	SP					Brown, fine to medium **SAND**	
20			8	20	0.9	Light brown, fine to coarse **SAND**, some fine to coarse gravel, loose, moist	
21						Trace cobbles	
22	SW		10	22	3.0		
23			2*	9*	1.4	Light brown to brown, sand with fine to coarse gravel, loose	*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
24						Medium dense	
25			16	20	1.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 009 - M13
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
	SP					Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
26							
27	SW		20	20	1.8	Brown to dark brown, fine to coarse **SAND** with fine gravel, medium dense, moist Light brown, some fine to coarse gravel	
28						Brown to dark brown, with fine gravel	
29	SP		13	20	1.2	Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist Grading to brown, some coarse sand	
30						Little fine to coarse gravel 2" brown fine to coarse sand lens at 30.3' Brown laminations at 31-31.3'	
31			16	22	2.0		
	SW					Light brown to brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/2/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/8/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 010 - N13
Date Drilled: 2/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	*Drilled through concrete, 1' spoon driven from 0-1'
0			26*	10*	0.0	**FILL**, brown, silty sand, little fine to coarse gravel, moist	
1							
2			26	18	0.0	Dark brown to black, some fine gravel, trace coarse gravel	
3							
4			14	22	0.0		
5							
6			9	0		No recovery	
7							
8			25	22	0.8	Brown, silty sand, some fine to coarse gravel Dark brown to black, little fine gravel Brown to dark brown, fine to medium sand, little gravel and cobbles, trace silt	
9							
10	SW		26	16	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
11						Little cobbles	
12			29	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 010 - N13
Date Drilled: 2/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13						Gravelly	
						Some fine to coarse gravel, dense	
14			30	19	0.0		
15						With fine to coarse gravel, trace cobbles	
16			36	19	0.7		
17						Medium dense	
	SW						
18			23	17	0.6		
19							
20			22	18	1.7		
21						Tan to light brown, some fine to coarse gravel	
22			16	19	1.4		
23						Light brown to brown, with fine to coarse gravel, dense	
24			42	16	1.0		
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 010 - N13
Date Drilled: 2/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW		44	22	1.5	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
27						Medium dense	
28	SP		27	16	3.0	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
29	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
			19*	12*	2.0		
30						Dense	
31			35	20	5.8		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 2/28/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/7/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 7', 17', 27' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 011 - J15
Date Drilled: 3/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, brown, silty sand, some fine to coarse gravel, moist	
0			20	20	0.0		
1						Trace cobbles	
2			28	24	0.0	Dark brown to black	
3							
4			11	17	0.0	Brown Dark brown to black Some construction debris from 4.5 - 5'	
5							
6			4	22	0.0		
7						Some cobbles and construction/ concrete debris	
8			7	21	0.0		
9						Light brown, fine to coarse **SAND**, little fine to coarse gravel, loose, moist	
10	SW		9	18	0.0		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 011 - J15
Date Drilled: 3/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12			17	20	0.0	Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
13							
14	SM		19	20	0.0	4" tan layer at 13.4' 1" Dark brown, silty sand lens at 14.3'	
15	SW					Light brown to tan, with fine gravel, some coarse gravel, medium dense, dry	
16			17	22	0.0		
17						Tan, little coarse gravel, loose, moist	
18			6	18	0.0		
19						Dry, medium dense	
20			11	20	0.0		
	SP					Tan, fine to medium **SAND**, medium dense, dry	
21	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense, dry Little coarse gravel, loose	
22			7	18	1.5		*1' Spoon driven from 23-24' in order to return to even numbered sampling intervals
	SP					Brown, medium to coarse **SAND**, some fine gravel, loose, moist	
23	SW		18*	12*	1.2	Light tan, fine to coarse **SAND**, some fine gravel, medium dense, dry	
	SP					Light tan, fine to medium **SAND**, medium dense, dry	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 011 - J15
Date Drilled: 3/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW SM		26	24	1.2	Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry 1" brown silty fine sand layer at 25' Light brown, little fine to coarse gravel	
26	SP					Tan, fine to medium **SAND**, trace fine gravel	
27	SW		15	24	0.0	Light brown, fine to coarse **SAND**, medium dense, dry Brown, fine to medium sand laminations from 27-27.3'	
28						1/8" brown laminations from 28-30' Little fine gravel, trace coarse gravel	
29			21	20	1.6		
30						Tan, some fine gravel	
31			27	20	1.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/9/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/23/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 012 - L15
Date Drilled: 3/2/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0			20*	12*	0.0	**FILL**, brown, silty sand, little fine to coarse gravel, moist	* 1' spoon driven from 0-1'
1							
2			15	22	0.2	Dark brown to black	
3						Brown, fine to medium sand with silt, some fine to coarse gravel	
4			8	20	0.0	Black grading to dark brown, silty sand, grading to some fine to coarse gravel, moist	
5						Brown, some fine to coarse gravel	
6			11	20	1.0	Light brown, fine to coarse sand, some fine to coarse gravel, trace cobbles, moist	
7							
8			24	20	1.7	Brown, fine to medium sand, some silt, moist	
9	SW					Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
10			26	22	0.7		
11	SP					Light brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	
12			17	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 012 - L15
Date Drilled: 3/2/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
13						Some cobbles	
14			27	12	0.0		
15							
16			22	22	0.6		
17	SW						
18			13	20	1.0		
19							
20			13	22	0.5		
21							
22			10	20	2.6	1" dark brown layer at 21.7'	
23						Loose	
24			9	20	3.0		
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 012 - L15
Date Drilled: 3/2/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, some cobbles, medium dense, moist	
26	SP		23	20	1.3	Light brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
27	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
28	SP		13	22	0.5	Light brown, fine to medium **SAND**, little fine to coarse gravel, medium dense, moist	
29	SW		18*	12*	0.0	Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			15	20	0.9		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/2/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/14/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 7', 17', 27' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 013 - M15
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0						**FILL**, brown, silty, fine to coarse sand, trace coarse gravel and cobbles, moist	
1			9	20	0.6	Light brown, fine to medium sand, trace coarse sand and fine to coarse gravel, moist	
2						Brown, silty, fine to medium sand, trace coarse sand, moist	
3			11	24	1.0	2" of concrete dust/debris	
						Brown, sandy silt, some gravel	
4						Brown to dark brown, silt, some sand and gravel, trace silt, moist	
5			14	14	4.8	Concrete debris	
6							
7			5	22	4.3	Concrete debris	
8						No recovery	
9			22	12	8.5	Asphalt debris, dark brown, silty sand	
	SP					Light brown, fine to medium **SAND**, some coarse sand and cobbles, trace fine to coarse gravel, medium dense	
10						Brown, fine to coarse **SAND**, some silt and gravel	
11	SW		28	24	2.2	Light brown, trace coarse gravel, some fine gravel	
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 013 - M15
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
13	SW		18	24	2.3	Light brown to brown, fine to coarse **SAND**, some silt and fine gravel, trace coarse gravel, medium dense	
14							
15	SP		25	24	3.3	Light brown to brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense	
16							
17	SW		12	20	4.0	Light brown to brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
18	SP					Light brown to brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
19	SW		12	23	6.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist Some coarse gravel	
20							
21	SP		12	24	4.8	Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
22							
23	SW		11	20	4.8	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
24							
25	SP		19	20	3.4	Light brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 013 - M15
Date Drilled: 3/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
26	SW					Brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
27			19	24	4.8	Light brown, trace coarse gravel	
28							
29			10	22	1.0		
30	SP					Light brown, fine to medium **SAND**, trace coarse sand	
31	SW		16	22	3.6	Light brown to brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/1/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/8/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4', 14', 24' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 014 - J16
Date Drilled: 3/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, light brown, silt, some fine gravel, little coarse gravel, dry	
0			23	20	0.0		
						Dark brown, sandy silt, some coarse gravel, dry	
1						Light brown, silt, some fine sand, little fine to coarse gravel	
2			24	24	2.9	Dark brown, sandy silt, some fine to coarse gravel, moist	
						Light brown, silt, little fine to coarse gravel, dry	
3						Dark brown, sandy silt, some fine gravel, little coarse gravel, trace terra cotta debris, moist, odor	
4			20	14	6.7		
5						3" concrete dust layer	
						Dark brown, sandy silt, some fine to coarse gravel, brick debris, dry	
6			8	4.7	24		
7						Tan, fine to coarse **SAND**, some fine to coarse gravel, loose, dry	
	SW					Medium dense	
8			22	16	0.0		
9						Tan, fine to medium **SAND**, little coarse sand and fine gravel, trace silt, medium dense, dry	
10	SP		26	24	1.2		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 014 - J16
Date Drilled: 3/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		14	16	2.3	Tan, medium to coarse **SAND**, some fine gravel, little coarse gravel, medium dense Light brown and dark brown, fine to medium sand, trace silt, gravel grades out Tan-orange, little coarse sand and fine gravel	
13							
14	SW		29	18	1.9	Tan, fine to coarse **SAND**, little coarse gravel, medium dense, dry Medium to coarse sand with fine gravel layer from 13.5-13.7'	
15							
	SP					Tan, fine to medium **SAND**, trace silt, dry	
16			24	14	1.2	Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense, dry	
17						Gravel grades out, loose	
18	SW		7	24	3.2		
19						Little fine gravel, trace silt	
20			11	16	1.5		
21						Loose	
22	SP		7	20	1.3	Tan, medium to coarse **SAND**, fine gravel, little coarse gravel, moist	
23	SW					Tan, fine to coarse **SAND**, little coarse gravel, loose, dry Little fine gravel, medium dense	
24			13	24	5.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 014 - J16
Date Drilled: 3/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan-orange with brown seams, fine to coarse **SAND**, medium dense, moist	
25	SP					Tan, some fine gravel, trace silt	
						Tan-orange, fine **SAND**	
26			18	18	1.8	Light brown, medium to coarse sand with fine gravel, some coarse gravel, trace cobbles, moist	
						Tan, fine to coarse **SAND**, little fine gravel, medium dense, dry	
27						2" light brown, medium to coarse sand, some fine gravel layer at 26.5'	
28	SW		20	24	1.7	1" brown, fine to coarse sand layer at 27.7'	
29							
			21*	12*	3.2	3" tan, fine to medium sand, little coarse sand, trace silt layer at 29' 2" brown, medium to coarse sand, little coarse gravel layer at 29.3'	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30						With fine gravel, little coarse gravel	
						Little fine to coarse gravel	
31			19	24	1.8	2" light brown, medium to coarse sand with fine gravel, little coarse gravel layer at 31'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/11/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/18/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 7', 17', 27' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 015 - K16
Date Drilled: 3/9/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			12	13	0.0	**FILL**, light brown, silty fine to medium sand, some fine gravel, trace coarse gravel, moist	
0							
1			18	24	2.1	Trace clay from 0.8-1' Dark brown to brown, coarse gravel grades out	
2						Light brown to brown	
3			23	24	1.9	Dark brown, trace cobbles	
4							
5			7	18	3.3		
6						Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, dense, moist	
7	SW		32	20	1.7		
8							
9			40	20	1.0		
	SP					Light brown, fine to medium **SAND**, trace fine gravel, dense, moist	
10	SW					Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel and cobbles, medium dense	
11			17	16	0.5	Orange-brown	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 015 - K16
Date Drilled: 3/9/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel and cobbles, medium dense	
12						Light brown to brown	
13	SP		16	20	1.7	Brown, fine to medium **SAND**, medium dense, moist Light brown, trace coarse sand and fine to coarse gravel	
14							
15			24	20	1.0	Light brown to brown, some fine gravel	
16	SW					Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, loose, moist	
17			10	16	1.1		
18						Medium dense	
19			12	24	1.5		
20							
21			14	8	2.1	Coarse gravel grades out	
22						Trace coarse gravel	
23			12	18	1.6		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 015 - K16
Date Drilled: 3/9/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		22	22	2.3	Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist 2" brown to dark brown seam at 24.5'	
26							
27			15	20	2.6	Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
28	SP						
29			22	20	3.9	Brown Light brown, some fine to coarse gravel Trace coarse gravel	
30	SW					Light brown, fine to coarse **SAND**, some fine gravel	
	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine gravel	
31			18	24	3.5		
	SW					Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/10/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/18/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4', 14', 24' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 016 - M16
Date Drilled: 3/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, brown, silty sand, some fine to coarse gravel and cobbles, moist	
0			12*	12	0.0		* Blow counts from 0-1'
						Dark brown to black, little fine to coarse gravel	
1						Brown, some fine to coarse gravel and cobbles	
2			14	21	0.0	Dark brown to black, little fine to coarse gravel, asphalt debris	
3							
4			7	20	0.7	Brown, sandy silt, trace fine gravel, moist	
5						Dark brown to black, silty sand, trace fine gravel	
6	SW		33	24	2.1	Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
7	SM					Brown, silty **SAND**, little fine gravel, dense, moist	
8	SW		31	22	0.0	Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, dense, moist	
9							
10			32	22	1.4		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 016 - M16
Date Drilled: 3/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		16	18	0.0	Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, medium dense, moist	
13	SM						
14			24	22	3.0	1" dark brown, silty sand lens at 13.4'	
15	SP					Brown, fine to medium **SAND**, medium dense, moist With gravel	
16	SW		15	19	1.6	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
17						Loose	
18			8	22	6.3		
19						Light brown to brown, medium dense	
20			12	20	0.6	Tan to light brown	
21							
22			9	20	1.6		*1' boring from 23-24' in order to return to even numbered sampling intervals
23			15*	12*	0.5		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 016 - M16
Date Drilled: 3/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		17	22	0.9	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
26							
27			17	18	3.5		
28	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
29	SW		14	22	4.7	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
30							
31			18	22	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/3/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/17/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 018 - J17
Date Drilled: 3/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						FILL, tan to light brown, silt, little fine to medium sand and coarse gravel	
0			14	22	1.5		
						Dark brown, sandy silt, dry	
1						Some fine to coarse gravel, trace cobbles	
2			18	20	2.5		
3						Light brown, cobbles grade out, moist	
4			20	16	1.3		
5						Dark brown, moist	
						Light brown, silt, some coarse gravel, little fine gravel, trace clay, moist	
6			31	24	1.3		
						Tan, fine to coarse **SAND**, little fine to coarse gravel, trace silt, dense, dry	
7	SW						
8			32	24	1.4		
						Brown, some fine to coarse gravel, little silt	
						Tan, medium to coarse **SAND**, little fine to coarse gravel, dry	
9						Fine to medium sand, some coarse sand, trace silt, dense	
	SP						
10			37	20	1.8		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 018 - J17
Date Drilled: 3/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		16	20	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, trace silt, medium dense, dry	
13	SW					Tan-orange, little fine gravel, trace coarse gravel	
14	SW		20	16	1.2		
15	SW						
16	SW		20	14	2.9		
17	SP					Tan, fine to medium **SAND**, trace silt, medium dense, dry Some coarse sand, trace fine gravel	
18	SP		9	16	3.2	Coarse sand grades out, moist	
19	SW					Tan, fine to coarse **SAND**, some fine gravel, little coarse gravel, trace silt, medium dense, dry	
20	SW		14	16	27		
21	SW					Little fine gravel, loose	
22	SW		8	18	4.1		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SW					2" dark brown, medium to coarse sand, some fine gravel layer at 22.8	
24	SW		13*	8*	1.9	Coarse gravel grades out, medium dense	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 018 - J17
Date Drilled: 3/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, little fine gravel, trace silt, medium dense, dry	
25			17	22	8.0		
	SP					Tan, fine to medium **SAND**, medium dense, moist	
26							
27	SW		16	24	3.3	Tan, fine to coarse **SAND**, little fine gravel, medium dense, dry	
28							
	SP					Tan, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, trace silt, dry	
29			20	20	2.1	Tan, fine to coarse **SAND**, some coarse gravel, trace silt, medium dense, dry	
30	SW						
31			20	14	2.2	2" tan fine to medium sand layer at 31' 2" tan fine to medium sand layer at 31.5'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/10/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/23/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 019 - L17
Date Drilled: 3/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, light brown, silt, little fine gravel, dry	
0			15	16	0.0		
1							
2			8	16	6.4	Concrete dust at 2' Dark brown to black, sandy silt, some fine gravel, little coarse gravel, trace brick debris, moist	
3						Asphalt from 2.7-3.7'	
4			6	14	2.5	Light brown, silt, some coarse gravel, trace fine sand and clay, moist	
5						Brown to black, sandy silt, coarse gravel and clay grade out	
6	SM		6	24	2.6	Tan-orange, fine to medium **SAND** and gray **SILT**, some coarse gravel, loose, moist	
7						Gray-tan, clayey **SILT**, little coarse gravel, soft, moist	
8	ML		4	24	2.2		
9						Red-tan, fine to medium sand and silt lens at 9.5'	
10	SW		30	24	1.4	Tan, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 019 - L17
Date Drilled: 3/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, medium to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
12	SM		15	20	7.2	Brown, silty **SAND**, some coarse gravel, little fine gravel, medium dense, moist	
13	SW					Tan, fine to coarse **SAND**, little fine gravel, medium dense, moist	
	SM					1/4" brown, silty sand seam	
14	SP		24	20	1.1	Tan, fine to medium **SAND**, little coarse sand, trace fine gravel, medium dense, moist	
15							
16	SW		20	20	1.8	Tan-orange, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
17	SP					Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel, medium dense, moist	
18	SW		15	12	1.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, dry	
19						With fine gravel, some coarse gravel, moist	
20			14	22	1.2		
21							
22			13	14	2.0	2" tan, medium to coarse sand with fine gravel, some coarse gravel layer	
23							
24			23	12	1.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 019 - L17
Date Drilled: 3/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense, moist	
25							
			22	16	3.3	Cobbles grade out, moist	
26							
						2" tan, fine to medium sand layer	
27						Little fine to coarse gravel	
			11	20	1.6		
28							
	SP					Tan, fine to medium **SAND**, medium dense, moist	
29							
	SW		25*	10*	0.0	Tan, fine to coarse **SAND**, some fine gravel, little coarse gravel, medium dense, dry	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
			17	20	0.0		
31	SP					Light brown, fine to medium **SAND**, some coarse sand and silt, little fine to coarse gravel, medium dense, moist	
	SW						
32	EOB					Tan, fine to coarse **SAND**, little fine gravel, medium dense, dry	
33							
34							
35							
36							
37							

NOTES:
1. Boring completed to a depth of 32' below reference on 3/15/05
2. Groundwater not encountered
3. Boring backfilled to grade with clean soil on 3/17/05
4. Analytical samples collected where sufficient recovery from +1-30':
   a. On-Site radiological every foot
   b. On-Site nickel every even numbered foot
5. SP sample collected at 7', 17', 27' and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 020 - M17
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
0						No recovery	
1			8	12	0.8	**FILL**, light brown, silt, moist	
2							
3			4	12	0.0		
						Concrete dust	
4						Dark brown to black, sandy silt, some fine to coarse gravel, moist	
5			9	12	0.0		
						Tan-gray	
6	SP					Tan-orange, fine to medium **SAND**, little silt and coarse gravel, loose, moist	
7			13	18	0.0	Tan-orange, fine to coarse **SAND**, little coarse gravel and silt, medium dense, moist	
8	SW					Tan, some fine gravel, little coarse gravel, moist	
9			26	24	1.0		
10						Tan, fine to medium **SAND**, some coarse sand, little fine gravel, trace silt, dense, moist	
11	SP		30	24	0.0		
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 020 - M17
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to coarse **SAND**, little fine gravel, medium dense, moist	
13			20	20	7.9		
14						Tan-orange, some fine to coarse gravel, trace cobbles	
15			28	24	0.9		
16							
17			22	24	3.0		
18	SW					2" medium to coarse sand layer Loose	
19			9	18	0.6		
20						Medium dense, cobbles grade out	
21			10	24	1.3		
22						Loose	
23			9	18	1.3		
24						Medium dense	
25			13	24	3.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 020 - M17
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan-orange, fine to medium **SAND**, medium dense, moist	
26	SW					Tan-orange, fine to coarse **SAND**, some fine gravel, medium dense, moist	
27			26	22	2.9		
28	SP					Tan-orange, fine to medium **SAND**, medium dense, moist	
29	SW		10	16	8.3	Tan-orange, fine to coarse **SAND**, some fine gravel, medium dense, moist	
30							
31			19	20	3.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/16/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/17/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 4', 14', 24' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 022 - M18
Date Drilled: 3/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						No recovery, lithology from cuttings appears same as below	
0			14	12	0.0	**FILL**, light brown to brown, sandy silt, some fine gravel, trace coarse gravel and cobbles, moist	
1						Medium brown to dark brown, trace fine to coarse gravel	
2			12	14	0.6		
3						No recovery, lithology from cuttings appear same as above	
4			5	12	0.4	Some debris, appears to be concrete pipe	
5						No recovery, lithology from cuttings appear same as above	
6			11	12	1.2	Light brown, fine to medium sand, some coarse sand, trace fine to coarse gravel, moist	
7						Light brown, clayey silt, trace coarse gravel and brick pieces	
8			14	18	0.7	Light brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, trace cobbles, medium dense, moist	
9	SP					Light brown to orange-brown	
10			20	20	0.5		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 022 - M18
Date Drilled: 3/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		24	14	0.5	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel and cobbles, medium dense, moist	
13							
14	SW		29	20	2.4	Light brown, gravelly fine to coarse **SAND**	
15	SP					Orange-brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist Trace coarse sand and fine gravel	
16	SW		24	24	2.4	Orange-brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
17	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
18	SW		13	16	0.7	Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
19						Some fine to coarse gravel	
20			15	20	3.5	Trace fine to coarse gravel	
21						Some fine to coarse gravel	
22			10	18	1.0		* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23			17*	12*	0.8	Trace coarse gravel	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 022 - M18
Date Drilled: 3/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		28	16	1.7	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
26						Trace coarse gravel, loose	
27			9	18	2.6	Light brown, fine to medium **SAND**, trace coarse sand, loose, moist	
28	SP					Light brown to orange-brown, medium dense	
29			16	20	3.5		
30						Orange-brown, fine to coarse **SAND**, medium dense, moist Light brown	
31	SW		20	18	2.9		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/15/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/17/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 023 - N18
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	* Auger through concrete, spoon driven 1.5' from +0.5-1'
0			10*	16*	0.6	**FILL,** brown to light brown, fine to coarse sandy silt, moist	
1						Brown to light brown, clayey silt, some fine to coarse gravel, moist	
2			5	14	2.5	Dark brown, clayey silt, some fine to coarse gravel, moist	
3						Brown to light brown, fine to coarse sandy silt, trace coarse gravel, moist	
4			6	18	1.7		
5						2" brown to light brown silty clay layer Brown fine to coarse sandy silt, moist 2" brown silty clay layer	
6			7	24	0.4	Light brown, fine to coarse sand, trace coarse gravel, moist	
7						Orange-brown to gray-brown, silty clay, trace coarse gravel, moist	
	SP		12	20	0.5	Brown to light brown, fine to medium **SAND**, trace coarse gravel, medium dense, moist	
8	SW					Brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
9						Gray-brown to light brown, fine to coarse sandy, **SILT**, some fine to coarse gravel, medium dense, moist	
10	ML		22	24	0.2		
11	~~SM~~					Light brown, fine **SAND**, trace coarse sand, medium dense, moist 2" brown to light brown, sandy silt layer at 11'	
	SP						
12			20	24	0.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 023 - N18
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13							
14	ML		15	18	0.3	Light brown, fine to coarse sandy **SILT**, trace coarse gravel, medium dense, moist Dark brown to light brown	
15							
16	SW		19	24	0.7	Orange-brown to tan, fine to coarse **SAND**, trace coarse gravel, medium dense, moist	
17						Some fine to coarse gravel	
18			11	16	0.2		
19						Light brown to tan	
20			17	18	0.5		
21						Brown to light brown	
22			16	14	0.2		
23							
24			10	16	0.2	Trace cobbles	
25							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU03 - 023 - N18
Date Drilled: 3/16/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
26	SW		20	16	0.2	Brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
27							
28			10	24	1.1	Orange-brown to brown, trace coarse gravel, fine gravel and cobbles grade out	
29			16*	10*	0.2	Some fine to coarse gravel	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30						Brown to light brown	
31			19	24	1.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/17/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/17/05 4. Analytical samples collected where sufficient recovery from 0-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 7', 17', 27' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 001 - E11
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			16*	12*	0.0	**FILL**, brown, silty sand, some fine gravel, moist	* 1' spoon driven from +1-0'
0							
1			10	22	0.3	Dark brown to black, sandy silt, moist Brown, trace fine gravel	
2						Brown, fine sand, trace silt, moist	
3			6	22	0.1	Brown, sandy silt, trace fine gravel, moist	
4							
5	SP		35	24	0.0	Light brown, fine to medium **SAND**, trace fine gravel, dense, moist Dark brown	
6							
7	SW		23	20	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
8							
9	SP		22	22	0.0	Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
10						Brown, with silt	
11			19	22	0.0	Tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 001 - E11
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
13	SP		17	23	0.0	Brown to dark brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
14	SW					Brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
15			18	20	0.0		
16						Little coarse gravel, loose	
17			8	18	0.0		
18						Medium dense, moist	
19	SM		12	20	0.0	3" brown, silty sand layer	
20	SP					Brown, fine to medium **SAND**, trace silt, medium dense, moist	
21	SW		11	22	0.0	Brown, fine to coarse **SAND**, medium dense, moist	
22						Loose	
23			7	16	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 001 - E11
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown with dark brown laminations, fine to medium **SAND**, trace fine gravel, medium dense, moist	
25	SW		10	20	0.0	Tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist Brown, little fine gravel, trace cobbles	
26							
27			13	20	0.0		
28							
29			13	22	0.0	3" brown with dark brown laminations, fine to medium sand layer	
30							
31			18	20	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/29/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/18/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 002 - F11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						FILL, brown, silty sand, little fine gravel, trace coarse gravel, moist	
0			10	20	0.0		
						Dark brown to black, little fine to coarse gravel	
1						Brown, trace fine gravel	
2			6	24	0.0	Dark brown to black, gravel grades out	
						Brown, trace fine gravel	
3							
	SP					Light brown to brown, fine to medium **SAND**, trace fine gravel and silt, medium dense, moist	
4			25	22	0.0		
						Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
5							
6			27	20	0.1		
	SM					4" brown, silty sand layer	
7	SW					Trace cobbles	
8			27	20	0.2		
9						Trace coarse gravel	
10			24	18	0.2		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 002 - F11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel and cobbles, medium dense, moist	
12			18	20	0.3		
13						Brown	
14			19	22	0.0		
15							
16	SW		18	22	0.1		
17							
18			10	22	0.1		
19						Some coarse gravel	
20			10	22	0.2		
21						Loose	
22			8	20	0.1		* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23						Some cobbles, medium dense	
			14*	12*	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 002 - F11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	22	0.1	Brown grading to light brown, fine to coarse **SAND**, some coarse gravel, little fine gravel, trace cobbles, medium dense, moist	
26						Brown	
27			14	20	0.1		
28	SP					Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist Some coarse sand	
29			18	20	0.1		
30							
31			12	24	0.2		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/25/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/30/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 003 - H11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			13	16	0.9	**FILL**, light brown, silty sand, trace fine to coarse gravel, moist	
1						Dry	
2			8	24	1.1	Brown to dark brown, some fine to coarse gravel, moist	
3							
4			6	20	1.2	Brown, fine to coarse **SAND**, some silt and fine to coarse gravel, loose, moist Light brown	
5						Medium dense	
6	SW		27	18	1.1		
7						Light brown to brown, trace cobbles, silt grades out	
8			29	24	1.2		
9						Brown, trace silt	
10	SP		17	24	1.0	Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
11	SW					Light brown to tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 003 - H11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		21	18	0.4	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13			21	24	0.6	Light brown to brown	
14	SP					Light, fine to medium **SAND**, medium dense, moist	
15	SW		17	14	0.9	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
17			6	20	0.6	Some coarse gravel, loose Trace fine to coarse gravel	
18							
19			14	20	1.5	1" brown layer at 19.7', medium dense Coarse gravel grades out	
20							
21			9	22	0.7	Light brown to brown, some fine to coarse gravel, loose, moist	
22							
23			11	20	1.1	Coarse gravel grades out, medium dense	
24						**SAND** and **GRAVEL**	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 003 - H11
Date Drilled: 3/24/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GW					Light brown to brown, fine to coarse **SAND** and **GRAVEL**, medium dense, moist Some fine gravel	
25							
26	SW		21	24	1.8	Brown to light brown, fine to coarse **SAND**, some coarse gravel, medium dense, moist	
27							
28			13	22	0.9		
29			15*	11*	0.9		*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			13	20	1.6		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/24/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/30/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 004 - D13
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			23	20	0.2	**FILL**, brown, silty sand, some fine to coarse gravel, moist	
1						Dark brown to black, little fine gravel, coarse gravel grades out	
2			7	4	NA		NA = Not available (PID data not recorded)
3						No recovery	
4			36	12	0.0	Dark brown to black, silty sand, little fine gravel, moist	
						Brown, some fine to coarse gravel	
5							
6	SP		30	20	0.6	Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel and cobbles, dense	
7						Medium dense	
8			24	20	0.4	With coarse sand	
9						Dense	
10			31	20	0.4		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 004 - D13
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		21	16	0.3	Light brown, fine to medium **SAND** with coarse sand, some coarse gravel, trace fine gravel, medium dense, moist	
13						Some fine gravel, trace coarse sand	
14			23	22	1.5		
15						Trace fine gravel, coarse gravel grades out	
16			24	18	1.1		
17	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
18			10	18	0.9		
19							
20			12	22	1.2	Fine to medium sand layer from 19.7-19.8'	
21						Loose	
22			4	18	0.9		* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23			12*	12*	0.8	Medium dense	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 004 - D13
Date Drilled: 3/29/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW		15	20	0.9	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist Light brown to tan	
25							
26			12	20	1.4	Light brown, trace fine to coarse gravel Fine to medium sand layer from 27.4-27.5'	
27							
28			19	20	0.9		
29							
30			18	24	1.0		
	SP					Light brown, fine to medium **SAND**	
31	SW					Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
	SP					Light brown, fine to medium **SAND**	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/30/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/18/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 005 - F12
Date Drilled: 3/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			22	22	0.0	**FILL**, brown, silty sand, trace fine gravel, moist Dark brown to black, little fine gravel	
1							
						No recovery	
2			6	11	0.0	Brown, silty sand, trace fine gravel, moist	
3							
4			9	18	0.0	Brown, sandy silt, moist	
						Light brown, fine to coarse **SAND**, trace fine gravel, loose, moist	
5						Medium dense Grading to fine to medium sand	
6	SW		21	18	0.0	3" dark brown sand layer	
7							
						Light brown, fine to medium **SAND**, little fine gravel, trace cobbles, medium dense, moist	
8	SP		24	20	0.4		
9						Trace coarse gravel	
10	SW		28	24	0.3	Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 005 - F12
Date Drilled: 3/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		19	19	0.0	Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist Grading to brown, fine to medium sand, trace fine gravel	
13	SP		28	18	0.0	Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
14							
15	SW					Light brown to brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
16			22	24	0.0		
17						Trace coarse gravel	
18			12	19	0.4		
19							
20			14	20	0.3		
21						Loose	
22			7	20	0.3		
23						Medium dense	
24			13	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 005 - F12
Date Drilled: 3/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW					Light brown to brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist Tan to light brown	
26			19	22	0.0		
27							
28			14	20	0.4		
29	SP					Brown, fine to medium **SAND**, trace coarse sand, medium dense, moist 3" gravelly sand layer	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
			17*	12*	0.0		
30							
31			17	22	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/28/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/7/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 006 - G12
Date Drilled: 3/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			12*	12*	0.3	**FILL**, brown, silty sand, some fine gravel, concrete construction debris, moist	*1' spoon driven from +1-0
0							
1			16	24	0.4	Brown to black, sandy silt, trace fine to coarse gravel, moist	
2							
3			5	20	0.4		
4							
5			24	20	0.0	Brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
6						Trace cobbles	
7	SP		32	18	0.0		
8							
9			22	22	0.1		
10							
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
11			20	22	0.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 006 - G12
Date Drilled: 3/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13	SP		19	22	0.0	Brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
14							
15			18	24	0.0		
16							
17			18	18	0.0		
18	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
19			15	20	0.0		
20							
21	SM		11	20	0.3	Brown, silty **SAND**	
22	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
23			14	20	0.0	Tan, trace coarse gravel and cobbles	
24	SM					1" black, silty sand, wet lens at 23.7'	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 006 - G12
Date Drilled: 3/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		15	22	0.0	Tan, fine to coarse **SAND**, trace fine to coarse gravel and cobbles, medium dense, moist Light brown to brown, coarse gravel grades out	
26							
27	SP		14	22	0.1	Brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
28							
29	SW		18	22	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
30	SP					Brown, fine to medium **SAND**	
31	SW		24	22	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/29/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/8/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 007 - I12
Date Drilled: 3/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, light brown, silty sand, little fine to coarse gravel, trace cobbles, moist	
0			19	12	0.0		
1						Dark brown to black, cobbles grade out	
2			5	10	1.6		
3							
4			17	18	0.0	Light brown, fine to medium sand with fine to coarse gravel, trace cobbles and silt, moist	
5						Dark brown to black, silty sand, little fine gravel, moist	
6			27	20	0.0	Light brown, fine to medium sand, little fine to coarse gravel, moist	
7							
8			14	22	0.0	Brown, silty sand, some fine to coarse gravel, grading to sandy silt, trace fine gravel, moist	
9							
10	SW		26	20	0.0	Tan, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist Light brown, some fine to coarse gravel	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 007 - I12
Date Drilled: 3/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		15	19	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13							
14	SP		25	22	0.0	Light brown to brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, medium dense	
15							
16	SW		17	20	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
17							
18			14	22	0.0		
19							
20			14	22	0.0		
21						Loose	
22			8	20	0.0		* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SP		17*	11*	0.0	Light brown to brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 007 - I12
Date Drilled: 3/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown to brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
25	SW		25	20	0.0	Brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel, medium dense, moist	
26							
27			19	16	0.0		
28							
29			11	22	0.0		
30						Trace cobbles	
31			18	22	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/21/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 3/30/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 008 - E14
Date Drilled: 3/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			10*	10*	0.0	**FILL**, light brown, silty, fine to medium sand, trace fine to coarse gravel and coarse sand, moist	* 1' spoon driven from +1-0'
0						No recovery	
1			8	12	0.0	Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, moist	
2						No recovery	
3			5	10	0.0	Brown to dark brown, silty, fine to coarse sand, some fine gravel, moist	
4							
5	SP		17	20	0.0	Light brown, fine to medium **SAND**, some fine to coarse gravel, trace coarse sand, medium dense, dry	
6	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
7	SP		22	20	0.0	Light brown, fine to medium **SAND**, trace fine gravel, cobbles and silt, medium dense, dry	
8						Light brown to tan, trace coarse sand, cobbles and silt grade out	
9			24	20	0.0	1" fine to coarse sand layer at 8.9'	
10	SW					Light brown to tan, fine to coarse **SAND**, trace fine gravel, medium dense, dry	
11	SP		14	20	0.0	Light brown to tan, fine to medium **SAND**, trace fine gravel, medium dense, dry	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 008 - E14
Date Drilled: 3/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to tan, fine to coarse **SAND**, trace fine gravel, medium dense, dry	
12	SP		18	24	0.0	Light brown to tan, fine to medium **SAND**, trace fine gravel, medium dense, dry	
13	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, dry	
14	SP		35	24	1.5	Light brown to tan, fine to medium **SAND**, trace coarse sand and fine gravel, dense, dry	
15							
16	SW					Light brown, fine to coarse **SAND**, trace fine gravel, dense, dry	
17			10	22	0.4	Some fine gravel, medium dense	
18						Some coarse gravel	
19			12	20	0.7		
20						Coarse gravel grades out	
21			12	24	0.2		
22							
23			12	24	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 008 - E14
Date Drilled: 3/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, dry	
25	GW		13	20	0.9	Tan, **SAND** and **GRAVEL**	
26							
27	SW		18	22	0.1	Light brown to brown, fine to coarse **SAND**, some fine gravel, medium dense	
28						Light brown to tan, trace fine gravel	
29			20	20	0.0		
30						Light brown, trace coarse gravel	
31			17	18	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/1/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/19/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 009 - G14
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			16*	12*	0.0	**FILL**, brown, silty sand, some fine gravel, moist	
0							
1			13	20	1.1	Dark brown to black, some fine to coarse gravel	* 1' spoon driven from +1-0'
2							
						Brown, sandy silt, moist	
3			12	24	0.8		
	SP					Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
4						Light brown, fine to coarse **SAND** with fine gravel, dense, moist	
5			35	20	0.7		
6						Trace cobbles	
7	SW		31	20	0.6		
8						Cobbles grade out	
9			32	19	1.5		
10						Trace cobbles, medium dense	
11			19	20	0.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 009 - G14
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown, fine to coarse **SAND** with fine gravel, trace cobbles, medium dense, moist	
13			24	20	0.3		
14	SP					Brown, fine to medium **SAND**, medium dense, moist Trace fine to coarse gravel	
15			20	20	0.6		
16							
17			14	18	0.8		
18						Some fine to coarse gravel	
19			11	20	0.7		
20							
21			13	18	1.5		
22			9	19	1.7	Tan, fine to coarse **SAND**, some fine gravel, loose, moist	
23							
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 009 - G14
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	1.0	Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist 4" fine to medium sand layer	
26							
27	SP		16	20	0.7	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
28							
29	SW		22	22	13.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
30							
31			27	24	4.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/6/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/8/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 010 - H14
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			23	20	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	
						Dark brown to black, little fine gravel	
1						Brown, some fine gravel	
2			9	22	0.0	Dark brown, little fine gravel, grading to brown sandy silt, trace fine to coarse gravel, moist	
3						Brown, fine to medium sand, little fine gravel, trace silt	
4			9	18	0.0		
5						Light brown, fine to coarse sand, some fine to coarse gravel moist	
						Light brown to brown, fine to medium sand, some coarse sand, little fine to coarse gravel, moist	
6			17	19	0.0		
						Brown, silty sand, trace fine gravel, moist	
7						Brown, fine to coarse sand, some fine to coarse gravel, moist	
8			34	22	0.0	Brown to dark brown, silty sand, moist	
9						Brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, dense, moist	
10	SW		23	22	0.0	Light brown to brown, some fine to coarse gravel, trace cobbles, medium dense	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 010 - H14
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
12			12	20	0.0		
13							
14			17	22	0.0		
15							
16			17	24	0.0		
	SW					1" dark brown, gravelly sand layer	
17						With fine gravel, some coarse gravel, loose	
18			9	17	0.0		
19						Medium dense	
20			10	18	0.0		
21						Loose	
22			9	18	0.0		
23						With cobbles, medium dense	
24			18	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 010 - H14
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW					Light brown to brown, fine to coarse **SAND** with fine to coarse gravel and cobbles, medium dense, moist	
26	SP		27	22	0.0	Light brown, fine to medium **SAND**, little gravel, medium dense, moist	
27	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
28			17	22	0.0		
29			20*	12*	0.0		* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			26	20	2.4		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/21/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/8/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 011 - D15
Date Drilled: 4/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			9	12	0.2	**FILL**, brown, silty sand, some fine gravel, moist	
1							
2			6	16	1.0		
3						No recovery	
4			3	12	2.0	Light brown, clayey silt, some sand and fine gravel, trace coarse gravel, moist	
5						Brown, sandy silt, some fine to coarse gravel, moist	
6	SW		9	22	0.1	Light brown to tan, fine to coarse **SAND**, some fine to coarse grave, loose	
	ML					Light brown, clayey **SILT, medium stiff**	
7						Orange-brown, fine to medium **SAND**, some silt, trace coarse sand and fine to coarse gravel, loose	
8	SP		33	20	0.0	Brown to light brown, some coarse sand and fine gravel, coarse gravel grades out, dense, moist	
9							
10			30	22	0.2		
11						Trace fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 011 - D15
Date Drilled: 4/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Brown to light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist	
12			22	20	0.1	Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
13	SW						
14			24	22	0.0		
15							
16			14	18	0.2	Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
17							
18	SP		12	20	0.0		
						2" fine to coarse sand, some fine to coarse gravel layer at 18.5'	
19						Some coarse sand, trace fine to coarse gravel	
20			12	18	0.3	Trace coarse sand, coarse gravel grades out	
21						Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
22	SW		14	18	0.1		
23							
24	SP		9	18	0.0	Light brown to tan, fine to medium **SAND**, trace fine to coarse gravel, loose, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 011 - D15
Date Drilled: 4/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown to tan, fine to medium **SAND**, trace fine to coarse gravel, loose, moist	
25	SW		24*	12*	0.1	Light brown to tan, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense	* 1' spoon driven from 25-26' in order to return to even numbered sampling intervals
26							
27			16	22	0.2	1" gravelly sand layer at 27'	
	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
28							
29			14	24	0.0		
30						Light brown to tan	
31			16	20	1.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/7/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/18/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 012 - F15
Date Drilled: 4/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						FILL, brown, silty fine to medium sand, some fine to coarse gravel, trace cobbles, moist	
0			17	22	3.7		
1							
2			7	20	2.0	Brown, sandy silt, moist	
						Brown, silty, fine to medium sand, some fine to coarse gravel, trace cobbles, moist	
3						Light brown	
						Brown, gravelly sand	
4			26	24	1.7	Light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
5						Some coarse sand, trace coarse gravel	
6			32	20	0.3		
7	SP					Trace coarse sand	
8			29	20	0.5		
						Some silt and fine gravel, coarse gravel grades out	
9							
10			26	24	1.9		
						2" tan, fine to coarse sand, some fine to coarse gravel layer	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 012 - F15
Date Drilled: 4/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		15	18	0.8	Light brown to tan, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
13	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
14			22	22	0.0	Trace fine to coarse gravel	
15	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
16	SP		20	18	0.6	Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist 3" fine to coarse sand layer	
17						Some fine gravel, trace coarse gravel, loose	
18			9	18	0.0		
19							
20			13	20	0.6	Some coarse sand, medium dense	
21	SW					Light brown, fine to coarse **SAND**, some fine gravel, loose, moist 3" brown layer at 21'	
22			6	20	0.6		
23						Some coarse gravel, medium dense	
24			12	24	0.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 012 - F15
Date Drilled: 4/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, some fine gravel, moist	
25							
	SP		17	22	0.0	Light brown to tan, fine to medium **SAND**, some coarse sand, medium dense, moist Light brown, trace fine gravel	
26							
	SW					Red-brown, fine to coarse **SAND**, some fine gravel	
27	SP					Light brown, fine to medium **SAND**, medium dense, moist	
28	SW		18	23	0.5	Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
29			21*	12*	0.3	Trace fine gravel, coarse gravel grades out	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30	SP		15	20	0.3	Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
31							
32	SW					Light brown to brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist 1" dark brown layer at 31.5'	
	EOB						
33							
34							
35							
36							
37							

NOTES:
1. Boring completed to a depth of 32' below reference on 4/7/05
2. Groundwater not encountered
3. Boring backfilled to grade with clean soil on 4/18/05
4. Analytical samples collected where sufficient recovery from +1-30':
   a. On-Site radiological every foot
   b. On-Site nickel every even numbered foot
5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 013 - G15
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, brown, silty sand, some fine gravel, moist	
			16*	12*	0.0		* 1' spoon driven from +1-0'
0							
1			13	20	1.1	Dark brown to black, some coarse gravel	
2							
						Brown, sandy silt, moist	
3			12	24	0.8		
						Light brown, fine to medium sand, trace fine to coarse gravel, moist	
4						Light brown, fine to coarse **SAND** with fine gravel, dense, moist	
5			35	20	0.7		
6						Trace cobbles	
7	SW		31	20	0.6		
8							
9			32	19	1.5		
10						Medium dense	
11			20	20	0.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 013 - G15
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown, fine to coarse **SAND** with fine gravel, trace cobbles, medium dense, moist	
13			23	20	0.3		
14	SP					Brown, fine to medium **SAND**, medium dense, moist	
15			20	20	0.6		
16							
17			14	18	0.8		
18						Some fine to coarse gravel	
19			11	20	0.7		
20							
21			13	18	1.5		
22	SW					Tan, fine to coarse **SAND**, some fine gravel, loose, moist	
23			9	19	1.7		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 013 - G15
Date Drilled: 4/5/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	1.0	Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	SP					Tan, fine to medium **SAND**, medium dense, moist	
26	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	
27	SP		16	20	0.7	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
28							
29	SW		22	22	13	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
30							
31			27	24	4.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/6/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/8/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 014 - I15
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			13	17	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	
1							
2			14	20	0.0	Dark brown grading to brown, little fine gravel	
3						Light brown to dark brown, some fine to coarse gravel, asphalt debris,	
4			6	16	0.0		
5	SW		24	20	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
6	SP					Fine to medium **SAND**, trace silt, medium dense, moist	
7							
8	SW		20	20	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt and cobbles, medium dense, moist	
9	SP		20	18	0.0	Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
10	SW					Fine to coarse **SAND**, with fine gravel, trace coarse gravel, medium dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 014 - I15
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, gravelly fine to coarse **SAND**, trace cobbles, medium dense	
12			17	18	0.0	Some fine to coarse gravel, moist	
13						Light brown to brown, trace cobbles	
14			24	22	0.0		
15							
	SM					3" dark brown, silty sand layer	
16			21	24	0.0		
	SW						
17						With gravel	
18			10	18	0.0	Light brown, little fine to coarse gravel	
19							
20			12	20	0.0		
21							
	SM					Loose	
						3" dark brown, silty sand layer	
22			7	20	0.0	1" seam dark brown, fine to medium sand	
23						Brown, with gravel, trace cobbles, medium dense	
24			11	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 014 - I15
Date Drilled: 3/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, with gravel, trace cobbles, medium dense, moist	
25						3" dark brown, gravelly sand layer	* 1' spoon driven from 25-26' in order to return to even numbered sampling intervals
			13*	11*	0.0	Some fine to coarse gravel	
26							
27			20	24	0.0		
	SP					Light brown with dark brown laminations, fine to medium **SAND**, trace fine gravel, medium dense, moist	
28							
29			21	22	0.0	Brown with dark brown laminations from 28.8-29', fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
30	SW					Some fine to coarse gravel	
31			23	20	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/22/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/6/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 015 - D17
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Surface elevation 142', 3' below reference	
1							
2							
3						Concrete	
4			17*	12*	0.0	**FILL**, brown, silty fine to medium sand, some fine to coarse gravel, moist	* 1' spoon driven from 4-5'
5						Gray, sandy silt, moist	
6			32	20	0.3	Light brown to orange-brown, silty fine to coarse sand, some fine gravel, moist 2" orange-brown, fine to medium sand layer	
7						Brown to orange-brown, fine to coarse sand, some fine to coarse gravel and silt, moist	
8	SP		28	20	1.3	Light brown to orange-brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
9							
10			24	20	1.1	Light brown to brown, **SILT**, trace sand and fine gravel, medium dense	
11	ML					Sandy silt	
12			15	24	0.6	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
13	SW						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 015 - D17
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW		26	20	1.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
15							
16			22	24	0.0		
	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
17						Some coarse sand, trace fine to coarse gravel	
18			16	22	0.4	Increasing coarse sand	
19							
	SW					Light brown, fine to coarse **SAND**, trace fine to coarse gravel, loose, moist	
20			10	24	0.5		
						2" coarse sand layer	
21						Some fine gravel	
22			9	18	0.4		
23						Medium dense	* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
			14*	12*	0.0		
24						Trace coarse gravel	
25			14	20	1.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 015 - D17
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		16	18	0.3	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist	
28							
29			18	20	3.0		
30							
31			19	20	0.8		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/13/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/14/05 4. Analytical samples collected where sufficient recovery from 4-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 016 - E17
Date Drilled: 4/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Surface elevation 142', 3' below reference	
1							
2							
3						Concrete	
4						**FILL**, brown, sandy silt, some fine gravel, trace coarse gravel, medium dense	
5			17	18	0.5		
6	SP					Light brown to brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, medium dense, moist	
7			23	16	0.4	Light brown to orange-brown, trace coarse sand and fine gravel, coarse gravel grades out	
8							
9	ML		35	20	0.0	Brown, sandy **SILT**, trace coarse gravel, dense, moist	
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
10						No recovery due to cobbles at 10'	
11			46	0	NA		NA = Not available (no recovery)
12	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense, moist	
13			14	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 016 - E17
Date Drilled: 4/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense, moist	
14							
15			26	24	0.3		
16							
17			15	21	1.8	Cobbles 2" fine to medium sand layer	
18	SW					Trace coarse gravel, cobbles grade out	
19			15	24	0.4		
20						Light brown	
21			14	22	0.7		
22						Trace fine gravel, loose	
23			9	20	0.5		
24							
25			11	22	0.7	1" brown layer at 24.5, medium dense	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 016 - E17
Date Drilled: 4/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		21	18	0.6	Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist 2" tan, fine to medium sand layer at 27.5'	
28							
29	SP		18	22	18	Light brown, trace dark brown laminations, fine to medium **SAND**, medium dense, moist	
30	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
31			26	22	0.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/13/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/14/05 4. Analytical samples collected where sufficient recovery from 4-30': a. On-Site radiological every foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 017 - G17
Date Drilled: 4/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, medium brown, silty sand, some fine to coarse gravel, moist	
0			11	18	0.3		
1						Medium to dark brown, trace wood and asphalt debris	
2			11	20	0.7		
3							
4			29	16	2.0	Concrete debris	
5						Dark to medium brown, sandy silt, some fine to coarse gravel	
6			6	15	2.3	Light brown to brown, silty, fine to coarse sand, some fine to coarse gravel, moist	
7							
8	SP		30	24	1.2	Light brown, fine to medium **SAND**, some coarse sand and fine gravel, medium dense, moist	
9	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
10			27	22	0.9	2" fine to medium sand layer at 10'	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 017 - G17
Date Drilled: 4/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		16	24	1.3	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist	
13	SP		26	24	1.5	Light brown to brown 1" dark brown layer at 13.5'	
15	SP		20	22	1.4	1" dark brown layer at 16.5'	
17	SW		10	22	1.0	Light brown, fine to coarse **SAND**, trace fine to coarse gravel, loose, moist	
18	SP					Light brown, fine to medium **SAND**	
19	SW		13	18	0.7	Light brown, fine to coarse **SAND**, trace fine to coarse gravel, loose, moist Some fine to coarse gravel, medium dense	
21	SW		9	18	1.8	Loose	
23	SW		14*	12*	0.7	Medium dense	* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 017 - G17
Date Drilled: 4/11/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		20	24	0.9	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist Trace coarse gravel Some fine to coarse gravel	
26 27	SP		13	22	1.9	Light brown with dark brown laminations, fine to medium **SAND**, medium dense, moist 1" dark brown, trace coarse sand layer at 27.5'	
28	SW					Light brown, fine to coarse **SAND**, trace fine to coarse gravel	
29 30	SP		17	20	2.1	Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
31			NA	22	1.0	2" fine to coarse sand, some fine to coarse gravel layer at 30.5'	NA = Not available (blow counts not recorded)
32	EOB						
33 34 35 36 37						NOTES: 1. Boring completed to a depth of 32' below reference on 4/12/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/12/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 018 - H17
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						FILL, brown, silty sand, trace fine gravel, dry	
0			25	20	1.4		
1						Dark brown, some fine to coarse gravel	
						Brown to dark brown	
2			21	20	1.4	Light brown layer 2-2.1'	
3						Brown	
4			32	18	3.9		
						Light brown	
5							
6	SP		17	22	9.1	Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
7							
						Light brown, fine to coarse **SAND**, trace fine to coarse gravel, dense, dry	
8			36	22	5.5	1" fine sand seam	
						Light brown to tan, some fine to coarse gravel	
9	SW					Medium dense	
10			26	24	7.1		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 018 - H17
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, dry	
12	SP		17	22	3.7	Light brown, fine to medium **SAND**, trace fine gravel and coarse sand, medium dense, dry	
13	SW					Light brown to tan, fine to coarse **SAND**, some fine gravel, medium dense, dry	
14			20	24	4.1	Light brown, some fine to coarse gravel	
15						Light brown to tan, some fine gravel	
16			23	22	6.7		
17						Some fine to coarse gravel, moist	
18			10	16	2.2		
19						Trace fine to coarse gravel	
20			16	22	6.1		
21						Loose	
22			8	18	4.1	Light brown to brown, some fine to coarse sand and gravel	
23						Light brown to tan, medium dense	
24			13	24	10.7		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 018 - H17
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
25							
26			19	24	7.5		
27						Trace fine gravel	
28			20	22	7.1		
29			13*	12*	7.6		* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30						Some fine gravel	
31			19	22	9.5	1" dark brown seam	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/23/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/12/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 019 - D18
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Surface elevation is 145', 1' below reference	
1						Concrete and base material	
2							* 1' spoon driven from 2-3'
			8*	12*	0.0	**FILL**, light brown, fine to coarse sand, trace coarse gravel, moist	
3						Dark brown, fine to coarse sandy, silt	
4			18	16	0.2		
5						Orange-brown, fine sand, trace coarse sand and fine to coarse gravel, moist Dark brown to grayish brown, fine to coarse sandy, silt, trace coarse gravel, moist	
6			16	22	0.2		
						Orange-brown to tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
7						Light brown to orange-brown, trace coarse gravel	
8			21	16	0.2		
9	SW					Light brown	
10			30	22	0.5		
11							
12			16	20	0.0		
13							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 019 - D18
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SP		28	24	0.1	Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
15							
16	SW		15	18	0.2	Brown to light brown, fine to coarse **SAND**, trace coarse gravel, medium dense, moist	
17						Trace fine gravel	
18			18	20	0.4		
19							
20			13	18	0.5		
21						Light brown to tan, loose	
22			9	20	0.4		
23			11*	12*	0.1	Brown to light brown, medium dense	1' spoon driven from 23-24' in order to return to even numbered sampling intervals
24						Brown to tan, some fine gravel	
25			13	20	0.3		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 019 - D18
Date Drilled: 4/13/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		13	22	0.3	Brown to light brown, fine **SAND**, trace coarse sand and coarse gravel, medium dense, moist	
28							
29	SW		20	20	0.5	Brown to light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
30							
31			18	24	0.7		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/14/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/14/05 4. Analytical samples collected where sufficient recovery from 2-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 020 - F18
Date Drilled: 4/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Surface elevation 144', 1' below reference	
1						Concrete	
2							* 1' spoon driven from 2-3'
			16*	12*	0.3	**FILL**, light brown, silty sand, little fine gravel, moist Dark brown, trace fine to coarse gravel	
3							
4			14	20	0.3	Brown, sandy silt, trace fine gravel, moist	
5						Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
6			22	18	0.2		
7	SW					Trace coarse gravel	
8			26	22	0.2		
9						Light brown to brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
10	SP		13	20	0.2		
11							
12			19	24	0.4	Brown to dark brown	
13							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 020 - F18
Date Drilled: 4/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW SM		19	22	0.2	Dark brown, fine to coarse **SAND**, some fine gravel, medium dense, moist Light brown to brown, some coarse gravel 2" brown silty sand layer	
15 16 17	SP		11	24	0.2	Light brown, fine to medium **SAND**, medium dense, moist Little fine gravel Loose	
18 19 20 21 22	SW		8 9 10	22 19 22	0.2 1.2 0.5	Light brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel and cobbles, loose, moist Medium dense	
23	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
24 25	SW		12	22	1.0	Tan to light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
26	SP		11	20	0.6		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 020 - F18
Date Drilled: 4/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
27							
						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
28			14	22	1.1		
29	SW						* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
			8*	12*	0.9		
30							
	SM					1" dark brown, silty sand layer	
31			12	22	1.5		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/14/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/14/05 4. Analytical samples collected where sufficient recovery from 4-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 021 - H18
Date Drilled: 4/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			15*	11*	2.0	**FILL**, brown, sandy silt, trace fine gravel	* 1' spoon driven from +1-0'
0						Brown, silty fine to medium sand, some fine to coarse gravel, moist	
1			15	20	4.3		
2							
3			7	18	3.8	Brown to dark brown, sandy silt, some fine to coarse gravel	
						Light brown, silty clay	
4						Brown to light brown, sandy silt, some clay and fine to coarse gravel, moist	
5	SP		9	24	3.1	Light brown, fine to medium **SAND**, some fine gravel, loose, moist	
6						Light brown to orange-brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
7	SW		20	20	1.2		
8						Some cobbles	
9			28	22	3.5	Light brown to brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
10	SP					Trace fine gravel	
11			11	20	1.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 021 - H18
Date Drilled: 4/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
12	SP					Light brown, trace coarse sand and fine to coarse gravel, loose	
13			12	18	3.5		
14	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
15	SP		19	22	1.0	Light brown, fine to medium **SAND**, medium dense, moist	
						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
16	SW						
17			10	22	1.8		
18						Dark brown	
19			20	22	1.9	Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
						Some coarse sand, trace fine gravel	
20							
21	SP		13	24	1.2		
						Some fine gravel	
22						Some coarse gravel	
23			10	15	0.5	Trace coarse sand and fine gravel, loose	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 021 - H18
Date Drilled: 4/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SP		20	12	0.0	Light brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, medium dense, moist	
26							
27			12	18	1.6	Trace coarse sand, gravel grades out	
28	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
29			19	22	0.9		
30							
31			26	24	1.2		
	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/11/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/12/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 022 - I18
Date Drilled: 3/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			18	24	6.8	**FILL**, light brown, silty sand, some fine to coarse gravel, dry Brown	
1						Light brown to brown	
2			16	24	15.3		
3						Dark brown, sandy silt, trace fine gravel, moist Light brown, silty sand, some fine gravel, moist	
4			7	22	6.6		
5							
6	SP		19	20	5.8	Light brown, fine to medium **SAND**, some fine to coarse gravel, trace coarse sand, medium dense, moist	
7							
8	SW		41	20	7.7	Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
9						Medium dense	
10			19	22	6.9		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 022 - I18
Date Drilled: 3/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		17	20	19.9	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13							
	SP					Light brown, fine to medium **SAND**, trace fine gravel and coarse sand, medium dense, moist	
14	SW		20	22	9.7	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
15							
16			20	20	8.7	Brown layer 15.8-16'	
17						Coarse gravel grades out, loose	
18			9	20	8.5		
19						Light brown to tan, some coarse gravel, medium dense	
20			12	18	8.2		
21							
22			12	18	8.6		* 1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SP		18*	12*	3.9	Light brown, fine to medium **SAND**, trace fine to coarse gravel and coarse sand, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU04 - 022 - I18
Date Drilled: 3/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
25			17	24	12.6		
26						Trace fine to coarse gravel	
27			19	20	8.8		
	SW						
28							
29			18	24	8.9		
30							
31			18	24	11.3	Light brown to tan	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 3/23/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/12/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP sample collected at 1', 11', 21' and 30' and analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 001 - T60
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			15	20	0.2	**FILL**, brown, silty sand, trace fine gravel, moist Dark brown to black, trace coarse gravel	
1							
2			5	18	0.5		
3						Brown, fine to medium **SAND**, some fine gravel, trace coarse gravel, loose, moist	
4	SP		6	22	0.4	Light brown to brown	
5							
	SM					Dark brown, silty **SAND**, some fine gravel, loose, moist	
6	ML		5	24	0.5	Grayish brown, **SILT**, trace fine to coarse gravel, loose, moist	
7	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, loose, moist	
	SP					Brown, fine to medium **SAND, medium dense**	
8			23	20	0.3	Brown, fine to coarse **SAND**, some fine to coarse gravel, moist	
9						Dense	
10	SW		32	22	0.2		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 001 - T60
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		23	16	0.1	Brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13	SP					Light brown, fine to medium **SAND**, some coarse sand, medium dense, moist	
14			21	20	0.0	Brown, trace fine gravel, coarse sand grades out	
15	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
16			25	24	0.0		
17						Loose	
18			9	20	0.0		
19						Medium dense	
20			15	18	0.0		
21							
22			15	20	0.1		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23			17*	11*	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 001 - T60
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	0.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
26							
27			24	20	0.0		
28							
29	SP		19	22	0.0	Brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
30							
31	SW		23	20	0.0	Brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/22/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/22/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 002 - V60
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			6	20	0.0	**FILL**, brown, silty sand, trace fine gravel, moist	
1							
2			6	18	0.0	Dark brown to black	
3							
4			3	18	0.0		
						Brown, sandy **SILT**, loose, moist	
5						Dark brown, trace fine gravel, medium dense	
6	ML		10	24	0.0	Gray-brown, sand grades out	
7						Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
8			18	20	0.0		
9	SW						
10			27	22	0.0		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 002 - V60
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
12	SP		21	20	0.0	Brown, fine to medium **SAND**, some coarse sand, medium dense, moist	
13						Trace fine to coarse gravel and cobbles	
14			25	22	0.0		
15							
16			12	22	0.0		
						Brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
17							
18	SW		13	22	0.0	1" seam fine to medium sand	
19							
20			20	22	0.0	Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
21							
22	SP		11	24	0.0	4" brown to dark brown, fine to coarse sand layer	
23						Trace coarse gravel	
24			18	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 002 - V60
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
25						Brown to dark brown	
26	SW		25	22	0.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	SP					Light brown, fine to medium **SAND**, medium dense, moist	
27							
						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
28			13	24	0.0		
29	SW		13*	12*	0.0		* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30						4" dark brown, fine to medium sand layer	
31			15	24	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/21/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/22/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 003 - X60
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			9*	12*	0.0	**FILL**, light brown, fine to medium sand, some coarse sand and fine to coarse gravel, moist	* 1' spoon driven from +1-0'
0						Some silt	
1			13	18	0.0	Brown, silty sand, some fine to coarse gravel, moist	
2						No recovery	
3			6	12	0.0	Brown, silty sand, some fine to coarse gravel and cobbles, moist	
4							
5	SP		11	24	0.1	Orange-brown to light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
6							
7	ML		12	18	0.3	Brown, sandy **SILT**, trace fine to coarse gravel, medium dense, moist	
8	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense	
9			38	24	0.2	Some coarse sand, dense Trace coarse sand	
10	SW					Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel and cobbles, medium dense	
11			24	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 003 - X60
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel and cobbles, medium dense	
13	SP		14	24	0.4	Light orange-brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense	
14	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
15			30	22	0.0		
16							
17			15	24	0.0		
18	SP					Light brown to tan, fine to medium **SAND**, medium dense	
19	SW		16	24	0.2	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist 3" red-brown layer	
20						Trace coarse gravel	
21			18	22	0.0		
22	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, loose, moist	
23			10	15	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 003 - X60
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist	
25			15	16	0.0		
26							
27			21	20	0.6		
	SP						
28							
29			21	20	0.0		
30						Brown	
31			20	24	0.7	Light brown	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/19/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/21/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 004 - Z60
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			16	24	0.0	**FILL**, brown, silty sand, some fine gravel, trace coarse gravel, moist	
1							
2			12	16	0.1	Dark brown to black, trace fine gravel, moist	
3							
4			4	12	0.2		
5							
6	SP		10	24	0.0	Brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
7							
8	ML		12	20	0.1	Brown, sandy **SILT**, medium dense, moist	
9						Brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel, medium dense, moist	
10	SP		28	20	0.3		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 004 - Z60
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		20	20	0.7	Brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel, medium dense, moist	
13	SP		24	22	0.6	Light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
14	SW					Brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
15			16	20	0.5		
16	SP					Brown, fine to medium **SAND,** trace fine gravel, medium dense, moist	
17	SW		11	20	0.4	Light brown to brown, fine to coarse **SAND**, little fine gravel, trace coarse gravel, medium dense, moist	
18							
19			14	20	0.1		
20							
21			8	20	0.0	Loose	
22	SP					Brown, fine to medium **SAND**, some coarse sand, little fine gravel, loose, moist	*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SW		13*	12*	0.2	Brown, fine to coarse **SAND**, little fine gravel, trace cobbles, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 004 - Z60
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SM					Brown, fine to coarse **SAND**, little fine gravel, trace cobbles, medium dense, moist	
25	SW		21	24	0.3	2" dark brown, silty sand lens at 24.5'	
26							
27	SP		29	20	0.0	Brown, fine to medium **SAND**	
	SW					Brown, fine to coarse **SAND**, little fine gravel, trace cobbles, medium dense, moist	
28							
29	SP		19	22	0.0	Brown to light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
30	SW					Brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
31			20	20	0.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/19/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/21/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 005 - C11
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete and base material	
-1							
0			13	20	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	
1						Dark brown to black, trace fine to coarse gravel,	
2			4	22	0.2		
3						No recovery	
4			3	12	0.0	Dark brown to black, silty sand, trace fine to coarse gravel, moist	
5						Brown, coarse gravel grades out	
						Gray-brown, silt, moist	
6			6	24	0.0		
7						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
8	SW		27	22	0.2	Trace cobbles	
9							
10			28	22	0.3		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 005 - C11
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		23	20	0.3	Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13	SW					Trace silt	
14	SW		21	22	0.1		
15	SW						
16	SW		18	22	0.6		
17	SP					Brown, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, medium dense, moist	
18	SP		11	18	0.2		
19	SW					Brown, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
20	SW		16	20	0.3		
21	SW						
	SP					Brown, fine to medium **SAND**	
22	SW		13	22	0.3	Brown, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
23	SW						
24	SW		16	18	0.1		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 005 - C11
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW					Brown, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
26	SP		23	22	0.3	Brown, fine to medium **SAND**	
27	SW					Brown, fine to coarse **SAND** with fine gravel, some coarse gravel, medium dense, moist	
28			19	16	0.0		
29			15*	12*	0.1		*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31	SM		20	20	0.4	2" dark brown, silty sand lens at 30.6'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/18/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/20/05 4. Analytical samples collected where sufficient recovery from +2-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 006 - U62
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			27*	12*	0.0	**FILL**, brown, silty sand, little fine gravel, moist	* 1' spoon driven from +1-0'
0							
1			12	20	0.0	Dark brown to black, trace fine gravel, moist	
2							
3			7	22	0.0	Brown, little fine gravel, moist	
4	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, loose, moist	
5			3	20	0.0	Brown, sandy **SILT**, loose, moist	
6	ML					Gray-brown, clayey silt	
7			4	20	0.0		
8						Light brown, fine to medium **SAND**, little fine to coarse gravel, loose, moist	
9	SP		32	22	0.0	Trace cobbles, dense	
10							
11	SW		20	20	0.0	Light brown to brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 006 - U62
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown to brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
13	SP		26	22	0.1	Light brown to brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
14							
15			19	22	0.1		
16							
17	SW		14	22	0.0	Brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
18							
19			13	20	0.1		
20							
21			16	24	0.2		
22						Loose	
23			7	20	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 006 - U62
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		17	20	0.0	Brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
26							
27			18	20	0.0		
28							
29			18	22	0.0		
30	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, dry	
31			19	22	0.0		
32	SW					Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/25/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/25/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 007 - W62
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			18	20	0.0	**FILL**, brown, sandy silt, little fine to coarse gravel, medium dense, moist Dark brown to black, silty sand, little fine gravel, medium dense, moist	
1						Brown, trace fine gravel, loose	
2			7	20	0.0	Black Dark brown, trace coarse gravel	
3							
4			7	20	0.1	Light brown to brown, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, loose, moist	
5	SP					Medium dense	
6			11	19	0.1		
7							
8	ML		12	20	0.1	Grayish brown, **SILT**	
	SP					Light brown to brown, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, medium dense, moist	
9							
10	SW		31	20	0.5	Brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 007 - W62
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		24	18	0.2	Brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13							
14	SP		30	24	0.0	Brown, fine to medium **SAND**, trace fine gravel, dense, moist	
15							
16	SW		18	22	0.0	Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
17						Trace coarse gravel	
18	SP		12	20	0.0	Light brown to brown, fine to medium **SAND**, trace fine gravel, medium dense, dry	
19							
20			15	22	0.0		
21	SW					Brown, fine to coarse **SAND**, little fine gravel, medium dense, dry	
22			11	20	0.0		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23			11*	12*	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 007 - W62
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	0.0	Brown, fine to coarse **SAND**, little fine gravel, medium dense, dry	
26	SP					Brown, fine to medium **SAND**, some coarse sand, little fine gravel, medium dense, dry	
27			14	22	0.0		
28							
29	SW		22	20	0.0	Light brown, fine to coarse **SAND**, trace fine to coarse gravel and cobbles, medium dense, moist	
30							
31			19	24	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/21/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/22/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 008 - Z62
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			15	18	0.0	**FILL**, brown, silty sand, some fine to coarse gravel, moist	
1							
2			8	14	0.1	Dark brown to black, trace fine to coarse gravel	
3							
4			9	20	0.0	Brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, loose, moist	
5						Medium dense	
	SM						
6	SP		20	20	0.0	2" silty sand layer	
	SM					2" silty sand layer	
7							
8			18	20	0.0		
9							
10	SW		33	20	0.2	Light brown, fine to coarse **SAND**, some fine gravel, trace cobbles, medium dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 008 - Z62
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		18	20	0.0	Light brown, fine to coarse **SAND**, some fine gravel, trace cobbles, medium dense, moist	
13							
14	SP		31	22	0.0	Light brown, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, dense, moist	
15							
16	SW		30	24	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
17							
18			12	16	0.2	Trace cobbles, medium dense	
19							
20			13	24	0.0		
21							
22			13	20	0.0		
23							
24			18	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 008 - Z62
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
25							
26	SP		31	20	0.5	Light brown to brown, fine to medium **SAND**, little fine gravel, dense, moist	
27						Medium dense	
28			15	22	0.0		
29			18*	10*	0.8		* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			15	24	0.2		
	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/19/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/21/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 009 - B12
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			12*	10*	0.5	**FILL**, light brown to brown, silty sand, trace fine to coarse gravel, moist	* 1' spoon driven from +1-0'
0							
1			11	18	0.0	Dark brown, sandy silt, some fine to coarse gravel, with asphalt and fabric debris	
2							
3			5	18	0.0	3" asphalt debris layer 1" asphalt debris layer	
4							
5	SP		13	18	0.3	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist	
6							
7	SW		16	18	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
8							
9			38	18	0.3	Trace coarse gravel and cobbles, dense	
10							
11			26	18	0.1	Light brown to tan, trace fine gravel, cobbles grade out, medium dense	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 009 - B12
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown to tan, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
13	SP		21	24	0.1	Light brown to orange-brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
14							
15			27	24	0.4		
16						Light brown	
17			14	20	0.1	2" light brown, fine to coarse sand, some fine to coarse gravel layer	
18							
19	SW		12	24	0.2	Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, moist	
	SP					Light brown to orange-brown, fine **SAND**, medium dense	
20							
21	SW		13	18	0.2	Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
22						Some fine to coarse gravel, loose	
23			7	18	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 009 - B12
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		21	22	0.2	Medium dense 1" fine to medium sand layer Brown	
26							
27	SP		17	20	0.0	Light brown, fine to medium **SAND**, medium dense, moist Tan Light brown 1" dark brown layer	
	SW					Light brown, fine to coarse **SAND**, some fine gravel 1" light brown to brown, fine to medium sand layer	
28							
	SP					Light brown, fine to medium **SAND**, trace coarse sand and cobbles	
29			21	18	0.3	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	SW						
30							
31	SP		16	24	0.2	Light brown with brown laminations, fine to medium **SAND**, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/18/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/21/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 010 - T64
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, brown, silty sand, little fine gravel, trace cobbles, moist	
0			44	20	0.0	Dark brown to black, some fine to coarse gravel, cobbles grade out	
1							
2			8	22	0.0	Brown, some fine gravel, coarse gravel grades out	
3						Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense, dry	
4	SW		12	20	0.0		
5						Loose	
6			4	20	0.0		
	ML					Grayish brown, clayey **SILT**, loose, moist	
7						Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
8	SW		23	22	0.0		
	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
9						Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
10	SW		27	20	0.0		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 010 - T64
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		16	18	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13							
14			24	24	0.2	Brown, fine to medium **SAND**, little fine gravel, medium dense, dry	
15	SP						
16			23	20	0.0		
	SW					Brown, fine to coarse **SAND**	
17	SP					Brown, fine to medium **SAND**, little fine gravel, medium dense, dry Loose	
18			8	20	0.0	Light brown, fine to coarse **SAND**, some fine gravel, loose, dry	
19	SW					Medium dense	
20			13	22	0.0		
21						Loose	
22			9	20	0.0		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SP		10*	12*	0.0	Light brown, fine to medium **SAND**, loose, dry Medium dense	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 010 - T64
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW		14	24	0.0	Brown, fine to coarse **SAND**, little fine gravel, medium dense, dry	
25	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, dry	
26	SW		14	22	0.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
27	SP					Light brown, fine to medium **SAND**	
28	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
29	SP		18	22	0.0	Brown, fine to medium **SAND**, some coarse sand, little fine gravel, medium dense, moist	
30							
31	SW		21	22	0.0	Light brown to brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/25/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/25/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 011 - V63
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			39	20	0.0	**FILL**, brown, silty sand, little fine gravel, trace coarse gravel, moist	
1						Dark brown to black	
2			6	22	0.0	Brown to dark brown, trace fine to coarse gravel	
3							
4			5	20	0.0	Gray-brown, clayey **SILT**, trace fine gravel, medium stiff, moist	
5	ML						
6			7	24	0.0		
7							
8	SP		9	20	0.0	Light brown, fine to medium **SAND**, some coarse sand, loose, moist	
9						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
10	SW		23	22	0.0		
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 011 - V63
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		14	20	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13							
14	SP		23	24	0.0	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
15	SP					Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
16			21	22	0.0		
17							
18			11	18	0.0		
19							
20			11	20	0.0		
21						Trace cobbles	
22			12	15	0.0		
23							
24			13	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 011 - V63
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
26			17	18	0.0		
	SW					Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
27							
28			15	22	0.0	Light brown, fine to medium **SAND**, trace coarse gravel, medium dense, moist	
29	SP						* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
			14*	12*	0.0		
30							
31			14	22	0.0		
	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/26/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/26/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 012 - X63
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			40*	12*	0.0	**FILL**, gray-brown to light brown, silty, fine to coarse sand, trace fine gravel, dry	* 1' spoon driven from +1-0'
0						Dark brown to brown, sandy silt, trace coarse gravel, dry	
1			27	24	0.3	Light brown to gray-brown, silty, fine to coarse sand, trace fine to coarse gravel, dry Dark brown, sandy silt, trace fine to coarse gravel, dry	
2							
3			4	24	0.3	Dark brown to light brown, silty, fine to coarse sand, trace fine to coarse gravel, dry	
4							
5			3	18	0.2	Dark brown, trace fine gravel, dry Light brown, some fine to coarse gravel	
6							
7	ML		4	20	0.3	Light gray-brown to light brown, fine sandy **SILT**, trace fine to coarse gravel, loose, dry	
8							
9	SP		18	24	0.1	Brown to tan, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, dry	
10							
11	SW		30	24	0.1	Brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 012 - X63
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
12							
13	SP		21	24	0.0	Light brown to tan, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, dry	
14							
15	SW		30	24	0.2	Light brown to tan, fine to coarse **SAND**, trace fine to coarse gravel, dense, dry	
	SP					Tan, fine **SAND**, dense, dry	
16							
17	SW		15	18	0.5	Brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry Light brown to tan, trace fine to coarse gravel	
18							
19			14	24	0.3	Gray-brown to tan, some fine to coarse gravel, moist	
20							
21			18	24	0.6	Light brown, trace fine to coarse gravel 2" dark brown, fine sandy, silt layer Tan, some fine to coarse gravel	
22							
23			8	24	0.3	Light brown, trace fine to coarse gravel, loose with dark brown, sandy silt seams Tan, some fine to coarse gravel	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 012 - X63
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		14	20	0.2	Brown, fine to coarse **SAND**, trace fine gravel, medium dense, dry Tan, some fine to coarse gravel	
26	SP					Brown to light brown, fine **SAND**, trace coarse sand and orange-brown, fine sandy, silt seams, medium dense, dry	
27	SW		15	20	0.2	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
28							
29			20	24	0.2	1" seam brown, fine sand 2" gray-brown fine sand layer Light brown, trace fine to coarse gravel	
30						Gray-brown to light brown, some fine to coarse gravel	
31			17	24	0.5	Light brown to tan, trace fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/20/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/26/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 013 - A14
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			24	22	0.0	**FILL**, brown, silty sand, trace fine gravel, moist Dark brown to black, little fine to coarse gravel	
0							
1							
			8	20	0.0	2" fine to medium sand lens at 2' Brown, trace fine gravel, coarse gravel grades out	
2							
3						Brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
			13	20	0.0		
4							
5						Light brown to brown, loose	
	SW		9	20	0.0		
6							
7							
			13	20	0.0		
8							
	SM					Brown, silty **SAND**, some fine gravel, medium dense	
9	SW					Light brown to brown, fine to coarse **SAND**, little fine gravel, moist	
	ML					Gray, **SILT**	
10			25	22	0.0		
	SW					Light brown to brown, fine to coarse **SAND**, little fine gravel, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 013 - A14
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		21	20	0.0	Light brown to brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
13	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
14			31	22	0.3	Dense	
15						Medium dense	
16			16	22	0.2		
17							
18	SW		16	20	0.1	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
19							
20			16	18	0.2		
21							
22	SP		11	20	0.0	Light brown, fine to medium **SAND**	*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SW		11*	10*	0.0	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 013 - A14
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		21	22	0.4	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
26							
27	SP		16	20	0.3	Brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
28						2" black, fine to coarse sand lens at 27.7'	
29			18	20	0.2		
30	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
31			21	22	0.6		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/20/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/22/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 014 - C14
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			44	22	0.3	**FILL**, light brown to brown, silty, fine to coarse sand, some fine to coarse gravel, trace brick, dry	
1							
						No recovery	
2			56	12	0.7	Brown to dark brown, silty fine to coarse sand, some fine to coarse gravel, with clay lenses and concrete fragments, dry	
3							
4			82	16	1.0	Light brown, silty, fine to medium sand, trace fine to coarse gravel and coarse sand, dry	
5							
6			21	24	1.3	Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
						Light brown to tan, fine to coarse **SAND**, some fine gravel, medium dense, dry	
7							
8	SW		55	16	0.7	Some fine to coarse gravel, very dense	
9							
10			59	22	1.5	Light brown, trace cobbles	
	SP					Tan, fine to medium **SAND**, very dense, dry	
11	SW					Tan, fine to coarse **SAND**, trace fine gravel, very dense, dry	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 014 - C14
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		86	18	0.8	Tan, fine to coarse **SAND**, some fine to coarse gravel, very dense, dry	
13			43	20	1.2	Dense	
14	SP					Tan, fine to medium **SAND**, trace fine gravel and coarse sand, dense, dry	
15	SW		59	22	1.3	Tan, fine to coarse **SAND**, trace fine gravel, dense, dry Tan to light brown, some fine to coarse gravel, very dense	
16							
17	SP					Tan to light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, very dense, dry	
18	SW		42	18	1.1	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, dense, dry	
19			35	20	0.8	Light brown	
20						Tan	
21			28	20	0.9	Tan to light brown, trace fine gravel, medium dense	
22	SP					Tan to light brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, dry	
23	SW		22	16	0.7	Tan to light brown, fine to coarse **SAND**, trace fine gravel, medium dense, dry Light brown to tan, trace coarse gravel	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 014 - C14
Date Drilled: 3/23/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to tan, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, dry	
25							
						Some fine to coarse gravel	
26			28	22	1.7		
27						Light brown, dense, moist	
28			42	18	1.3		
29	SW		27*	12*	1.2	Light brown, fine to medium **SAND**, trace fine gravel and coarse sand, medium dense, moist	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
	SP						
30						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
31	SP		27	18	1.6	Light brown, fine to medium **SAND**, trace fine to coarse gravel and coarse sand, medium dense, moist	
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/18/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/22/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 017 - W65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						**FILL**, brown, silty sand, trace fine gravel, moist	
0			18	22	0.0		
1						Dark brown to black	
2			12	22	0.1		
3						Dark brown, gravel grades out	
4			12	22	0.1		
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
5							
6	SP		25	20	0.0	Tan to light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
7							
8	ML		12	24	0.0	Grayish brown, clayey **SILT**, trace fine gravel, medium dense, moist	
	SW					Light brown, fine to coarse **SAND**	
	ML					Grayish brown, clayey **SILT**, trace fine gravel, medium dense, moist	
9							
10	SW		28	20	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 017 - W65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		22	20	0.4	Tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, dry	
13						Light brown to brown, dense	
14			32	24	0.0		
15						Medium dense	
16			16	20	0.0		
17							
18			12	20	0.0		
19							
20			11	16	0.0		
21							
22			14	24	0.0		
23			16*	11*	0.0	Some cobbles	*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 017 - W65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense, dry	
25			14	23	0.0		
	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
26							
27			17	22	0.0		
	SW					Light brown, fine to coarse **SAND**, little fine gravel, medium dense, dry	
28							
29			19	22	0.0		
30							
						1" grayish brown, fine sand lens at 30.2'	
31			24	24	0.0		
	SP					Light brown to brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/26/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/26/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 018 - Y65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			15	22	0.0	**FILL**, brown, silty sand, moist	
1						Dark brown to black, trace fine gravel	
2			8	20	0.0		
3							
4			13	20	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
5	SW						
6			18	22	0.0		
7							
8			22	24	0.0	Brown, fine to medium **SAND**, some coarse sand, little fine gravel, medium dense, moist	
9	SP						
10			24	22	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
11	SW						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 018 - Y65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, medium dense, dry	
12			28	20	0.0	Tan to light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
13							
14	SP		28	22	0.0		
15							
16			21	20	0.0		
						Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
17						Loose	
18			9	22	0.0		
19						Medium dense	
	SW						
20			15	20	0.0		
21							
22			12	22	0.0		
23							
24			17	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 018 - Y65
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW					Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
26			16	22	0.0		
27	SP					Brown, fine to medium **SAND**, trace coarse sand, medium dense, dry	
28			15	20	0.0		
29			13*	11*	0.0	Light brown to brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	* 1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30	SW						
31			15	24	0.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/27/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 019 - B16
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			5*	11*	0.0	**FILL**, light brown, fine to coarse sand, moist Brown, silty sand, trace fine gravel, moist	* 1' spoon driven from +1-0'
0							
1			4	20	0.0	Dark brown to black	
2						Brown, sandy silt, trace fine to coarse gravel, moist	
3			3	20	0.0	Dark brown, silty sand, little fine to coarse gravel, moist	
4							
5			8	18	0.0		
	SW					Orange-brown, fine to coarse **SAND**, some fine to coarse gravel, loose, moist	
6						Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
7			22	20	0.0	Orange-brown	
8	SP						
9			21	22	0.0	Light brown, trace cobbles, gravel grades out	
10							
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
11			18	20	0.0	1" orange-brown, fine to coarse sand layer	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 019 - B16
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
13	SP		20	22	0.0	Light brown to brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
14							
15	SW		25	22	0.0	Gray-brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, dry	
16							
17	SP		13	20	0.0	Light brown, fine to medium **SAND**, medium dense, moist	
18	SW					Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
19	SP		17	20	0.0	Light brown, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, medium dense, moist	
20							
21	SW		13	20	0.0	Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
22							
23			9	20	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 019 - B16
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		10	20	0.0	Light brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
26						Light brown to brown, trace coarse gravel	
27			20	20	0.0		
28							
29			19	22	0.0		
30							
31			17	24	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/28/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/28/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 021 - V67
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			47	18	0.0	**FILL**, light brown, fine to medium sand, trace fine to coarse gravel, dry Brown, some silt	
1						Light brown, sandy silt, some fine to coarse gravel, dry	
2			94	12	0.2		
3						Brown, clayey silt, some sand, coarse gravel grades out	
4			14	24	0.0		
5							
6	SP		29	24	0.0	Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
7							
8			22	16	0.7	Brown, sandy **SILT**, some fine to coarse gravel Trace fine gravel, dense	
9	ML					2" light brown, fine to medium sand layer at 8.5'	
10			42	20	0.6		
	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, dense, moist	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 021 - V67
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SP		87	22	0.6	Light brown, fine to medium **SAND**, trace coarse sand, very dense, moist	
13						Some coarse sand and fine to coarse gravel and cobbles, dense	
14			40	20	0.5		
15						1" brown, medium to coarse sand layer at 15'	
						Orange-brown, gravel and cobbles grade out	
16			41	18	0.4	1" brown medium to coarse sand layer at 15.3'	
						Light brown, trace fine gravel	
17						Some coarse sand, trace coarse gravel	
18			35	18	1.6		
19						Coarse gravel grades out	
20			33	20	1.3	Some coarse sand, trace coarse gravel	
21	SW		20	24	1.4	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
22	SP					Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
23						Some coarse sand and fine to coarse gravel, dense	
24			37	16	1.7		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 021 - V67
Date Drilled: 4/22/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, dense, moist	
25						Coarse sand and gravel grade out	
	SW					Tan to light brown, fine to coarse **SAND**, trace fine to coarse gravel, very dense	
26	SP		56	18	1.9	Brown, fine to medium **SAND**, trace coarse sand and fine gravel, very dense	
27						Light brown, dense	
						Some fine to coarse gravel	
28			45	16	1.4		
	SW					Red-brown, gravelly **SAND**, dense, moist	
29	SP		40*	11*	1.6	Fine to medium **SAND**	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			39	16	1.7		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/25/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/25/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 022 - Y67
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			36*	10*	0.6	**FILL**, light brown, fine to medium sand, trace fine gravel, moist Medium brown, silty sand, some fine to coarse gravel, moist	* 1' spoon driven from +1-0'
0						Trace fine to coarse gravel	
1			35	14	0.7		
2							
3			27	18	0.5	Brown to dark brown, sandy silt, trace fine gravel, moist Light brown, trace coarse gravel	
4							
	SM					Light brown, silty **SAND**, trace fine to coarse gravel, medium dense, moist	
5	SP		12	22	0.1	Light brown, fine to medium **SAND**, trace silt and coarse sand, medium dense, moist	
6	ML					Orange-brown, clayey **SILT**, trace fine gravel, medium dense, moist Light brown to gray, dense	
7			34	24	0.8	Light brown, silty, fine to medium **SAND**, trace fine gravel, very dense, moist	
8	SM						
9			41	24	0.0		
	SP					Light brown, fine to medium **SAND**, some fine gravel, trace coarse gravel, dense, moist	
10							
	SM					Light brown, silty, fine to medium **SAND**, trace coarse gravel, dense, moist	
11			76	22	1.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 022 - Y67
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SM					Light brown, silty fine to medium **SAND**, trace coarse gravel, very dense, moist, 1" brown silt layer at 11.5'	
	SP					Light brown, fine to medium **SAND**, some fine gravel, moist	
12	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles, very dense, moist	
13			58	20	0.8	Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, very dense, moist	
14						Some fine to coarse gravel	
15			62	24	0.7		
16							
17			80	18	0.5		
18	SP					Dense	
19			32	18	0.4		
20						Trace fine to coarse gravel	
21			37	16	0.5		
22						Medium dense	
23			16	20	0.3		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 022 - Y67
Date Drilled: 4/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SP		40	22	0.3	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, dense, moist Some fine to coarse gravel	
26							
	SW					Light brown to tan, fine to coarse **SAND**, dense, moist	
27	SP		40	20	0.8	Light brown, fine to medium **SAND**, dense, moist	
28							
29			34	18	0.7	Trace coarse sand and fine gravel	
30						Some coarse sand and fine gravel, trace coarse gravel	
31			48	22	0.5		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/22/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/25/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP samples collected at 4', 14', 24', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 023 - A18
Date Drilled: 4/27/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						No recovery	
0			13	12	0.0	**FILL,** brown, silty sand, little fine gravel, moist	
1							
2			5	20	0.3	Dark brown to black, trace fine gravel	
3							
4	SW		9	20	0.1	Reddish brown, fine to coarse **SAND**, some silt, little fine gravel, loose, moist	
5							
6			5	24	0.0	Orange-brown, clayey **SILT**, some fine to coarse gravel, loose, moist	
7	ML					Wet	
8			4	24	0.0	Grayish brown, moist	
9	SW					Reddish brown, fine to coarse **SAND**, little fine gravel, loose, moist Medium dense	
	SM						
10	SP		27	22	0.0	Light brown to reddish brown, fine to medium **SAND**, little coarse sand, trace fine to coarse gravel, medium dense, moist	
						3" brown, silty sand lens at 9.5'	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 023 - A18
Date Drilled: 4/27/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown to reddish brown, fine to medium **SAND**, little coarse sand, trace fine to coarse gravel, medium dense, moist	
12	SW		18	20	0.0	Brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
13							
14			22	22	0.4		
15	SP					Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
16			12	22	0.2		
17	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
18			16	24	0.2		
19							
20			17	20	1.7		
21							
22			10	20	0.5		*1' spoon driven from 23-24' in order to return to even numbered sampling intervals
23	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
24	SW		11*	12*	1.1	Light brown, fine to coarse **SAND** with fine gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 023 - A18
Date Drilled: 4/27/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		17	20	1.7	Light brown to brown, fine to coarse **SAND** with fine gravel, trace cobbles, medium dense, moist	
26							
27	SP		19	20	1.6	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
28							
29			21	20	3.5		
30						Brown, some fine gravel, trace silt	
31	SP		20	24	3.2	Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/27/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected where sufficient recovery from +1-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 1', 11', 21', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 024 - C18
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Surface elevation 144', 1' below reference	
1						Concrete and base material	
2			18*	11*	0.1	**FILL**, dark brown to black, silty sand, little fine gravel Trace fine gravel, moist	* 1' spoon driven from 2-3'
3						No recovery	
4			18	12	0.3	Dark brown to black, silty sand, trace fine gravel, moist	
5							
6	SW		34	24	0.0	Light brown, fine to coarse **SAND**, little fine gravel, dense, moist	
7							
8			45	20	0.3	Brown, fine to medium **SAND**, some silt and fine to coarse gravel, dense, moist	
9	SP					Medium dense Trace fine gravel, silt and coarse gravel grade out	
10			18	22	0.1	Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
11	SW						
12			25	24	0.0		
13	SP					Light brown, fine to medium **SAND**, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 024 - C18
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Dark brown, fine to medium **SAND** with silt, trace coarse sand, medium dense, moist	
14	SW		24	24	0.3	Brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
15						Some fine to coarse gravel	
16			12	19	0.1		
17							
18			14	18	0.3		
19						Loose	
20			9	20	0.1		
21						Medium dense	
22			12	20	0.0		
23							
24			16	22	0.2		
25							
26			13	22	0.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: SU05 - 024 - C18
Date Drilled: 4/15/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP					Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
28	SW		22	22	0.2	Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	SP					Light brown, fine to medium **SAND**, medium dense, moist	
29	SW		9*	12*	0.4	Light brown to brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	*1' spoon driven from 29-30' in order to return to even numbered sampling intervals
30							
31			18	22	0.2		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/15/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/26/05 4. Analytical samples collected where sufficient recovery from 2-30': a. On-Site radiological every foot b. On-Site nickel every even numbered foot 5. SP samples collected at 7', 17', 27', and 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F13 - DL01
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			45	16	0.7	**FILL**, light brown, silty, fine to medium sand, trace coarse sand and fine gravel, dry	
1						No recovery	
2			24	6	0.2	Brown to dark brown, silty, fine to coarse sand, some fine gravel, dry	
3			16*	10*	0.7		* 1' spoon driven from +3-4'
4						No recovery	
5			9	12	1.0	Light brown to brown, silty, fine to coarse sand, some fine gravel, moist	
	SW					Light brown to brown, fine to coarse **SAND**, some fine gravel and silt, medium dense, moist	
6							
7	SP		49	18	2.8	Light brown, fine to medium **SAND**, some coarse sand and fine gravel, dense, dry	
8						No recovery	
9			45	12	1.2		
	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, dense, dry	
10						No recovery	
11			54	12	1.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F13 - DL01
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, very dense, dry	
12						Cobbles grade out, dense	
13			34	16	2.1		
14	SW					Light brown	
15			35	22	1.3		
16							
17			34	18	1.8		
18						No recovery	
19			24	12	1.8	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
20						Light brown	
21	SW		26	18	4.1		
22							
23			20	16	5.1		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F13 - DL01
Date Drilled: 4/25/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		22	18	15.5	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
26						Dense	
27			38	20	18		
28	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, dense, dry	
29	SW		37	20	23.8	Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, dry	
30							
31			42	18	40.8		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/25/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/28/05 4. Analytical samples collected from +1-30': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10' and 20' 5. SP sample collected at 30' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F14 - DL01
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1						No recovery	
0			18	12	0.0	**FILL**, light brown to brown, sandy silt, some fine to coarse gravel, medium dense, moist	
1						No recovery	
2			7	6	0.0	Light brown, sandy, silt, trace fine gravel	
3			5*	3*	0.0	Medium brown, some fine to coarse gravel, moist	* 1' spoon driven from +3-4'
4						No recovery	
5			6	7	0.0	Medium brown, sandy, silt, some fine to coarse gravel, moist	
6						No recovery	
7			5	7	0.0	Medium brown, sandy, silt, some fine to coarse gravel and cobbles, moist	
8						Medium brown, silty sand, some fine to coarse gravel, cobble at 9'	
9			60	24	0.2	Light brown, fine to medium **SAND**, some fine to coarse gravel, trace coarse sand, very dense, moist	
10	SP					Dense	
11			47	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F14 - DL01
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to medium **SAND**, trace fine gravel, dense, moist	
12							
13			33	16	0.3		
14	SP					Light brown to brown, some coarse sand and fine gravel, trace coarse gravel, medium dense	
15			28	22	0.3		
16						Medium Dense	
17			45	20	0.4	Light brown, trace fine gravel	
18						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
19	SW		25	20	0.5		
20						Trace coarse gravel	
21			20	20	2.4		
22	SP					Light brown, fine to medium **SAND**, some fine gravel, trace coarse sand, medium dense, moist	
23	SW		19	18	3.8	Light brown, fine to coarse **SAND**, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: F14 - DL01
Date Drilled: 4/20/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	93.7	Light brown, fine to coarse **SAND**, medium dense, moist Light brown to tan	
26						Dense	
27	SP		40	24	130	Tan, fine to medium **SAND**, some fine to coarse gravel, trace coarse sand, dense, moist Light brown	
28						Some coarse sand	
29			35	20	131		
30						Trace coarse gravel	
31			36	20	155		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/20/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/28/05 4. Analytical samples collected from +1-30': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10' and 20' 5. SP sample collected at 30' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G13 - DL01
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			35*	8*	0.1	**FILL**, light brown, silty, fine to medium sand, some fine gravel, trace coarse gravel	* 1' spoon driven from +1-0'
0							
1			47	8	0.6	No recovery	
2							
			31	17	0.5	Dark brown, fine to coarse sand, some silt and fine to coarse gravel, moist Dark brown, silty, fine to coarse sand, some fine to coarse gravel, asphalt debris, moist	
3							
4						Brown, asphalt debris grades out	
			53	18	0.5		
5							
6						Light brown, fine to medium sand, some coarse sand, trace fine gravel, dry	
			85	22	0.6	Some fine gravel Light brown to brown, trace fine gravel	
7							
8						Dark brown to brown, silty, fine to medium sand, some coarse sand, moist	
			47	22	0.3		
9						Light brown, sandy silt, trace fine to coarse gravel, moist	
10						Light brown, fine to medium sand, some fine to coarse gravel, dense, moist	
	SP		53	18	0.5	Gravel grades out, very dense Some coarse sand	
11							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G13 - DL01
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown, fine to medium **SAND**, some coarse gravel, very dense, moist Coarse gravel grades out	
12							
			36	20	0.8	Trace coarse sand and fine to coarse gravel, dense	
13							
14						Gravel grades out	
			37	18	0.7		
15							
16						Some coarse sand, trace fine to coarse gravel	
			41	20	0.4		
17							
18							
						No recovery	
19			26	12	0.3		
	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense, moist	
20						Some fine gravel	
			21	16	0.5		
21							
22							
						No recovery	
23			19	11	0.6		
	SP					Light brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, medium dense, moist	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G13 - DL01
Date Drilled: 4/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to medium **SAND**, some coarse sand and fine gravel, trace coarse gravel, medium dense, moist	
25			27	18	1.0		
						Trace coarse sand, gravel grades out	
26							
						1/4" dark brown seam at 26.5', dense	
27	SP		40	20	0.8	Light brown to orange-brown, trace fine to coarse gravel	
28							
29			35	20	1.3	Light brown, coarse sand and gravel grades out	
						Light brown to orange-brown, some coarse sand, trace fine to coarse gravel	
30							
31			37	18	2.2	Light brown, coarse sand and gravel grade out	
						Light brown to orange-brown, some coarse sand, trace fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/26/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected from +1-30': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10' and 20' 5. SP sample collected at 30' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
						No recovery	
0			20	12	0.0		
						FILL, light brown, fine to coarse sand, some fine to coarse gravel and silt, with styrofoam debris,dry	
1							
						No recovery	
2			16	11	0.0		
						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
3							
			8*	11*	0.0		* 1' spoon driven from +3-4'
4							
						No recovery	
5			9	5	0.0		
						Light brown, silty, fine to medium sand, trace coarse sand and fine to coarse gravel, moist	
6							
						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, with asphalt debris	
7			6	14	0.0		
8							
						Light brown to dark brown	
9			15	16	0.4		
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
10							
	SW					Light brown to tan, moist	
11			29	20	52.4		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
12						Dry	
13			30	18	80.7		
14							
15	SW		30	20	111	Fine to medium sand layer 14.9-15.1'	
16						Light brown, trace fine to coarse gravel, dense, moist	
17			30	22	131		
18						Some fine to coarse gravel, medium dense, dry	
19			20	20	129		
20							
	GW					Light brown, fine to coarse **SAND** and **GRAVEL**, medium dense, dry	
21			19	20	130		
						Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, dry	
22						Some fine to coarse gravel, trace cobbles	
	SW						
23			20	16	138		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		11	18	127	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
26						Light brown to tan, trace fine to coarse gravel, dense	
27			31	24	136		
	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, dry	
28						No recovery	
29	SW		33	12	118	Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, dry	
30							
31			30	16	104		
32						No recovery	
33	SW		37	12	341	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, dense, dry	
34						Light brown, some fine gravel	
35			37	24	284		
36	SP					Light brown, fine to medium **SAND**, trace fine gravel, dense, dry	
37			43	18	320		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, dense, dry	
38	SP		46	20	282	Light brown, fine to medium **SAND**, trace fine gravel, dense, dry	
39	SW					Light brown to brown, fine to coarse **SAND**, trace fine gravel, dense, dry	
40			52	22	266	Very dense	
41	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, very dense, dry	
42			39	18	58.2	Trace coarse sand and fine gravel, dense, moist	
43							
44			33	20	43.8		
45	SM					Silty, fine **SAND** with clay seams	
46	SP		40	20	14.2	Light brown, fine to medium **SAND**, trace coarse sand, dense, moist	
47							
48			42	20	52.3		
49							
50							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP		28	24	6.5	Light brown, fine to medium **SAND**, trace coarse sand, medium dense, moist	
51	CL					Light brown, silty **CLAY**, trace silt seams, very stiff, moist	
52	SP		172	23	7.8	Light brown, fine to medium **SAND**, very dense, moist	
53	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, very dense, moist	
54	SP		132	18	13.2	Light brown, fine to medium **SAND**, very dense, moist	
55							
56			90	22	19.4	Trace coarse sand and fine gravel	
57							
58			51	20	15.0	Light brown to tan, coarse sand and gravel grade out	
59							
60			41	20	10.2	Trace coarse sand, dense	
61							
62			31	20	11.8	Tan, coarse sand grades out	
63							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL01
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to medium **SAND**, dense, moist	
64	SP					Trace coarse sand, medium dense	
65			26	22	25.6	Brown layer 65.2-65.4'	
66	EOB						
67						NOTES: 1. Boring completed to a depth of 66' below reference on 4/27/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected from +1-64': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10', 20', 40', and 50' 5. SP samples collected at 30' and 64' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL02
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			16*	12*	0.0	No recovery	
0							
						FILL, light brown, fine to coarse sand, trace fine gravel and silt, dry	* 1' spoon driven from +1-0'
1			13	20	1.1	Brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
						No recovery	
2							
						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
3			12	24	0.8		
4						Light brown, some silt	
5			35	20	0.7		
6						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, trace clay lenses and wood fragments, moist	
7			31	20	0.6	Light brown, fine to coarse sand, some fine to coarse gravel, moist Fine sand layer 7.5-7.8'	
8						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
9			32	19	1.5	Light brown, fine to coarse sand, some fine to coarse gravel and silt, trace cobbles, dry	
10						Light brown, silty, fine sand, trace coarse sand and fine gravel, dry	
11			19	20	0.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL02
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, trace silt, medium dense, dry	
12							
						Light brown to tan, dry	
13	SW		24	20	0.3		
14						Light brown	
15	SP		20	20	0.6	Light brown to tan, fine to medium **SAND**, trace fine gravel and coarse sand, medium dense, dry	
16							
17	SW		14	18	0.8	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
18							
						No recovery	
19			11	20	0.7		
						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
20	SW						
21			13	18	1.5		
						Fine to medium sand layer 21.5-21.8'	
22							
						No recovery	
23			9	19	1.7		
	SW					Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, loose, dry	
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL02
Date Drilled: 4/18/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		19	20	1.0	Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, dry	
26							
27			16	20	0.7		
28						Light brown, moist	
29			22	22	13.0		
30						Trace fine to coarse gravel	
31			27	24	4.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/19/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected from +1-30': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10' and 20' 5. SP sample collected at 30' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL03
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt, Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			40*	10*	0.9	**FILL**, Light brown, silty, fine to coarse sand, some fine to coarse gravel, dry	* 1' spoon driven from +1-0'
0							
1			59	10	1.9	Brown to dark brown, trace fine gravel, coarse gravel grades out	
						No recovery	
2							
						Dark brown to brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
3			32	23	1.2	Light brown to brown	
4						Trace fine to coarse gravel and cobbles	
5			45	20	0.6		
6						Brown to dark brown, some fine to coarse gravel, cobbles grade out,	
7			50	24	2.9	Light brown, fine to coarse sand, some fine to coarse gravel, dry	
8						Light brown, fine to medium sand Light brown, fine to coarse sand, some fine to coarse gravel, dry	
9			15	11	0.0	No recovery	
						Light brown, silt, trace fine to medium sand seams and fine gravel, moist	
10						Light brown, silty, fine to coarse sand, some fine to coarse gravel, moist	
11			50	20	0.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL03
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt, Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to tan, fine to coarse **SAND**, trace fine to coarse gravel, dense, dry	
12							
						Some fine to coarse gravel	
13	SW		42	16	1.5		
14						Light brown, trace fine gravel, coarse gravel grades out	
15			30	20	1.7		
	SP					Light brown, fine to medium **SAND**, trace coarse sand and fine gravel, dense, dry	
16						Light brown, fine to coarse **SAND**, trace fine gravel, dense, dry Some fine gravel	
17			32	22	2.1		
18	SW						
19			26	20	8.0		
20							
						Light brown, fine to medium **SAND**, trace coarse sand and fine to coarse gravel, medium dense, moist	
21	SP		29	18	7.2		
22							
						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
23	SW		21	18	0.4		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Survey Units Drilling Program (009 Delineation)
Client: GTEOSI, Hicksville, NY
Log of Boring: G14 - DL03
Date Drilled: 4/19/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt, Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SW		27	16	1.5	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist 2" tan, fine to medium sand layer at 25.5', dense	
26							
27	SP		38	20	7.2	Tan, fine to medium **SAND**, some coarse sand and fine gravel, dense, moist Light brown	
28							
29	SW		33	18	19.0	Light brown, fine to coarse **SAND**, some fine gravel, trace coarse gravel, dense, moist	
30							
31	SP		48	20	19.0	Light brown, fine to medium **SAND**, some coarse sand and fine to coarse gravel, dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' below reference on 4/20/05 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 4/27/05 4. Analytical samples collected from +1-30': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot d. Off-Site VOCs at 10' and 20' 5. SP sample collected at 30' bgs, analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: I19 - DECB
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			33*	11*	0.0	**FILL**, brown, sandy silt, trace fine to coarse gravel, moist	*1' spoon from +1-0'
0						Brown to light brown, clayey silt, some sand, gravel grades out	
1			35	18	0.0	Brown to dark brown, sandy silt, trace fine to coarse gravel, clay grades out	
2							
3			15	0	-	No recovery, part of a cobble in the spoon from 2-4'	
4							
5			13	12	0.0	Light brown, fine to medium sand, some coarse sand, trace fine gravel and silt, moist	
6						Light brown to gray, clayey silt to silty clay	
7			14	22	0.0	Light brown clay, trace silt, moist	
8	SP					Light brown, fine to medium **SAND**, medium dense, moist	
						Dark brown, some coarse sand, trace fine gravel, very dense	
9			52	16	0.0	Light brown, trace cobbles	
10	EOB						
11							

NOTES:
1. Boring completed to 10' below reference on 4/28/05
2. Groundwater not encountered
3. Boring backfilled with clean soil on 4/28/05
4. Analytical samples collected from +1-10':
a. On-Site radiological every foot
b. On-Site VOCs every odd foot
c. On-Site nickel every even foot

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: K17 - DECC
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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5 Penn Plaza
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			44*	11*	0.0	**FILL**, light brown, silty, fine to coarse sand, some fine to coarse gravel, moist	*1' spoon from +1-0'
0						No recovery	
1			37	10	0.0	Light brown, silty, fine to coarse sand, some fine to coarse gravel, moist	
2						Dark brown, coarse gravel grades out	
3			57	18	0.0	Dark brown to brown, fine to coarse sandy, silt, some fine to coarse gravel, trace cobbles, moist	
4						No recovery	
5			28	12	0.0	Dark brown to brown, silty, fine to coarse gravel, moist Concrete debris from 5.3-5.5'	
6						No recovery	NOTES: 1. Boring completed to 10' below reference on 4/28/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 4/29/05
7			13	12	0.0	Brown, fine to coarse sand, some silt and fine to coarse gravel, trace silt lenses and concrete debris, moist	
8						Light brown to tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, dense, dry	
9	SW		46	20	0.0		4. Analytical samples collected from +1-10': a. On-Site radiological every foot b. On-Site VOCs every odd foot c. On-Site nickel every even foot
10	EOB						
11							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: J19 - DECD
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			33*	11*	0.0	**FILL**, light brown, silty, fine to coarse sand, some fine to coarse gravel, moist	*1' spoon from +1-0'
0						Light brown, sandy silt, trace fine to coarse gravel, moist	
1			35	18	0.0	Brown to light brown, silty, fine to coarse sand, some fine to coarse gravel, dry	
2						No recovery	
3			15	0	-	Light brown to brown, fine to coarse sand, some fine to coarse gravel, trace silt and cobbles, dry	
4						No recovery	
5			13	12	0.0	Brown to gray, fine to coarse sand, some fine to coarse gravel, silt and concrete debris, dry	
6						No recovery	NOTES: 1. Boring completed to 10' below reference on 4/28/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 4/29/05 4. Analytical samples collected from +1-10': a. On-Site radiological every foot b. On-Site VOCs every odd foot c. On-Site nickel every even foot
7			14	22	0.0	Light brown, fine to coarse sand, some silt and fine gravel, moist	
8						Brown, some coarse sand, trace cobbles	
9			52	16	0.0	Light brown, sandy silt, some fine gravel, moist	
10	SW					Light brown to dark brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, very dense, moist	
	EOB						
11							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: N12 - DECF
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			6*	12*	0.5	**FILL**, brown, silty sand, little fine gravel, moist	*1' spoon from +1-0'
0			7	12	0.8	No recovery	
1						Brown, silty sand, little fine gravel, moist Dark brown to black, little coarse gravel	
2			6	-	-	No recovery	
3							
4			3	12	2.3		
5						Dark brown to black, silty sand, little fine gravel, moist	
6			2	16	4.2		
7							
8			8	20	0.9		
9							
	SW					Brown, fine to coarse **SAND**, little fine gravel, loose, moist	
10	EOB						
11							

NOTES:
1. Boring completed to 10' below reference on 4/28/05
2. Groundwater not encountered
3. Boring backfilled with clean soil on 4/28/05

4. Analytical samples collected from +1-10':
a. On-Site radiological every foot
b. On-Site VOCs every odd foot
c. On-Site nickel every even foot

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: L17 - DECH
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Brian Stoudt

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			32*	10*	0.0	**FILL**, light brown, silty, fine to coarse sand, trace fine gravel, moist	*1' spoon from +1-0'
0						Light brown, fine to coarse sandy, silt, trace fine gravel, moist	
1			44	16	0.0		
2						Dark brown, silty, fine to coarse sand, trace fine gravel, moist	
						Brown to dark brown, silty, fine to coarse sand, some fine to coarse gravel, with concrete and asphalt , moist	
3			33	16	0.0	2" light brown, silty clay layer	
4						Some cobbles, gravel grades out	** 94 blows to drive spoon 9"
			94**	6	0.0		
5			163	0	-	Unable to advance spoon, slough in spoon contained dark gray, fine gravelly, fine to coarse sand, some white pastey material, wet	
	EOB						
6							
7							
8							
9							
10							
11							

NOTES:
1. Boring completed to 5.5' below reference on 4/28/05
2. Groundwater not encountered
3. Analytical samples collected from +1-4':
   a. On-Site radiological every foot
   b. On-Site VOCs every odd foot
   c. On-Site nickel every even foot
4. Augered through refusal at 5.5', further investigation identified underground storage tank

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: M19 - DECI
Date Drilled: 4/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			16*	10*	0.0	**FILL**, brown, silty sand, little fine gravel, moist	*1' spoon from +1-0'
0							
1			17	24	0.0	Dark brown to black, some fine to coarse gravel	
2							
3			4	20	0.0	Brown, sandy silt, trace fine to coarse gravel, moist	
4							
5			4	20	0.0		
6						Grayish brown, silty sand, moist	
						Reddish brown, fine to coarse sand, little fine gravel, moist	
7			5	20	0.0	Brown, sandy silt, moist	
8							
	SP					Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
9			19	22	0.0		
	SW					Brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
10	EOB						
11							

NOTES:
1. Boring completed to 10' below reference on 4/28/05
2. Groundwater not encountered
3. Boring backfilled with clean soil on 4/28/05
4. Analytical samples collected from +1-10':
a. On-Site radiological every foot
b. On-Site VOCs every odd foot
c. On-Site nickel every even foot

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: L16 - DECK
Date Drilled: 5/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
			14*	12*	0.5	**FILL**, light brown, sandy silt, some fine to coarse gravel, moist	*1' spoon from +1-0'
0							
1			24	20	1.5	Dark brown Concrete debris from 1.5-2'	
2			13*	11*	3.6	Light brown, trace cobbles Dark brown, cobbles grade out	*1' boring from 2-3'
3						No recovery	
4			8	11	0.9	Dark brown to black, sandy silt, some fine to coarse gravel Light brown, clayey silt, some sand, trace fine to coarse gravel	
5						Dark brown, sandy silt, coarse gravel grades out	
6			13	20	1.8	Light brown, silty clay, some fine to coarse gravel	
	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
7							
8	SP		21	16	2.0	Light brown, fine to medium **SAND**, trace coarse sand, fine gravel and clay, medium dense, moist Clay grades out	
9	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
10	SP		16	13	2.0	No recovery Light brown, fine to medium **SAND**, trace coarse sand increasing with depth, fine gravel and cobbles, medium dense, moist	
11							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: L16 - DECK
Date Drilled: 5/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		26	22	1.1	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist Trace coarse gravel	
13	SP					Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist Trace cobbles	
14	SW		26	16	2.6	Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
15	EOB					NOTES: 1. Boring completed to 15' below reference on 5/3/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 5/4/05 4. Analytical samples collected from +1-15': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot	
16							
17							
18							
19							
20							
21							
22							
23							
24							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: L17 - DECL
Date Drilled: 5/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1							
0			15	16	2.8	**FILL**, light brown, sandy silt, trace fine to coarse gravel, moist	
1							
						No recovery	
2			7	10	8.5	Dark brown, sandy silt, some fine to coarse gravel, moist	
3							
4			6	18	6.1	Light brown, some clay, trace fine to coarse gravel	
5						Light brown, clayey sand, moist	
	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
6			23	18	3.4	Light brown, fine to medium **SAND**, some fine gravel, trace coarse sand and coarse gravel, medium dense, moist	
7	SP						
8			26	20	2.3	2" dark red-brown layer Light brown to brown 2" trace clay at 8'	
9						Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist Trace cobbles	
10	SW		30	18	1.5		
11							

Project No.: NYSDEC: V-00089-1/ URS: 27010-039
Project: NYSDEC-Requested Drilling Program
Client: GTEOSI
Log of Boring: L17 - DECL
Date Drilled: 5/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW		32	16	0.9	Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, dense, moist	
13 14	SP		27	20	3.7	Light brown to brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist 1" dark brown, fine to coarse sand layer at 14'	
15 16 17 18 19 20 21 22 23 24	EOB					NOTES: 1. Boring completed to 15' below reference on 5/3/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 5/4/05 4. Analytical samples collected from +1-15': a. On-Site radiological every foot b. On-Site VOCs every even foot c. On-Site nickel every odd foot	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0101
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						BACKFILL Previously excavated to 3' bgs	
1							
2							
3						Void (inside of leach pool)	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0101
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Void (inside of leach pool)	
14							
15			*WR	3	0.0	**FILL**, brown, sandy silt, little fine to coarse gravel (likely slough)	*WR = Weight of the rods
16						Light tan to brown, silty, fine sand	
17			*WR	12	0.0	Black, organic layer from 16.75-17.25' Brown to reddish gray, fine to coarse sand, little gravel	
18							
19			*WR	17	0.0	Tan Gravelly from 19.8-20'	
20							
21	SW		20	6	0.0	Brown to tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
22						Tan, little gravel	
23	SP		12	24	0.0	Tan with red laminations, fine to medium **SAND**, medium dense, moist	
24	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist Brown-red, some fine to coarse gravel	
25			12	18	0.0		
	GW					Fine to coarse **GRAVEL** and fine to coarse **SAND**, moist	
26	SW					Brown, fine to coarse **SAND**, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0101
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	GW		24	24	0.0	Fine to coarse **GRAVEL**, some brown to tan, fine to coarse sand, medium dense, moist Brown, gravel and fine to coarse sand from 26.7-27.3'	
	SP					Fine gravel layer from 27.2-27.3'	
28	SW		22	20	0.0	Light tan, fine to medium **SAND**, little fine to coarse gravel Red, fine sand layer from 27.5-27.6' Brown from 27.6-28'	
29	SP					Brown-red, fine to coarse **SAND**, little fine to coarse gravel, moist	
	SW					Tan, fine to medium **SAND**, little fine to coarse gravel	
30	SP		13	17	0.0	Dark tan to brown, fine to coarse **SAND**, little fine to coarse gravel, moist Dark tan to brown, fine to medium **SAND**, medium dense, moist	
31	SW					Trace fine gravel	
32	EOB					Dark tan to brown, fine to coarse **SAND**, some fine to coarse gravel, moist	
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/10/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/16/04 4. Analytical samples collected from 15-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0102
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			9	18	0.0	**BACKFILL** Previously excavated to 3' and backfilled with dark tan, silty, fine sand, little fine to coarse gravel, trace clay	
2							
3			10	12	0.0	**FILL**, black, silty, fine sand, little fine to coarse gravel, trace clay	
4							
5			5	16	0.0	1" light tan to white, clayey silt layer	
6	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, loose, trace silt Silt grades out	
7	GW SP		12	22	0.0	Fine to coarse **GRAVEL**, little medium to coarse sand Tan, fine **SAND, medium dense** 2.5" fine to coarse sand layer at 7.3'	
8							
9	SW		3	11	0.0	Tan, fine to coarse **SAND**, little fine gravel, loose	
	SP					Tan, fine **SAND**	
10							
11	GM		7	14	0.0	Brown, silty, fine to coarse **SAND** and fine to coarse **GRAVEL, loose**	
12	SP					Tan, fine to medium **SAND, loose** Tan and brown, trace fine silt and fine gravel, medium dense	
13			13	17	0.0	2" fine to medium sand and fine to coarse gravel layer	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0102
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, trace fine to coarse gravel, medium dense	
14	SW					Tan, fine to coarse **SAND**, trace fine to coarse gravel, moist	
	SP		14	19	0.0	Tan, fine **SAND**, moist	
15	SW					Tan to gray, fine to coarse **SAND** Fine to coarse gravelly from 15.6-16'	
16	SP		34	24	0.0	Tan, fine to medium **SAND**, some fine to coarse gravel, dense 1" coarse sand layer at 16.75' Gravel grades out	
17	SW					Tan to brown, fine to coarse **SAND**, some fine to coarse gravel	
18	SP		17	20	0.0	Tan, fine to medium **SAND**, little fine gravel and silt, medium dense, moist Brown laminations	
19	GP					Black, fine **GRAVEL** and coarse **SAND**, little fine to medium sand, trace coarse gravel, moist	
	SP					Black and tan, fine to medium **SAND**, little fine to coarse gravel, moist	
20	SW		23	23	0.0	Brown, black, and tan, fine to coarse **SAND**, some fine to coarse gravel, moist Tan	
21	SP		14	19	0.0	Brown, fine to medium **SAND**, little fine gravel, moist Light tan	
22	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, moist	
23	SP		19	18	0.0	Brown, fine to medium **SAND**, trace fine gravel, moist	
24	SW					Tan to brown, fine to coarse **SAND**, some fine to coarse gravel, moist	
25							
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0102
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		26	24	0.0	Tan to brown, fine to coarse **SAND**, some fine to coarse gravel, moist 1" gray layer, gravel grades out, medium dense 2" coarse sand and fine gravel layer at 26.9' Light tan, some fine to coarse gravel	
28						Orange-tan	
29	SP		24	18	0.0	Tan with brown laminations, fine **SAND**, trace fine gravel	
30	SW					Orange-tan, fine to coarse **SAND**, some fine to coarse gravel, moist Little gravel	
31			19	23	0.0		
32	SP EOB					Orange-tan, fine **SAND** 2" fine gravel and coarse sand layer at 31.6' Brown, fine to medium sand from 31.8'	
33							
34							
35							
36							
37							
38							
39							

NOTES:
1. Boring completed to a depth of 32' bgs on 11/11/04
2. Groundwater not encountered
3. Boring backfilled to grade with clean soil on 11/16/04
4. Analytical samples collected from 1-29':
   a. On-Site radiological every foot where soil recovery permitted
   b. On-Site nickel every odd-numbered foot
5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0103
Date Drilled: 11/12/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			19	23	0.0	**BACKFILL** Previously excavated to 2' and backfilled with tan, silty, fine sand, little fine to coarse gravel	
2						**FILL**, black, silty, fine to medium sand, little fine to coarse gravel	
3	SW		25	15	0.0	Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
4							
5	ML		8	16	0.4	Tan mottled with gray, sandy **SILT**, little fine gravel, loose	
6	SP					Tan-orange, fine to medium **SAND**, little fine to coarse gravel, trace clay	
7	SW		21	20	0.0	Tan, fine to coarse **SAND,** little fine to coarse gravel, medium dense	
	SP					Tan, fine to medium **SAND** Fine to coarse sand, trace fine gravel layer from 7.8-8'	
8	SM		14	14	0.0	Brown, silty, fine to medium **SAND**	
9	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
	SP					Tan to brown, fine **SAND**, trace silt	
10	SW		11	14	0.0	Tan and gray, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
11							
12							
13			21	18	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0103
Date Drilled: 11/12/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GW					Fine to coarse **GRAVEL** with fine to coarse sand	
14	SW					Tan and gray, fine to coarse **SAND**, some to little fine to coarse gravel, medium dense	
15			24	16	0.0		
16	SP					Tan, fine to medium **SAND**, little fine to coarse gravel	
17			28	19	0.0		
18	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel 1" fine sand layer at 17.5'	
19			23	19	0.0		
	SP					Tan, fine to medium **SAND** Medium to coarse sand, little fine gravel from 19.3-19.5'	
20	SW					Tan, fine to coarse **SAND**	
	GP					Orange-red to brown, trace fine gravel and silt	
21			18	16	0.0	Orange-tan **SAND** and fine **GRAVEL**	
	SW					Tan, fine to coarse **SAND**	
22						Tan-orange, some fine to coarse gravel Dark brown, moist Tan, little fine gravel, coarse gravel grades out	
23			15	20	0.0		
	GW					Brown to gray-tan, fine to coarse **GRAVEL** and fine to coarse **SAND**, moist	
24							
25	SW		17	18	0.0	Brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense Light tan, gravel grades out Dark brown, some fine gravel	
26	SP					Light tan, medium to coarse **SAND**, some fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0103
Date Drilled: 11/12/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
	GW					Light brown, medium to coarse **SAND** and fine to coarse **GRAVEL**	
27	SP		31	19	0.0	Brown fine **SAND**, grading to tan, fine to medium sand, little fine to coarse gravel, dense	
28	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
29	SP		23	16	0.0	Tan-orange grading to brown-red grading to tan, fine **SAND** 1" fine to coarse sand layers at 28.8' and 29'	
30						Brown to tan, fine to medium sand, little fine to coarse gravel, moist	
31	SW		18	19	0.0	Brown, fine to coarse **SAND**, little fine to coarse gravel, moist Tan-orange Brown-orange	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/15/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0104
Date Drilled: 11/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						BACKFILL Previously excavated to 0.8' and backfilled with brown, silty, fine sand, little fine to coarse gravel and cobbles	
1			12	11	0.0	**FILL**, brown to black, sandy silt, little fine to coarse gravel, medium dense	
2							
3			24	17	0.0	Brown and black, fine to medium sand, some asphalt debris, little gravel Black to brown, clayey silt, little fine to coarse gravel	
4						Gray and tan mottled, trace fine to coarse gravel	
5			6	17	0.0		
	ML					Brown to tan, sandy **SILT**	
6	SW					Tan to light tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
7			24	20	0.0		
	SP					Tan, fine **SAND**	
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
8							
9	SP		20	14	0.0	Tan, fine **SAND**, medium dense	
	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel	
10							
	SP					Tan-orange, fine **SAND**	
11	GW		14	16	0.0	Tan, fine to coarse **SAND** and fine to coarse **GRAVEL**	
12	SP					Tan, fine to medium **SAND**, little fine to coarse gravel 3" fine sand layer at 12' Tan with red, little fine gravel, coarse gravel grades out	
13	SW		23	15	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0104
Date Drilled: 11/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
14							
	SP		22	16	0.0	Tan, fine to medium **SAND**, some fine to coarse gravel	
15						Gravel grades out	
						Little fine to coarse gravel	
16			32	24	0.0	Trace fine to coarse gravel, dense	
17	GW					Tan, fine to coarse **SAND** and fine to coarse **GRAVEL** grading to little fine to coarse gravel by 17'	
18	SP					Light tan, fine **SAND** Tan, fine to medium sand	
	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
19	SP		19	16	0.0	Brown, fine to medium **SAND**, little fine to coarse gravel	
20						1" dark brown followed by tan, fine to coarse **SAND**, some fine gravel	
						Light tan, some fine to coarse gravel	
21	SW		14	16	0.0	Tan, some fine gravel, little coarse gravel	
22						Little fine to coarse gravel	
	SP					Orange-tan, fine to medium **SAND**	
23	GP		13	20	0.0	Red-brown, coarse **SAND** and fine **GRAVEL,** some fine to medium sand	
24						Tan, fine to coarse **SAND**, some fine gravel	
						Little fine to coarse gravel, medium dense	
25	SW		14	17	0.0	Tan with orange, fine to medium sand layer from 24.8-25'	
						Some fine to coarse gravel	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0104
Date Drilled: 11/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense	
	GP					Light tan, fine to coarse **SAND** and fine **GRAVEL**, little coarse gravel	
27	SP		26	22	0.0	Tan-orange, fine to medium **SAND**, little coarse gravel	
28						Tan to gray, gravel grades out, moist	
29	SW		23	17	0.0	Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, moist Red-tan, little fine to coarse gravel Tan to brown	
30						Tan-orange	
31			20	18	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/15/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0105
Date Drilled: 11/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1, 2			21	19	0.0	**BACKFILL** Previously excavated to 2.4' and backfilled with tan to gray, silty, fine sand, little fine to coarse gravel, trace clay	
3			31	24	0.0	**FILL**, asphalt to 3.2', followed by black, silty, fine sand, little fine gravel Brown, clayey silt, little fine gravel, trace sand	
4, 5	ML		5	18	0.0	Tan mottled with gray, clayey **SILT**, little fine gravel, trace sand, medium stiff	
6	SP					Tan to tan-orange, fine to medium **SAND**, trace fine gravel, dense Medium sand grades out	
7	SW		45	17	5.0	Tan, fine to coarse **SAND**, some fine to coarse gravel 1" tan-orange, fine sand layer at 6.5'	
8	SP					Tan, fine grading to fine to medium **SAND**, little fine to coarse gravel, some to trace cobbles Very dense	
9	SP		83	16	0.0		
10	SP					Cobbles grade out, medium dense	
11	SP		18	15	0.0		
12	SP					Dense	
13	GW		32	11	1.0	Tan, fine to coarse **SAND** and fine to coarse **GRAVEL**	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0105
Date Drilled: 11/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to coarse **SAND**, little fine to coarse gravel, dense	
14	SW					Light tan, fine gravel, coarse gravel grades out, medium dense	
15			21	16	0.0	Brown, trace coarse gravel	
16	SP		50	18	0.0	Tan-orange, fine to medium **SAND**, little fine to coarse gravel, dense, moist	
17						Tan	
18	SW					Tan, fine to coarse **SAND**, little fine gravel, medium dense, moist	
19	SP		18	19	0.0	Tan with intermittent brown layers, fine to medium **SAND**, trace fine gravel, moist	
20	SW					Tan with intermittent brown layers, fine to coarse **SAND**, little fine gravel, moist	
						Brown to tan	
21			13	16	0.0		
22	GP					Brown fine to coarse **SAND** and fine **GRAVEL**, moist	
23	SP		12	19	0.0	Tan and brown, fine **SAND**, trace fine to coarse gravel, moist	
						Tan, fine to medium sand	
24	SW					Brown, fine to coarse **SAND**, moist	
	GP					Dark brown **SAND** and fine **GRAVEL**, little coarse gravel	
25	SP		11	22	0.0	Light tan, fine **SAND**	
26	SW					Tan to brown, fine to coarse **SAND**, little fine to coarse gravel, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0105
Date Drilled: 11/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
27	SP		24	19	0.0	Light tan, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, moist	
28						Orange-tan	
29	SW		22	16	0.0	Tan, fine to coarse **SAND**, trace fine to coarse gravel, moist	
30	GP					Coarse **SAND** and fine **GRAVEL**, little fine to medium sand and coarse gravel, moist	
	SW					Orange-tan, fine to coarse **SAND**, little fine to coarse gravel, moist	
31	ML		18	17	0.0	1" brown, sandy silt at 31.2'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/12/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0201
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1						**BACKFILL** Previously excavated to 6' bgs	
2							
3							
4							
5							
6						**FILL**, dark brown, silty sand, some gravel, moist	
7			1	12	0.0		
8							
9			5	6	0.0		
10						Some cobbles, with construction debris	
11			4	7	0.0		
12							
13			7	12	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0201
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, dark brown, silty sand, some gravel and cobbles, moist	
14	SP		12	23	0.0	Dark orange-tan, fine to medium **SAND**, some coarse sand and gravel, medium dense 1" brown layer at 15' Dark tan, trace coarse sand, gravel grades out	
15							
16			16	19	0.0	2" brown, fine to coarse sand layer at 16' Tan, trace gravel and cobbles	
17							
18	SW		28	20	0.0	Tan with intermittent dark tan layers, fine to coarse **SAND**, some gravel	
19							
20	SP					Tan, fine to medium **SAND**, trace coarse gravel Trace coarse sand, gravel grades out	
21	SW		17	23	0.0	Tan, fine to coarse **SAND**, some fine gravel	
22	SP		34	24	0.0	Orange-tan, fine to medium **SAND**, some coarse sand and gravel, dense	
23							
24			29	20	0.0	1" reddish brown layer at 23.75' Tan, trace coarse sand, gravel grades out, medium dense Orange-tan, some coarse sand and gravel	
25							
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0201
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		38	19	0.0	Orange-tan, fine to medium **SAND**, some coarse sand and gravel, dense 2" brown, trace silt at 26.5'	
28							
29	SW		31	20	0.0	Orange-tan, fine to coarse **SAND**, some fine gravel	
30	SP					Tan, fine to medium **SAND**, trace coarse sand and fine gravel	
31			36	22	0.0	Some coarse sand and gravel Reddish brown laminations at 31.75'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/9/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/15/04 4. Analytical samples collected from 7-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0202
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			5	12	1.9	Asphalt and gravel	
						FILL, tan, silt, trace clay and sand	
2	SW		32	19	0.5	Tan, fine to coarse **SAND**, some gravel, dense	
3	SP					Tan with brown laminations, fine to medium **SAND**, trace coarse sand	
	SW					Tan, fine to coarse **SAND**, some gravel	
4	SP		29	18	0.0	Tan, fine to medium **SAND**, trace coarse sand and gravel, medium dense	
5						Increasing coarse sand content from 5-6'	
6	SW		43	20	0.0	Tan, fine to coarse **SAND**, some fine gravel, trace coarse gravel, dense Light brown, some fine to coarse gravel, trace silt	
7	SP					Tan, fine to medium **SAND**, trace coarse sand	
8			39	3	0.0	Trace cobbles	
9							
10			35	19	0.0	Trace gravel	
11						Increasing gravel content from 11-12'	
12			41	5	0.0	Light brown, some coarse sand and gravel	
13							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0202
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to medium **SAND**, some coarse sand and gravel, trace cobbles, dense	
14							
15			34	22	0.0	Orange-tan, trace gravel, cobbles grade out	
						Light brown	
16							
17	SP		33	19	0.0	Tan, trace coarse sand, coarse gravel grades out	
						Some coarse sand and fine to coarse gravel	
18						Trace coarse sand, gravel grades out	
19			35	18	0.0	Dark orange-tan, some coarse sand and fine gravel	
						Tan, fine to coarse gravel	
20							
21	SW		38	18	0.0	Light brown, fine to coarse **SAND**, some gravel	
						Tan, trace fine gravel, coarse gravel grades out	
22							
23	SP		25	19	0.0	Orange-tan, fine to medium **SAND**, some coarse sand, trace fine gravel, occasional cobbles, medium dense	
24							
	SW					Tan, fine to coarse **SAND**, some fine gravel, dense	
25			48	19	0.0		
	SP					Orange-tan, fine to medium **SAND**, some coarse sand and gravel	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0202
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine gravel, dense	
27	SP		51	20	0.0	Orange-tan, fine to medium **SAND**, some coarse sand and gravel, very dense	
28						Dense	
29			29	19	0.0		
30							
31			32	20	0.0		
	SW					Orange-tan, fine to coarse **SAND**, trace fine gravel	
	SP					Orange-tan, fine to medium **SAND**, trace coarse sand	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/10/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/11/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0203
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1, 2, 3, 4						**BACKFILL** Previously excavated to 4' bgs	
5	SP		4	18	0.0	Orange-tan, fine to medium **SAND**, trace coarse sand and fine gravel, loose	
6, 7	SP		4	16	0.0	Some coarse sand and fine gravel	
8, 9	SP		4	8	0.0		
9, 10	SW					Dark brown, fine to coarse **SAND**, some gravel, trace silt	
11	SP		8	15	0.0	Tan, fine to medium **SAND**, some coarse sand and gravel	
12	SP					Orange-tan, trace coarse sand and gravel, medium dense	
13	SP		17	20	0.0	Dark orange-tan with dark brown laminations	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0203
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SP					Dark orange-tan with dark brown laminations, fine to medium **SAND**, trace coarse sand and gravel, medium dense Tan, laminations grade out	
15	SW		27	21	0.0	Dark tan, fine to coarse **SAND**, some fine gravel	
16	SP					Tan, fine to medium **SAND**, trace coarse sand Dark laminations at 16.5'	
17	SW		18	23	0.0	Brown, fine to coarse **SAND**, trace fine gravel Tan	
18						Brown, some fine gravel	
19	SP		11	22	0.0	Tan with brown laminations, fine to medium **SAND**	
20							
21			14	21	0.0		
22	SW					Dark tan, fine to coarse **SAND**, some fine to coarse gravel	
23			24	19	0.0	Tan, gravel grades out	
24	SP					Dark tan, fine to medium **SAND**, some coarse sand and fine gravel	
	SW		37	20	0.0	Tan, fine to coarse **SAND**, dense	
25	SP					Dark brown, fine to medium **SAND** Tan, trace coarse sand and gravel	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0203
Date Drilled: 11/9/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		32	21	0.0	Tan, fine to medium **SAND**, trace coarse sand and gravel, dense Some coarse sand	
28						Trace coarse sand Medium dense	
29			28	20	0.0		
30							
31			26	23	0.0	Orange-tan, some coarse sand and fine gravel, coarse sand grades out	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/10/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/15/04 4. Analytical samples collected from 4-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0205
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1, 2, 3, 4						**BACKFILL** Previously excavated to 4' bgs	
4	SP					Tan, fine to medium **SAND**, some coarse sand and fine gravel, dense	
5			31	18	0.0		
6						Dark tan, fine to coarse gravel, trace cobbles to 8'	
7			36	21	0.0		
8						Medium dense	
9			20	19	0.0	Orange-tan, trace coarse sand and gravel Tan, some coarse sand, trace fine gravel	
10						Gravel grades out, dense	
11			36	20	0.0	Dark tan to light brown, some coarse sand, trace gravel	
12						Tan	
13			37	23	0.0	Orange-tan, trace coarse sand, gravel grades out	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0205
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Orange-tan, fine to medium **SAND**, trace coarse sand, dense Tan, some coarse sand, trace gravel	
14							
						Trace coarse sand, coarse gravel grades out	
15	SP		31	23	0.0		
16							
17			26	19	0.0		
	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense	
18							
						Tan, fine to medium **SAND**, trace coarse sand and fine gravel	
19			19	18	0.0		
						2" orange-tan layer at 19'	
20	SP						
21			17	20	0.0		
						Light brown, fine to coarse **SAND**, some fine gravel	
22						Tan	
23	SW		24	20	0.0		
24						Dense	
25			41	22	0.0		
						Orange-tan, fine to medium **SAND**, trace coarse sand and fine gravel	
	SP						
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: I11 - LP0205
Date Drilled: 11/10/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Aimee Clark

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		30	19	0.0	Orange-tan, fine to medium **SAND**, trace coarse sand and fine gravel, dense Some coarse sand and fine gravel	
28							
29			31	20	0.0		
30							
31			32	23	0.0	Tan, trace coarse sand, gravel grades out	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/11/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/15/04 4. Analytical samples collected from 4-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0301
Date Drilled: 11/16/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						BACKFILL Previously excavated to 4' bgs	
1			26	18	1.2		
2							
3			24	16	3.8		
4						**FILL**, brown, silty, fine to coarse sand with fine to coarse gravel	
5			12	18	4.2	Black, gravel grades out Tan, fine sand	
6						Black and brown, silty sand, little fine to coarse gravel and asphalt debris Black, sandy silt, little fine to coarse gravel	
7			6	14	0.8	Tan, fine to coarse sand, little fine to coarse gravel	
8						Dark brown to black, silty, fine to coarse sand, little fine to coarse gravel	
9			11	17	1.6		
10						Dark brown to black, sandy silt, some debris, trace clay and fine to coarse gravel	
11			7	19	6.1		
12						Grading to silty sand	
13			10	13	4.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0301
Date Drilled: 11/16/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, dark brown to black, sandy silt grading to silty sand, trace fine to coarse gravel, construction debris (brick, asphalt and concrete)	
14						Silty sand grading to sandy silt, trace clay, with wood fragments	
15			4	15	4.9		
16							
17			12	15	15.0		
	SW					Gray, fine to coarse **SAND**, little fine gravel, medium dense	
	SP					Gray, fine **SAND**	
18							
19	SW		15	19	2.6	Light tan to gray, fine to coarse **SAND**, some fine gravel	
20							
	SP					Light tan to white, fine **SAND**	
21			16	16	4.3	Light tan to white, fine to coarse **SAND**, little fine gravel, trace coarse gravel	
22							
23	SW		14	20	3.4		
24						Tan	
25			15	15	3.2		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0301
Date Drilled: 11/16/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, little coarse gravel, dense	
27	SP		38	18	3.6	Tan-orange, fine to medium **SAND**, little fine gravel, trace coarse gravel, dense	
28						Coarse gravel grades out, medium dense	
29			19	18	2.7		
30						1" coarse sand layer followed by 1" fine to coarse sand layer at 29.75'	
31			20	14	4.8		
	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/17/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/23/04 4. Analytical samples collected from 5-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0302
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, brown silt, little coarse gravel	
1			10	15	0.0		
2							
3			2	15	0.0	Dark brown, sandy, little fine to coarse gravel	
4						Dark brown to black, 3" asphalt layer from 4.75-5'	
5			10	16	2.5	Brown to tan, silty, fine to coarse sand, little fine to coarse gravel	
6						Tan, fine to coarse sand, little fine to coarse gravel	
7			4	21	1.4		
8						Brown with gray silt, trace fine to coarse gravel, loose	
						Tan, fine to medium sand, little fine to coarse gravel, trace cobbles	
9			3	18	1.0		
10						Tan to brown, fine to coarse sand, little fine to coarse gravel and silt	
11			3	16	1.1		
12						Tan (12-12.3') to light tan (12.3-12.5'), fine to medium sand, little coarse sand and fine to coarse gravel to 12.3'	
13			7	13	1.6	Tan, fine to coarse sand, little fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0302
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, tan, fine to coarse sand, little fine to coarse gravel	
14							
						Tan, fine to medium sand, trace fine gravel Fine gravel layer from 14.4-14.6'	
15			14	15	5.0	Little coarse sand, trace fine to coarse gravel Tan, fine to coarse sand, trace fine to coarse gravel	
16						Tan to gray, some fine to coarse gravel Gray sand and coarse gravel, trace roots	
17			24	18	4.1	Tan and red, fine to coarse **SAND**, some coarse gravel and cobbles, medium dense	
18	SW					Gray, gravel grades out	
19			19	16	2.7	Gray to white to tan, trace fine gravel, cobbles grade out Tan to gray, little fine to coarse gravel Coarse sand layer from 18.5-18.6' White to brown	
20	SP					Tan, fine **SAND**	
21	SW		14	18	2.2	Light tan, fine to coarse **SAND**, some fine to coarse gravel	
22	SP					Tan, medium to coarse **SAND**, some fine gravel, trace coarse gravel	
23	SW		15	18	1.4	Light tan, fine to coarse **SAND**, trace fine gravel Tan, some gravel and cobbles Fine gravel layer from 23.2-23.4'	
24						Tan, medium to coarse **SAND**, some fine gravel	
25	SP		15	14	1.4	Fine to medium sand, trace fine to coarse gravel and cobbles	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0302
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GW					Tan, fine to coarse **SAND** and fine **GRAVEL**, little coarse gravel, dense	
27	GP		35	18	3.7	Brown	
	SW					Tan-orange, fine **GRAVEL** and fine to coarse **SAND**, little coarse gravel	
28						Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
29	SP		24	16	1.4	Tan-orange, fine to medium **SAND**, trace fine to coarse gravel Tan-orange-red, some coarse sand, little fine to coarse gravel, medium dense	
30						Gravel grades out	
31			18	18	1.2	Fine to coarse sand with fine to coarse gravel layer from 30.4-30.6' Trace fine gravel	
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/19/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/23/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0303
Date Drilled: 11/17/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			16	17	0.0	**BACKFILL** Previously excavated to 2.6' and backfilled with brown, silty, fine sand, little fine to coarse gravel and cobbles	
2							
3			38	20	0.0	**FILL**, dark brown, silty sand, little coarse gravel Black, some brick and asphalt debris	
4						Black silt, little coarse gravel and debris	
5			10	16	1.1	Brown, trace clay	
6						Orange-red, silty, fine sand, trace fine gravel	
7	ML		23	20	0.9	Brown to tan **SILT**, medium dense	
						Tan, fine to coarse **SAND**, little fine gravel, medium dense	
8						With fine to coarse gravel, very dense	
9	SW		71	19	0.8		
10						Dense	
11			34	17	0.5		
12	SP					Tan with orange, fine to medium **SAND**, trace coarse gravel	
13			30	16	0.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0303
Date Drilled: 11/17/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, dense	
14	SW					Medium dense	
15			23	15	0.8		
16							
	SM					Tan-orange, fine to medium **SAND**, little coarse gravel, dense	
17	SP		32	16.5	0.0	1/2" dark brown, silty seam at 16.7' Some coarse sand	
18							
						Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
19	SW		15	12	3.5		
20						Tan, little fine to coarse gravel	
21			14	16	2.0		
	SP					Light tan, fine **SAND**	
22						Light tan, fine to coarse **SAND**, some fine gravel	
						Tan, little coarse gravel	
23			16	22	1.9		
24	SP						
25			11	18	1.1		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0303
Date Drilled: 11/17/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		35	24	3.2	Tan, fine to coarse **SAND**, some fine gravel, little coarse gravel, dense	
28						Tan-orange, little fine gravel, coarse gravel grades out, medium dense	
29			22	18	3.0		
30	SP					Tan, fine to medium **SAND**, trace fine to coarse gravel	
31	SW		18	19	4.0	Tan-orange, fine to coarse **SAND**, little fine to coarse gravel 1" red at 31'	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/18/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/23/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0304
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			22	15	0.0	**FILL**, brown, sandy silt, little coarse gravel and cobbles	
2							
3			33	15	2.6	Black	
4						Asphalt debris from 4-4.6'	
5			13	16	2.2	Orange-brown, silty, fine to coarse sand, little fine to coarse gravel and cobbles	
6						Brown silt, little fine to coarse gravel and cobbles	
7			21	21	1.3	Red-brown, sandy, gravel grades out Tan-orange, fine sand, little medium to coarse sand and fine gravel, trace silt	
8						Brown to tan, fine to coarse **SAND**, some fine to coarse gravel and cobbles, very dense	
9	SW		61	18	1.0		
10						Tan, little fine to coarse gravel, cobbles grade out, dense	
11			34	16	1.5	Cobble layer at 10.75'	
12	SP					Tan, fine **SAND**, little fine gravel Medium to coarse sand	
13			30	13	1.9		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0304
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GP					Coarse **GRAVEL** and **COBBLES**, some fine gravel and fine to coarse sand, dense	
14	SW					Tan, fine to coarse **SAND**, little fine gravel, medium dense	
15	SP		21	15	1.6	Tan, fine to medium **SAND**, some coarse sand and little fine to coarse gravel, trace cobbles	
16	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel and cobbles, dense	
17	SP		35	18	1.4	Tan, fine to medium **SAND**, some coarse sand, little fine to coarse gravel, trace cobbles	
18						Cobbles grade out, medium dense	
19			19	16	2.2		
	GW					Tan, fine to coarse **SAND** and fine to coarse **GRAVEL**	
20	SP					Tan-orange, fine to medium **SAND**, trace fine to coarse gravel	
21			12	18	1.8	Light tan, fine to coarse sand layer from 20.7-20.8' Tan with red-brown laminations, gravel grades out	
	GW					Fine to coarse **GRAVEL** and fine to coarse **SAND** and **COBBLES**, trace silt	
22	SP					Light tan, fine to medium **SAND**	
23	SW		12	18	1.5	Tan, fine to coarse **SAND**, trace fine to coarse gravel Light tan, some fine to coarse gravel	
24						Some cobbles	
25			17	14	1.1	Tan to brown	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0304
Date Drilled: 11/19/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		40	18	2.0	Brown-red, fine to medium **SAND**, dense Fine to coarse sand layer from 26.5-26.6' Tan, little coarse sand Red-brown, fine gravel layer from 27.3-27.4'	
28						Fine gravel layer from 27.8-28' Medium dense	
29	GW		28	16	1.4	Some coarse sand, little fine to coarse gravel Tan, fine to coarse **SAND** and fine to coarse **GRAVEL**	
	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel	
30	SP		25	18	1.9	Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel	
31	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, little cobbles	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/22/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/22/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0305
Date Drilled: 11/18/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			26	18	1.2	**BACKFILL** Previously excavated to 2.25' bgs and backfilled with brown, silty, fine sand, little fine to coarse gravel and cobbles	
2							
3			24	16	3.8	**FILL**, dark brown to black, sandy silt, little fine to coarse gravel and cobbles, asphalt debris	
4							
5			12	18	4.2	Tan, silty sand, little fine to coarse gravel Brown and dark brown, sandy silt, trace coarse gravel Tan, fine sand	
6						Dark brown, sandy silt, little fine to coarse gravel Tan, fine to medium sand, little coarse sand and fine to coarse gravel	
7			6	14	0.8		
8						Brown, silty sand	
9			11	17	1.6	Light brown, fine to coarse sand, some fine to coarse gravel, trace silt Black and tan, silty, fine to coarse sand, little fine to coarse gravel and debris	
10						Dark brown, sandy silt, little fine to coarse gravel	
11			7	19	6.1	4" asphalt at 11.3'	
12						Dark brown, sandy silt, little fine to coarse gravel Asphalt and brick debris, trace clay	
13			10	13	4.2		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0305
Date Drilled: 11/18/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, dark brown, sandy silt, little fine to coarse gravel and debris, trace clay	
14							
15			4	15	4.9		
16							
17			12	15	15.0	Tan with red, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
18	SW					Red-brown, trace silt	
						2" tan followed	
19			15	19	2.6	Brown, silt grades out	
	SP					1" fine gravel followed by brown, medium to coarse **SAND**, some fine gravel	
	SW						
20						Light tan, fine to coarse **SAND**, little fine to coarse gravel	
21	SP		16	16	4.3	Tan to tan-orange, fine to medium **SAND**, some coarse sand, little fine to coarse gravel	
22							
23	SW		14	20	3.4	Tan to brown, fine to coarse **SAND**, little fine to coarse gravel Some fine to coarse gravel	
	SP					Tan to brown, fine to medium **SAND**	
24	SW					Tan to brown, fine to coarse **SAND**, little fine to coarse gravel	
	GW					Fine to coarse **GRAVEL** and fine to coarse **SAND**	
25	SW		15	15	3.2	Tan, fine to coarse **SAND**, some fine to coarse gravel	
	GW					Fine to coarse **GRAVEL**, some fine to coarse sand	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: L14 - LP0305
Date Drilled: 11/18/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
27	SP		38	18	3.6	Tan-orange, fine **SAND**, some medium to coarse sand, little fine to coarse gravel, dense	
28	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
29	SP		19	18	2.7	Tan, fine **SAND**, little medium to coarse sand, trace fine to coarse gravel	
30						Fine to medium sand	
31			20	14	4.8		
	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/18/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 11/23/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0401
Date Drilled: 11/23/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			27	18	0.0	**BACKFILL** Previously excavated to 4' bgs and backfilled	
2							
3			25	16	1.4		
4						**FILL**, brown, sandy silt Tan and brown, fine sand, trace coarse gravel, with roots, from 4.25'	
5			11	18	3.0	Brown and dark brown, sandy clay with roots, trace fine gravel	
6						Concrete from 5.75-6.1'	
7			17	20	4.0		
8						Black, organic silt and clay, little fine to coarse gravel	
9			37	17	0.0		
10						Brown, fine to coarse sand, little fine to coarse gravel, trace clay, construction and wood debris	
11			31	16	1.6		
12						Trace cobbles	
13			34	15	1.7		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0401
Date Drilled: 11/23/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, brown, fine to coarse sand, little fine to coarse gravel, trace clay, construction and wood debris	
14							
15			29	14	2.3	Asphalt debris 15.3-15.7' Brown to dark brown, silty, fine to coarse sand, little fine to coarse gravel, trace clay	
16							
17			36	24	2.7	Tan Dark brown with debris	
18							
19			16	15	3.9		
20							
21			14	16	4.0		
22						Black silty sand and brown silt, some fine to coarse gravel, trace organics	
23			13	18	3.0	Dark gray, medium to coarse sand, trace fine to coarse gravel, moist Gray, fine to medium sand, trace fine to coarse gravel, moist	
24							
25	SP		16	17	3.7	Tan, medium to coarse **SAND**, some fine to coarse gravel and cobbles, medium dense	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0401
Date Drilled: 11/23/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to coarse **SAND**, little fine gravel, trace coarse gravel, dense	
27			41	18	3.9		
28							
29	SW		30	17	0.0		
30						Medium dense	
31			19	17	3.3		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/29/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/17/04 4. Analytical samples collected from 4-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0402
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, brown, sandy silt, little coarse gravel and cobbles, concrete fragments	
1			27	20	0.0		
2							
3			34	19	0.0	Dark brown to black	
						Tan, fine to coarse sand, little fine to coarse gravel	
4						Dark brown to black, sandy silt, little coarse gravel and cobbles	
5			11	17	1.6		
6						Asphalt debris	
7			21	16	2.4		
8						Brown, silty, fine to coarse sand, little coarse gravel, trace cobbles	
9			10	13	3.5		
10						Brown, fine to coarse sand, little fine to coarse gravel, trace silt, moist	
11			4	15	2.3		
12						Gray grading to tan grading to gray, fine to coarse sand, silt grades out	
13			3	11	10.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0402
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, dark brown, silty sand, little fine to coarse gravel, loose	
						Brown, fine to coarse sand, little silt and fine to coarse gravel, moist	
14						Gray, trace silt	
15			3	14	2.5		
16							
17			*WR	16	2.5		
18						Little tan, silt grades out	
19			5	22	4.3		
20						Gray, fine sand	
21			7	16	4.5	Gray, fine gravel and medium to coarse sand, little fine sand and coarse gravel Tan, fine to coarse sand, little fine to coarse gravel 1" black, organic silt and fine sand at 21.9'	
22						Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
23			16	24	5.6	Light tan from 22.2'	
24	SW					Tan, some gravel	
25			19	15	1.7		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0402
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		38	18	2.4	Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, trace cobbles, dense	
28							
29	SP		22	20	3.6	Tan-orange, fine to medium **SAND**, trace fine gravel, medium dense	
	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
30	SP					Tan, fine **SAND**	
	SW					Tan, fine to coarse **SAND**, trace fine to coarse gravel	
31	SP		24	19	2.3	Tan, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel	
32	EOB					Medium sand and gravel grade out	
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/1/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0403
Date Drilled: 11/29/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			16	19	0.0	**BACKFILL**, previously excavated to 3.3' and backfilled with brown, silty, fine sand, little fine to coarse gravel	
2							
3			13	19	1.6		
4						**FILL**, black, sandy silt, little fine to coarse gravel, trace clay Black and tan, fine to coarse sand, little fine to coarse gravel, trace silt and clay Brown, trace clay	
5			4	14	4.7	Black, sandy silt, little fine to coarse gravel, trace clay	
6							
7			4	15	4.7		
8	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
	SP					Tan, fine **SAND**, trace coarse sand	
9			20	15	1.2	Tan, fine to coarse **SAND**, little fine to coarse gravel	
10	SW					Dense	
11			33	18	2.1		
	SP					Tan, fine to medium **SAND**, trace fine gravel	
12	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
13			23	16	1.7		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0403
Date Drilled: 11/29/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
	SP					Tan, fine to medium **SAND**, trace fine gravel	
14	SW					Tan, fine to coarse **SAND**, little coarse gravel	
15	SP		24	14	1.2	Tan, fine to medium **SAND**, little coarse sand and coarse gravel	
16	SW					Tan, fine to coarse **SAND**, little fine gravel Some fine to coarse gravel	
17			30	18	1.8		
18	SP					Tan, fine to medium **SAND**, trace fine gravel	
19	SW		15	15	0.0	Tan, fine to coarse **SAND**, little fine to coarse gravel	
20	SP					Light tan, medium to coarse **SAND**, little fine to coarse gravel	
21	SW		17	17	4.2	Tan, fine to coarse **SAND**, some fine to coarse gravel Gray, little gravel	
22						Gray-tan	
23			11	17	5.0		
24	GP					Gray-tan, fine to coarse **SAND** and fine **GRAVEL**, little coarse gravel	
25	SW		20	18	2.8	Tan, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0403
Date Drilled: 11/29/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		39	18	3.9	Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles to 28', dense	
28						Medium dense	
29			22	14	4.8		
	SP					Tan, fine to medium **SAND**	
30							
31	SW		13	18	6.8	Tan, fine to coarse **SAND**, some fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/29/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/17/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0404
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			27	18	0.0	**FILL**, brown, sandy silt, little coarse gravel and cobbles	
2							
3			25	16	1.4	Dark brown, silty sand, little fine to coarse gravel, trace cobbles Light tan to white silt from 3.5-3.6'	
4						Tan to brown, silty sand, little coarse gravel and cobbles	
5			11	18	3.0	Brown, trace clay	
6							
7			17	20	4.0	Dark brown to black, sandy silt, trace clay Black, silty sand with fine gravel and asphalt debris	
8							
9	SW		37	17	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, dense	
10						Intermittent red layers from 10-12'	
11			31	16	1.6		
12						Gravel grades out	
13	SP		34	15	1.7	Tan with orange layers, fine to medium **SAND**, dense	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0404
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan with orange layers, fine to coarse **SAND**, little fine to coarse gravel, trace cobbles, dense	
14	SP					Tan, fine to medium **SAND**	
15	SW		29	14	2.3	Tan to brown, fine to coarse **SAND**, some fine to coarse gravel and cobbles	
16	SP					Brown, fine to medium **SAND**, some coarse sand	
17	SW		36	24	2.7	Brown, fine to coarse **SAND**, little fine to coarse gravel Tan, gravel grades out Red-brown Tan, some fine to coarse gravel, trace cobbles	
18 19	SP		16	15	3.9	Tan, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, medium dense	
20 21 22	SW		14	16	4.0	Tan, fine to coarse **SAND**, some fine gravel Tan to light tan, some fine to coarse gravel	
23	SP		13	18	3.0	Light tan, fine to medium **SAND**, little coarse sand and fine gravel Fine to coarse sand layer from 23.1-23.2', gravel grades out	
24 25 26	SW		16	17	3.7	Tan-orange, fine to coarse **SAND**, some fine to coarse gravel Coarse gravel layer from 24.2-25.4' Tan, little fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0404
Date Drilled: 11/30/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		41	18	3.9	Tan-orange, medium to coarse **SAND**, some fine gravel, trace cobbles, dense Fine to medium sand, some coarse sand and fine to coarse gravel, cobbles grade out	
28			30	17	0.0	Tan, little coarse gravel, coarse sand and coarse gravel grade out	
29	SW					Red-tan, fine to coarse **SAND**	
	SP					Tan, fine to medium **SAND**, some coarse gravel	
30	GW					Red-orange-tan, fine to coarse **SAND** and fine to coarse **GRAVEL** Medium dense Brown and tan, silty sand from 30.8-31'	
31	SM		19	17	3.3		
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 11/30/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/17/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0405
Date Drilled: 12/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, brown silt, little coarse gravel	
1			26	20	1.1	Concrete Brown, sandy silt, little coarse gravel and cobbles	
2							
3			27	19	3.6	Dark brown to black, asphalt debris	
4							
5			25	17	0.0		
6						Concrete debris	
7			10	16	3.2	Dark brown and tan, silty sand, some fine to coarse gravel, trace cobbles	
8						Tan, fine to medium sand, some fine to coarse gravel	
9			7	13	1.3	Brown silt, little coarse gravel and cobbles	
10						Gray, fine to coarse sand, little fine gravel, trace organics	
11			4	15	2.6	Brown to gray, trace silt and organics	
12						Dark brown, silty sand, some fine to coarse gravel and cobbles, trace organics	
13			9	11	4.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0405
Date Drilled: 12/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, dark brown, silty sand, some fine to coarse gravel and cobbles, trace organics	
14							
15	SP		3	14	2.7	Tan to gray, fine to medium **SAND**, some fine to coarse gravel, with roots, loose	
16							
17			5	16	5.8		
	SM					Brown, silty, fine to coarse **SAND**, little coarse gravel and cobbles	
18	SW					Tan to gray, fine to coarse **SAND**, some fine to coarse gravel	
19			5	22	4.5		
20						Light gray to tan, medium dense	
21			12	16	3.9	Tan to gray, little fine to coarse gravel	
22							
23			13	24	5.0	Light tan to white, some fine to coarse gravel	
	SP					Light tan with red, fine to medium **SAND**, little coarse gravel	
24	SW					Light tan to white, fine to coarse **SAND**, little fine to coarse gravel Some fine to coarse gravel	
25			17	15	0.0		
26						2" brown and light tan, fine to medium sand followed by 3" fine gravel at 25.6'	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0405
Date Drilled: 12/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		28	18	2.1	Tan, fine to medium **SAND**, medium dense Little coarse sand and fine to coarse gravel	
28						Coarse gravel grades out	
29	SW		21	20	3.7	Tan-orange, fine to coarse **SAND**, little fine gravel, trace cobbles	
30	SP					Tan, fine to medium **SAND**, little coarse sand	
31	GP		22	19	3.6	Tan, fine to coarse **SAND** and fine **GRAVEL**, trace coarse gravel and cobbles	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/2/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/15/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0406
Date Drilled: 12/2/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			24	14	0.0	**FILL**, brown silt, little fine sand, coarse gravel and cobbles	
2							
3			17	21	1.8	Black, sandy, construction debris (brick, asphalt, etc.)	
4							
5			13	14	5.3		
6							
7			10	17	2.1	Brown to tan, fine to coarse sand, some fine to coarse gravel, trace silt	
8						Black, organic silt, little coarse gravel	
9			8	16	1.2	Tan, fine to coarse sand, little fine to coarse gravel Black, organic silt, trace fine to coarse gravel, asphalt fragments	
10						Tan grading to brown, fine to coarse sand, some fine to coarse gravel, little cobbles	
11			19	15	1.8	Concrete	
12						Gray and black, fine to coarse sand, some fine to coarse gravel, wood and degraded organics	
13	SP		30	16	2.9	Tan, fine to medium **SAND**, little coarse sand and cobbles, dense	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0406
Date Drilled: 12/2/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SP					Tan, fine to medium **SAND**, little coarse sand and cobbles, dense	
						Tan-orange, medium dense	
	SW					Tan, fine to coarse **SAND**, some fine gravel	
15	SP		27	18	1.6	Tan, fine to medium **SAND**, little coarse sand	
	SW					Tan-orange, fine to coarse **SAND**, some fine gravel, trace coarse gravel	
16							
17	SP		31	18	1.8	Tan, fine to medium **SAND**, little coarse sand and fine gravel, dense Tan-orange, medium to coarse sand, little fine sand and fine to coarse gravel Tan, fine to medium sand, some coarse sand	
18							
19	SW		20	16	2.2	Tan, fine to coarse **SAND**, some fine gravel, medium dense Brown, gravel grades out	
20	SP					Light tan, fine **SAND**	
21			17	15	1.9	Tan, coarse sand, some fine to medium sand and fine gravel Fine to medium sand, little coarse sand and fine to coarse gravel	
22	GP					Tan, fine **GRAVEL** and fine to coarse **SAND**, some coarse gravel	
23	SP		23	24	2.7	Tan, fine to medium **SAND**	
24	GP					Light tan to white, fine **GRAVEL** and fine to coarse **SAND**, some coarse gravel	
25	SW		17	16	3.0	Tan, fine to coarse **SAND**, some fine to coarse gravel Brown layer from 25.8-26	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0406
Date Drilled: 12/2/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GP					Tan, fine to coarse **SAND** and fine **GRAVEL**, little cobbles, dense	
27			39	24	1.8		
	SP					Tan-orange, fine to medium **SAND**, some coarse sand, little fine to coarse gravel and cobbles	
28						Medium dense	
29			28	16	3.1		
30							NA = Not available (recovery not recorded)
	SW					Tan-orange, fine to coarse **SAND** with fine gravel, little coarse gravel	
31			24	NA	2.9		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/2/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0407
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			13	13	1.3	**FILL**, brown, sandy silt, little coarse gravel and cobbles	
2							
3			16	22	3.2	Dark brown, fine to coarse gravel, trace clay, asphalt debris	
4							
5			6	18	8.2		
6							
7			13	19	2.5	Tan, fine to coarse sand, some coarse gravel Black sandy silt, trace fine to coarse gravel and clay 1" brown, silty sand at 7.3'	
8						Black and brown, little gravel	
9			7	16	1.2	Brown and tan, silty sand, some debris	
	SP					Tan, fine to medium **SAND**, little coarse gravel, loose	
10							
11	SW		47	16	1.9	Tan, fine to coarse **SAND** with fine to coarse gravel, dense Increasing coarse gravel content, trace silt	
	SP					Tan, fine to medium **SAND**, little coarse sand and fine gravel	
12							
13	SW		36	16	0.0	Tan, fine to coarse **SAND** with fine to coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0407
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND** with fine to coarse gravel, dense	
14							
15	SP		34	17	1.2	Tan, fine to medium **SAND**, some coarse sand, little fine gravel Dark tan sand and coarse gravel, trace silt from 14.6-15.7'	
16							
	SW		43	17	3.0	Tan to brown, fine to coarse **SAND**, little fine gravel Fine gravel layer, trace silt from 16.4-16.7'	
17	SP					Tan, fine to medium **SAND**, some coarse sand and fine to coarse gravel	
18			15	17	2.2	Light tan with orange laminations, trace fine gravel, medium sand and coarse gravel grade out, medium dense Orange layer from 18.6-19'	
19	SW					Light tan, fine to coarse **SAND** with fine gravel, some coarse gravel, moist	
20			12	16	2.8		
	SP					Light tan, fine **SAND**	
21	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel 3" light tan sand and gravel layer	
	SP					Light tan, fine to medium **SAND**, little fine to coarse gravel	
22	SW		13	17	1.8	Light tan, fine to coarse **SAND**, some fine gravel, little coarse gravel, moist	
23							
24			17	14	4.0		
25	SP					Tan, fine to medium **SAND**	
	SW					Tan, fine to coarse **SAND**, some fine grave, little coarse gravel	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0407
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light tan, fine to coarse **SAND** with fine gravel, medium dense	
27	SP		29	24	4.2	Tan-orange, fine to medium **SAND**, some coarse sand and fine gravel	
28	GP					Tan-red, fine **GRAVEL** and fine to coarse **SAND**	
	SW					Tan, fine to coarse **SAND**, little fine gravel	
	SP					Tan-orange, fine to medium **SAND**, little coarse sand	
29	SW		23	16	4.8	Tan, fine to coarse **SAND**, little fine gravel, trace coarse gravel	
30						Some fine to coarse gravel, moist	
31			19	16	5.1		
	SP					Tan with brown laminations, fine to medium **SAND**, some coarse sand, little coarse gravel, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/7/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/05 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0408
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			16	13	0.0	**FILL**, brown, sandy silt, little coarse gravel and cobbles	
2						Asphalt debris	
3			28	22	1.3	Dark brown Black, little fine to coarse gravel	
4						Brown **SILT**, little coarse gravel, loose	
5	ML		6	18	1.6	Brown-red, trace coarse gravel and clay	
6						Tan-orange, fine to coarse **SAND**, some coarse gravel, very dense	
7			50	19	1.1		
8	SW					Tan	
9	ML		52	16	0.0	1" brown silt at 9.3'	
10						Trace coarse gravel, medium dense	
11			25	16	0.0	Tan, fine to medium **SAND**, trace coarse gravel	
12	SP					Some coarse sand and fine to coarse gravel, dense	
13			31	16	1.3		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0408
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SP					Tan, fine to medium **SAND**, some coarse sand and fine to coarse gravel, dense	
15	SP		20	17	1.4	Medium dense	
16	SW					Tan-orange, fine to coarse **SAND** with fine gravel, little coarse gravel	
17	SW		24	17	2.7	Tan, fine gravel grades out	
18	SP					Tan, fine to medium **SAND**, little coarse sand	
19	SW		16	17	1.8	Tan-orange, fine to coarse **SAND**, some fine gravel, little coarse gravel	
20	SW					Tan	
21	SW		12	16	3.4		
22	SW					2" reddish layer at 22' Some fine to coarse gravel	
23	SP		15	17	1.8	Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel	
24	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, medium dense	
25	SW		17	14	2.0	2" coarse gravel layer at 24.8'	
26	SW						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0408
Date Drilled: 12/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
27	SP		31	24	1.8	1" tan-red followed by tan-orange, fine to medium **SAND**, some coarse sand and fine to coarse gravel, dense	
28	SW					Tan-red, fine to coarse **SAND**, some fine gravel, trace coarse gravel, medium dense	
29			26	16	1.7	Tan-orange, some fine to coarse gravel	
30							
31			19	16	4.0	Tan	
32	SP					Tan, fine **SAND**	
	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/6/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/14/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0409
Date Drilled: 12/3/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			23	16	0	**FILL**, brown silt, little fine sand, coarse gravel and cobbles	
2							
3			34	21	1.2	Black, sandy, metal debris	
4						Brown, silty sand, some fine to coarse gravel Black silt, trace coarse gravel and cobbles	
5			10	18	2.4	Brown, little fine to coarse gravel, cobbles grade out from 5.2-5.7' Black, sandy, trace coarse gravel, fine gravel grades out from 5.7-6'	
6						Red and tan, silty sand Tan to white silt, trace cobbles, medium dense	
7			10	19	1.3	Red and tan, silty sand, trace coarse gravel and cobbles Tan to gray silt, trace clay and cobbles, medium dense	
8							
9	SW		48	17	1.5	Tan grading to brown, fine to coarse **SAND**, little fine to coarse gravel, trace cobbles, dense	
10	SP		31	17	0	Tan, medium to coarse **SAND** with fine gravel, some coarse gravel	
11	ML					Brown **SILT**, little coarse gravel	
12	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, little cobbles	
13			34	17	0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0409
Date Drilled: 12/3/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, dense	
15	SP		27	18	1.3	Tan-orange, fine to medium **SAND**, little coarse sand and fine to coarse gravel, medium dense	
16							
17	SW		36	24	1.6	Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles, dense	
18						Medium dense	
19			17	17	3.8	1" fine gravel layer at 19.4'	
20	SP					Light tan, coarse **SAND**, little fine to medium sand and fine gravel	
	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel	
21	GW		14	18	1.8	Light tan, fine to coarse **GRAVEL**, little fine to coarse sand	
	SW					Light tan, fine to coarse **SAND**, little coarse gravel	
22	SP					Tan with red, fine to medium **SAND**, some coarse sand	
23	SW		17	18	1.8	Tan, fine to coarse **SAND**, some fine to coarse gravel	
	SP					Tan, medium to coarse **SAND**, some fine sand and fine gravel	
24						Tan to red, medium sand grades out from 23.6-24'	
	SW					Brown, fine to coarse **SAND**, little fine to coarse gravel	
25			24	17	1.7	Tan, some coarse gravel, fine gravel grades out	
	SP					Brown, fine to medium **SAND**, little coarse sand	
26	SW					Tan, fine to coarse **SAND**, some fine gravel, trace cobbles	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: M14 - LP0409
Date Drilled: 12/3/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		42	19	2.9	Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, little cobbles, dense	
28							
29	SP		24	17	1.4	Tan-orange, fine to medium **SAND**, little coarse sand and fine gravel, medium dense	
30							
31	SW		22	NA	2.5	Tan-orange, fine to coarse **SAND** with fine gravel, some coarse gravel	NA = Not available (recovery not recorded)
	SP					Tan and brown, fine **SAND**	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/3/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/15/04 4. Analytical samples collected from 0-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			22	16	0.0	**FILL**, brown, fine to medium sand, some silt and coarse sand and fine gravel	
2							
3			10	12	0.0		
						Black, silty, fine to coarse sand, little coarse gravel and asphalt debris	
4			*WR	2	3.7	Tan to brown, fine to coarse sand, little silt and fine gravel	* WR = Weight of rods
5						Void (inside of leach pool)	
6							
7							
8							
9							
10							
11							
12							
13							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Void (inside of leach pool)	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25			*WR	7	1.7	**FILL**, tan to brown, fine to coarse sand, little silt and fine gravel 1" black silt layer at 25.8'	* WR = Weight of rods
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		*WR	11	6.1	Tan, fine to medium **SAND**, little coarse sand and coarse gravel	* WR = Weight of rods
28							
29	SW		10	17	10.3	Tan, fine to coarse **SAND**, with fine gravel, trace coarse gravel, loose, moist	
30							
31			9	17	9.8	1" brown, medium to coarse sand layer 1" tan, fine to medium sand layer at 30.6'	
	SP					Tan, fine **SAND**, moist	
32	SW					Tan, fine to coarse **SAND**, little fine gravel, medium dense, moist 1" tan-orange layer at 32.4'	
33	SP		18	17	6.1	Tan, fine to medium **SAND**, some coarse sand, little fine gravel, moist 1" tan-orange, fine to coarse sand layer at 33.3' Dark tan, little coarse gravel, coarse sand and fine gravel grade out	
34						Tan, medium sand grades out	
35			17	15	9.0		
36	SW					Tan, fine to coarse **SAND** with fine to coarse gravel	
37	SP		23	17	5.6	Tan with brown laminations, fine to medium **SAND**, little coarse sand and coarse gravel	
38	SW					Brown, fine to coarse **SAND**, some fine gravel, moist	
39			20	16	0.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GP					Red-brown, medium to coarse **SAND** and fine **GRAVEL**, little fine sand	
40	SW					Brown, fine to coarse **SAND** with fine gravel, some coarse gravel Tan, some fine gravel, little coarse gravel, medium dense, moist	
41			20	16	1.3	2" brown, medium to coarse sand layer at 40.9' Little fine to coarse gravel Brown layer from 41.9-42'	
42	SP					Light tan, fine to medium **SAND**, little coarse sand and fine gravel	
43			26	17	4.0	2" red, fine to coarse sand layer at 43.2'	
44						Tan with brown laminations, gravel grades out, moist	
45	SW		19	15	4.0	Red-tan, fine to coarse **SAND**, some fine to coarse gravel	
46	SP					Dark tan, fine to medium **SAND** Tan, little coarse sand, trace coarse gravel	
47			26	20	5.4	2" red-tan, fine to coarse sand layer 2" tan, fine sand layer 2" dark brown, medium to coarse sand layer, some silt at 47.2'	
48						Tan with orange laminations to 48' Brown to tan, trace coarse gravel, medium sand grades out, moist	
49			22	20	3.2		
50						Tan, gravel grades out	
51	SM		24	20	7.8	Brown, silty **SAND**, trace clay	
52	SP					Tan, fine **SAND**	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
53	SW		25	22	10.5	Tan, fine **SAND**, medium dense Brown, silt layer from 52.2-52.5' Dark brown, fine to medium sand with gravel layer from 53.25-53.5'	
	SM					Dark tan, silty **SAND**, trace clay	
54	CL					Brown to dark tan, silty **CLAY**, very stiff	
55	SP		22	18	2.0	Tan, fine **SAND** 1/4" dark reddish brown seam at 55.5'	
56	GW					Fine to coarse **GRAVEL**, some fine sand	
57	SW		90	11	4.0	Tan to brown with some red, fine to coarse **SAND** with fine gravel, some coarse gravel, moist	
	SP					Tan, fine **SAND**, very dense, moist	
58							
59			68	11	4.4		
60							
61			57	20	3.0	Red-tan layer, trace silt from 60.8-61.2'	
62						Light tan with sporadic red spots, medium dense	
63			23	19	3.2		
64						Red, trace silt, very dense layer from 63.75-64'	
65			24	19	6.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0501
Date Drilled: 12/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light tan with sporadic red spots, fine **SAND**, medium dense	
66	EOB						
67						NOTES: 1. Boring completed to a depth of 66' bgs on 12/9/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/13/04 4. Analytical samples collected from 1-4' and from 25-63': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0502
Date Drilled: 12/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			23	12	0.0	**FILL**, brown, fine to medium sand, little silt and coarse gravel, trace cobbles	
2							
3			32	14	1.3		
						Black, silty, fine to coarse sand, little coarse gravel and asphalt debris	
4						Brown, fine to coarse sand, some silt, little fine gravel, asphalt debris	
5	ML		12	11	1.1	Brown to gray **SILT**, little fine to coarse gravel, trace clay	
						2.5" brown-red, fine to medium sand, some silt at 5.4'	
6						Tan, fine to medium **SAND**, little coarse gravel, trace cobbles, dense	
7			32	17	1.1		
8						2.5" brown, fine sand layer at 7.8'	
	SP					Some coarse sand, little coarse gravel, cobbles grade out, medium dense, moist	
9			28	13	2.3	Tan-red, some coarse gravel	
						Tan, some fine to coarse gravel, trace cobbles	
10						Dark tan, medium to coarse sand	
11			22	15	0.7	Tan, fine to medium sand, some coarse sand, fine gravel grades out	
						Dark tan, fine to coarse **SAND**, some fine gravel	
12	SW					Tan, some coarse gravel, fine gravel grades out	
						Red-tan and black from 12.8-13'	
13			22	17	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0502
Date Drilled: 12/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, some coarse gravel, medium dense	
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
14							
	SP		19	14	0.0	Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel	
15						Tan with brown laminations, medium sand and gravel grade out	
16	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, moist	
17			18	17	0.0		
18						Little fine gravel, coarse gravel grades out	
19			10	17	0.0	With fine gravel, some coarse gravel	
						Little fine to coarse gravel	
20						Tan-orange	
21			10	16	0.0	Red layer at 21'	
22						Tan, trace coarse gravel, fine gravel grades out	
23			13	18	0.0	With fine gravel, some coarse gravel	
	SM					1/4" black, silty sand	
24	SP					Tan, fine to medium **SAND**, little coarse gravel, moist Light tan	
	SW					Light tan, fine to coarse **SAND**, little fine to coarse gravel	
25	SP		19	16	0.0	Brown, fine **SAND**, trace coarse gravel, moist	
	GW					Fine to coarse **GRAVEL**, little fine to coarse sand	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0502
Date Drilled: 12/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		26	18	3.5	Tan, fine **SAND**, medium dense Fine to medium sand, some coarse sand, little fine gravel	
28	SW					Fine sandy gravel to 28' followed by tan-orange, fine to coarse **SAND**, little fine gravel, moist	
29	SP		20	15	2.5	Tan, fine to medium **SAND**, trace fine gravel, moist	
30	SW					Tan, fine to coarse **SAND** with fine gravel, little coarse gravel, moist	
31	SP		14	15	0.0	Tan, fine to medium **SAND**, little coarse sand and fine gravel	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/10/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0503
Date Drilled: 12/13/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1, 2			58	8	0.0	Intact concrete and concrete debris, some fine to coarse sand	
3			14	19	0.9	**FILL**, brown, fine sand, some silt, little coarse gravel	
4						Black, fine to coarse sand, some silt, little fine to coarse gravel, trace clay	
5			5	19	1.3	Brown, silty sand, little fine to coarse gravel, trace clay	
	ML					Brown to gray **SILT**, little fine to coarse gravel, trace clay	
6	SW					Brown, fine to coarse **SAND**, little fine to coarse gravel, trace silt, loose, moist	
	SP					Tan, fine to medium **SAND**, dense, moist	
7	SW		41	19	1.3	Tan, fine to coarse **SAND**, some fine to coarse gravel, moist	
8	SP					Brown with dark brown laminations, fine to medium **SAND**	
9	SW		34	19	0.0	Tan, fine to coarse **SAND**, little fine to coarse gravel, moist Dark tan to brown, some fine to coarse gravel, trace cobbles	
10						Tan, cobbles grade out, medium dense	
11			24	14	0.0		
12						With fine gravel, some coarse gravel, trace cobbles, dense	
13			33	16	1.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0503
Date Drilled: 12/13/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Tan, fine to coarse **SAND** with fine gravel, some coarse gravel, trace cobbles, dense, moist Light tan	
15 16	SP		20	14	1.1	Tan, fine to medium **SAND**, some coarse sand, little fine gravel, medium dense, moist	
17 18	SW		19	18	1.5	Tan, fine to coarse **SAND**, some fine to coarse gravel, moist	
	SP					Light tan, fine to medium **SAND**, moist, loose	
19	GP		9	16	2.6	Coarse **GRAVEL**, some fine gravel and fine to coarse sand	
20 21 22	SW		12	17	4.3	Tan-orange, fine to coarse **SAND**, some fine gravel, moist 1.5" brown, trace silt layer at 19.9', medium dense Tan with orange and brown laminations	
			10	15	7.0	Tan sand with fine gravel, some coarse gravel	
23	SP SM					Tan, fine to medium **SAND**, little coarse gravel, moist Black silty sand seam at 23.4'	
24 25 26	SW		24	14	4.3	Brown, fine to coarse **SAND**, some fine to coarse gravel, moist Tan-orange Brown, fine gravel grades out	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0503
Date Drilled: 12/13/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GP					Dark tan, fine to coarse **SAND** and coarse **GRAVEL**, medium dense, moist	
	SP						
27			27	18	3.9	Red-tan, medium to coarse **SAND** with fine gravel, some coarse gravel, moist	
						Tan, fine to coarse **SAND**, little fine gravel, moist	
28						Trace coarse gravel	
	SW						
29			17	17	3.0		
30						Tan-orange, some fine gravel	
31	SP		13	17	4.0	Tan with light brown layers, fine to medium **SAND**, little coarse gravel, moist	
	SW					Tan, fine to coarse **SAND** with fine gravel, little coarse gravel, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/13/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0504
Date Drilled: 12/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			24	11	0.0	**FILL**, brown, fine to medium sand, some silt, little coarse gravel	
2							
3			28	16	1.3	Black, fine to coarse sand, some silt, little fine to coarse gravel, trace clay and asphalt	
4						Black and tan, sandy silt, little fine gravel, trace clay	
5	ML		8	13	1.1	Tan **SILT**, little coarse gravel, trace clay	
6	SW					Dark tan, fine to coarse **SAND**, some coarse gravel, trace silt, loose	
7	SP		31	17	1.3	Tan, fine to medium **SAND**, little coarse gravel, dense 2" fine gravel layer at 6.3'	
8	SW					Tan, fine to coarse **SAND** with fine gravel, some coarse gravel Trace coarse gravel, fine gravel grades out from 8-8.4' Medium dense	
9			28	15	0.0	Dark tan, moist Brown, fine gravel grades out	
10	SP					Dark tan, fine to medium **SAND**, some coarse gravel	
11	SW		23	18	3.8	Tan, fine to coarse **SAND** with fine gravel, little coarse gravel, moist Little fine to coarse gravel	
12	GW					Tan, medium to coarse **SAND** and fine to coarse **GRAVEL**, little fine sand	
13			17	15	1.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0504
Date Drilled: 12/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GW					Tan, medium to coarse **SAND** and fine to coarse **GRAVEL**, little fine sand Brown, fine gravel	
14	SW					Dark tan, fine to coarse **SAND** with fine gravel, little coarse gravel, medium dense	
15	SP		23	16	2.8	Dark tan, fine to medium **SAND**, little fine to coarse gravel and coarse sand	
16						Tan-orange, coarse sand and fine gravel grade out	
17			19	18	5.3	Medium to coarse sand with fine gravel, some coarse gravel	
18						Light tan, fine to medium sand, little fine to coarse gravel, loose	
19			9	17	3.2	Tan, medium to coarse sand with fine gravel, some coarse gravel, little fine sand	
20	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
21	SP		11	17	5.7	Tan, fine to medium **SAND** with fine gravel, little coarse gravel	
22						Little fine to coarse gravel 2" fine gravel layer at 22.3'	
23			7	16	7.7	Light tan, trace coarse sand and coarse gravel	
24	GP					Tan, fine to coarse **SAND** and fine **GRAVEL**, some coarse gravel, moist Medium dense	
25	SP		27	13	5.5	Dark tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel, moist	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0504
Date Drilled: 12/15/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, little coarse gravel	
27	SW		31	18	3.5	Tan, fine to coarse **SAND** with fine gravel, some coarse gravel, dense	
28						Medium dense	
29	SP		19	18	8.8	Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel, moist	
	SW					1" tan-orange, medium to coarse sand layer at 29.5'	
30	SP					Tan, fine to coarse **SAND**, some fine gravel, moist	
	SW					Dark tan, fine to medium **SAND**, little fine to coarse gravel	
31	SP		13	17	4.5	Tan, fine to coarse **SAND**, trace coarse gravel, moist	
						Tan, fine to medium **SAND**	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/16/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0505
Date Drilled: 12/14/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			25	6	0.0	**FILL**, brown, fine to medium sand, some silt, little coarse gravel	
2							
3			35	16	0.0	Black, fine to coarse sand, some silt, little fine to coarse gravel, trace asphalt debris	
4						Black silt, little coarse gravel	
5	ML		6	19	0.8	Tan to gray **SILT**, little coarse gravel Some brown-orange, fine sand	
6							
7	SW		31	17	0.5	Tan with intermittent brown layers, fine to coarse **SAND**, little fine to coarse gravel, dense	
	SP					Dark tan, fine **SAND**, trace coarse gravel	
8	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
	SP					1" tan, medium to coarse followed by fine to medium **SAND**	
9			39	17	0.7	Tan, fine to coarse **SAND** with fine to coarse gravel, trace cobbles Brown	
10	SW					Brown to tan, trace silt	
11			31	19	0.0	3" fine gravel layer at 11.7'	
12	SP					Tan, medium to coarse **SAND**, some fine to coarse gravel, little fine sand, moist	
13			30	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0505
Date Drilled: 12/14/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, medium to coarse **SAND**, some fine to coarse gravel, little fine sand, dense, moist	
14							
						Dark tan, fine to medium sand, little coarse sand and fine to coarse gravel, medium dense	
15			22	15	4.9	1" coarse sand layer at 14.8'	
						Tan, medium sand and gravel grade out	
						Fine to medium sand, little fine to coarse gravel	
16	SW					Tan-orange, fine to coarse **SAND**, some fine to coarse gravel, moist	
17			22	17	1.9		
18							
19			11	16	4.0		
20						Tan, trace coarse gravel	
21			12	16	.8		
	SP					Tan, fine to medium **SAND**, trace fine gravel	
22	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel	
23			16	21	3.7		
	SP					Tan, fine to medium **SAND**, little coarse sand and fine gravel	
24	SW					Light tan, fine to coarse **SAND**, some fine to coarse gravel	
25	GW		18	18	6.0	Fine to coarse **GRAVEL**, little fine to coarse sand	
	SW					Dark tan, fine to coarse **SAND**, little fine to coarse gravel	
	GP					Fine **GRAVEL**, some coarse gravel, little medium to coarse sand	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: N15 - LP0505
Date Drilled: 12/14/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine gravel, little coarse gravel, dense	
	SP						
27			31	19	7.1	Tan, fine to medium **SAND**, little coarse gravel	
						Tan, fine to coarse **SAND**, some fine gravel, trace coarse gravel	
28							
	SW					With fine gravel, some coarse gravel, medium dense	
29			21	16	1.5		
						1.5" brown layer at 29.7'	
30							
						Tan, fine to medium **SAND**, little coarse sand and fine to coarse gravel	
31	SP		13	17	1.6	Medium sand and gravel grade out	
32							
	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 12/14/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 12/16/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1201
Date Drilled: 10/5/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber, Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1, 2, 3, 4						**BACKFILL** Previously excavated to 4'	
4						**FILL**, Dark brown and brown, silty, fine to medium sand, trace fine gravel, medium dense, moist	
5			14	18	33.8	Yellow-brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
6						Black at 5.5'	
7			27	16	13	Red-brown to yellow-brown, trace silt	
8						Trace cobbles, dense Black at 8'	
9	SW		32	18	0.9		
10						Brown	
11			34	18	1.1	Light brown Red-Brown	
12							
13			42	18	0.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1201
Date Drilled: 10/5/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber, Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Red-brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, trace cobbles and silt, dense, moist	
15	SM		41	20	0.3	Brown to light brown, silty, fine to medium **SAND**, little fine to coarse gravel, with 1/8 - 1/4" seams of light brown and red-brown, fine to coarse sand and fine gravel	
16							
17	SW		38	21	0.3	Yellow-brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, dense, moist	
18							
19			36	20	2.0		
20							
21	SP		18	18	1.4	Yellow-brown to light brown, fine to medium **SAND**, some fine to coarse gravel, trace silt, with 1/4" seams of light brown and red-brown coarse sand and fine gravel, medium dense, moist 7" brown fine sand layer	
22							
23			16	19	0.4		
24							
25	SW		17	17	0.3	Light brown, fine to coarse, **SAND** with fine gravel, trace silt	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1201
Date Drilled: 10/5/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber, Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse, **SAND** with fine gravel, trace silt, dense	
27	SP		35	21	0.0	Light brown, fine to medium **SAND**, little fine gravel, dense, moist	
28						Medium dense	
29			25	24	0.1		
30							
31			21	24	0.2		
32						1/16 - 1/8" dark brown seams from 31.5 - 32'	
	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/5/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean sand on 10/12/04 4. Analytical samples collected where sufficient recovery from 2 - 29': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot c. On-Site field sample VOC at 4' (not barcoded) 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOC's, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1203
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			16	23	1.9	**FILL**, brown, fine to medium sand, little fine to coarse rounded gravel Dark gray, silty, fine to medium sand, with fine gravel, medium dense, moist Brown, fine to medium sand, some fine to coarse gravel , little cobbles	
2						Dark gray, silty sand, cobbles grade out, loose	
3			9	17	0.0		
4						Electrical cable debris	
5			10	18	1.7	Yellow-red, fine to medium **SAND**, some fine gravel, trace silt, medium dense, moist	
6						Dense	
7	SP		36	20	1.7	Light brown, little fine to coarse gravel Yellow-red, some fine to coarse gravel	
8						Brown, trace fine gravel, coarse gravel grades out	
	SM					Dark gray, silty, fine **SAND**, trace fine gravel, dense, moist	
	SW						
9	SM		30	23	0.1	Yellow-brown, fine to coarse **SAND**, with fine to coarse gravel	
	SW					Brown, silty, fine to medium **SAND**, trace fine to coarse gravel	
10	SP					Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, medium dense, moist	
	SM						
11	SW		14	19	0.3	Yellow-brown fine to medium **SAND**, little to trace gravel, medium dense, moist	
						Brown, silty, fine to medium **SAND**, little to trace gravel	
12	SP					Red-brown, fine to coarse **SAND**, little to trace gravel, medium dense, moist	
13			34	20	0.0	Brown fine **SAND**, dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1203
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Brown to red-brown to light brown, fine to coarse **SAND**, with fine to coarse gravel, dense	
						Yellow-brown	
15			32	22	0.2		
16	SP					Yellow-brown, fine to medium **SAND**, little fine gravel, dense, moist Stratified with 2-3" layers of fine to coarse sand, little fine gravel	
17			36	17	0.0		
18						Light brown, medium dense	
19			20	19	0.1	2" red-brown layer	
20							
21			16	19	0.0		
22	GP					Light brown, coarse **SAND** and fine **GRAVEL**, medium dense, moist	
23	GW		20	16	0.0	Light brown, medium to coarse **SAND** and fine to coarse **GRAVEL**, medium dense, moist	
24							
25	SW		17	16	0.0	Light brown fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1203
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		25	19	0.0	Light brown to brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense	
28						1" Yellow-red layer	
29	SP		23	22	0.0	Light brown, fine to medium **SAND**, trace fine to coarse gravel and silt, medium dense, moist	
30							
31			20	20	0.0		
32	SW					Light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
	EOB						
33							
34							
35							
36							
37							
38							
39							

NOTES:
1. Boring completed to a depth of 32' bgs on 10/7/04
2. Groundwater not encountered
3. Boring backfilled to grade with clean sand on 10/12/04
4. Analytical samples collected where sufficient recovery from 0 - 29':
   a. On-Site radiological every foot
   b. On-Site nickel every odd numbered foot
5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOC's, and nickel and off Site for beryllium

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1204
Date Drilled: 10/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			4	24	79.9	**BACKFILL** Previously excavated to approximately 1.5' bgs	
2						**FILL**, dark gray, silty, fine sand, little fine gravel, loose, moist Dark gray, silty sand, medium dense	
3			13	8	4.2		
4						Brown, silty, fine to medium sand, trace fine gravel, loose, moist	
5	SP		16	24	1.6	Yellow-brown, fine to medium **SAND**, some fine to coarse gravel, trace silt, medium dense, moist	
6						Trace fine gravel	
	ML					Some fine gravel Gray-brown, fine sandy **SILT**, loose, moist	
7			32	24	4.0	Yellow-brown, fine to medium **SAND**, some fine to coarse gravel, trace silt, dense, moist	
8						Brown-yellow, silt grades out	
9	SP		39	20	0.0		
10						Dense	
11			28	21	0.0		
12							
13	SW		37	24	0.0	Brown-yellow, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1204
Date Drilled: 10/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown-yellow, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
14	SP					Brown, fine to medium **SAND**, little fine gravel, trace silt, dense, moist	
15			34	22	0.0		
16						Little fine to coarse gravel	
17			39	22	0.0	Light brown, trace fine gravel, coarse gravel grades out	
18	SW					Yellow-red, fine to coarse **SAND**, some fine to coarse gravel, trace silt, dense, moist	
19			11	24	0.0	Brown, little fine to coarse gravel, medium dense	
20							
21			19	17	0.0		
22	SP					Light brown, fine to medium **SAND**, little fine gravel, trace silt, medium dense, moist	
23			17	23	0.0	Brown, coarse gravel grades out Light brown, little fine to coarse gravel	
24	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
25			15	16	0.0	Brown, trace silt	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1204
Date Drilled: 10/7/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown fine to coarse **SAND**, some fine to coarse gravel, trace silt, medium dense, moist	
27	SP		26	23	0.0	Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
28						Stratified with yellow-brown and light brown, trace gravel	
29			17	20	0.0		
30						Brown, fine to coarse **SAND**, little fine gravel, trace silt	
31	SW		20	24	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/7/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean sand on 10/12/04 4. Analytical samples collected where sufficient recovery from 0 - 29': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot c. On-Site VOC field sample collected at 1' (not barcoded) 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOC's and nickel and off Site only for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1205
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						FILL, brown, fine to medium sand, medium dense, moist	
1			13	16	0.0	Dark brown, silty, fine to medium sand with fine to coarse gravel and black asphalt debris	
2							
3			13	20	0.6	Brick debris	
4						Brown Dark brown	
5			10	17	0.0	Yellow-red, fine to medium **SAND** with fine gravel, trace silt, medium dense, moist	
6	SP						
7			25	18	0.0	Brown-yellow, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
8	SM					1/4" gray, silty, fine sand seam at 8.3'	
9	SW		48	19	0.0		
10							
11			30	18	0.0	Yellow-red, with fine to coarse gravel	
12	SM					Brown, silty, fine **SAND**, little fine gravel, medium dense to dense, moist	
	SW					Yellow-brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, dense, moist	
13			40	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1205
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Yellow-brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, dense, moist	
14							
						Medium dense	
15	SW		28	16	0.0		
						Interlayered brown and light brown	
16						Light brown	
17			46	20	0.0		
	SP					Brown-yellow, fine to medium **SAND**, trace fine gravel and silt, dense, moist	
18						Interlayered brown and light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
19			34	21	0.0		
	SW						
20							
21			36	21	0.0		
22							
	SP					Light brown, fine to medium **SAND** with fine to coarse gravel, medium dense 1/4" black seam	
23			21	17	0.0		
	SW					Brown-yellow, fine to coarse **SAND**, some fine to coarse gravel	
24							
						Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
25	SP		15	17	0.0		
						Little fine gravel	
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: A19 - LP1205
Date Drilled: 10/6/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		19	15	0.0	Light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
28							
29	SW		28	21	0.0	Light brown, fine to coarse **SAND**, some fine gravel, trace cobbles, medium dense, moist	
30							
31			25	16	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/6/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean sand on 10/12/04 4. Analytical samples collected where sufficient recovery from 1 - 29': a. On-Site radiological every foot b. On-Site nickel every odd numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOC's and nickel and off Site only for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1301
Date Drilled: 10/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
2, 3, 4						**BACKFILL** Previously excavated and backfilled to 4' bgs	
4						**FILL**, brown, silty, fine to medium sand, little fine gravel, trace silt, medium dense, moist	
5, 6	SW		13	14	0.0	Yellow-red, fine to coarse **SAND**, little fine gravel, trace silt, medium dense, moist	
7	SP		25	18	0.0	Brown-yellow, fine **SAND**, trace silt, medium dense, moist	
8	ML ML					Brown-gray, silt layer from 7.8-8' Little silt, dense Brown-gray, fine sandy silt, trace fine gravel, moist layer from 8.3-8.5'	
9	SW		40	20	0.0	Yellow-red, fine to coarse **SAND**, little fine gravel, dense moist	
10, 11, 12	SP		22	19	0.0	Yellow-brown, fine to medium **SAND**, little fine to coarse gravel, dense, moist Light brown, trace fine gravel and silt, coarse gravel grades out	
13, 14	SW		30	24	0.0	Stratified layers of brown, yellow-brown and red-brown fine to coarse **SAND**, little fine to coarse gravel and fine to medium sand, trace silt, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1301
Date Drilled: 10/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
15	SW		23	24	0.0	Stratified layers of brown, yellow-brown and red-brown fine to coarse **SAND**, little fine to coarse gravel and fine to medium sand, trace silt, medium dense, moist	
16	SP		36	24	0.0	Brown-yellow fine to medium **SAND**, trace fine gravel, dense, moist	
17	GW					Light brown, fine to medium **SAND** and fine to coarse **GRAVEL**, trace cobbles, dense, moist	
18						Intermittent coarse sand seams to 20'	
						Medium dense	
19			23	24	0.0		
20	SP		18	16	0.0	Light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
21							
22			14	16	0.0		
23						Trace cobbles	
24	SW		19	18	0.0	Light brown, fine to coarse **SAND**, with fine to coarse gravel, trace cobbles, medium dense, moist	
25							
26			24	18	0.0		
27							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1301
Date Drilled: 10/8/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, with fine to coarse gravel, trace cobbles, medium dense, moist	
28	SP					Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
29			29	23	0.0	Stratified with 1/16 - 1/4" thick red brown seams from 28 - 29.8'	
30						Stratified with 5-6" thick light brown to brown fine to coarse sand and fine to coarse gravel, trace cobbles layers from 29.8 - 32'	
31	SP/ GW		24	20	0.0		
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/8/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 10/12/04 4. Analytical samples collected from 4-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							
40							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1304
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			21	21	0.0	**FILL**, dark brown, silty, fine to medium sand and fine to coarse, subangular gravel and asphalt fragments, medium dense, moist	
2						Asphalt grades out	
3			10	16	0.0		
4						Dark brown, fine sandy silt, trace subangular gravel, moist from 3.75-4'	
5	SP		9	14	0.0	Yellowish brown, fine to medium **SAND**, little silt and fine, subrounded gravel, trace cobbles, loose, moist	
6							
7	GP		10	13	4.6	Yellowish brown fine to medium **SAND** and fine to coarse, subrounded **GRAVEL**, trace silt	
8	SM					Yellowish brown, silty, fine **SAND**, trace subrounded, fine gravel, loose, moist	
9	SW		35	21	0.0	Yellowish brown, fine to coarse **SAND** with fine to coarse, subrounded gravel, trace silt, dense, moist	
10	SP					Light brown, fine **SAND**, trace fine, subrounded gravel, dense, moist	
11			26	19	0.0		
12	SW					Yellowish brown, fine to coarse **SAND** with fine to coarse, subrounded gravel, trace silt, medium dense, moist	
13			22	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1304
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Yellowish brown, fine **SAND**, medium dense, moist	
14	SW					Yellowish brown, fine to coarse **SAND** with fine to coarse, subrounded gravel, trace silt, medium dense, moist	
15			24	17	0.0		
16							
17			22	14	0.0		
18							
19			16	21	0.0		
20							
21			22	22	0.0		
22	GW					Yellowish brown to brown, fine to medium **SAND** and fine to coarse, subrounded **GRAVEL**, loose to medium dense, moist 1/8" Black layer from 22-23'	
23			10	16	0.0		
24							
25			10	17	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1304
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		19	15	0.0	Light brown, fine to coarse **SAND** with subrounded, fine gravel, medium dense, moist	
28							
29			13	15	0.0		
30							
31	SP		16	16	0.0	Light brown to brown, fine **SAND**, trace fine, subrounded gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/11/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 10/12/04 4. Analytical samples collected from 0-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1305
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1			8	14	0.0	**FILL**, dark brown, silty, fine to medium sand, little fine, subrounded gravel and asphalt fragments, loose, moist	
2						Brown, asphalt grades out	
3			8	19	0.0		
4							
5	SM		14	19	0.0	Yellowish brown, fine to medium **SAND** with fine to coarse, subrounded gravel, trace silt, medium dense, moist Silty sand, moist layer at 5'	
6							
7	SP		38	20	0.0	Light brown, trace gravel, medium sand grades out, dense	
8						Yellowish brown, gravel grades out	
9			29	22	0.0	Yellowish brown, fine to coarse **SAND**, trace fine, subrounded gravel, medium dense, moist	
10	SW						
11			27	19	0.0		
12	SP					Light brown, fine to medium **SAND**, trace fine, subrounded gravel, medium dense, moist	
13			29	21	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1305
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND** with fine, subrounded gravel, medium dense, moist	
14							
	SP		30	14	0.0	Yellowish brown, fine to medium **SAND**, trace fine, subrounded gravel, medium dense to dense, moist	
15							
	GW					Yellowish brown, fine to coarse **SAND** and fine to coarse, subrounded **GRAVEL**, medium dense to dense, moist	
16							
	SP		35	22	0.0	Yellowish brown to brown, fine **SAND**, trace fine, subrounded gravel, dense, moist	
17							
	GW					Yellowish brown, fine to coarse **SAND** and fine to coarse, subrounded **GRAVEL**, medium dense to dense, moist Medium dense, occasional cobbles	
18							
			22	14	0.0		
19							
20							
			14	24	0.0		
21							
22							
			19	24	0.0		
23							
24							
			13	11	0.0		
25							
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Leach Pool Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: Z68 - LP1305
Date Drilled: 10/11/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Gary Webber

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		25	17	0.0	Light brown, fine to medium **SAND** with fine, subangular gravel, medium dense, moist	
28							
29			18	21	0.0	1" dark brown layer at 29.5'	
30							
31	SW		20	21	0.0	Light brown to brown, fine to coarse **SAND** with fine to coarse, subangular gravel, medium dense, moist	
32	EOB						
33						NOTES: 1. Boring completed to a depth of 32' bgs on 10/11/04 2. Groundwater not encountered 3. Boring backfilled to grade with clean soil on 10/12/04 4. Analytical samples collected from 1-29': a. On-Site radiological every foot where soil recovery permitted b. On-Site nickel every odd-numbered foot 5. SP sample collected at 30', analyzed on and off Site for radioactivity, VOCs, and nickel and off Site for beryllium	
34							
35							
36							
37							
38							
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1						**Above ground surface** Surface elevation at 143', first sample at surface is 2' below reference	
2						Concrete	*Drill through top 9", blow count reported from bottom foot
3			24*	12	0.0	**FILL**, dark brown to black, silty sand with fine to coarse gravel, moist	
4							
5			69	19	0.0	Light brown to brown, fine to coarse sand, trace silt, some fine to coarse gravel, moist	
6							
7			68	14	0.0	2" red brown, gravelly sand layer at 7'	
8							
9			59	24	0.3	1" dark brown, silty sand layer at 8.3' Dark brown, sandy silt, some fine to coarse gravel, moist	
10						Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
11	SW		26	14	0.0		
12							
13			18	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
14						Some fine to coarse gravel	
15			30	22	0.0	Light brown to brown, sand with fine to coarse gravel, trace cobbles, dense	
16						Little fine gravel, coarse gravel and cobbles grade out, medium dense	
17			16	16	0.0		
18							
19	SW		18	22	0.8		
20							
21			14	16	0.4		
22						With fine to coarse gravel	
23			12	15	0.0		
24							
25			22	22	0.3		
26						Gravelly sand, trace cobbles	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW		27	16	0.0	Light brown to brown, gravelly, fine to coarse **SAND**, trace cobbles, medium dense, moist	
27	SP					Light brown, fine to medium **SAND**, medium dense, moist	
	SW					Brown, fine to coarse **SAND** with gravel, medium dense, moist	
28	SP		26	21	0.0	Brown to dark brown, fine to medium **SAND**, some gravel, medium dense, moist	
29							
30			16	20	0.0		
31							
32			22	19	0.0		
33							
34			19	22	0.0		
35							
36	SW		20	12	0.0	Dark brown to black, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
37							
38			28	24	0.0		
39							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Dark brown to black, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
	SP					Brown to dark brown with black laminations, fine **SAND**, medium dense, moist	
40	SW					Tan to light brown, fine to coarse **SAND** with gravel, medium dense, moist	
41			26	22	0.0	Light brown to brown with dark brown laminations, fine to medium **SAND**, trace fine gravel, medium dense, moist	
42							
43	SP		22	14	0.0		
44							
45			26	24	1.1		
46							
	ML					Alternating layers of light brown, sandy **SILT** and tan, fine to medium sand, medium dense, moist	
47			24	14	0.0	Light brown to brown, fine to medium **SAND**, medium dense, moist	
48	SP						
49			20	22	0.0		
	ML					Brown, clayey **SILT**, very stiff, moist	
	SP					Light brown, fine to medium **SAND**, medium dense, moist	
50	CL					Brown, silty **CLAY**, very stiff, moist	
51			20	22	0.0		
	SP					Light brown to brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
52						3" dark brown, gravelly sand	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
53	SW		73	14	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, very dense, moist	
54							
55			68	22	0.1	Tan, fine to medium **SAND**, very dense, moist	
	SM					1" red brown, silty sand layer at 55.4'	
56						Medium dense	
57			29	18	0.0		
58						Dense	
59	SP		46	24	0.4		
60						Medium dense	
61			24	22	0.3		
62							
63			21	22	0.2		
	SM					4" red brown, silty sand layer at 63.6'	
64						Dense	
	SM					2" red brown, silty sand layer at 64.5'	
65			44	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C17 - DL01
Date Drilled: 2/3/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, dense, moist	
	SM					1/16" red brown, silty sand layer at 65.7'	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 2/4/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 2/4/05 4. Analytical samples from 3-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			8*	6	0.0	**FILL**, dark brown, fine to medium sand, little fine gravel, trace silt, moist	
2						Trace coarse gravel	
3			4	16	0.0	Dark brown to black, silty sand, little fine gravel, moist	
4						Trace cobbles	
5			3	14	0.0		
6						Brown to dark brown, some fine to coarse gravel	
7			7	20	0.0		
8						With gravel	
9			25	19	0.0		
10	SP					Light brown to brown, fine to medium **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
11	SW		22	16	0.0	Light brown, fine to coarse **SAND**, medium dense, moist	
12	SP					Light brown to brown, fine to medium **SAND**, some fine to coarse gravel, trace cobbles, medium dense, moist	
						Very dense	
13			55	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Brown, fine to coarse **SAND** with fine to coarse gravel, very dense, moist	
14							
						Light brown to brown, medium dense	
15			23	16	0.0		
	SW						
16							
						Light brown, some fine gravel, coarse gravel grades out, dense	
17			32	24	0.0		
						Tan, fine to medium **SAND**, some fine to coarse gravel, dense, moist	
18							
						Medium dense	
19	SP		20	18	0.0		
20							
						Tan to light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
21			12	15	0.0		
22							
23	SW		22	22	0.0		
24							
25			15	16	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan to light brown, fine to coarse **SAND**, some fine to coarse gravel, very dense, moist	
27			53	22	0.0		
						Light brown to brown	
28						Medium dense	
29			22	18	0.0		
30							
31	SW		20	14	0.0		
						Brown, trace fine gravel, coarse gravel grades out Dark brown laminations from 31.4 - 31.8'	
32							
						Tan to light brown, sand with gravel	
33			28	24	0.0		
34						Light brown to brown, trace fine gravel	
35			14	19	0.0		
36							
						Brown to dark brown, sand with fine to coarse gravel, trace cobbles	
37			26	22	0.0		
38							
39			16	14	0.4		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown to dark brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, medium dense, moist	
40						1" coarse black sand layer at 39.6'	
41			23	16	0.0	Light brown, little fine gravel, trace cobbles, coarse gravel grades out Dark brown laminations from 41 - 41.6'	
42						Red brown to dark brown layer at 41.6 - 41.8'	
43			48	24	0.0	1" dark brown layer at 42.7', dense	
44						1/4" dark brown silt seam at 43.8'	
45			20	16	0.0	Dark brown laminations at 44.8 - 45.4', medium dense	
46						Trace fine gravel, cobbles grade out	
47			23	20	0.0		
48	SM					Brown, silty **SAND**, medium dense, moist	
	CL					Brown, silty **CLAY**, medium stiff, moist	
49	ML		6	22	0.0	Brown, sandy **SILT**, loose, moist	
	CL					Brown, silty **CLAY**, medium stiff, moist	
50	SM					Light brown to brown, silty **SAND**, dense, moist	
						Dark brown to black	
51	SW		44	20	0.0	Brown, fine to coarse **SAND** with fine to coarse gravel, dense, moist	
52	SP					Tan, fine to medium **SAND**, dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
53	SP		100	18	0.1	Tan, fine to medium **SAND**, very dense, moist	
54							
55	ML		21	22	0.0	Brown, sandy **SILT**, medium dense, moist	
						Tan to light brown, fine to medium **SAND**, medium dense, moist	
56							
57			26	22	0.0		
58							
59	SP		17	20	0.0		
60							
61			21	16	0.0		
62						Dense	
63			41	22	0.5		
64							
65			30	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL01
Date Drilled: 1/31/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan to light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 2/1/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 2/1/05 4. Analytical samples from 0-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Above ground surface Surface elevation at 144', first sample at surface is 1' below reference	
1						Concrete	
2						**FILL**, dark brown, silty sand, some fine to coarse gravel, moist	
3			38	15	0.0	Dark brown to black, sand with fine to coarse gravel, construction debris	
4							
5			89	22	0.4	Light brown to brown, fine to medium sand with fine to coarse gravel, moist	
6							
7			71	16	0.0		
						Brown to dark brown, some fine gravel, coarse gravel grades out	
8							
						1" dark brown to black silty sand layer at 8.4'	
9			45	21	0.0	Dark brown, silty sand, some fine gravel, moist 2" light brown sand layer at 9.3'	
10						Tan to light brown, fine to coarse **SAND** with fine gravel, trace coarse, medium dense, moist	
11	SW		24	16	0.0		
12						Dense	
13			33	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan to light brown, fine to coarse **SAND** with fine gravel, trace coarse gravel and cobbles, dense	
14						Trace cobbles	
15			34	18	0.0		
16						Medium dense	
17			20	15	0.0		
18	SW					With fine to coarse gravel, medium dense, cobbles grade out	
19			18	22	0.0		
20						Trace cobbles	
21			16	15	0.0		
22							
23			19	22	0.0		
						3" light brown fine to medium sand layer at 23.3'	
24							
25			16	16	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		26	17	0.0	Tan to light brown, gravelly **SAND**, trace cobbles, medium dense, moist	
28						Light brown, sand with fine to coarse gravel	
29			28	24	0.0		
30							
31			18	14	0.0		
32	SP					Light brown fine to medium **SAND**, trace fine gravel, medium dense, moist	
						Some fine to coarse gravel	
33			28	24	0.0		
34							
35			16	20	0.0	Laminations of dark brown, fine sand at 34.8 - 35.5'	
36							
37			18	15	1.2		
38	SW					Brown to dark brown, fine to coarse **SAND**, little fine gravel, medium dense, moist	
						Dense	
39			30	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown to dark brown, fine to coarse **SAND**, little fine gravel, dense, moist 2" dark brown, fine to medium sand layer at 39'	
40							
41	SP		26	18	0.0	Light brown to brown, fine to medium **SAND**, trace fine gravel and cobbles, medium dense Dark brown laminations at 40.5 - 41.2'	
42							
43			22	24	0.0	Dark brown laminations from 42 - 44'	
44							
45			16	20	1.0	Tan to light brown, gravel and cobbles grade out	
46							
47			10	18	0.0	1" silty sand layer at 46.7' Loose	
	ML					Light brown to brown, clayey **SILT**, loose, moist 3" light brown fine to medium sand layer at 47.4' and 47.9'	
48	SP		11	22	0.0	Brown, fine to medium **SAND**, trace silt, medium dense, moist	
49	ML					Brown, clayey **SILT**, stiff, moist 1" brown fine to medium sand layer at 49.6'	
50	CL		26	20	0.0	Brown, silty **CLAY** grading to clayey silt, very stiff, moist	
51	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, medium dense, moist	
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to medium **SAND**, trace fine gravel, very dense, moist	
53			61	20	0.0		
54						Dense	
55			38	20	0.0		
56						1" red brown silty sand layer at 55.9'	
						Medium dense	
57	SP		26	20	0.0		
58						Dense	
59			30	NA	0.0		NA = Not available (recovery not recorded)
60						Medium dense	
61			17	20	0.0		
62						4" red brown silty sand layer at 61.2'	
						Dense	
63			36	20	0.0		
64						Very dense	
65			53	20	1.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: C18 - DL02
Date Drilled: 2/1/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, trace fine gravel, very dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 2/2/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 2/3/05 4. Analytical samples from 3-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1						**Above ground surface** Surface elevation at 143', first sample at surface is 2' below reference	
2						Concrete	* Blow counts from bottom foot of spoon, top foot was drilled through concrete
3			10*	8	0.0	**FILL**, dark brown, silty fine sand, some fine to coarse gravel, dry	
4							
5			10	22	0.0	Brown, fine to medium sand, some fine gravel, trace cobbles, dry	
6						Some fine to coarse gravel, trace silty sand	
7			48	23	0.0		
8						Brown, silty fine sand, some fine to coarse gravel, dry	
9			52	22	0.0		
10						Light brown, fine to medium **SAND**, some fine to coarse gravel, dense, dry	
11	SP		32	12	0.0		
12						Brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
13	SW		23	18	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
14							
15	SP		33	22	0.0	Brown, fine to medium **SAND**, some fine to coarse gravel, dense, moist	
16						Medium dense	
17			25	12	0.0		
18							
19	SW		25	20	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
20							
21			14	16	0.0		
22							
23			17	12	0.0		
24							
25			30	22	1.7		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		22	18	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
28							
29	SP		29	22	1.6	Brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
30							
31			15	18	0.0		
32							
33			24	18	0.0		
34						Brown to tan, trace fine gravel, coarse gravel grades out	
35			26	22	0.5		
36							
37			28	18	0.6		
38							
39	SW		27	22	0.8	Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist Dark brown from 39.5 - 39.9'	
40							
41	SP		28	19	0.0	Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
42						Dense	
43			35	21	0.7		
44						Brown, gravel grades out, medium dense	
45			26	22	0.0		
46							
47			23	16	0.0		
48							
	SM					Dark brown, silty fine **SAND**, medium dense, moist	
49			18	24	0.0	Dark brown, clayey **SILT** with trace fine sand, very stiff, moist	
50	ML						
51			22	24	0.0	Brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
	SP						
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine **SAND**, dense, moist	
53			48	15	0.0		
54	SP					Medium dense	
55			29	16	0.0		
	SM					1" silty sand lens at 55.5'	
	SM					2" silty sand lens at 55.7'	
56							
57			24	16	0.0		
58	SP						
59			21	20	0.6		
60							
61			14	16	0.0		
62						Loose	
63			9	18	0.0		
64							
65	SM		10	24	0.0	2" silty sand lens at 64.9'	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D16 - DL01
Date Drilled: 2/8/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels and Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine **SAND**, loose, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 2/10/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 2/10/05 4. Analytical samples from 3-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Asphalt and concrete	
1						**FILL**, dark brown, fine to medium sand, some fine to coarse gravel, moist	
2							
3			31	12	0.0		
4						Brown, fine to medium **SAND**, some fine to coarse gravel, dense, moist	
5			31	16	0.0		
6	SP						
7			41	16	0.0		
8							
9			36	14	0.9		
10						Medium dense	
11			26	15	0.0		
12						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	SW						
13			30	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
15			19	16	0.0	Brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
16							
17			21	15	0.3		
18							
19	SP		20	16	1.1		
20			*13	9	0.8	Light brown, some gravel	*1' spoon driven from 20-21'
21							
22			14	14	1.1		
23			*22	12	0.0	Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	*1' spoon driven from 23-24'
24	SW					Trace gravel	
25			12	16	0.5		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
27			20	16	0.0		
28							
29			25	22	0.8		
30							*1' spoon driven from 30-31'
			*11	12	2.0		
31							
32			21	16	1.0		
	SP						
33							*1' spoon driven from 33-34'
			*24	12	1.2		
34						Fine gravel	
35			16	22	0.3		
36						Trace cobbles	
37			22	16	1.2		
38							
39			26	22	0.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Brown, fine to medium **SAND**, trace fine gravel and cobbles, medium dense, moist	
40			*16	10	0.8	Light brown	*1' spoon driven from 40-41'
41						Dark brown laminations from 41-41.2'	
42			24	17	0.5		
43							*1' spoon driven from 43-44'
	SP		*34	12	0.5	Gravel grades out, dense	
44							
45			19	18	1.1	Silty sand seams from 44.9-45.1', medium dense	
46							
47			19	18	0.8		
	SM					1" silty sand layer at 47.2'	
	SM					1" silty sand layer at 47.5'	
48							
49	SM		15	18	0.0	Brown, silty fine **SAND**, medium dense, moist	
50							
	CL		*5	12	0.3	Brown, sandy **CLAY**, medium stiff, moist	*1' spoon driven from 50-51'
51							
	SM		33	19	0.4	Brown, silty fine to medium **SAND**, some fine to coarse gravel, dense, moist	
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SM					Brown, silty fine to medium **SAND**, some fine to coarse gravel, dense, moist	
53	SP		*57	12	0.3	Brown, fine to medium **SAND**, some fine to coarse gravel, very dense, moist	*1' spoon driven from 53-54'
54			43	22	1.1	Light brown, fine sand, gravel grades out, dense	
55							
56			30	16	0.3		
57							
58			37	23	1.4		
59							
60			25	16	1.0	Tan, medium dense	
61							
62			26	20	1.0	1" silty sand layer at 62.75'	
63							
64			34	16	1.1	Dense	
65							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D17 - DL01
Date Drilled: 1/21/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine **SAND**, dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/26/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/26/05 4. Analytical samples from +1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Above ground surface Surface elevation at 144', first sample at surface is 1' below reference	
1						Concrete	
2						**FILL**, brown, fine to coarse sand, some fine to coarse gravel, little silt	
3			19	18	0.0	Dark brown, silty sand, little fine to coarse gravel, trace cobbles	
4							
5			45	17	0.2	Tan-orange, fine to coarse **SAND**, trace fine to coarse gravel and silt, dense	
6	SW						
7			37	12	0.5		
	SP					Tan-orange, fine **SAND**, dense	
	SW					Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, dense	
8	SP					Tan-orange to brown, fine **SAND**, trace cobbles, moist	
9	SM		42	22	0.2	Brown, silty **SAND**, some cobbles, moist	
						Tan-orange, fine to coarse **SAND**, little fine to coarse gravel, moist	
10						Tan, some fine gravel, little coarse gravel, medium dense	
11	SW		18	15	0.0		
12						Little fine to coarse gravel, dense	
13			40	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, dense, moist	
14						Tan-orange, some fine gravel, medium dense	
15			20	16	0.0		
16						Little fine to coarse gravel	
17			17	14	0.0		
18	SP					Tan, medium to coarse **SAND**, medium dense, moist	
19			23	18	0.0	Fine to medium sand	
	GW					Tan, fine to coarse **SAND** and fine to coarse **GRAVEL**	
20						Some fine gravel, little coarse gravel	
21			12	12	0.0		
22						And fine gravel, little coarse gravel, moist	
23			14	24	0.0		
24						Coarse gravel grades out	
25			14	12	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		29	16	0.0	Tan to light brown, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
28	SW					Some fine gravel, little coarse gravel, dense	
29	SW		32	20	0.0		
30	SW						
31	SW		17	19	0.0	Tan sand and fine to coarse gravel, medium dense	
32	SP		23	22	0.0	Tan with brown laminations to 31.8', fine grading to fine to medium **SAND**, trace fine gravel from 31.8-32', moist	
	SW					Light brown, fine to coarse **SAND**, little fine gravel	
33	SP					Tan with brown laminations, fine to medium **SAND**	
	SW					Brown, fine to coarse **SAND**, little fine gravel, trace silt	
34	SP		22	17	0.0	Tan, fine to medium **SAND**, little coarse sand	
35	SP					Brown with dark brown laminations, fine sand, trace silt, moist Light brown, fine to medium sand	
36	SW		20	17	0.0	Tan, fine to coarse **SAND**, trace fine gravel, moist	
37	SW						
38	SW		18	20	0.0		
39	SW						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
40	SP					Light brown, fine **SAND**, trace silt and fine to coarse gravel, medium dense, moist	
41			19	17	0.0	Brown, medium to coarse sand, little fine sand, gravel grades out 1" tan, fine layer at 40.4' Tan, fine to medium sand, trace coarse sand and fine gravel	
42						Brown laminations to 43.5', medium dense	
43			23	19	0.0		
44	ML					Gravel grades out 1" brown silt at 44' Trace silt seams to 46'	
45			14	16	0.0		
46							
47			15	17	0.0		
48	ML					Dark brown, silty sand seam followed by brown, clayey **SILT** grading to silty **CLAY,** very stiff	
	SP					Tan, fine **SAND**, medium dense	
49			16	17	0.0		
	ML					Brown, sandy **SILT**, medium dense	
50	CL					Brown, silty **CLAY**, trace silt seams, stiff, moist	
51			14	22	0.0		
	SP					Tan with orange laminations, fine **SAND**, trace fine gravel, medium dense Brown, little fine to coarse gravel, moist at 51.7-52'	
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	CL					Brown, silty **SAND**, some fine to coarse gravel, trace clay, very dense, moist	
	SM					2" brown, silty clay layer at 52'	
53	SW		64	21	0.0	Tan, fine to coarse **SAND** and fine gravel, very dense, moist	
						Tan, fine **SAND**, very dense, moist	
54						Dense	
55			36	19	0.0		
56						Light tan with trace brown mottling, medium dense	
57			23	18	0.0		
58							
59	SP		22	21	0.0		
60						Light tan to white, trace silt	
61			20	18	0.0	Fine to medium sand, brown mottling grades out	
						Fine sand	
62						Trace brown mottling and brown laminations, dense	
63			38	22	0.0		
64						Medium dense	
65			24	18	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL01
Date Drilled: 1/10/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light tan to white with trace brown mottling and brown laminations, fine **SAND**, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/12/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/12/05 4. Analytical samples from 2-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			9	8	0.0	**FILL**, light brown silt, trace fine to coarse gravel, dry	
2						Dark brown, trace fine sand, some gravel	
3			9	14	0.0		
4							
5			3	12	0.0		
6							
7			11	20	0.0	Brown, fine **SAND**, trace fine to coarse gravel, medium dense, moist	
8						Fine to medium sand, some fine gravel	
9			20	15	0.0		
10	SP					Light brown to brown, fine to coarse gravel, dense	
11			33	18	0.0		
12							
13			34	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SP					Light brown to brown, fine to medium **SAND**, some fine to coarse gravel, dense, moist	
						Medium dense	
15			24	18	0.3		
16							
17			26	21	0.0		
18	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
19			12	18	0.1		
20						Fine to coarse gravel	
21			15	15	0.0		
22	SP					Light brown, fine to medium **SAND**, some fine to coarse gravel, medium dense, moist	
23			24	21	0.0		
24						Tan to light brown, fine gravel	
25			29	14	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		38	21	0.5	Light brown with trace dark brown laminations, fine **SAND**, trace fine gravel, dense, moist	
28							
29			22	18	0.3	Fine to medium sand, some fine to coarse gravel, laminations grade out, medium dense	
30							
31			20	18	0.5		
32							
33			22	18	0.0	Fine sand , trace fine gravel	
34						Silty sand seams from 33.75-33.9'	
35			20	15	0.0		
36						Fine to medium sand, some gravel	
37			20	21	0.0		
38							
39			23	12	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
40						Fine sand, trace gravel	
41			26	16	0.9		
42						Dense	
43			32	21	1.2		
44						Tan, gravel grades out, medium dense	
45			15	15	0.2		
46						Tan to light brown, trace fine gravel	
47			18	21	0.4	Sandy silt seams from 47.1-47.4'	
48	CL					Brown, sandy, silty **CLAY**, medium stiff, moist	
49			8	16	0.0	Sand grades out	
50						Hard	
51	SP		30	22	0.2	Light brown, fine to medium **SAND**, some fine to coarse gravel, trace silt, dense, moist	
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine **SAND**, very dense, moist	
53			70	20	0.3		
54						Dense	
55			33	20	0.0		
56						Medium dense	
57			26	21	0.5		
	SM					2" silty sand layer at 57.6'	
58						Tan with brown mottled	
	SP						
59			24	18	0.0		
60							
61			27	18	0.0		
62						Dense	
63			31	24	0.0		
64						Medium dense	
65			20	17	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL02
Date Drilled: 1/6/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan with trace brown mottled, fine **SAND**, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/10/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/10/05 4. Analytical samples from 1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Asphalt and concrete	
1			16	8	0.0	**FILL**, dark brown, silty fine to medium sand, some fine to coarse gravel, dry	
2							
3			4	16	0.0		
4							
5			3	16	0.0		
6						Dark brown, clayey sand, trace fine gravel, moist	
						Dark brown, silty fine to medium sand, some fine to coarse gravel, dry	
7			6	12	0.0		
8						Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
9	SP		20	15	0.5		
10						Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
11	SW		28	16	0.0		
12						Dense	
13			34	16	0.6		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
15			20	15	0.0	Medium dense	
16	SP		26	21	0.4	Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
18	SW					Light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
19			14	16	0.0		
20							
21			15	15	0.0		
22							
23			20	22	0.5		
24							
25			25	16	0.5		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SP		39	20	1.2	Brown, fine to medium **SAND**, some fine to coarse gravel, dense, moist	
28						Medium dense	
29			22	16	0.7		
30							
31			18	16	0.4		
32	SW					Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
33	SP		29	16	1.1	Light brown, fine to medium **SAND**, trace fine to coarse gravel, medium dense, moist	
34							
35			16	16	0.5		
36							
37			22	23	0.7	Dark brown laminations from 37.8-38'	
38	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
39			21	15	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
40							
41	SP		28	15	0.4	Brown with dark brown mottling to 42', fine **SAND**, trace fine gravel, medium dense, moist	
42						Fine to medium sand, gravel grades out, dense	
43			38	20	0.8		
	SM						
44						1" silty sand layer at 43.75' Brown with dark brown laminations to 46', fine sand, medium dense	
45			19	18	0.7		
	SM						
46						1" silty sand layer at 45.9' Fine to medium sand	
47			19	16	0.0		
	SM						
	SM					2" silty sand layers at 47.6' and 47.8'	
48							
49	ML		7	21	0.3	Brown, sandy **SILT**, loose, moist clayey silt, medium stiff	
50							
51	SM		58	20	0.4	Brown, fine to medium, silty **SAND**, some fine to coarse gravel, very dense, moist	
52							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan, fine to medium **SAND**, very dense, moist	
53			59	19	0.0		
54						Dense	
55			31	16	0.4		
56						Medium dense	
57			25	19	0.5		
58							
	SP						
59			15	18	0.6		
	SM					1" silty sand layer at 59.5'	
60						Trace fine gravel	
61			16	16	0.4		
62						Fine sand, gravel grades out	
63			13	19	1.0		
64							
65			14	18	0.6		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: D18 - DL03
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Chris Ortolano

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine **SAND**, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/28/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/28/05 4. Analytical samples from 1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1						**Above ground surface** Surface elevation at 143', first sample at surface is 2' below reference	
2						Concrete	*Drill through top 9", blow count reported from bottom foot
3			30*	15	0.0	**FILL**, dark brown grading to brown, silty, fine to coarse sand with silty seams and fine to coarse gravel, dry	
4							
5			14	22	0.5		
6	SW					Light orange brown, fine to coarse **SAND** and fine gravel, medium dense, dry Some gravel, trace red, dense	
7	SP		38	19	0.1	Light orange brown, fine **SAND**, some coarse sand, trace fine gravel, dense, dry	
8	GW					Light brown, fine to coarse **SAND** and fine **GRAVEL**, trace coarse gravel, dense, dry 2 - 3" gravelly silt layer at 9'	
9			33	19	0.0	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, dense, dry	
10	SP					Fine gravel, medium dense, moist	
11	GW		17	21	0.0	Light brown, fine to coarse **SAND** and fine to coarse **GRAVEL**, medium dense, moist	
12	SP					Light brown orange, fine **SAND**, some medium and coarse sand and silt, trace fine gravel, medium dense, moist	
13			22	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
14							
						Brown grading to light brown	
15	SW		18	17	0.0		
16						Trace fine to coarse gravel	
17			11	18	0.0		
18							
19	SP		14	17	0.0	Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
20							
						Light brown, fine to coarse **SAND**, trace fine gravel, loose, moist	
21			6	16	0.0		
22	SW					Gravelly sand, dry	
23			9	24	0.0		
24							
						Tan, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
25	SP		13	16	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
27	SP		14	24	0.0	Light brown with trace dark brown, fine **SAND**, medium dense, moist	
28	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
						Trace fine gravel	
29			13	24	0.0		
30						Occasional fine gravel, loose	
31			9	24	0.0		
	SP					Light brown, fine to medium **SAND**, some coarse sand, occasional fine gravel, loose, moist	
32						Medium dense	
33			13	19	0.0	3" fine sand layer	
34						Gravel and coarse sand grade out	
35			16	18	0.0	3" fine to coarse sand layer	
	SM					2" brown silty sand layer	
36						Light brown, fine to coarse **SAND**, occasional fine gravel, medium dense, moist	
37	SW		12	22	0.0		
38							
39			16	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, occasional fine gravel, medium dense, moist	
40	SP					Light brown, fine **SAND**, medium dense, moist	
						Fine to medium sand, some coarse sand, occasional fine gravel	
41			16	19	0.0	1/2" dark brown seam at 41' 1/2" dark brown seam at 41.2'	
42						1/2" black coarse sand seam at 41.1' 4" fine sand layer	
43			20	24	0.0	1/2" brown seam at 42.5'	
44						Fine sand with dark brown laminations	
45			18	24	0.0		
46						Fine to medium sand	
	ML					Light brown, clayey **SILT**, very stiff, moist	
47	SP		16	24	1.0	Light tan, fine to medium **SAND**, medium dense, moist	
48							
49	ML		10	24	0.8	Brown sandy **SILT**, fine sand Brown clayey silt, sand grades out, moist 1" tan fine sand layer at 49.8'	
50	CL					Brown, silty **CLAY**, stiff, moist	
51			10	24	0.0		
52	SP					Tan, fine **SAND**, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
53	GW		55	24	1.2	Light brown, fine to coarse **SAND** and fine **GRAVEL**, some coarse gravel, very dense, moist	
54	SP					Light tan, fine **SAND**, very dense, moist	
						Medium dense	
55			25	24	0.0		
	SM					1" orange silty fine sand, dense, layer at 55.3'	
56							
57			21	24	0.0		
58	SP					Trace brown from 58 - 60'	NA = Not available (no recovery data recorded)
59			14	NA	0.0		
60							
	SM					2" orange silty fine sand, dense, layer at 60.5'	
61	SP		14	24	1.3	Fine to medium sand with coarse sand	
62							
	SM					2" orange silty fine sand, dense, layer at 62.5'	
63			16	24	0.0	White, fine sand	
64	SP					Light tan to white	
65			11	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light tan to white, fine **SAND**, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/31/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/31/05 4. Analytical samples from 2-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
1						**Above ground surface** Surface elevation at 143', first sample at surface is 2' below reference	
2						Concrete	*Drill through top 9", blow count reported from bottom foot
3			30*	15	0.0	**FILL**, dark brown grading to brown, silty, fine to coarse sand with silty seams and fine to coarse gravel, dry	
4							
5			14	22	0.5		
6	SW					Light orange brown, fine to coarse **SAND** and fine gravel, medium dense, dry Some gravel, trace red, dense	
7	SP		38	19	0.1	Light orange brown, fine **SAND**, some coarse sand, trace fine gravel, dense, dry	
8	GW					Light brown, fine to coarse **SAND** and fine **GRAVEL**, trace coarse gravel, dense, dry 2 - 3" gravelly silt layer at 9'	
9			33	19	0.0	Light brown, fine to medium **SAND**, some coarse sand, trace fine to coarse gravel, dense, dry	
10	SP					Fine gravel, medium dense, moist	
11			17	21	0.0		
12	GW					Light brown, fine to coarse **SAND** and fine to coarse **GRAVEL**, medium dense, moist	
13	SP		22	24	0.0	Light brown orange, fine **SAND**, some medium and coarse sand and silt, trace fine gravel, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
14	SW					Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
15	SW		18	17	0.0	Brown grading to light brown	
16	SW					Trace fine to coarse gravel	
17	SW		11	18	0.0		
18	SP					Light brown, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
19	SP		14	17	0.0		
20	SW					Light brown, fine to coarse **SAND**, trace fine gravel, loose, moist	
21	SW		6	16	0.0		
22	SW					Gravelly sand, dry	
23	SW		9	24	0.0		
24	SP					Tan, fine to medium **SAND**, some coarse sand, trace fine gravel, medium dense, moist	
25	SP		13	16	0.0		
26	SP						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
27	SP		14	24	0.0	Light brown with trace dark brown, fine **SAND**, medium dense, moist	
28	SW					Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist	
						Trace fine gravel	
29			13	24	0.0		
30						Occasional fine gravel, loose	
31			9	24	0.0		
	SP					Light brown, fine to medium **SAND**, some coarse sand, occasional fine gravel, loose, moist	
32						Medium dense	
33			13	19	0.0	3" fine sand layer	
34						Gravel and coarse sand grade out	
35			16	18	0.0	3" fine to coarse sand layer	
	SM					2" brown silty sand layer	
36						Light brown, fine to coarse **SAND**, occasional fine gravel, medium dense, moist	
37	SW		12	22	0.0		
38							
39			16	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
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Sampler Type: 3-inch split spoon driven by 300-lb hammer
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown, fine to coarse **SAND**, occasional fine gravel, medium dense, moist	
40	SP					Light brown, fine **SAND**, medium dense, moist	
41			16	19	0.0	Fine to medium sand, some coarse sand, occasional fine gravel 1/2" dark brown seam at 41' 1/2" dark brown seam at 41.2'	
42						1/2" black coarse sand seam at 41.1' 4" fine sand layer	
43			20	24	0.0	1/2" brown seam at 42.5'	
44						Fine sand with dark brown laminations	
45			18	24	0.0		
46						Fine to medium sand	
	ML					Light brown, clayey **SILT**, very stiff, moist	
47	SP		16	24	1.0	Light tan, fine to medium **SAND**, medium dense, moist	
48							
49	ML		10	24	0.8	Brown sandy **SILT**, fine sand Brown clayey silt, sand grades out, moist 1" tan fine sand layer at 49.8'	
50	CL					Brown, silty **CLAY**, stiff, moist	
51			10	24	0.0		
52	SP					Tan, fine **SAND**, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
53	GW		55	24	1.2	Light brown, fine to coarse **SAND** and fine **GRAVEL**, some coarse gravel, dense, moist	
54	SP					Light tan, fine **SAND**, dense, moist	
						Medium dense	
55			25	24	0.0		
	SM					1" orange silty fine sand, dense, layer at 55.3'	
56							
57			21	24	0.0		
58						Trace brown from 58 - 60'	NA = Not available (no recovery data recorded)
	SP						
59			14	NA	0.0		
60							
	SM					2" orange silty fine sand, dense, layer at 60.5'	
61			14	24	1.3	Fine to medium sand with coarse sand	
	SP						
62							
	SM					2" orange silty fine sand, dense, layer at 62.5'	
63			16	24	0.0	White, fine sand	
64	SP					Light tan to white	
65			11	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E17 - DL02
Date Drilled: 1/28/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen and Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Light tan to white, fine **SAND**, medium dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/31/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/31/05 4. Analytical samples from 2-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
0						Concrete	
1						**FILL**, brown, silty fine to coarse sand, trace fine to coarse gravel, moist	
2							
3			10	18	0.0		
4							
5			36	16	0.0	Orange-brown, fine to coarse **SAND**, some fine to coarse gravel, trace silt, dense, moist	
6						Grading to light brown, silt grades out	
7			37	14	0.3		
8						Trace cobbles to 10'	
9	SW		45	16	0.0		
10						Light brown to tan and gravel, medium dense	
11			22	14	0.0		
12							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown to tan, fine to coarse **SAND** and fine to coarse gravel, dense, moist	
13			46	20	0.0	1" brown layer at 12.75' Orange-brown	
14						Orange-brown to light brown, trace fine gravel, medium dense	
15			19	16	0.0		
16						Some fine to coarse gravel	
17			19	14	0.0		
18							
19	SW		24	20	0.1		
20						Light brown	
21			12	16	0.0		
22							
23			19	20	0.3		
24						Fine gravel	
25			29	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND**, some fine gravel, medium dense, moist	
26							
						Fine to coarse gravel	
27			29	14	0.0		
28							
29			26	22	0.0		
30							
						Trace gravel	
31			20	14	0.0		
	SW						
32							
						Brown to light brown, some gravel	
33			29	20	0.4		
34							
35			23	16	0.0		
36						1" dark brown, fine sand layer at 35.75'	
						Trace coarse gravel and cobbles, fine gravel grades out	
37			16	16	0.1		
38							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
39	SW		27	22	0.4	Brown to light brown, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
40						Trace coarse gravel	
41			24	18	0.5	1" dark brown, fine sand layer at 41.1' Light brown with trace brown mottling, medium dense	
42						Dense	
43			31	20	0.4		
44						Brown to light brown, gravel grades out, medium dense	
45			20	18	0.2		
46	SP		14	18	0.1	Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
47							
48	CL					Dark brown, silty **CLAY**, stiff, moist	
49	ML		23	18	0.0	Brown, sandy **SILT**, fine sand, medium dense, moist	
	CL					Brown, silty **CLAY**, very stiff, moist	
50	ML					Orange-brown to light brown, sandy **SILT**, fine sand, moist	
51	CL		7	22	0.0	Brown, silty **CLAY**, very stiff, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	CL					Brown, silty **CLAY**, very stiff, moist	
	SW					Brown to orange-brown, fine to coarse **SAND**, loose, moist	
52	CL					Light brown, silty **CLAY**, hard, moist	
	ML					Brown to light brown, sandy **SILT**, fine to coarse sand, trace coarse gravel, very dense, moist 1" dark brown layer at 52.8'	
53			61	24	0.0		
	SW					Brown to light brown, fine to coarse **SAND** and fine to coarse gravel, very dense, moist	
54							
						Light brown, fine **SAND**, dense, moist	
55			39	14	0.0		
56	SP						
57			33	14	0.0		
58							
	ML					Orange-brown to light brown, sandy **SILT**, fine sand, moist	
59			31	20	0.2	Tan, fine **SAND**, dense, moist	
60						Medium dense	
61	SP		23	18	0.5		
62						Dense	
63			37	22	0.2		
64							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL02
Date Drilled: 1/12/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Jackson

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
65	SP		31	16	0.1	Tan with brown mottling, fine **SAND**, dense, moist	
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/13/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/14/05 4. Analytical samples from 3-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
1			6	12	0.0	**FILL**, brown, fine to coarse sand, some silt, little fine to coarse gravel	
2						Brown, silty fine to coarse sand, little fine to coarse gravel	
3			4	14	0.0		
						1" tan, fine to coarse sand at 3.4'	
4							
5			44	15	0.0	Concrete debris	
6							
						Tan-orange, fine to medium **SAND**, trace fine to coarse gravel, dense, moist	
7			35	20	0.0		
8	SP					Tan, fine sand, gravel grades out, medium dense	
9			23	16	0.0	2" fine to coarse layer, some fine gravel at 8.8' Fine to medium sand, trace fine to coarse gravel	
10							
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, moist	
11			22	16	0.0		
	SP					Tan, fine to medium **SAND**, little fine gravel, moist	
12							
	GP					Dark brown to black, fine **GRAVEL**, some medium to coarse sand	
	SP					Tan-orange, fine to medium **SAND**, moist	
13			30	24	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan-orange, fine to medium grading to medium to coarse by 13.2', **SAND**, little fine gravel, medium dense, moist	
14	SP					Tan, fine to medium sand, little fine to coarse gravel	
15			21	16	0.0	1" brown-orange, fine sand with trace silt layer at 15'	
						Tan, fine to coarse **SAND**, little fine to coarse gravel, moist	
16							
17	SW		27	17	0.0		
18							
19	GP		15	19	0.0	Fine **GRAVEL** and coarse sand, little medium sand	
						Tan, fine to coarse **SAND**, little fine gravel	
20							
						Tan, fine to coarse **SAND** and fine **GRAVEL**, some coarse gravel, medium dense, moist	
21	GW		12	19	0.0		
22						Trace fine to coarse gravel	
						Little coarse gravel	
23	SP		15	24	0.0		
	GP					Tan, fine to medium **SAND**	
	SP					Fine **GRAVEL**, some fine to coarse sand	
24						Tan, fine to medium **SAND**, some fine gravel	
						Tan, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
25	SW		33	16	0.0		
26							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
27	SW		42	24	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, dense, moist	
28	SP					2" dark brown followed by tan, fine to medium **SAND**, some silt in dark brown layer, dense Brown, little fine to coarse gravel, medium dense, moist	
29	SW		21	19	1.5	Trace silt, gravel grades out Tan, fine to coarse **SAND**, some fine to coarse gravel, moist	
30	SP					Light brown, fine to medium **SAND**, little fine gravel	
31	SW		18	17	1.9	1" tan, fine to coarse **SAND**, trace fine to coarse gravel, moist Light brown with brown bands, Tan, little gravel	
32							
33	SP		26	22	2.0	Tan, fine to medium **SAND**, trace fine to coarse gravel, moist	
34							
35	SW		16	20	1.1	Tan, fine to coarse **SAND** and fine gravel, moist	
36	SP					Tan, fine **SAND**, trace medium sand and fine to coarse gravel, moist Tan, little gravel	
37			21	20	1.5	Light tan, trace gravel	
38	SW					Tan, fine to coarse **SAND**, trace coarse gravel	
39	GW		21	18	0.8	Black to brown, fine to coarse **GRAVEL**, some fine to coarse sand, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan with brown laminations, fine to medium **SAND**, some coarse sand, medium dense, moist	
40	SW					Tan, fine to coarse **SAND**, moist	
41	SP		20	16	0.0	Brown, fine **SAND** Tan, fine to medium sand, little coarse sand	
42						Brown from 42-42.2' Light tan, coarse sand grades out	
43	SW		24	24	0.0	Light tan, fine to coarse **SAND** and fine gravel, little coarse gravel	
44	SP					Tan, fine **SAND**	
45			15	17	0.8		
46							
47			23	24	0.0		
48	ML					Tan **SILT**, medium dense	
49	SP		12	17	0.0	Seam of dark brown to black, silty sand followed by tan, fine **SAND**, moist 1" clayey sand layer at 49', medium dense	
50	CL					Tan, silty **CLAY**, stiff	
51	SP		18	21	0.0	Tan with orange and black laminations to 51.6', fine to medium **SAND**, trace silt, medium dense, moist	
52						Some coarse sand, little coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	GW					Fine to coarse **GRAVEL**, some fine to coarse sand, very dense	
						Tan, fine **SAND**, very dense, moist	
53			54	21	0.0		
54						Dense	
55			39	21	0.0		
56							
57			32	20	0.0		
						2" orange, trace silt layer at 57.4'	
58						Medium dense	
59	SP		25	16	0.0		
60							
61			29	20	0.0	Brown seam at 60.9'	
62						Intermittent brown mottling, dense	
63			43	21	0.0	Brown seam at 63.1'	
64						Medium dense	
65			26	20	0.0		

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Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: E18 - DL03
Date Drilled: 1/4/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine **SAND**, medium dense	
66	EOB						
67						NOTES: 1. Boring completed to 66' bgs on 1/5/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/6/05 4. Analytical samples from 1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			27	10	0.0	**FILL**, dark brown, silty sand with fine to coarse gravel, moist	*Drill through top 9", blow count reported from bottom foot
0							
1			6	13	0.2		
2						Trace cobbles	
3			11	5	0.0		
4						With cobbles	
5			42	17	0.0	Light brown, fine to coarse sand with fine to coarse gravel, some silt, moist	
6						1" light brown silty sand layer at 6.7'	
7			45	22	0.0		
8						Brown, fine to medium **SAND**, some fine to coarse gravel, trace cobbles, dense, moist	
9	SP		34	17	0.0		
10						Light brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, very dense, moist	
11			55	22	0.7		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, very dense, moist	
12							
						Dark brown, little fine gravel, cobbles and coarse gravel grade out, dense	
13	SW		30	20	0.0		
						Black, some fine gravel, trace cobbles	
						Light brown, some fine to coarse gravel	
14						Brown, little fine gravel, coarse gravel and cobbles grade out	
						Brown to dark brown, sand with fine gravel, little coarse gravel, medium dense	
	SP						
15			24	22	0.0	1" black layer at 14.4'	
						Brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
16						Light brown to brown, fine to coarse **SAND** with fine to coarse gravel, trace cobbles, medium dense, moist	
17			21	16	0.0		
18							
19	SW		11	14	0.0		
20							
21			19	22	1.0	Tan to light brown fine to medium sand layer	
						Light brown, cobbles grade out	
22						Tan to light brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
23	SP		11	14	0.0		
24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
25	SP		25	20	0.7	Tan to light brown, fine to medium **SAND**, little fine gravel, medium dense, moist 2" dark brown to black, medium to coarse sand with fine to coarse gravel layer at 25'	
26							
27	SW		22	15	0.0	Light brown, fine to coarse **SAND** with fine to coarse gravel, medium dense, moist Little fine gravel, coarse gravel grades out	
28							
29			20	20	0.6	Dark brown, some fine to coarse gravel Light brown, little fine gravel, coarse gravel grades out	
30							
31			27	22	0.5	With fine to coarse gravel	
32							
33			24	20	2.6	Trace cobbles	
34							
35			32	24	1.5	Light brown to brown with fine gravel, some coarse gravel, cobbles grade out, dense	
36							
37			24	22	1.0	Trace cobbles 4" brown to dark brown, little fine to coarse gravel layer at 36.5'	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Light brown to brown, fine to coarse **SAND** with fine gravel, some coarse gravel, trace cobbles, medium dense, moist	
38							
			29	20	1.0	Brown to dark brown 3" gravelly sand layer at 39.2'	
39							
40							
			28	22	0.7	Light brown to brown, some fine to coarse gravel, cobbles grade out	
41							
42						Little fine to coarse gravel	
			20	24	2.6		
43							
44						Dark brown with fine to coarse gravel	
	SP		31	24	1.0	Light brown, fine to medium **SAND**, dense, moist	
45							
46							
	ML					Brown, clayey **SILT**, medium dense, moist	
47			15	20	0.6		
	SP					Light brown, fine to medium **SAND**, medium dense, moist	
48							
	SM					Brown, silty **SAND**, medium dense, moist	
	ML					Brown, sandy **SILT**	
49			19	22	0.0		
	ML					Brown, fine to coarse **SAND**, trace fine gravel 2" sandy silt layer at 49.4'	
	SW						
50							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Brown, fine to coarse **SAND**, trace fine gravel, medium dense	
51	ML		16	24	0.0	Brown, sandy **SILT**, medium dense, moist	
52	SW		55	23	0.0	Brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist Light brown to brown with fine to coarse gravel, very dense 1" silty sand layer at 52.4'	
54	SP					Light brown, fine to medium **SAND**, some coarse sand, very dense, moist	
55			75	22	0.7		
56	SM					Dense 5" red brown silty sand layer at 56'	
57	SP		33	20	0.5		
58	SM					1" red brown silty sand layer at 57.8'	
59			34	20	0.5		
60	SP					2" dark brown to black layer at 60'	
61			39	24	1.1		
62							
63			36	19	0.5		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: F18 - DL01
Date Drilled: 2/7/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Kyle Strumfels

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Light brown, fine to medium **SAND**, some coarse sand, dense, moist	
64							
	SP					Medium dense	
65			29	22	0.8		
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 2/8/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 2/8/05 4. Analytical samples from -1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
Date Drilled: 1/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			11	10	0.0	**FILL**, dark brown, sandy silt, little fine to coarse gravel, trace clay, dry	
0						Mottled with white silt to 2'	
1			7	16	0.0		
2						Brick and concrete debris	
3			16	9	0.0		
4						Moist	
5			103	12	0.0		
						Concrete layer from 5.2-6.7'	
6							
7			11	14	0.0	Wood debris, degraded organics	
8	GW					**GRAVEL** and fine to coarse **SAND**, medium dense, moist	
9			20	16	1.6	Tan, fine to medium **SAND**, medium dense, moist	
10	SP					Trace brown seams to 11', trace coarse sand and fine to coarse gravel	
11			26	20	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
Date Drilled: 1/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan with trace brown seams to 12', fine to medium **SAND**, trace coarse sand and coarse gravel, medium dense, moist	
12	SP					Fine to coarse gravel	
13			13	15	0.0		
14	SW					Tan, fine to coarse **SAND**, some coarse gravel, medium dense, moist	
15			26	19	0.0	Brown, some fine gravel, coarse gravel grades out	
16	SP					Tan, fine to medium **SAND**, some fine to coarse gravel, moist Trace fine gravel	
17	SW		18	15	0.0	Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
18						Little gravel	
19			17	15	0.0		
20						Some gravel	
21			18	19	1.0		
22							
23	SP		11	15	0.0	Tan, fine to medium **SAND**, trace coarse gravel, medium dense, moist	
24	SW						

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
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Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
	SP						
25			17	19	0.0	Tan, fine to coarse **SAND**, some fine grave, moist	
						Tan, fine **SAND**, medium dense, moist	
26						Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
	SW						
27			25	16	0.0		
28							
29	SP		20	16	1.0	Tan with brown, fine to medium **SAND**, little fine gravel, medium dense, moist	
30							
	SW					Tan, fine to coarse **SAND,** trace fine gravel, medium dense, moist	
31	SP		25	11	1.6	Brown, medium to coarse **SAND**, some fine sand, medium dense, moist	
						Tan, fine to medium sand, trace fine gravel	
32						Tan, fine to coarse **SAND** and fine gravel, moist	
	SW					Some fine to coarse gravel	
33			25	20	2.0		
						Tan, fine to medium **SAND**, medium dense, moist	
34	SP						
35			25	22	1.7		
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
	SP						
36						Tan, fine to medium **SAND**, trace fine gravel, medium dense, moist	
	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	
37			18	17	1.8		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
Date Drilled: 1/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SW					Tan, fine to coarse **SAND**, some fine gravel, medium dense, moist	
	GP					Brown, fine **GRAVEL** and fine to coarse **SAND**, moist	
38	SW		36	13	1.0	Tan, fine to coarse **SAND**, little fine to coarse gravel, trace cobbles, dense, moist Dark tan to brown, some fine to coarse gravel, trace silt	
39							
40			36	17	1.6	1" black, medium to coarse sand with fine gravel layer at 40' Tan, trace fine gravel, dense	
41	SP					Tan, fine to medium **SAND**, dense, moist	
42			23	18	3.7	Medium dense	
43						1" medium to coarse sand with fine gravel layer at 43.6'	
44			24	22	2.5		
45						2" brown, fine, medium dense layer at 45.5'	
46			19	17	1.7	Tan and brown, fine sand, trace silt	
47							
48			12	19	1.1	1" fine to coarse layer at 47.6' Tan, silt grades out	
49	ML					Tan **SILT**, trace to some clay, medium dense, moist Tan, fine sand at 49.3'	
50	SP					Tan to white, fine **SAND**, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
Date Drilled: 1/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
51	CL		12	10	0.7	Tan, silty **CLAY** with silt seams, stiff, moist	
52	SP					Tan, fine **SAND**, moist, dense 1" brown, sandy silt layer at 52.5'	
53	SW		48	11	0.3	Tan, fine to coarse **SAND** and fine gravel, some coarse gravel, dense, moist Dark brown	
54	SP					Tan to white, fine **SAND**, trace silt to 54', very dense, moist	
55			56	20	0.5		
56	SM					Brown and tan, silty fine **SAND**, medium dense, moist	
57	SP		29	17	0.0	Tan, fine **SAND**, medium dense	
58						Tan to white, trace silt	
59			18	17	0.0		
60							
61			23	20	0.0		
62							
63			10	16	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: G18 - DL01
Date Drilled: 1/14/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Tan to white, fine **SAND**, trace silt, medium dense	
64	SP					Very loose	
65			1	18	0.0		
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/18/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/18/05 4. Analytical samples from +1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						Concrete	
-1			5	12	1.8	**FILL**, brown silt, little fine to coarse sand and gravel	
0						Brown, silty sand, some fine to coarse gravel, moist	
1			8	14	5.0		
2							NA = Not available (PID data not recorded)
3			14	3	NA	Concrete	
4						Brown, silty sand, little clay and fine to coarse gravel, moist	
5			8	16	4.6		
6							
7			3	10	0.0	Concrete and debris	
						Tan, fine to coarse **SAND**, some fine to coarse gravel, trace silt, very loose, dry	
8						Medium dense	
9	SW		17	18	1.7		
10							
11	SP		14	17	0.0	Tan, medium to coarse **SAND** and fine gravel, some coarse gravel	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
12	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist Brown	
13	SP		12	11	2.1	Tan, fine to medium **SAND**, little coarse sand and fine gravel, medium dense, moist	
14 15			19	24	2.2		
16	SW					Tan, fine to coarse **SAND** and fine gravel, some coarse gravel, medium dense, moist Some fine to coarse gravel, trace silt	
17			13	24	3.1		
18						Some fine gravel, little coarse gravel	
19			16	24	8.4		
20						Little fine to coarse gravel	
21	SP		12	24	0.0	Brown, medium to coarse **SAND**, some fine sand, moist	
	SW					Tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
22	GP		11	22	0.0	Tan, fine to coarse **SAND** and fine **GRAVEL**, little coarse gravel	
23 24							

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine to medium **SAND**, little coarse sand and fine gravel, medium dense, moist	
25	SM		11	17	1.7	Brown, silty **SAND**, some fine to coarse gravel, moist	
	SW					Tan, fine to coarse **SAND**, little fine gravel, moist	
26							
						Tan, fine to medium, silty **SAND**, some coarse sand, little fine gravel, trace coarse gravel, medium dense, moist	
27	SP		15	24	2.3		
28						Little coarse sand and fine gravel, coarse gravel grades out	
						Brown, little fine to coarse gravel	
29			17	11	3.5	Tan, fine to coarse **SAND** and fine gravel, little coarse gravel, medium dense, moist	
30							
31	SW		18	24	0.1		
32						Some fine gravel, little coarse gravel	
33			21	24	0.0		
34						Tan with brown laminations, fine **SAND**, medium dense, moist	
35	SP		25	19	3.6	Fine to medium sand, little coarse gravel, laminations grade out	
36							
	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
37			20	24	1.1		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
38	SW					Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
						And fine gravel, coarse gravel grades out	
39	SP		22	24	0.0	Brown, medium to coarse **SAND** and fine gravel, some coarse gravel	
	SW					Tan, fine to coarse **SAND**, little fine gravel, moist	
40						Brown, medium to coarse **SAND** and fine gravel	
41			22	24	1.2	Tan, fine to medium sand, some coarse sand, little coarse gravel, moist	
42							
43	SW		22	24	1.7	Tan, fine to coarse **SAND**, little fine to coarse gravel, medium dense, moist	
44						Brown, medium to coarse **SAND**, moist	
45	SP		18	20	1.1	Tan, fine to medium sand, little coarse sand, trace silt, medium dense, moist	
46							
47	ML		13	24	3.4	Brown **SILT,** medium dense Interbedded clayey silt and tan, fine sand	
48	SP					Tan, fine **SAND**, moist, medium dense	
49	ML		15	24	4.3	Tan to brown, sandy **SILT**, grading to clayey by 49', medium dense, moist	
	ML						
50	SP					Tan, fine **SAND**, moist, 1" brown, clayey silt at 49.5'	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
	SP					Tan, fine **SAND**, loose, moist	
51	CL		10	24	1.8	Brown, silty **CLAY**, stiff, moist	
52							
53	SW		29	24	0.7	Brown, fine to coarse **SAND** and fine to coarse gravel, medium dense	
	SP					Tan, fine **SAND**, trace silt, medium dense, moist	
54						Dense	
55			38	24	2.0		
56						Medium dense	
57			25	24	0.0		
58	SP					White, silt grades out, medium dense	
	SM					2" orange, silty sand at 58.3'	
59			19	24	0.0		
60							
61			27	24	0.0		
	SM						
	SM					1/3" orange silty sand seam at 61.2'	
62						1/3" orange silty sand seam at 61.5'	
						Trace silt	
63			18	22	0.0		

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Cell 9 Delineation Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: H18 - DL01
Date Drilled: 1/26/05
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Jessica Ross

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	Description	Remarks
						White, fine **SAND**, trace silt, medium dense, moist	
64							
	SP						
	SM		21	22	0.0	2" orange, silty sand at 64.7'	
65							
66	EOB						
67						NOTES: 1. Boring completed to 66' below reference on 1/27/05 2. Groundwater not encountered 3. Boring backfilled with clean soil on 1/27/05 4. Analytical samples from +1-63': a. On-Site radiological every foot b. On-Site nickel every odd-numbered foot 5. SP sample collected at 64', analyzed on and off Site for radioactivity, VOCs and nickel and off Site for beryllium	
68							
69							
70							
71							
72							
73							
74							
75							
76							

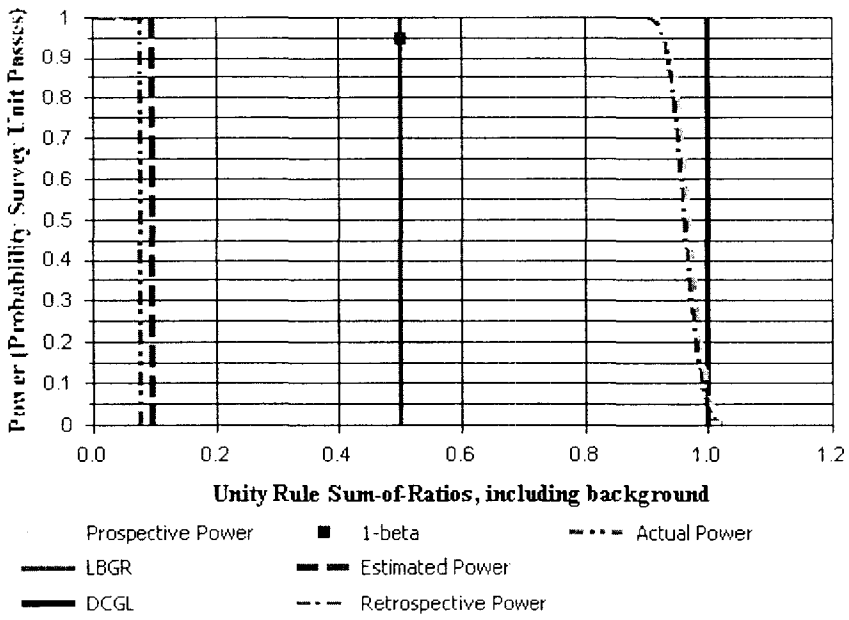
APPENDIX D

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 3 02		
Report Number:	2		
Survey Unit Samples:	22		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
29078	S	0.17	0.29	0.28
28562	S	0.17	0.41	0.34
29773	S	0.13	6.24	6.32
29013	S	0.41	0.29	0.29
29731	S	0.2	0.26	0.34
28454	S	0.12	0.18	0.15
28604	S	0.12	0.27	0.2
29616	S	0.2	0.42	0.45
28789	S	0.16	0.18	0.18
29439	S	0.25	0.2	0.21
29686	S	0.14	0.24	0.23
29337	S	0.23	0.18	0.2
28960	S	0.24	0.18	0.17
28893	S	0.28	0.19	0.2
29149	S	0.15	0.23	0.17
29526	S	0.17	0.7	0.75
28681	S	0.11	0.27	0.23
28512	S	0.27	0.3	0.3
28849	S	0.11	0.14	0.12
29398	S	0.09	0.12	0.13
29830	S	0.12	7.7	8.1
28742	S	0.12	0.15	0.19

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
29078	S	0.07
28562	S	0.07
29773	S	0.3
29013	S	0.16
29731	S	0.08
28454	S	0.05
28604	S	0.05
29616	S	0.09
28789	S	0.07
29439	S	0.1
29686	S	0.06
29337	S	0.09
28960	S	0.09
28893	S	0.11
29149	S	0.06
29526	S	0.09
28681	S	0.05
28512	S	0.11

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28849	S	0.04
29398	S	0.04
29830	S	0.36
28742	S	0.05

DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	22	N/A	N=13
Mean (SOR)	0.10	N/A	0.1
Median (SOR)	0.08	N/A	N/A
Std Dev (SOR)	0.08	N/A	0.06
High Value (SOR)	0.36	N/A	N/A
Low Value (SOR)	0.04	N/A	N/A

SU05 MARSSIM Evaluation Results Using Severn Trent Laboratories, Inc. Sample Results

SU05, Intervals 1, 2, and 3 passed the MARSSIM[1] Sign Test and the associated soils are considered releasable from a radiological perspective. These intervals consist of SP samples collected and analyzed in the 0 to 3-m, 3 to 6-m, and 6 to 9-m depth ranges, respectively. The MARSSIM protocol uses a non-parametric statistical analysis test that evaluates all of the SP sample results for a single interval separately. Therefore, there were three independent evaluations within the three-dimensional footprint of SU05.

There were a total of 21 SP sample results in Interval 1, 21 in Interval 2, and 21 in Interval 3. All samples were analyzed for radiological analytes of interest (Th-232, U-234, and U-238) for purposes of this evaluation. The sample results for each of the samples are presented in **Table 2** and are the results reported by STL.

The charts on the subsequent pages of this appendix were generated by the COMPASS[2] computer code. As shown on the first page of the COMPASS Surface Soil Survey Plan for each interval, a minimum of 13 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As stated earlier, this MARSSIM-based analysis for Intervals 1, 2, and 3 in this SU were each based on 21 soil sample analyses, respectively.

Included in the assessment of SU05 are three reports. The cover report is titled *Site Report* and provides information the radiological contaminants and their respective DCGLw[3] (the Site cleanup levels specified in the Work Plan) used in the evaluation of each interval.

Each interval assessment is comprised of two COMPASS reports. The first report is titled *Surface Soil Survey Plan*. This report contains information that was used in the planning phase of the survey or soil sample collection. This information was based on the Site's cleanup levels and cell parameters or is information that was derived from these parameters. The last section of this report contains information that, by design, was an estimate of the average concentration and the standard deviation anticipated to be present in the survey unit interval for each radionuclide. The values in this report were based on the actual average concentration and standard deviation of each radionuclide as calculated from the sample results.

The second report is titled *DQA Surface Soil Report*. This report presents the results of performing a non-parametric statistical analysis called the Sign Test on the samples results. On the first page of this report is given the *Assessment Conclusion* which is *Reject Null Hypothesis (Survey Unit PASSES)* for all three intervals. The only other possible conclusion is if the survey unit did not pass. Other information presented in the report is either input information that is echoed back in the report or is information related to the performance of the Sign Test. Also included in the report is a table titled *Basic Statistical Quantities Summary*. The average or mean SOR is shown in this table. This SOR value is high (conservative) by approximately a factor of 2 due to the use of individual uranium radionuclides in the evaluation and the limitations on the flexibility of this version of COMPASS. The information in this table supports the earlier stated conclusion as it demonstrates that the average concentration of radiological contaminants is significantly below the cleanup levels.

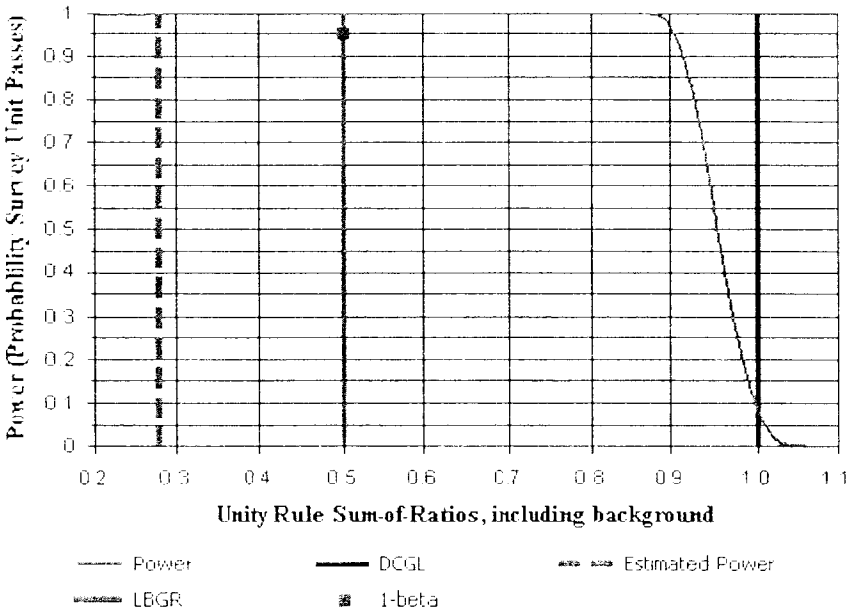
[1] NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), August 2000
[2] *COMPASS Code* Version 1.0.0 was developed under the sponsorship of the U. S. Nuclear Regulatory Commission for implementing the MARSSIM in support of the decommissioning license termination rule (10 CFR Part 20, Subpart E).
[3] For these purposes, the term DCGL is synonymous with the term cleanup level.

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 1 02		
Comments:	SU05 Interval 1 Run 02		
Area (m²):	2,961	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.09
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.28
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve



Site Report

Site Summary

Site Name: GTEOSI - Hicksville Site

Planner(s): Shane Brightwell

Contaminant Summary

NOTE: Surface soil DCGLw units are pCi/g
Building surface DCGLw units are dpm/100 cm²

Contaminant	Type	DCGLw	Screening Value Used?	Area (m²)	Area Factor
Th-232	Surface Soil	2.80	No	1	12.3
				3	6.08
				10	3.12
				30	2.24
				100	1.75
				300	1.47
				1,000	1.05
				3,000	1.03
				10,000	1
U-234	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1
U-238	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1

Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

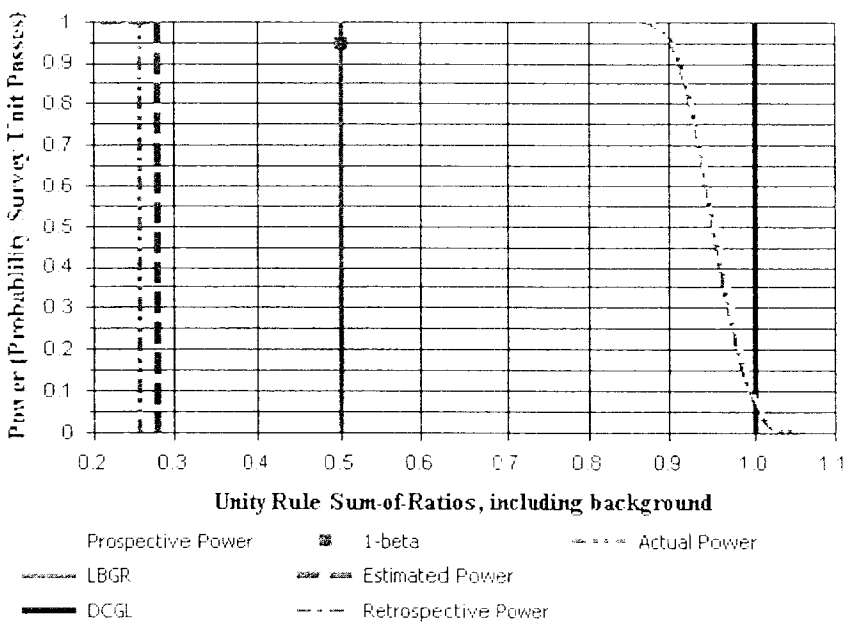
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.612 ± 0.206	N/A
U-234	1.606 ± 1.949	N/A
U-238	1.579 ± 2.005	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 1 02		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
30679	S	0.63	0.89	0.81
30282	S	0.41	2.94	2.79
30149	S	0.81	1.03	0.88
30589	S	0.59	1.38	1.17
30469	S	0.62	0.4	0.46
30367	S	0.38	0.58	0.59
29985	S	0.54	6.81	6.87
30711	S	0.45	0.94	0.83
29951	S	0.85	1.57	1.57
30040	S	0.38	2.79	2.8
30356	S	0.74	0.58	0.57
30217	S	0.83	7.3	7.6
30435	S	0.91	0.66	0.66
29847	S	0.95	0.93	0.84
30417	S	0.73	0.83	0.79
30640	S	0.32	0.37	0.35
30098	S	0.6	1.66	1.54
30539	S	0.86	0.76	0.68
29921	S	0.45	0.52	0.51
30331	S	0.54	0.35	0.43
29898	S	0.28	0.43	0.42

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30679	S	0.26
30282	S	0.26
30149	S	0.33
30589	S	0.26
30469	S	0.24
30367	S	0.16
29985	S	0.47
30711	S	0.2
29951	S	0.37
30040	S	0.25
30356	S	0.29
30217	S	0.59
30435	S	0.35
29847	S	0.37
30417	S	0.29
30640	S	0.13
30098	S	0.28
30539	S	0.34
29921	S	0.18

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30331	S	0.21
29898	S	0.12

DQA Surface Soil Report

Basic Statistical Quantities Summary

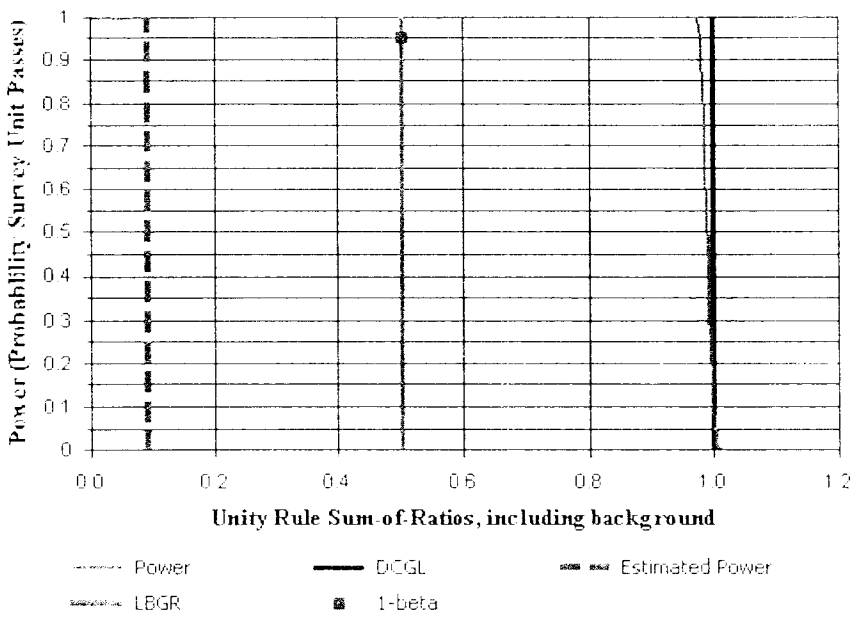
Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.28	N/A	0.28
Median (SOR)	0.26	N/A	N/A
Std Dev (SOR)	0.11	N/A	0.09
High Value (SOR)	0.59	N/A	N/A
Low Value (SOR)	0.12	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 2 01		
Comments:	SU05 Interval 2 Run 01		
Area (m²):	2,961	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.02
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.09
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

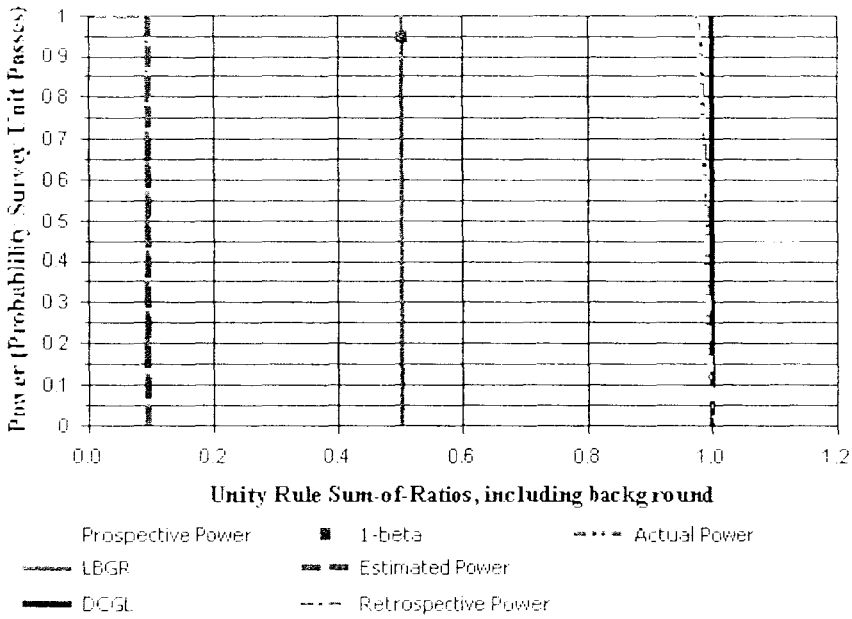
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.217 ± 0.058	N/A
U-234	0.332 ± 0.153	N/A
U-238	0.323 ± 0.171	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 2 01		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
30291	S	0.21	0.29	0.24
30379	S	0.31	0.27	0.2
30159	S	0.28	0.25	0.26
30484	S	0.17	0.2	0.2
30688	S	0.2	0.3	0.21
29993	S	0.19	0.38	0.44
30598	S	0.25	0.28	0.22
30055	S	0.21	0.79	0.8
29961	S	0.21	0.23	0.26
30236	S	0.24	0.39	0.33
30370	S	0.16	0.37	0.36
30728	S	0.22	0.18	0.26
30452	S	0.3	0.21	0.22
30425	S	0.17	0.21	0.17
30340	S	0.16	0.2	0.14
29907	S	0.31	0.57	0.68
29934	S	0.21	0.22	0.33
30113	S	0.07	0.52	0.54
29862	S	0.23	0.46	0.33
30654	S	0.19	0.23	0.17
30564	S	0.26	0.41	0.42

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30291	S	0.09
30379	S	0.12
30159	S	0.11
30484	S	0.07
30688	S	0.08
29993	S	0.09
30598	S	0.1
30055	S	0.11
29961	S	0.09
30236	S	0.1
30370	S	0.07
30728	S	0.09
30452	S	0.12
30425	S	0.07
30340	S	0.06
29907	S	0.14
29934	S	0.09
30113	S	0.05
29862	S	0.1

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30654	S	0.08
30564	S	0.11

DQA Surface Soil Report

Basic Statistical Quantities Summary

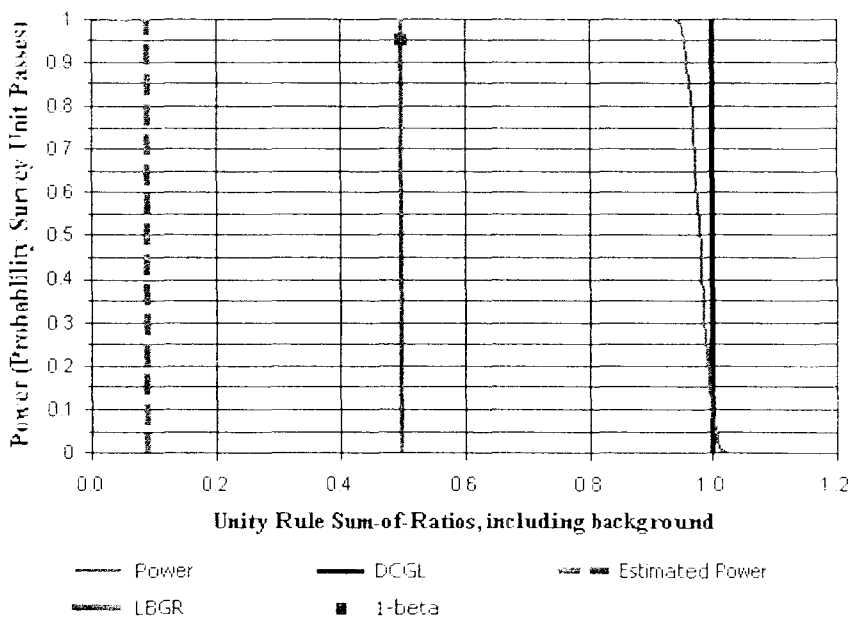
Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.09	N/A	0.09
Median (SOR)	0.09	N/A	N/A
Std Dev (SOR)	0.02	N/A	0.02
High Value (SOR)	0.14	N/A	N/A
Low Value (SOR)	0.05	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 3 01		
Comments:	SU05 Interval 3 Run 01		
Area (m²):	2,961	Classification:	2
Selected Test:	Sign	Estimated Sigma (SOR):	0.04
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.09
Alpha:	0.050	Estimated Power:	1
Beta:	0.050		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	N/A
U-234	50.00	N/A	N/A	N/A	N/A
U-238	50.00	N/A	N/A	N/A	N/A

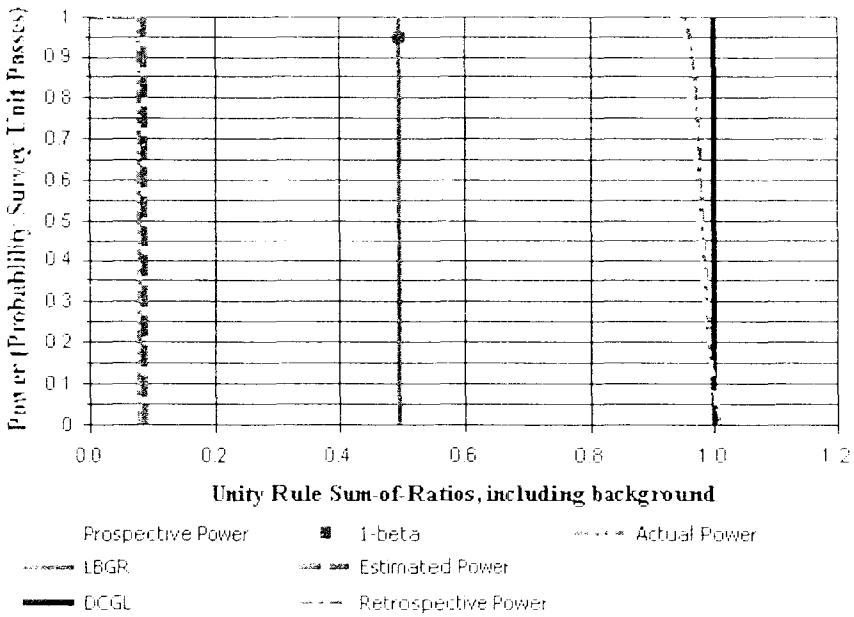
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.216 ± 0.105	N/A
U-234	0.27 ± 0.248	N/A
U-238	0.273 ± 0.225	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU05 Interval 3 01		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
30017	S	0.2	1.29	1.17
30304	S	0.29	0.19	0.21
30401	S	0.24	0.2	0.2
30606	S	0.2	0.2	0.14
30184	S	0.61	0.31	0.26
30499	S	0.18	0.15	0.18
30697	S	0.25	0.18	0.26
30256	S	0.16	0.51	0.58
30075	S	0.17	0.18	0.17
30739	S	0.12	0.1	0.13
30391	S	0.12	0.23	0.19
29970	S	0.25	0.18	0.14
30461	S	0.12	0.19	0.27
30443	S	0.22	0.29	0.23
30572	S	0.32	0.17	0.24
29881	S	0.21	0.21	0.19
29924	S	0.16	0.31	0.28
29942	S	0.17	0.24	0.28
30127	S	0.12	0.2	0.23
30350	S	0.2	0.16	0.18
30666	S	0.21	0.19	0.2

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30017	S	0.12
30304	S	0.11
30401	S	0.1
30606	S	0.08
30184	S	0.23
30499	S	0.07
30697	S	0.1
30256	S	0.08
30075	S	0.07
30739	S	0.05
30391	S	0.05
29970	S	0.1
30461	S	0.05
30443	S	0.09
30572	S	0.12
29881	S	0.08
29924	S	0.07
29942	S	0.07
30127	S	0.05

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
30350	S	0.08
30666	S	0.08

DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.09	N/A	0.09
Median (SOR)	0.08	N/A	N/A
Std Dev (SOR)	0.04	N/A	0.04
High Value (SOR)	0.23	N/A	N/A
Low Value (SOR)	0.05	N/A	N/A

SU03 MARSSIM Evaluation Results Using Severn Trent Laboratories, Inc. Sample Results

SU03, Intervals 1, 2, and 3 passed the MARSSIM[1] Sign Test and the associated soils are considered releasable from a radiological perspective. These intervals consist of SP samples collected and analyzed in the 0 to 3-m, 3 to 6-m, and 6 to 9-m depth ranges, respectively. The MARSSIM protocol uses a non-parametric statistical analysis test that evaluates all of the SP sample results for a single interval separately. Therefore, there were three independent evaluations within the three-dimensional footprint of SU03.

There were a total of 21 SP sample results in Interval 1, 21 in Interval 2, and 21 in Interval 3. All samples were analyzed for radiological analytes of interest (Th-232, U-234, and U-238) for purposes of this evaluation. The sample results for each of the samples are presented in **Table 2** and are the results reported by STL.

The charts on the subsequent pages of this appendix were generated by the COMPASS[2] computer code. As shown on the first page of the COMPASS Surface Soil Survey Plan for each interval, a minimum of 13 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As stated earlier, this MARSSIM-based analysis for Intervals 1, 2, and 3 in this SU were each based on 21 soil sample analyses, respectively.

Included in the assessment of SU03 are three reports. The cover report is titled *Site Report* and provides information the radiological contaminants and their respective DCGLw[3] (the Site cleanup levels specified in the Work Plan) used in the evaluation of each interval.

Each interval assessment is comprised of two COMPASS reports. The first report is titled *Surface Soil Survey Plan*. This report contains information that was used in the planning phase of the survey or soil sample collection. This information was based on the Site's cleanup levels and cell parameters or is information that was derived from these parameters. The last section of this report contains information that, by design, was an estimate of the average concentration and the standard deviation anticipated to be present in the survey unit interval for each radionuclide. The values in this report were based on the actual average concentration and standard deviation of each radionuclide as calculated from the sample results.

The second report is titled *DQA Surface Soil Report*. This report presents the results of performing a non-parametric statistical analysis called the Sign Test on the samples results. On the first page of this report is given the *Assessment Conclusion* which is *Reject Null Hypothesis (Survey Unit PASSES)* for all three intervals. The only other possible conclusion is if the survey unit did not pass. Other information presented in the report is either input information that is echoed back in the report or is information related to the performance of the Sign Test. Also included in the report is a table titled *Basic Statistical Quantities Summary*. The average or mean SOR is shown in this table. This SOR value is high (conservative) by approximately a factor of 2 due to the use of individual uranium radionuclides in the evaluation and the limitations on the flexibility of this version of COMPASS. The information in this table supports the earlier stated conclusion as it demonstrates that the average concentration of radiological contaminants is significantly below the cleanup levels.

[1] NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), August 2000.
[2] *COMPASS Code* Version 1.0.0 was developed under the sponsorship of the U. S. Nuclear Regulatory Commission for implementing the MARSSIM in support of the decommissioning license termination rule (10 CFR Part 20, Subpart E).
[3] For these purposes, the term DCGL is synonymous with the term cleanup level.

Site Report

Site Summary

Site Name: GTEOSI - Hicksville Site

Planner(s): Shane Brightwell

Contaminant Summary

NOTE: Surface soil DCGLw units are pCi/g.
Building surface DCGLw units are dpm/100 cm².

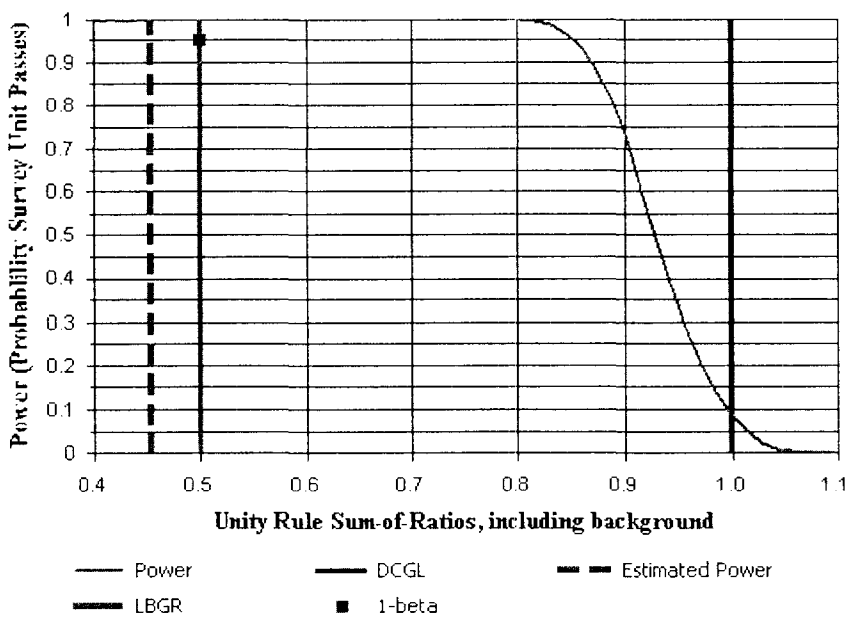
Contaminant	Type	DCGLw	Screening Value Used?	Area (m²)	Area Factor
Th-232	Surface Soil	2.80	No	1	12.3
				3	6.08
				10	3.12
				30	2.24
				100	1.75
				300	1.47
				1,000	1.05
				3,000	1.03
				10,000	1
U-234	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1
U-238	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 1 01		
Comments:	SU03 Interval 1 Run 01		
Area (m²):	1,539	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.14
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.45
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

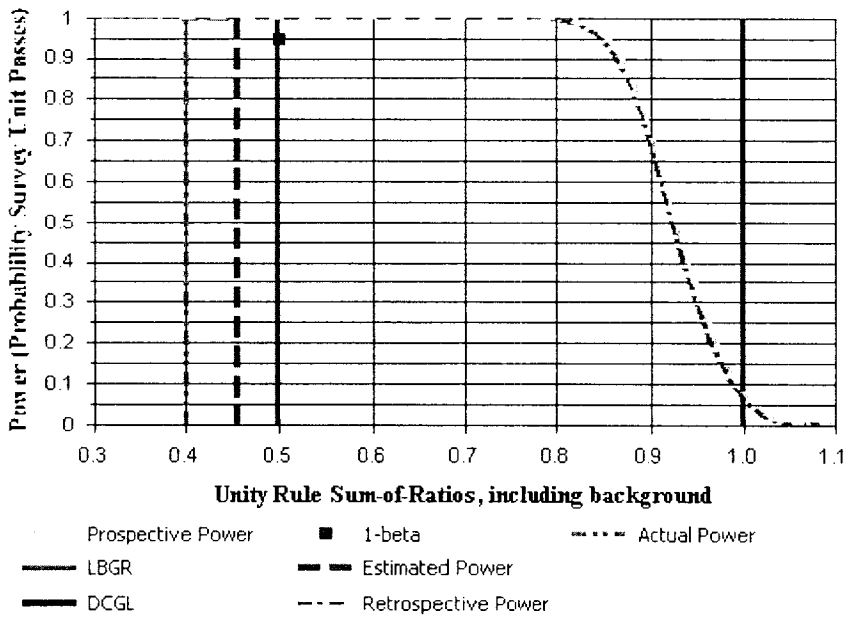
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.783 ± 0.254	N/A
U-234	4.712 ± 4.108	N/A
U-238	4.025 ± 3.757	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 1 01		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
26414	S	0.81	9.8	6.5
27567	S	0.87	8.6	7.9
27856	S	0.58	4.92	3.37
28020	S	0.61	2.1	2.08
27404	S	0.68	5.79	3.92
28275	S	0.73	16.2	16.3
26723	S	0.95	9.2	5.87
27089	S	0.81	6.33	5.31
27626	S	0.95	1.06	1
28329	S	0.74	3.6	3.23
27958	S	0.79	9	8
27321	S	0.82	6.74	6.38
26658	S	0.45	0.85	0.42
27738	S	1.17	2.05	1.65
28134	S	0.41	4.97	5.12
27474	S	0.59	0.49	0.36
26539	S	0.87	0.55	0.72
27256	S	0.62	2.59	2.66
28385	S	0.75	0.58	0.55
26856	S	0.66	2.32	1.82
28216	S	1.59	1.22	1.36

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
26414	S	0.62
27567	S	0.64
27856	S	0.37
28020	S	0.3
27404	S	0.44
28275	S	0.91
26723	S	0.64
27089	S	0.52
27626	S	0.38
28329	S	0.4
27958	S	0.62
27321	S	0.56
26658	S	0.19
27738	S	0.49
28134	S	0.35
27474	S	0.23
26539	S	0.34
27256	S	0.33
28385	S	0.29

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
26856	S	0.32
28216	S	0.62

DQA Surface Soil Report

Basic Statistical Quantities Summary

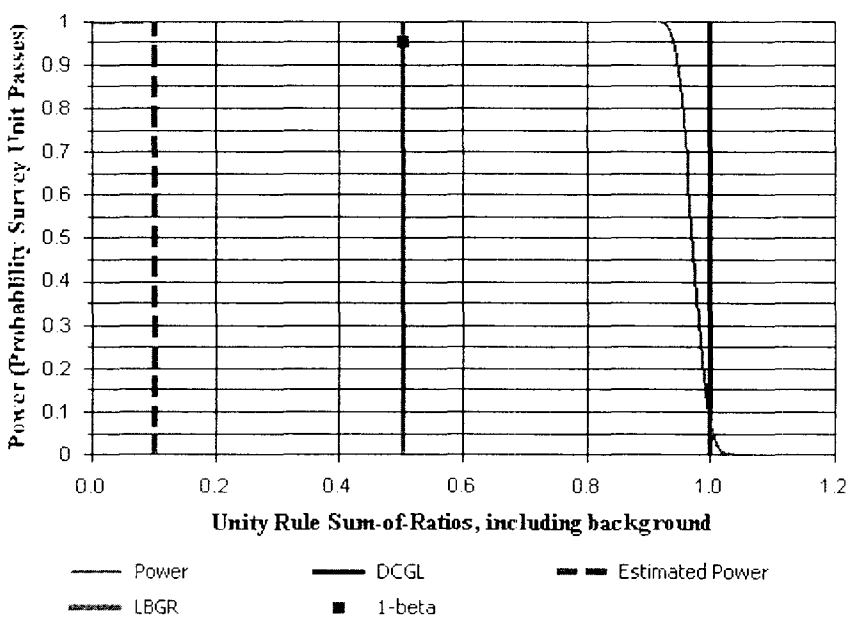
Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.46	N/A	0.45
Median (SOR)	0.40	N/A	N/A
Std Dev (SOR)	0.18	N/A	0.14
High Value (SOR)	0.91	N/A	N/A
Low Value (SOR)	0.19	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 2 01		
Comments:	SU03 Interval 2 Run 01		
Area (m²):	1,539	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.06
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.1
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

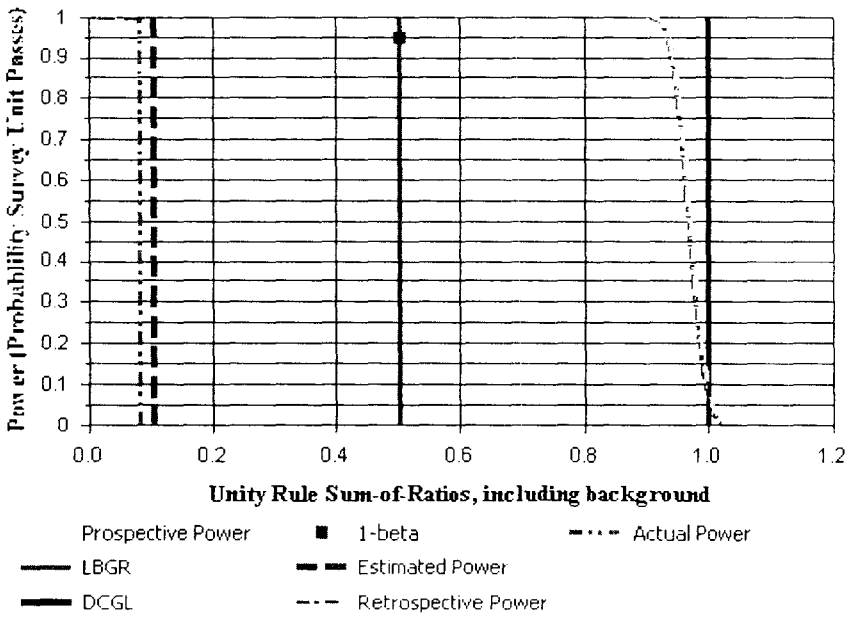
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.193 ± 0.071	N/A
U-234	0.902 ± 1.719	N/A
U-238	0.863 ± 1.871	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 2 01		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
27867	S	0.28	0.61	0.53
28284	S	0.18	0.38	0.3
28041	S	0.17	8.2	8.9
27426	S	0.38	1.86	1.49
27576	S	0.14	0.82	0.76
26446	S	0.14	0.21	0.19
26779	S	0.14	0.29	0.25
27974	S	0.12	1.06	0.94
27118	S	0.21	0.29	0.29
27336	S	0.18	0.8	0.84
28341	S	0.27	0.51	0.41
27658	S	0.25	0.79	0.47
26673	S	0.31	0.51	0.38
26566	S	0.15	0.22	0.19
26896	S	0.17	0.19	0.14
28393	S	0.21	0.25	0.21
28241	S	0.14	0.28	0.3
28152	S	0.14	0.78	0.71
27280	S	0.11	0.43	0.4
27752	S	0.24	0.32	0.3
27497	S	0.13	0.14	0.12

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
27867	S	0.12
28284	S	0.08
28041	S	0.4
27426	S	0.2
27576	S	0.08
26446	S	0.06
26779	S	0.06
27974	S	0.08
27118	S	0.09
27336	S	0.1
28341	S	0.12
27658	S	0.12
26673	S	0.13
26566	S	0.06
26896	S	0.07
28393	S	0.08
28241	S	0.06
28152	S	0.08
27280	S	0.05

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
27752	S	0.1
27497	S	0.05

DQA Surface Soil Report

Basic Statistical Quantities Summary

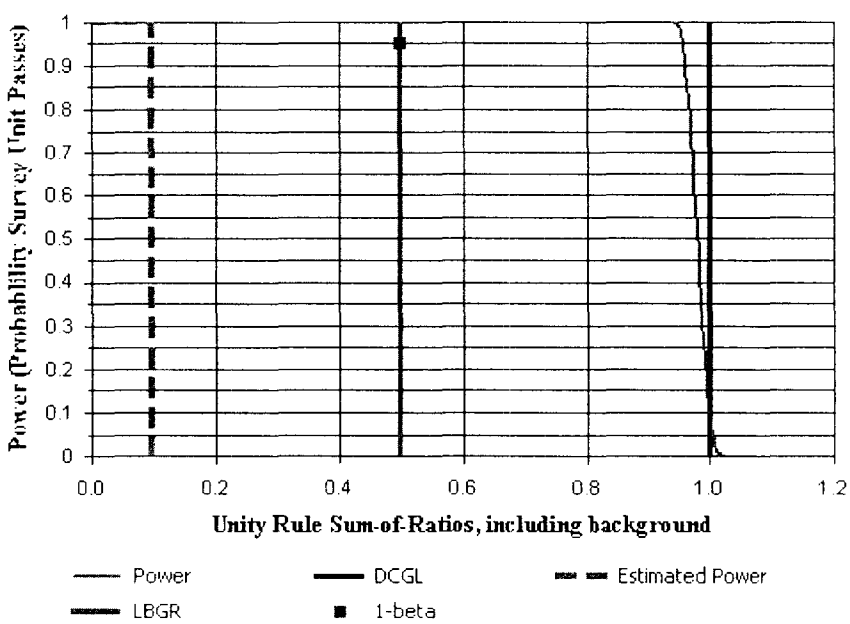
Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.10	N/A	0.1
Median (SOR)	0.08	N/A	N/A
Std Dev (SOR)	0.08	N/A	0.06
High Value (SOR)	0.40	N/A	N/A
Low Value (SOR)	0.05	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 3 01		
Comments:	SU03 Interval 3 Run 01		
Area (m²):	1,539	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.04
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.1
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

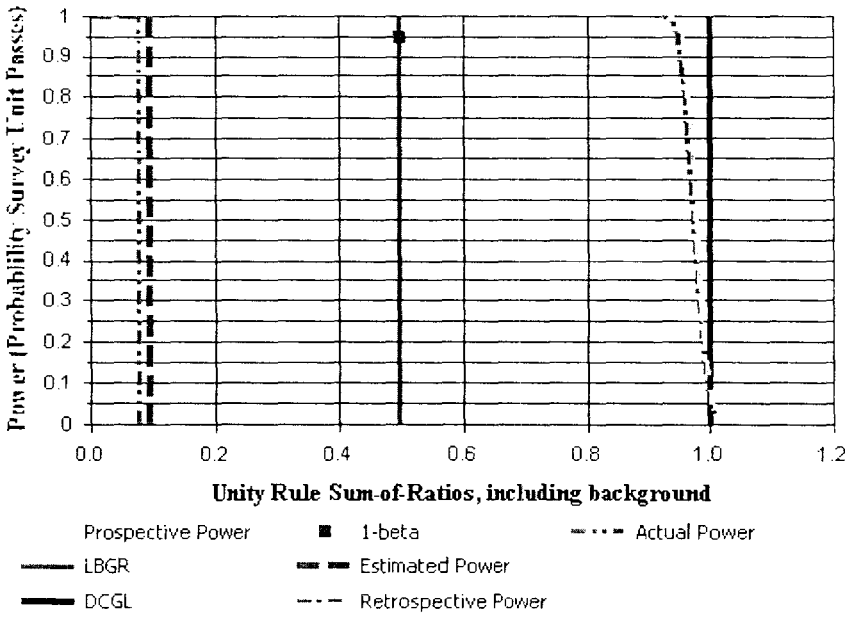
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.213 ± 0.077	N/A
U-234	0.507 ± 0.89	N/A
U-238	0.486 ± 0.862	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU03 Interval 3 01		
Report Number:	1		
Survey Unit Samples:	21		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
28060	S	0.45	4.31	4.18
26479	S	0.12	0.16	0.2
27885	S	0.16	0.77	0.57
27439	S	0.2	0.42	0.45
26813	S	0.18	0.15	0.16
28300	S	0.24	0.14	0.21
27590	S	0.15	0.52	0.62
27998	S	0.19	0.43	0.47
26698	S	0.12	0.17	0.18
27366	S	0.27	0.26	0.21
27166	S	0.26	0.54	0.51
27678	S	0.23	0.42	0.26
28351	S	0.27	0.18	0.22
28405	S	0.15	0.13	0.16
28263	S	0.18	0.31	0.24
27533	S	0.2	0.19	0.19
26617	S	0.21	0.17	0.2
26926	S	0.15	0.17	0.12
27761	S	0.27	0.22	0.24
28170	S	0.16	0.61	0.61
27298	S	0.33	0.35	0.22

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28060	S	0.33
26479	S	0.05
27885	S	0.08
27439	S	0.09
26813	S	0.07
28300	S	0.09
27590	S	0.08
27998	S	0.09
26698	S	0.05
27366	S	0.11
27166	S	0.11
27678	S	0.1
28351	S	0.1
28405	S	0.06
28263	S	0.07
27533	S	0.08
26617	S	0.08
26926	S	0.06
27761	S	0.11

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28170	S	0.08
27298	S	0.13

DQA Surface Soil Report

Basic Statistical Quantities Summary

Statistic	Survey Unit	Background	DQO Results
Sample Number	21	N/A	N=13
Mean (SOR)	0.10	N/A	0.1
Median (SOR)	0.08	N/A	N/A
Std Dev (SOR)	0.06	N/A	0.04
High Value (SOR)	0.33	N/A	N/A
Low Value (SOR)	0.05	N/A	N/A

SU04 MARSSIM Evaluation Results Using Severn Trent Laboratories, Inc. Sample Results

SU04, Intervals 1, 2, and 3 passed the MARSSIM[1] Sign Test and the associated soils are considered releasable from a radiological perspective. These intervals consist of SP samples collected and analyzed in the 0 to 3-m, 3 to 6-m, and 6 to 9-m depth ranges, respectively. The MARSSIM protocol uses a non-parametric statistical analysis test that evaluates all of the SP sample results for a single interval separately. Therefore, there were three independent evaluations within the three-dimensional footprint of SU04.

There were a total of 18 SP sample results in Interval 1, 22 in Interval 2, and 22 in Interval 3. All samples were analyzed for radiological analytes of interest (Th-232, U-234, and U-238) for purposes of this evaluation. The sample results for each of the samples are presented in **Table 2** and are the results reported by STL.

The charts on the subsequent pages of this appendix were generated by the COMPASS[2] Software. As shown on the first page of the COMPASS Surface Soil Survey Plan for each interval, a minimum of 13 soil sample analyses were sufficient for the MARSSIM-based analysis to be statistically significant. As stated earlier, this MARSSIM-based analysis for Intervals 1, 2, and 3 in this SU were based on 18, 22, and 22 soil sample analyses, respectively.

Included in the assessment of SU04 are three reports. The cover report is titled *Site Report* and provides information the radiological contaminants and their respective DCGLw[3] (the Site cleanup levels specified in the Work Plan) used in the evaluation of each interval.

Each interval assessment is comprised of two COMPASS reports. The first report is titled *Surface Soil Survey Plan*. This report contains information that was used in the planning phase of the survey or soil sample collection. This information was based on the Site's cleanup levels and cell parameters or is information that was derived from these parameters. The last section of this report contains information that, by design, was an estimate of the average concentration and the standard deviation anticipated to be present in the survey unit interval for each radionuclide. The values in this report were based on the actual average concentration and standard deviation of each radionuclide as calculated from the sample results.

The second report is titled *DQA Surface Soil Report*. This report presents the results of performing a non-parametric statistical analysis called the Sign Test on the samples results. On the first page of this report is given the *Assessment Conclusion* which is *Reject Null Hypothesis (Survey Unit PASSES)* for all three intervals. The only other possible conclusion is if the survey unit did not pass. Other information presented in the report is either input information that is echoed back in the report or is information related to the performance of the Sign Test. Also included in the report is a table titled *Basic Statistical Quantities Summary*. The average or mean SOR is shown in this table. This SOR value is high (conservative) by approximately a factor of 2 due to the use of individual uranium radionuclides in the evaluation and the limitations on the flexibility of this version of the COMPASS Software. The information in this table supports the earlier stated conclusion as it demonstrates that the average concentration of radiological contaminants is significantly below the cleanup levels.

[1] NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), August 2000.
[2] *COMPASS Software* Version 1.0.0 was developed under the sponsorship of the U. S. Nuclear Regulatory Commission for implementing the MARSSIM in support of the decommissioning license termination rule (10 CFR Part 20, Subpart E).
[3] For these purposes, the term DCGL is synonymous with the term cleanup level.

Site Report

Site Summary

Site Name: GTEOSI - Hicksville Site

Planner(s): Shane Brightwell

Contaminant Summary

NOTE: Surface soil DCGLw units are pCi/g.
Building surface DCGLw units are dpm/100 cm².

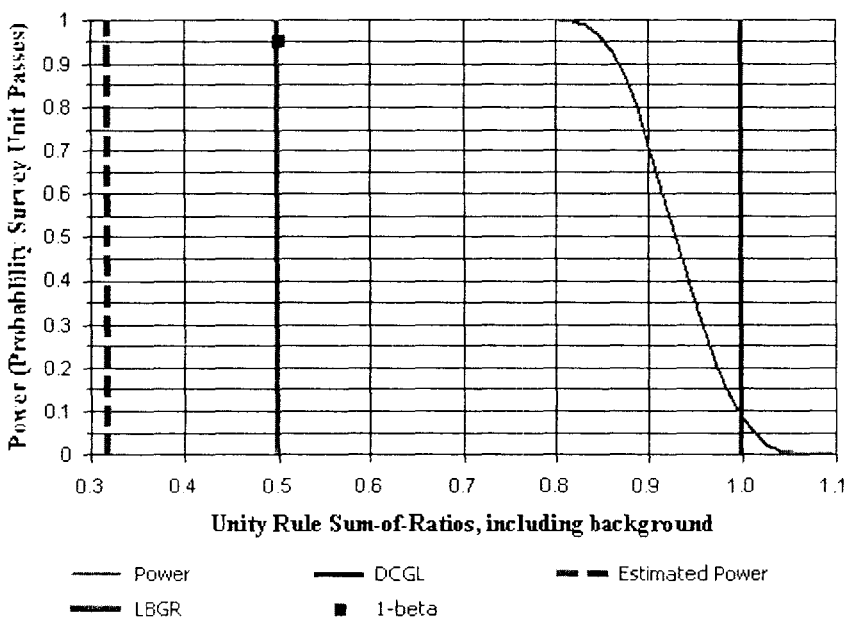
Contaminant	Type	DCGLw	Screening Value Used?	Area (m²)	Area Factor
Th-232	Surface Soil	2.80	No	1	12.3
				3	6.08
				10	3.12
				30	2.24
				100	1.75
				300	1.47
				1,000	1.05
				3,000	1.03
				10,000	1
U-234	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1
U-238	Surface Soil	50.00	No	1	30.5
				3	18.3
				10	11.1
				30	5.73
				100	2.27
				300	1.43
				1,000	1.04
				3,000	1.01
				10,000	1

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 1 01		
Comments:	SU04 Interval 1 Interval 01		
Area (m²):	1,983	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.14
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.32
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

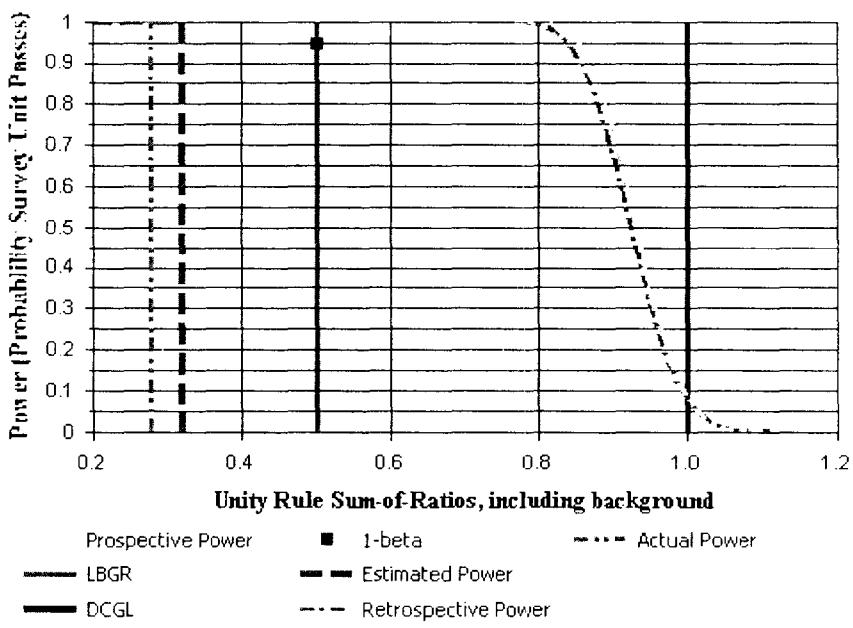
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.565 ± 0.239	N/A
U-234	3.07 ± 4.083	N/A
U-238	2.754 ± 3.652	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 1 01		
Report Number:	1		
Survey Unit Samples:	18		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
28575	S	0.66	2.05	2.14
29542	S	0.81	8	7.6
28536	S	0.46	1.78	1.53
28756	S	1	0.95	0.85
28431	S	0.82	7.85	4.71
29412	S	0.7	0.96	0.73
28872	S	0.56	0.32	0.34
28913	S	0.36	0.33	0.37
29112	S	0.43	0.47	0.44
29495	S	0.61	9.1	8.9
29655	S	0.76	5.82	5.64
29299	S	0.48	0.85	0.65
28654	S	0.34	0.52	0.48
28814	S	0.19	0.27	0.34
28718	S	0.23	0.66	0.89
28492	S	0.68	0.69	0.61
29798	S	0.22	14.1	12.7
29377	S	0.85	0.53	0.66

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28575	S	0.32
29542	S	0.6
28536	S	0.23
28756	S	0.39
28431	S	0.54
29412	S	0.28
28872	S	0.21
28913	S	0.14
29112	S	0.17
29495	S	0.58
29655	S	0.5
29299	S	0.2
28654	S	0.14
28814	S	0.08
28718	S	0.11
28492	S	0.27
29798	S	0.62
29377	S	0.33

DQA Surface Soil Report

Basic Statistical Quantities Summary

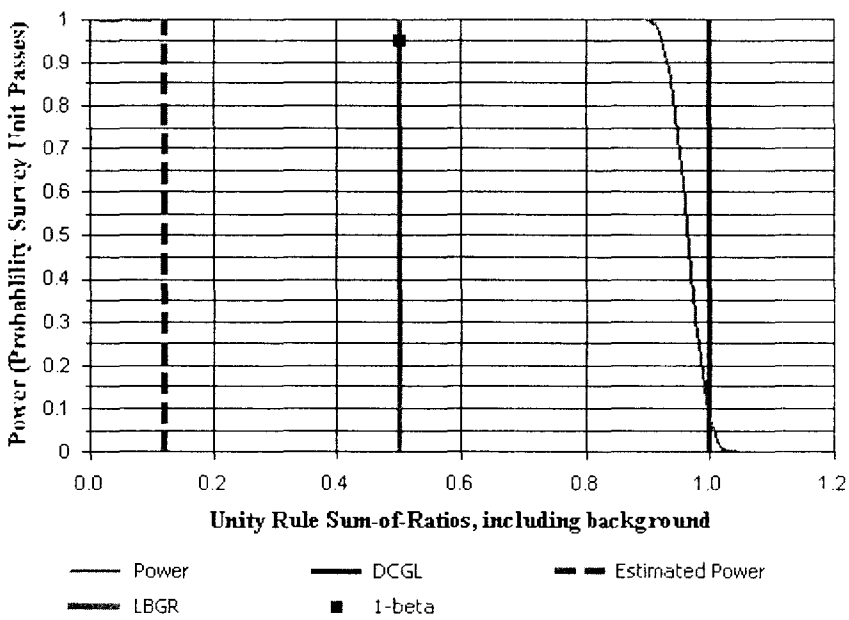
Statistic	Survey Unit	Background	DQO Results
Sample Number	18	N/A	N=13
Mean (SOR)	0.32	N/A	0.32
Median (SOR)	0.28	N/A	N/A
Std Dev (SOR)	0.18	N/A	0.14
High Value (SOR)	0.62	N/A	N/A
Low Value (SOR)	0.08	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 2 01		
Comments:	SU04 Interval 2 Run 01		
Area (m²):	1,983	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.07
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.12
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

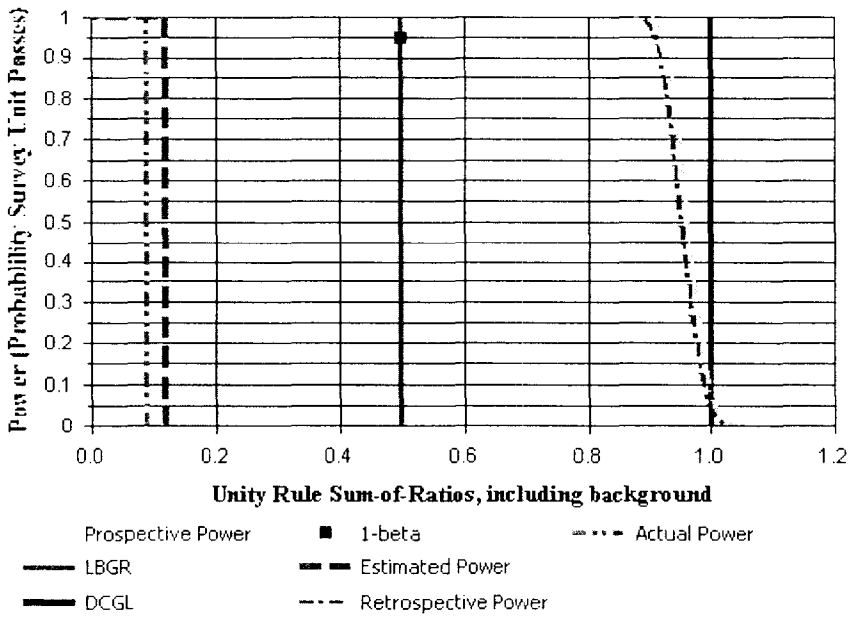
Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.238 ± 0.14	N/A
U-234	0.869 ± 1.903	N/A
U-238	0.864 ± 1.928	N/A

DQA Surface Soil Report

Assessment Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 2 01		
Report Number:	1		
Survey Unit Samples:	22		
Reference Area Samples:	0		
Test Performed:	Sign	Test Result:	Not Performed
Judgmental Samples:	0	EMC Result:	Not Performed
Assessment Conclusion:	***Reject Null Hypothesis (Survey Unit PASSES)***		

Retrospective Power Curve



DQA Surface Soil Report

Survey Unit Data

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Th-232 (pCi/g)	U-234 (pCi/g)	U-238 (pCi/g)
29063	S	0.18	0.38	0.3
28593	S	0.17	0.35	0.31
29764	S	0.24	1.49	1.42
28440	S	0.26	0.36	0.27
29712	S	0.84	1.47	1.49
29426	S	0.18	0.24	0.22
28773	S	0.2	0.19	0.18
29001	S	0.25	0.3	0.32
29607	S	0.29	0.55	0.54
28550	S	0.2	0.41	0.42
29508	S	0.24	1.11	1.26
28884	S	0.22	0.2	0.16
28939	S	0.28	0.14	0.22
29319	S	0.23	0.2	0.19
29668	S	0.18	0.81	0.71
29132	S	0.16	0.19	0.18
29813	S	0.21	9.2	9.3
28733	S	0.16	0.22	0.18
28826	S	0.19	0.13	0.16
29389	S	0.16	0.2	0.16
28501	S	0.2	0.49	0.62
28668	S	0.2	0.48	0.39

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
29063	S	0.08
28593	S	0.07
29764	S	0.14
28440	S	0.11
29712	S	0.36
29426	S	0.07
28773	S	0.08
29001	S	0.1
29607	S	0.13
28550	S	0.09
29508	S	0.13
28884	S	0.09
28939	S	0.11
29319	S	0.09
29668	S	0.09
29132	S	0.07
29813	S	0.45
28733	S	0.06

DQA Surface Soil Report

Modified Data (Unity Rule SOR)

NOTE: Type = "S" indicates survey unit sample.
Type = "R" indicates reference area sample.

Sample Number	Type	Sum-of-Ratios (SOR)
28826	S	0.07
29389	S	0.06
28501	S	0.09
28668	S	0.09

DQA Surface Soil Report

Basic Statistical Quantities Summary

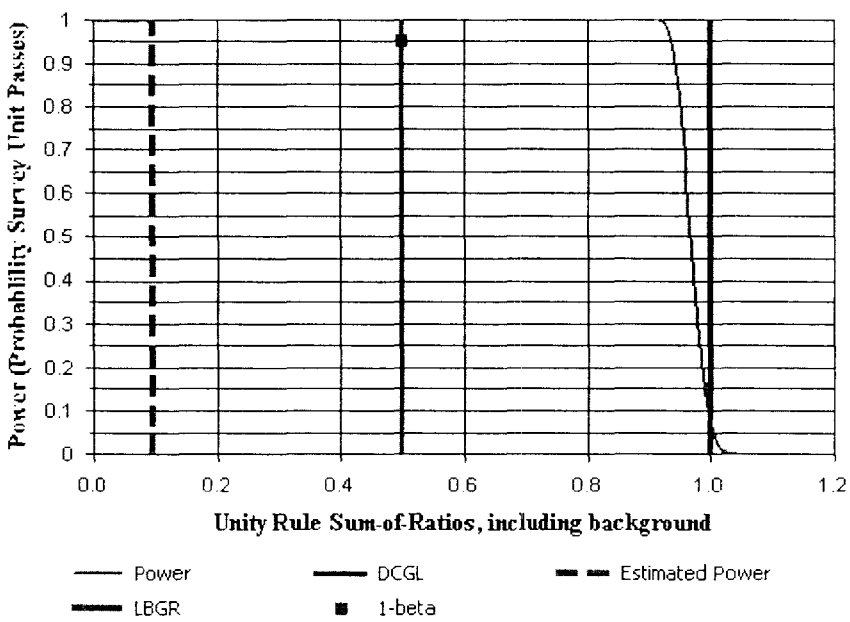
Statistic	Survey Unit	Background	DQO Results
Sample Number	22	N/A	N=13
Mean (SOR)	0.12	N/A	0.12
Median (SOR)	0.09	N/A	N/A
Std Dev (SOR)	0.10	N/A	0.07
High Value (SOR)	0.45	N/A	N/A
Low Value (SOR)	0.06	N/A	N/A

Surface Soil Survey Plan

Survey Plan Summary

Site:	GTEOSI - Hicksville Site		
Planner(s):	Shane Brightwell		
Survey Unit Name:	SU04 Interval 3 02		
Comments:	SU04 Interval 3 Run 02		
Area (m^2):	1,984	Classification:	1
Selected Test:	Sign	Estimated Sigma (SOR):	0.06
DCGL (SOR):	1	Sample Size (N):	13
LBGR (SOR):	0.5	Estimated Conc. (SOR):	0.1
Alpha:	0.050	Estimated Power:	1
Beta:	0.050	EMC Sample Size (N):	13
Scanning Instrumentation:	3" NaI		

Prospective Power Curve



Surface Soil Survey Plan

Contaminant Summary

Contaminant	DCGLw (pCi/g)	Inferred Contaminant	Ratio	Modified DCGLw (pCi/g)	Scan MDC (pCi/g)
Th-232	2.80	N/A	N/A	N/A	1.8
U-234	50.00	N/A	N/A	N/A	80
U-238	50.00	N/A	N/A	N/A	80

Contaminant	Survey Unit Estimate (Mean ± 1-Sigma) (pCi/g)	Reference Area Estimate (Mean ± 1-Sigma) (pCi/g)
Th-232	0.181 ± 0.074	N/A
U-234	0.87 ± 1.991	N/A
U-238	0.888 ± 2.069	N/A

GTE Operations Support Incorporated

Basking Ridge, New Jersey

Former Sylvania Electric Products Incorporated Facility Hicksville, NY Voluntary Cleanup Program Site No. V00089-1

Data Report P119 and P120

November 2009

Report Prepared By:

Malcolm Pirnie, Inc.

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Fair Lawn, New Jersey 07410
201.797.7400

4563001

MALCOLM PIRNIE

LEGEND

PROFILE LOCATION - DATA INCLUDED IN PREVIOUS REPORTS

PROFILE LOCATION - DATA INCLUDED WITHIN THIS REPORT

SCALE IN FEET

0 300 600 1200

NOTES

1. AERIAL IMAGE FROM NYS GIS CLEARINGHOUSE HIGH RESOLUTION DIGITAL ORTHOIMAGERY (6-INCH RESOLUTION - 2007).

MALCOLM PIRNIE	GTE - OPERATIONS SUPPORT, INC. HICKSVILLE, NY FORMER SYLVANIA ELECTRIC PRODUCTS FACILITY	PROFILE LOCATIONS COMPLETED AS OF OCTOBER 2009	MALCOLM PIRNIE, INC. November 2009 FIGURE 1

Mobile Lab Data - Groundwater Profiles P-119 and P-120
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Client: GTE031
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI#: 071867-R
Date Sampled: 3/31/2009-4/16/2009
Date Analyzed: 3/31/2009-4/16/2009
Report Date: 5/22/2009

Matrix: Water

HOLE ID = P-119

VOC DATA, ug/L

Depth	Vinyl Chloride Value	Q	DF	1,1-Dichloroethane Value	Q	DF	c-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
64.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
72.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
84.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
94.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
104.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	85
114.45	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
124.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	93
133.45	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
144.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
154.95	1	U	1	1	U	1	1	U	1	8		1	3		1	88
164.95	1	U	1	1	U	1	1	U	1	2		1	4		1	95
174.95	1	U	1	1	U	1	1	U	1	1		1	5		1	89
184.95	1	U	1	1	U	1	1	U	1	1	U	1	3		1	88
194.95	1	U	1	1	U	1	1	U	1	1	U	1	5		1	86
204.50	1	U	1	1	U	1	1	U	1	1	U	1	39		1	88
217.80	1	U	1	1	U	1	1	U	1	25		1	200		1	95
224.80	1	U	1	1	U	1	1	U	1	34		1	1390		10	91
234.80	1	U	1	1	U	1	1	U	1	1	U	1	13		1	88
244.25	1	U	1	1	U	1	1	U	1	1	U	1	18		1	95
254.30	1	U	1	1	U	1	1	U	1	1	U	1	33		1	91
263.00	1	U	1	1	U	1	1	U	1	2		1	66		1	86
283.00	1	U	1	1	U	1	1	U	1	1		1	16		1	101
294.70	1	U	1	1	U	1	1	U	1	1	U	1	18		1	99
304.25	1	U	1	1	U	1	1	U	1	1	U	1	3		1	97
324.80	1	U	1	1	U	1	1	U	1	1	U	1	2		1	101
347.00	1	U	1	1	U	1	1	U	1	1	U	1	2		1	94
356.95	1	U	1	1	U	1	1	U	1	1	U	1	1		1	92
364.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	88
373.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	97
388.80	1	U	1	1	U	1	1	U	1	1	U	1	4	U	1	95
389.15	1	U	1	1	U	1	1	U	1	1	U	1	3		1	104
397.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
408.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94

INORGANIC DATA, mg/L

Fe*	Fe, Total	Ammonia	Chloride	Chrome, Total
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
0.53	1.04	0.27	141	0.41
0.29	0.57	0.79	22	0.05
0.24	0.87	0.59	125	0.04
0.62	1.21	0.24	162	0.03
0.53	0.89	2.4	143	0.05
0.14	0.39	0.04	97	0.02
0.30	0.38	0.80	163	ND
0.59	0.82	8.0	91	0.02
1.05	1.95	0.14	20	0.03
0.44	1.41	0.06	17	0.05
NA	NA	NA	NA	NA
NA	NA	0.22	NA	NA
0.16	0.13	0.43	42	0.03
NA	NA	0.03	NA	NA
0.33	1.00	0.23	15	ND
0.45	1.13	ND	17	0.03
0.38	0.68	0.14	17	0.17
ND	ND	0.04	15	ND
0.93	0.99	0.05	19	ND
0.16	0.24	0.02	22	ND
0.22	0.38	0.18	17	ND
0.11	0.15	0.02	27	ND
0.09	0.48	0.28	127	0.03
0.15	0.21	0.10	188	0.04
0.18	0.28	0.03	117	ND
0.15	0.32	0.20	57	0.10
0.16	0.17	0.03	12	ND
0.26	0.64	0.13	26	0.02
0.20	0.47	0.07	22	0.02
0.51	0.19	0.09	18	0.03
0.14	0.34	0.12	59	0.04

Filterable

Ferro 111 Value	Q	DF	Ferro 121 Value	Q	DF	Ferro 1226 Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

VOC DATA, ug/L

Depth	1,1-Dichloroethane Value	Q	DF	1,1-Dichloroethene Value	Q	DF	1,1,1-Trichloroethane Value	Q	DF	1,1,2-Trichloroethane Value	Q	DF	Carbon Tetrachloride Value	Q	DF	Benzene Value	Q	DF	1,2-Dichloroethane Value	Q	DF	Toluene Value	Q	DF	Chlorobenzene Value	Q	DF	Ethylbenzene Value	Q	DF	m,p-Xylene Value	Q	DF	o-Xylene Value	Q	DF	1,3-Dichlorobenzene Value	Q	DF	1,4-Dichlorobenzene Value	Q	DF	1,2-Dichlorobenzene Value	Q	DF	%SS
64.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
72.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
84.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
94.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
104.95	3		1	4		1	5		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	85
114.45	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
124.85	4		1	8		1	10		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	93
133.45	1		1	3		1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
144.95	4		1	6		1	9		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
154.95	2		1	1	U	1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	88
164.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
174.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
184.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
194.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86
204.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	88
217.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
224.80	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	91
234.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	88
244.25	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
254.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	91
263.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86
283.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
294.70	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
304.25	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	97
324.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
347.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
356.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	92
364.95	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	88
373.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	97
388.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
389.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
397.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
408.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94

Samples with >100 ppb total VOC's cannot be run on a carbonaceous filter and will have detection limits of 10 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
J = Estimated value.
ND = Value below detection limit.
NS = Not Sampled

Mobile Lab Data - Groundwater Profiles P-119 and P-120
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Client: GTEOSI
Location: Hicksville, NY
Project No.: Groundwater Profiling
SEI #: 071807-A
Date Sampled: 4/17/2009-5/13/2009
Date Analyzed: 4/18/2009-5/13/2009
Report Date: 5/25/2009

Matrix: Water

HOLE ID = P-120

VOC DATA, ug/L

Depth	Vinyl Chloride Value	Q	DF	1,1-Dichloroethene Value	Q	DF	c-1,2-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
74.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
84.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
94.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
103.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
114.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	118
125.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	118
143.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
154.70	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
165.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
172.35	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
182.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
200.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
210.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
220.00	1	U	1	1	U	1	1	U	1	2	J	1	10	J	1	105
230.00	1	U	1	1	U	1	1	U	1	3	J	1	77	J	1	103
239.30	1	U	1	1	U	1	1	U	1	12	J	1	93	J	1	101
253.05	1	U	1	1	U	1	1	U	1	5	J	1	30	J	1	103
263.50	1	U	1	1	U	1	1	U	1	7	J	1	44	J	1	102
328.65	1	U	1	1	U	1	1	U	1	39	J	1	55	J	1	102
335.00	1	U	1	1	U	1	1	U	1	8	J	1	390	10	J	115
345.00	1	U	1	1	U	1	12	J	1	590	J	10	320	10	J	111
361.50	1	U	1	1	U	1	8	J	1	390	J	10	1120	10	J	109
368.00	1	U	1	1	U	1	14	J	1	240	J	10	2400	10	J	104
381.70	1	U	1	1	U	1	21	J	1	260	J	10	830	10	J	109
389.20	1	U	1	1	U	1	35	J	1	180	J	10	1900	10	J	110
404.05	1	U	1	1	U	1	24	J	1	91	J	1	830	10	J	111
417.35	1	U	1	1	U	1	3	J	1	8	J	1	960	10	J	107
424.80	1	U	1	1	U	1	1	U	1	1	U	1	140	J	1	119
434.50	1	U	1	1	U	1	1	U	1	1	U	1	23	J	1	105
444.90	1	U	1	1	U	1	1	U	1	1	U	1	29	J	1	106
453.40	1	U	1	1	U	1	1	U	1	1	U	1	95	J	1	102
471.95	1	U	1	1	U	1	1	U	1	1	U	1	43	J	1	101
481.25	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
																106

INORGANIC DATA, mg/L

Fe**	Fe, Total	Ammonia	Chloride	Chlorine, Total
0.23	0.71	0.13	57	0.02
0.83	0.84	0.40	51	0.20
0.67	0.73	0.36	47	0.07
0.37	0.44	0.31	54	0.09
0.31	0.61	0.23	44	0.04
0.41	2.87	0.09	47	0.21
0.34	0.85	0.17	108	0.06
0.38	0.62	0.26	117	0.12
0.22	0.45	0.22	67	0.05
0.15	0.35	0.24	56	0.04
0.10	0.10	0.09	135	ND
0.15	0.20	0.04	34	ND
0.07	0.15	0.15	36	0.03
0.34	0.39	0.09	72	ND
0.32	0.63	0.18	60	0.03
0.46	0.84	0.19	35	0.14
0.24	0.27	0.14	28	0.02
0.21	0.43	0.12	21	0.02
0.25	0.71	0.14	27	0.04
0.70	0.92	0.23	30	0.15
0.41	0.44	0.19	23	ND
0.14	0.17	0.05	22	0.03
0.12	0.16	0.08	21	ND
0.12	0.12	0.09	23	ND
0.17	0.17	0.05	15	ND
0.07	0.23	0.11	58	0.02
0.65	12.50	0.28	43	0.23
0.10	0.14	0.04	40	ND
0.17	0.39	0.07	41	0.06
0.30	0.30	0.15	17	0.08
0.11	0.20	0.06	34	ND
0.31	0.38	0.23	46	0.07
NA	NA	NA	NA	NA

Freons

Freon 113 Value	Q	DF	Freon 123 Value	Q	DF	Freon 123A Value	Q	DF
1	U	1	1	U	1	1	U	1

Fixed Lab Data - Groundwater Profiles P-119 and P-120
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

	Sample ID / Date Sampled		P-119-124.85	P-119-144.95	P-119-217.80	P-119-224.80	P-119-304.25	P-119-304.25 DUP	TB-1-33140809	TB-0418042309	TB042809	P-120-EB-12
COMPOUND NAME	CAS Number	Units	4/1/2009	4/2/2009	4/3/2009	4/3/2009	4/6/2009	4/6/2009	4/8/2009	4/18/2009	4/28/2009	5/5/2009
1,1,1,2-Tetrachloroethane	630-20-6	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	µg/L	9.9	9	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	µg/L	6.3	5.6	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	µg/L	4.3	3.9	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	123-91-1	µg/L	80 UJ	80 UJ	80 UJ	80 UJ	80 UJ	80 UJ	80 UJ	R	R	R
2-Butanone	78-93-3	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	R	5 U	5 U
2-Hexanone	591-78-6	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	108-10-1	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	µg/L	2 U	2 U	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	1.8 J	1.2 J
Benzene	71-43-2	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	µg/L	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	75-15-0	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	µg/L	1 U	1 U	0.99 J	1.4	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	µg/L	2 U	2 U	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	2 UJ	2 UJ
Chloroform	67-66-3	µg/L	1 U	1 U	0.19 J	0.11 J	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	µg/L	2 U	2 U	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	µg/L	1 U	1 U	1.1 J	1.7	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	124-48-1	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	75-09-2	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100-42-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	µg/L	1 U	1 U	170 J	930	3.2	4.2	0.22 J	1 U	0.82 J	0.66 J
Toluene	108-88-3	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	0.073 J	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	µg/L	3.5 U	3.5 U	29 J	36	3.5 U	3.5 U	3.5	1 U	0.22 J	0.19 J
Vinyl chloride	75-01-4	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	1330-20-7	µg/L	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	0.16 J	0.19 J	0.10 J
TIC- 1,1,2-Trichloro-1,2,2 trifluoroethane	76-13-1	µg/L										

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

Fixed Lab Data - Groundwater Profiles P-119 and P-120
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

	Sample ID / Date Sampled		P-120-103.50	P-120-220	P-120-230	P-120-335.00	P-120-345.00	P-120-361.50	P-120-361.50 DUP	P-120-381.7	P-120-424.80
COMPOUND NAME	CAS Number	Units	4/19/2009	4/22/2009	4/23/2009	4/30/2009	4/30/2009	5/1/2009	5/1/2009	5/2/2009	5/4/2009
1,1,1,2-Tetrachloroethane	630-20-6	µg/L	1 U	1 U	1 U	1 U	1.1	2.2	2.3	1.3	1 U
1,1,1-Trichloroethane	71-55-6	µg/L	1 U	1 U	1 U	2.2	0.82 J	0.94 J	0.97 J	0.2 J	1 U
1,1,2,2-Tetrachloroethane	79-34-5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	µg/L	1 U	1 U	1 U	0.37 J	0.44 J	0.72 J	0.75 J	0.46 J	1 U
1,1-Dichloroethane	75-34-3	µg/L	1 U	1 U	1 U	1.2	0.32 J	0.19 J	0.19 J	0.094 J	1 U
1,1-Dichloroethene	75-35-4	µg/L	1 U	1 U	1 U	3.8	1.2	1.3	1.3	0.29 J	1 U
1,2-Dichlorobenzene	95-50-1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	µg/L	1 U	1 U	1 U	0.19 J	0.12 J	0.2 J	0.17 J	0.27 J	1 U
1,2-Dichloropropane	78-87-5	µg/L	1 U	1 U	1 U	0.11 J	0.06 J	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	123-91-1	µg/L	R	R	R	R	R	R	R	R	R
2-Butanone	78-93-3	µg/L	R	R	R	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	µg/L	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 U
4-Methyl-2-pentanone (MIBK)	108-10-1	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	µg/L	2 U	2 U	2 U	R	R	2 UJ	R	2 UJ	R
Benzene	71-43-2	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	75-15-0	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	µg/L	1 U	1 U	1 U	12	9.9	6.3	6.5	3.4	1 U
Chlorobenzene	108-90-7	µg/L	1 U	1 U	1 U	1 U	0.16 J	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	µg/L	2 U	2 U	2 U	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Chloroform	67-66-3	µg/L	1 U	1 U	1 U	1.2	0.75 J	0.65 J	0.65 J	0.86 J	1 U
Chloromethane	74-87-3	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	µg/L	1 U	1 U	1 U	16	11	16	16	40	1 U
cis-1,3-Dichloropropene	10061-01-5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	124-48-1	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	75-09-2	µg/L	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U
Styrene	100-42-5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	µg/L	1 U	9.6	64	390	1200	2700 J	1800	1500	29
Toluene	108-88-3	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	µg/L	1 U	1 U	1 U	0.21 J	0.14 J	0.2 J	0.28 J	0.71 J	1 U
trans-1,3-Dichloropropene	10061-02-6	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	µg/L	1 U	3.5 U	3.5 U	1100	690	260	220	190	1 U
Vinyl chloride	75-01-4	µg/L	1 U	1 U	1 U	0.16 J	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	1330-20-7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TIC- 1,1,2-Trichloro-1,2,2 trifluoroethane	76-13-1	µg/L				6.7 NJ	3.3 NJ	1 NJ	1.1 NJ		

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

Fixed Lab Data - Groundwater Profiles P-119 and P-120
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

	Sample ID / Date Sampled		P-119-244.25	P-119-263.00	P-119-294.70	P-119-304.25	P-119-304.25 DUP	P-119-324.8	P-119-354.95		EB-006-042909
COMPOUND NAME	CAS Number	Units	4/4/2009	4/4/2009	4/6/2009	4/6/2009	4/6/2009	4/7/2009	4/8/2009		4/29/2009
1,4-Dioxane	123-91-1	µg/L	0.37 J	1.0 U	1.0 U	1.0 U	1.0 U	R	1.0 U		1.0 U

	Sample ID / Date Sampled		P-120-200	P-120-220	P-120-239.30	P-120-263.50	P-120-326.65	P-120-335.00	P-120-345.00	P-120-361.50	P-120-361.50 DUP	P-120-404.05
COMPOUND NAME	CAS Number	Units	4/22/2009	4/23/2009	4/23/2009	4/28/2009	4/30/2009	4/30/2009	4/30/2009	5/0/09	5/1/2009	5/4/2009
1,4-Dioxane	123-91-1	µg/L	1.0 U	0.28 J	0.6 J	0.90 J	4.4	6.1	4.0	3.0	3.2	0.84 J

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID:

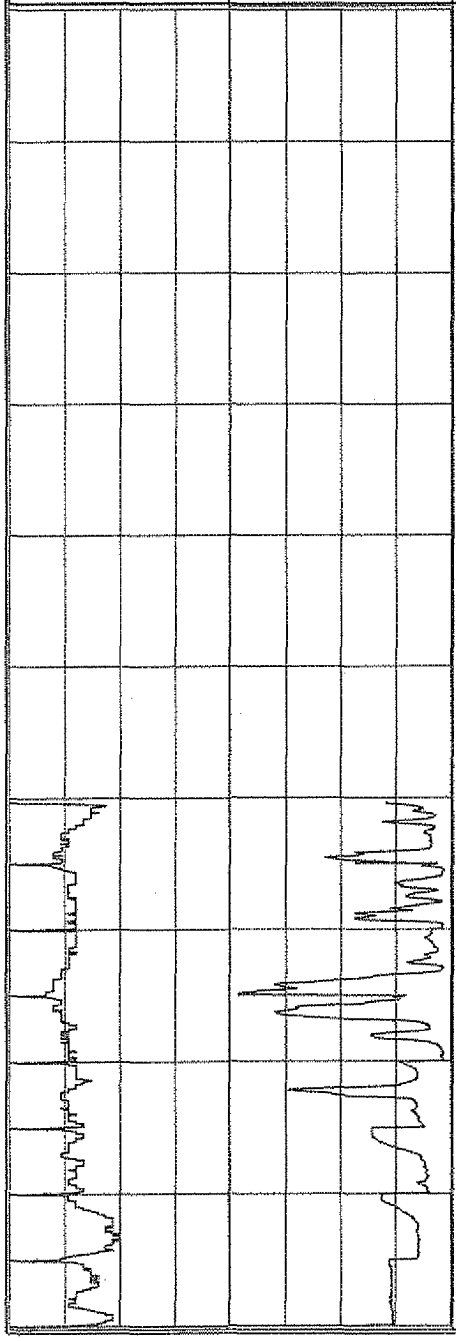
P-119

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	March 30, 2009
JOB NUMBER:	4563001	END DATE:	April 16, 2009
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Melia	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 409.5

Total depth of boring: 405.5

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (fine-medium) and SILT, trace-little sub-rounded Gravel (fine),dark brown.	SM		Hollow stem augers advanced from 0 to 20 ft
10	SAND (medium to coarse), little Gravel (fine); moderate brown.	SW		
20	SAND (fine to coarse), little Gravel (fine); fine-moderate brown.	SW		Begin mud rotary drilling at 20 ft
30	SAND (fine-medium), light brown.	SP		
40	SAND (medium-coarse), light brown.	SP		
50	SAND (fine), trace Silt; moderate brown.	SP		
60	SAND (fine) with Silt; light brown.	SM		Begin profiling at 60 ft
70				
80				
90	SAND (fine) with Silt, some Sand (coarse) and Gravel (fine); light brown.	SM		

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

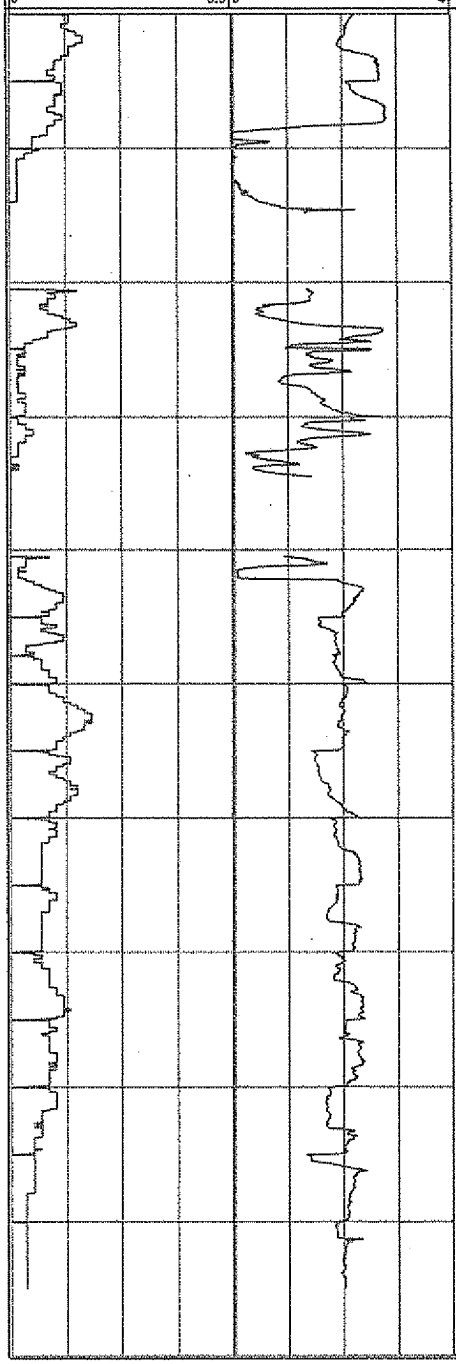
Boring ID:

P-119

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	March 30, 2009
JOB NUMBER:	4563001	END DATE:	April 16, 2009
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Melia	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 409.5 Total depth of boring: 405.5

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110	SAND (fine) with Silt, trace white Clay; light brown.	SM		Profiler refusal at 114.80' bgs, pulled rods and advanced casing from 60' bgs to 120'
120	SAND (fine-medium) with some Silt; light-moderate brown.	SM		
130				Profiler refusal at 134.46' bgs, pulled rods and advanced casing from 120' bgs to 140'
140	SAND (fine-medium) some Silt; moderate brown.	SM		
150				
160				
170	SAND (fine-coarse) trace Silt; moderate brown.	SP		
180	SAND (fine) with Silt, trace gray Clay; light brown.	SM		
	SAND (fine) light brown, with interbedded light brown and gray Silt.	SM		
190				Profiler tripped out at 194.95, pulled rods and advanced casing from 140' bgs to 200'

Boring ID:

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

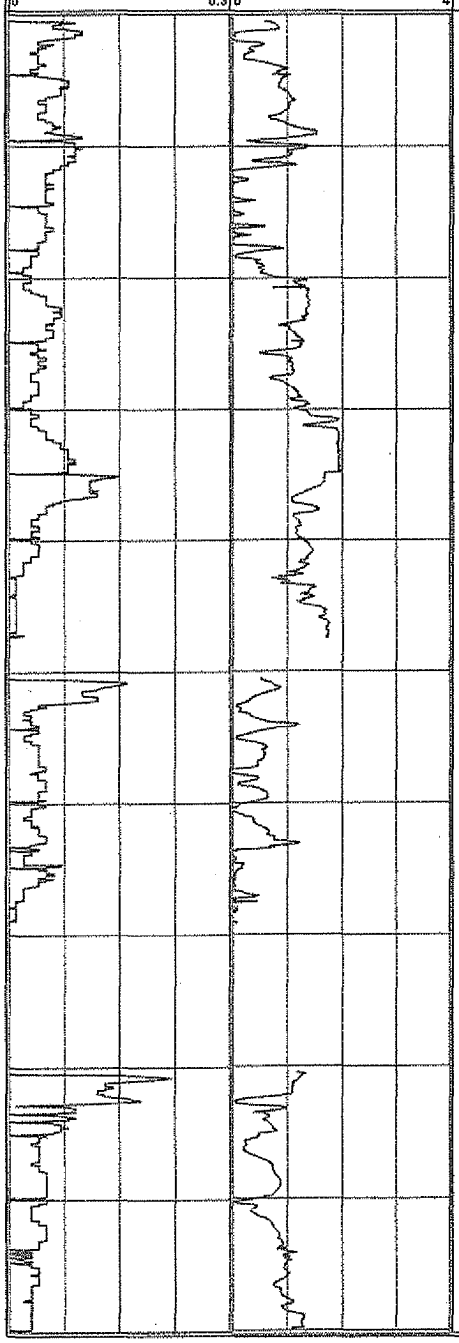
P-119

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	March 30, 2009
JOB NUMBER:	4563001	END DATE:	April 16, 2009
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Mella	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 409.5

Total depth of boring: 405.5

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200	SAND (fine-medium) and SILT, trace Clay; moderate brown to gray-brown.	SM		
210	SILT, trace-little fine grain Sand; medium brown w/ black carbonaceous interbeds.	ML		
220	SAND (fine), trace Silt; light brown.	SP		
230				
240	SAND (medium-coarse), trace Silt; light brown-gray.	SP		Profiler tripped out at 247.5, pulled rods and advanced casing from 200' bgs to 250' bgs
250	SILT, trace Sand (fine), trace Clay; light brown-white.	ML		
260				
270				Profiler refusal at 269.2' bgs, pulled rods and advanced casing from 250' bgs to 280'
	SAND (fine), some Silt; light brown.	SM		
280	SILT, some Sand (fine); light brown-white.	ML		
290				

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

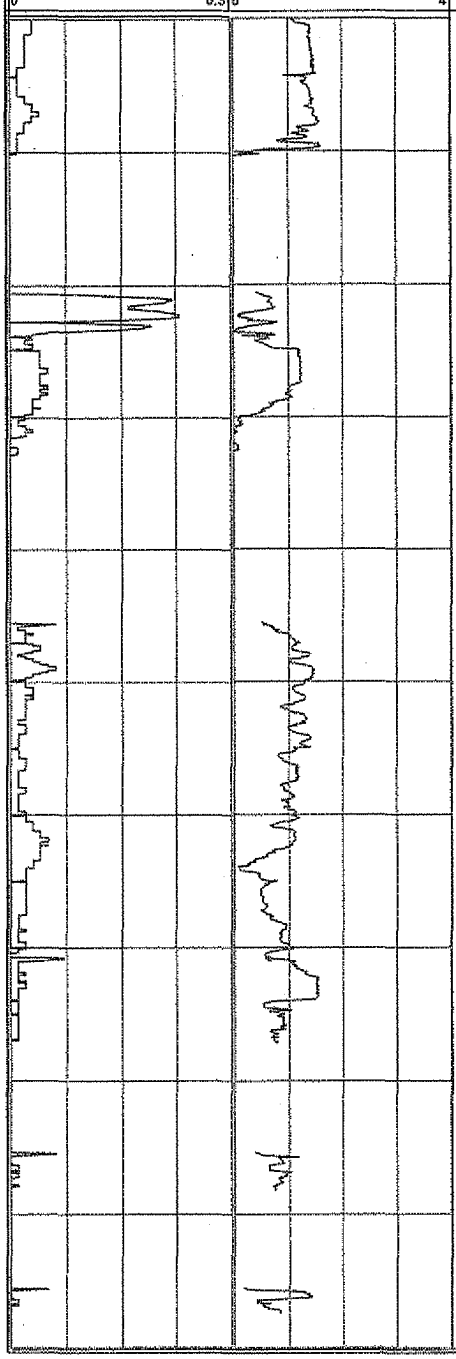
Boring ID:

P-119

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	March 30, 2009
JOB NUMBER:	4563001	END DATE:	April 16, 2009
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Mella	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 409.5 Total depth of boring: 405.5

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SAND (fine-medium), some Silt; light brown, micaceous.	SM		
310	SILT, some Sand (fine); white.	ML		Profiler refusal at 310.34' bgs, pulled rods and advanced casing from 280' bgs to 320'
	SAND (fine), some Silt; light brown-white.	SM		
320	SAND (fine-coarse), some Silt; light brown-white, angular.	SM		
330	SAND (fine to medium), trace Silt and Clay interbeds; light brown to white.	ML		Profiler refusal at 332.84' bgs, pulled rods and advanced casing from 320' bgs to 345' bgs
340	SAND (fine), some Silt; light brown.	SM		
350	SAND (fine-coarse) trace-little white Silt; light gray-white.	SM		
360				
370	SAND (fine to medium), trace white Silt; light gray-white, angular	SM		Profiler refusal at 371.2' bgs, pulled rods and advanced casing from 345' bgs to 370'
				Profiler refusal at 377.18' bgs, pulled rods and advanced casing from 370' bgs to 385'
380				
390				Profiler tripped out at 388.15, pulled rods and advanced casing from 385' bgs to 395.5' bgs
	SAND (fine to medium), trace-little Silt; light tan-brown, sub-angular.	SM		

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

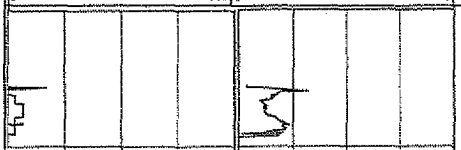
Boring ID:

P-119

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	March 30, 2009
JOB NUMBER:	4563001	END DATE:	April 16, 2009
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Melia	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 409.5 — Total depth of boring: 405.5

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400				Profiler refusal at 397.4' bgs, pulled rods and advanced casing from 395.5' bgs to 405.5'
				End of mud logging at 405 ft
410				End of profile at 409.5 ft
420				
430				
440				
450				
460				
470				
480				
490				

MALCOLM PIRNIE, INC.
17-17 Route 208 North Fair Lawn, NJ 07401

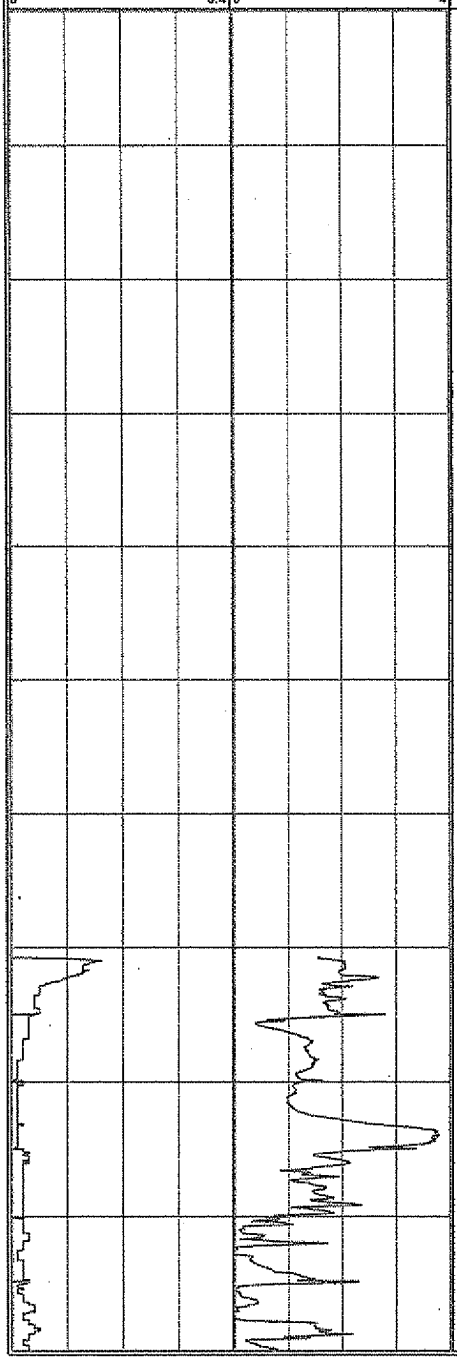
Boring ID:
P-120

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2009
JOB NUMBER:	4563001	END DATE:	May 13, 2009
DRILLING FIRM:	SGS	LOCATION:	Town of Oyster Bay, Alpine Lane
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Melia	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 481.25 ft

Total depth of boring: 480 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	ASPHALT and GRAVEL; gray.	GW		
	SAND (medium-coarse), trace Gravel (fine-coarse); yellow-brown, sub-round.	SW		Hollow stem augers advanced from 0 to 20 ft
10	SAND (medium-coarse), some Gravel (fine-coarse); moderate brown, sub-round.	SW		
20	SAND (fine-medium); light brown.	SW		Begin mud rotary drilling at 20 ft
30				
40	SAND (fine-coarse); light brown.	SW		
50	SAND (coarse) and GRAVEL (fine); light brown, sub-round.	SW		
60				
				Begin profiling at 70 ft
70	SAND (fine), trace Silt; light brown.	SP		
80	SAND (fine), trace interbedded white Silt; light brown.	SP		
90	SAND (fine), with orange-brown interbedded Silt; lightbrown-yellow.	SM		

MALCOLM PIRNIE, INC.

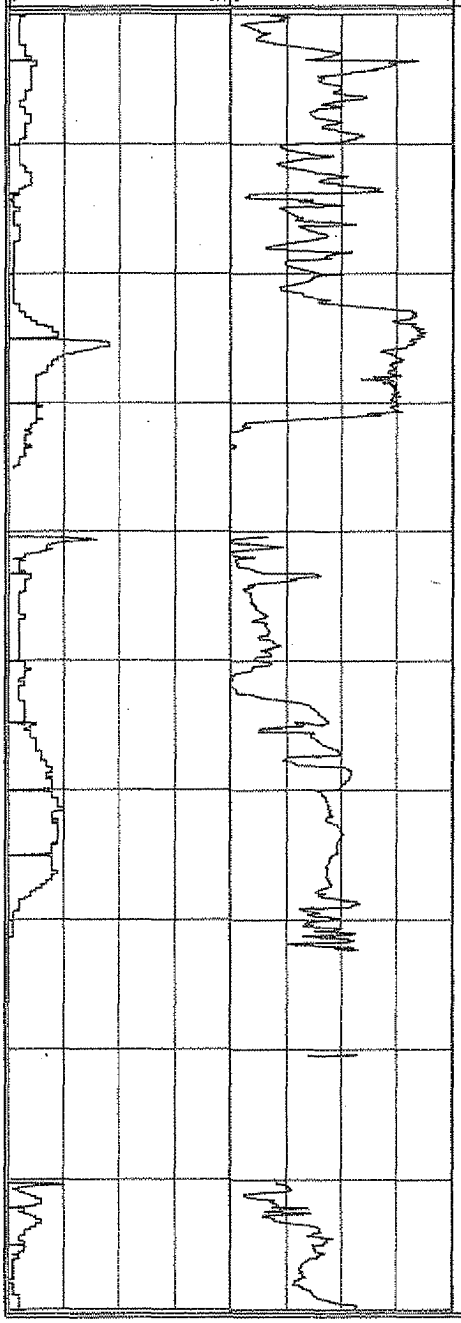
17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-120**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2009
JOB NUMBER:	4563001	END DATE:	May 13, 2009
DRILLING FIRM:	SGS	LOCATION:	Town of Oyster Bay, Alpine Lane
DRILLING METHOD:	Mud Rotary	DATUM:	Land Surface
DRILLER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith
HELPER:	Mike Melia		

Total depth of Profile: 481.25 ft Total depth of boring: 480 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100	SAND (fine), trace Silt; light brown-orange, micaceous.	SP		
110				
120				
130	SILT, trace-little black carbonaceous Clay; dark gray-black.	ML		Profiler refusal at 135' bgs, pulled rods and advanced casing from 70' bgs to 140'
140	SAND (fine), trace interbedded white Silt; light gray-white.	SM		
150	SAND (fine); light brown.	SP		
160	SAND (fine); light brown-orange.	SP		
170	SAND (fine-coarse), trace -little orange Silt; brown-orange.	SM		Profiler refusal at 172.35' bgs, pulled rods and advanced casing from 140' bgs to 180'
180	SAND (fine), trace orange Silt; light brown.	SM		Profiler tripped out at 184.9, pulled rods and advanced casing from 180' bgs to 190'
190	SAND (fine), some orange oxidized Silt; light brown.	SM		

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PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2009
JOB NUMBER:	4563001	END DATE:	May 13, 2009
DRILLING FIRM:	SGS	LOCATION:	Town of Oyster Bay, Alpine Lane
DRILLING METHOD:	Mud Rotary	DATUM:	Land Surface
DRILLER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith
HELPER:	Mike Melia		

Total depth of Profile: 481.25 ft

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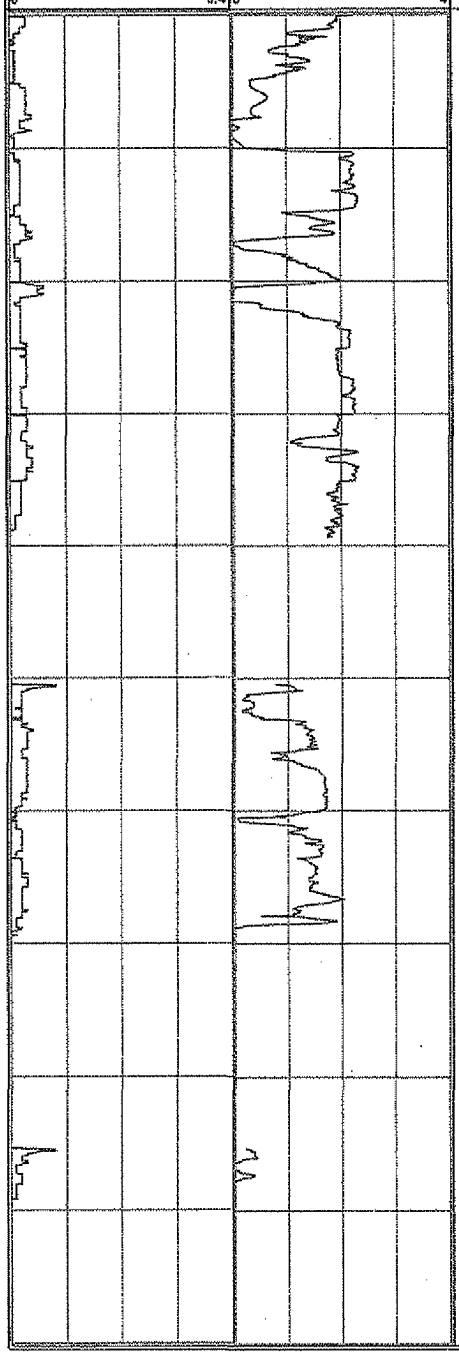

Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200	SAND (fine-medium), trace Silt; light brown.	SM		
210	SAND (fine-medium); light brown.	SW		
220				
230				
240				Profiler refusal at 239.3' bgs, pulled rods and advanced casing from 190' bgs to 250' bgs
	SAND (fine), trace white Silt; light brown.	SP		
250	SAND (fine-medium), trace white-light gray Silt; light brown.	SP		
260				
270	SAND (fine) with interbedded light gray Silt; light brown.	SM		Profiler refusal at 269.6' bgs, pulled rods and advanced casing from 250' bgs to 285'
280	SAND (fine) with interbedded white Silt; light brown.			Profiler refusal at 289.4' bgs, pulled rods and advanced casing from 289' bgs to 300'
290	SILT and CLAY, trace Sand (fine); dark gray.	ML		
	SILT with dark gray-black	ML		

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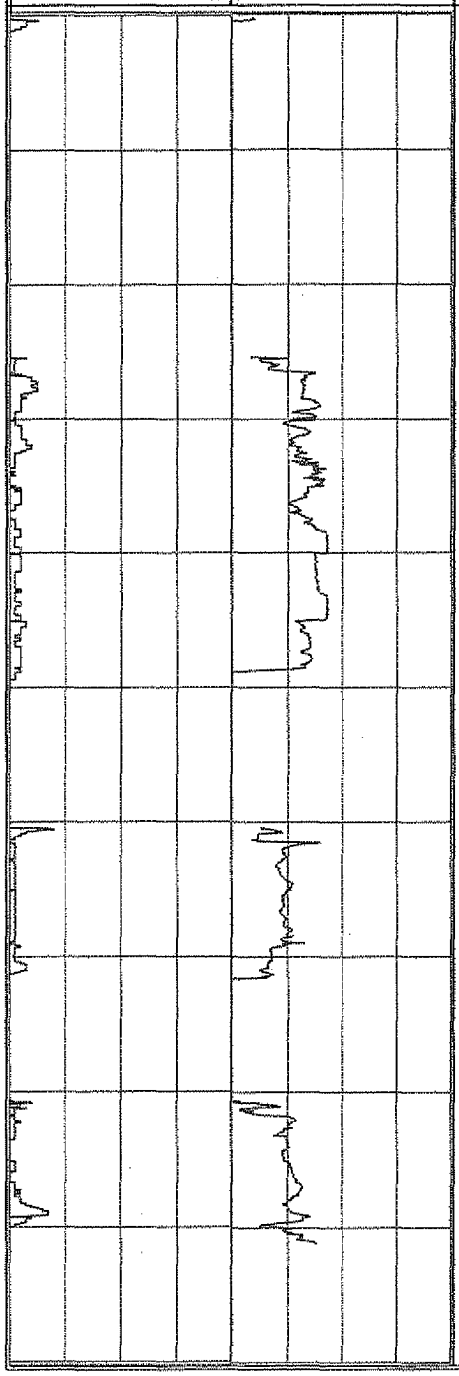
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2009
JOB NUMBER:	4563001	END DATE:	May 13, 2009
DRILLING FIRM:	SGS	LOCATION:	
DRILLING METHOD:	Mud Rotary		Town of Oyster Bay, Alpine Lane
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Mike Mella	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 481.25 ft Total depth of boring: 480 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	carbonaceous Clay, trace Sand (fine) lenses; gray-white.			Profiler refusal at 301' bgs, pulled rods and advanced casing from 300' bgs to 325'
310	SILT with trace-little Sand (fine) within matrix, becoming sandy with depth; gray-white.	ML		
320				
	SAND (fine-medium), trace-little Silt; light gray, micaceous.	SP		
330				
340				
350	SILT, trace-little Sand (fine); gray-white.	ML		Profiler refusal at 349.5' bgs, pulled rods and advanced casing from 325' to 360' bgs
	SAND (fine-medium); light gray-brown, micaceous.	SW		
360				
370	SILT, trace Sand (fine); gray-white.	ML		Profiler refusal at 371.9' bgs, pulled rods and advanced casing from 360' to 380' bgs
	SAND (fine-medium); light brown, angular.	SW		
380	SAND (fine-coarse); light brown, angular.	SW		
390				Profiler refusal at 391.2' bgs, pulled rods and advanced casing from 380' to 400' bgs

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-120**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2009
JOB NUMBER:	4563001	END DATE:	May 13, 2009
DRILLING FIRM:	SGS	LOCATION:	Town of Oyster Bay, Alpine Lane
DRILLING METHOD:	Mud Rotary	DATUM:	Land Surface
DRILLER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith
HELPER:	Mike Melia		

Total depth of Profile: 481.25 ft

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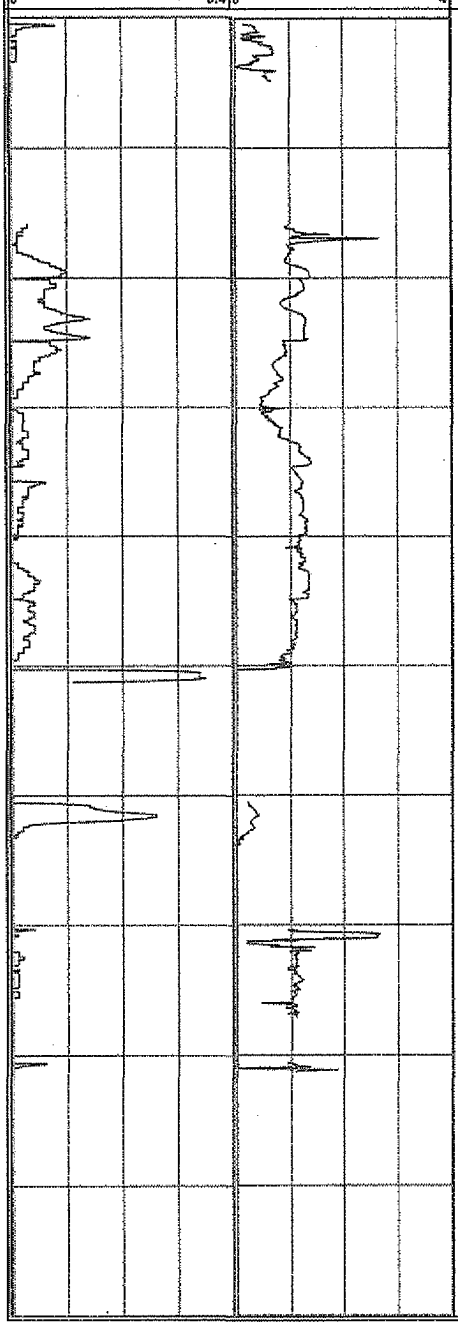

Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400	SAND (fine-coarse), some white Silt; light brown-white, angular.	SM		Profiler refusal at 404.85' bgs, pulled rods and advanced casing from 400' to 415' bgs
410	SAND (medium-coarse); light brown, angular.	SW		
	SAND (medium-coarse); gray-white, angular.	SW		
420				
430				
440	SAND (medium-coarse); brown, angular.	SW		
450	SAND (fine-coarse) and SILT with interbedded white brown Silt; brown-gray, angular, micaceous.	SM		Profiler refusal at 451.26' bgs, pulled rods and prep to advance casing from 415' to 460' bgs
460	SAND (fine-medium) and SILT, light brown.	SM		Profiler refusal at 463.84' bgs, pulled rods and prep to advance casing from 460' to 470' bgs
470	SAND (fine-medium), some Silt, light brown.	SM		Profiler refusal at 477.06' bgs, pulled rods and prep to advance casing from 470' to 480' bgs
480				End of mud logging at 480.0 ft End of profile at 481.25 ft
490				

Data Usability Summary Report
Volatile Organics
Profiles P-119 and P-120

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

VALIDATION REPORT

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Executive Summary

This report addresses data quality for groundwater profile samples collected at points south and east of the former Sylvania Electric Products Incorporated Facility in Hicksville, New York. The groundwater profile samples were collected by Malcolm Pirnie, Inc. (Malcolm Pirnie) from April 1, 2009 through May 5, 2009.

The environmental samples collected for this investigation were submitted to TestAmerica, Inc. of Earth City, Missouri, for volatile organic compound (VOC) analysis and to TestAmerica, Inc. of Phoenix, Arizona for 1,4-dioxane analysis using United States Environmental Protection Agency (USEPA) SW-846 guidance methods. A total of 37 samples[1] were submitted, which resulted in 745 VOCs and 18 semivolatile organic compound (SVOC) results[2]. Of this number, 525 of them are actual sample results[3] and the remainder are field quality assurance/quality control (QA/QC) indicators[4] of the samples. The analytical data generated for this investigation were evaluated by Malcolm Pirnie using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.* EPA 540-R-08-01. June 2008.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IV. January 2008.
- United States Environmental Protection Agency, Region 2. *Validating Semivolatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D.* SOP No. HW-22, Revision #3. October 2006.
- United States Environmental Protection Agency, Region 2. *Validating Volatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B.* SOP No. HW-24, Revision #2. October 2006.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to consider if results should be qualified as estimated ("J" or "UJ"). Since individual guidance documents used (as a source of reference for the validation) may differ slightly in the type of qualification applied to data, Malcolm Pirnie applied qualifiers generally with an err to caution. Method non-conformances included exceedances of the relative percent standard deviation for the initial calibrations, the percent differences of the continuing calibrations, and the excessively low response factors in both the initial and continuing calibrations. Results rejected were due to initial and continuing calibration response factor non-conformances and to extremely poor surrogate recoveries.

[1] Total number of samples includes field samples, field duplicates, trip blanks, and equipment blanks. For this evaluation, samples with the same sample ID for VOCs and for 1,4-dioxane are considered separate samples.
[2] Total number of results includes 759 results for targeted compounds and 4 results for tentatively identified compounds. This number includes some results that were rejected by the validation process.
[3] This is the total number of results minus trip blank, equipment blank, and field duplicates results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA trained data validator with over a decade of environmental laboratory experience.

Additionally, most laboratory VOC method blanks contained low level contamination from common laboratory contaminants, including acetone and methylene chloride. The presence of these contaminants affected some project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the final sample result. In many cases, the project trip blanks and equipment blank contained low-levels of the same contaminants as were seen in the laboratory method blanks, in addition to other contaminants due to cross-contamination during field sampling activities. Malcolm Pirnie qualified the affected data to show the potential impact on the final sample results.

Other quality issues requiring data validation qualification included replacement of results which exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with re-analysis results, and qualification of all tentatively identified compounds (TIC). TIC results are qualitative only, and not considered usable for quantitative assessments, in particular risk screening evaluations.

Overall, 97.2 percent[6] of the results retained in the data set as final data were determined to be usable for qualitative and quantitative purposes. The other 2.8 percent were qualified as unusable, "R," – the presence or absence of the compounds cannot be verified. Sample results qualified as estimated, "J" and "UJ," due to quality control (QC) deficiencies should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as presented in the QAPP, was met for the data set.

[6] Value = (763 total data points - 21 rejected data points) / 763 X 100

1. Introduction

1.1. Sample Identification

This report presents the results of a data quality evaluation for groundwater profile samples collected from profile locations P-119 and P-120 (see Figure 1) by Malcolm Pirnie from April 1, 2009 through May 5, 2009. The samples were collected for the analysis of volatile organic compounds (VOCs) via USEPA Method 8260B and/or for 1,4-dioxane via USEPA Method 8270C.

Cross-references of the sample delivery group (SDG) number (laboratory package identification number), date of sample collection, field sample identification, corresponding laboratory identification, and analytical method utilized are presented in Tables 1-1 and 1-2.

Table 1-1. VOC Sample Cross-Reference List

Package Identification	Sample Collection Date	Sample ID	Laboratory ID	Analytical Method
F9D090153	4/01/09	P-119-124.85	F9D090153-001	8260B
	4/02/09	P-119-144.95	F9D090153-002	8260B
	4/03/09	P-119-217.80	F9D090153-003	8260B
	4/03/09	P-119-224.80	F9D090153-004	8260B
	4/06/09	P-119-304.25	F9D090153-005	8260B
	4/06/09	FD-003-040609 (P119-304.25)	F9D090153-006	8260B
	4/08/09	TB-1-33140809	F9D090153-007	8260B
F9D240242	4/18/09	TB-0418042309	F9D240242-001	8260B
	4/19/09	P-120-103.50	F9D240242-002	8260B
	4/22/09	P-120-220	F9D240242-003	8260B
	4/23/09	P-120-230	F9D240242-004	8260B
F9E060254	5/01/09	P-120-361.50	F9E060254-001	8260B
	5/02/09	P-120-381.7	F9E060254-002	8260B
	5/04/09	P-120-424.80	F9E060254-003	8260B
	4/30/09	P-120-335.00	F9E060254-004	8260B
	4/30/09	P-120-345.00	F9E060254-005	8260B
	5/01/09	P-120-FD2 (P-120-361.50)	F9E060254-006	8260B
	4/28/09	TB042809	F9E060254-007	8260B
	5/05/09	P-120-EB-12	F9E060254-008	8260B

Table 1-2. 1,4-Dioxane Sample Cross-Reference List

Package Identification	Sample Collection Date	Sample ID	Laboratory ID	Analytical Method
PSD0559	4/04/09	P-119-244.25	PSD0559-01	8270C Modified
	4/04/09	P-119-263.00	PSD0559-02	8270C Modified
	4/06/09	P-119-294.70	PSD0559-03	8270C Modified
	4/06/09	P-119-304.25	PSD0559-04	8270C Modified
	4/07/09	P-119-324.8	PSD0559-05	8270C Modified
	4/06/09	FD-003-040609 (P-119-304.25)	PSD0559-06	8270C Modified
	4/08/09	P-119-354.95	PSD0559-07	8270C Modified
PSD1403	4/22/09	P-120-200	PSD1403-01	8270C Modified
	4/23/09	P-120-220	PSD1403-02	8270C Modified
	4/23/09	P-120-239.30	PSD1403-03	8270C Modified
PSE0020	4/28/09	P-120-263.50	PSE0020-01	8270C Modified
	4/30/09	P-120-326.65	PSE0020-02	8270C Modified
	4/29/09	EB-006-042909	PSE0020-03	8270C Modified
	4/30/09	P-120-335.00	PSE0020-04	8270C Modified
	4/30/09	P-120-345.00	PSE0020-05	8270C Modified
PSE0254	5/01/09	P-120-361.50	PSE0254-01	8270C Modified
	5/04/09	P-120-404.05	PSE0254-02	8270C Modified
	5/01/09	P-120-FD2 (P-120-361.50)	PSE0254-03	8270C Modified

1.2. General Considerations

Data validation is a process of determining the suitability of a measurement system for providing useful analytical results. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system, especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines deviations from applicable quality control (QC) criteria referenced in the following documents:

- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.* EPA 540-R-08-01. June 2008.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IV. January 2008.
- United States Environmental Protection Agency, Region 2. *Validating Semivolatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D.* SOP No. HW-22, Revision #3. October 2006.
- United States Environmental Protection Agency, Region 2. *Validating Volatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B.* SOP No. HW-24, Revision #2. October 2006.
- URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

1.3. Analytical Methods

The environmental samples presented in this report were collected in Hicksville, New York and submitted to TestAmerica Laboratories, Inc. located in Earth City, Missouri (St. Louis) for VOC analysis and in Phoenix, Arizona (Phoenix) for 1,4-dioxane analysis. The laboratories used the following USEPA guidance methods to conduct the analyses:

- SW-846 Method 5030B: Purge-and-Trap for Aqueous Samples
- SW-846 Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- SW-846 3520C: Continuous Liquid-Liquid Extraction
- SW-846 8270C (modified): Semivolatile Organic Compounds (SVOC) by Gas Chromatography/Mass Spectrometry (GC/MS)

The laboratory assigned an SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 37 samples, in a total of seven SDGs, are included in this data validation report. The SDG, collection date, field identification, laboratory identification, and analytical method used for each sample are summarized in Table 1-1 for TestAmerica St. Louis analyses and in Table 1-2 for TestAmerica Phoenix analyses.

The following sections of this report address distinct aspects of the validation process. Section 2 lists the data QA/QC elements and protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

TestAmerica St. Louis is a New York State Department of Health accredited laboratory with laboratory ID number 13715. They are approved to conduct drinking water and wastewater analyses. TestAmerica Phoenix is a New York State Department of Health accredited laboratory with laboratory ID number 11898. NYSDOH does not offer accreditation for the analysis of 1,4-dioxane via modified method 8270C. TestAmerica Phoenix is an accredited testing laboratory for drinking water and/or wastewater analysis for many other states (e.g., Arizona, California, Nevada, and Oregon).

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The data validation of analyses for this project used guidances presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[7]. Malcolm Pirnie performed a data review of all analytical results to assess data quality. The data review included an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the data validation:

- Data package completeness review – sufficient to fully conduct data validation
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, absence of headspace, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Instrument tuning
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., trip blanks, field blanks, equipment blanks)
- Surrogate standard recoveries and comparison to laboratory control limits
- Internal standards and comparison to technical guideline criteria
- Compound identifications, quantitations, dilutions, and reporting limits
- Tentatively Identified Compounds (TICs)
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, Malcolm Pirnie applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

[7] Professional judgment is performed by a USEPA trained data validator with over a decade of environmental laboratory experience.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for organic analyses:

"U" Non-detect result at the laboratory established reporting limit.

"B" Associated with a result if the compound was also identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the laboratory established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

"D" This flag identifies compounds whose concentration is from a secondary dilution analysis.

During the data validation process, the laboratory qualifiers are retained, amended, or removed and/or new qualifiers are added based on the data validation findings. If any laboratory qualifiers are retained after the data validation process, they are considered data validation qualifiers. The following are data validation qualifiers and are the only qualifiers, if any, associated with this report's validated results.

"U" The compound was analyzed for, but was not detected above the reported quantitation limit.

"J" The compound was positively identified; the associated numerical value is the approximate concentration of the compound in the sample.

"N" The analysis indicates the presence of a compound for which there is presumptive evidence to make a "tentative identification".

"NJ" The analysis indicates the presence of a compound that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

"UJ" The compound was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

"R" The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets project specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR summary information section, Section 5.

3. Data Quality Evaluation

This section summarizes the evaluation of QA/QC parameters that were specified in Section 2.1, and whether they met validation criteria. The evaluation of VOCs is presented in Section 3.1 and the evaluation of 1,4-dioxane is presented in Section 3.2. Summaries of the individual components of the evaluation are described in their respective subsections.

3.1. Data Quality Evaluation for VOCs

3.1.1. Completeness Review

The laboratory provided the analytical results using formats based on the Contract Laboratory Program (CLP). Most documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses. It should be noted that although the case narratives were included in each SDG, they were indiscriminately written and contains information that are not relevant to the data reported for this project. They were not relied upon in this data validation.

3.1.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 5030B (purge and trap sample introduction) followed by Method 8260B (gas chromatography/mass spectrometry sample analysis). All samples were analyzed using a 25 mL (common volume used is 5 mL) purge volume, which offered lower reporting limits for each compound.

3.1.3. Sample Receipt

The laboratory received 19 water samples for VOC analysis between April 9, 2009 and May 6, 2009. The temperatures within all VOC sample shipment coolers at the time of laboratory receipt were within the recommended temperature range of 4°C ± 2°C. Field and laboratory personnel completed the Chain-of-Custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

There were no custody seals attached to individual sample bottles. No qualification is necessary because the exterior of the shipment coolers had intact custody seals.

3.1.4. Holding Times

The maximum technical holding time for VOC samples that are preserved with HCl to a pH of ≤ 2 is 14 days from date of sample collection. The maximum technical holding time for VOC samples that are not preserved to a pH of ≤ 2 is 7 days. All samples were preserved in the field and the pH is check at the laboratory immediately prior to sample analysis when the sample bottle is opened.

The following problem with holding time was found:

- SDG F9D090153: when the pH of sample P-119-217.80 was checked immediately prior to sample analysis, the pH value was not ≤ 2, and since it was on the 10th day from the date of sample collection, the applicable 7 day maximum holding time has been exceeded. Therefore, all detect concentrations for sample P-119-217.80 will be qualified as estimated, "J", biased low, and based on professional judgment, all non-detect reporting limits will also be qualified as estimated values, "UJ", biased low.
- SDG F9D240242: no problems found
- SDG F9E060254: no problems found

3.1.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using formats based on the CLP program. This format requires the use of stylized forms to present critical information pertaining to the analyses performed. For all analytical results, the laboratory provided a "Form I" with the reported analytical results for the requested analyses. The Form I format shows the following information for organic analyses: laboratory name; laboratory sample identification; sample matrix; field sample identification; date the sample was received; date the sample was analyzed; dilution factor; chemical abstract service (CAS) number; unit of measurement; and laboratory qualifier (if any).

3.1.6. Traceability to Raw Data

Traceability of the VOC analyses is established by Form V (Instrument Performance Check). These forms were all supplied and list the project samples analyzed per laboratory batch processed and the corresponding QC samples performed with the project samples.

3.1.7. Instrument Tuning

The GC/MS instrument performance (i.e., "tuning data," or a check of mass spectral ion intensities using bromofluorobenzene [BFB]) met method criteria. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical batches. There were no deficiencies found.

- SDG F9D090153: tuning results acceptable
- SDG F9D240242: tuning results acceptable
- SDG F9E060254: tuning results acceptable

3.1.8. Initial Calibration

Initial Calibrations (ICALs) were performed at multiple concentration levels with most compound concentrations from 0.5 ug/L to 40 ug/L. The initial calibration for SDG F9D090153 was calibrated at seven concentration levels and the initial calibration for SDG F9D240242 was calibrated at eight concentration levels. The average relative response factors (RRFs) were all evaluated with respect to the acceptance criterion of ≥ 0.05 (or ≥ 0.10 for chloromethane, 1,1-dichloroethane, and bromoform, or ≥ 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane) to determine acceptable detection sensitivity. All compound response factors were also evaluated for linearity over the calibration range. A percent relative standard deviation (%RSD) ≤ 20.0 indicates linearity through the origin and an average RF would be used). For some chemicals with elevated %RSD, the laboratory had employed a linear regression equation to determine the calibration curve. Since the %RSDs were not presented by the laboratory for these chemicals, an acceptable calibration must have a coefficient of the determination (COD) greater than or equal to 0.99 (SW-846 8000B criterion).

Some compounds in the ICALs did not meet data validation criteria (i.e., average RRFs < 0.05 and/or the %RSDs > 20%). Table 3.1-1 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to ICAL deficiencies.

Table 3.1-1. Evaluation of VOC Initial Calibration Results

Package Identification	Initial Calibration Date	Sample ID	Compounds	Action
F9D090153	03/31/09, 11:21	P-119-124.85 P-119-144.95 P-119-217.80 P-119-224.80 P-119-304.25 FD-003-040609 TB-1-33140809	RRF: None %RSD: None	RRF < 0.05 None %RSD > 20% None
F9D240242	04/30/09, 11:23	TB-0418042309 P-120-103.50 P-120-220 P-120-230	RRF: 2-Butanone 1,4-Dioxane %RSD: None	RRF < 0.05 R – all non-detect results %RSD > 20% None
F9E060254	05/05/09, 15:02	P-120-361.50 P-120-381.7 P-120-424.80 P-120-335.00 P-120-345.00 P-120-FD2 TB042809 P-120-EB-12	RRF: Acetone 1,4-Dioxane %RSD: None	RRF < 0.05 R – all non-detect results J – all positive results %RSD > 20% None

3.1.9. Continuing Calibration

The continuing calibration verification (CCV) analyses were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. All RRFs were evaluated with respect to the acceptance criterion of ≥ 0.05 (or ≥ 0.10 for chloromethane, 1,1-dichloroethane, and bromoform, or ≥ 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane) to determine continued acceptable detection sensitivity. All compound responses were also evaluated for continued agreement with the initial calibration - a percent difference (%D) criterion of ≤ 20% for the RRF or calculated amount must be met (USEPA HW-24 criterion).

Some compounds in the CCV analyses did not meet data validation criteria (i.e., RRFs < 0.05, and/or the %Ds > 20%). Table 3.1-2 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to CCV deficiencies.

Table 3.1-2. Evaluation of VOC Continuing Calibration Results

Package Identification	CCV Date	Sample ID	Compounds	Action
F9D090153	04/13/09, 9:35	P-119-124.85 P-119-144.95 P-119-217.80 P-119-224.80 FD-003-040609 TB-1-33140809	RRF: None % D: 1,4-Dioxane	RRF < 0.05 None %D > 20% UJ – all non-detect results

Table 3.1-2. Evaluation of VOC Continuing Calibration Results

Package Identification	CCV Date	Sample ID	Compounds	Action
	04/14/09, 11:26	P-119-217.80 DL P-119-224.80 DL P-119-304.25	RRF: None % D: Chioromethane Chloroethane Acetone	RRF < 0.05 None %D > 20% UJ – all non-detect results J – all positive results
F9D240242	05/01/09, 08:38	TB-0418042309 P-120-103.50 P-120-220 P-120-230 P-120-230 DL	RRF: 2-Butanone 1,4-Dioxane % D: None	RRF < 0.05 R – all non-detect results %D > 20% None
F9E060254	05/11/09, 10:22	P-120-361.50 P-120-381.7	RRF: Acetone 1,4-Dioxane % D: Chloroethane Methylene chloride 2-Hexanone	RRF < 0.05 R – all non-detect results J – all positive results %D > 20% UJ – all non-detect results
	05/12/05, 09:25	P-120-424.80 P-120-335.00 P-120-345.00 P-120-FD2 TB042809 P-120-EB-12 P-120-361.50 DL P-120-381.7 DL P-120-335.00 DL P-120-345.00 DL P-120-FD2 DL P-120-361.50 DLDL	RRF: Acetone 1,4-Dioxane % D: Chloroethane	RRF < 0.05 R – all non-detect results J – all positive results %D > 20% UJ – all non-detect results J – all positive results

Note:
DL Suffix – Indicates a secondary diluted sample reanalysis
DLDL Suffix – Indicates a tertiary diluted sample reanalysis

3.1.10. Laboratory Method Blanks

There were minor contaminations detected in several of the method blanks. In general, most laboratory method blanks contained trace levels of one or more common laboratory contaminants. The following contaminants were detected in the following method blanks:

- SDG F9D090153: 4/13/09 none; 4/14/09- none
- SDG F9D240242: 5/01/09- methylene chloride, styrene
- SDG F9E060254: 5/11/09- benzene, bromomethane; 5/12/09- acetone, styrene, tetrachloroethene

The corresponding sample results for the identified contaminants were revised to non-detect results if these results were "less than five times" (< 5 X) the method blank results for laboratory contaminants in accordance with the QAPP (GTEOSI, 2002). However, per National Functional Guidelines (EPA 540-R-99-008), common laboratory contaminants (methylene chloride, acetone, and 2-butanone) criterion is "< 10 X" the method blank results. The National Functional Guidelines' criterion was also used. Most

samples were affected by these qualification guidelines. A summary of the samples and compounds that were revised due to laboratory contamination are presented in Table 3.1-3.

Table 3.1-3. Evaluation of VOC Laboratory Method Blank Results

Package Identification	Blank Date/Time	Sample Affected	Compounds	Action
F9D090153	4/13/09 12:12	None	None	None
	4/14/09 14:10	None	None	None
F9D240242	5/01/09 10:22	P-120-230	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
		None	Styrene	None
F9E060254	5/11/09 12:25	P-120-361.50 P-120-381.7 P-120-335.00 P-120-345.00 P-120-FD2	Benzene	Revised result to "U" (non-detect)
	5/12/09 11:09	TB042809 P-120-EB-12	Acetone Tetrachloroethene	Removed "B" qualifier. No need to qualify TB or EB with MB
		P-120-424.80	Tetrachloroethene	Removed "B" qualifier. Blank concentration < 5X of sample

In addition to the above, the following actions were also performed.

- SDG F9D240242: although not detected in the same day's method blank (5/12/09), based on professional judgment, samples P-120-335.00, P-120-345.00, P-120-FD2 were qualified for benzene with the previous day's method blank (5/11/09) as non-detects.

3.1.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for each day of sample analysis. Most LCS percent recoveries were within the laboratory control limits for each of the batches. Generally, for recoveries exceeding laboratory control limits substantially, the associated data would be qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; non-detects are not qualified; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. For compounds that were slightly out, but were within the method default range of 70% to 130%, they were not qualified based on professional judgment. Table 3.1-4 shows the evaluation of LCS samples.

Table 3.1-4. Evaluation of VOC Laboratory Control Sample Results

Package Identification	LCS Date	Compound(s) Out	Affected Samples	Action
F9D090153	04/13/09	Acetone	None	None (high %R but not detected in samples)
	04/14/09	None	None	None
F9D240242	05/01/09	None	None	None

Table 3.1-4. Evaluation of VOC Laboratory Control Sample Results				
Package Identification	**LCS Date**	**Compound(s) Out**	**Affected Samples**	**Action**
F9E060254	05/11/09	None	None	None
	05/12/09	None	None	None

3.1.12. Matrix Spike/Matrix Spike Duplicate Analyses

MS/MSD analyses are designed to provide information about the effect of sample matrix on the sample preparation procedures and the measurement methodology. Data precision from field sampling and analytical techniques can also be assessed.

Only the associated non-spiked MS/MSD samples were evaluated for qualification (unless a trend can be determined for all other samples within the SDG). Where recoveries exceeded laboratory control limits, the associated data are qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. No qualification of data is required when percent recoveries are above the upper control limit and the VOC results are non-detect. However, there were no MS/MSDs submitted that were relevant to the samples of this project.

- SDGs F9D090153, F9D240242, and F9E060254: MS/MSDs were not performed or were performed on samples from other clients of the laboratory. Matrix effect of the samples for accuracy and precision was not evaluated because those MS/MSDs offer no pertinent information on matrix effects of field samples from this project.

Table 3.1-5 shows the samples and compounds that were qualified as estimated due to MS/MSD percent recoveries exceeding criteria.

Table 3.1-5. Evaluation of VOC Matrix Spike/Matrix Spike Duplicate Sample Results			
Package Identification	**Sample ID**	**Compounds**	**Action**
Not Evaluated			None

Since no project samples were analyzed for MS/MSD, sample matrix effects were not evaluated for this project.

3.1.13. Field Duplicate Analyses

Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical technique's precision. And by design, the laboratory was never made aware of which field samples the blind duplicates were associated with. The following samples were analyzed for field duplicate:

- SDG F9D090153: sample FD-003-040609 is a blind field duplicate of sample P119-304.25
- SDG F9E060254: sample P-120-FD2 is a blind field duplicate of sample P-120-361.50

An evaluation on the precision of the field sample collection procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when the results were above the laboratory

reporting limits. The RPD values for all compounds were less than 30% (aqueous data evaluation criteria) with the following exception:

- SDG F9E060254: the RPD for tetrachloroethene is 40.0%, for the P-120-FD2 duplicate pair. This may be due to the high dilution needed (200x and 100x) to bring the elevated tetrachloroethene concentration within the calibration range. Therefore, all samples where the dilution of 100x or above was conducted for tetrachloroethene are qualified as estimated values, "J". The only affected samples are the duplicate samples, P-120-361.50 and P-120-FD2.

There were no field duplicates submitted with SDG F9D240242. It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). There were 2 field duplicates collected for the 13 field samples submitted (not including blank samples collected as QCs) for analysis. Therefore, the frequency is satisfied and field precision is considered to have been evaluated to the QAPP's requirements.

3.1.14. Trip Blanks, Field Blanks, and Equipment Blanks

Three trip blanks, no field blanks, and one equipment blank were submitted for analysis. Many of the trip blanks that were submitted contained some contaminants. Edits made on the affected target compound results, which were based on trip blank and equipment blank contamination, were in accordance with practices described in the validation guidance documents listed in Sections 1.2 and on professional judgment. For all common contaminants (methylene chloride, 2-butanone, and acetone) that are greater than the reporting limit, positive sample results at less than 10x the highest blank concentration will be considered false positives (based on professional judgment) and qualified as non-detects "U". For all other contaminants that are greater than the reporting limit, positive sample results at less than 5x the highest blank concentration will be considered false positives (based on professional judgment) and qualified as non-detects "U". There were no field blanks submitted with any of the SDGs. The only equipment blank submitted was in SDG F9E060254, which was used for evaluating all SDG groundwater profiler location samples in the project. It should be noted that the results for the trip blanks and the equipment blank themselves were not revised with respect to the method blank's contamination; but the original results were retained to show data users the presence and concentrations of contamination that was used to qualify the project sample results. Any laboratory "B" qualifiers in the trip blanks and the equipment blank would be removed. The contamination in the trip blanks, like the project samples, is potentially attributable to cross-contamination from samples during shipment or contamination during the preparation and analysis of samples (including QC samples) at the laboratory. Contaminations detected in the equipment blank can also be used to identify contaminants introduced during the sample collection activities. Table 3.1-6 shows the samples and compounds that were qualified as non-detect "U" due to the presence trip blank and/or equipment blank contamination.

Table 3.1-6. Evaluation of VOC Trip Blank, Field Blank, and Equipment Blank Results

Package Identification	Sample Affected	Compound	Action
F9D090153	P-119-124.85 P-119-144.95	Tetrachloroethene Trichloroethene	Revised result to "U" (non-detect)
	P119-304.25 FD-033-040609 P-120-220 P-120-230	Trichloroethene	
F9D240242	None	Toluene o-Xylene	None, no sample detections
F9E060254	P-120-361.50 P-120-381.7	Acetone	Revised result to "U" (non-detect)

Table 3.1-6. Evaluation of VOC Trip Blank, Field Blank, and Equipment Blank Results			
Package Identification	**Sample Affected**	**Compound**	**Action**
	P-120-424.80	Trichloroethene	Revised result to "U" (non-detect)

For clarification, it should be noted that the following actions were performed.

- SDG F9D240242: although not detected in this SDG's trip blank, the trichloroethene sample concentrations in samples P-120-220 (2.3 ug/L) and P-120-230 (2.9 ug/L) were similar to that of the trip blank concentration from SDG F9D090153 (3.5 ug/L). Therefore, based on professional judgment, trichloroethene is qualified as a non-detect, "U", for samples P-120-220 and P-120-230 at the SDG F9D090153 trip blank level of 3.5 ug/L

3.1.15. System Monitoring Compounds

All percent recoveries for the VOC surrogates in all primary sample analyses were within laboratory control limits. However, there were three secondary or tertiary re-analyses with 4-bromofluorobenzene recoveries slightly below the laboratory's recovery range but greater than 70% recovery. The re-analyses were for the VOCs of tetrachloroethene and/or trichloroethene. The affected samples are P-120-361.50, P-120-381.7, and P-120-FD2 from SDG F9E060254. Since the surrogate 4-bromofluorobenzene is not associated with these two VOCs, no qualification actions are necessary.

- SDG F9D090153: no qualification actions performed
- SDG F9D240242: no qualification actions performed
- SDG F9E060254: no qualification actions performed

3.1.16. Internal Standards

All internal standard retention times were within ± 0.5 minutes from that of the associated calibration for all analyses. The responses (area counts) of all internal standards were within the range of 50-200% of the associated calibration verification for all samples. There were no deficiencies found.

- SDG F9D090153: all internal standards were acceptable
- SDG F9D240242: all internal standards were acceptable
- SDG F9E060254: all internal standards were acceptable

3.1.17. Compound Identification and Quantitation of Results / Dilutions

The laboratory's evaluations of the gas chromatograms and mass spectra for the identified compounds were acceptable with the exception.

- SDG F9D090153: no deficiencies found
- SDG F9D240242: Sample TB-0418042309 – o-xylene was positively detected and the concentration given in the quantitation report was 0.16 ug/L. The laboratory did not report the concentration, probably, because the concentration was low. The result for total-xylene will be

changed from non-detect to 0.16 J ug/L. The qualifier "J" is to denote that the concentration is below the reporting limit and, therefore, it is an estimated value.

- SDG F9E060254: Samples TB042809 and P-120-EB-12 – o-xylene was positively detected and the concentration given in the quantitation report was 0.19 ug/L and 0.10 ug/L, respectively. The laboratory did not report the concentration, probably, because the concentration was low. The result for total-xylene will be changed from non-detect to 0.19 J ug/L and 0.10 J ug/L, respectively. The qualifier "J" is to denote that the concentration is below the reporting limit and, therefore, it is an estimated value.

Some samples contained elevated concentrations of target compounds that exceeded the calibration range for the VOC analysis. The laboratory reported and qualified these results with an "E" qualifier. As part of the laboratory's corrective action, the affected samples were reanalyzed at a dilution to obtain usable results within the established calibration curve range. As part of this validation, specific compound results, which exceeded the calibration range in the original analysis, were replaced with the compound results from the secondary dilution analysis. The sample results, in effect, are made whole when the initial and secondary analyses are "hybridized," into one. A list of the re-analyzed samples and the affected compounds is presented in Table 3.1-7.

Table 3.1-7. Summary of VOC Laboratory Re-Analyses

Package Identification	Sample ID	Compound Reported From Re-Analysis
F9D090153	P-119-217.80 P-119-224.80	Tetrachloroethene
F9D240242	P-120-230	Tetrachloroethene
F9E060254	P-120-361.50 P-120-381-7 P-120-335.00 P-120-345.00 P-120-FD2	Tetrachloroethene Trichloroethene

Table 3.1-8. Summary of VOC Samples Analyzed Diluted Without an Undiluted Analysis

Package Identification	Sample ID	Initial Dilution
Not applicable		

3.1.18. Tentatively Identified Compounds (TICs)

The laboratory was required to perform library searches for TICs present in the samples and QC matrices for the VOC analyses. Since the TIC evaluation provides only the identity of a possible compound in the matrix and an estimated concentration of a compound, all TIC data should be considered tentatively qualitative and quantitative. The "N" qualifier was added to all TIC results to indicate to the data user that the compound identifications are tentative. The "J" qualifier was added to all TIC results to indicate to the data user that the values are estimated.

- TICs were only detected in SDG F9E060254. They were all the same TIC (1,1,2-trichloro-1,2-ethane) detected in samples P-120-361.50, P-120-335.00, P-120-345.00, and P-120-FD2. They were not detected in any of the blanks. There were no other TICs detected.

3.1.19. Electronic Data Deliverables

The results in the electronic data set matched results listed on the hardcopy analytical report including laboratory qualifiers. The qualifiers and results were revised based on quality control issues; and foundation for changes are listed in previous sections of this data validation report. The qualifiers were also placed onto the reporting forms located near the beginning of each hardcopy deliverable package (i.e., SDG package).

3.2. Data Quality Evaluation for 1,4-Dioxane

3.2.1. Completeness Review

The laboratory provided the analytical results in a Level IV data package. The package was not presented in a USEPA CLP format. Most documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses. It should be noted that although the case narratives were included in each SDG, they do not necessarily contains information that are relevant to the data reported for this project. The case narratives were not relied upon in this data validation.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 3520C (continuous liquid-liquid extraction) followed by modified Method 8270C (SVOCs by GC/MS). All samples were prepared using an initial sample volume of 1 L, extracted down to a final volume of 1 mL. In the modification of the method, deuterated 1,4-dioxane (1,4-dioxane-d8) was added to the samples during sample extraction to be used as a surrogate standard to evaluate the extraction procedure and also used as an internal standard to quantify 1,4-dioxane in the samples (isotope dilution). The laboratory had quantitated each analytical run twice, first to ensure that the run meets Method 8270C analytical criteria, then again to determine the concentration of 1,4-dioxane, if detected, via 1,4-dioxane-d8.

3.2.3. Sample Receipt

The laboratory received 19 water samples for VOC analysis between April 9, 2009 and May 6, 2009. The temperatures within all SVOC sample shipment coolers at the time of laboratory receipt were within the recommended temperature range of 4°C ± 2°C, with the exception of samples of SDG PSD1403 at 8°C. However, the laboratory noted that the sample was "on ice" and therefore, no qualifications are necessary. Field and laboratory personnel completed the Chain-of-Custody (COC) documents recording the signature, date, and time of custody transfer.

3.2.4. Holding Times

The maximum technical holding time for SVOC samples from date of sample collection to date of sample extraction is 7 days, and from date of sample extraction to date of sample analysis is 40 days.

The following problems with holding time were found:

- SDG PSD0559: Due to poor surrogate standard recoveries with samples P-119-304.35, P-119-324.8, and FD-003-040609, the samples were re-extracted outside of holding time by 9 days, 8 days, and 9 days, respectively. Therefore, based on the poor surrogate standard recoveries of the initial analysis and the exceedance of holding time on the second analysis, the following actions are taken:

  Sample P-119-304.35: qualify 1,4-dioxane as an estimated non-detect

  Sample P-119-324.8: qualify 1,4-dioxane as an estimated non-detect

  Sample FD-003-040609: qualify 1,4-dioxane as an estimated non-detect

- SDG PSD1403: no problems found
- SDG PSE0020: Due to poor surrogate recoveries with the method blank and the detection of 1,4-dioxane in samples P-120-326.65, P-120-335.00, and P-120-345.00, these samples were re-extracted. However, these samples were re-extracted outside of the holding time by 11 days.

Since the equipment blank surrogates in the original extraction batch was acceptable and because the surrogates in method blank in the re-extracted batch was still poor, the results from the re-extracted batch will not be used. The original extraction batch, with acceptable holding time and acceptable equipment blank (in place of the method blank) will be used.

- SDG PSE0254: no problems found

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using their own formats into full data package (Level IV Data Package). For all analytical results, the laboratory provided a summary results form per SDG. The form format shows the following information for the analyses: laboratory name; laboratory sample identification; field sample identification, sample matrix; reporting unit; analytical method, sample preparation batch identification, reporting limit, sample result, dilution factor, date of sample extraction, date of sample analysis, and data qualifier (if any). Also included were surrogate recoveries.

3.2.6. Traceability to Raw Data

Traceability of the SVOC analyses is established by the Extraction Record sheets and the GCMS Run Logbook sheets. These sheets were all supplied and list the project samples analyzed per laboratory batch processed and the corresponding QC samples performed with the project samples.

3.2.7. Instrument Tuning

The GC/MS instrument performance (i.e., "tuning data," or a check of mass spectral ion intensities using decafluorotriphenylphosphine [DFTPP]) met method criteria. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical batches. There were no deficiencies found.

- SDG PSD0599: tuning results acceptable
- SDG PSD1403: tuning results acceptable
- SDG PSE0020: tuning results acceptable
- SDG PSE0254: tuning results acceptable

3.2.8. Initial Calibration

Initial Calibrations (ICALs) were performed at eight levels with concentrations from 1 ug/L to 100 ug/L. A deuterated 1,4-dioxane (1,4-dioxane-d8) was used as the internal standard for 1,4-dioxane. Based on the response factors of nearly unity, they behave chromatographically similar. The average relative response factors (RRFs) were all evaluated with respect to the acceptance criterion of ≥ 0.05. All compound response factors were also evaluated for linearity over the calibration range. A percent relative standard deviation (%RSD) ≤ 15.0 indicates linearity through the origin and an average RF would be used.

1,4-Dioxane in all ICALs met data validation criteria (i.e., average RRFs < 0.05 and/or the %RSDs $>$ 15%). Table 3.2-1 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to ICAL deficiencies, if any.

Table 3.2-1. Evaluation of 1,4-Dioxane Initial Calibration Results

Package Identification	Initial Calibration Date	Sample ID	Compounds	Action
PSD0559	04/07/09, 18:02	P-119-244.25 P-119-263.00 P-119-294.70 P-119-304.25 P-119-324.8 FD-003-040609 P-119-354.95	RRF: None %RSD: None	RRF < 0.05 None %RSD > 15% None
PSD1403	04/07/09, 18:02	P-120-200 P-120-220 P-120-239.30	RRF: None %RSD: None	RRF < 0.05 None %RSD > 15% None
PSE0020	05/08/09, 00:32	P-120-263.50 P-120-326.65 EB-006-042909 P-120-335.00 P-120-345.00	RRF: None %RSD: None	RRF < 0.05 None %RSD > 15% None
PSE0254	05/08/09, 00:32	P-120-361.50 P-120-404.05 P-120-FD2	RRF: None %RSD: None	RRF < 0.05 None %RSD > 15% None

3.2.9. Continuing Calibration

The continuing calibration verification (CCV) analyses were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. All RRFs were evaluated with respect to the acceptance criterion of ≥ 0.05 to determine continued acceptable detection sensitivity. All compound responses were also evaluated for continued agreement with the initial calibration - a percent difference (%D) criterion of ≤ 20% for the RRF or calculated amount must be met (USEPA HW-22 criterion).

1,4-Dioxane in all CCV analyses met data validation criteria (i.e., RRFs < 0.05, and/or the %Ds > 20%). Table 3.2-2 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to CCV deficiencies, if any.

Table 3.2-2. Evaluation of 1,4-Dioxane Continuing Calibration Results

Package Identification	CCV Date	Sample ID	Compounds	Action
PSD0559	04/14/09, 13:10	P-119-244.25 P-119-263.00 P-119-294.70 P-119-304.25 P-119-324.8 FD-003-040609 P-119-354.95	RRF: None % D: None	RRF < 0.05 None %D > 20% None
	04/16/09, 12:00	P-119-304.25 RE P-119-324.8 RE FD-003-040609 RE	RRF: None % D: None	RRF < 0.05 None %D > 20% None

Table 3.2-2. Evaluation of 1,4-Dioxane Continuing Calibration Results

Package Identification	CCV Date	Sample ID	Compounds	Action
PSD1403	05/01/09, 17:26	P-120-200 P-120-220 P-120-239.30	RRF: None % D: None	RRF < 0.05 None %D > 20% None
PSE0020	05/08/09, 01:20	P-120-263.50 P-120-326.65 EB-006-042909 P-120-335.00 P-120-345.00	RRF: None % D: None	RRF < 0.05 None %D > 20% None
PSE0254	05/12/09, 11:29	P-120-361.50 P-120-404.05 P-120-FD2	RRF: None % D: None	RRF < 0.05 None %D > 20% None

Note:
RE Suffix – Indicates a reanalyzed sample

3.2.10. Laboratory Method Blanks

There were no 1,4-dioxane contamination detected in any of the method blanks. The following contaminants were detected in the following method blanks:

- SDG PSD0559: 4/10/09 - none; 4/15/09- none
- SDG PSD1403: 5/01/09 - none
- SDG PSE0020: 5/04/09 - none
- SDG PSE0254: 5/07/09 - none

A summary of the samples and compounds that were revised due to laboratory contamination are presented in Table 3.2-3.

Table 3.2-3. Evaluation of 1,4-Dioxane Laboratory Method Blank Results

Package Identification	Blank: Date Extracted	Sample Affected	Compounds	Action
PSD0559	4/10/09	None	None	None
	4/15/09	None	None	None
PSD1403	4/29/09	None	None	None
PSE0020	5/04/09	None	None	None
PSE0254	5/07/09	None	None	None

In addition to the above, the following actions were also performed.

- SDG PSD0559: although there was no 1,4-dioxane detected in both method blanks, both method blanks have poor 1,4-dioxane-d8 recoveries. Since, it is not known if contamination was

detectable, based on professional judgment, positive sample results are consequently qualified as estimated "J".

- SDG PDE0020: the surrogate recoveries of the method were poor (1,4-dioxane-d8 = 7%, nitrobenzene-d5 = 23%). Therefore, it cannot be certain if the detections of 1,4-dioxane in the associated samples are or are not from contamination that would otherwise show up in the method blank. However, since an equipment blank sample was extracted with the batch and its surrogate recoveries were acceptable, the equipment blank will be used in place of the method blank. A re-extracted batch (5/20/09), also with poor method blank surrogate recoveries, will not be used. There was no contamination of 1,4-dioxane detected in the equipment blank.

3.2.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for each extraction batch. All LCS percent recoveries were within the laboratory control limits for each of the batches. No qualification actions are necessary. Table 3.2-4 shows the evaluation of LCS samples.

Table 3.2-4. Evaluation of 1,4-Dioxane Laboratory Control Sample Results

Package Identification	LCS: Date Extracted	Compound(s) Out	Affected Samples	Action
PSD0559	4/10/09	None	None	None
	4/15/09	None	None	None
PSD1403	04/29/09	None	None	None
PSE0020	05/04/09	None	None	None
PSE0254	05/0709	None	None	None

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

MS/MSD analyses are designed to provide information about the effect of sample matrix on the sample preparation procedures and the measurement methodology. Data precision from field sampling and analytical techniques can also be assessed.

Only the associated non-spiked MS/MSD samples were evaluated for qualification (unless a trend can be determined for all other samples within the SDG). Where recoveries exceeded laboratory control limits, the associated data are qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. No qualification of data is required when percent recoveries are above the upper control limit and the SVOC results are non-detect. The following MS/MSD results were found:

- SDG PSD1403: an MS/MSD set was analyzed for sample P-120-239.30. The recoveries were acceptable at 101% and 105%. The relative percentage difference was acceptable at 4% (≤20%). There were no sample matrix effected detected.

- SDGs PSD0559, PEE0020, and PSE0254: MS/MSDs were not performed or were performed on samples from other clients of the laboratory. Matrix effect of the samples for accuracy and

precision was not evaluated because those MS/MSDs offer no pertinent information on matrix effects of field samples from this project.

Table 3.2-5 shows the samples and compounds that were qualified as estimated due to MS/MSD percent recoveries exceeding criteria.

Table 3.2-5. Evaluation of 1,4-Dioxane Matrix Spike/Matrix Spike Duplicate Sample Results

Package Identification	Sample ID	Compounds	Action
PSD1403	P-120-239.30	1,4-Dioxane	None

3.2.13. Field Duplicate Analyses

Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical technique's precision. And by design, the laboratory was never made aware of which field samples the blind duplicates were associated with. The following samples were analyzed for field duplicate:

- SDG PSD0559: sample FD-003-040609 is a blind field duplicate of sample P119-304.25
- SDG PSE0254: sample P-120-FD2 is a blind field duplicate of sample P-120-361.50

An evaluation on the precision of the field sample collection procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when the results were above the laboratory reporting limits. The RPD values for 1,4-dioxane were less than 30%. No qualification actions are necessary.

There were no field duplicates submitted with SDGs PSD1403 or PSD0020. It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). There were 2 field duplicates collected for the 15 field samples submitted (not including blank samples collected as QCs) for analysis. Therefore, the frequency is satisfied and field precision is considered to have been evaluated to the QAPP's requirements.

3.2.14. Field Blanks and Equipment Blanks

There were no field blanks submitted with any of the SDGs. The only equipment blank submitted was in SDG PSE0020, which was used for evaluating all SDG groundwater profiler location samples in the project. There was no contamination (1,4-dioxane) detected in the equipment blank. Table 3.2-6 shows the samples and compounds that were qualified as non-detect "U". There were no qualifications necessary.

Table 3.2-6. Evaluation of 1,4-Dioxane Equipment Blank Results

Package Identification	Sample Affected	Compound	Action
PSD0559	None	None	None
PSD1403	None	None	None
PSE0020	None	None	None
PSE0254	None	None	None

3.2.15. System Monitoring Compounds

A deuterated 1,4-dioxane (1,4-dioxand-d8) was extracted with the samples and evaluated as a surrogate standard along with nitrobenzene-d5. There were sample recovery results that did not meet the laboratory's acceptance ranges. It appears that the poor recoveries are related to poor extraction practices because several method blanks and laboratory control samples were also affected in addition to some samples. This deficiency appears to be random and does not appear to be related to sample matrix interferences. Below is a summary of the surrogate recovery findings and qualification actions taken.

- SDG PSD0559: Due to poor surrogate recoveries below the laboratory's acceptance range (1,4-dioxane acceptance range 38.6 % to 88.3%) with samples P-119-304.35, P-119-324.8, and FD-003-040609, the samples were re-extracted. Unfortunately, the re-extracted surrogate recoveries were also below the laboratory's acceptance range. Therefore, the results for these samples are qualified as estimated. However, the result for sample P-119-324.8 is qualified as unusable (R) because the recovery for 1,4-dioxane in the original analysis was only 5% and because the re-extracted sample was extracted 8 days past holding time of 7 days.
- SDG PSD1403: poor recoveries in the LCS and LCSD; no qualification actions performed
- SDG PSE0020: poor recoveries in the method blanks; no qualification actions performed
- SDG PSE0254: all recoveries were acceptable; no qualification actions performed

3.2.16. Internal Standards

All internal standard retention times were within ± 0.5 minutes from that of the associated calibration for all analyses. The responses (area counts) of all internal standards were within the range of 50-200% of the associated calibration verification for all samples. There were no deficiencies found.

- SDG PSD0559: all internal standards were acceptable
- SDG PSD1403: all internal standards were acceptable
- SDG PSE0020: all internal standards were acceptable
- SDG PSE0254: all internal standards were acceptable

3.2.17. Compound Identification and Quantitation of Results / Dilutions

The laboratory's evaluations of the gas chromatograms and mass spectra for the identified compounds were acceptable with the exception.

- SDG PSD0559: Sample P-119-244.24 – 1,4-dioxane was detected at a concentration of 0.37 ug/L. The laboratory did not report the concentration because the concentration was below the calibration range. The result for 1,4-dioxane will be changed from non-detect to 0.37 J ug/L. The qualifier "J" is to denote that the concentration is below the reporting limit and, therefore, it is an estimated value.
- SDG PSD1403: Samples P-120-220 and P-120-239.30 – 1,4-dioxane was detected at concentrations of 0.28 ug/L and 0.60 ug/L, respectively. The laboratory did not report the concentrations because the concentration was below the calibration range. The results for 1,4-dioxane will be changed from non-detects to 0.28 J ug/L and 0.60 J ug/L, respectively. The qualifiers "J" is to denote that the concentrations are below the reporting limit and, therefore, it are estimated values.

- SDG PSE0254: Sample P-120-404.05 – 1,4-dioxane was detected at a concentration of 0.84 ug/L. The laboratory did not report the concentration because the concentration was below the calibration range. The result for 1,4-dioxane will be changed from non-detect to 0.84 J ug/L. The qualifier "J" is to denote that the concentration is below the reporting limit and, therefore, it is an estimated value.
- SDG PSE0020: Sample P-120-263.50 – 1,4-dioxane was detected at a concentration of 0.90 ug/L. The laboratory did not report the concentration because the concentration was below the calibration range. The result for 1,4-dioxane will be changed from non-detect to 0.90 J ug/L. The qualifier "J" is to denote that the concentration is below the reporting limit and, therefore, it is an estimated value.

There were no samples that contained elevated concentrations of 1,4-dioxane that exceeded the calibration range. A list of the re-analyzed samples due to elevated concentrations and the affected compounds is presented in Table 3.2-7.

Table 3.2-7. Summary of 1,4-Dioxane Laboratory Re-Analyses Due to Need for Dilution

Package Identification	Sample ID	Compound Reported From Re-Analysis
PSD0559	None	None
PSD1403	None	None
PSE0020	None	None
PSE0254	None	None

Table 3.2-8. Summary of 1,4-Dioxane Samples Analyzed Diluted Without an Undiluted Analysis

Package Identification	Sample ID	Initial Dilution
Not applicable		

3.2.18. Tentatively Identified Compounds (TICs)

The search for TICs is not required in the analysis for 1,4-dioxane. However, it should be noted that there are TICs detected in many of the sample chromatograms.

3.2.19. Electronic Data Deliverables

The results in the electronic data set matched results listed on the hardcopy analytical report including laboratory qualifiers. The qualifiers and results were revised based on quality control issues; and foundation for changes are listed in previous sections of this data validation report. The qualifiers were also placed onto the reporting forms located near the beginning of each hardcopy deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 97.2 percent[8] of the data (individual compound results) were determined to be usable for qualitative and quantitative purposes. The other 2.8 percent were qualified as unusable – the presence or absence of the compounds cannot be verified. Those sample results qualified as estimated, "J" and "UJ," due to QC deficiencies should be considered conditionally usable. TIC identifications are only presumptive evidence of the compound's presence, and are qualified with "N."

The samples collected from profile locations P-119 and P-120 were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, on the QAPP (GTEOSI, 2002) established for the Sylvania Electric Products Incorporated Facility project, and by professional judgment[9]. Major deficiencies in the data generation process have resulted in some sample data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process have resulted in some sample data being characterized as approximate or estimated results. Identification of a data point as approximate, "J," indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples. For the analyses, none of the data were rejected due to precision non-conformances. The frequency of duplicates analysis is 15.4 percent for VOCs and 13.3 percent for 1,4-dioxane, which is above the QAPP's minimum requirement of 10 percent.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the analyses, none of the data were rejected due to LCS deficiencies. There were no 1,4-dioxane data rejected due to MS/MSD recoveries. However, MS/MSD recoveries were not evaluated for the VOC analyses because there were no MS/MSD data that were relevant to this project. Therefore, accuracy of the VOC data was not evaluated.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. There were some data qualified as unusable due to holding time exceedances and to poor blank surrogate recoveries. There were some data qualified as false-positives due to field and/or laboratory contamination. And there were some data qualified as false-negatives due to detected concentrations that are below the calibration range. Details are summarized within Section 3.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratories, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for several compounds in several project samples due to excessively poor compound responses in the initial

[8] Value = (763 total data points - 21 rejected data points) / 763 X 100

[9] Professional judgment is performed by a USEPA trained data validator with over a decade of environmental laboratory experience.

and continuing calibrations performed. Many of the rejected data were due to this sensitivity non-conformance.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets project specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data packages. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. Full CLP deliverable packages were received for the VOC analyses and Level IV deliverables were received for the 1,4-dioxane analyses. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times was not met for one VOC sample due to deficient sample pH preservation. The holding times was not met for many 1,4-dioxane sample due to the need for re-extraction as a result deficient surrogate recoveries either in the associated method blanks or the samples.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were observed with the initial and continuing calibrations performed and with surrogate recoveries – 2.8 percent of all data were qualified as not usable.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   USEPA guidance and modified methods were used in the analysis of the samples. The laboratory used the method specified. Some samples had results which were somewhat over diluted.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed all information provided in the data packages with minor errors. There were several occasions where individual xylene compounds were identified in the raw data but the laboratory neglected to manually convert them to total-xylene, and therefore not reported. There were also some compounds that were detected but not reported due to concentrations being below the calibration range. These situations were corrected in the data validation process.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines listed in Section 1. The laboratory and validation qualifier definitions are listed in Section 2.2.

References

United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.* EPA 540-R-08-01. June 2008.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IV. January 2008.

United States Environmental Protection Agency, Region 2. *Validating Semivolatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D.* SOP No. HW-22, Revision #3. October 2006.

United States Environmental Protection Agency, Region 2. *Validating Volatile Organic Compound by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B.* SOP No. HW-24, Revision #2. October 2006.

URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

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LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 921031

D

Field No. P-112392-2

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises: John Hassell

Address: Cantiague Rock Road

Town: Westbury NY

Collection Point: /

Well No. MW1A

	Month	Day	Year
Date Collected	11	23	92
Date Received	NOV	24	1992
Date Reported			
Collection Time	1200 Hrs		

Collected By: PFP / CAR

Sampler's Comments:

1) Sample on ice

2) Expect low levels of VOCs

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

NCDOH24499

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921031
SOURCE: JOHN HASSEL - CANTIAGUE ROCK RD, WESTBURY
MATRIX: MONITORING WELL
SITE: MW-1A
DATE SAMPLED: 11/23/92
DATE OF REPORT: 12/02/92

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
VINYL CHLORIDE	1	-------	1
TRICHLOROFLUOROMETHANE	1	------- <	1
1,1-DICHLOROETHYLENE	1	-------	4
METHYLENE CHLORIDE	1	------- <	1
t-1,2-DICHLOROETHYLENE	1	------- <	1
1,1-DICHLOROETHANE	1	-------	9
2,2-DICHLOROPROPANE	2	------- <	2
c-1,2-DICHLOROETHYLENE	1	-------	4
CHLOROFORM	1	------- <	1
BROMOCHLOROMETHANE	1	------- <	1
1,1,1-TRICHLOROETHANE	1	-------	10
1,1-DICHLOROPROPENE	1	------- <	1
CARBON TETRACHLORIDE	1	------- <	1
1,2-DICHLOROETHANE	1	------- <	1
TRICHLOROETHYLENE	1	-------	3
1,2-DICHLOROPROPANE	1	------- <	1
BROMODICHLOROMETHANE	1	------- <	1
DIBROMOMETHANE	1	------- <	1
c-1,3-DICHLOROPROPENE	1	------- <	1
t-1,3-DICHLOROPROPENE	1	------- <	1
1,1,2-TRICHLOROETHANE	1	------- <	1
1,3-DICHLOROPROPANE	1	------- <	1
TETRACHLOROETHYLENE	1	------- <	1
DIBROMOCHLOROMETHANE	1	------- <	1
1,2-DIBROMOETHANE	1	------- <	1
1,1,1,2-TETRACHLOROETHANE	1	------- <	1
BROMOFORM	1	------- <	1
1,1,2,2-TETRACHLOROETHANE	1	------- <	1
1,2,3-TRICHLOROPROPANE	1	------- <	1
1,2-DIBROMO-3-CHLOROPROPANE	1	------- <	1

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921031
SOURCE: JOHN HASSEL - CANTIAGUE ROCK RD, WESTBURY
MATRIX: MONITORING WELL
SITE: MW-1A
DATE SAMPLED: 11/23/92
DATE OF REPORT: 12/02/92

VOLATILE AROMATICS	MRC (ug/l)		RESULT (ug/l)
BENZENE	2.0	<	2.0
TOLUENE	1	<	1
CHLOROBENZENE	1	<	1
ETHYLBENZENE	1	<	1
o-XYLENE	1	<	1
m,p-XYLENE	1	<	1
STYRENE	1	<	1
n-PROPYLBENZENE	1	<	1
ISOPROPYLBENZENE	1	<	1
BROMOBENZENE	1	<	1
1,2,4-TRIMETHYLBENZENE	1	<	1
1,3,5-TRIMETHYLBENZENE	1	<	1
2-CHLOROTOLUENE	1	<	1
4-CHLOROTOLUENE	1	<	1
n-BUTYLBENZENE	1	<	1
sec-BUTYLBENZENE	1	<	1
tert-BUTYLBENZENE	1	<	1
p-ISOPROPYLTOLUENE	1	<	1
o-DICHLOROBENZENE	1	<	1
m-DICHLOROBENZENE	1	<	1
p-DICHLOROBENZENE	1	<	1
1,2,3-TRICHLOROBENZENE	1	<	1
1,2,4-TRICHLOROBENZENE	1	<	1
HEXACHLOROBUTADIENE	1	<	1
NAPHTHALENE	1	<	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 921032

D

Field No. P-112392-3

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	J. Hasselbrinkmann
Address	Cantiague Rock Rd
Town	Westbury NY
Collection Point	Well No. MW-2

	Month	Day	Year
Date Collected	11	23	92
Date Received	NOV	24	1992
Date Reported	NOV	30	1992
Collection Time	1300 Hrs		
Collected By:	PFP / CA Rich		

Sampler's Comments:
1) Sample on ice
2) Up gradient well
3) Expect low or no levels of VOC's

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

DEC 09 1992

NCDOH24502

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921032
SOURCE: J. HASSEL-BRINKMANN - CANTIAGUE ROCK RD, WESTBURY
MATRIX: MONITORING WELL
SITE: MW-2
DATE SAMPLED: 11/23/92
DATE OF REPORT: 11/30/92

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
VINYL CHLORIDE	1	------- <	1
TRICHLOROFLUOROMETHANE	1	------- <	1
1,1-DICHLOROETHYLENE	1	------- <	1
METHYLENE CHLORIDE	1	------- <	1
t-1,2-DICHLOROETHYLENE	1	------- <	1
1,1-DICHLOROETHANE	1	------- <	1
2,2-DICHLOROPROPANE	2	------- <	2
c-1,2-DICHLOROETHYLENE	1	------- <	1
CHLOROFORM	1	------- <	1
BROMOCHLOROMETHANE	1	------- <	1
1,1,1-TRICHLOROETHANE	1	------- <	1
1,1-DICHLOROPROPENE	1	------- <	1
CARBON TETRACHLORIDE	1	------- <	1
1,2-DICHLOROETHANE	1	------- <	1
TRICHLOROETHYLENE	1	------- <	1
1,2-DICHLOROPROPANE	1	------- <	1
BROMODICHLOROMETHANE	1	------- <	1
DIBROMOMETHANE	1	------- <	1
c-1,3-DICHLOROPROPENE	1	------- <	1
t-1,3-DICHLOROPROPENE	1	------- <	1
1,1,2-TRICHLOROETHANE	1	------- <	1
1,3-DICHLOROPROPANE	1	------- <	1
TETRACHLOROETHYLENE	1	------- <	1
DIBROMOCHLOROMETHANE	1	------- <	1
1,2-DIBROMOETHANE	1	------- <	1
1,1,1,2-TETRACHLOROETHANE	1	------- <	1
BROMOFORM	1	------- <	1
1,1,2,2-TETRACHLOROETHANE	1	------- <	1
1,2,3-TRICHLOROPROPANE	1	------- <	1
1,2-DIBROMO-3-CHLOROPROPANE	1	------- <	1

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921032
SOURCE: J. HASSEL-BRINKMANN - CANTIAGUE ROCK RD, WESTBURY
MATRIX: MONITORING WELL
SITE: MW-2
DATE SAMPLED: 11/23/92
DATE OF REPORT: 11/30/92

VOLATILE AROMATICS	MRC (ug/l)		RESULT (ug/l)
BENZENE	2.0	<	2.0
TOLUENE	1	<	1
CHLOROBENZENE	1	<	1
ETHYLBENZENE	1	<	1
o-XYLENE	1	<	1
m,p-XYLENE	1	<	1
STYRENE	1	<	1
n-PROPYLBENZENE	1	<	1
ISOPROPYLBENZENE	1	<	1
BROMOBENZENE	1	<	1
1,2,4-TRIMETHYLBENZENE	1	<	1
1,3,5-TRIMETHYLBENZENE	1	<	1
2-CHLOROTOLUENE	1	<	1
4-CHLOROTOLUENE	1	<	1
n-BUTYLBENZENE	1	<	1
sec-BUTYLBENZENE	1	<	1
tert-BUTYLBENZENE	1	<	1
p-ISOPROPYLTOLUENE	1	<	1
o-DICHLOROBENZENE	1	<	1
m-DICHLOROBENZENE	1	<	1
p-DICHLOROBENZENE	1	<	1
1,2,3-TRICHLOROBENZENE	1	<	1
1,2,4-TRICHLOROBENZENE	1	<	1
HEXACHLOROBUTADIENE	1	<	1
NAPHTHALENE	1	<	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 921033

D

Field No. P-112392-4

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises: J Hassel-Powers Dgn

Address: 1700 Shames Dr

Town: Westbury NY

Collection Point: Well No. MW-3

	Month	Day	Year
Date Collected	11	23	92
Date Received	NOV	24	1992
Date Reported			
Collection Time	1425 Hrs		
Collected By:	PFP / CA Rich		

Sampler's Comments: Sample on ice
Low to moderate VOCs

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

NCDOH24505

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921033
SOURCE: J HASSEL - POWERS - 1700 SHAMES DR., WESTBURY
MATRIX: MONITORING WELL
SITE: MW-3
DATE SAMPLED: 11/23/92
DATE OF REPORT: 12/02/92

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
VINYL CHLORIDE	1	<	1
TRICHLOROFLUOROMETHANE	1	<	1
1,1-DICHLOROETHYLENE	1		14
METHYLENE CHLORIDE	1	<	1
t-1,2-DICHLOROETHYLENE	1	<	1
1,1-DICHLOROETHANE	1		3
2,2-DICHLOROPROPANE	2	<	2
c-1,2-DICHLOROETHYLENE	1	<	1
CHLOROFORM	1	<	1
BROMOCHLOROMETHANE	1	<	1
1,1,1-TRICHLOROETHANE	1		37
1,1-DICHLOROPROPENE	1	<	1
CARBON TETRACHLORIDE	1	<	1
1,2-DICHLOROETHANE	1	<	1
TRICHLOROETHYLENE	1		7
1,2-DICHLOROPROPANE	1	<	1
BROMODICHLOROMETHANE	1	<	1
DIBROMOMETHANE	1	<	1
c-1,3-DICHLOROPROPENE	1	<	1
t-1,3-DICHLOROPROPENE	1	<	1
1,1,2-TRICHLOROETHANE	1	<	1
1,3-DICHLOROPROPANE	1	<	1
TETRACHLOROETHYLENE	1	<	1
DIBROMOCHLOROMETHANE	1	<	1
1,2-DIBROMOETHANE	1	<	1
1,1,1,2-TETRACHLOROETHANE	1	<	1
BROMOFORM	1	<	1
1,1,2,2-TETRACHLOROETHANE	1	<	1
1,2,3-TRICHLOROPROPANE	1	<	1
1,2-DIBROMO-3-CHLOROPROPANE	1	<	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

ACCESS NUMBER: 921033
SOURCE: J HASSEL - POWERS - 1700 SHAMES DR., WESTBURY
MATRIX: MONITORING WELL
SITE: MW-3
DATE SAMPLED: 11/23/92
DATE OF REPORT: 12/02/92

VOLATILE AROMATICS	MRC (ug/l)		RESULT (ug/l)
BENZENE	2.0	<	2.0
TOLUENE	1	<	1
CHLOROBENZENE	1	<	1
ETHYLBENZENE	1	<	1
o-XYLENE	1	<	1
m,p-XYLENE	1	<	1
STYRENE	1	<	1
n-PROPYLBENZENE	1	<	1
ISOPROPYLBENZENE	1	<	1
BROMOBENZENE	1	<	1
1,2,4-TRIMETHYLBENZENE	1	<	1
1,3,5-TRIMETHYLBENZENE	1	<	1
2-CHLOROTOLUENE	1	<	1
4-CHLOROTOLUENE	1	<	1
n-BUTYLBENZENE	1	<	1
sec-BUTYLBENZENE	1	<	1
tert-BUTYLBENZENE	1	<	1
p-ISOPROPYLTOLUENE	1	<	1
o-DICHLOROBENZENE	1	<	1
m-DICHLOROBENZENE	1	<	1
p-DICHLOROBENZENE	1	<	1
1,2,3-TRICHLOROBENZENE	1	<	1
1,2,4-TRICHLOROBENZENE	1	<	1
HEXACHLOROBUTADIENE	1	<	1
NAPHTHALENE	1	<	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AN OLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 920200 **D**

Field No. P-44

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	John Hassall
Address	Cantiague Rock Rd
Town	Westbury NY
Collection Point	Well No. MW1A

	Month	Day	Year
Date Collected	3	19	92
Date Received	MAR	19	1992
Date Reported	MAR	20	1992
Collection Time	12:15		
Collected By:			

Sampler's Comments:

Sample on ice
Split w/ CA Rich's Mike Yeager
Turbid

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

DL211. 7/89 Rev. 8/90

NCDOH24508

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 920200
Source: JOHN HASSAL, CANTIAQUE ROCK RD, WESTBURY
Matrix: MONITORING WELL
Site: MW1A
Date Sampled: 03/19/92
Date of Report: 03/20/92

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
VINYL CHLORIDE----------(WA24)-------	1	------- <	1
TRICHLOROFLUOROMETHANE------(WA01)-------	1	------- <	1
1,1-DICHLOROETHYLENE--------(WA15)-------	1	------- <	1
METHYLENE CHLORIDE----------(WA02)-------	1	------- <	1
t-1,2-DICHLOROETHYLENE------(WA16)-------	1	------- <	1
1,1-DICHLOROETHANE----------(WA04)-------	1	-------	12
2,2-DICHLOROPROPANE---------(WA33)-------	2	------- <	2
c-1,2-DICHLOROETHYLENE------(WA17)-------	1	-------	4
CHLOROFORM----------(WA05)-------	1	------- <	1
BROMOCHLOROMETHANE----------(WA25)-------	1	------- <	1
1,1,1-TRICHLOROETHANE-------(WA06)-------	1	-------	18
1,1-DICHLOROPROPENE---------(WA26)-------	1	------- <	1
CARBON TETRACHLORIDE------ (WA07)-------	1	------- <	1
1,2-DICHLOROETHANE----------(WA18)-------	1	------- <	1
TRICHLOROETHYLENE----------(WA08)-------	1	-------	3
1,2-DICHLOROPROPANE---------(WA20)-------	1	------- <	1
BROMODICHLOROMETHANE--------(WA09)-------	1	------- <	1
DIBROMOMETHANE----------(WA32)-------	1	------- <	1
c-1,3-DICHLOROPROPENE-------(WA22)-------	1	------- <	1
t-1,3-DICHLOROPROPENE----- (WA23)-------	1	------- <	1
1,1,2-TRICHLOROETHANE ---- (WA19)-------	1	------- <	1
1,3-DICHLOROPROPANE---------(WA27)-------	1	------- <	1
TETRACHLOROETHYLENE --------(WA13)-------	1	------- <	1
DIBROMOCHLOROMETHANE--------(WA10)-------	1	------- <	1
1,2-DIBROMOETHANE----------(WA28)-------	1	------- <	1
1,1,1,2-TETRACHLOROETHANE---(WA29)-------	1	------- <	1
BROMOFORM ----------(WA14)-------	1	------- <	1
1,1,2,2-TETRACHLOROETHANE---(WA21)-------	1	------- <	1
1,2,3-TRICHLOROPROPANE------(WA30)-------	1	------- <	1
1,2-DIBROMO-3-CHLOROPROPANE-(WA31)-------	1	------- <	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 920200
Source: JOHN HASSAL, CANTIAQUE ROCK RD, WESTBURY
Matrix: MONITORING WELL
Site: MW1A
Date Sampled: 03/19/92
Date of Report: 03/20/92

VOLATILE AROMATICS	MRC (ug/l)		RESULT (ug/l)
BENZENE ----------(WC01)-------	0.5	------- <	0.5
TOLUENE ----------(WC02)-------	1	------- <	1
CHLOROBENZENE ----------(WC03)-------	1	------- <	1
ETHYLBENZENE ----------(WC04)-------	1	------- <	1
o-XYLENE ----------(WC29)-------	1	------- <	1
m,p-XYLENE ----------(WC30)-------	1	------- <	1
STYRENE ----------(WC31)-------	1	------- <	1
n-PROPYLBENZENE ----------(WC11)-------	1	------- <	1
ISOPROPYLBENZENE ----------(WC12)-------	1	------- <	1
BROMOBENZENE ----------(WC09)-------	1	------- <	1
1,2,4-TRIMETHYLBENZENE -----(WC14)-------	1	------- <	1
1,3,5-TRIMETHYLBENZENE -----(WC15)-------	1	------- <	1
2-CHLOROTOLUENE ----------(WC16)-------	1	------- <	1
4-CHLOROTOLUENE ----------(WC17)-------	1	------- <	1
n-BUTYLBENZENE ----------(WC18)-------	1	------- <	1
sec-BUTYLBENZENE ----------(WC19)-------	1	------- <	1
tert-BUTYLBENZENE ----------(WC20)-------	1	------- <	1
p-ISOPROPYLTOLUENE ----------(WC21)-------	1	------- <	1
o-DICHLOROBENZENE ----------(WC22)-------	1	------- <	1
m-DICHLOROBENZENE ----------(WC23)-------	1	------- <	1
p-DICHLOROBENZENE ----------(WC24)-------	1	------- <	1
1,2,3-TRICHLOROBENZENE -----(WC25)-------	1	------- <	1
1,2,4-TRICHLOROBENZENE -----(WC26)-------	1	------- <	1
HEXACHLOROBUTADIENE ---------(WC27)-------	1	------- <	1
NAPHTHALENE ----------(WC28)-------	1	------- <	1

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY DEPARTMENT OF HEALTH

BUREAU OF LAND RESOURCES MANAGEMENT

SAMPLING NOTES

DATE	SITE NAME	PAGE 1 OF 1
3/19/92	STREET Cantiague Rock Road	WEATHER Snowing, 20-30 mph wind, 20-30°F
	VILLAGE Westbury NY	

FIELD NUMBER TIME	SOURCE DESCRIPTION	SAMPLE DESCRIPTION	INTENDED ANALYSIS *	COMMENTS
P-44	MW 1A (2" casing) DTW 76.53 from Casing Top Before Purge		VOA	1 3/4" Bailer wouldn't go beyond ~78' deep and recharge was slow Bailed w 1 1/4" SS bailer

* CN = CYANIDE VOA = VOLATILE ORGANIC ANALYSIS

FP = FLASH POINT TCLP = TOXICITY CHARACTERISTIC LEACHING POTENTIAL

PCB = POLYCHLORINATED BIPHENYLS

Peter T. Paul

SIGNATURE(S)

NCDOH24511

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent :
Address:

Inspector

DATE	COMMENTS
12/1/92	Sampling Report John Hassel RI/FS Cantiague Rock Road Westbury New York

On 11/23/92 C A Rich Consultants performed the first sampling of all five monitoring wells installed for this RI/FS

This sampling was observed and split with the writer.

The three off site wells were developed on the week of 11/9/92. All wells were purged immediately before sampling. Stabalization was determined by checking five parameters: These were temperature, pH, conductivity, disolved O_2 and TDS. Purging was done by submersable pumps.

The inorganic samples were taken by pump + hose however organic samples were taken by bailer. All aparatus was fully and thoroughly decontaminated by

EH 109a 1/68
DH-1198, 9/71

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : J Hassel
Address: Sampling Report

Inspector

DATE	COMMENTS

phosphate free detergent and triple rinsing between samplings. All purged waters were drumed for disposal at the John Hassel treatment facility.

The analysis intended for the C.A. Rich samples was for heavy metals and VOCs. Unfortunatly, the NCDH samples were taken for VOCs only due to a large backlog of work in the inorganic lab

All samples were placed on ice. The NCDH samples were submitted for analysis the following day. Presumably the CA Rich samples were submitted to Eco Test the following day.

The sample numbers, sources etc are shown on the sampling notes attached.

Peter F. Paul
PH Sanitarian I
NCDH

EH 109a 1/68
DH-1198. 9/71

NASSAU COUNTY DEPARTMENT OF HEALTH

BUREAU OF LAND RESOURCES MANAGEMENT

SAMPLING NOTES

DATE 12/1/92	SITE NAME John Hassel Inc		PAGE 1 OF 2
	STREET Cantiague Rock Rd		WEATHER Variable Sunny,
	VILLAGE Westbury NY		Cloudy, rainy, windy, calm

FIELD NUMBER TIME	SOURCE DESCRIPTION	SAMPLE DESCRIPTION	INTENDED ANALYSIS *	COMMENTS
P-112392-1	MW-1 Deep well 4" well On J. Hassel property	Clear H_2O	VOA	
P-112392-2	MW-1A 2" Shallow well on John Hassel property	Clear H_2O		
P-112392-3	MW-2 On Brinkman Property Up gradient of J. Hassel	Slightly turbid H_2O		

* CN = CYANIDE VOA = VOLATILE ORGANIC ANALYSIS
FP = FLASH POINT TCLP = TOXICITY CHARACTERISTIC LEACHING POTENTIAL
PCB = POLYCHLORINATED BIPHENYLS

Peter F. Paul
Dan I
SIGNATURE(S)

NCDOH24515

NASSAU COUNTY DEPARTMENT OF HEALTH

BUREAU OF LAND RESOURCES MANAGEMENT

SAMPLING NOTES

DATE	SITE NAME	PAGE 2 OF 2
11/23/92	STREET	WEATHER Varied Sun + Clouds
	VILLAGE	West wind 4 to 18 mph

FIELD NUMBER TIME	SOURCE DESCRIPTION	SAMPLE DESCRIPTION	INTENDED ANALYSIS *	COMMENTS
P-112392-4	2" Well immediately down gradient of John Hassel MW-3	Slightly turbid H_2O	VOA	
P-112392-5	MW-4 2" MW South of PKy	"		

* CN = CYANIDE VOA = VOLATILE ORGANIC ANALYSIS

FP = FLASH POINT TCLP = TOXICITY CHARACTERISTIC LEACHING POTENTIAL

PCB = POLYCHLORINATED BIPHENYLS

Peter Paul

P H Sanitarian I

SIGNATURE(S)

NCDOH24516

CA RICH CONSULTANTS, INC.
404 GLEN COVE AVENUE • SEA CLIFF, NY 11579 • (516) 674-3889

Memo

To D. F.

Date 7/24/92

From P. F. P.

Re: Plan review for John Hassel

The following are my comments on the July 1992 plan for Hassel

1) It does not address the extent of remaing soil contamination in the vadose zone.

2) It does not address the extent and contour of the clay lense in the immediate spill area.

3) It does not address the exact direction of ground water flow in the immediate spill area. (The clay may affect it)

BMI - 5039 - 1/9/67

Results of Monitoring Well MW-1A Resampling and Additional Monitoring Well Installation & Sampling Plan

July 1992

Prepared for:

John Hassall, Inc.
P.O. Box 698
Westbury, New York 11590

Attn: Mr. Victor Palese, Facility Mgr.

Prepared by:

CA Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, New York 11579

CA RICH CONSULTANTS, INC.

Certified Ground-Water and Environmental Specialists

July 20, 1992

John Hassall, Inc.
P.O. Box 698
Westbury, New York 11590

Attention: Victor Palese, Facility Manager

Re: Results of Monitoring Well MW-1A Resampling
and
Additional Monitoring Well Installation and
Sampling Plan for John Hassall, Inc., Westbury, NY

Dear Mr. Palese:

The following letter report has been prepared on behalf of John Hassall, Inc. to serve two purposes. This document presents the results of the resampling of monitoring well MW-1A, a water table monitoring well installed on your Facility in March of this year. It also serves to present a Plan for the installation of three (3) additional monitoring wells on and adjacent to your property.

Resampling Of Monitoring Well MW-1A

On June 23, 1992, two CA RICH field representatives collected a groundwater sample from MW-1A. Using a 1-3/4 inch diameter submersible pump, at least 3 casing volumes of water were pumped from this well and placed in a 55-gallon drum. This water was later discharged to the Facility's on-site waste water treatment plant. A groundwater sample was then collected using a decontaminated Teflon (TM) bailer for the analysis of volatile organics, base neutral extractable semivolatile organics and 9 selected metals. Both unfiltered (total) metals and filtered (dissolved) metals samples were collected. Samples were split with a field representative from NCDH.

A summary of the results of these analyses are included on Table 1. On both March 19th and June 23rd 1,1-dichloroethane (1,1-DCA); 1,1,1-trichloroethane (1,1,1-TCA) and trichloroethene (TCE) were detected at similar concentrations. TCE was measured below the NYS standard of 5 ppb in each analysis. Ranging between 9 and 16 ppb, both 1,1-DCA and 1,1,1-TCA exceeded the NYS standard of 5 ppb in both analyses. Only two of the nine unfiltered (total) metals - chromium and lead - equaled or exceed the NYS standard. Both of these metals, however, were undetected in the filtered (dissolved) analysis indicating that the source of these compounds are the suspended sediments derived from the underlying aquifer material and not the ambient groundwater.

404 Glen Cove Avenue, Sea Cliff, New York 11579 • Tel. 516/674-3889 • FAX 516/674-3901

Additional Monitoring Well Installation and Sampling Plan

The goal of the this Plan is to determine if the three VOCs detected in monitoring well MW-1A are migrating off-site and hydraulically downgradient of the John Hassall facility. In order to determine the direction of groundwater flow, CA RICH contacted the Nassau County Department of Public Works (NCDPW) to obtain water level measurements for numerous NCDPW monitoring wells located around the John Hassall site (see attached telephone log). The water levels measured by NCDPW as well as the water table well located on the John Hassall property indicate a southwestern direction of groundwater flow as plotted on Figure 1.

To monitor the quality of groundwater both upgradient and downgradient of the site, we propose the installation and sampling of three (3) water table monitoring wells as shown on Figure 2.

- MW-2 will be installed upgradient of the Facility at a location on the John Hassall property and bordering Cantiague Rock Road. This well will serve to determine the quality of groundwater as it enters the property.

- MW-3 is located hydraulically downgradient of the former USTs and wastewater recharge basin. The physical layout of the property does not allow for the mobilization of drilling equipment to install this well on John Hassall, Inc. property. As such, the well will have to be installed in the parking lot of 1700 Shames Drive, the adjacent property, which is currently occupied by Power Designs.

- MW-4 is located along a grass covered shoulder of Hunters Lane, a local street bordering the Northern State Parkway. This well is to be located approximately 1,500 feet hydraulically downgradient of the former USTs and wastewater recharge basin.

In general, the wells will be installed following the same protocol that was developed in our NCDH-approved December 1991 Work Plan. A hollow stem auger drill rig will be employed to advance the borings. Split spoon soil samples will then be collected at a frequency of one every ten feet to characterize the subsurface geology and to assist in locating the water table.

A red clayey soil horizon was encountered at approximately 55 to 62 feet below grade during the drilling of monitoring well MW-1A (log attached). During the drilling of wells MW-2 and MW-3, the on-site field inspector will examine the split spoon samples to determine if this red clayey horizon exists at these locations.

In the event this strata is again encountered at these locations, representative soil samples of the red clayey soil will be analyzed for VOCs plus arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. The results of these analyses will be used to determine if the red clayey soil horizon is acting as a localized confining or retarding unit of historically contaminated waters. Should the red clayey horizon not be encountered in these two borings, no soil samples will be analyzed.

Upon completion of the borings, monitoring wells will be constructed of 2-inch diameter PVC casing with 20 feet of slotted screens installed to intersect the encountered water table. The wells will then be completed with a washed sand pack, a cement seal and a flush-mounted, locking well cover. A NYS-licsenced surveyor will survey the elevations of each of the casings to the nearest 0.01 foot, MSL.

The wells will be developed upon completion and allowed to rest for a period of two weeks. Each well will then be purged of at least 3 casing volumes of water and sampled for volatile organics using EPA method 624 and both unfiltered and filtered arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. All samples will be delivered to State-certified Ecotest Laboratory, Inc. under chain-of-custody documentation in an ice-filled cooler accompanied with a volatile organics trip blank.

Once the field work is completed and all analytical results are received, a letter report will be prepared including boring logs, well construction details, elevations and a summary of the analytical results. The report will include an interpretation of the data collected and recommendations, if required, for additional investigative or remedial activities.

If you have any questions regarding this letter, please feel free to contact our office.

Sincerely,

Eric Weinstock

Eric A. Weinstock, CPG, CGWP
Project Manager

EAW:mg
Attachments

cc: Peter Paul, NCDH

TABLE 1

SUMMARY OF ANALYTICAL DETECTIONS FOR GROUNDWATER
John Hassall, Inc.
Westbury, New York

Parameter / Well ID	MW-1A	MW-1A	Trip Blank	Trip Blank	NYSDEC*	NYSDOH**
Date	3/19/92	6/23/92	3/19/92	6/23/92	(Groundwater)	Part 5
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics						
11 Dichloroethane	9	11	ND	ND	5	5
111 Trichloroethane	12	16	ND	ND	5	5
Trichloroethene	1	2	ND	ND	5	5
Base Neutrals						
Di-n- Butyl Phthalate	ND	1	N/A	N/A	50***	-
Bis(2-ethylhexyl)phthalate	ND	5	N/A	N/A	50	-

Parameter / Well ID	MW-1A	MW-1A	MW-1A	NYSDEC*	NYSDOH**
Date	3/19/92	6/23/92	6/23/92	(Groundwater)	Part 5
Units	mg/L	mg/L	mg/L	mg/L	mg/L
Metals	**Total**	**Total**	**Dissolved**		
Arsenic	0.003	0.002	<0.002	0.025	0.05
Barium	0.50	0.06	0.22	1.0	1.0
Cadmium	<0.001	<0.001	<0.001	0.01	0.01
Chromium	0.05	0.060	0.015	0.05	0.05
Lead	0.050	0.046	<0.005	0.025	0.05
Mercury	0.00028	0.00033	0.00026	0.002	0.002
Selenium	<0.002	<0.002	<0.002	0.01	0.01
Silver	<0.01	0.018	0.006	0.05	0.05
Nickel	0.11	<0.10	<0.10	-	-

▒ - Equal to or exceeds NYS standards

ND = Indicates Not Detected.

N/A = Indicates Not Analyzed.

*NYSDEC, 9/25/90, Div. of Water-Technical & Operational Guidance Series, 6NYCRR Parts 701-703.

**NYSDOH, 11/28/88, Chapter 1 State Sanitary Code Part 5 Drinking Water Supplies; Subpart 5-1 Public Water Supplies.

*** - Value taken from NYSDEC, 9/1/91, Div of Water-Water Quality Regulations For Surface And Groundwaters, 6NYCRR Parts 700-705.

TELEPHONE CALL REPORT

C A RICH CONSULTANTS, INC.
404 GLEN COVE AVENUE
SEA CLIFF, NEW YORK 11579

Firm/Office:
Date: 7/15/92
Job No.:

Project: John Hassal, Inc

Made by/Received by: Eric Veinstock Distribution:

Talked with: Ken Fishgrun NCDPW 433-1329

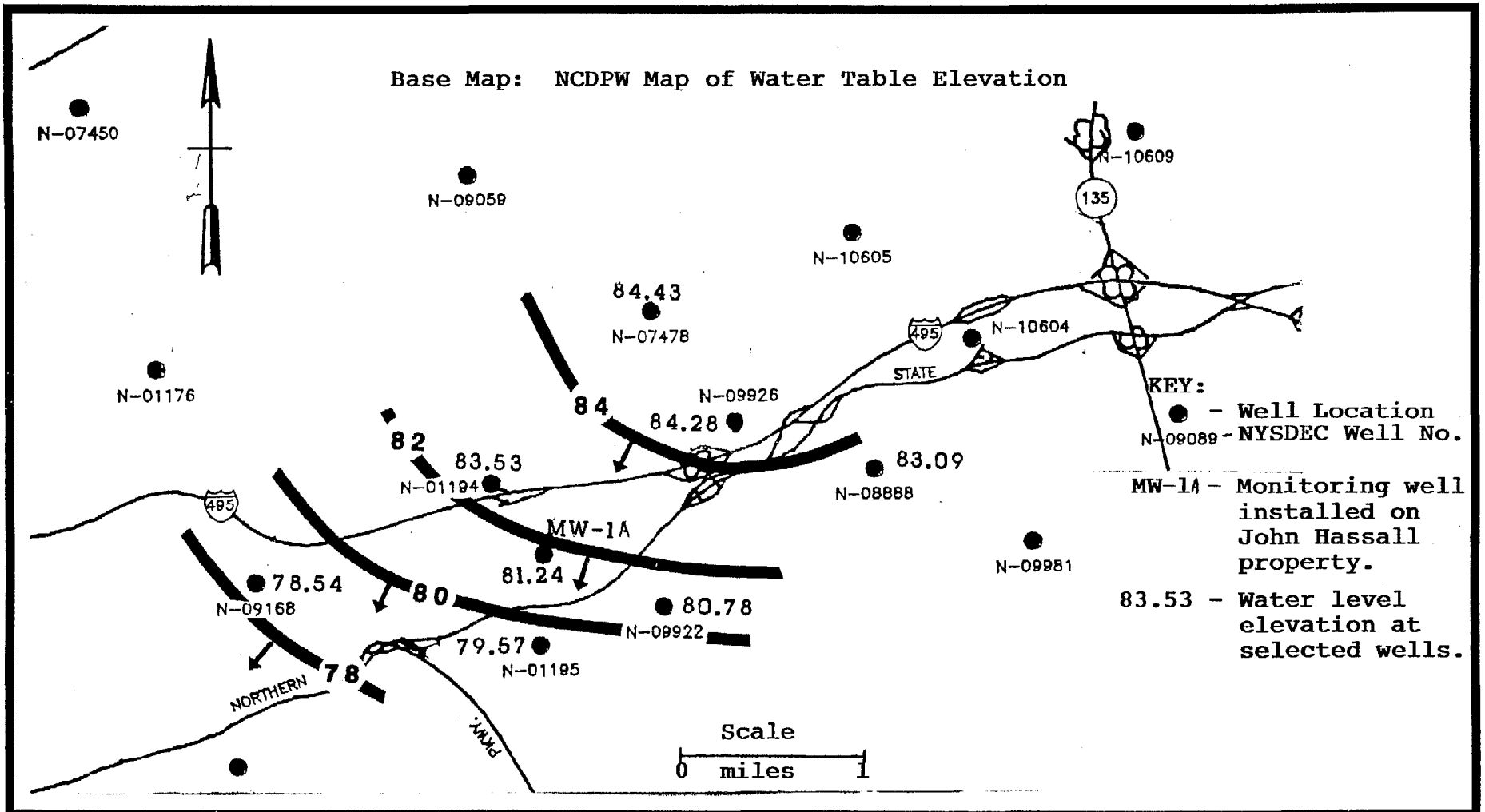
Ken provided me with the following information:

NCDPW Monitoring well #	W.L. Elev.	Date
N-01194	83.53	3/27/92
N-01195	79.57	3/25/92
N-07478	84.43	3/30/92
N-09926	84.28	3/30/92
N-09922	80.78	3/25/92
N-08888	83.09	3/30/92
N-09168	78.54	3/25/92

Eric

Note:

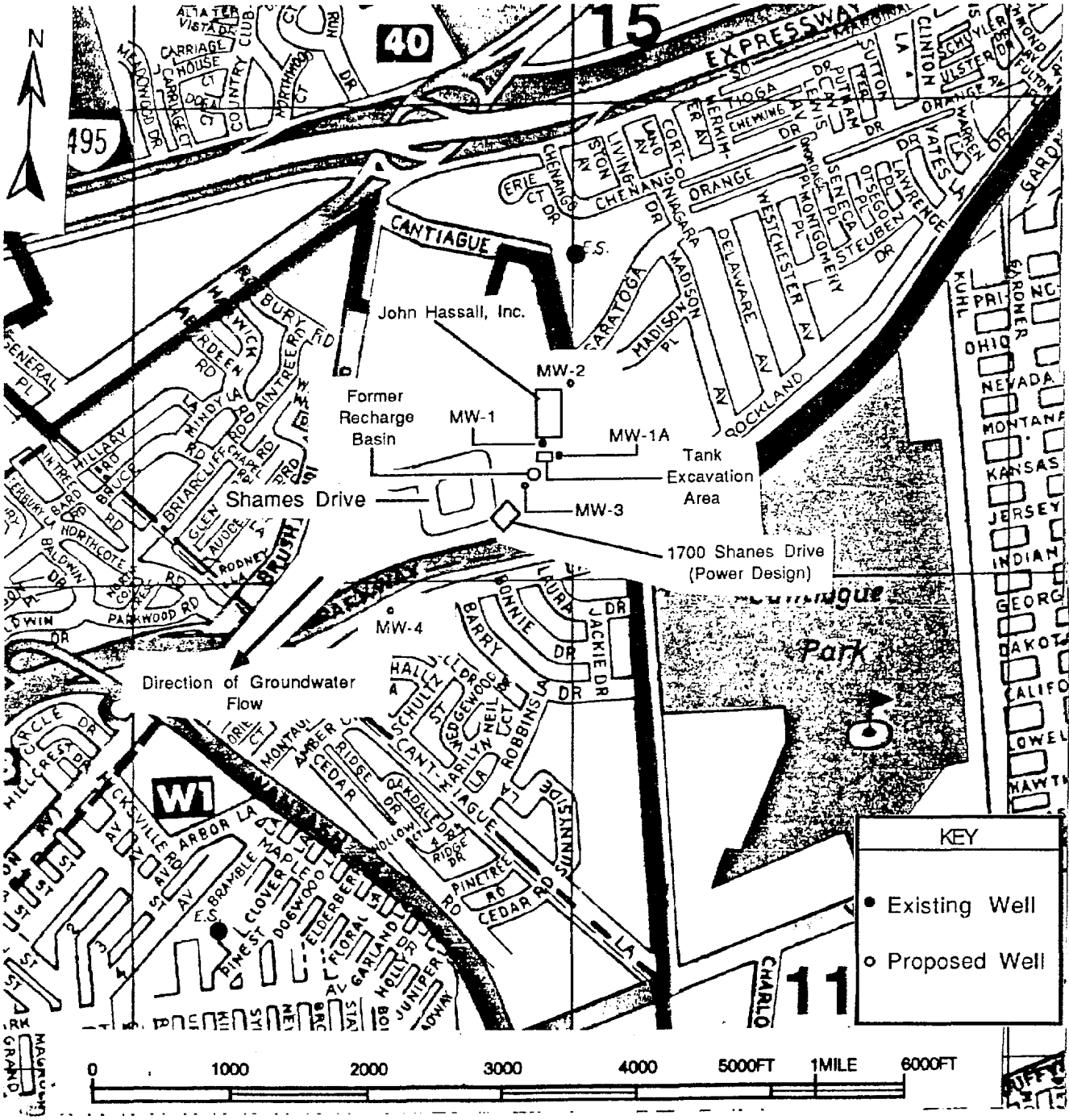
MW-1A (John Hassal, Inc.) Measured by CARich	81.24	3/27/92



MAP OF WATER TABLE ELEVATION MEASURED DURING MARCH 1992

CA RICH CONSULTANTS, INC Certified Ground-Water and Environmental Specialists	John Hassall, Inc. Westbury, New York	
	Prepared By: RH	Date: July 1992
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: EAW	Figure: 1

NCDOH24525



MAP OF PROPOSED AND EXISTING MONITORING WELLS

CA RICH CONSULTANTS, INC. Certified Ground-Water and Environmental Specialists	John Hassall, Inc. Westbury, New York	
	Prepared By: RH	Date: July 1992
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: EW	Figure: 2

NCDOH24526

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-2-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

Inspector *STS* Organic Vapor Instruments *OVA* Page *1 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
						Asphalt-Fill, Dark brown silty sand and gravel.		9:30 AM
2						Light brown-Tan, Coarse sand and gravel.		No Visual Staining No Odor
5						Drill without split spoon sampling to 25'below grade.		
10								
						Light brown-tan, Coarse sand and gravels, some large cobbles.		
20								
25								
27	1	13,18, 19,27	25 to 27.5	30"/20"	0.3	Tan-rust, coarse sand and gravel-broken white (quartz) sand.		No Visual Staining No Odor
30	2	7,10, 11,14,15	27.5 to 30	30"/16"		Tan-rust, coarse sand and gravel w/white fine sand and quartz.		
35								
37	3	5,7, 10,11,10	35 to 37.5	30"/16"	0.2	Tan-rust, coarse sand w/white fine sands and quartz.		
40								
42	4	7,9, 15,17,22	40 to 42.5	30"/15"	0.0	Tan-rust, coarse sand w/white fine sands and quartz.		
45								

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-2-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

Inspector *STS* Organic Vapor Instruments *OVA* Page *2 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
45	5	8,11, 16,29,27	45 to 47.5	30"/18"	0.2	White-tan, coarse sand w/small quartz pebbles.		11:30 AM No Odor No visual Staining
47								
50	6	8,15, 21,22,23	50 to 52.5	30"/17"	0.2	(50-51)White-tan, coarse sand w/small quartz pebbles		
52.5						(51-52.5) Very fine white sand w/reddish bands of fine sand.		
55	7	6,14, 15,15,17	55 to 57.5	30"/30"	0.2	Very fine red sand, w/very fine white sand (lenses), 5-10% red silty clay.		Lenses appear to be native organic deposits
57	8	8,9, 14,15,28	57.5 to 60	30"/28"	3.0	Very fine red silty clayey sand w/bands of dark brown black organic lenses.		No Odor No visual Staining
60	9	6,20, 25,29,32	60 to 62.5	30"/28"	0.0	(60-61.5) Very fine red silty clayey sand w/bands of dark brown-black organic lensess.		
62						(61.5-62.5) White fine-medium sand.		
65	10	17,23, 32,26,27	65 to 6.5	30"/28"	0.0	Medium-coarse white sand		
67								
70	11	7,8, 34,37,34	70 to 72.5	30"/26"	0.0	Medium-coarse, white-tanish sand w/pebbles and white small pebbles		
72								
74						Lost down hole Hammer at 75-77.5		
75								

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-3-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

Inspector *STS* Organic Vapor Instruments *OVA* Page *3 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
75	12	14, 27, 43, 49, 67	75 to 77.5	30"/27"	0.0	Light-tan, fine sand w/medium white sands.		9:15 AM Tip of spoon moist Water at appr. 76.8'
77								
80	13	4,9, 12,27,48	80 to 82.5	30"/30"	0.0	Light-tan, fine-medium grained sand.		
82								
85	14	8,17, 23,27,59	85 to 87.5	30"/30"	0.0	Tan, medium-coarse sand w/some small pebbles.		Final Sample
87								End boring 91.5'

RECEIVED
JUL 22 1992
NCDH—BLRM

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 920656 **D**

Field No. P-62392-1

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises: John Hassell Inc.

Address: Cantiague Rock Rd.

Town: Westbury NY

Collection Point: Well No. MW1A

	Month	Day	Year
Date Collected	6	23	92
Date Received	JUN 23 1992		
Date Reported	JUN 30 1992		
Collection Time	11:00 AM		
Collected By:	Peter Paul		

Sampler's Comments:

1) Sample on ice
2) Expect low level Halogenated and Aromatic contamination.
3) Split w/CA Rich

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
(4)	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

NCDOH24630

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 920656
Source: JOHN HASSEL INC., CANTIAQUE ROCK RD, WESTBURY
Matrix: MONITORING WELL
Site: MW1A
Date Sampled: 06/23/92
Date of Report: 06/30/92

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
VINYL CHLORIDE----------(WA24)-------	1	------- <	1
TRICHLOROFLUOROMETHANE------(WA01)-------	1	------- <	1
1,1-DICHLOROETHYLENE--------(WA15)-------	1	------- <	1
METHYLENE CHLORIDE----------(WA02)-------	1	------- <	1
t-1,2-DICHLOROETHYLENE------(WA16)-------	1	------- <	1
1,1-DICHLOROETHANE----------(WA04)-------	1	-------	13
2,2-DICHLOROPROPANE---------(WA33)-------	2	------- <	2
c-1,2-DICHLOROETHYLENE------(WA17)-------	1	-------	2
CHLOROFORM----------(WA05)-------	1	------- <	1
BROMOCHLOROMETHANE----------(WA25)-------	1	------- <	1
1,1,1-TRICHLOROETHANE-------(WA06)-------	1	-------	22
1,1-DICHLOROPROPENE---------(WA26)-------	1	------- <	1
CARBON TETRACHLORIDE------ (WA07)-------	1	------- <	1
1,2-DICHLOROETHANE----------(WA18)-------	1	------- <	1
TRICHLOROETHYLENE----------(WA08)-------	1	-------	3
1,2-DICHLOROPROPANE---------(WA20)-------	1	------- <	1
BROMODICHLOROMETHANE--------(WA09)-------	1	------- <	1
DIBROMOMETHANE----------(WA32)-------	1	------- <	1
c-1,3-DICHLOROPROPENE-------(WA22)-------	1	------- <	1
t-1,3-DICHLOROPROPENE----- (WA23)-------	1	------- <	1
1,1,2-TRICHLOROETHANE ---- (WA19)-------	1	------- <	1
1,3-DICHLOROPROPANE---------(WA27)-------	1	------- <	1
TETRACHLOROETHYLENE --------(WA13)-------	1	------- <	1
DIBROMOCHLOROMETHANE--------(WA10)-------	1	------- <	1
1,2-DIBROMOETHANE----------(WA28)-------	1	------- <	1
1,1,1,2-TETRACHLOROETHANE---(WA29)-------	1	------- <	1
BROMOFORM ----------(WA14)-------	1	------- <	1
1,1,2,2-TETRACHLOROETHANE---(WA21)-------	1	------- <	1
1,2,3-TRICHLOROPROPANE------(WA30)-------	1	------- <	1
1,2-DIBROMO-3-CHLOROPROPANE-(WA31)-------	1	------- <	1

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 920656
Source: JOHN HASSEL INC., CANTIAQUE ROCK RD, WESTBURY
Matrix: MONITORING WELL
Site: MW1A
Date Sampled: 06/23/92
Date of Report: 06/30/92

VOLATILE AROMATICS		MRC (ug/l)		RESULT (ug/l)
BENZENE	(WC01)	0.5	<	0.5
TOLUENE	(WC02)	1	<	1
CHLORDBENZENE	(WC03)	1	<	1
ETHYLBENZENE	(WC04)	1	<	1
o-XYLENE	(WC29)	1	<	1
m,p-XYLENE	(WC30)	1	<	1
STYRENE	(WC31)	1	<	1
n-PROPYLBENZENE	(WC11)	1	<	1
ISOPROPYLBENZENE	(WC12)	1	<	1
BROMOBENZENE	(WC09)	1	<	1
1,2,4-TRIMETHYLBENZENE	(WC14)	1	<	1
1,3,5-TRIMETHYLBENZENE	(WC15)	1	<	1
2-CHLOROTOLUENE	(WC16)	1	<	1
4-CHLOROTOLUENE	(WC17)	1	<	1
n-BUTYLBENZENE	(WC18)	1	<	1
sec-BUTYLBENZENE	(WC19)	1	<	1
tert-BUTYLBENZENE	(WC20)	1	<	1
p-ISOPROPYLTOLUENE	(WC21)	1	<	1
o-DICHLOROBENZENE	(WC22)	1	<	1
m-DICHLOROBENZENE	(WC23)	1	<	1
p-DICHLOROBENZENE	(WC24)	1	<	1
1,2,3-TRICHLOROBENZENE	(WC25)	1	<	1
1,2,4-TRICHLOROBENZENE	(WC26)	1	<	1
HEXACHLORDBUTADIENE	(WC27)	1	<	1
NAPHTHALENE	(WC28)	1	<	1

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY REPORT

CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES

Center for Laboratories and Research

au County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. Clin. Spec. 19201159

B

Field No. P-96

Source Information (Please Print)

Premises John Hassel

Address Cantiague Rock Rd.,

Town Westbury

Collection Point JH-4-2

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported	AUG 26 1991		
Collection Time	13 :15 hrs		
Collected By:	Peter F. Paul		

Sampler's Comments:

Total metals only

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	TOTAL Metals		Result	Check	Non-Metals		Result
	Aluminum	mg/l		15	Chloride	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l	
3	Barium	mg/l		17	Fluoride	mg/l	
4	Cadmium	mg/l		18	MBAS	mg/l	
5	Chromium, Total	mg/l		19	pH		
6	Copper	mg/l		20	Phenols	mg/l	
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l	
8	Lead	mg/l		22	Solids, Total Diss.	mg/l	
9	Manganese	mg/l		23	Sulfate	mg/l	
10	Mercury	mg/kg	0.10	24	Ammonia nitrogen	mg/l	
11	Nickel	mg/kg	14.0	25	Kjeldahl nitrogen	mg/l	
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l	
13	Silver	mg/l		27	Nitrate nitrogen	mg/l	
14	Zinc	mg/l		28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent		Result
29	Chromium hex.	mg/l	
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

Examiner's Comments

PLEASE SIGN IN SAMPLES.

NCDOH24665

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES A SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911202

D

Field No. P-96

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	J. Hassell
Address	Cantiague Rock Rd
Town	Westbury
Collection Point	JH-4-P
Well No.	

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported			
Collection Time	13:15 hrs		
Collected By:	P. Paul		

Sampler's Comments:

Samples on ice
Heavy contamination

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	(1)	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

DL211. 7/89 Rev. 8/90

NCDOH24666

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911202
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-4-2
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	1000	------- <	1000
TRICHLOROFLUORMETHANE-----(WA01)---------	1000	------- <	1000
1,1-DICHLOROETHYLENE------(WA15)---------	1000	------- <	1000
METHYLENE CHLORIDE--------(WA02)---------	1000	------- <	1000
t-1,2-DICHLOROETHYLENE----(WA16)---------	1000	------- <	1000
1,1-DICHLOROETHANE--------(WA04)---------	1000	------- <	1000
c-1,2-DICHLOROETHYLENE----(WA17)---------	1000	------- <	1000
CHLOROFORM----------(WA05)---------	1000	------- <	1000
1,1,1-TRICHLOROETHANE-----(WA06)---------	1000	------- <	1000
CARBON TETRACHLORIDE------(WA07)---------	1000	------- <	1000
1,2-DICHLOROETHANE--------(WA18)---------	1000	------- <	1000
TRICHLOROETHYLENE---------(WA08)---------	1000	------- <	1000
1,2-DICHLOROPROPANE-------(WA20)---------	1000	------- <	1000
BROMODICHLOROMETHANE------(WA09)---------	1000	------- <	1000
c-1,3-DICHLOROPROPENE-----(WA22)---------	1000	------- <	1000
t-1,3-DICHLOROPROPENE-----(WA23)---------	1000	------- <	1000
1,1,2-TRICHLOROETHANE ----(WA19)---------	1000	------- <	1000
TETRACHLOROETHYLENE ------(WA13)---------	1000	------- <	1000
DIBROMOCHLOROMETHANE------(WA10)---------	1000	------- <	1000
BROMOFORM ----------(WA14)---------	1000	------- <	1000
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	1000	------- <	1000

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

JUL 29 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911202
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-4-2
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	500	<	500
TOLUENE	(WC02)	1000	<	1000
CHLOROBENZENE	(WC03)	1000	<	1000
ETHYLBENZENE	(WC04)	NR		NR
o-XYLENE	(WC29)	1000		8600
m,p-XYLENE	(WC30)	1000		4300
STYRENE	(WC31)	NR		NR
n-PROPYLBENZENE	(WC11)	NR		NR
ISOPROPYLBENZENE	(WC12)	NR		NR
BROMOBENZENE	(WC09)	1000	<	1000
1,2,4-TRIMETHYLBENZENE	(WC14)	1000		27000
1,3,5-TRIMETHYLBENZENE	(WC15)	1000		9600
2-CHLOROTOLUENE	(WC16)	1000	<	1000
4-CHLOROTOLUENE	(WC17)	1000	<	1000
n-BUTYLBENZENE	(WC18)	1000		4600
sec-BUTYLBENZENE	(WC19)	NR		NR
tert-BUTYLBENZENE	(WC20)	NR		NR
p-ISOPROPYLTOLUENE	(WC21)	NR		NR
o-DICHLOROBENZENE	(WC22)	1000	<	1000
m-DICHLOROBENZENE	(WC23)	1000	<	1000
p-DICHLOROBENZENE	(WC24)	1000	<	1000
1,2,3-TRICHLOROBENZENE	(WC25)	1000	<	1000
1,2,4-TRICHLOROBENZENE	(WC26)	1000	<	1000
HEXACHLOROBUTADIENE	(WC27)	1000	<	1000
NAPHTHALENE	(WC28)	1000		1500

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC COMPOUNDS
Comment: DETECTED BY GC IN HIGH CONCENTRATIONS.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY REPORT

CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. Clin. 19201160 Spec.

B

Field No. P-97

Source Information (Please Print)

Premises John Hassel

Address Cantiague Rock Rd

Town Westbury

Collection Point JH-6-1

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported	SEP 03 1991		

Collection Time 13:30 hrs

Collected By: P. Paul

Sampler's Comments: Total Metal only

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	Total Metals		Result	Check	Non-Metals		Result
1	Aluminum	mg/l		15	Chloride	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l	
3	Barium	mg/l		17	Fluoride	mg/l	
4	Cadmium	mg/l		18	MBAS	mg/l	
5	Chromium, Total	mg/l		19	pH		
6	Copper	mg/l		20	Phenols	mg/l	
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l	
8	Lead	mg/l		22	Solids, Total Diss.	mg/l	
9	Manganese	mg/l		23	Sulfate	mg/l	
10	Mercury	mg/Kg	<0.10	24	Ammonia nitrogen	mg/l	
11	Nickel	mg/Kg	32.0	25	Kjeldahl nitrogen	mg/l	
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l	
13	Silver	mg/l		27	Nitrate nitrogen	mg/l	
14	Zinc	mg/l		28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent		Result
29	Chromium hex.	mg/l	
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

Examiner's Comments

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911201

D

Field No. P-97

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	J. Hassel
Address	Cantiague Rock Rd
Town	Westbury
Collection Point	JH-6-1
Well No.	

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported			
Collection Time	13:30		
Collected By:	P. Paul		

Sampler's Comments:

Sample on ice
Heavy contamination

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	(1)	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

JUL 29 1991

DL 211 7/90 Rev. 8/90

NCDOH24670

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911201
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-1
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	1000	------- <	1000
TRICHLOROFLUORMETHANE-----(WA01)---------	1000	------- <	1000
1,1-DICHLOROETHYLENE------(WA15)---------	1000	------- <	1000
METHYLENE CHLORIDE--------(WA02)---------	1000	------- <	1000
t-1,2-DICHLOROETHYLENE----(WA16)---------	1000	------- <	1000
1,1-DICHLOROETHANE--------(WA04)---------	1000	------- <	1000
c-1,2-DICHLOROETHYLENE----(WA17)---------	1000	------- <	1000
CHLOROFORM----------(WA05)---------	1000	------- <	1000
1,1,1-TRICHLOROETHANE-----(WA06)---------	1000	------- <	1000
CARBON TETRACHLORIDE------(WA07)---------	1000	------- <	1000
1,2-DICHLOROETHANE--------(WA18)---------	1000	------- <	1000
TRICHLOROETHYLENE---------(WA08)---------	1000	------- <	1000
1,2-DICHLOROPROPANE-------(WA20)---------	1000	------- <	1000
BROMODICHLOROMETHANE------(WA09)---------	1000	------- <	1000
c-1,3-DICHLOROPROPENE-----(WA22)---------	1000	------- <	1000
t-1,3-DICHLOROPROPENE-----(WA23)---------	1000	------- <	1000
1,1,2-TRICHLOROETHANE ----(WA19)---------	1000	------- <	1000
TETRACHLOROETHYLENE ------(WA13)---------	1000	------- <	1000
DIBROMOCHLOROMETHANE------(WA10)---------	1000	------- <	1000
BROMOFORM ----------(WA14)---------	1000	------- <	1000
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	1000	------- <	1000

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

JUL 29 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911201
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-1
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	500	------- <	500
TOLUENE	(WC02)	1000	------- <	1000
CHLOROBENZENE	(WC03)	1000	------- <	1000
ETHYLBENZENE	(WC04)	NR	-------	NR
o-XYLENE	(WC29)	1000	-------	9500
m,p-XYLENE	(WC30)	1000	-------	4600
STYRENE	(WC31)	NR	-------	NR
n-PROPYLBENZENE	(WC11)	NR	-------	NR
ISOPROPYLBENZENE	(WC12)	NR	-------	NR
BROMOBENZENE	(WC09)	1000	------- <	1000
1,2,4-TRIMETHYLBENZENE	(WC14)	1000	-------	39000
1,3,5-TRIMETHYLBENZENE	(WC15)	1000	-------	12000
2-CHLOROTOLUENE	(WC16)	1000	------- <	1000
4-CHLOROTOLUENE	(WC17)	1000	------- <	1000
n-BUTYLBENZENE	(WC18)	1000	-------	8900
sec-BUTYLBENZENE	(WC19)	NR	-------	NR
tert-BUTYLBENZENE	(WC20)	NR	-------	NR
p-ISOPROPYLTOLUENE	(WC21)	NR	-------	NR
o-DICHLOROBENZENE	(WC22)	1000	------- <	1000
m-DICHLOROBENZENE	(WC23)	1000	------- <	1000
p-DICHLOROBENZENE	(WC24)	1000	------- <	1000
1,2,3-TRICHLOROBENZENE	(WC25)	1000	------- <	1000
1,2,4-TRICHLOROBENZENE	(WC26)	1000	------- <	1000
HEXACHLOROBUTADIENE	(WC27)	1000	------- <	1000
NAPHTHALENE	(WC28)	1000	-------	1400

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC COMPOUNDS
Comment: DETECTED BY GC IN HIGH CONCENTRATIONS.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY REPORT

CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES

Center for Laboratories and Research

N u County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Clin. Lab Spec. 19201161

B

Field No. P-98

Source Information (Please Print)

Premises J. Hassel

Address Cantiague Rock Rd.

Town Westbury

Collection Point JH 6-2

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL 15 1991		
Date Reported	AUG 22 1991		
Collection Time	13:35 hrs		

Collected By:

Sampler's Comments: Total Metal only

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	TAM Metals		Result	Check	Non-Metals		Result
1	Aluminum	mg/l		15	Chloride	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l	
3	Barium	mg/l		17	Fluoride	mg/l	
4	Cadmium	mg/l		18	MBAS	mg/l	
5	Chromium, Total	mg/l		19	pH		
6	Copper	mg/l		20	Phenols	mg/l	
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l	
8	Lead	mg/l		22	Solids, Total Diss.	mg/l	
9	Manganese	mg/l		23	Sulfate	mg/l	
10	Mercury	mg/Kg	<0.10	24	Ammonia nitrogen	mg/l	
11	Nickel	mg/Kg	93.0	25	Kjeldahl nitrogen	mg/l	
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l	
13	Silver	mg/l		27	Nitrate nitrogen	mg/l	
14	Zinc	mg/l		28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent		Result
29	Chromium hex.	mg/l	
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

Examiner's Comments

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911200

D

Field No. P-98

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	J. Hassell
Address	Cantiague Rock Rd
Town	Westbury
Collection Point	JH-6-12
Well No.	

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported			
Collection Time	13:35		
Collected By:	P. Paul		

Sampler's Comments:

Sample on ice

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

JUL 29 1991

DL211. 7/89 Rev. 8/90

NCDOH24674

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911200
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-2
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	200	------- <	200
TRICHLOROFLUORMETHANE-----(WA01)---------	200	------- <	200
1,1-DICHLOROETHYLENE------(WA15)---------	200	------- <	200
METHYLENE CHLORIDE--------(WA02)---------	200	------- <	200
t-1,2-DICHLOROETHYLENE----(WA16)---------	200	------- <	200
1,1-DICHLOROETHANE--------(WA04)---------	200	------- <	200
c-1,2-DICHLOROETHYLENE----(WA17)---------	200	------- <	200
CHLOROFORM----------(WA05)---------	200	------- <	200
1,1,1-TRICHLOROETHANE-----(WA06)---------	200	------- <	200
CARBON TETRACHLORIDE------(WA07)---------	200	------- <	200
1,2-DICHLOROETHANE--------(WA18)---------	200	------- <	200
TRICHLOROETHYLENE---------(WA08)---------	200	------- <	200
1,2-DICHLOROPROPANE-------(WA20)---------	200	------- <	200
BROMODICHLOROMETHANE------(WA09)---------	200	------- <	200
c-1,3-DICHLOROPROPENE-----(WA22)---------	200	------- <	200
t-1,3-DICHLOROPROPENE-----(WA23)---------	200	------- <	200
1,1,2-TRICHLOROETHANE ----(WA19)---------	200	------- <	200
TETRACHLOROETHYLENE ------(WA13)---------	200	------- <	200
DIBROMOCHLOROMETHANE------(WA10)---------	200	------- <	200
BROMOFORM ----------(WA14)---------	200	------- <	200
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

JUL 24 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911200
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-2
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	100	<	100
TOLUENE	(WC02)	200	<	200
CHLOROBENZENE	(WC03)	200	<	200
ETHYLBENZENE	(WC04)	NR		NR
o-XYLENE	(WC29)	200		650
m,p-XYLENE	(WC30)	200	<	200
STYRENE	(WC31)	NR		NR
n-PROPYLBENZENE	(WC11)	NR		NR
ISOPROPYLBENZENE	(WC12)	NR		NR
BROMOBENZENE	(WC09)	200	<	200
1,2,4-TRIMETHYLBENZENE	(WC14)	200		3500
1,3,5-TRIMETHYLBENZENE	(WC15)	200		1900
2-CHLOROTOLUENE	(WC16)	200	<	200
4-CHLOROTOLUENE	(WC17)	200	<	200
n-BUTYLBENZENE	(WC18)	200		1500
sec-BUTYLBENZENE	(WC19)	NR		NR
tert-BUTYLBENZENE	(WC20)	NR		NR
p-ISOPROPYLTOLUENE	(WC21)	NR		NR
o-DICHLOROBENZENE	(WC22)	200	<	200
m-DICHLOROBENZENE	(WC23)	200	<	200
p-DICHLOROBENZENE	(WC24)	200	<	200
1,2,3-TRICHLOROBENZENE	(WC25)	200	<	200
1,2,4-TRICHLOROBENZENE	(WC26)	200	<	200
HEXACHLOROBUTADIENE	(WC27)	200	<	200
NAPHTHALENE	(WC28)	200		320

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC
Comment: COMPOUNDS DETECTED BY GC.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY REPORT

CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. Clin. 19201162 Spec.

B

Field No. P-99

Source Information (Please Print)

Premises J. Hassel

Address Cantiague Rock Rd.

Town Westbury NY

Collection Point JH-6-4

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported	SEP 05 1991		

Collection Time 13:54 hrs

Collected By: P. Paul

Sampler's Comments:

Total Metal only

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	TOTAL Metals		Result	Check	Non-Metals		Result
	Aluminum	mg/l		15	Chloride	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l	
3	Barium	mg/l		17	Fluoride	mg/l	
4	Cadmium	mg/l		18	MBAS	mg/l	
5	Chromium, Total	mg/l		19	pH		
6	Copper	mg/l		20	Phenols	mg/l	
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l	
8	Lead	mg/l		22	Solids, Total Diss.	mg/l	
9	Manganese	mg/l		23	Sulfate	mg/l	
10	Mercury	mg/Kg	0.16	24	Ammonia nitrogen	mg/l	
11	Nickel	mg/Kg	18.0	25	Kjeldahl nitrogen	mg/l	
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l	
13	Silver	mg/l		27	Nitrate nitrogen	mg/l	
14	Zinc	mg/l		28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent		Result
29	Chromium hex.	mg/l	
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

Examiner's Comments

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911199

D

Field No. P-99

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	John Hassell
Address	Cantiague Rock Rd
Town	Westbury
Collection Point	JH-6-14
Well No.	

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported			
Collection Time	13:54 hrs		
Collected By:	P. Paul		

Sampler's Comments: Sample on ice

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

JUL 29 1991

DL 211 7/89 Rev. 8/90

NCDOH24678

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911199
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-4
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	200	------- <	200
TRICHLOROFLUORMETHANE-----(WA01)---------	200	------- <	200
1,1-DICHLOROETHYLENE------(WA15)---------	200	------- <	200
METHYLENE CHLORIDE--------(WA02)---------	200	------- <	200
t-1,2-DICHLOROETHYLENE----(WA16)---------	200	------- <	200
1,1-DICHLOROETHANE--------(WA04)---------	200	------- <	200
c-1,2-DICHLOROETHYLENE----(WA17)---------	200	------- <	200
CHLOROFORM----------(WA05)---------	200	------- <	200
1,1,1-TRICHLOROETHANE-----(WA06)---------	200	------- <	200
CARBON TETRACHLORIDE------(WA07)---------	200	------- <	200
1,2-DICHLOROETHANE--------(WA18)---------	200	------- <	200
TRICHLOROETHYLENE---------(WA08)---------	200	------- <	200
1,2-DICHLOROPROPANE-------(WA20)---------	200	------- <	200
BROMODICHLOROMETHANE------(WA09)---------	200	------- <	200
c-1,3-DICHLOROPROPENE-----(WA22)---------	200	------- <	200
t-1,3-DICHLOROPROPENE-----(WA23)---------	200	------- <	200
1,1,2-TRICHLOROETHANE ----(WA19)---------	200	------- <	200
TETRACHLOROETHYLENE ------(WA13)---------	200	------- <	200
DIBROMOCHLOROMETHANE------(WA10)---------	200	------- <	200
BROMOFORM ----------(WA14)---------	200	------- <	200
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

JUL 29 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911199
Source: J HASSEL, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-4
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	100	<	100
TOLUENE	(WC02)	200	<	200
CHLOROBENZENE	(WC03)	200	<	200
ETHYLBENZENE	(WC04)	NR		NR
o-XYLENE	(WC29)	200		810
m,p-XYLENE	(WC30)	200		490
STYRENE	(WC31)	NR		NR
n-PROPYLBENZENE	(WC11)	NR		NR
ISOPROPYLBENZENE	(WC12)	NR		NR
BROMOBENZENE	(WC09)	200	<	200
1,2,4-TRIMETHYLBENZENE	(WC14)	200		3800
1,3,5-TRIMETHYLBENZENE	(WC15)	200		1200
2-CHLOROTOLUENE	(WC16)	200	<	200
4-CHLOROTOLUENE	(WC17)	200	<	200
n-BUTYLBENZENE	(WC18)	200		870
sec-BUTYLBENZENE	(WC19)	NR		NR
tert-BUTYLBENZENE	(WC20)	NR		NR
p-ISOPROPYLTOLUENE	(WC21)	NR		NR
o-DICHLOROBENZENE	(WC22)	200	<	200
m-DICHLOROBENZENE	(WC23)	200	<	200
p-DICHLOROBENZENE	(WC24)	200	<	200
1,2,3-TRICHLOROBENZENE	(WC25)	200	<	200
1,2,4-TRICHLOROBENZENE	(WC26)	200	<	200
HEXACHLOROBUTADIENE	(WC27)	200	<	200
NAPHTHALENE	(WC28)	200		310

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC
Comment: COMPOUNDS DETECTED BY GC.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY REPORT

CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES

Center for Laboratories and Research

N u County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. Clin. 19201163 Spec.

B

Field No. P-100

Source Information (Please Print)

Premises J. Hassel

Address Cantiague Rock Rd

Town Westbury

Collection Point JH-6-3

	Month	Day	Year
Date Collected	7	15	91
Date Received	JUL	15	1991
Date Reported	AUG	26	1991

Collection Time 14:40 hrs

Collected By: P. Paul

Sampler's Comments:

Total metal only

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	Total Metals		Result	Check	Non-Metals		Result	Check	Constituent		Result
1	Aluminum	mg/l		15	Chloride	mg/l		29	Chromium hex.	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l		30			
3	Barium	mg/l		17	Fluoride	mg/l		31			
4	Cadmium	mg/l		18	MBAS	mg/l		32			
5	Chromium, Total	mg/l		19	pH			33			
6	Copper	mg/l		20	Phenols	mg/l		34			
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l		35			
8	Lead	mg/l		22	Solids, Total Diss.	mg/l		36			
9	Manganese	mg/l		23	Sulfate	mg/l		37			
10	Mercury	mg/kg	0.20	24	Ammonia nitrogen	mg/l		38			
11	Nickel	mg/kg	70.0	25	Kjeldahl nitrogen	mg/l		39			
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l		40			
13	Silver	mg/l		27	Nitrate nitrogen	mg/l		41			
14	Zinc	mg/l		28	Total Phos.	mg/l		42			

SPECIAL ANALYSIS

Examiner's Comments

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES) SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☑ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911198

Field No. P-100

N No. (Public Water Supply Only)

D

Source Information (Please Print)

Premises	J. Hassell
Address	Cantiague Rock Rd
Town	Westbury
Collection Point	JH-6-3
Well No.	

	Month	Day	Year
Date Collected	7	15	91
Date Received	[illegible]	15	1991
Date Reported			
Collection Time	14:40hr		
Collected By:	P. Paul		

Sampler's Comments: Sample on ice.

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

JUL 29 1991

J Rev. 8/90

NCDOH24682

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911198
Source: J. HASSEL, CANTIAQUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-3
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	200	------- <	200
TRICHLOROFLUORMETHANE-----(WA01)---------	200	------- <	200
1,1-DICHLOROETHYLENE------(WA15)---------	200	------- <	200
METHYLENE CHLORIDE--------(WA02)---------	200	------- <	200
t-1,2-DICHLOROETHYLENE----(WA16)---------	200	------- <	200
1,1-DICHLOROETHANE--------(WA04)---------	200	------- <	200
c-1,2-DICHLOROETHYLENE----(WA17)---------	200	------- <	200
CHLOROFORM----------(WA05)---------	200	------- <	200
1,1,1-TRICHLOROETHANE-----(WA06)---------	200	-------	290
CARBON TETRACHLORIDE------(WA07)---------	200	------- <	200
1,2-DICHLOROETHANE--------(WA18)---------	200	------- <	200
TRICHLOROETHYLENE---------(WA08)---------	200	------- <	200
1,2-DICHLOROPROPANE-------(WA20)---------	200	------- <	200
BROMODICHLOROMETHANE------(WA09)---------	200	------- <	200
c-1,3-DICHLOROPROPENE-----(WA22)---------	200	------- <	200
t-1,3-DICHLOROPROPENE-----(WA23)---------	200	------- <	200
1,1,2-TRICHLOROETHANE ----(WA19)---------	200	------- <	200
TETRACHLOROETHYLENE ------(WA13)---------	200	------- <	200
DIBROMOCHLOROMETHANE------(WA10)---------	200	------- <	200
BROMOFORM ----------(WA14)---------	200	------- <	200
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

JUL 29 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911198
Source: J. HASSEL, CANTIAQUE ROCK RD, WESTBURY
Matrix: SOIL
Site: JH-6-3
Date Sampled: 07/15/91
Date of Report: 07/26/91

VOLATILE AROMATICS	MRC (ng/g)		RESULT (ng/g)
BENZENE ----------(WC01)---------	100	------- <	100
TOLUENE ----------(WC02)---------	200	------- <	200
CHLOROBENZENE ----------(WC03)---------	200	------- <	200
ETHYLBENZENE ----------(WC04)---------	200	------- <	200
o-XYLENE ----------(WC29)---------	200	------- <	200
m,p-XYLENE ----------(WC30)---------	200	------- <	200
STYRENE ----------(WC31)---------	200	------- <	200
n-PROPYLBENZENE ----------(WC11)---------	200	------- <	200
ISOPROPYLBENZENE ----------(WC12)---------	200	------- <	200
BROMOBENZENE ----------(WC09)---------	200	------- <	200
1,2,4-TRIMETHYLBENZENE ---(WC14)---------	400	------- <	400
1,3,5-TRIMETHYLBENZENE ---(WC15)---------	200	------- <	200
2-CHLOROTOLUENE ----------(WC16)---------	200	------- <	200
4-CHLOROTOLUENE ----------(WC17)---------	200	------- <	200
n-BUTYLBENZENE ----------(WC18)---------	200	------- <	200
sec-BUTYLBENZENE ----------(WC19)---------	400	------- <	400
tert-BUTYLBENZENE ----------(WC20)---------	400	------- <	400
p-ISOPROPYLTOLUENE ----------(WC21)---------	400	------- <	400
o-DICHLOROBENZENE ----------(WC22)---------	200	------- <	200
m-DICHLOROBENZENE ----------(WC23)---------	200	------- <	200
p-DICHLOROBENZENE ----------(WC24)---------	200	------- <	200
1,2,3-TRICHLOROBENZENE ---(WC25)---------	200	------- <	200
1,2,4-TRICHLOROBENZENE ---(WC26)---------	200	------- <	200
HEXACHLOROBUTADIENE ------(WC27)---------	200	------- <	200
NAPHTHALENE ----------(WC28)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

Nassau County Department of Health
NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

FORM I-GENERAL INFORMATION (SEE INSTRUCTION SHEET)

If applicable, check the following:
- ☐ Municipality
- ☐ Public School
- ☐ Other tax-supported institutions

If tax exempt facility, enter N.Y. State Exempt Organization Certificate No. and enclose a copy:

For Office Use Only

Facility I.D.	Date Rec'd
3143	12/9/99
Fee Exempt Fac. ☐ Yes ☑ No	Permit Months:

Check all that apply to your facility: ☐ Tank Storage ☒ Container Storage ☑ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☑ New ☐ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Post Office	State	Zip	Phone
OLD COUNTRY CLEANERS	102 LEVITTOWN PKWY	HICKSVILLE	NY	11801	931-5470

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
SAME		

Facility Owner	Street Address	Post Office	State	Zip	Phone
BUYONG DOH	43-23 COLDEN ST., #9G	FLUSHING	NY	11355	(718) 461-8669
Property Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
SAMIR KHAROUFA	10 PINE DR.	OLD BETHPAGE	NY	11804	
Tank Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone

Name that should appear on Permit (Permittee) (If different from Facility Owner) Old Country Cleaners

Permittee's Street Address	Post Office	State	Zip	Phone

Permittee's Relationship to Facility Owner: ☐ Same ☒ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot

Forms Attached (Check all that apply) ☐ Form 2 - Tank Registration ☒ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true and correct to the best of my knowledge and belief.

Print Name	Signature	Title	Date
Buyong Doh	[signature]	OWNER	12-9-99

EH 857 4/87
DH - 2512. 11/86 Rev. 12/87

☑ D.P.

NCDOH25415

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 12/9/99	Facility I.D. 3143
Reviewed By WS	Date Reviewed 12/20/99
Action: ☐ Approved ☐ Not Req'd. ☐ Disapproved	No. of Months /

Facility Name: Old Country Cleaners

Facility Address: 102 Lentown Plaza, Hicksville, NY 11801

Action: ☒ Register Existing Area ☐ Add Area ☐ Remove Area ☐ Modify Area — Area No.

Location: ☒ Indoors ☐ Outdoors — Bulk Storage Max. Quantity Stored: — Container Storage Max. No. ____ Max. Vol. ____

Secondary Containment: ☐ Impervious Berm/Dike ☒ Impervious Floor/Pad ☐ Roof ☐ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply): ☒ Concrete ☐ Steel ☐ Other (Specify): — Security ☐ Yes ☐ No

Type	NCDH Number	Material Name	Physical State	Amount Stored: Average Quantity	Amount Stored: Units	Storage Method: Average Number	Storage Method: Type
1	5592	PERC IN DRY CLEANING MACHINE	1	112	1	3	2
1	1523	BLEACH	1	1	1	1	2
1	8430	DETERGENT	1	2	1	1	2
1	23261	SPOTTING CHEMICALS	1	1X	1	13	2
2	18933	SLUDGE / POWDER	4	15	1	1	2
2	24302	SEPERATOR WATER	1	15	1	1	2

X

EH 859 4/86
DH-2791 11/86

Date Submitted 12/9/99 Page 2 of 2

☐ D.P.

NCDOH25416

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

OLD COUNTRY CLEANERS
2 LEVITTOWN PARKWAY
HICKSVILLE, NY 11801

ATT: BUYONG DOH
OWNER/OPERATOR

4a. Article Number

Z 038-988-005

4b. Service Type

☐ Registered ☑ Certified
☐ Express Mail ☐ Insured
☑ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

11801 DEC 2 1996 USPS

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*

X

PS Form **3811**, December 1994 102595-96-B-0229 Domestic Return Receipt

Thank you for using Return Receipt Service.

NCDOH25418

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Print your name, address, and ZIP Code in this box •

NASSAU COUNTY DEPARTMENT OF HEALTH
BUREAU OF ENVIRONMENTAL MANAGEMENT
240 OLD COUNTRY ROAD
MINEOLA, NEW YORK 11501

Att:MM

DEC 3 1999

THOMAS S. GULOTTA
COUNTY EXECUTIVE

KATHLEEN A. GAFFNEY, M.D., M.P.H.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501-4250

November 30, 1999

Old Country Cleaners
2 Levittown Parkway
Hicksville, N.Y. 11801

Att:Buyong Doh
Owner/Operator

Re: Old Country Cleaners
2 Levittown Parkway
Hicksville, N.Y.

Dear Mr. Doh:

On November 3, 1999 an inspection of your facility was conducted by representatives of this Department to determine proper storage of toxic and hazardous materials and compliance with Article XI of the Nassau County Public Health Ordinance.

At the time of the inspection the following violations of Article XI were noted:

1 - Facility was storing toxic and hazardous materials (perchloroethylene) without a storage permit

Be advised that this Department must be notified in writing within 45 days that the above violations have been corrected. Clearly detail the actions, materials and/or methods used to correct the violations. An application for applying for a storage permit is enclosed. Failure to comply could result in legal action as mandated by the Public Health Ordinance.

If you have any further questions or would like any additional information please contact me at 571-3232.

Very truly yours,

Michael Mangino
P.H. Sanitarian II
Bureau of Environmental Management

MM:sb
cc: Howard Schaefer - Office of Enforcement
1972Q-36

— Here 3 wk letter

NCDOH25421

DRY CLEANER INSPECTION REPORT
Bureau of Environmental Management
Nassau County Department of Health

Facility Name:	Old Country Cleaners		
Address:	2 Levittown Pkwy, Hicksville		
Contact: Buyong Doh	Title: owner	Phone: 931-5470	
Property Owner Name:		Phone:	
Property Owner Address:			

Permit No.: 548	✓ New	Renewal	Effective Date:	Expiration Date: 4/1/03	Member NCA	✓ Yes	No

Item	Yes	No	N/A
A. Equipment: Columbia 35 15			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:			
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges		✓	
2. Still Bottom	✓		
3. Filter Powder	✓		
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [ ]	✓		
D. Waste Disposal: Selecta Klean			
1. N.Y.S Transporter: DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other: M1 to Selecta Klean	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Reservoir Capacity 112	✓		
2. Storage Tank Capacity ____		✓	
3. Drum(s) Total ___ Capacity ____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: Refrig Unit	✓		
H. Records:			
1. Purchase Receipts	✓		
2. Removal Receipts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains		✓	
1. Location:			
J. Boiler Discharge (Blowdown) Caught in	✓		
1. Location: bucket → sewer			
K. Inspection Rating: Pass [ ] Fail [✓]			

Date	Item	Comments
		Last S/K pick up 8/27/99 — Letter needed —
	* K	Facility needs to file for new ART Tr Permit (Application Provided)
		+ DF 185

Signature of Inspector:	Date 11/3/99	Signature of Company Rep.:	Date: 11/3/99

eh795

HE-1507. 12/94

NCDOH25422

DRY CLEANER INSPECTION REPORT
Bureau of Environmental Management
Nassau County Department of Health

Facility Name: Old Country Cleaners			
Address: 882 Lantham Pkwy			
Contact: Charles Bracato	Title:	Phone: 931-5420	
Property Owner	Name:	Phone:	
	Address:		

Permit No.: 548	New	Renewal	Effective Date:	Expiration Date:	Member NCA	Yes	No

Item	Yes	No	N/A
A. Equipment: Columbia 36 JF			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges Sp. - Disc	✓		
2. Still Bottom	✓		
3. Filter Powder		✓	
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [ ]	✓		
D. Waste Disposal:			
1. N.Y.S Transporter: DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other: To Solvent Clean	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Reservoir Capacity 100 gal	✓		
2. Storage Tank Capacity ____		✓	
3. Drum(s) Total ___ Capacity ____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: Refrig Unit	✓		
H. Records:			
1. Purchase Receipts	✓		
2. Removal Receipts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains		✓	
1. Location:			
J. Boiler Discharge (Blowdown) Cap	✓		
1. Location: Bucket to sewer			
K. Inspection Rating: Pass [✓] Fail [ ]			

Date	Item	Comments
	Last 2/25/98	Statement
	10F18	

Signature of Inspector:	Date	Signature of Company Rep.	Date:
C. Bracato	7/7/98	Glenda Powell	7/7/98

eh795

HE-1507. 12/94

NCDOH25423

DRY CLEANER INSPECTION REPORT
Bureau of Environmental Management
Nassau County Department of Health

Facility Name: Old Country Cleaners			
Address: 2 Levittown Pkwy Hicksville			
Contact: Charlie Brancato	Title: owner	Phone: 931-5870	
Property Owner	Name: Maccrone + DiNepoli Inc	Phone:	
	Address:		

Permit No.: 548	New	Renewal	Effective Date:	Expiration Date: 4/1/88	Member NCA	✓ Yes	No

Item	Yes	No	N/A
A. Equipment: Columbia 35 12			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges	✓		
2. Still Bottom		✓	
3. Filter Powder		✓	
4. Separator Water		✓	
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [ ]	✓		
D. Waste Disposal: Safety Clean			
1. N.Y.S Transporter: DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other: To Safety Clean	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Reservoir Capacity 120	✓		
2. Storage Tank Capacity ____		✓	
3. Drum(s) Total ___ Capacity ____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: heating unit	✓		
H. Records:			
1. Purchase Receipts	✓		
2. Removal Receipts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains Closed by EPA		✓	
1. Location:			
J. Boiler Discharge (Blowdown) Bucket →	✓		
1. Location: sewer			
K. Inspection Rating: Pass [✓] Fail [ ]			

Date	Item	Comments
		Last S.C Receipt 4/22/87
		1 DF 195

Signature of Inspector: [signature]	Date: 5/27/87	Signature of Company Rep.: [signature]	Date: 5/27/87

eh795

HE-1507. 12/94

NCDOH25424

DRY CLEANER INSPECTION REPORT
Bureau of Environmental Management
Nassau County Department of Health

Facility Name: Old Country Cleaners			
Address: 193 Levittown Pkwy, Hicksville			
Contact:	Title:	Phone: 931-5470	
Property Owner	Name: Frank Dinapoli	Phone:	
	Address:		

Permit No.: 548	New	Renewal	Effective Date: 4/1/93	Expiration Date: 4/1/98	Member NCA	✓ Yes	No	

Item	Yes	No	N/A
A. Equipment: Columbia 35			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges		✓	
2. Still Bottom	✓		
3. Filter Powder	✓		
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [ ]	✓		
D. Waste Disposal: Septa Clear			
1. N.Y.S Transporter: DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other:	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Reservoir Capacity 112 gal	✓		
2. Storage Tank Capacity		✓	
3. Drum(s) Total ___ Capacity		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: Public water → sewer	✓		
H. Records:			
1. Purchase Receipts	✓		
2. Removal Receipts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains sealed		✓	
1. Location:			
J. Boiler Discharge (Blowdown) to bucket	✓		
1. Location: then to sewer			
K. Inspection Rating: Pass [✓] Fail [ ]			

Date	Item	Comments
	Last S.C pick up 3/1/96	basement
	CDF 195	- Sealed last Sept after sampled by
	S.C pick up every 2 mos.	NCHD

Signature of Inspector: C. Brucker	Date 3/12/96	Signature of Company Rep.: Charles Francesco	Date: 3/12/96

eh795

HE-1507. 12/94

NCDOH25425

DRY CLEANER INSPECTION REPORT Bureau of Environmental Management Nassau County Department of Health	Facility Name: OLD COUNTRY CLNRS.		
	Address: 2 LEVITTOWN PKWY., HICKSVILLE, N.Y.		
	Contact: CAROL/CHARLIE.	Title: OWNER.	Phone: 931-5470
	Property Owner Name: FRANK DENAPOLI.		Phone: —
	Property Owner Address:		

Permit No.: 548 | New [ ] Renewal [X] | Effective Date: 4/1/93. | Expiration Date: 4/1/98 | Member NCA [X] Yes [ ] No

Item	Yes	No	N/A
A. Equipment: COLUMBIA TURBO DRY (83).			
C.T.U. [ ] Combo [X] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges * ?	NP.	✓	
2. Still Bottom	✓		
3. Filter Powder	✓	NP	
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [X] Outside [ ]	✓		
2. Container Type: Plastic [X] Metal [X]	✓		
D. Waste Disposal:			
1. N.Y.S Transporter: DEC#			
E. Separator Water Disposal: S Kleen.			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other: S. Kleen.	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Reservoir Capacity 112 gal	✓		
2. Storage Tank Capacity ____		✓	
3. Drum(s) Total ___ Capacity ____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: public water to S. Sewer	✓		
H. Records:			
1. Purchase Receipts	✓		
2. Removal Receipts	✓		
3. Annual Waste Report Submitted ?		✓	
4. Records on File For Past 3 Years to 5/93.		✓	
I. Floor Drains	✓		
1. Location: boiler room/basement			
J. Boiler Discharge (Blowdown) locked.	✓		
1. Location: boiler room. floor drain			
K. Inspection Rating: Pass [X] Fail [ ]			

Date	Item	Comments
		1/3/95 last 8th pup. - 10M - 135 lbs - 1 pup/2 mo.
	*	UNCERTAIN.
	*	2/23/95 operator states. - no cartridges - he has filter powder. Also the floor drain does exist in the boiler room.

Signature of Inspector: [signature] | Date 2/22/95 | Signature of Company Rep.: [signature] Received | Date:

eh795

HE-1507. 12/94

NCDOH25426

DRY CLEANER INSPECTION REPORT
Bureau of Environmental Management
Nassau County Department of Health

Facility Name:	OLD COUNTRY CLEANERS		
Address:	193 LEVITTOWN PKWY. HICKSVILLE		
Contact:	CHARLES BRANCATO	Title:	Phone: (516)931-5470
Property Owner Name:	WINSTON PROPERTIES		Phone: (516) -
Property Owner Address:	2 DOLLY DR.	COMMACK	NY

Permit No.: 548 | [ ] New | [ ] Renewal | Effective Date: 04/01/93 | Expiration Date: 04/01/98 | Member NCA [X] Yes [ ] No

Item	Yes	No	N/A
A. Equipment:			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges		✓	
2. Still Bottom		✓	
3. Filter Powder	✓		
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [X]	✓		
D. Waste Disposal:			
1. N.Y.S Transporter: Safety Kleen DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer Hold to Haul		✓	
4. Other:	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Resevoir Capacity 85 GAL	✓		
2. Storage Tank Capacity ____		✓	
3. Drum(s) Total ___ Capacity ____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: PUBLIC WATER	✓		
H. Records:			
1. Purchase Reciepts	✓		
2. Removal Reciepts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains	✓		
1. Location: BASEMENT			
J. Boiler Discharge (Blowdown)	✓		
1. Location: Boiler Room			
K. Inspection Rating: Pass [✓] Fail [ ]			

Date	Item	Comments

Signature of Inspector: A. F. Bonell | Date: 10/18/94 | Signature of Company Rep. J. Brancato | Date:

eh795

NCDOH25427

DRY CLEANER INSPECTION REPORT Bureau of Environmental Management Nassau County Department of Health	Facility Name: OLD COUNTRY CLEANERS		
	Address: 2 ~~278~~ LEVITTOWN PKWY. HICKSVILLE		
	Contact: YIN SEONG GIM	Title: PRESIDENT	Phone: (516) 766-4335
	Property Owner Name: ~~G.M. REALTY CORP.~~		Phone: ( ) -
	Address: ~~136-89 41ST AVE.~~ ~~FLUSHING~~ ~~NY~~		

Permit No.: 548	New [ ]	Renewal [ ]	Effective Date: 03/01/92	Expiration Date: 03/01/97	Member NCA [X] Yes [ ] No

Item	Yes	No	N/A
A. Equipment:			
C.T.U. [ ] Combo [✓] Dryer [ ] Outside Venting:		✓	
Still [ ] Sniffer [ ] Solvation Unit [ ]			
B. Waste Sources:			
1. Filter Cartridges		✓	
2. Still Bottom		✓	
3. Filter Powder	✓		
4. Separator Water	✓		
C. Waste Storage:			
1. Inside [✓] Outside [ ]	✓		
2. Container Type: Plastic [✓] Metal [ ]	✓		
D. Waste Disposal:			
1. N.Y.S Transporter: Safety Kleen DEC#			
E. Separator Water Disposal:			
1. Recirculator		✓	
2. Evaporator		✓	
3. Sewer		✓	
4. Other: Hold to Haul	✓		

Item	Yes	No	N/A
F. Chemical Storage:			
1. D/C Resevoir Capacity 85 Gal	✓		
2. Storage Tank Capacity _____		✓	
3. Drum(s) Total ___ Capacity _____		✓	
G. Cooling Water System:			
1. Tower		✓	
2. Chiller		✓	
3. Other: Public Water	✓		
H. Records:			
1. Purchase Reciepts	✓		
2. Removal Reciepts	✓		
3. Annual Waste Report Submitted			✓
4. Records on File For Past 3 Years	✓		
I. Floor Drains	✓		
1. Location: Basement			
J. Boiler Discharge (Blowdown)	✓		
1. Location: Boiler Room			
K. Inspection Rating: Pass [✓] Fail [ ]			

Date	Item	Comments

Signature of Inspector: G. Fitzgerald	Date 11/9/93	Signature of Company Rep.: [illegible]	Date: 11/9/93

eh795

APPLICATION FOR RENEWAL OF A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
DIVISION OF ENVIRONMENTAL HEALTH
NASSAU COUNTY DEPARTMENT OF HEALTH

02/01/93

60

FACILITY ID NUMBER : 000548

APPLICATION DUE : 04/01/93

RECEIVED
FEB 11 1993
DOH-BEM

NEW YORK STATE
TAX EXEMPT?
MUNICIPALITY
( ) YES ( ) NO
IF YES, INDICATE
TAX EXEMPT NUMBER
AND ENCLOSE COPY
OF CERTIFICATE
(FORM ST-119.1)
CERTIFICATE
NUMBER:

OLD COUNTRY CLEANERS
2 LEVITTOWN PKWY.
HICKSVILLE NY 11801

FACILITY NAME	STREET ADDRESS	FACILITY PHONE
OLD COUNTRY CLEANERS HICKSVILLE NY 11801	2 LEVITTOWN PKWY.	516-931-5470
CONTACT PERSON	CONTACT TITLE	CONTACT PHONE
CHARLES BRANCATO		516-931-5470
FACILITY OWNER	STREET ADDRES	OWNER PHONE
CAROL BRANCATO HICKSVILLE NY 11801	2 LEVITTOWN PKWY.	516-931-5470
PROPERTY OWNER	STREET ADDRESS	PROPERTY PHONE
WINSTON PROPERTIES COMMACK NY 11816	2 DOLLY DR.	516- -
PERMITTEE NAME	STREET ADDRESS	PERMITTEE PHONE
OLD COUNTRY CLEANERS HICKSVILLE NY 11801	2 LEVITTOWN PKWY.	516-931-5470

PERMITTEE"S RELATIONSHIP TO FACILITY OWNER SAME X OPERATOR OF FACILITY OTHER SPECIFY

TANK/STORAGE		CAPACITY	STATUS	LOCATION	TYPE OF MATERIAL STORED
0001	BULK	60	INSERVC		MULTIPLE CHEMICALS STORED IN BULK AREA
0001	BULK	112	INSERVC		MULTIPLE CHEMICALS STORED IN BULK AREA

IF THERE IS ANY TANK(S) OR STORAGE AREA(S), AT YOUR FACILITY WHICH ARE NOT LISTED ABOVE PLEASE PROVIDE US WITH THE FOLLOWING INFORMATION ABOUT EACH TANK OR AREA: CAPACITY, LOCATION, TYPE OF MATERIAL STORED IN THE TANK OR AREA, AND THE STATUS OF THE TANK OR AREA.

I HEREBY AFFIRM UNDER PENALTY OF PERJURY, THAT ALL THE INFORMATION PROVIDED ON THIS FORM AND ON ANY ATTACHED FORMS, STATEMENTS AND EXHIBITS IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PRINT NAME	SIGNATURE	TITLE	DATE
CAROL BRANCATO	Carol Brancato	OWNR	2/1/93

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: Old Country Cleaners		Address: 193 Levittown Pkwy Hicksville	
Company Representative: Charles Brancato		Title:	Phone: 822-15420
Property Owner	Name:		Phone:
	Address		

Permit No. 548 ☐ New ☐ Renewal	Effective Date	Expiration Date	Member NCA ☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☑ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name Safety Kleen			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer	✓		
5. Other Recirculated	✓		
D. Chemical Storage	✓		
1. Drums	✓		
2. Tanks			✓
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.	✓		
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		Last Pickup 9/25/92 1 Drum Filter Powder

Signature of Inspector: A. Fitzgerald	Date 10/14/92	Signature of Company Representative: Charles Brancato	Date 10/14/92

EH 795 7/84

NCDOH25429

DRY CLEANER INSPECTION REPORT
Bureau of Land Resources Management
Nassau County Department of Health

Facility Name: old country cleaners
Address: 193 Levittown Pkwy Hicksville
Company Representative: Charles Brancato
Title:
Phone: 935-430
Property Owner Name:
Phone:
Address

Permit No. ☐ New ☐ Renewal
Effective Date
Expiration Date
Member NCA ☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage			
1. ☑ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name: Safety Klean			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer	✓		
5. Other: Recirculated	✓		
D. Chemical Storage		✓	
1. Drums	✓		
2. Tanks		✓	
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.	✓		
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		Last Pick up 3/17/92 1 Drum Filter Powder 135 lbs

Signature of Inspector: A. Fitzgerald
Date: 3/17/92
Signature of Company Representative: Charley Brancato
Date: 3/17/92

EH 795 7/84

NCDOH25430

APPLICATION FOR RENEWAL OF A TOXIC OR HAZARDOUS MATERIALS
STORAGE FACILITY PERMIT
DIVISION OF ENVIRONMENTAL HEALTH
NASSAU COUNTY DEPARTMENT OF HEALTH

02/01/98

66

FACILITY ID NUMBER : 000548

APPLICATION DUE : 04/01/1998

FEB 18 1998

NEW YORK STATE
TAX EXEMPT?
MUNICIPALITY
( ) YES ( ) NO
IF YES, INDICATE
TAX EXEMPT NUMBER
AND ENCLOSE COPY
OF CERTIFICATE
(FORM ST-119.1)
CERTIFICATE
NUMBER:

OLD COUNTRY CLEANERS
2 LEVITTOWN PKWY.
HICKSVILLE NY 11801

FACILITY NAME OLD COUNTRY CLEANERS HICKSVILLE NY 11801	STREET ADDRESS 2 LEVITTOWN PKWY.	FACILITY PHONE 516-931-5470
CONTACT PERSON CHARLES BRANCATO	CONTACT TITLE	CONTACT PHONE 516-931-5470
FACILITY OWNER CAROL BRANCATO HICKSVILLE NY 11801	STREET ADDRES 2 LEVITTOWN PKWY.	OWNER PHONE 516-931-5470
PROPERTY OWNER MACCARONE & DINAPOLI ~~WINSTON PROPERTIES~~ ~~COMMACK NY 11816~~	STREET ADDRESS ~~2 DOLLY DR.~~ 3400 BRUSHHOLLOW RD WESTBURY NY 11590	PROPERTY PHONE 516- -
PERMITTEE NAME OLD COUNTRY CLEANERS HICKSVILLE NY 11801	STREET ADDRESS 2 LEVITTOWN PKWY.	PERMITTEE PHONE 516-931-5470

PERMITTEE"S RELATIONSHIP TO FACILITY OWNER SAME X OPERATOR OF FACILITY OTHER SPECIFY

TANK/	STORAGE	CAPACITY	STATUS	LOCATION	TYPE OF MATERIAL STORED
0001	BULK	60	INSERVC	INDOOR	MULTIPLE CHEMICALS STORED IN BULK AREA
0001	BULK	112	INSERVC	INDOOR	MULTIPLE CHEMICALS STORED IN BULK AREA

IF THERE IS ANY TANK(S) OR STORAGE AREA(S), AT YOUR FACILITY WHICH ARE NOT LISTED ABOVE PLEASE PROVIDE US WITH THE FOLLOWING INFORMATION ABOUT EACH TANK OR AREA: CAPACITY, LOCATION, TYPE OF MATERIAL STORED IN THE TANK OR AREA, AND THE STATUS OF THE TANK OR AREA.

I HEREBY AFFIRM UNDER PENALTY OF PERJURY, THAT ALL THE INFORMATION PROVIDED ON THIS FORM AND ON ANY ATTACHED FORMS, STATEMENTS AND EXHIBITS IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PRINT NAME	SIGNATURE	TITLE	DATE
CAROL BRANCATO	Carol Brancato	Pres	2/15/98

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: old country cleaners	Address: 199 Levittown Pkwy Hicksville	
Company Representative: Carol + Charles Brancato	Title:	Phone: WI 5430
Property Owner — Name:		Phone:
Property Owner — Address		

Permit No. ☐ New ☑ Renewal	Effective Date	Expiration Date	Member NCA ☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☐ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name: Safety Kleen			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer		✓	
5. Other: Recirculated	✓		
D. Chemical Storage	✓		
1. Drums		✓	
2. Tanks: 150 Gal	✓		
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		Last pickup 6/14/91 1 Drum filter powder 135 Lbs

Signature of Inspector: A. J. Fendell	Date: 6/14/91	Signature of Company Representative: Charles Brancato	Date: 6/14/91

EH 795 7/84

NCDOH25432

CHEMICAL/SOLVENT WASTE REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Name: OLD COUNTRY CLEANERS

Address: 2 LEVITTOWN PARKWAY HICKSVILLE N.Y. 11801.

Article XI Permit Number: 000548

Report Period: 1989

List all chemicals and/or solvents purchased during the reporting period.
Indicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	How is Chemical or Solvent Used?	Trade Name or Supplier	Quantity Purchased
"PYRATEX"	SPOTTING.	KLEIGMAN BROS.	(1) GAL.
AMYL ACETATE	SPOTTING	KLEIGMAN BROS	(1.) GAL
PERCHLOROETHYLENE	DRY CLEANING	KLEIGMAN BROS.	250. GALS.
PERCHLOROETHYLENE	DRY CLEANING.	SAFTY KLEEN	~~108 GALS~~ 108 GALLONS
CHARGE DETERGENT (SAFTY KLEEN #785)	DRY CLEANING	SAFTY KLEEN	10 GALS.
ERUSTICATOR	SPOTTING	KLEIGMANN BROS	~~12~~ 12 OZ

RECEIVED
JUN 04 1990
NCDH-BLRM

EH 704 5/88

(continued on reverse)

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Description of Waste	Amount Removed	Shipped By: Transporter's Name	Shipped By: Transporter's Address	Shipped By: D.E.C.Reg. Number	Shipped To (Final Disposal Site For Waste)
01-26-89	R/Q WASTE PER POWDER	135 LB	Safety Kleen	80 Seabro Rd No. Amityville	F002	Hebron Ohio
02-24-89	RQ WASTE PERC. STILL POWDER	135 LB	" "	" "	F002	" "
03-23 89	"	"	" "	" "	"	" "
04-19-89	RQ WASTE STILL POWDER	135 LB	SAFETY-KLEEN	80 SEABRO NO AMITYVILLE	"	HEBRON OHIO.
05-18-89	RQ. WASTE STILL POWDER	135 LB	" "	"	"	" "
06-15-89	WASTE POWDER	135 LB	" "	"	"	" "
07-11-89	WASTE POWDER	135 LB	" "	"	"	" "
08-10 89	WASTE POWDER	135 LB	" "	"	"	" "
09-12-89	RQ WASTE POWDER	135 LB	" "	"	"	" "
10-5-89	RQ WASTE POWDER	135 LB	" "	"	"	" "
11 03 89	RQ WASTE POWDER	135 LB	" "	"	"	" "
12/01/89	RQ WASTE POWDER	135 LB	" "	"	"	" "

List any spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill
		("NONE")

Signature of Company Representative: Carol Brancato

Title: owner.

Date: 5-25-90

EH 704A 5/88 540 old country rd mineola 11501

NCDOH25434

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: Old country cleaners		Address: 199 Levittown Pkwy Hicksville	
Company Representative: Carol & Charles Bracciafo		Title:	Phone: W15430
Property Owner	Name:		Phone:
	Address		

Permit No. 548 ☐ New ☐ Renewal	Effective Date	Expiration Date	Member NCA ☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☐ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name Safety Kleen			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer			✓
5. Other Recirculated	✓		
D. Chemical Storage	✓		
1. Drums			✓
2. Tanks 150 GAL	✓		
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		Last pickup 4/19/90 1 Drum filter powder 135 LBS

Signature of Inspector A. J. Gerard	Date 5/23/90	Signature of Company Representative Charles Bracciafo	Date

EH 795 7/84

NCDOH25435

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: Old Country Cleaners		Address: 199 Levittown Pkwy Hicksville	
Company Representative: Carol & Charles Bencato		Title:	Phone: 681-8490
Property Owner	Name:		Phone:
	Address		

Permit No. ☐ New ☐ Renewal	Effective Date	Expiration Date	Member NCA ☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☑ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name Safety Kleen			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer			✓
5. Other Recirculated	✓		
D. Chemical Storage	✓		
1. Drums			✓
2. Tanks	✓		
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		Last Pickup 10/05/89 1 Drum Filter Powder

Signature of Inspector: A. Fitzgerald	Date: 11/16/89	Signature of Company Representative: Charles Bencato	Date

EH 795 7/84

NCDOH25436

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: OLD COUNTRY CLNRS		Address: 198 Levittown Pkwy Hicksville	
Company Representative: Carol & Charles BRANCATO		Title:	Phone: 935-0720
Property Owner	Name: Winston Properties		Phone:
	Address: 2 Dilly Dr Commack N.Y. 11725		

Permit No.	☑ New ☐ Renewal	Effective Date	Expiration Date
Member NCA	☑ Yes ☐ No		

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☑ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name SAFETY KLEEN			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer		✓	
5. Other RECIRCULATED	✓		
D. Chemical Storage	✓		
1. Drums		✓	
2. Tanks 150 GAL	✓		
3. D.C. Reservoir	✓		
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		LAST PICKUP 4/19/89 1 DRUM FILTER POWDER 123 LBS

Signature of Inspector: G. Lefamel	Date: 4/26/89	Signature of Company Representative: Carol Brancato	Date

EH 795 7/84

NCDOH25437

NCDOH25438

NASSAU COUNTY DEPARTMENT of HEALTH

TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

Facility Number	Type of Permit	Date Issued	Date Modified	Expiration Date
000548	[x] Operation [ ] Construction	04/01/88	01/01/89	04/01/93

Name of Permittee:	Address of Permittee:
OLD COUNTRY CLEANERS	2 LEVITTOWN PKWY. HICKSVILLE NY

GENERAL CONDITIONS

1. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Article XI, Nassau County Public Health Ordinance.
2. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Nassau County Department of Health prior to their implementation. The permittee shall notify the Health Department 48 hours in advance of the start of construction.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to defend, indemnify and save harmless the County from suits, actions, damages and costs of every name and description resulting from the said project.

Name of Facility:	OLD COUNTRY CLEANERS	FACILITY ADDRESS:
Mailing Address:	2 LEVITTOWN PKWY. HICKSVILLE NY 11801-	2 LEVITTOWN PKWY. HICKSVILLE NY 11801

THIS FACILITY CONSISTS OF STORAGE AREAS AS LISTED ON PLANS AND APPLICATIONS FILED WITH THIS DEPARTMENT

Tank/Storage Area Number	Capacity	Type of Toxic or Hazardous Material Stored
BULK 0001	80 POUNDS	MULTIPLE CHEMICALS STORED
BULK 0001	112 GALLONS	MULTIPLE CHEMICALS STORED

Authorizing Officer	John J. Dowling, M.D., M.P.H. Commissioner of Health

DP

NASSAU COUNTY DEPARTMENT OF HEALTH — NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 1 - GENERAL INFORMATION
SEE INSTRUCTION SHEET

3/2/88

For Office Use Only
Facility I.D. ~~823~~ 548
☐ Municipal
☐ Non-Municipal

NCDOH25439

Check all that apply to your facility: ☒ Tank Storage ☒ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☒ New ☐ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Village	State	Zip	Phone
OLD COUNTRY CLNRS	2 LEVITTOWN PKW	HICKSVILLE	NY	11801	931 5470.

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
SAME.	CHARLES BRANCATO, MGR.	931 5470

Facility Owner	Street Address	Village	State	Zip	Phone
CAROL BRANCATO	2 LEVITTOWN PKW	HICKSVILLE	NY	11801	931 5470
Property Owner (If not Facility Owner)	Street Address	Village	State	Zip	Phone
WINSTON PROPERTIES	2 DOLLY DRIVE.	COMMACK	NY	11816	
Tank Owner (If not Facility Owner)	Street Address	Village	State	Zip	Phone
WINSTON PROP.	SAME.				

Name that should appear on Permit (Permittee) (If different from Facility Owner) OLD COUNTRY CLEANERS

Permittee's Street Address	Village	State	Zip	Phone
2 LEVITTOWN PARKWAY	HICKSVILLE	NY	11801	931 5470.

Permittee's Relationship to Facility Owner: ☐ Same ☒ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot

Forms Attached (Check all that apply) ☒ Form 2 - Tank Registration ☒ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true to the best of my knowledge and belief.

Print Name	Signature	Title	Date
CAROL BRANCATO	Carol Brancato	OWNR	3/2/88

EH 857 4/86

☒ D.P.

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 3/2/88	Facility I.D. 548
Reviewed By	Date Reviewed
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No. of Months

Facility Name: Old Country Cleaners

Facility Address: 2 Levittown Parkway, Hicksville NY 11801

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Material Currently or Last Stored: Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection Sys.	Secondary Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condition
1	1	(A)	250	1	9	9	2	1	64721	#2 Fuel Oil	(R)	12/55 UNK	5	5	1	2	1		

EH 858 4/86
DH-2513 11/86

Date Submitted _____ Page ____ of ____ ☐ D.P.

NCDOH25440

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 3/2/88	Facility I.D. 548
Reviewed By	Date Reviewed
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months

Facility Name Old Country Cleaners

Facility Address 2 Levittown Parkway, Hicksville NY 11801

Action: ☒ Register Existing Area ☐ Add Area ☐ Remove Area ☐ Modify Area | Area No. 5-1

Location: ☒ Indoors ☐ Outdoors | Bulk Storage Max.Quantity Stored: 60 lbs | Container Storage Max.No. 4 Max.Vol. 112 gal

Secondary Containment: ☐ Impervious Berm/Dike ☐ Impervious Floor/Pad ☒ Roof ☒ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply) ☒ Concrete ☐ Steel ☐ Other (Specify): | Security ☐ Yes ☐ No

Type	NCDH Number	Material Name	Physical State	Amount Stored: Average Quantity	Amount Stored: Units	Storage Method: Average Number	Storage Method: Type
		Concrete in basement wood on first (main) floor					
1	8592	Perchloroethylene (D.C. Machine) (includes base tank)	1	~~60~~ 40	1	1	2
1	8592	Perchloroethylene (drum)	1	25	1	1	1
2	18922 ~~15622~~	Perchloroethylene (waste filter powder)	2	30	3	1	2
1	9040	Misc. spotting chemicals	1	1½	1	2	2
		Separator water disposed of by evaporation via cooling tower					

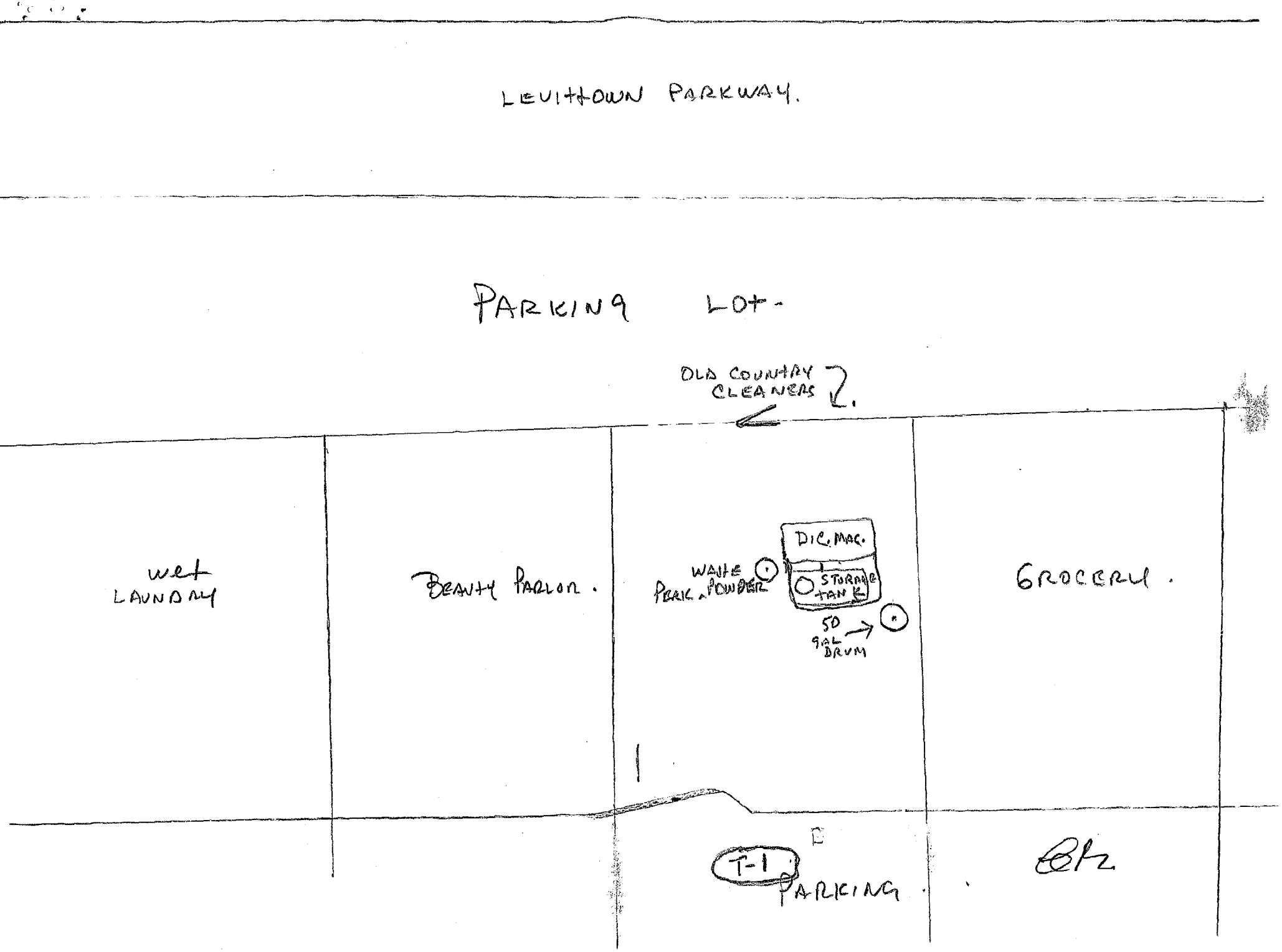
EH 859 4/86
DH-2791 11/86

Date Submitted _____ Page ____ of _____

☐ D.P.

NCDOH25441

NCDOH25442


LEVITTOWN PARKWAY.
PARKING LOT.
OLD COUNTRY CLEANERS ?
wet LAUNDRY
BEAUTY PARLOR.
WAHE PEAK POWDER
DIC. MAC.
STORAGE TANK
50 GAL DRUM
GROCERY.
T-1
PARKING.

NCDOH25443

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received	Facility I.D.
Reviewed By	Date Reviewed
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months

Facility Name

Facility Address

Action: ☐ Register Existing Area ☐ Add Area ☐ Remove Area ☐ Modify Area | Area No.

Location: ☐ Indoors ☐ Outdoors | Bulk Storage Max.Quantity Stored: | Container Storage Max.No. _____ Max.Vol. _____

Secondary Containment: ☐ Impervious Berm/Dike ☐ Impervious Floor/Pad ☐ Roof ☐ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply) ☐ Concrete ☐ Steel ☐ Other (Specify): | Security ☐ Yes ☐ No

Type	NCDH Number	Material Name	Physical State	Amount Stored		Storage Method	
				Average Quantity	Units	Average Number	Type

EH 859 4/86
DH-2791 11/86

Date Submitted _____ Page ____ of _____

☐ D.P.

THOMAS S. GULOTTA
COUNTY EXECUTIVE

NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

BOARD OF HEALTH
BRUCE A. LISTER
CHAIRMAN
NORMA J. HENRIKSEN
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JOAN L. CAEMMERER
JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

February 3, 1988

Old Country Cleaners
193 Levittown Parkway
Hicksville,N.Y. 11801

Dear Facility Owner/Operator: Re: ID # 548

In order to protect the ground and surface waters of Nassau County, the Board of Health adopted a Public Health Ordinance (Article XI), titled Toxic and Hazardous Materials Storage, Handling and Control. This Ordinance provides for the registration and regulation of toxic and hazardous materials stored in underground or aboveground tanks, containers or in bulk.

Toxic or hazardous materials, which are specifically defined in the Article XI Regulations, include any substance, solution or mixture, including petroleum products, which present an actual or potential hazard to human health or a threat to the quality of either the underground drinking water supply or surface waters if discharged to the land or waters of Nassau County.

Registration is mandated whenever any of the following minimum total storage capacities exist at a facility:

- A total of 250 gallons or more of toxic or hazardous materials including chemicals, fuel oil used solely for on-site heating (see Note), as well as lubricating, transmission, hydraulic, cutting, and motor oils

- 50 gallons or more of halogenated hydrocarbons

- More than 27.5 gallons of toxic or hazardous waste

- Bulk (dry) storage exceeding 2,000 pounds of toxic or hazardous materials

Our records indicate that your facility may fall under the provisions of the Ordinance. Please complete Form 1 (General Information). Form 2 (Tank Registration) and/or Form 3 (Bulk and Container Storage Registration) should be completed if tank and/or bulk and container storage exists at your facility. Refer to the enclosed instructions for filling out the forms.

(over)

DRY CLEANER INSPECTION REPORT
Bureau of Land Resources Management
Nassau County Department of Health

CHARLES BRANCATI

Facility Name: Old Country Cleaners		Address: 198 Levittown Pkwy Hicksville	
Company Representative: CARL BRANCATO		Title:	Phone: 681 5470
Property Owner	Name: Winston Properties		Phone: 573 2008
	Address: 3 Dolly Drive Commack N.Y. 11725		

Permit No.	☐ New ☐ Renewal	Effective Date	Expiration Date	Member NCA	☑ Yes ☐ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☑ Inside ☐ Outside	✓		
2. Drum	✓		
3. Special Container		✓	
C. Waste Disposal	✓		
1. Registered Industrial Scavanger	✓		
a. Name SAFETY KLEEN			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer		✓	
5. Other / Recirculated	✓		
D. Chemical Storage	✓		
1. Drums		✓	
2. Tanks 150 gal	✓		
3. D.C. Reservoir		✓	
E. Records	✓		
1. ☑ Purchase Receipts ☑ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments
		LAST PICKUP 10/16/86 1 DRUM FILTER POWDER
6/7/88		LAST PICKUP 5/20/88 1 DRUM FILTER POWDER

Signature of Inspector	Date	Signature of Company Representative	Date
G. F. Gerald	11/20/86	Charles Brancati / Carl Brancato	

EH 795 7/84

NCDOH25445

DRY CLEANER INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: OLD COUNTRY CLNRS		Address: 198 Levittown Pkwy Hicksville	
Company Representative: ROGER MOHL		Title: OWNER	Phone: 931 5470
Property Owner	Name: WINSTON PROPERTIES		Phone: 543-600
	Address: 2 DILLY DRIVE COMMACK N.Y 11725		
Permit No. ☐ New ☐ Renewal	Effective Date	Expiration Date	Member NCA ☐ Yes ☑ No

Item	Yes	No	N/A
A. Waste Sources			
1. Separator Water: ☐ Sniffer ☑ Reclaimer	✓		
2. Filter Powder	✓		
3. Filter Cartridge		✓	
4. Still Bottom		✓	
B. Waste Storage	✓		
1. ☑ Inside ☐ Outside	✓		
2. Drum		✓	
3. Special Container BOXES		✓	
C. Waste Disposal		✓	
1. Registered Industrial Scavanger		✓	
a. Name			
b. D.E.C. #			
2. Evaporator		✓	
3. Recirculation System	✓		

Item	Yes	No	N/A
C. Waste Disposal (cont'd)			
4. Sewer		✓	
5. Other		✓	
D. Chemical Storage	✓		
1. Drums		✓	
2. Tanks 150 GAL	✓		
3. D.C. Reservoir		✓	
E. Records	✓		
1. ☑ Purchase Receipts ☐ Removal Receipts	✓		
2. Records Kept a Minimum of 3 Yrs.			✓
3. Reports Submitted on Time			✓
F. Overall Inspection Rating			
☑ Satisfactory ☐ Non-Compliance			

Date	Item	Comments

Signature of Inspector: A. Fitzgerald	Date: 5/2/85	Signature of Company Representative: Roger Mohl	Date: 5/2/85

EH 795 7/84

NCDOH25446

DRY CLEANER SURVEY
Bureau of Land Resources Mgmt.
Nassau County Dept. of Health

Facility Name: OLD COUNTRY CLNRS

Date: 4/5/85

Contact: MR ROGER MOCK

Phone: WI 5470

Address: 198 LEVITTOWN PKWY HICKSVILLE

Zip: 11801

Make of Equipment	D.C.	HOFFMAN
	Reclaimer	Hoyt solvomiser
	Sniffer	NO
Reclamation Process	Type	☑ Condensation ☑ Distillation Powder
Chemical Usage	Chemical Name	PERC
	Gallons Purchased/ Year	300
Separator Water Discharge	Quantity Per Month	2 GAL
	Disposal Method	☐ Cesspool ☐ Sewer ☑ Recirculation ☐ Evaporator ☐ Dry Well ☐ Hold to Haul ☐ Other
Solid Discharge	Nature	☑ Filter Powder ☐ Filter Cartridge ☐ Still Bottom
	Disposal Method	☐ Garbage ☐ Hold to Haul ☑ Other storing on premises
Chemical Storage	Type	☐ D.C. Reservoir ☐ Drums ☑ Tank Capacity 150 GAL
Sewer	Available? ☑ Yes ☐ No	If Yes, Is It Hooked Up? ☑ Yes ☐ No

Comments

Signature of Business Representative: Roger Mock

Inspector: G. Fitzgerald

EH 698 7/84

NCDOH25447

ENVIRONMENTAL
HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : Old Country Cleaners

Address: 193 Jericho Turnpike Hicksville

Inspector

DATE	COMMENTS
11/26/80	Visited Old Country Cleaners & spoke to Mr Levine regarding the discharge from the water separators of the dry cleaning equipment. Mr Levine stated that all separator water is recycled. I noted a recycling system which was not seen on initial inspection. No cause for action.
	A Ratzgaell

EH 109a 1/68
DH-1198. 9/71

NCDOH25448

PS Form 3811, Aug. 1978

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● SENDER: Complete items 1, 2, and 3.
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one).
- ☐ Show to whom and date delivered. . . . . ____¢
- ☐ Show to whom, date, and address of delivery. . ____¢
- ☐ RESTRICTED DELIVERY
  Show to whom and date delivered. . . . . ____¢
- ☐ RESTRICTED DELIVERY.
  Show to whom, date, and address of delivery. $____

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:
Old Country Cleaners
2 Levittown Pkwy.
Hicksville, N.Y. 11801

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	4809	

(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE ☐ Addressee ☐ Authorized agent

Alice Levern.

4. DATE OF DELIVERY NOV 7 1980

POSTMARK

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:

CLERK'S INITIALS

☆ GPO: 1978-272-382

NCDOH25449

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, and 3 on the reverse.
- Attach to front of article if space permits. Otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S.MAIL®

RETURN TO

NASSAU COUNTY DEPARTMENT OF HEALTH
NEW OFFICE BUILDING
240 OLD COUNTRY ROAD
MINEOLA, N. Y. 11501

(Name of Sender)

(Street or P. O. Box)

Att: L. Sama

(City, State, and ZIP Code)

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N. Y., 11501

FRANCIS T. PURCELL
County Executive

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
for Environmental Health

CERTIFIED MAIL

November 3, 1980

Old Country Cleaners
2 Levittown Pkwy.
Hicksville, N.Y. 11801

Gentlemen:

Representatives of this office have inspected the dry cleaning establishment located on the property at:

Same as above

It has been determined that wastewater containing tetrachloroethylene (perc or cleaning fluid), is being disposed of at this facility onto the surface of the ground or through plumbing into septic tank system and cesspools. Such methods of disposal are not acceptable and are in violation of the Environmental Conservation Law, Article 17, Titles 7 and 8, 6NYCRR Parts 750-757. Accordingly, this discharge must be discontinued immediately and you are herewith instructed to do the following:

1. Provide a watertight and covered receptacle to receive all liquid wastes from the dry cleaning operation that may contain tetrachloroethylene (perc) or any other synthetic organic cleaning chemical.

2. Deposit all liquid wastes (sludge and water from separator) from (a) the still, (b) the solvent recovery unit (reclaimer-water separator), and (c) the solvent adsorption unit (sniffer); any spillage from chemical storage or transfer vessels and any other wastes that may contain the chemical, in the receptacle in (1) above.

3. Hold these wastes for disposal through a DEC registered industrial waste scavenger. (use an empty perc drum).

4. Where possible, utilize the wastewater from the above equipment, and any other wastes in the dry cleaning operation including the use of the material for the pre-spotting solutions.

If you have any reasonable alternate means for eliminating the above-referenced discharges or wastes, such as incorporation into a recirculating cooling system with cooling tower, we would be glad to discuss this with you. This office has been working in contact with your local Neighborhood Cleaners Association, 116 East 27 Street, N.Y., N.Y. 10016. They assure us they are willing to assist us and you in solving the problem of eliminating these discharges. You can call them at 212-684-0945 for information.

Representatives of this office will be reinspecting your facility in the near future to ascertain whether you are acting in compliance with this directive.

Should you have any questions, please call this office at 516-535-2404.

Very truly yours,

L. Sama
Public Health Engineer
Bureau of Land Resources Mgmt.

LS:ceg

DRY CLEANER SURVEY
Bureau of Wastewater Management-Nassau County Dept. of Health

Company Name: Old Country Clnrs

Date: 10/18/79

Contact: Mr Levene

Phone:

Address: 193 Levittown Pkwy Hicksville

Zip

		DC	DRYER
EQUIPMENT	Make	Hoffman Ice A	Hoyt Solvomiser
	Model	—	SF 130
	Year	10 yrs	10 yrs
RECLAMATION PROCESS	Type	~~Por~~ Distillation	
CHEMICAL USAGE	Brand Name & Chemical	Perk	
	Distributor	Johnston	Floral Park
	Gallons Purchased/ Year	500	
LIQUID DISCHARGE	Frequency	1 every 5 wks	
	Quantity	½ gal wk	
	How Disposed	Out on lawn	
SOLID DISCHARGE	Nature	Dry powder	
	Frequency of Filter Change	Every 5 days	
SEWER	Available? [ ] Yes [✓] No	If yes, is it hooked up? [ ] Yes [✓] No	

COMMENTS: Bulk from truck to D.C. reservoir

Recycles water — cooling tower

Signature of Business Representative: Alan Levene

Inspector: A. Fitzgerald

EH-698 10/79

NCDOH25453

INDUSTRIAL CHEMICAL SURVEY
BUREAU OF WATER POLLUTION CONTROL
Nassau County Department of Health
240 Old Country Road, Mineola, N.Y. 11501 Tel. 535-2404

DRY CLEANER
FOLLOW UP SURVEY

Company Name Old Country Cleaners Contact Ahy Levene

Address Store #2 Levittown Pkwy Village Green Reinspection Date 6/2/78

Equipment:	DRYER	WASHER
Make	Hoyt	Hoffman
Model	FS130	IGEA
Year	1961	1961

Reclamation Process:

Type Distillation

Chemical Usage:

Brand Name Stafford

Distributor Johnson Distributors

Gal. Purchased/Year 720

Percentage Reclaimed 75%

Liquid Discharge:

	From Machine	From Dryer
How Often is Water Drawn Off?	twice a week	→
How Much Is Drawn Off Each Time	½ - 1 gallon	→ Plus a pipe that goes directly into drain
Disposal Method	Down the drain - out the back	

Solid Discharge:

Nature Filter

Occurrence of Change twice a week

Disposal Method Garbage can

Volume Disposed 10 lbs

Carting Firm and/or Location of Dumpsite Monti Bros

Signature of Business Representative Ahy Levene

Inspector J. C.

NCDOH25454

INDUSTRIAL CHEMICAL SURVEY-BUREAU OF WATER POLLUTION
Nassau County Department of Health

Name of Company: Old Country Cleaners | SIC Code | Water District | Code

PART II - CHEMICALS USED (include gases and oils)

INSTRUCTIONS: Complete all information for those chemicals your facility has used, stored, distributed, or otherwise disposed of since January 1, 1977. Do not include chemicals used only in analytical laboratory work.

Name of Chemical/Trade Name, Supplier and Address	Code	Avg Annual Usage	Gal	Lbs	Use of Chemical	Final Disposition of Chemical
perc		360	✓		dry cleaning fluid	recycle
Stauffer Chemical						
Diamond Sizing 5 lb/wk		260		✓	starch	in machine
staticol spirit soap 6 lb/wk		312		✓	water soluble stains	" "
1 R Street						
Chicago						
Diamond Chemical Co PO Box 87						
Bayonne NJ						

RECOMMENDED ACTION

FOR OFFICE USE ONLY

2 ☐ Immediate Abatement
3 ☐ Sample
4 ☐ SPDES Application
5 ☐ Refer To: _____
6 ☐ Re-inspection
7 ☒ No Action
9 ☐ Other (specify)

EH 651B 3/77

NCDOH25455

INDUSTRIAL CHEMICAL SURVEY
BUREAU OF WATER POLLUTION CONTROL

Nassau County Department of Health
240 Old Country Road, Mineola, N.Y. 11501 Tel. 535-2404

Part I

Company Name	Old Country Cleaners	SIC (if known) Code	
Company Mailing Address	Store #2 Levittown Pkwy Village Green Hicksville	Zip	11801
Plant Name (if different)		Contact Name: Avy Levene	Tel. WE 1-5470
Plant Address		Village	Water Distr. Hicksville; Code; Zip
Principal Business of Plant	dry cleaners	No. Employees at this Facility	3

Part II

COMPLETE LIST OF CHEMICALS USED (See attached)

PART III - DISCHARGE INFORMATION

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? If yes, name of system: ☐ Yes ☑ No
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? If yes, enter Permit No. ☐ Yes ☑ No
3. Do you discharge liquid industrial wastes in any other manner? If yes, explain: ☐ Yes ☑ No
4. If any of the above are yes:
   a. Do you discharge process or chemical wastes, i.e., water used in manufacturing, including direct contact cooling water and scrubber water? ☐ Yes ☑ No
   b. Do you discharge non-contact cooling water? 10 gal/day ☑ Yes ☐ No
   c. Do you discharge sanitary wastes? cesspool ☑ Yes ☐ No

AIR

1. Does your facility have sources of possible emissions to the atmosphere? 1 vent ☑ Yes ☐ No
2. Enter location and facility code as shown on your Air Pollution Control Application for Permits & Certification (if applicable)
3. Heating System: ☐ None ☑ Boiler ☐ Space Heater | Type of Fuel: ☐ Electric ☐ Gas ☑ Oil | Incinerator: ☐ Yes ☑ No

SOLID & CONCENTRATED LIQUID WASTES

1. List name and address of firm (incl. yourself) removing wastes other than office and cafeteria refuse (industrial scavenger)

Name	Name
Monti Bros	
Address	Address

2. List location(s) of landfills owned and used by your Facility

		Active	Inactive
a.			
b.			

PEST

Does this facility manufacture, produce, formulate or repackage pesticides? ☐ Yes ☑ No

Signature (owner, partner, or officer)	X Avy Levene	Date	
Name (printed or typed)	Avy Levene	Title	owner
Inspector's Name	Strober Terrell	Date of Inspection	8/25/77

EH 651 4/77

NCDOH25456

The Nassau County Department of Health is conducting an investigation pursuant to New York State Environmental Conservation Law, 3-0301 (g) (h), 17-0303 (g), 19-0301 (d) and 37-0103, concerning the present practices of industry in Nassau County in relation to certain specific and broad classes of chemicals used in industrial processes.

EH 651A 3/77

48-14-1 (4/81)

See cover sheet for instructions

PLEASE TYPE

Part A:

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

HAZARDOUS WASTE MANIFEST

DOCUMENT NO. NY 269787 6

GENERATOR NAME: Stokvis Multiton	PHONE: 516-822-7400	EPA ID NO.: NYD002045037
SITE ADDRESS: 520 W. John St. Hicksville NY 11801		
TRANSPORTER NO. 1: ATLAS ASSOCIATES	PHONE: 201-684-0709	NJD065825341
SITE ADDRESS: 109 Fifth Ave. Paterson NJ 07524		
TRANSPORTER NO. 2:	PHONE:	
SITE ADDRESS:		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY: MARISOL INC.	PHONE: 201 469-5100	NJD002454544
SITE ADDRESS: 125 Factory Lane Middlesex NJ 08846		

THIS FORM IS NO. _____ OF A TOTAL OF _____ THE FIRST MANIFEST DOCUMENT NO. IS NY

To Be TYPED by Generator

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN/NA NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EPA HAZ CODE	EPA WASTE TYPE
1	Hazardous Waste Liquid - NOS	ORM-E	NA 9189	1	00055	1	001	01	T	F001
2	Waste Oil NOS	Combustible Liquid	NA 1270	1	00055	1	001	01	T	X726
3										
4										
5										
6										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

① tech # 565 - Chlorinated Solvents

② tech # 805 - Waste Oil

GENERATOR'S CERTIFICATION. This is to certify that the herein named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA. The wastes described herein were consigned to the transporter named. The TSD Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. This shipment also conforms with all applicable State regulations. I certify that the foregoing is true and correct.

GENERATOR'S SIGNATURE: Alan W. Hubbs Please type name also	DATE SHIPPED: 12 06 83 (Mo. Day Yr.)	EXPECTED ARRIVAL DATE: 12 07 83 (Mo. Day Yr.)
TRANSPORTER NO. 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest." Roger Dunlap	TRANSPORTER NO. 1 PERMIT NUMBER: NJ SWAS 8477AF TA-1165	DATE RECEIVED: 12 06 83 (Mo. Day Yr.)

COPY 3 Generator—Retained by Generator

Tear at this Perforation

NCDOH25668

48-14-1 (4/81)

See cover sheet for instructions

PLEASE TYPE

Part A:

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

HAZARDOUS WASTE MANIFEST

DOCUMENT NO. NY 269779 5

GENERATOR NAME: Stokvis Multiton	PHONE: 516-822-7400	EPA ID NO.: NYD002045037
SITE ADDRESS: 520 W. John St. Hicksville NY 11801		
TRANSPORTER NO. 1: Atlas Associates	PHONE: 201-684-0709	NJD065825341
SITE ADDRESS: 109 Fifth Ave. Paterson, NJ 17524		
TRANSPORTER NO. 2:	PHONE:	
SITE ADDRESS:		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY: SCA Chemical Services	PHONE: 201-465-9100	NJD089216790
SITE ADDRESS: 100 Lister Ave Newark, NJ 07105		

THIS FORM IS NO. _____ OF A TOTAL OF _____ THE FIRST MANIFEST DOCUMENT NO. IS NY

To Be TYPED by Generator

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN/NA NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EPA HAZ CODE	EPA WASTE TYPE
	Waste Phosphoric Acid RQ	Corrosive Material	UN 1805	1	00110	1	0024	01	C	D002
2										
3										
4										
5										
6										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

① tech # 568 - Phosphoric Acid - site code 9141

GENERATOR'S CERTIFICATION. This is to certify that the herein named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA. The wastes described herein were consigned to the transporter named. The TSD Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. This shipment also conforms with all applicable State regulations. I certify that the foregoing is true and correct.

GENERATOR'S SIGNATURE: Alan W. Hubbs Please type name also	DATE SHIPPED: 12 06 83 (Mo. Day Yr.)	EXPECTED ARRIVAL DATE: 12 07 83 (Mo. Day Yr.)
TRANSPORTER NO. 1 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest." Roger Dunlop	TRANSPORTER NO. 1 PERMIT NUMBER: JA-165 NJSWAS 8477AF	DATE RECEIVED: 12 06 83 (Mo. Day Yr.)

COPY 3 Generator—Retained by Generator

Tear at this Perforation

NCDOH25669

Part B: GEN NAME Stokvis Multiton GEN EPA ID# NYD002045037

Transporter—FILL OUT

TRANSPORTER NO. 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment." Roger Dunlap — DATE DELIVERED 12 07 83 (Mo. Day Yr.)

TRANSPORTER NO. 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest." — TRANSPORTER NO.2 PERMIT NUMBER — DATE RECEIVED (Mo. Day Yr.)

TRANSPORTER NO. 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment." — DATE DELIVERED (Mo. Day Yr.)

TSD Facility—FILL OUT

TSD NAME: SCA Chemical Services Inc. — TSD EPA ID #: NJD089216790

TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS

HANDLING METHOD: 1 T31 2 3 4 5 6

TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on the manifest except those discrepancies noted on this form." — SIGNATURE Robert Mourtrot — Please print or type name also — DATE RECEIVED 12 07 83 (Mo. Day Yr.)

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Department of Transportation (518) 457-7362.

DOCUMENT NO. NY 269779 5

COPY 3 Generator—Mailed by TSD Facility

Part B: GEN NAME Stokvis Multiton GEN EPA ID# NYD002045037

Transporter—FILL OUT

TRANSPORTER NO. 1 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment." Roger Dunlap — DATE DELIVERED 12 07 83 (Mo. Day Yr.)

TRANSPORTER NO. 2 SIGNATURE "To the best of my knowledge the contents of the shipment I have accepted for transport conforms with the description on this manifest." — TRANSPORTER NO.2 PERMIT NUMBER — DATE RECEIVED (Mo. Day Yr.)

TRANSPORTER NO. 2 SIGNATURE "I certify that I have not tampered with or materially altered the contents of this shipment." — DATE DELIVERED (Mo. Day Yr.)

RECEIVED Dec 12 1983 STOKVIS MULTITON CORP.

TSD Facility—FILL OUT

TSD NAME: Marisol, Inc — TSD EPA ID #: NJD002454544

TREATMENT STORAGE OR DISPOSAL FACILITY INDICATION OF ANY DIFFERENCES BETWEEN MANIFEST AND SHIPMENT OR LISTING OF REASONS FOR AND DISPOSITION OF REJECTED MATERIALS

HANDLING METHOD: 1 T63 2 T63 3 4 5 6

TREATMENT STORAGE OR DISPOSAL FACILITY SIGNATURE "Upon visual inspection, I certify that the contents of this shipment conform with the description on the manifest except those discrepancies noted on this form." — SIGNATURE — Please print or type name also — DATE RECEIVED 12 07 83 (Mo. Day Yr.)

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Department of Transportation (518) 457-7362.

DOCUMENT NO. NY 269787 6

COPY 3 Generator—Mailed by TSD Facility

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

FRANCIS T. PURCELL
County Executive

Mr. Dieter Feustal
Stokvis Multiton Corp.
520 West John Street
Hicksville, N.Y. 11801

NOTICE OF COMPLETENESS

Date: 5/30/84

Application For: Solid Waste Management Facility Permit

Application No: #84-70

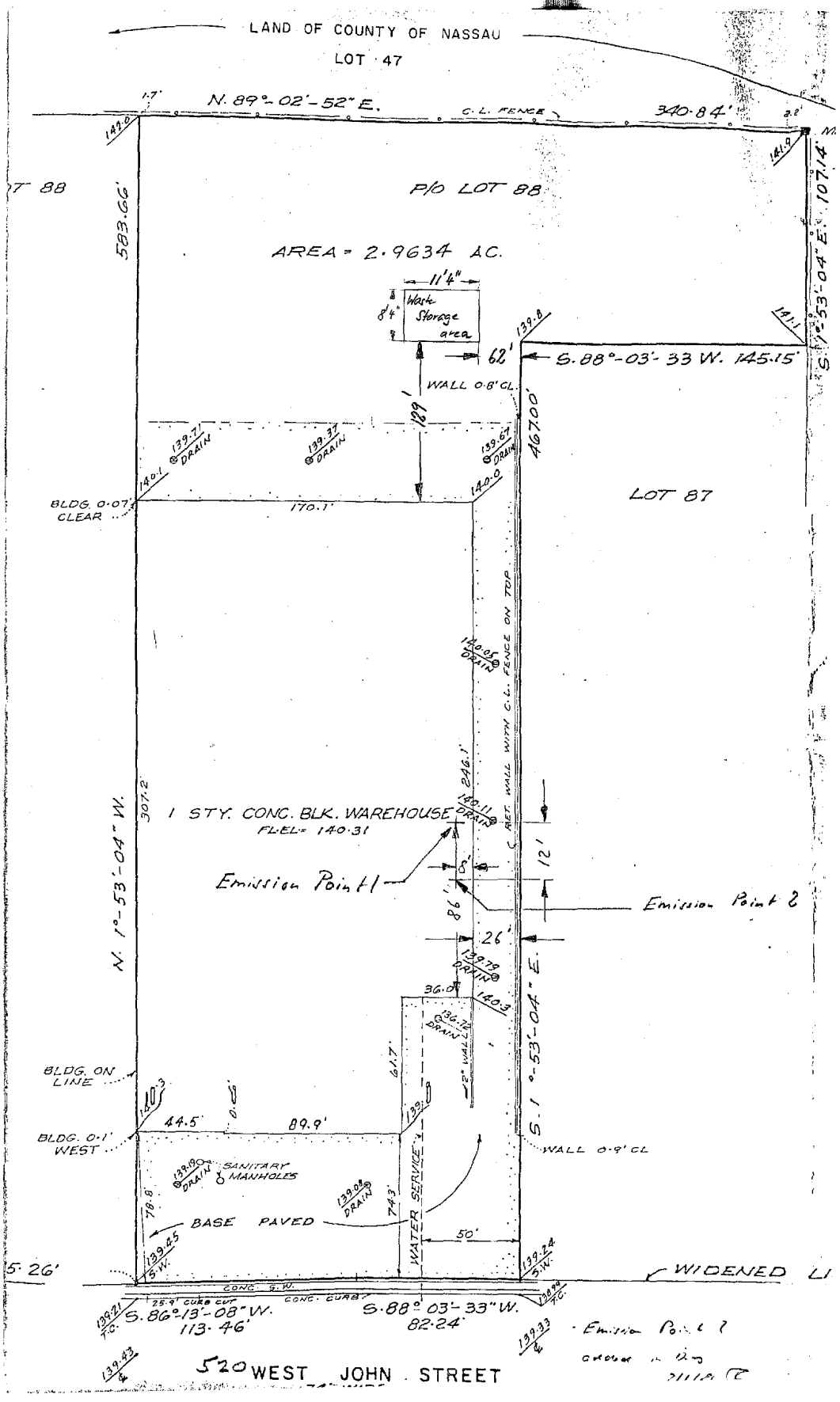
This is to advise you that your application for a permit, as indicated above, is complete and that a review of it has commenced. Additional information may be requested from you at a future date if it is necessary for the processing of the application.

Department Representative

L. Sama
Public Health Engineer
Bureau of Land Resources Management

Telephone No. 535-2406

EH 763 5/83


LAND OF COUNTY OF NASSAU
LOT 47
N. 89°-02'-52" E.
C.L. FENCE
340.84'
P/O LOT 88
AREA = 2.9634 AC.
583.66'
107.14'
S. 1°-53'-04" E.
11'4"
8'4"
Waste Storage area
62'
S. 88°-03'-33 W. 145.15'
WALL 0.8' CL.
189'
467.00'
LOT 87
BLDG. 0.07' CLEAR
170.1'
C. RET. WALL WITH C.L. FENCE ON TOP
1 STY. CONC. BLK. WAREHOUSE
FL.EL.= 140.31
Emission Point 1
Emission Point 2
12'
26'
N. 1°-53'-04" W.
307.2'
S. 1°-53'-04" E.
BLDG. ON LINE
BLDG. 0.1' WEST
44.5'
89.9'
WALL 0.9' CL
SANITARY MANHOLES
BASE PAVED
WATER SERVICE
50'
WIDENED LI
CONC. S.W.
CONC. CURB
S. 86°-13'-08" W.
113.46'
S. 88° 03'-33" W.
82.24'
520 WEST JOHN STREET

NCDOH25672

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : Stokvis Multiton Corp.
Address: 520 W. John Street, Hicksville N.Y. 11801

Inspector

DATE

Contact → Dieter Feustel M-W.P. MGR.S

23 May 1984

Rochelle regarding delinquent Article IX Application.

Mr. Feustel advised by the writer to submit application immediately to N.C.H.D. Article IX application mailed to facility 20 April 1984.

Robert Welch

EH 109a 1/68
DH-1198. 9/71

NCDOH25673

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

Nassau County Department of Health

Instructions

- Complete all Sections
- Mail this Application Form, along with your Plot Sketch and Material Flow Sketch, within 2 weeks to:

  Bureau of Land Resources Management
  Nassau County Department of Health
  240 Old Country Road
  Mineola, N.Y. 11501

For Health Department Use Only

Facility Number:	Date Received: 5/25/84

Department Action: ☒ Approved ☐ Interim ☐ Not Required By:

Permit Number	Start Date:	Exp. Date:

1. Facility Name	2. Address	3. Tel. #
STOKVIS MULTITON CORP.	520 West John Street, Hicksville, N.Y.11801	822-7400
4. Owner's Name	**5. Address**	**6. Tel. #**
STOKVIS MULTITON CORP.	SAME AS ABOVE	
7. On-Site Supervisor	**8. Address**	**9. Tel. #**
Dieter Feustel	SAME AS ABOVE	
10. Engineer (if applicable)	**11. Address**	**12. Tel. #**

13. Has this department ever approved plans and specifications and or engineering reports for this facility? ☐ Yes Date ☒ No

14. List Wastes Generated (use additional sheet if needed).

Name of Constituents	Check One: Hazardous	Check One: Non-Hazardous	# of Gals. Generated Per Month: Maximum	# of Gals. Generated Per Month: Average	Maximum # of Gals. Accumulated Before Disposal
Waste Phosphoric Acid – UN 1805	X		40	40	220
Waste Clorinated Solvent - NA 9189	X		10	10	55
Waste Oil - NA 1270		X	10	10	55
Waste Toluene - UN 1294	X		20	20	110

15. Names of Waste Haulers

16. Briefly describe facility operation: (use additional sheet if needed)

Metal Cleaning for preparation of painting

Repair of hydraulic operated machinery

RECEIVED
MAY 25 1984
NCDH
BLRM

I hereby affirm under penalty of perjury, that the information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief.

Signature	Title	Date
Dieter Feustel	VP	5-23-84

NCDOH25674

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

FRANCIS T. PURCELL
County Executive

May 9, 1983

Mr. A. LaRuffa, P.E.
New York State Department of
Environmental Conservation
SUNY-Bldg. 40
Stony Brook, N.Y. 11794

Re: Stokvis Multiton Corp.
Renewal of 30H200

Dear Mr. LaRuffa:

Enclosed is an application for renewal of the above referenced permit. Our records confirm the waste generation rates in the application. However, the facility has accumulated more than 1000 Kg at times. Accordingly they should be warned about not exceeding this limit in their future operations. They do appear to require control under Part 365.

Our most recent inspection of this facility was on May 4, 1983. No problems were noted. A copy of the inspection report is enclosed for your information.

If you require any further assistance with this facility, please contact me.

Very truly yours,

L. Sama
Public Health Engineer
Bureau of Land Resources Management

LS:ceg
Encl.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Regulatory Affairs Unit
Bldg. 40, SUNY--Room 219
Stony Brook, NY 11794
(516-751-7900)

NOTICE OF INCOMPLETE APPLICATION

TO: Stokvis Multiton Corp. 5/23/83
520 W. John St.
Hicksville, NY 11801

Permit Applied for: 360 Renewal Location: Hicksville

Application Number: 10-83-0622 (30H200)
(Please refer to this number in all your correspondence)

YOUR APPLICATION FOR THIS PERMIT IS INCOMPLETE UNTIL THE REQUESTED INFORMATION LISTED BELOW IS SUBMITTED TO THIS OFFICE.

_____ You did not include with your application the full amount of the required fee. Please submit a check or money order in the amount of $_____, payable to the Department of Environmental Conservation.

_____ Please submit the following data:

Fill out the enclosed Part 360 Solid Waste Management Information Sheet.

All technical questions should be refered to Mr. August Laruffa

_____ It has been determined that your project is subject to Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQR). Your application will be considered complete when:

RECEIVED
MAY 25 1983
NCDH
BLRM

For further information, contact this office.

Project Manager: Dennis W. Cole

If you wish to withdraw your application rather than complete it, please notify the Permit Agent for refund of application fee. YOUR APPLICATION WILL LAPSE (BE DEEMED WITHDRAWN) IF YOU DO NOT REPLY WITHIN 90 DAYS OF THE DATE OF THIS NOTICE.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY	
PROJECT NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

1. OWNER'S NAME Stokvis Multiton Corp.	2. ADDRESS (Street, City, State, Zip Code) 520 W. John St., Hicksville, NY11801	3. Telephone No. (156)822-7400
4. OPERATOR'S NAME "	5. ADDRESS (Street, City, State, Zip Code) "	6. Telephone No. "
7. ENGINEER'S NAME Dieter Feustel	8. ADDRESS (Street, City, State, Zip Code) "	9. Telephone No. "
10. ON-SITE SUPERVISOR Alan Hubbs	11. ADDRESS (Street, City, State, Zip Code) "	12. Telephone No. "

13. HAS THE INDIVIDUAL NAMED IN ITEM 10 ATTENDED A DEPARTMENT SPONSORED OR APPROVED TRAINING COURSE?
☐ Yes Date Course Title Location ☒ No

14. PROJECT/FACILITY NAME Renewal Permit - Permit #30-H-200	15. COUNTY IN WHICH FACILITY IS LOCATED Nassau	16. ENVIRONMENTAL CONSERVATION REGION I

17. TYPE OF PROJECT FACILITIES: ☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☐ Sanitary Landfill ☐ Incineration ☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☒ Other On site storage

18. HAS THIS DEPARTMENT EVER APPROVED PLANS AND SPECIFICATIONS AND/OR ENGINEERING REPORTS FOR THIS FACILITY? ☐ Yes Date _____ ☐ No

19. LIST WASTES NOT ACCEPTED:

- Diluted phosphoric acid
- Used paint thinner
- Water soluble cutting oil
- Used hydraulic fluid
- Used parts solvent (blend of chlorinated and aromatic solvents)

REMOVED BY: Chemical Pollution Control, Inc. 2-3times per year - Total (15) 55 gallon drums per year

20. BRIEFLY DESCRIBE OPERATION

Manufacturing of Materials Handling Equipment

(welding, machining, stamping, assembling and painting)

Additional Information Required:

HAZARDOUS

A) Diluted PhosphoricAAcid
Used paint thinner
Used parts solvent

NON HAZARDOUS

Cutting oil
Used hydraulic fluid

B) Phosphoric Acid 18 gal./mo.
Soluble Oil (cutting fluid) [illegible] gal./mo.
Degreaser Fluid 6 gal./mo.
Used paint thinner 3 gal./mo.

C) Maximum accumulation of wastes is no more than 5 drums at anytime.

[illegible] 1/6/83

21. IF FACILITY IS A SANITARY LANDFILL, PROVIDE THE FOLLOWING INFORMATION:
a. Total useable area: (Acres) Initially _____ Currently _____
b. Distance to nearest offsite, downgradient, water supply well _____ Feet
c. No. of groundwater monitoring wells Upgradient _____ Downgradient _____

22. INDICATE WHICH ATTACHMENTS, IF ANY, ARE INCLUDED WITH THIS APPLICATION:
☐ Form 47-19-2 or SW-7 ☐ Operations Plan & Report ☐ USGS Topographic Map ☐ Record Forms ☐ Other _____
☐ Construction Certificate ☐ Boring Logs ☐ Water Sample Analysis ☐ None

23. CERTIFICATION:
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Date _____ Signature and Title _____

47-19-4(3/82)
Formerly SW-22

FIELD COPY

NCDOH25688

FRANCIS T. PURCELL
County Executive

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

BUREAU OF LAND RESOURCES MANAGEMENT

NOTICE OF INCOMPLETE APPLICATION

TO: Stokvis Multiton
520 W. John St.
Hicksville, N.Y. 11801

Att: Mr. Dieter Feustel, V.P.

Date: January 3, 1983

Permit Applied for Renewal Location: above

Application Number: 30-H-200
(Please refer to this number in all your correspondence).

YOUR APPLICATION FOR THIS PERMIT IS INCOMPLETE.

[X] **Please submit the following data:** On Form 47-19-4 returned enclosed please indicate following:

1. a. Identify each waste as hazardous or non-hazardous
   b. Indicate amount of waste generated per month for each waste.
   c. Indicate maximum accumulation of each waste at any time.
2. Retain green copy of form for your records.

[ ] It appears that other environmental permits may be required in connection with your proposed project. In order for a comprehensive review of all Environmental permits for this project to be made, it is necessary for you to submit application(s) for the following permit(s):

If you have reason to request that all permits not be processed simultaneously, please notify the Department representative below to discuss the matter.

[ ] It has been determined that your project is subject to Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQR).
The following is required:

For further information, contact this office.

Department Representative: L. Sama Telephone No.: 535-2285

RECEIVED
MAY 9 1983
NCDH
BLRM

EH 657 12/80

~~Jack Knolle Supervisor~~

PERMIT COMPLIANCE INSPECTION REPORT

Al. Hubbs - Supervision

Bureau of Land Resources Management

Mr. L. Lovejoy - Purchasing -

Nassau County Department of Health

Facility Name: Stokvis Multiton Corp.

Changes in Name, Address, Rep.:

Address: 520 W. John Street, Hicksville NY 11801

Company Representative: Dieter Feustel | Title: V.P. Mfg. | Phone: 822-7400

Permit No. 30-H-200 ~~New~~ ~~Renewal~~ → Effective Date of Permit: permit exp. 12/14/82 | Expiration Date of Permit: —

Item	Yes	No	N/A
1. Waste Storage and Handling			
A. Adequate Spill Control?	✓		
B. No obvious infraction of Fire Code?	✓		
C. Proper waste containers?	✓		
D. Proper Storage of incompatible wastes?	✓		
E. Waste containers properly labeled?	✓		
F. Proper drum stack size and aisles?	✓		
G. Containers off ground and not leaking?	✓		
H. Waste stored in secure area?	✓		
2. Registered Industrial Waste Scavenger?	✓		
Name Chemical Pollution Control			
DEC # 1A-042			
☐ Different scavenger since last report			
3. Records			
A, B, C Proper waste inventory records?	✓		

Item	Yes	No	N/A
3. Records (Cont'd.)			
D. Record of spills & notification of N.C.H.D.?			✓
E. Record of special sampling results?			✓
4. Records kept a minimum of 3 years?			✓
5. Reports submitted on time? Fall 1982 WASTE report received	✓		
6. Waste storage in comformance with permit?	✓		
Quantities O.K.? → Drums (6) WASTE DRUMS chemical.	✓		
3 Recycl. 2 Scrap → Tanks			✓
Maximum storage time O.K.?	✓		
7. Sampling in conformance with permit?			✓
8. Is compliance schedule met as required by permit?	✓		
9. Overall Inspection Rating			
☒ Satisfactory			
☐ Non-Compliance ☐ Major ☐ Minor			

Date	Item	Comments
		* Waste report July → Dec. 1982 received by NCHD - BLRM 17 Feb. 1983.
		Discussed 6 NYCRR 365 versus 360 & mgmt. -
		Assisted mgmt in completion of same 47-19-04.
		Application to be returned to NCHD weeks of May 9, 1983.

Signature of Inspector: J J Welch | Date: 4 May 1983 | Signature of Company Representative: L B Lovejoy | Date

EH 702 9/80

NCDOH25690

4/29/83

Herb

Mr. Lovejoy of Stokris Multiton requested assistance on his 360 renewal. Told him he was due for an inspection so maybe we could kill 2 birds.

Would you plan on inspecting Stokris the week of 5/2/83.

LL.

NASSAU COUNTY DEPARTMENT OF HEALTH

Fr[illegible] | Date

	Route to:	Date Action By	Initials	Date
1				
2				
3				
4				
5				
6				

- ☐ Reply to sender
- ☐ Investigate and report status
- ☐ For your information
- ☐ Copy to us
- ☐ Read and confer
- ☐ Retain for your file
- ☐ For my signature
- ☐ Read and comment
- ☐ Return to O.C. file
- ☐ For your action
- ☐ Note comments
- ☐ Retain in Library

Remarks

HD-14B 9/80
DH-2102. 3/74 Rev. 10/80

☐ Over

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY

PROJECT NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

1. OWNER'S NAME	2. ADDRESS (Street, City, State, Zip Code)	3. Telephone No.
Stokvis Multiton Corp.	520 W. John St., Hicksville, NY11801	(156)822-7400
4. OPERATOR'S NAME	5. ADDRESS (Street, City, State, Zip Code)	6. Telephone No.
"	"	"
7. ENGINEER'S NAME	8. ADDRESS (Street, City, State, Zip Code)	9. Telephone No.
Dieter Feustel	"	"
10. ON-SITE SUPERVISOR	11. ADDRESS (Street, City, State, Zip Code)	12. Telephone No.
Alan Hubbs	"	"

13. HAS THE INDIVIDUAL NAMED IN ITEM 10 ATTENDED A DEPARTMENT SPONSORED OR APPROVED TRAINING COURSE?
☐ Yes Date Course Title Location ☒ No

14. PROJECT/FACILITY NAME	15. COUNTY IN WHICH FACILITY IS LOCATED	16. ENVIRONMENTAL CONSERVATION REGION
Renewal Permit - Permit #30-H-200	Nassau	I

17. TYPE OF PROJECT FACILITIES: ☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☐ Sanitary Landfill ☐ Incineration ☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☒ Other On site storage

18. HAS THIS DEPARTMENT EVER APPROVED PLANS AND SPECIFICATIONS AND/OR ENGINEERING REPORTS FOR THIS FACILITY? ☐ Yes Date _____ ☐ No

19. LIST WASTES [redacted]

- Diluted phosphoric acid
- Used paint thinner
- Water soluble cutting oil
- Used hydraulic fluid
- Used parts solvent (blend of chlorinated and aromatic solvents)

REMOVED BY: Chemical Pollution Control, Inc. 2-3times per year - Total (15) 55 gallon drums a year

20. BRIEFLY DESCRIBE OPERATION

Manufacturing of Materials Handling Equipment

(welding, machining, stamping, assembling and painting)

RECEIVED
DEC 22 1982
NCDH
BLRM

21. IF FACILITY IS A SANITARY LANDFILL, PROVIDE THE FOLLOWING INFORMATION:
a. Total useable area: (Acres) Initially _____ Currently _____
b. Distance to nearest offsite, downgradient, water supply well _____ Feet
c. No. of groundwater monitoring wells Upgradient _____ Downgradient _____

22. INDICATE WHICH ATTACHMENTS, IF ANY, ARE INCLUDED WITH THIS APPLICATION:
☐ Form 47-19-2 or SW-7 ☐ Operations Plan & Report ☐ USGS Topographic Map ☐ Record Forms ☐ Construction Certificate ☐ Boring Logs ☐ Water Sample Analysis ☐ None ☐ Other _____

23. CERTIFICATION:
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

12/20/82 Date — Signature and Title VICE PRES

47-19-4(3/82)
Formerly SW-22

CENTRAL OFFICE COPY

NCDOH25693

FRANCIS T. PURCELL
County Executive

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

BUREAU OF LAND RESOURCES MANAGEMENT

NOTICE OF INCOMPLETE APPLICATION

TO: Stokvis Multiton
520 W. John St.
Hicksville, N.Y. 11801

Att: Mr. Dieter Feustel, V.P.

Date: January 3, 1983

Permit Applied for Renewal Location: above

Application Number: 30-H-200
(Please refer to this number in all your correspondence).

YOUR APPLICATION FOR THIS PERMIT IS INCOMPLETE.

[X] **Please submit the following data:** On Form 47-19-4 returned enclosed please indicate following:

1. a. Identify each waste as hazardous or non-hazardous
   b. Indicate amount of waste generated per month for each waste.
   c. Indicate maximum accumulation of each waste at any time.
2. Retain green copy of form for your records.

[ ] It appears that other environmental permits may be required in connection with your proposed project. In order for a comprehensive review of all Environmental permits for this project to be made, it is necessary for you to submit application(s) for the following permit(s):

If you have reason to request that all permits not be processed simultaneously, please notify the Department representative below to discuss the matter.

[ ] It has been determined that your project is subject to Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQR).
The following is required:

For further information, contact this office.

Department Representative: L. Sama Telephone No.: 535-2285

EH 657 12/80

12/28/82
LSL

Review of Stokes Multiton Corp

1) waste/yr - first 1/2 of 1982
450 gal phosphoric acid / Toluol

2) max accum. - 450 gal.

3) last inspection ~~11/10/82~~ SHW. - 11/18/82

4) waste rpt up to date - YES.

5) other waste include:
Safety Kleen

6) spray booths

NCDOH25698

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

ANCIS T. PURCELL
County Executive

11/17/82

Stokvus Multiton
520 W. John St.
Hicksville, N.Y. 11801
Att: William Stauffer

Re: Part 360 Permit # 30-H-200
Renewal Notice
Expiration Date: 12/15/82

Gentlemen:

The above-referenced permit, covering the generation and/or storage of industrial wastes at your facility, will expire shortly. Application forms are enclosed for renewal of this permit. Please complete the application and return it to this office within two weeks.

We will review your application and forward it to the New York State Department of Environmental Conservation at Stony Brook, New York for further processing.

If you have any questions, please call 535-2406.

Very truly yours,

L. Sama
Public Health Engineer
Bureau of Land Resources Management

Encl.

EH 729 7/81

Jack Knolle - supervisor

PERMIT COMPLIANCE INSPECTION REPORT

Al. Hubbs - Supervisor

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: Stokvis Multiton Corp.

Changes in Name, Address, Rep.:

Address: 520 W. John Street, Hicksville NY 11801

Company Representative: Dieter Feustel | Title: V.P. Mfg. | Phone: 822-7400

Permit No. 30-H-200 | [X] New [ ] Renewal | Effective Date of Permit: 12/15/81 | Expiration Date of Permit: 12/14/82

Item	Yes	No	N/A
1. Waste Storage and Handling			
A. Adequate Spill Control?	✓		
B. No obvious infraction of Fire Code?	✓		
C. Proper waste containers?	✓		
D. Proper Storage of incompatible wastes?	✓		
E. Waste containers properly labeled?	✓		
F. Proper drum stack size and aisles?	✓		
G. Containers off ground and not leaking?	✓		
H. Waste stored in secure area?	✓		
2. Registered Industrial Waste Scavenger?	✓		
Name Chemical Pollution Control			
DEC # 1A-042			
[ ] Different scavenger since last report			
3. Records			
A, B, C Proper waste inventory records?	✓		

Item	Yes	No	N/A
3. Records (Cont'd.)			
D. Record of spills & notification of N.C.H.D.?			✓
E. Record of special sampling results?			✓
4. Records kept a minimum of 3 years?			✓
5. Reports submitted on time? Spring 1982 - Waste report	✓		
6. Waste storage in comformance with permit?	✓		
(8) Quantities O.K.? Drums (3) Still Drum on hand	✓		
Tanks			✓
Maximum storage time O.K.?	✓		
7. Sampling in conformance with permit?			✓
8. Is compliance schedule met as required by permit?	✓		
9. Overall Inspection Rating			
[X] Satisfactory			
[ ] Non-Compliance [ ] Major [ ] Minor			

Date	Item	Comments
		Spring 1982 Waste Report received - last removal noted on report 5/12/82 - 450 Gals - Phosphoric Acid/Toluol waste, scavenger Chemical Pollution Control.
		Existing Permit due to expire on 12/14/82 - Company has not received renewal info. to date.

Signature of Inspector: H Welch | Date: 18 Nov 1982

Signature of Company Representative: Alan W. Hubbs | Date: 11/18/82

EH 702 9/80

NCDOH25700

CHEMICAL/SOLVENT WA[illegible] REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Name: STOKVI[illegible] MULTITON CORP.
520 W[illegible]N ST. / P.O. BOX 220
HICKSVILLE, N. Y. 11801

Address:

Permit Number: 30-H-200

Report Period: Jan.-June 82

List all waste generating chemicals and/or solvents purchased during the reporting period. Indicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	Purpose or Use	Trade Name or Supplier	Quantity Purchased
UNIVIS J-13	HYD. OIL	EXXON	110 gal 1/27/82
STRATUS-21	HYD. OIL	MILES PETRO. (SHELL DIST.)	55 gal 2/19/82
S-500	WATER SOLUBLE COOLANT	HANGSTEFERS LABS	55 gal 2/25/82
UNIVIS J-13	HYD OIL	EXXON	110 gal 4/16/82
CSD43	DEGREASER	SPARTAN	110 gal. 4/27/82
S-500	WATER SOLUBLE COOLANT	HANGSTEFERS LABS	55 gal. 5/27/82
			RECEIVED
			AUG 10 1982
			NCDH BLRM

EH 704 1/82

continued on reverse

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Type of Waste (Chemical, oil or solvents)	Amount Shipped	Shipped By			Shipped To (Final Disposal Site For Waste)
			Scavenger Name	Scavenger Address	Scavenger Number	
5/12/82	PHOSPHORIC ACID/TOLUOL	450	CHEMICAL POLLUTION	120 S. 4th St. BAYSHORE NY	1A-042	ENVIRONMENTAL WASTE REMOVAL 130 FREIGHT ST. WATERBURY CT.

List any accidental spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill

Signature of Company Representative: Victor Pente | Title: VP | Date: 8/6/82

EH 704A 1/80

NCDOH25702

30-H-200 Permit issued 12/15/81
Expiration Date 12/14/82

EPA ID # NYD002045034

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : Stokvis Multitow Corp.
Address: 520 W. John Street, Hicksville

Inspector

DATE	COMMENTS
	Contact ⟹ Dieter Feustel V.P. Mgr.
11 May 1982	Recheck @ Stokvis Multitow revealed (A) Adequate spill control has not been initiated - However contractor @ site at this time - Completion due in two weeks. (B) 10 waste Drums on premises — over permit limit of (8) Drums. In regard to waste Drums on premises - Chemical Pollution Control has been @ site sampling waste on hand. Drums to be removed as soon as sampling completed.
	Rechecked J. Arthur Welch
	*5/26/82
5/26/82	Dieter Feustel V.P. Mgr. not on premises @ this time of recheck. Spoke to Jack Knolle - Supervisor @ Stokvis Multitow Spill control has been completed utilizing concrete pad. Eight (8) waste Drums on premises - conforming with permit condition - Quantities. In Addition mgmt. to provide roof for spill control pad etc.
	J. Welch

EH 109a 1/68
DH-1198. 9/71

NCDOH25703

PERMIT COMPLIANCE INSPECTION REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Facility Name: Stokvis Multitow Corp.

Changes in Name, Address, Rep.:

Address: 520 W. John Street, Hicksville NY 11801

Company Representative: Dieter Feuestel | Title: V.P. Mgr. | Phone: 822-7400

Permit No. 30-H-200 | ☒ New ☐ Renewal | Effective Date of Permit: 12/15/81 | Expiration Date of Permit: 12/14/82

Item	Yes	No	N/A
1. Waste Storage and Handling			
(A) Adequate Spill Control?		✓	
B. No obvious infraction of Fire Code?	✓		
C. Proper waste containers?	✓		
D. Proper Storage of incompatible wastes?	✓		
(E) Waste containers properly labeled?		✓	
F. Proper drum stack size and aisles?	✓		
(G) Containers off ground and not leaking?		✓	
H. Waste stored in secure area?	✓		
2. Registered Industrial Waste Scavenger?			
Name Chemical Pollution Control			
DEC # 1A-042			
☐ Different scavenger since last report			
(3) Records			
A, B, C Proper waste inventory records?		✓	

Item	Yes	No	N/A
3. Records (Cont'd.)			
D. Record of spills & notification of N.C.H.D.?			✓
E. Record of special sampling results?			✓
4. Records kept a minimum of 3 years?			✓
5. Reports submitted on time? on permit only since 12/15/81			
6. Waste storage in comformance with permit?	✓		
(8) Quantities O.K.? Drums 7 Drums	✓		
Tanks			✓
90 days Maximum storage time O.K.?	✓		
7. Sampling in conformance with permit?			✓
8. Is compliance schedule met as required by permit?		✓	
9. Overall Inspection Rating			
☐ Satisfactory			
☐ Non-Compliance ☐ Major ☑ Minor			

Date	Item	Comments
30 Dec 1981	1A	Provide adequate spill control in waste storage area.
	1E	Waste containers to be properly labeled.
	1G	Containers to be kept off ground.
	3	Proper waste inventory records to be initiated

Signature of Inspector: N Welch | Date: 30 Dec 1981 | Signature of Company Representative: [illegible] | Date

EH 702 9/80

NCDOH25704

30-H-200 Exp. Date 12/14/82 EPA ID# NYD002045037

ENVIRONMENTAL HEALTH Continuation Sheet
Nassau County Health Department

(date of permit 12/15/81)

Owner or Agent: Stokvis Multitow Corp. Inspector

Address: 520 W. John Street, Hicksville

DATE Contact → Dieter Eustel V.P. Mgr. COMMENTS

22 March 1982

Rechecks regarding violations noted 30 Dec. 1981 revealed (A) Adequate spill control has not been initiated (1A)

(B) Waste drums still not properly identified (1E)

(C) Several waste drums not off ground and in poor condition. (1D)

(D) Firm to institute proper record keeping - including collection dates + removal records? 3 (A)(B)(C)

There now are a total of (8) waste drums on premises outside in rear of Bldg.

Advised mgmt. regarding outstanding violations noted. Mgmt. request another month to install spill control.

According to Mr. Dieter Eustel the delay in removing existing drums occurred because of EPA not issuing I.D. number since contacted Jan 1982.

I.D. EPA number has been issued, scavenger requested additional sampling before removal.

Herbert Welch

EH 109a 1/68
DH-1198. 9/71

NCDOH25705

(516)822-7400

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

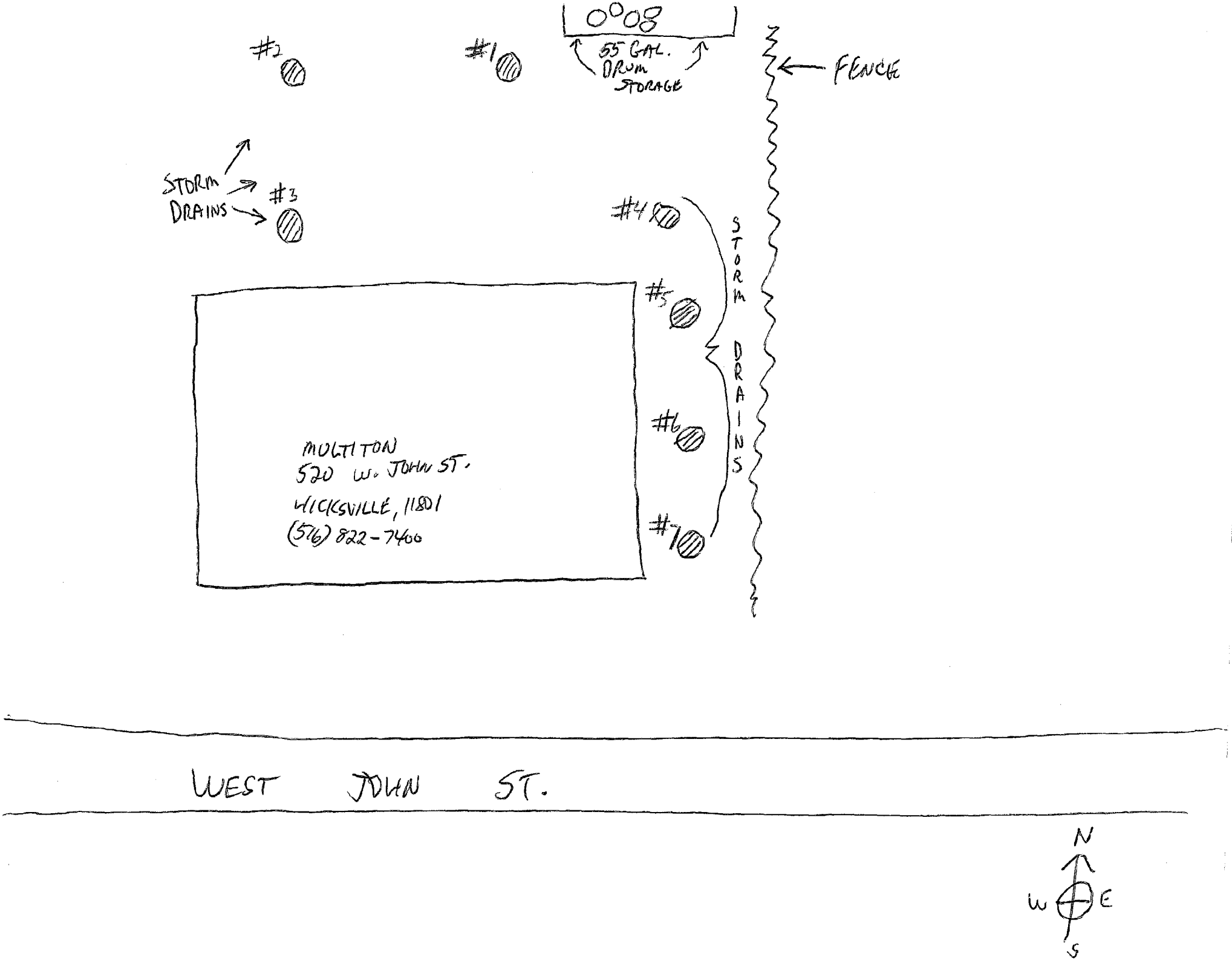
Owner or Agent: MULTITON MIC CORP.
Address: 520 W. JOHN ST. BOX 220 HICKSVILLE, NY 11801

Inspector: GG

DATE	COMMENTS
7-10-90	GG on site at 15:30 in response to an oil spill complaint that was referred to NCDOH by John Jiwa of DEC who indicated that someone called in about a dump of 55 GAL. of oil from a drum into a storm drain at the above site. After checking storm drains indicated on diagram (see on back of sheet) and finding negative oil product by use of smell and sight through drain gratings of #3 through #7 and thief with #1 & #2, I talked with John Jyons and Pete Ruggo of Multiton.
	Mr. Jyons said that Multiton is a company that designs hydraulic hand trucks and that the 55 GAL. drums that are stored on this property in the north end of the back parking lot are filled with NaOH, heavy naptha, Na metasilicate. Pete Ruggo indicated that hydraulic fluid (55 GAL. DRUMS) was stored at a site directly across W. JOHN ST. and all drums already mentioned are permitted under Article XI with NCDOH.

EH 109a 1/68
DH-1198, 9/71

NCDOH25729


0°08
55 GAL. DRUM STORAGE
FENCE
#2
#1
STORM DRAINS
#3
#4
#5
#6
#7
STORM DRAINS
MULTITON
520 W. JOHN ST.
WICKSVILLE, 11801
(516) 822-7400
WEST JOHN ST.
N
W
E
S

NCDOH25730

JAN 09 1987

NASSAU COUNTY DEPARTMENT OF HEALTH — NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI

APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

FORM 1 - GENERAL INFORMATION

SEE INSTRUCTION SHEET

JAN 9 1987

For Office Use Only

Facility I.D. 185

☐ Municipal

☒ Non-Municipal

NCDOH25747

Check all that apply to your facility: ☐ Tank Storage ☒ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☐ New ☒ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Village	State	Zip	Phone
STOKVIS MULTITON CORP.	520 West John Street	Hicksville	N.Y.	11801	(516)822-7400

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
SAME AS ABOVE	Gerhard Stoenner - Technical Director	(516)822-7400

Facility Owner	Street Address	Village	State	Zip	Phone
Jerry Spiegel Realty	270 No. Broadway	Hicksville	N.Y.	11801	931-8500
Property Owner (If not Facility Owner)	Street Address	Village	State	Zip	Phone
Tank Owner (If not Facility Owner)	Street Address	Village	State	Zip	Phone

Name that should appear on Permit (Permittee) (If different from Facility Owner) STOKVIS MULTITON CORP.

Permittee's Street Address	Village	State	Zip	Phone
520 West John Street	Hicksville	N.Y.	11801	516)822-7400

Permittee's Relationship to Facility Owner: ☐ Same ☒ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot
	17	11	499	0098

Forms Attached (Check all that apply) ☐ Form 2 - Tank Registration ☒ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true to the best of my knowledge and belief.

Print Name	Signature	Title	Date
Gerhard Stoenner	G. S L	Technical Director	01/06/87

EH 857 4/86

☐ D.P.

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FEB 25 1987

NCDH—BLRM

NCDOH25748

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

JAN 09 1987

FRESH MATERIALS? SEE ATTACHED SHEET

For Office Use Only	
Date Application Received JAN 9 1987	Facility I.D. 185
Reviewed By AS	Date Reviewed 1/9
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months

Facility Name: STOKVIS MULTITON CORP.

Facility Address: 520 West John Street, Hicksville, N.Y. 11801

Action: ☒ Register Existing Area ☐ Add Area ☐ Remove Area ☐ Modify Area — Area No. S1

Location: ☐ Indoors ☒ Outdoors — Bulk Storage Max.Quantity Stored: — Container Storage Max.No. 16 Max.Vol. Gal

Secondary Containment: ☐ Impervious Berm/Dike ☒ Impervious Floor/Pad ☒ Roof ☐ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply) ☐ Concrete ☐ Steel ☐ Other (Specify):

Security ☒ Yes ☐ No

Type	NCDH Number	Material Name	Physical State	Amount Stored: Average Quantity	Amount Stored: Units	Storage Method: Average Number	Storage Method: Type
2	~~UN1805~~ 7013	Waste Phosphoric Acid	1	220	1	220	1
2	~~NA 9189~~	* SEE BELOW Waste Chlorinated Solvent SPECIAL	1	55	1	55	1
2	~~NA 1270~~ 6491	Waste Oil	1	55	1	55	1
2	~~UN 1294~~ 8941	Waste Toluene	1	110	1	110	1
		* Meth. Chloride - Chlor. Solvents 96-98% Oil 2-4%					

EH 859 4/86 Date Submitted 01/06/87 Page 1 of 1 ☐ D.P.

NCDOH25749

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FEB 25 1987

NCDH—BLRM

NCDOH25750

Stokvis Multiton Corp.

February 9, 1987

520 West John Street

1) ALL TOLUENE PAINT THINNER STORED IN APPROVED, VENTILATED AND GROUNDED CABINETS.

2) ALL PAINTS STORED IN CABINETS AS ABOVE.

3) PHOSPHORIC ACID BASE CLEANING COMPOUND STORED IN ORIGINAL DRUM (PLASTIC), AT USE SITE, TIGHTLY CLOSED, ONE 55 GALLON DRUM MAX.

4) WATER SOLUBLE OILS AT SITE IN TIGHTLY CLOSED DRUM, MAXIMUM OF (1) DRUM AT A TIME (55 gals.)

520 West John Street, P.O. Box 220, Hicksville, New York 11801
(516) 822-7400 / Telex: 96-1409

Materials Handling Equipment

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NCDH—BLRM

NCDOH25752

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

JAN 09 1987

For Office Use Only	
Date Application Received	Facility I.D.
Reviewed By	Date Reviewed
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months

Facility Name

Facility Address

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Material Currently or Last Stored: Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection	Secondary Sys. Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condi-tion

NOT APPLICABLE

EH 858 4/86

Date Submitted 1/8/87

Page 1 of 1

☐ D.P.

NCDOH25753

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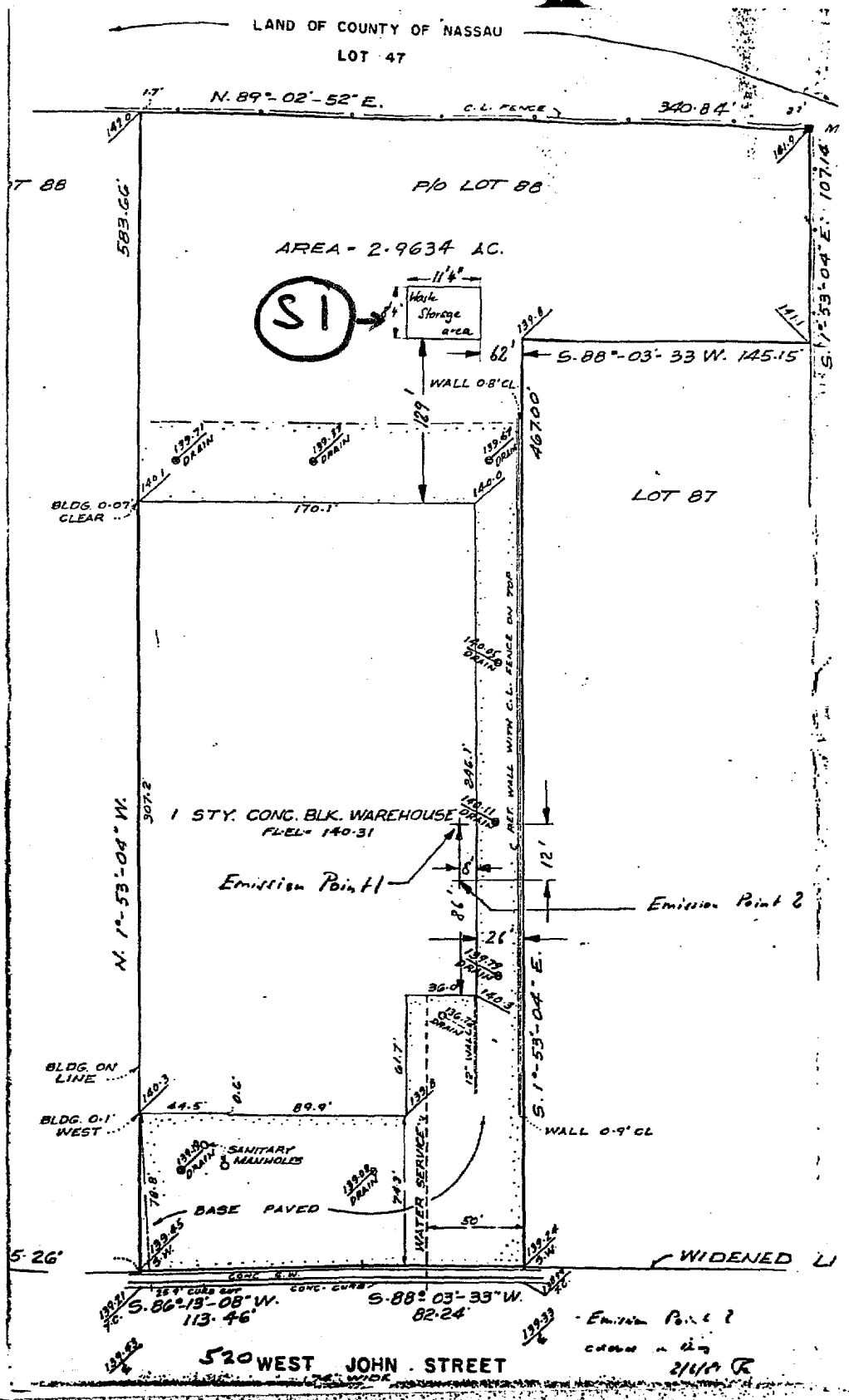
FEB 25 1987
NCDH—BLRM

NCDOH25


LAND OF COUNTY OF NASSAU
LOT 47
N. 89°-02'-52" E.
C.L. FENCE
340.84'
P/O LOT 88
AREA - 2.9634 AC.
S1
Hole Storage area
11'4"
62'
S. 88°-03'-33 W. 145.15'
WALL 0.8' CL
129'
46.00'
LOT 87
BLDG. 0.07' CLEAR
170.1'
583.66'
107.14'
S. 1°-53'-04" E.
N. 1°-53'-04" W.
307.2'
1 STY. CONC. BLK. WAREHOUSE
FL.EL= 140.31
Emission Point 1
Emission Point 2
12'
26'
86'
S. 1°-53'-04" E.
BLDG. ON LINE
BLDG. 0.1' WEST
44.5'
89.9'
WALL 0.9' CL
SANITARY MANHOLES
BASE PAVED
WATER SERVICE
50'
WIDENED
S. 86°-13'-08" W.
113.46'
S. 88°-03'-33" W.
82.24'
520 WEST JOHN STREET

NCDOH25755

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FEB 25 1987

NCDH—BLRM

NCDOH25756

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Center for Environmental Health 2 University Place Albany, New York 12203-3399

Mark R. Chassin, M.D., M.P.P., M.P.H.
Commissioner
Paula Wilson
Executive Deputy Commissioner

OFFICE OF PUBLIC HEALTH
Sue Kelly
Executive Deputy Director
William N. Stasiuk, P.E., Ph. D.
Center Director

June 14, 1993

Mr. Earl Barcomb, P.E., Director
Bureau of Hazardous Site Control
NYS Dept. of Environmental Conservation
50 Wolf Road, Room 218
Albany, New York 12233

RE: **Registry Site Classification Decision**
AGO Associates, ID #130029
Oyster Bay, Nassau County

Dear Mr. Barcomb:

My staff have reviewed the available data on the AGO Associates site which is the subject of this March 1993 site registry classification decision package. Based on that review, I do not concur with the proposal to delist the site, but rather, I recommend that the site classification be changed from Class 2a to 4.

The basis for this recommendation is that while there is no explicit evidence that hazardous waste was disposed of on-site, we do know that it was stored on-site in anticipation of disposal. The Nassau County Department of Health (NCDOH) discovered drums of hazardous waste at the site in 1974. Although these drums were subsequently removed from the site, we do not know if other drums of hazardous waste had been disposed of before or after 1974.

A Phase 2 Investigation that included the installation and sampling of several monitoring wells was done at the site. No geophysical survey, test pits, or soil borings were conducted to attempt to locate drums because of site conditions. While the groundwater does not appear to be contaminated (except for monitoring well #6), it is possible that drums are present and have not leaked yet. The hydrogeologic evidence is not complete and although the contamination in monitoring well #6 does not appear to be coming from the site, a specific source has not been identified.

For these reasons, I believe the site should be a Class 4 to allow for future groundwater monitoring. The monitoring wells that were installed as part of the Phase 2 Investigation for the AGO site should be maintained in serviceable condition.

Please contact Mr. Steve Bates of my staff at 518-458-6305 if you have any questions.

Sincerely,

G. Anders Carlson, Ph.D.
Director
Bureau of Environmental Exposure
Investigation

dwrm/31310291

cc: Dr. N. Kim
Mr. S. Bates/Mr. D. Miles
Ms. L. Lutzker, NCHD
Mr. A. Shah, DEC Reg.1

NCDOH25798

Form San 117 (Rev. 12/63)

Mr. Dressman

NEW YORK STATE DEPARTMENT OF HEALTH

INDUSTRIAL WATER USE AND WASTE WATER DISPOSAL PRACTICES SURVEY

1. Name of Establishment John Hassall Inc.

2. Mailing Address Cantiague Rock Road, Westbury

3. Plant Address Same

4. Location of Plant Westbury City, town, or (village) (circle) Nassau County

5. Number of employees 145 Average Same Maximum

6. Months Plant Operated (circle) (J F M A M J J A S O N D)

7. Number of days plant operated per week 5 Normal _____ Peak

8. Number of hours plant operated per day 40 Normal _____ Peak

9. Manufacturing Process or service Metal Fasteners (Nail Rivets)

10.

Raw Materials	Quantities	Primary Products	Quantities
1. Wire	2-3/4 million lbs. (E)	Metal Fasteners	2-1/2 million lbs. (E)
2.			
3.			

11. Water Sources

	Gallons per day average	Gallons per day maximum
a. Public Water Supply (Municipal or Private) Name of Water Supply Jericho Water District	8400	9700
b. Plant's surface water intake (rivers, lakes, etc.) Name of river, lake, etc. _____ Location of intake _____		
c. Plant's ground water source (wells, springs, etc.)		
d. Other sources of water (quarries, mines, etc.) Name and location _____		

12. Source of Aux. Fire Protection Jericho

13. Briefly describe treatment of incoming water by your company and indicate whether or not water is treated for reuse No Treatment

(over please)

NCDOH25994

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'65 JUL 27 AM 10:15
NASSAU COUNTY
DEPARTMENT OF HEALTH

14. Incoming water analysis performed by plant None equency

15. Water Use and Recirculation

Purpose of Water Intake	Water Use Gallons per day		Water Recirculation Gallons per day	
	Average	Maximum	Average	Maximum
Potable	40 E			
Process	6360 E			
Cooling	1500 E	2000 E		
Other	500 E	1400 E	500 E	600E

16. Type of Waste	Process A	Process B	Process C	Cooling Water	Sanitary Sewerage	Total Plant Waste
17. Origin of Wastes	Cleaning	Rinsing			Sanitary	Over All Plant
18. Description of Waste	Iron, Copper Caustics Acid etc. Alkalis			Heated	Sanitary	
19. Average Volume of Waste Water, gallons/day	1200 E	5160 E		1500 E	500 E	8360 E
20. Waste treated yes or no (If yes, answer question #22	No			No	No	
21. Where waste water is discharged:						
To Sewers Name of Municipality						
To Local Watercourse Name of River/Lake						
To Land incl. ground water (Describe)						
Other (Describe)	Settling Pond (Sand & Gravel)				Leaching Chambers ~~Septic Tank~~	

22. Briefly describe waste water treatment by types of waste (Question No. 20)
Use additional sheets for supplementary information and sketches

23. If discharge is to watercourse, give location of discharge

24. Waste Water analysis performed by plant None Frequency

SEP 3 1964

BUREAU WATER RESOURCE SERVICES

(Continued)

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NASSAU COUNTY
DEPARTMENT OF HEALTH

NCDOH2599

25. Indicate any future water requirements None anticipated

26. Remarks

Name Edwin R. Eschert Telephone Number Ed 4-6200 Ext. 28

Title Ass't. Plant Supt. Date July 23, 1965

Conference 11/18/65

Mr. Smith - Plant Supt.
Elliott

Do not write below this line--to be completed by Health Authority

Drainage Basin Long Island Topo Map Name Hicksville Map No. 25.SE

Name of Survey Industrial Waste Local Health Office Nassau Co

Receiving Waters:

Surface (1) _____ Index _____

(2) _____ Index _____

Ground (1) _____ Mileage Coordinates _____

(2) _____ Mileage Coordinates _____

RECEIVED

'65 JUL 27 AM 10:15

NASSAU COUNTY
DEPARTMENT OF HEALTH

July 1, 1953

Mr. A. F. Dappert, Exec. Sec'y
Water Pollution Control Board
State Department of Health
Albany, New York

Re: John Hassall, Inc.
Proposed Factory, Jericho, New York

Dear Sir:

Enclosed please find the following:-

1. Letter of authorization for Wininger Construction Corporation to act for above regard.

2. Sanitary Form #5 for discharge of waste from industrial establishment into thewaters of the state.

3. Copy of report from Platers Technical Service establishing probable constituency of untreated waste dated June 22, 1953.

4. Copy of letter from Hassel to Wininger Construction Eorporation inferring that no chromium wastes will be discharged to the soil at this site dated June 26, 1953.

5. Copies of previous letters from Hassel to Wininger giving rough estimate of chemicals to be usedcated June 1 and June 3, 1953.

6. Copies of data from manufacturers of cleaning compounds stating constituents of their respective products, various dates.

7. Cloth copy of plans of plant and proposed sewage and industrial waste treatment facilities.

8. A covering letter from Wininger Construction Corporation to the State Department of Health.

We suggested to a representative of Wininger Construction Corporation that the Leeds & Northrup pH Controller be set to neutralize wastes to pH 6.0

NCDOH26016

from more acetic values. What is the opinion of your office in this matter?

On the plans you will note one lone leaching pool on the east side of the proposed building. Mr. Scott, Vice-President of Wininger, in describing the operation in this proposed plant, explains that this pool will leach away water from settling tanks in which small particles of metal will settle. Theseestanks will not contain any acids, the acids having been washed off, added to that of the etching room and this waste treated to suitable pH value before being discharged to the open leaching beds. Compliance with this should be made one of the conditions of any permit.

This office has reviewed the plans and processes and has no objection to a permit being issued in this matter.

Very truly yours,

John S. McCabe
Jr. Public Health Engineer
Division of Sanitation

JSMcC/jg

Encs.

NCDOH26017

SPECIAL NAILS·RIVETS·SCREWS
Hassall
ESTABLISHED 1850

JOHN HASSALL, INC.·WESTBURY·LONG ISLAND·N.Y.·11590

TELEX 14 4585 516 · 334-6200 FAX 516-2221911

JOHN HASSALL, INC.

1986 ANNUAL WASTE REPORT
FOR THE BUREAU OF LAND RESOURCES
NASSAU COUNTY, NEW YORK

RECEIVED
APR 20 1987
NCDH—BLRM

VICTOR PALESE
FACILITY MANAGER

#00007

CHEMICAL/SOLVENT WASTE REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Name: JOHN HASSALL INC.

Address: Cantiague Rock Rd.,Westbury NY

Permit Number: NY 007 6287

Report Period: 1/1/86-12/31/86

List all waste generating chemicals and/or solvents purchased during the reporting period. Indicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	Purpose or Use	Trade Name or Supplier	Quantity Purchased
Albavis 8	Hydraulic Oil	Cooks Ind-Lubricants	110 gal.
" 20	"	"	440 gal.
" 50	"	"	110 gal.
Way lube 20	Way Oil	"	1,705 gal.
EP 90 Oil	Gear Oil	"	990 gal.
Cool 1235	Cooling Fluid	"	165 gal.
Cool 500	"	"	880 gal.
Cut 20	Cutting Oil	"	220 gal.
4634	Drilling Oil	"	990 gal.
4768	Cutting Oil	Cooks Ind.-Lubricants	55 gal.
4915	Cutting Oil	"	165 gal.
Rustlan Regular	Heading Oil	Rustlan Co.	120 gal.
Rustlan Heavy	"	"	230 gal.
Wood 373	Heading Oil	W.A. Woods Inc.	5,955 lbs.
Kleen Flo	De greaser	Kleer Flo. Inc.	220 gal.
Stuart 8587	Cutting Oil	D.A. Stuart	275 gal.

EH [illegible]

continued on reverse

CHEMICAL/SOLVENT WASTE REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Name: JOHN HASSALL INC.

Address: Cantiague Rock Rd. Westbury NY

Permit Number: NY 007 6287

Report Period: 1/1/86-12/31/86

List all waste generating chemicals and/or solvents purchased during the reporting period. Indicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	Purpose or Use	Trade Name or Supplier	Quantity Purchased
Freon-TMC	Degreaser	Pride Solvent	5,885 lbs.
111 Tri Chlor	"	"	1,800 lbs.
E.P. 2 Grease	-Lube-	Cooks Ind-Lubricants	210 lbs.
68 AF	Way Oil	Lusion Ind.	1,760 gals.
14 R	Cutting Oil	"	550 gal.
405	"	"	110 gal.
HF220	Hydrulic Oil	"	275 gal.
HF150	"	"	660 gal.
1611	Drawing Oil	Harry Miller	10-55 gal. Drums 550 gal.
1611 B	"	"	55 gal.
Curtis-S-7	Cutting Fluid	Robert G. Lloyde	1 Drum
R.S.	Rust Stripper	Bernite/Banner	330 gal. + 28,800 lbs.
16	Parts Cleaner	"	26,400 lbs.
J.W.	"	"	7,200 lbs.
G.	"	"	2,400 lbs.
M.W.	Parts Protector	"	660 gal.

EH 704 1/82

continued on reverse

CHEMICAL/SOLVENT WASTE REPORT

Bureau of Land Resources Management

Nassau County Department of Health

Name: JOHN HASSALL, INC.

Address: Cantiague Rock Rd.,Westbury,NY

Permit Number: NY 007 6287

Report Period: 1/1/86-12/31/86

List all waste generating chemicals and/or solvents purchased during the reporting period. Indicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	Purpose or Use	Trade Name or Supplier	Quantity Purchased
AV	Parts Cleaner	Bernite/Banner	1320 gal.
502	Parts Cleaner	Lusion	330 gal.
Lime	Waste Treatment	Agway	2,500 lbs.
Sodium Sulfide	"	Acro	900 lbs.
Calcuim Chloride	"	"	400 lbs.
Citric Acid	"	"	3,600 lbs.
Hydrogen Peroxide	"	"	500 lbs.
Carbon	"	Amer. Norit	6,000 lbs.

BH 704 1/81

continued on reverse

NCDOH26021

SOLID WASTE

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Type of Waste (Chemical, oil or solvents)	Amount Shipped	Shipped By			Shipped To (Final Disposal Site For Waste)
			Scavenger Name	Scavenger Address	Scavenger Number	
4/14/86	Solid Waste Water Sludge	15 yds.^{3}	Chemical Mgt. Inc.	340 Eastern Pkwy Farmingdale, NY	2395	Chemical Mgt. Inc. Farmingdale, NY
12/11/86	"	14 yds.^{3}	"	"	"	"
12/15/86	"	17 yds.^{3}	"	"	"	"

List any accidental spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill
	N.A.	

Signature of Company Representative	Title	Date:
[signature]	Facility Mgr.	4/20/87

EH 7013 1/80

NCDOH26023

PRIVATE
NON-HAZARDOUS
DOCUMENT OF CARGO

****

N.Y. State 364 Permit No. 1A-033

RGM ID # 11-2144 11

Truck License Number 11 7/8-V

****

IDENTIFICATION

****

Company name, mailing address and telephone number

Generator: John Hassall Co., Cantiague Rock Road, Hicksville, LI

Transporter: **RGM LIQUID WASTE REMOVAL CORP.**
972 NICOLLS ROAD
DEER PARK, NEW YORK 11729 (516) 586-0002

TSDF Treatment Storage or Disposal Facility: Chemical Management, Inc.
340 Eastern Parkway
Farmingdale, NY 11735

WASTE INFORMATION

Description	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	RGM Code #
Industrial Waste Solid containing iron, copper & nickel.	1	DM	15	Yards	#2395 (CMI)

****

I hereby certify that the above waste description is complete and accurate, and that no component exist in the wastes which render it hazardous as defined by 6 NY CRR Section 371 and 372.

Generator's Signature — Date

Transporter's Signature — Date

TSDF Signature — Date

****

WHITE—CHEMICAL DEPT. YELLOW—TRANSPORTER #1 PINK—GENERATOR COPY GOLDENROD—TSDF COPY

NCDOH26024

PRIVATE

NON-HAZARDOUS

DOCUMENT OF CARGO

№ 0209

Document Number

CMI ID # 2395

Truck License Number 91773-6V

IDENTIFICATION

Company name, mailing address and telephone number

Generator: John Hassall, Inc.
Westbury, NY 11590
Cantiague Rock Road
516-334-6200

Transporter: RGM Liquid Waste Removal Corp.
Deer Park, NY 11729
972 Nicolls Road
516-586-0002

TSDF Treatment Storage or Disposal Facility:

CHEMICAL MANAGEMENT INC.
340 EASTERN PARKWAY
FARMINGDALE, N. Y. 11735
(516) 454-6766

WASTE INFORMATION

Description	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	CMI Code #
industrial waste solid with trace amts. iron, & nickel	1	DT	14	Y	2395

Generator's Signature — Date 12/11/86

Transporter's Signature — Date 12-11-86

TSDF Signature — Date 12-11-86

WHITE—RETURN TO GENERATOR YELLOW—TRANSPORTER #1 PINK—GENERATOR COPY GOLDENROD—TSDF COPY

NCDOH26025

PRIVATE
NON-HAZARDOUS
DOCUMENT OF CARGO

****

N.Y. State 364 Permit No. 1A-033

RGM ID # [illegible]

Truck License Number [illegible]

****

IDENTIFICATION

****

Company name, mailing address and telephone number

Generator: [illegible]

Transporter: **RGM LIQUID WASTE REMOVAL CORP.**
972 NICOLLS ROAD
DEER PARK, NEW YORK 11729 (516) 586-0002

TSDF Treatment Storage or Disposal Facility: [illegible]

WASTE INFORMATION

Description	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	RGM Code #
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

****

I hereby certify that the above waste description is complete and accurate, and that no component exist in the wastes which render it hazardous as defined by 6 NY CRR Section 371 and 372.

Generator's Signature _____ Date _____

Transporter's Signature _____ Date [illegible]

TSDF Signature _____ Date _____

****

WHITE—CHEMICAL DEPT. YELLOW—TRANSPORTER #1 PINK—GENERATOR COPY GOLDENROD—TSDF COPY

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Type of Waste (Chemical, oil or solvents)	Amount Shipped	Shipped By			Shipped To (Final Disposal Site For Waste)
			Scavenger Name	Scavenger Address	Scavenger Number	
1/9/86	Waste Oil	-Gallons 1,200	Certified Oils Inc.	171 Brompton Road Garden City So., NY	1A052	Tanks-A-Lot Maspeth, NY
2/3/86	"	500		"	"	"
3/17/86	"	600		"	"	"
5/6/86	"	400		"	"	"
6/10/86	"	700		"	"	"
7/15/86	"	750		"	"	"
9/19/86	"	1,000	Ace Waste Oil	71-34-58 Ave,Maspeth,N.Y.	2A020	"
9/22/86	"	400	Certified Oils Inc.	171 Brompton Rd. Garden City So.,NY	1A052	"
11/3/86	"	600	"	"	"	"

List any accidental spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill
	N.A.	

Signature of Company Representative	Title	Date:
Victor Calder	Facility Mgr.	4/20/87

EH 704A 1/80

NCDOH26027

TREATMENT OF A MULTIPLE CONTAMINANT METAL PLATING WASTE

By

Robert H. Albanese, P.E.

Manager - Industrial Waste Treatment

Holzmacher, McLendon & Murrell, P.C.

Melville, New York 11746

Presented at the

New York State
Water Pollution Control Association
46th Annual Meeting

January 1974

NCDOH26223

TREATMENT OF A MULTIPLE CONTAMINANT METAL PLATING WASTE

By Robert H. Albanese, P.E.

INTRODUCTION

Nail making from wire was developed in France in the 1830's, but not until about 1850 was it introduced in the United States by the New York City firm of Morton & Bremner. To design the necessary nail forming machines, William Hassall left Birmingham, England, to settle in New York City.

In 1857, William Hassall formed his own firm and in 1863, his son, John Hassall, joined his father. John Hassall had a special knack for designing nail machines and immediately began improving the machines which resulted in his firm not only producing nails and fasteners, but also nail machines. For years the company grew and prospered in New York City until 1953, when it moved to its present large modern plant in Westbury, Nassau County, New York.

Since the turn of the century, Hassall has devoted most of its efforts to the manufacture of "job-designed" nails, screws, rivets and other fasteners and small parts to satisfy the customer whose requirements cannot be adequately met by the standard

NCDOH26224

items.

New products and changes in operations have occurred through the years. Present products include special corrosive resistant metals, heat-treated metals, high temperature alloys, cold heading or "upsetting", threading, fluting, knurling, slotting, drilling, tapping, turning, grinding and trimming. Metals used include low carbon steel, copper alloys, aluminum alloys, precious metals, stainless steel, nickel alloys, and high carbon steel. Fasteners can be furnished in brass, cadmium, nickel, zinc and chrome.

The plant is located in Westbury, Town of Oyster Bay, Nassau County, New York. The lack of public sewers or streams in the Westbury area, necessitates the discharge of industrial waste waters from the plant into the ground through a surface leaching basin.

The discharge of industrial waste waters into the ground in Nassau County has been practiced for many years by many firms under the control and regulation of the State and County Health Departments, and more recently by the New York State Department of Environmental Conservation and the United States Environmental Protection Agency. Particular concern over these discharges has always been observed because they have been found to appreciably effect the quality of ground water in the vicinity of the discharge. Added to this is the fact that all Nassau County water supply is obtained from the ground water reservoir and you find

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potentially objectionable conditions when the waste water quality is markedly different than ground water quality.

Prior to occupancy of the Westbury plant, waste treatment facilities were designed and built. The facilities were under permit from the State Health Department. However, as early as 1957, the facilities were observed to be unable to reduce the objectionable waste constituents to acceptable levels.

In 1965, the State officially classified the ground waters of Long Island (Nassau) for a best usage of drinking water and established a series of standards of minimum waste water quality for effluents discharged into the ground. Nassau County falls under Schedule I of these standards.

In 1967, we were retained by J. Hassall, Inc. to determine the need for and the cost of the required treatment facilities to comply with the then recently adopted standards. Initial inspection of the cleaning and plating room operations did not allow complete appraisal of the magnitude of the problem. Only after waste stream testing was concluded, did the complexity and magnitude of the problem become apparent.

Concurrent with the initial monitoring, J. Hassall completed plans to modify the majority of the cleaning operations. This modification eliminated the vapor degreasing of the nails and fasteners, which was used to remove cutting and forming lubricants. In lieu of vapor degreasing, a large automatic alkaline cleaning washing machine was installed.

NCDOH26226

This machine reportedly has increased parts cleaning efficiency, but at the expense of causing a major water pollution problem. As a result, recoverable oil from distillation of the trichlorethylene of the vapor degreaser became soluble emulsified oil in the waste waters of the washing machine.

Initial analysis of the then combined industrial waste waters revealed a complex, highly polluted waste water. The following constituents were found present:

	Average	Maximum
Hexavalent Chromium (CR^{+6})	10. mg/l	20 mg/l
Chromium (Cr)	12. mg/l	30 mg/l
Copper (Cu)	25. mg/l	130 mg/l
Nickel (Ni)	9. mg/l	20 mg/l
Cyanide (Cn)	10. mg/l	30 mg/l
Iron (Fe)	10. mg/l	250 mg/l
Oil & Grease	approx. 3%	approx. 10%
pH	3 to 8	2 to 11

Early analysis of the constituents indicated that combined treatment of these constituents might not be feasible due to the vast difference in the required treatment steps. Detailed investigations into the various operations which produced the wastes revealed the following important conclusions:

(1) Waste volumes were low, amounting to about 10,000 gallons per week.

(2) Emulsified oil was discharged in operations other than

NCDOH26227

the industrial washing machine. These prevented separation or isolation of the oil problem.

(3) The use of cyanide compounds to strip copper coatings off steel wire results in complex copper cyanide and iron cyanide compounds in the waste waters, which could not be destroyed by conventional alkaline chlorination.

(4) Individual operations varied considerably with various tumblers used for numerous different types of cleaning. This prevented the complete segregation of waste waters according to waste constituents.

Jar tests on unsegregated and segregated samples were conducted to evaluate various treatment methods and chemical addition efficiencies. The following jar tests were run and observations were made:

(1) Floating and Emulsified Oil

Considerable reduction in hexane extractable (measure of oil content) would be experienced by fine bubble air flotation. As much as 40 per cent reduction was estimated by such treatment. Little or no emulsified oil reduction was accomplished by fine bubble flotation.

Acidification of the wastes appeared to "crack" the emulsified oil, yielding large quantities of insoluble oil. This also clarified the waste to the point that it was transparent when viewed through 1000 ml beakers. The degree of cracking increased with decreasing pH. Optimum cracking appeared to be at a pH of 2.0

NCDOH26228

The quantity of acid required to obtain a pH of 2.0 varied considerably. In general, objectionable amounts of sulfates or chlorides results from acidification of the wastes. A completely clarified effluent was not obtained. In order to obtain a satisfactory effluent, additional treatment would be required, such as ozone or activated carbon polishing. The standard of 0.2 mg/l of CCE required virtually complete removal of all floating and emulsified oil.

(2) Cyanide and Metals Removals

Cyanide destruction by alkaline chlorination did not oxidize complex cyanide compounds of nickel, iron and copper. As a result of the failure to reduce cyanides, removal of these metals was unsatisfactory. Additional treatment steps were required to convert the complex cyanides to free cyanide where conventional alkaline chlorination would then effect oxidation to carbon dioxide, nitrogen, water and salt. Tests indicated that heating for 30 minutes at 180°F with magnesium chloride effectively destroyed the complexes.

(3) High Removal Efficiencies

Precipitation of the heavy metals as hydroxides did not obtain the required removals, but filtration improved removals. Considerable pinpoint floc remained in suspension even after extended quiescent settling. Filtration was required to reduce the nickel, iron and copper to approach ground water standards.

NCDOH26229

Experimentation with sodium sulfide to precipitate the metals as sulfides proved that acceptable removals of copper and iron could be obtained.

As a result of the jar tests, the individual plant operations were investigated, particularly the cyanide stripping operations, to see if the operations were essential. Some interesting conclusions were reached:

(1) The solvents used to strip lacquer from the wire could be saved and reused. When spent, they could be collected and stored for disposal by an oil and solvent reclaiming firm. This considerably reduced solvent concentrations in the waste water.

(2) Cyanide stripping of copper and heat treating scales were not essential for all fasteners. Experimentation with hexavalent chromium compounds indicated that satisfactory results could be obtained with slightly longer tumbling.

(3) The final standard chromic acid compound selected contained fluoride compounds which caused objectionable fluoride in the wastes. This compound was not needed to effect removal of scales or coatings. The manufacturer agreed to provide the cleaning compound without fluoride.

(4) Investigations into the need for high degrees of surface cleaning and finishing, revealed that some clients did not need the treatment applied to the fasteners. However, to date,

NCDOH26230

no significant reduction in fastener finishing has occurred.

(5) Study of the need for lacquer and copper coating of wires indicated that some copper coating might not be necessary for high speed and forming on the fastener machine. However, large inventories of copper coated wire were on hand, so immediate reduction or elimination could not be effected.

The engineering study of the wastes, the ground water standards and jar tests, resulted in a preliminary design for a batch treatment system with recommendation for a limited scope 1/2 gallon per minute pilot plant study to investigate, in greater depth, continual and batch treatment methods.

The wastes were recommended to be segregated into three systems. Wastes from (1) the industrial washing machine, containing the high emulsified and floating oils, were to be collected separately, as were (2) the wastes from cyanide, oil and solvent stripping of copper and lacquer coatings. Wastes from (3) nickel plating and the various alkaline and aluminum cleaning operations were to be continued and discharged into the third system.

The wastes from the industrial washing machine were to be held in a 2,000-gallon batch treatment tank, and the copper and oil stripping wastes were to be treated in two (2), 3,000-gallon batch treatment tanks (this recommendation was made before chromic acid was accepted as a substitute for cyanide stripping). Nickel plating and other cleaning wastes from tumblers were to be treated in two (2) 5,000-gallon (each) treatment tanks.

NCDOH26231

Each batch tank was to have vertical paddle wheel flocculators, chemical feeders, liquid level indicators and specially designed floating take-off devices to remove clarified effluent above the sludge blanket. Oil treatment was to be by acidification and fine bubble flotation. Cyanide destruction was by alkaline chlorination and fine bubble flotation for solvent and oil removal. The cleaning wastes were to receive hexavalent chromium reduction by treatment with bisulfite at a pH of 3.0. After chromium reduction, metals were to be precipitated as hydroxides at pH's of 7.5 to 8.5. Alkaline emulsified oil effluent was to be used to increase the pH after chrome reduction. All wastes were to be settled in the batch treatment tank. Final treatment was to be sand filtration prior to disposal.

After review and consideration by J. Hassall, it was decided to conduct pilot plant operations.

During October and November of 1971, our mobile pilot plant was set up at J. Hassall, with preliminary runs conducted on combined waste samples.

Continuous treatment of the combined wastes was attempted. The first treatment step was chlorination to reduce cyanides. Minimum chlorine residuals of 3.0 mg/l were to insure complete cyanide reduction at 30 minutes of contact. Second step treatment was the addition of 1,000 to 2,000 mg/l of calcium chloride to precipitate or separate emulsified or floating oil. The supernatant from this step was clear and slightly green in

NCDOH26232

color (copper and chromium). The third step was hexavalent chromium reduction by bisulfite addition.

Metals were then precipitated as hydroxides at pH's of 7.0 to 8.5, by the addition of caustic. Initial results indicated unsatisfactory copper and iron removals. Jar test experiments with sulfide addition to the supernatant of the hexavalent chromium treatment revealed better removals of metals. Limitations on the pilot plant reactor vessels and piping prevented the sulfide precipitation to be applied as continuous treatment.

Batch treatment for precipitation with sodium sulfide was performed and results indicated that best copper removals occurred at a pH of 3.0, while iron, nickel and chromium removals were best at 7.0 to 7.5. We concluded that separate precipitation steps would be required.

Sulfide precipitate was finely divided and did not easily flocculate, coagulate or settle. Complete removal required filtration.

Objectionable amounts of hydrogen sulfide were produced at low pH, when excess sulfide was present. Hydrogen sulfide production could be minimized by the addition of sulfide at higher pH's, slowly reducing pH to 3.0 and careful monitoring of the stoichiometric amounts of sulfide required.

The effluent from the batch sulfide precipitation was then pumped down through four (4) pilot scale, granular activated carbon packed columns, connected in series. The first column

NCDOH26233

removed considerable suspended material and required frequent backwashing, confirming the need for filtration prior to carbon treatment. Carbon polishing amounting to one (1) hour contact produced a very clear effluent containing no noticeable odors or visible oil content. Carbon runs were shorter than anticipated due to operating difficulties with the pilot plant, as a result of the unexpected conversion to a sulfide precipitation system. Short runs apparently resulted from the carryover of emulsified oil which coated the surface of the carbon rather than being adsorbed. Acid stripping of carbon particles yielded oil.

Batch treatment runs were conducted with much better removal of metals and oil. Batch treatment, however, caused problems with appraisal of carbon application due to variations in contact time between batch discharges.

As a result of the pilot plant operations, the treatment system previously proposed was revised to (1) eliminate cyanide destruction (since decisions were made to substitute hexavalent chromium, instead of cyanide for removal of copper coatings), (2) to substitute sodium sulfide for sodium hydroxide to precipitate metals as sulfides rather than as hydroxides, (3) to include separate batch treatment tanks to allow precipitation of copper and iron sulfides at different pH's, (4) to include a

NCDOH26234

filter to remove the fine sulfide precipitates, (5) to provide carbon dioxide compressor and re-carbonation equipment to produce carbon dioxide from waste plant flue gases to lower the pH of the waste waters, (6) to provide activated carbon polishing equipment to remove oil and solvents and other organic solvents so the final effluent would meet CCE limitations, and (7) to provide for pre-waste treatment in underground tanks including re-carbonation to lower the pH and to reduce emulsified oil content, and fine bubble flotation with carbon dioxide for oil separation and settleable solids reduction.

The revised treatment system is to consist of two (2) batch treatment systems, each with a design capacity of 10,000 gallons (once a week treatment). The emulsified oil system for the industrial washing machine waste would consist of a single tank, whereas the oil stripping, nickel plating and alkaline cleaning system (referred to as the Hexavalent Chromium-Chromium-Copper-Iron-Nickel system) would include two (2) 10,000 gallon tanks due to the requirement for precipitation at different pH's.

Each system would have a 9,000 gallon pre-treatment sedimentation tank and a 9,000 gallon oil separation tank. The proposed operation is as follows:

(1) Industrial Washing Machine Waste Water

After pre-treatment, waste would be pumped automatically from a new emulsified oil equalization - wet well to the emulsified oil treatment tank. Once per week on Thursday evening,

NCDOH26235

the wet well would be pumped down completely and the automatic controls de-energized. A 1,000 to 1,500 mg/l dosage of calcium chloride would be added and mixed. The pH would be adjusted to about 8.0 with sulfuric acid, if required. The waste water would then be flocculated for an additional thirty (30) minutes.

The waste would be allowed to settle overnight. On Friday, the supernatant of the emulsified oil treatment tank would be transferred to one of the 10,000 gallon Hexavalent Chromium-Chromium-Copper-Iron-Nickel treatment tanks where it would be combined with partially treated oil stripping and Hexavalent Chromium-Chromium-Copper-Iron-Nickel waste waters. Floating and settled solids would remain in the emulsified oil treatment tanks and would be used in subsequent oil treatment. Re-use rather than dumping of the sludge from each batch is recommended since the sludge will act as a seed for the floc formation in subsequent batches. Periodically, at approximately two-month intervals, 75 per cent of this sludge blanket would be drained to a sludge holding tank. The supernatant from the sludge holding tank would be returned to the oil treatment tank for re-treatment. Sludge would be removed from the sludge holding tank by a chemical waste disposal service, and disposed in accordance with the applicable disposal requirements of the County, State and Federal governments.

NCDOH26236

(2) Oil Stripping and Hexavalent Chromium-Chromium-Copper-Iron-Nickel Waste Waters

Oil stripping and hexavalent chromium-chromium-copper-iron-nickel waste waters would be automatically pumped from separate equalization - wet wells to one of the 10,000 gallon treatment tanks. On Friday afternoon, the wet well would be dumped down and the flow for the past five (5) days would be completely transferred to the treatment tank. The pH would be checked and if not below 7.5, the waste would undergo additional re-carbonation. Acid would be added to lower the pH to about 3.0. If hexavalent chromium was found to be present, bisulfite would be added to reduce it to trivalent chromium. The batch would then be tested for hexavalent chromium, chromium, nickel, iron and copper. Slightly more than the stoichiometric amounts of sodium sulfide would be added to form sulfides with these metals. The batch would be flocculated for 30 minutes. Samples would be collected, settled, filtered and tested for metals content. If additional metals are present, then additional sulfide would be added.

Upon complete formation of sulfides with these metals, the batch would be settled for 1 to 2 hours. It would then be pumped through a plate and frame or tray filter for removal of copper sulfide (which is most insoluble at acid pH's).

The effluent of the filter would be pumped to the second 10,000 gallon treatment tank, where the pH would be raised by the addition of treated alkaline industrial washing machine

NCDOH26237

waste waters and/or caustic, to a pH between 7.0 and 8.5. A pH of 7.5 appears now to be optimum. The wastes would be re-flocculated and settled for 1 to 2 hours, then pumped once again through the plate and frame filter to the activated carbon polishing facilities.

Periodically, sludge would be removed from the treatment tanks and drained to a sludge-storage settling tank. Supernatant from this storage-settling tank would be returned for re-treatment. The sludge remaining would be removed and disposed of in a similar manner as previously described.

Final removal of organics and small amounts of some non-organic constituents from the combined effluent will be accomplished by an activated carbon contactor. Provisions will be made for duplicate units, but only one unit will be provided at this time. Spent activated carbon is not expected to be regenerated unless arrangements can be made either with the manufacturer or the County of Nassau for regeneration at furnaces located at their facilities.

The estimated project cost is $225,000.00. Operating costs have not been determined due to the many unknowns as to quantities of chemicals to be added and frequency of treatment. Costs are believed to range between 1/2 to 1 cent per gallon.

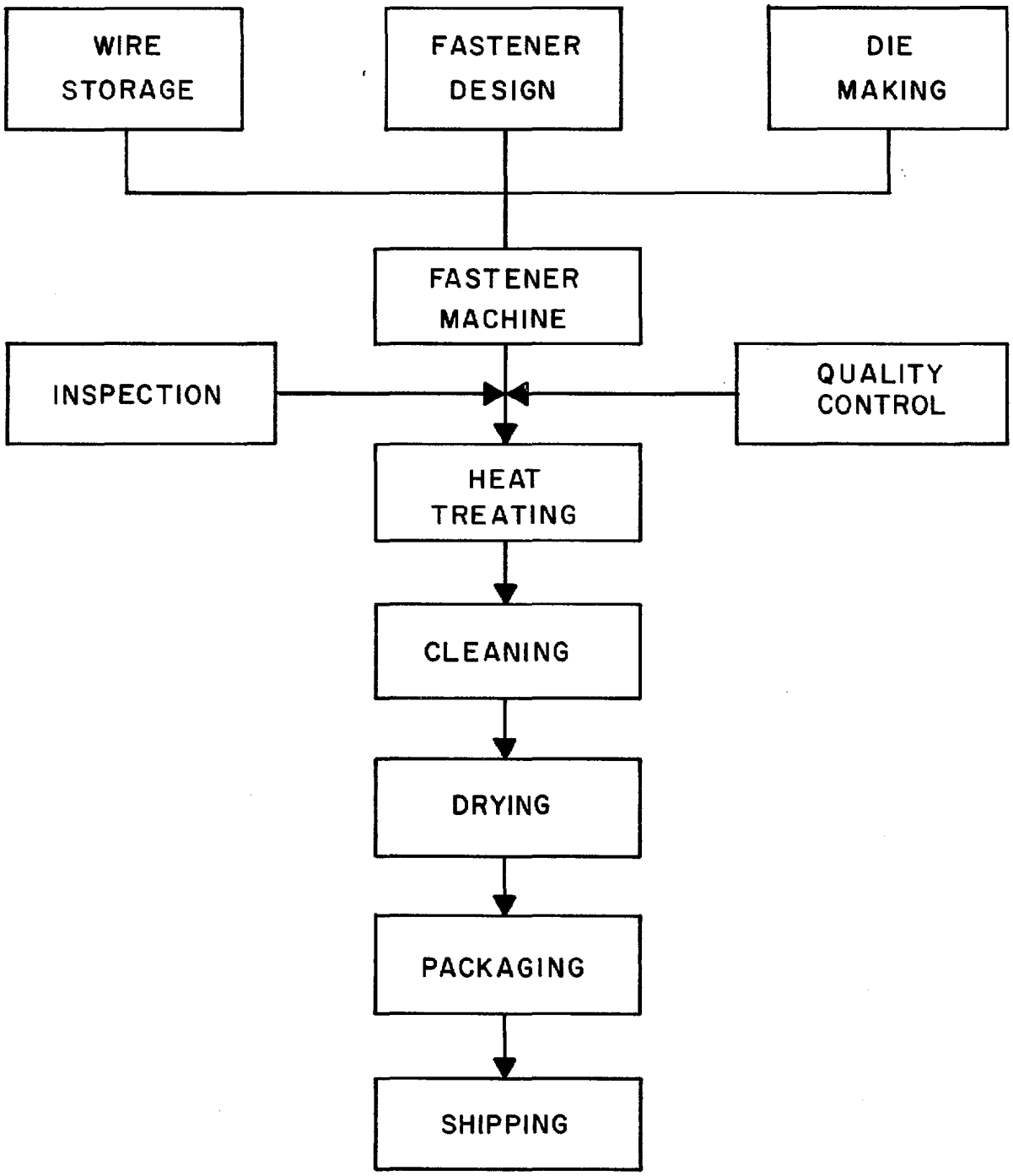
With the construction and startup of these facilities, John Hassall waste waters will meet all applicable State Ground

NCDOH26238

Water Standards and will be recharging the ground water supplies of Nassau County in line with the anticipated future State recharge requirements.

NCDOH26239

J. HASSALL, INC.
INDUSTRIAL WASTE TREATMENT AND DISPOSAL FACILITIES
PLANT OPERATIONS

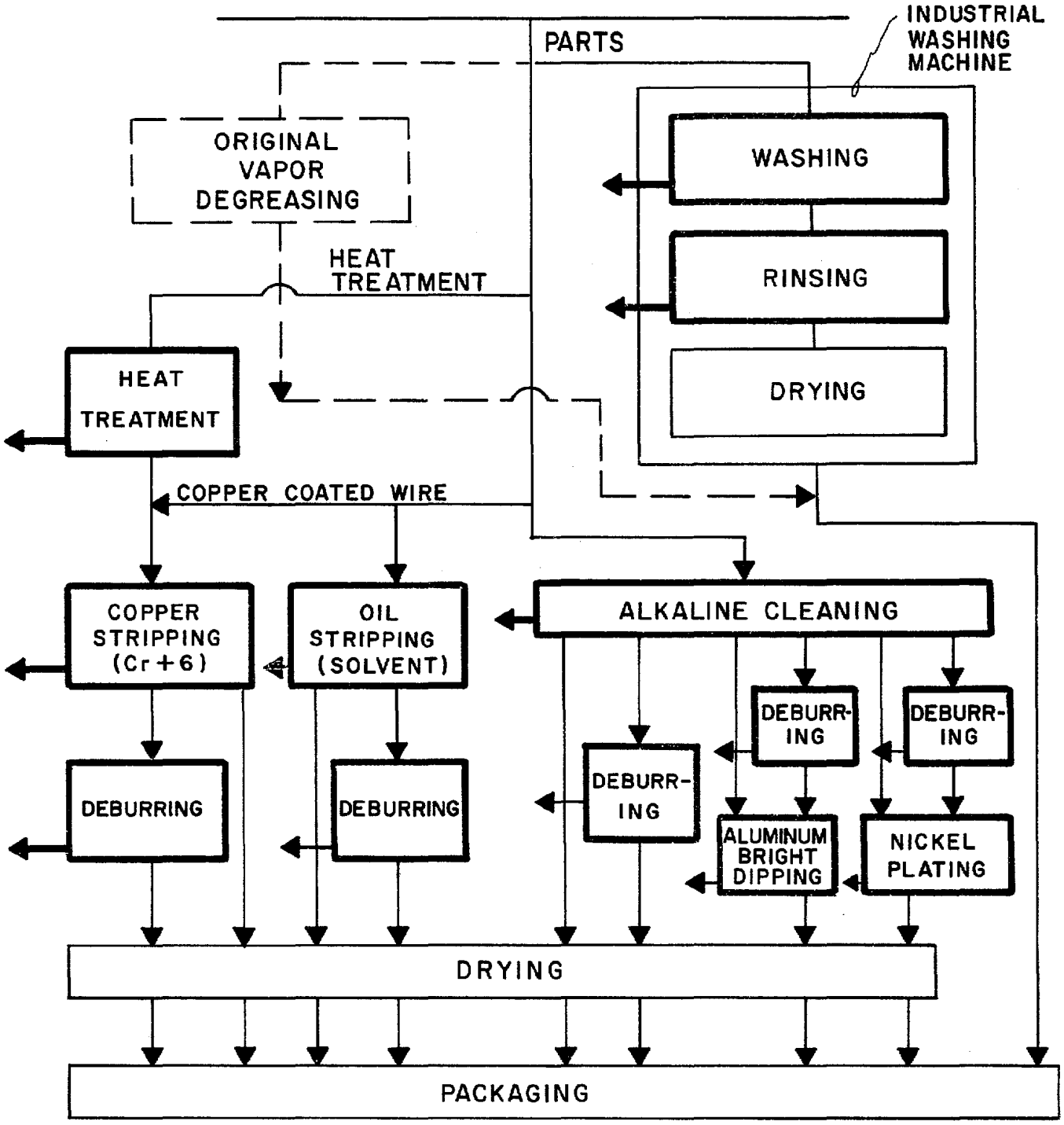


NCDOH26240

J. HASSALL, INC.

INDUSTRIAL WASTE TREATMENT AND DISPOSAL FACILITIES

CLEANING & PLATING OPERATION



NCDOH26241

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911272

D

Field No. TM-7-18-03

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises	JOHN HASSAL INC.
Address	CANTIAGUE ROCK RD.
Town	WESTBURY
Collection Point	25 FT DEPTH Well No.
	NEAR TANK #1

	Month	Day	Year
Date Collected	7	18	91
Date Received	JUL	18	1991
Date Reported	AUG	05	1991
Collection Time	2:50		
Collected By:	Jim Mulvihill		

Sampler's Comments:

SAMPLES ICED
HEAVY ODORS VOC
PROBABLE HIGH CONTAMINATION

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	(1)	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911272
Source: JOHN HASSEL INC, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: 25 FT DEPTH NEAR TANK #1
Date Sampled: 07/18/91
Date of Report: 08/06/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
METHYLENE CHLORIDE--------(WA02)---------	200	-------	320
t-1,2-DICHLOROETHYLENE----(WA16)---------	200	------- <	200
1,1-DICHLOROETHANE--------(WA04)---------	200	------- <	200
c-1,2-DICHLOROETHYLENE----(WA17)---------	200	------- <	200
CHLOROFORM----------(WA05)---------	200	------- <	200
1,1,1-TRICHLOROETHANE-----(WA06)---------	200	-------	780
CARBON TETRACHLORIDE------(WA07)---------	200	------- <	200
1,2-DICHLOROETHANE--------(WA18)---------	200	------- <	200
TRICHLOROETHYLENE---------(WA08)---------	200	------- <	200
1,2-DICHLOROPROPANE-------(WA20)---------	200	------- <	200
BROMODICHLOROMETHANE------(WA09)---------	200	------- <	200
c-1,3-DICHLOROPROPENE-----(WA22)---------	200	------- <	200
t-1,3-DICHLOROPROPENE-----(WA23)---------	200	------- <	200
1,1,2-TRICHLOROETHANE ----(WA19)---------	200	------- <	200
TETRACHLOROETHYLENE ------(WA13)---------	200	-------	990
DIBROMOCHLOROMETHANE------(WA10)---------	200	------- <	200
BROMOFORM ----------(WA14)---------	200	------- <	200
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

AUG 0 7 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911272
Source: JOHN HASSEL INC, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: 25 FT DEPTH NEAR TANK #1
Date Sampled: 07/18/91
Date of Report: 08/06/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	100	<	100
TOLUENE	(WC02)	200	<	200
CHLOROBENZENE	(WC03)	200	<	200
ETHYLBENZENE	(WC04)	NR		NR
o-XYLENE	(WC29)	200		990
m,p-XYLENE	(WC30)	200		200
STYRENE	(WC31)	NR		NR
n-PROPYLBENZENE	(WC11)	NR		NR
ISOPROPYLBENZENE	(WC12)	NR		NR
BROMOBENZENE	(WC09)	200	<	200
1,2,4-TRIMETHYLBENZENE	(WC14)	200		5900
1,3,5-TRIMETHYLBENZENE	(WC15)	200		3600
2-CHLOROTOLUENE	(WC16)	200	<	200
4-CHLOROTOLUENE	(WC17)	200	<	200
n-BUTYLBENZENE	(WC18)	200		2700
sec-BUTYLBENZENE	(WC19)	NR		NR
tert-BUTYLBENZENE	(WC20)	NR		NR
p-ISOPROPYLTOLUENE	(WC21)	NR		NR
o-DICHLOROBENZENE	(WC22)	200	<	200
m-DICHLOROBENZENE	(WC23)	200	<	200
p-DICHLOROBENZENE	(WC24)	200	<	200
1,2,3-TRICHLOROBENZENE	(WC25)	200	<	200
1,2,4-TRICHLOROBENZENE	(WC26)	200	<	200
HEXACHLOROBUTADIENE	(WC27)	200	<	200
NAPHTHALENE	(WC28)	200		750

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC
Comment: COMPOUNDS DETECTED BY GC.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

LABORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

Center for Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 911271

D

Field No. TM-7-18-01

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises: JOHN HASSAL INC.
Address: CANTIAGUE ROCK RD.
Town: WESTBURY
Collection Point: 25 FT DEPTH Well No.
VICINITY OF TANK 7

	Month	Day	Year
Date Collected	7	18	91
Date Received	JUL	10	1991
Date Reported			
Collection Time	2:30		
Collected By:	Jim Mulvihill		

Sampler's Comments:

SAMPLES ICED
HEAVY ODORS
BELIEVED TO BE HEAVILY CONTAMINATED

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

A	Purgeable Organic compounds
B	Other (specify)

Examiner's Comments:

AUG 01 1991

DL211 7/89 Rev. 8/90

DH-2416 8/90

NCDOH26301

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911271
Source: JOHN HASSEL INC, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: 25FT DEPTH IN VICINITY OF TANK 7
Date Sampled: 07/18/91
Date of Report: 07/31/91

VOLATILE HALOGENATED	MRC (ng/g)		RESULT (ng/g)
VINYL CHLORIDE----------(WA24)---------	200	------- <	200
TRICHLOROFLUORMETHANE-----(WA01)---------	200	------- <	200
1,1-DICHLOROETHYLENE------(WA15)---------	200	------- <	200
METHYLENE CHLORIDE--------(WA02)---------	200	-------	1100
t-1,2-DICHLOROETHYLENE----(WA16)---------	200	------- <	200
1,1-DICHLOROETHANE--------(WA04)---------	200	------- <	200
c-1,2-DICHLOROETHYLENE----(WA17)---------	200	------- <	200
CHLOROFORM----------(WA05)---------	200	------- <	200
1,1,1-TRICHLOROETHANE-----(WA06)---------	200	-------	6200
CARBON TETRACHLORIDE------(WA07)---------	200	------- <	200
1,2-DICHLOROETHANE--------(WA18)---------	200	------- <	200
TRICHLOROETHYLENE---------(WA08)---------	200	------- <	200
1,2-DICHLOROPROPANE-------(WA20)---------	200	------- <	200
BROMODICHLOROMETHANE------(WA09)---------	200	------- <	200
c-1,3-DICHLOROPROPENE-----(WA22)---------	200	------- <	200
t-1,3-DICHLOROPROPENE-----(WA23)---------	200	------- <	200
1,1,2-TRICHLOROETHANE ----(WA19)---------	200	------- <	200
TETRACHLOROETHYLENE ------(WA13)---------	200	-------	3600
DIBROMOCHLOROMETHANE------(WA10)---------	200	------- <	200
BROMOFORM ----------(WA14)---------	200	------- <	200
1,1,2,2-TETRACHLOROETHANE-(WA21)---------	200	------- <	200

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

AUG 0 1 1991

NASSAU COUNTY HEALTH DEPARTMENT
CENTER FOR LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 911271
Source: JOHN HASSEL INC, CANTIAGUE ROCK RD, WESTBURY
Matrix: SOIL
Site: 25FT DEPTH IN VICINITY OF TANK
Date Sampled: 07/18/91
Date of Report: 07/31/91

VOLATILE AROMATICS		MRC (ng/g)		RESULT (ng/g)
BENZENE	(WC01)	100	------- <	100
TOLUENE	(WC02)	200	-------	3600
CHLOROBENZENE	(WC03)	200	------- <	200
ETHYLBENZENE	(WC04)	NR	-------	NR
o-XYLENE	(WC29)	200	-------	6200
m,p-XYLENE	(WC30)	200	-------	3500
STYRENE	(WC31)	NR	-------	NR
n-PROPYLBENZENE	(WC11)	NR	-------	NR
ISOPROPYLBENZENE	(WC12)	200	-------	2700
BROMOBENZENE	(WC09)	200	------- <	200
1,2,4-TRIMETHYLBENZENE	(WC14)	200	-------	31000
1,3,5-TRIMETHYLBENZENE	(WC15)	200	-------	8500
2-CHLOROTOLUENE	(WC16)	200	------- <	200
4-CHLOROTOLUENE	(WC17)	200	------- <	200
n-BUTYLBENZENE	(WC18)	200	-------	11000
sec-BUTYLBENZENE	(WC19)	NR	-------	NR
tert-BUTYLBENZENE	(WC20)	NR	-------	NR
p-ISOPROPYLTOLUENE	(WC21)	NR	-------	NR
o-DICHLOROBENZENE	(WC22)	200	------- <	200
m-DICHLOROBENZENE	(WC23)	200	------- <	200
p-DICHLOROBENZENE	(WC24)	200	------- <	200
1,2,3-TRICHLOROBENZENE	(WC25)	200	------- <	200
1,2,4-TRICHLOROBENZENE	(WC26)	200	------- <	200
HEXACHLOROBUTADIENE	(WC27)	200	------- <	200
NAPHTHALENE	(WC28)	200	-------	1900

Comment: UNIDENTIFIED HYDROCARBON AND AROMATIC
Comment: COMPOUNDS DETECTED BY GC IN HIGH CONCENTRATIONS.

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

ENGINEERING STUDY & REPORT

INDUSTRIAL WASTE TREATMENT

JOHN HASSALL, INCORPORATED

WESTBURY, NASSAU COUNTY, NEW YORK

J. Welsch COPY

JULY, 1968

HOLZMACHER, McLENDON & MURRELL
CONSULTING ENGINEERS
MELVILLE, N.Y.

NCDOH26951

ENGINEERING STUDY & REPORT

INDUSTRIAL WASTE TREATMENT

JOHN HASSALL, INCORPORATED

WESTBURY, NASSAU COUNTY, NEW YORK

J. Welsch
COPY

JULY, 1968

NCDOH26952

HOLZMACHER, McLENDON & MURRELL

CONSULTING ENGINEERS

500 BROAD HOLLOW ROAD, MELVILLE, N. Y. 11746

(516) MY 4-3040

HENRY G. HOLZMACHER, P.E., L.S. (1961)
ROBERT G. HOLZMACHER, P.E., L.S.
SAMUEL C. MCLENDON, P.E.
NORMAN E. MURRELL, P.E.

ELIAS S. KALOGERAS, P.E.
ROBERT F. INGULLI, A.I.A.
HAROLD A. DOMBECK, P.E.
ROBERT H. ALBANESE, P.E.

WATER RESOURCES ENGINEERING
WATER SUPPLY & TREATMENT
SEWERAGE & TREATMENT
COMMUNITY PARKS
MUNICIPAL ENGINEERING
WATER ANALYSIS LABORATORY

August 9, 1968

John Hassall, Inc.
P.O. Box 366
Cantiague Road
Westbury, New York

Re: Engineering Study & Report
Industrial Waste Treatment

Attention: Mr. W. W. Smith
Vice President

Gentlemen:

We submit herewith three (3) copies of our Engineering Report entitled, "Engineering Study & Report, Industrial Waste Treatment, John Hassall, Inc., July, 1968."

Accompanying this report are preliminary cost estimates and drawings for two (2) waste water treatment plants utilizing the recommended treatment process. The construction cost estimates have been itemized according to anticipated construction contracts and optional items which may be incorporated into each plant. These estimates are based on recent actual bids for similarly constructed treatment plants.

We will be happy to furnish further details or discuss any aspects of this study or report at your convenience.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL

S. C. McLendon, P.E.

SCM:vm
Encl.
cc: J. Hassall, Inc.
Mr. Louis Loviseck, Plant Manager
Nassau County Health Department

ENGINEERING STUDY & REPORT
INDUSTRIAL WASTE TREATMENT
JOHN HASSALL, INCORPORATED
WESTBURY, NASSAU COUNTY, NEW YORK

July, 1968

SCOPE

The purpose of this Engineering Study and Report is to provide the management of John Hassall, Inc., with a preliminary design for collection, treatment and disposal of industrial waste waters, which presently are being discharged into the ground waters, untreated, from their Westbury Plant, Westbury, New York.

Included as part of this study and report are past and recent analysis of the waste waters, performed by the Nassau County Department of Health, New York Testing Laboratories and our own Laboratory.

Emphasis has been placed on reduction of wastes by in-plant changes, including reduction of the number and amounts of chemical compounds used in the cleaning operations, reduction of waste water volumes by recycling wash waters in a semi-automatic industrial washing machine.

NCDOH26954

Extensive laboratory testing has been conducted on the individual waste waters from the various major cleaning operations, as well as testing of composite waste water samples collected by the Nassau County Department of Health, John Hassall, Inc., and personnel from our office. The purpose of this testing was to determine if segregation of these various waste waters would simplify the overall treatment requirements.

LOCATION

The John Hassall, Inc. plant (hereafter referred to as Plant), is located on the west side of Cantiague Rock Road, approximately one-eighth (1/8) of a mile north of Northern State Parkway, approximately one-half (1/2) mile south of the Long Island Expressway, within the unincorporated area of Jericho, Town of Oyster Bay, Nassau County, New York.

Originally the plant consisted of approximately fifteen (15) acres of land of which approximately 2.0 acres, thirteen per cent (13%) was building area (office and factory). However, John Hassall, Inc. has leased two (2) portions of the original plant site, as shown on Drawing No. MI67-11-1. The northern leased parcel of land is occupied by a large industrial

NCDOH26955

building and a new industrial building is currently being built on the western leased parcel. As a result, the present plant site has been reduced to approximately seven and one-half (7-1/2) acres of land with approximately 2.0 acres, twenty-seven per cent (27%), occupied by building area.

The other sites immediately adjacent to the plant site are generally occupied by light industry, with the exception of the areas east of Cantiague Rock Road and southwest of Northern State Parkway where there are middle income development homes.

TOPOGRAPHY

The topography of the plant site is generally flat with the existing grades varying approximately between 163 and 158 feet above mean sea level, with the low point of the plant site in the southwest corner in the vicinity of the existing leaching basin.

No test holes or boring data are available, but the existing leaching basin and two (2) adjacent abandoned sand pits show subsoil to be typical Long Island medium to coarse sand and some gravel. Based upon the appearance of this leaching basin and the sand pits, we believe that the subsoil has excellent

NCDOH26956

leaching capabilities with a conservative design leaching rate of four (4) gallons/day/square foot, OK (typical full rate Long Island sand and gravel).

WATER SUPPLY

Public water mains exist on all roadways in the area adjacent to the plant. Water is supplied to consumers in this area by one of the following three Water Districts:

1. Hicksville Water District
2. Westbury Water District
3. Jericho Water District

Water supply for the plant is provided by the Jericho Water District from an existing water main on Cantiague Rock Road.

Most, if not all, of the industrial buildings and private homes in the immediate vicinity of the plant are supplied by one of the above Water Districts.

All known active water supply wells, with capacities equal to or greater than 45 g.p.m. within a vicinity of approximately one (1) mile radius of the plant, are shown on Drawing No. MI67-11-1 and tabulated in Appendix 1.*

*Information obtained from the records of the New York State Water Resources Commission

NCDOH26957

GROUND WATER AND WELL CONTAMINATION

Ground water is encountered approximately 73 feet above mean sea level in the area adjacent to the plant.* Natural ground water flow is presently in a south southwest direction.** Ground elevations are approximately 158 feet above mean sea level, with a resulting depth to ground water of approximately 85 feet.

The closest well to the Hassall Plant is the Aircraft Turbine, Inc., well 540 feet west of the Plant. This well is not within the path of ground and waste water flow from the plant, but it is screened in the upper portion of the water table acquifer and is therefore susceptible to contamination, not only from the J. Hassall waste water discharge, but also from the many domestic and other industrial waste water discharges in the area. However, no contamination of this well is known to exist. This could be due to the well's location, limited use (assumed air conditioning) and small capacity of 0.1 m.g.d.

* Ground water levels from New York State Water Resources Commission map dated April, 1967.

** Actual ground water flow may be artificially altered in the vicinity of the plant due to pumpage from the Jericho Water District, Well No. 13

NCDOH26958

Nassau County Department of Health records indicate no contamination of the larger public water supply well of the Jericho Water District. This is probably due to the fact that it is 446 feet deep in a different strata (Magothy) and is located 940 feet northeast of the plant, out of the direct path of natural ground and waste water flow from the plant.

The closest known wells in the direct line of ground and waste water flow, discharged from the plant, are the following three (3) private wells:

N.Y.W.R.C. NO.	DISTANCE & DIRECTION	OWNER	CAPACITY G.P.M.	DEPTH
N3906	4,700 feet S. Southwest	Linaco Bldg. Corp.	18	75'
N3907	4,700 feet S. Southwest	Linaco Bldg. Corp.	22	100'
N3515	5,700 feet S. Southwest	Molla Furn. Co.	35	89'

There may be additional small private wells in the direct path of ground and waste water flow from the plant, but no records are readily available for these wells since they are not required to be recorded with the New York State Water Resources Commission. Contamination of the above listed

NCDOH26959

wells would be expected due to their shallow depths, irrespective of the J. Hassall ground waste water discharge. No contamination of private or public wells, attributable to the ground waste water discharge of J. Hassall, is known to have occurred.

PRESENT PLANT OPERATIONS

John Hassall, Inc., is a long-time established company engaged in the manufacture of specialized or "Job Designed" fasteners, nails, screws and rivets.

The present company was established in 1888 to produce nail machines, hardware, nails and screws. The company was located in New York City until 1953 when it moved to the present location in Westbury, Nassau County, New York.

Present plant operations include the handling of various metallic wires from which the fasteners are made, cold heading or the forming of the required shape of the fastener and various other secondary operations such as threading, fluting, knurling, slotting, drilling, tapping, turning, grinding and trimming of fasteners. The above mentioned operations result in no appreciable amounts of industrial waste water and are limited to mostly

NCDOH26960

solid wastes consisting of metallic filing or chips. These wastes generally do not present any disposal problem as they are collected in containers and disposed of by a solid waste removal service.

Industrial waste waters originate from deburring, burnishing, cleaning and plating operations. The expended process solutions and rinse waters from these operations comprise the industrial waste waters mentioned in this report.

EXISTING OPERATIONS AND WASTE WATER SOURCES

The waste waters are composed of primarily expended cleaning solutions and wash waters from six (6) cleaning and/or plating operations, as shown on Drawing No. MI67-11-2 and tabulated as follows:

(1) Washing of Fasteners

High speed manufacturing of fasteners requires a petroleum base lubricant on the wires to aid the feeding of the wire through the dies of the forming machines. After the forming operations, many of the fasteners receive a final washing and coating with a rust inhibitor. Presently, this washing and protective coating is performed in a large industrial washing machine. This washing machine operates as

NCDOH26961

two (2) closed systems, where all wash and rinse waters are recycled to holding reservoirs for re-use. The wash reservoir has an approximate capacity of 500 gallons, whereas the rinse reservoir has a 350 gallon capacity.

Presently, the wash and rinse water solutions contain the following chemical cleaning compounds:

(a) Wash Tank: Kelite Chemical Corporation, Kelite No. 5-S, an alkaline cleaner composed of inorganic phosphates and sulfates, caustic soda and surfactants (none of which contain ABS). The concentrations of Kelite No. 5-S is maintained at approximately 1.5 oz./gal. with a resultant pH of approximately 11.5.

(b) Rinse Tank: Kelite Chemical Corporation, Kelite Ketron S, an alkaline rust inhibitor and neutralizing rinse agent composed of a sodium metaborate phosphate complex, sodium nitrite and sodium carbonate.

(2) <u>Nickel Scale Removal, Lacquer Stripping and Polishing of Stainless Steel</u>:

(a) Scale Removal from Nickel Fasteners: Nickel fasteners are heat treated to increase their strength. During heat treating, nickel scales form

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on the fastener which are presently removed by barrel tumbling with Kelite Process 814 NF (see Page 11), followed by an acetic acid wash.

(b) Stripping of Lacquer Coating from Fasteners: High speed manufacture of steel fasteners is accomplished by using steel wire coated with lacquer. The lacquer coating protects the wire from corrosion, as well as providing the smooth surface required for drawing the wire through the high speed forming machines. In the past, J. Hassall has removed the lacquer coatings and highly polishing the steel fasteners in barrel tumblers. However, there is reason to believe that many consumers may actually prefer that the protective coating of lacquer remain on the fasteners. This would eliminate this process and the accompanying waste waters. Presently, J. Hassall is exploring the possibility of stripping this lacquer only when clients specifically request it, or when specifications require highly polished surfaces.

The removal of lacquer from the steel fasteners is accomplished with Kelite Process 814 NF followed by an acetic acid wash.

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(c) Polishing of Stainless Steel: Many stainless steel fasteners receive heat treatment after the forming operations. Heat treating leaves metallic scales on the fasteners which must be removed. This removal is accomplished by barrel tumbling with Kelite Process 814 NF followed by an acetic acid wash.

Kelite Process 814 NF is a highly acid desmutter, specially formulated to desmut or mildly etch aluminum. J. Hassall has found Kelite Process 814 NF to be excellent for the above mentioned process, namely nickel scale stripping, stripping of copper and lacquer coatings off of steel and removal of stainless steel scale and polishing of stainless steel. Kelite Process 814 contains sodium bi-sulphite, potassium bichromate and sodium fluoride. During the preparation of this report, it was requested that the Kelite Chemical Corporation remove the sodium fluoride from this chemical compound as J. Hassall did not require it for the above mentioned applications. The Kelite Corporation removed the sodium fluoride from Process 814 and the present compound is called Kelite Process 814 NF (No Fluoride). Process 814 NF concentrations are

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approximately 12 to 16 oz./gal. of Process 814 NF per gallon of water with a resulting pH of approximately 2.5.

(3) Alkaline Cleaning of Fasteners:

Small fasteners cannot be cleaned in the industrial washing machine, and are cleaned instead in barrel tumblers to remove oils and soils. Kelite No. 25E alkaline cleaner is used in about a 1% concentration. Kelite No. 25E is composed of inorganic phosphates, silicates, sulfates, carbonates, non ABS surfactants, sequestrants and sodium metapyroborate. At a 1% concentration the pH is normally 10.5. No appreciable removal of metal is accomplished by this cleaner with the major removals being soils and oils from the metallic surfaces.

(4) Cyanide Stripping of Scales

Some fasteners are formed from wire which has received a protective coating of copper. This coating is placed on the wire for corrosion protection, and to provide the smooth surface required to pass the wire through the forming dies at high speeds. After forming, this coating is

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removed from the fastener by a sodium cyanide stripping bath in barrel tumblers. The cyanide stripping baths are presently prepared by dissolving cyanide bricks in hot water to produce a cyanide solution with an approximate 100,000 to 120,000 mg./liter concentration of free cyanide. This high cyanide concentration is desirable as it removes the copper rapidly from the fasteners and prevents its re-deposit on the fastener. This cyanide solution is saved and re-used many times until its strength (free cyanide concentration) is reduced to such a level that little or no additional copper is stripped from the fastener. The pH of this cyanide solution is high, between 9.0 and 10.0. The stripping solution and the rinse waters contain varying amounts of cyanide, copper and iron.

(5) Nickel Plating:

A number of fasteners are nickel plated in any one of five (5) nickel plating tanks. Fasteners are first cleaned in the industrial washing machine or barrel tumblers. Fasteners are placed in rotating barrels or baskets and

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immersed in nickel sulfate solutions in the nickel plating tanks. Presently, no dragout, static or running rinse tanks exist. Washing of plated parts is currently performed by removing the barrels or baskets from the plating tanks and flushing them with water on the plating room floor.

(6) Aluminum Polishing:

Mirror-like surface finishes are required on some aluminum fasteners. Such a finish can only be obtained from a nitric - hydrofluroric acid bright dipping process. This operation consists of four (4) tanks. The first tank (ceramic) is for acid dipping, containing a hot 50% solution of nitric and hydrofluoric acid. The remaining three (3) tanks consist of one (1) static dragout and two (2) counter-current running rinse tanks. Rinse waters from this operation would contain varying amounts of fluorides, nitrates and aluminum.

Plant personnel have indicated that this operation is not used every day, and when it is, for relatively small periods of time.

EXISTING WASTE WATER TREATMENT AND DISPOSAL FACILITIES

All waste waters discharged from the plating and cleaning rooms and a small portion of the cooling

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water from the heat treating room (overflow) are directed to one (1) 4" cast iron drain line by open troughs, pumps or overhead drain lines. The 4" drain line discharges the combined waste water, by gravity, into the first existing treatment unit, a below grade concrete reaction tank. This collection system is shown on Drawing MI67-11-1 and MI67-11-2.

Present treatment facilities consist of the following: One (1) 1600 gallon, three (3) compartment reaction or mixing tank (capacity presently limited to 1600 gallons due to the existing invert elevation of the gravity drain); three (3) rapid mixers, one (1) in each compartment; an automatic pH control system, complete with an ejector for feeding a 25% solution of caustic and an immersible pH electrode; and one (1) open leaching basin with an approximate storage capacity of 60,000 gallons and a side wall leaching area of approximately 1,000 square feet with a design leaching capacity of 4,000 gallons/day, based on a full rate soil leaching rate of 4 gallons/day/square foot. (Capacity of basin is presently limited by the invert elevation of gravity waste water effluent drain.)

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Plans for these facilities were submitted to the New York State Department of Health through the Nassau County Department of Health in June of 1953. They were approved by the New York State Department of Health with a permit issued in July of 1953, with the installation completed in 1953 with the exception of the pH control system. The pH control system was installed in April of 1955.

The automatic pH control and caustic solution feeding systems have been inoperative for a considerable time. Present waste water treatment consists of settling in the reaction tank with sludge removed periodically by a scavenger waste disposal service. The sludge is trucked to the County owned Bay Park Water Pollution Control Plant with ultimate disposal by sludge barging to sea.

Suspended and dissolved solid removals are generally poor, with the large portion of the sludge attributable to the removal of settleable solids from the abrasive tumbling. Removals of suspended and dissolved solids are poor due to the high pH, the presence of large quantities of oils and the inefficient settling of the waste water in the reaction or mixing tank.

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WATER QUALITY STANDARDS

In accordance with Section 1208, Article 12 of the Public Health Law, the State and County Departments of Health are enforcing the recently adopted and assigned New York State Conservation Department Standards of Quality for Waste Water Discharges into the Ground Waters of the State of New York.

Under these standards, industrial waste waters must receive the required treatment so that the concentrations of certain chemical constituents of the waste waters do not exceed certain maximum allowable concentrations. The following is a partial list of the concentrations of these various chemical constituents which the partially treated or untreated John Hassall waste waters are presently exceeding:

NEW YORK STATE WATER RESOURCES COMMISSION

GROUND WATER STANDARDS

CONSTITUENT	MAX. ALLOWABLE CONCENTRATION
Cyanide	0.4 mg./liter
Chromium (Hexavalent)	0.10 mg./liter
Chromium (Total)	1.0 mg./liter*
Copper	0.4 mg./liter
Iron	0.6 mg./liter

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NEW YORK STATE WATER RESOURCES COMMISSION

GROUND WATER STANDARDS - CONT'D.

CONSTITUENT	MAX. ALLOWABLE CONCENTRATION
Total Dissolved Solids	1,000 mg./liter
Nickel	1.0 mg./liter*
pH	6.5 to 8.5**
Carbon Chloroform Extract Residue (CCE)	0.4 mg./liter

*Nassau County Department of Health Standard

**The lower allowable range can be the natural pH of ground water in the area which is 5.8 to 6.0.

In the near future, when sewers become available in the area, the waste waters would no longer be required to meet the above New York State Water Resources Commission Standards, but instead the Nassau County Department of Public Works Industrial Waste Water Standards, which presently are considerably higher in the allowable concentrations of the various chemical constituents. These standards are required to protect bacterial organisms on/in trickling filter, activated sludge and sludge digestion processes and to minimize the effects of these various chemical constituents on tertiary treatment units planned for the future as part of the Nassau County Department of Public Works recharge of renovated sewage.

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The following is a partial list of the chemical constituents and their maximum allowable concentrations for discharge into the Nassau County sewer system:

CONSTITUENT	MAX. ALLOWABLE CONCENTRATION
Cyanide	2.0 mg./liter
Chromium (Hexavalent)	4.0 mg./liter
Copper	2.0 mg./liter
Nickel	5.0 mg./liter
pH	4.5 to 9.5

Currently, the Nassau County Department of Public Works is in the process of constructing sewers and a water pollution control plant at Seaford. Under the current comprehensive sewer plan for southeastern Nassau County, known as Collection District No. 3, this District will be extended to serve the Westbury-Jericho area where the John Hassall plant is located. Current estimates and plans indicate that the sewers will be available in 12 to 15 years in this area. At such time, the present ground leaching facilities would have to be abandoned and the waste waters, after the required pre-treatment, discharged into the County sewer system.

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WASTE WATER CHARACTERISTICS AND SAMPLING

A summary of past sampling results is presented in Appendix II. It is important to note that past sampling results do not present a particularly accurate picture of the concentrations of the various chemical constituents in the industrial waste waters presently being discharged from the plant. Considerable in-plant changes have been made since the first sampling of the waste waters in 1955. The most important of these changes occurred recently with major changes in chemical cleaning compounds and the installation of a large industrial washing machine.

Hexavalent chromium was present in the waste waters in 1955. It was eliminated from the waste water until 1968 when a change in chemical cleaning compounds resulted in the re-occurrance of hexavalent chromium in the waste water.

A large reduction in waste water volumes was made in 1968 with the installation of a large industrial washing machine. The reduction of waste water volumes has had an effect on the concentrations of the various chemical constituents in the waste water, approximately doubling their concentrations.

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Considerable variations in day by day waste water characteristics was observed during the conducting of this study. This variation was due to the predominance of different cleaning and plating operations depending on the type and amount of fasteners cleaned or plated on any particular day.

Based on past sampling results, adjustments made for chemical and waste water volume changes, and recent laboratory testing, we believe the following chemical constituents in the maximum amounts tabulated could be expected to be found in the waste waters:

CONSTITUENT	MAX. CONCENTRATION
Hexavalent Chromium	20 mg./liter
Total Chromium	30 mg./liter
Iron	250 mg./liter
Nickel	20 mg./liter
Copper	25 mg./liter
Fluoride	2 mg./liter
Cyanide	20 to 30* mg./liter
pH - Washing Machine Waste Waters	10 to 11
pH - Chromium Waste Waters	2 to 3
pH - Cyanide Waste Waters	8 to 9

*No sampling results are available for cyanide concentrations in the combined waste waters due to mixing

(Footnote Continues)

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of alkaline cyanide waste waters with acid waste waters in the present collection system. This results in the formation of hydrogen cyanide gas which is removed from solution. Also, expended cyanide stripping baths and first rinses are presently discharged into 55 gallon holding drums and removed by a scavenger disposal service, thereby reducing the amounts of cyanide discharged into the waste waters.

LABORATORY TESTING AND SEGREGATION OF WASTE WATERS

In order to determine the most economical treatment system and to obtain information on how the industrial waste waters would react to various treatment methods, a number of waste water grab samples were obtained from the existing leaching basin and many of the existing cleaning operations. Additional composite samples were obtained from the existing reaction tank to verify the results of the individual grab samples.

Results of the laboratory testing indicated that segregation of the waste waters will be required, due to the presence of cyanide, hexavalent chromium and large quantities of emulsified and suspended oils.

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The following observations or conclusions were made as a result of this laboratory testing:

1. Emulsified Oils

The waste waters contain large amount of emulsified and suspended oils due to the discharge of the expended re-cycled wash and rinse waters from the industrial washing machine and the alkaline cleaning of small fasteners in barrel tumblers. Acidification of samples from both the wash and rinse solutions from the industrial washing machine resulted in a breakdown of the water-oil emulsión. However, the high alkalinity of these expended wash and rinse solutions required large additions of acid to lower the pH to a point where the water-oil emulsion would break down and release the emulsified oil. Approximately one pound of 96% sulfuric acid per 600 gallons was required, with a resulting sulfate concentration of 1,500 mg./liter. Assuming a dilution of this waste water with other waste waters, no additional (sulfuric) acid additions for hexavalent chromium reduction, less than 50 mg./liter sulfate concentrations in the combined raw waste waters, 200 gallons treated per day of this washing machine waste water (800 gallons/4 days) and a total of 4,000 gallons per day of combined waste water, the resulting sulfate concentration in the

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combined treated waste water would be approximately 160 mg./liter. This would be below the New York State Water Resources Standards of Maximum Allowable Concentration of 250 mg./liter.

Oil separation and removal can be accomplished by allowing the acidified waste water to stand and decant the clarified effluent off from below the oil which rises to the surface. Further clarification can only be accomplished by filtration. Filtering a decanted sample after pH correction to 7.0 and flocculant aid addition through a 1'-0" bed of sand showed little improvement in the clarity of the waste water effluent. However, considerable clarification was accomplished by filtering this same sample through a 1/2" diatomaceous earth filter. As a result, we believe that this waste water, after acidification and settling, should be added to the hexavalent chromium treatment system, after the first step reduction, with the combined treated waste water filtered through a diatomaceous earth filter prior to ground disposal.

2. Cyanide Waste Waters

Due to the small volume of cyanide waste waters, in-plant cyanide treatment was investigated

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by treating the cyanide rinse waters and stripping solutions with "HTH". However, due to the high concentrations of cyanides present, approximately 114,000 mg./liter in the stripping solution, and 4,000 mg./liter in the rinse water, the treatment was not completely successful. This treatment method was abandoned in the belief that the State and County Departments of Health would not approve such a treatment method for these high cyanide concentrations, and the possible adverse affects on the stripping operations.

Expended cyanide stripping solutions and waste waters from the subsequent rinsing operations will require segregation from the acid waste waters. Mixing of these two (2) waste waters would cause the soluble cyanides to be converted to the highly poisonous hydrogen cyanide gas, which would result in a serious hazard to operating personnel.

3. Fluoride Waste Waters

Initial tests on the combined waste waters indicated that a fluoride removal treatment system would be required due to the presence of 17.5 mg./liter of fluoride in the combined waste water. Fluoride removal from this concentration would consist of a

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one-step ion exchange system. The presence of sulfates, chlorides, detergents and nitrates in the waste water would rapidly deplete the exchange capacity of the ion exchanger. More serious would be the presence of oil and detergents, which would probably hydraulically clog the exchanger long before the exchange capacity of the bed was depleted. The management of J. Hassall arranged to reduce the major source of fluorides in the waste water by changing the chemical cleaning compound used from the Process 814 to the new Process 814 NF which contains no fluorides. One (1) fluoride waste water source remains, namely the aluminum etching operation. However, due to limited usage of this operation and the presence of a static dragout tank, fluoride concentration in the waste water is now below the New York State Water Resources Commission's maximum allowable concentration of 3.0 mg./liter. As a result, we believe no fluoride removal process is now necessary.

4. Hexavalent Chromium Waste Waters

Testing of waste waters from the Process 814 NF cleaning operations showed considerable quantities of dissolved iron to be present. However, in all tests, good removals of iron was accomplished,

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by raising the pH of the samples to 7.0, flocculant aid additions and 30 minutes of flocculation, after the first step reduction of hexavalent chromium at a pH of 2.5. No difficulties are expected in removing chromium (hexavalent and trivalent) or iron from a segregated chromium waste water collection system.

How about quantity of sludge?

WASTE WATER VOLUMES

No past records are available for water usage in the cleaning or plating shops. A check of the plant's domestic water supply meter showed the meter to be not operating properly. Supervisory personnel estimated the past daily water usage at 10,000 gallons/day.

The recent installation of the large industrial washing machine was believed to reduce the water usage by 50%, or to approximately 5,000 gal./day. In order to check the accuracy of these estimates, the company installed water meters on both the hot and cold water services in the cleaning and plating rooms. The meters indicate an average daily water usage (based on 5-day working week) of approximately 4,000 gallons/day.

Based on plant inspections, we estimate this water usage would be distributed to the proposed

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segregated waste water collection system in the following amounts:

Hexavalent Chromium Collection System	2500 G.P.D. *
Cyanide Collection System	1200 G.P.D. *
Wash & Rinse Water Industrial Washing Machine Collection System	300 G.P.D.
TOTAL DAILY WASTE WATER VOLUME	4,000 G.P.D.

WASTE WATER COLLECTION SYSTEMS

The waste water presently discharged from the cleaning and plating rooms contain varying concentrations of cyanide, hexavalent chromium, fluoride, chloride, sulfate, nitrate and various heavy metals such as iron, trivalent chromium, nickel, copper and aluminum.

Based upon sampling results, laboratory testing and estimated water usage, we believe that waste water treatment facilities must be provided to remove cyanides, hexavalent chromium, iron, trivalent chromium, nickel and copper. Aluminum, nitrate and fluoride concentrations are believed to be below the New York State allowable concentration, as the principal sources of aluminum and nitrate are the fluoride bright dipping operations, which are not

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major operations. Therefore, no treatment systems will be provided for either aluminum, nitrate or fluoride. OK

The proposed treatment system will consist of three (3) separate waste collection systems, which will collect waste water from waste sources. These three (3) waste collection systems are shown on Drawing No. MI-67-11-2. These proposed waste water collection systems would consist of the following:

1. Hexavalent Chromium Waste Water Collection System

This system would collect the expended cleaning and plating solutions and rinse waters from the nickel scale removal; lacquer stripping; stainless steel polishing; alkaline cleaning of small fasteners; aluminum bright dipping and nickel plating. All the above listed operations are acid in nature except the alkaline cleaning and nickel plating operations. Plant management indicated that segregation of the alkaline cleaning waste waters from the acid Process 814 NF waste waters would be impossible due to the multiple usage of the tumblers for both acid 814 NF Process and alkaline cleaning.

will this affect pH for treatment?

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Nickel plating waste waters, for the present, will be directed to the acid waste waters until such time as the nickel dragout and running rinse tank is installed. At such time, the nickel plating waste waters will be directed to the cyanide waste water sump.

Waste waters would be collected through the existing grated troughs. A small prefabricated sump and sump pump would be installed to pump the waste water to the proposed treatment plant. The existing 4" combined waste water gravity drain would be abandoned for normal use and reserved only for emergency "overflow". NG The location of this sump, sump pump and piping is shown on Drawing MI67-11-2.

2. Cyanide Waste Water Collection System

This collection system will collect expended cyanide stripping solutions and rinse waters, as well as nickel rinse waters.

Waste waters would be collected by pouring the contents of containers or buckets of the expended cyanide solutions or rinse waters into the two (2) proposed sumps and/or the existing sink in the northeast corner of the cleaning room. Protection from accidental combination with acid rinse waters

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would be provided by installing a concrete curb as shown on Drawing MI67-11-2. Nickel plating rinse waters will be directed to the cyanide sump with a 2" PVC gravity drain line.

3. Industrial Washing Machine Waste Water

The collection system for the expended solutions from the wash and rinse tank of the industrial washing machine would consist of a horizontal centrifugal pump and a 2" drain line as shown on Drawing MI67-11-2.

WASTE WATER TREATMENT SYSTEMS

Any effective treatment system for the plant waste waters will require that the cyanide, hexavalent chromium and the industrial washing machine wash waters be segregated. Segregation is necessary as the treatment process for cyanide and hexavalent chromium wastes involve opposite processes, namely oxidation and reduction at different pH ranges, or different ion exchange resins. The segregation of the industrial washing machine waste waters is desirable as the presence of emulsified oil will affect the efficiency of the oxidation-reduction processes, or ion exchange resins.

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The selection of the best treatment process depends primarily on the type and volumes of waste waters and to a lesser extent on the concentrations of the various chemical constituents in the waste water. The following three (3) types of treatment systems were considered:

(1) Batch Treatment

(2) Continual Treatment

(3) Ion Exchange

The chemical treatment of cyanide bearing waste waters (batch and continual treatment systems) is by 3-stage alkaline chlorination, resulting in the complete destruction of cyanides to the non-toxic gaseous compounds of carbon dioxide and nitrogen. The reactions are rapid and easily controlled.

The destruction of cyanides proceeds in three steps with the first step the oxidation of cyanide to cyanogen chloride. This reaction is instantaneous and occurs at all pH levels. The second reaction is the hydrolysis of the cyanogen chloride to cyanate. This reaction occurs in a matter of minutes at a pH of 9. The final step is the oxidation of the cyanate to nitrogen, carbon dioxide and water. At a pH of 8, the latter reaction takes 10 to 15 minutes

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while at a pH of 9 about 30 minutes are required. Approximately 6.8 pounds of chlorine and 7.5 pounds of caustic (sodium hydroxide) are required for each pound of cyanide (not including caustic for adjusting the final pH of the waste water).

Treatment of chromium bearing waste waters requires a two-step process. The first step at a low pH reduces the hexavalent chromium to the trivalent state, while the second step serves to precipitate the trivalent chromium salts. When sodium bisulfite is used as the reducing agent in the first step, approximately 3.0 pounds of sodium bisulfite and 1.4 pounds of acid are required to reduce 1 pound of hexavalent chromium. 2.5 pounds of caustic (sodium hydroxide) per pound of hexavalent chromium plus an amount to raise the pH to 7.0 are required to carry out the second step precipitation. The reduction reaction time depends on the pH and excess reducing agent present.

Ion exchange treatment of the combined cyanide and hexavalent chromium waste waters is possible, but not practicable. Untreated cyanide waste waters limit the useful life of ion exchange resins. These resins are very expensive and therefore they are

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regenerated after their exchange capacities have been depleted. Continual exposure to cyanides will limit the number of regenerations to approximately 10 to 20, after which the exchange material would require replacement.

Economic ion exchange treatment of the combined waste water from the plant would require that cyanides be first destroyed by conventional chemical alkaline chlorination with the treated effluent directed to an ion exchanger for hexavalent chromium and heavy metal removal. The suspended and emulsified oil would have to be removed prior to ion exchange by filtration.

We believe that chemical treatment would be more adaptable to the waste waters than ion exchange for the following reasons:

(1) Concentrations of cyanides in raw waste waters would be greater than the ion exchange resins can tolerate. (5 mg./liter).

(2) Chemical treatment of cyanide waste waters is required.

(3) Presence of suspended and emulsified oils may coat the exchange resin with an oil film which will adversely affect the exchange rate of the resin and clog the bed.

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(4) The concentrated regenerate wastes and backwash waste waters from the regeneration cycles of the ion exchangers will require additional treatment and/or storage.

The relatively small volume of waste waters involved and the variable characteristics of waste water make continual chemical treatment impractical. Therefore, the recommended treatment system is the batch chemical treatment system described in subsequent sections.

RECOMMENDED TREATMENT SYSTEM - BATCH TREATMENT

The following factors were considered in sizing the individual treatment tanks for the batch treatment plant:

(1) Actual water usage

(2) Provisions for limited future expansion

(3) Remoteness of treatment plant from the cleaning and plating shop

(4) Available operating personnel

(5) Cost of additional capacities over the maximum required capacity

(6) Standard construction material sizes Example: 2', 4', 8', etc.

Factors 1 and 2 were relatively easy to determine and correlate. However, factors 3, 4, 5 and 6 were difficult.

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We believe that considerable operating time could be saved, without appreciably increasing the initial construction cost, by increasing the system treatment capacities as follows:

	EFFECTIVE TREATMENT VOLUME
Hexavalent Chromium - 2 Tanks	5,000 gallons each
Cyanide - 2 Tanks	3,000 gallons each
Industrial Washing Machine Wash & Rinse Water (Reconstructed Reaction Tank) - 1 Tank	2,000 gallons

Units of these sizes would result in operating saving by requiring treatment of one (1) chromium tank and one (1) cyanide tank every two (2) days and industrial washing machine treatment approximately once a week, instead of every day if sizes are reduced to the present water usage volumes.

BATCH TREATMENT OF CYANIDES, HEXAVALENT CHROMIUM AND INDUSTRIAL WASHING MACHINE WASTE WATERS

Three (3) separate batch treatment systems will be provided, the cyanide and hexavalent chromium systems, each consisting of two (2) separate treatment tanks, and the industrial washing machine waste water system, consisting of one (1) treatment tank, as shown on Drawing No. MI67-11-2. The cyanide

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waste waters will be treated in two (2) 3,000 gallon treatment tanks, the hexavalent chromium waste water will be treated in two (2) 5,000 gallon treatment tanks, and the industrial washing machine waste waters in a 2,000 gallon treatment tank. Cyanide and hexavalent chromium treatment will be conducted in one (1) treatment tank, while the second tank is filling. The actual volumes of each cyanide treatment tank is 3,300 gallons, while the volumes of the hexavalent chromium and industrial washing machine waste water treatment tanks are 5,500 and 3,000 gallons respectively. The 300, 500 and 1,000 gallon additional volumes are provided for sludge storage. Sludge will remain in the cyanide and industrial washing machine water treatment tanks after each batch. Sludge from the cyanide treatment system would be transferred to the sludge holding tank once every two (2) weeks. No sludge will be transferred from the industrial washing machine waste water treatment system. Sludge from the hexavalent chromium treatment system, however, must be transferred after each batch to reduce the chemical requirements for lowering the pH for the first step reduction of hexavalent chromium.

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Cyanide Batch Treatment System - The schematic of the cyanide batch treatment system is presented on Drawing No. MI67-11-2. In operation, the cyanide waste waters are pumped to one (1) of the two (2) cyanide treatment tanks. The flocculator, caustic and hypochlorite feeder are wired to mix and feed caustic and hypochlorite solutions automatically at a predetermined rate by means of a control relay energized by either of the raw waste sump pumps. An alarm will signal the operator when the cyanide treatment tank is filled, thereby requiring him to divert flow to the second cyanide treatment tank. The batch is sampled with a photo-electric comparator to determine if a sufficient chlorine residual exists (approximately 3 to 5 mg./liter) to completely destroy the cyanides and cyanates. If necessary, the pH is adjusted to 9.0. If additional hypochlorite or caustic is needed, the flocculator and chemical feeder are manually started and the required amount of caustic and hypochlorite added and mixed. After the appropriate amount of caustic and hypochlorite are added, the feeder is stopped, but the flocculator remains running for 30 minutes for circulation of the batch. At the end of 30 minutes, the batch is tested for cyanides and chlorine residual with a

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photo-electric comparator. If cyanides are present, or not chlorine residual exists*, the treatment is continued by manually starting the flocculator and the caustic and hypochlorite feeders. The batch would be tested at 15 minute intervals until all the cyanides are destroyed and a chlorine residual remains. The flocculator and the acid-alum feeder are then manually started and sufficient acid and alum added to lower the pH of the batch to approximately 7.0 and obtain an approximate alum concentration of 20 mg./liter. The batch would then be mixed by the flocculator for approximately 30 minutes to aid in the formation of a heavy settleable floc. The flocculator is then stopped and the batch allowed to settle for one (1) hour. The effluent valve is opened and the cyanide-free effluent decanted from the treatment tank and discharged to the leaching facilities by means of a floating take-off device adjusted to float approximately 1'-0" below the surface. Settled sludge and floating oil, if any, is allowed to remain in the treatment tank and is mixed with the raw waste of the

*Chlorine residual will be used as the indication that cyanide destruction is complete as no field method for analyzing cyanates is available.

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next batch. Once every two (2) weeks the settled sludge and floating oil is transferred to the sludge holding tank.

How much sludge produced?

Hexavalent Chromium Batch Treatment System - A schematic diagram of the hexavalent chromium batch treatment system is presented on Drawing No. MI67-11-2. In operation, the hexavalent chromium waste waters are pumped to one (1) of two (2) hexavalent chromium treatment tanks. The flocculator, sulfuric acid and sodium bisulfite feeder are wired to operate automatically as in the cyanide treatment system. The alarm signals the operator to divert the flow as in the cyanide treatment system. The batch is then sampled with a photo-electric comparator to determine the pH and the concentration of hexavalent chromium. If additional sulfuric acid and sodium bisulfite are required to reduce the hexavalent chromium, the flocculator and chemical feeder are manually started and the required amount of sulfuric acid and sodium bisulfite are added and mixed. The feeder is then stopped and the batch circulated for another 30 minutes. At the end of 30 minutes, the batch is tested for hexavalent chromium. If the test indicates hexavalent chromium is present, the chemical feeder and flocculator are started again, chemicals added and

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mixing continued for 15 minutes and the waste water resampled. This is repeated, if necessary, until no hexavalent chromium remains, at which time the flocculator and the caustic-alum feeder are manually started and sufficient caustic and alum added to raise the pH of the batch to 7.0 and obtain an approximate alum concentration of 20 mg./liter. The batch is then mixed by the flocculator for approximately 30 minutes to aid in the formation of a heavy settleable floc. The flocculator is stopped and the batch allowed to settle for one (1) hour. The effluent valve is opened and the chromium free effluent is decanted from the treatment tank and discharged via a diatomaceous earth filter to the leaching facilities by means of a floating take-off device adjusted to float 1'-0" below the surface. Finally, the effluent valve is closed, the sludge valve opened, and the settled sludge and floating oil, if any, is transferred to the sludge holding tank. Transfer of sludge will be performed after each batch.

Industrial Washing Machine Waste Water Batch Treatment System

A schematic diagram of this batch treatment system is presented on Drawing No. MI67-11-2. In operation, the industrial washing machine waste waters containing

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emulsified oils are pumped to the treatment tank (reconstructed reaction tank). Three (3) existing mixers and the acid feeder of the cyanide treatment system (valved to manually feed acid to the industrial washing machine waste water treatment tank) would be wired to operate together. The pH of the waste water would be adjusted to 7.0 by manually energizing the acid feeder. The treated waste water would be allowed to settle for 24 hours to separate the solids and oils. From time to time portions of the treated waste waters would be drawn off and added to hexavalent chromium treatment system, prior to the second step, raising of the pH, where it will receive flocculation, pH adjustmentto 7.0 and alum addition.

The final treatment step would be diatomaceous earth filtration of the combined hexavalent chromium industrial washing machine waste water.

CONSTRUCTION AND OPERATING COST ESTIMATES

Two (2) construction cost estimates for the recommended batch treatment system are presented in Appendix III and IV.

The construction cost estimate of Appendix III is for the above grade treatment system as shown on

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Drawing No. MI67-11-3, and the construction cost estimate of Appendix IV is for the below grade batch treatment system, as shown on Drawing No. MI67-11-4.

Daily operation costs would consist of electrical power costs to operate pumps, feeders, mixers and flocculators, light, etc., chemical costs for sulfuric acid, caustic, alum, and sodium bisulfite and operator's wages. The largest portion of the daily cost would be daily operator's wages. Therefore, the plant will be designed to limit operator time to a minimum. We believe that three (3) man hours per day will be sufficient to maintain and operate either batch treatment plant. Assuming a wage rate of $3.00/hour, this would amount of $45.00/week. Chemical costs are difficult to estimate at this time due to variations in waste water characteristics, and the lack of segregated waste water samples. We believe that $5.00/day is a reasonable chemical cost estimate at this time. Electrical cost would be small, possibly $.50/day. The total weekly cost would be $72.50 per week. Assuming 4,000 gallons of waste water treated per day or 20,000 gallons per week, the daily operating cost would be approximately $15.00.

NCDOH26996

No State or Federal Aid is available to help finance the cost of this treatment plant. However, for tax purposes, the cost of this waste water treatment plant, including the cost of Engineering Services, can be deducted from corporate earnings during the year that construction is completed and the plant put into operation.

Respectfully submitted,

HOLZMACHER, McLENDON & MURRELL

S. C. McLendon, P.E.
N.Y.S.P.E. Lic. No. 25302

NCDOH26997

APPENDIX I

JOHN HASSALL, INCORPORATED

ENGINEERING STUDY & REPORT

INDUSTRIAL WASTE TREATMENT

JULY, 1968

PUBLIC & PRIVATE WATER SUPPLY WELLS*

N.Y.S. W.R.C. NO.	WELL FIELD	DISTANCE & DIRECTION	OWNER	CAPACITY** M.G.D.	DEPTH
N6617	-	W 540'	Aircraft Turbine Inc.	0.1	90'
N7030	Saratoga Dr. Well #13	NE 940'	Jericho W. D.	1.63	531'
N7237	-	NW 1600'	Suval Industries, Inc.	0.24	113'
N6814	-	NW 1600'	Suval Industries, Inc.	0.22	130'
N3925	-	NW 2000'	Coca Cola Bottling Co.	0.43	143'
N6662	-	W 2800'	Linda-Louis Corp.***	0.10	130'
N3953	Well No. 6-1	E 3300'	Hicksville W. D.	1.72	419'
N3878	Well No. 6-2	E 3300'	Hicksville W. D.	1.72	428'
N7369	-	NW 3640'	Expressway Land Corp.***	0.29	200'
N6860	-	SE 3740'	Gen. Instrument Co.***	0.22	96'
N2231	-	SE 5920'	Fairway Farms***	0.15	129'
N7353	Union Ave.	SW 6120'	Westbury W. D.	2.02	391'
N5644	-	E 6200'	Mid-Island Shopping Center	0.52	270'
N5594	-	E 6200'	Mid-Island Shopping Center	1.75	255'
N8368	-	NE 6380'	Bomar-Plaza***	(Test Well)	311'

*All Well Data from New York State Water Resources Commission
**Public and Private Wells within approximately 1-mile radius of J. Hassall with capacities more than 45 G.P.M. (except Test Wells)
***Present Ownership has not been verified

NCDOH26998

APPENDIX II

JOHN HASSALL, INCORPORATED

ENGINEERING STUDY & REPORT

INDUSTRIAL WASTE TREATMENT

WASTE WATER SAMPLING RESULTS

JULY, 1968

DATE	SOURCE	SAMPLING POINT	pH	Cr^{+6}	Cr TOTAL	IRON	Ni	Cu	FLOURIDE	CY-NIDE	TOTAL DISSOLVED SOLIDS
5/11/55	N.C.H.D.	Leaching Basin	11.0	70.0	-	-	-	-	-	-	-
6/19/55	N.C.H.D.	Leaching Basin	10.96	-	-	110	-	-	-	-	-
10/?/55	N.Y. Testing Labs.	?	10.7	-	-	300	-	-	-	-	3,483
12/8/55	N.C.H.D.	Leaching Basin	11.1	-	-	9.5	-	-	-	-	-
11/24/65	N.C.H.D.	Leaching Basin	4.7	-	-	-	51.5	23.0	-	-	-
1/?/66	N.C.H.D.	Leaching Basin	-	-	-	-	51.5	23.0	-	-	-
3/30/66	N.C.H.D.	Leaching Basin	6.8	-	-	-	21.2	5.15	-	-	-
6/29/66	N.C.H.D.	Leaching Basin	10.5	-	-	-	15.0	15	-	-	-
4/12/67	N.C.H.D.	Leaching Basin	11.8	-	-	-	19.0	11.2	-	-	-
4/14/67	N.C.H.D.	Leaching Basin	11.4	-	-	-	17.0	13.9	-	-	-
9/12/67	N.C.H.D.	Leaching Basin	11.9	-	-	-	8.5	15.4	-	-	-
1/17/68	N.C.H.D.	Leaching Basin	11.5	-	-	-	8.3	8.4	-	-	-
2/5/68	N.C.H.D.	Leaching Basin	10.7	6.7	20.0	-	9.5	11.7	17.5	0.31	-
2/20/68	H.M.M.	(Composite) Reaction Tank	12.25	<0.05	-	244	-	11.8	125	-	-

NCDOH26999

APPENDIX II - CONT'D.

JOHN HASSALL, INCORPORATED

DATE	SOURCE	SAMPLING POINT	pH	Cr^{+6}	Cr TOTAL	IRON	Ni	Cu	FLOURIDE	CY-NIDE	TOTAL DISSOLVED SOLIDS
2/30/68	H.M.M.	Copper Stripping Bath	1.3	7,000	-	-	-	4,000	-	-	-
3/19/68	H.M.M.	(Composite) Reaction Tank	12.25	/0.05	-	220	-	11.8	125	-	-
3/21/68	H.M.M.	Leaching Basin	10.8	/0.05	-	1.9	-	7.5	-	-	-
4/?/68	H.M.M.	Cyanide Stripping Bath	9.5	-	-	-	-	-	-	114,000	-
4/?/68	H.M.M.	Rinse Water Cyanide Stripping Bath	9.5	-	-	-	-	-	-	4,000	-
4/?/68	H.M.M.	Rinse Water Cyanide Stripping-Treated	9.0	-	-	-	-	-	-	3,000	-
4/?/68	H.M.M.	Rinse Water Alum. Bright Dipping	1.5	-	-	-	-	-	2.1	-	-

Sample of waste at present by J.H. - Exchange for above
Circled ~~at~~

NCDOH27000

APPENDIX III

JOHN HASSALL, INCORPORATED

COST ESTIMATE

INDUSTRIAL WASTE TREATMENT SYSTEM

ABOVE GROUND PLANT

I	Waste Water Collection System consisting of Sumps, Pumps, Piping & Drains for Segregation of Waste Waters	$3,000.00
II	General Construction of Treatment Building & Tanks	34,000.00
III	Mechanical Work consisting of Installation of Piping, Chemical Feeders and Controls, Flocculators, Filters and Caustic Tank	21,000.00
IV	Electrical Work consisting of Installation of Power and Control Circuits and Equipment	9,000.00
	TOTAL ESTIMATED CONSTRUCTION COST.	$67,000.00
	Optional Protective Coatings	6,000.00
	Optional Stone Veneer	1,500.00
	TOTAL ESTIMATED CONSTRUCTION COST INCLUDING OPTIONAL ITEMS.	$74,500.00

NCDOH27001

APPENDIX IV

JOHN HASSALL, INCORPORATED

COST ESTIMATE

INDUSTRIAL WASTE TREATMENT SYSTEM

BELOW GROUND PLANT

I	Waste Water Collection System consisting of Sumps, Pumps, Piping & Drains for Segregation of Waste Waters	$3,000.00
II	General Construction of Treatment Building and Tanks	35,000.00
III	Mechanical Work consisting of Installation of Piping, Chemical Feeders and Controls, Flocculators, Filters and Caustic Tank	24,000.00
IV	Electrical Work consisting of Installation of Power and Control Circuits and Equipment	9,000.00
	TOTAL ESTIMATED CONSTRUCTION COST.	$71,000.00
	Optional Protective Coatings	6,000.00
	Optional Stone Veneer	3,500.00
	TOTAL ESTIMATED CONSTRUCTION COST INCLUDING OPTIONAL ITEMS.	$80,500.00

NCDOH27002

JOHN HASSALL INC.

ENGINEERING REPORT
INDUSTRIAL WASTE TREATMENT

HOLZMACHER, McLENDON & MURRELL
CONSULTING ENGINEERS
500 BROAD HOLLOW ROAD
MELVILLE, L.I., N.Y., 11746
(516) MY 4-3040

SHEET TITLE
PROPOSED ABOVE GRADE TREATMENT PLANT

DRAWING NO. MI 67-11-3
SCALE AS SHOWN
DRAWN BY
CHECKED BY
REVIEWED BY
DATE JULY 21, 1968
SHEET 3 OF 4

NCDOH27003

JOHN HASSALL INC.

ENGINEERING REPORT
INDUSTRIAL WASTE TREATMENT

HOLZMACHER, McLENDON & MURRELL
CONSULTING ENGINEERS
500 BROAD HOLLOW ROAD
MELVILLE, L.I., N.Y., 11746
(516) MY 4-3040

SHEET TITLE
PROPOSED BELOW GRADE TREATMENT PLANT

DRAWING NO.	MI 67-11-4
SCALE	AS SHOWN
DRAWN BY	H.G.
CHECKED BY	
REVIEWED BY	
DATE	JULY 21, 1968
SHEET	4 OF 4

Soil and Groundwater Investigation Report
John Hassall, Inc.
Westbury, New York

April 1992

CA RICH CONSULTANTS, INC.
404 GLEN COVE AVENUE • SEA CLIFF, NY 11579 • (516) 674-3889

Soil and Groundwater Investigation Report
John Hassall, Inc.
Westbury, New York

April 1992

Prepared for:

John Hassall, Inc.
P.O. Box 698
Westbury, NY

Prepared by:

CA Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, New York 11579

SOIL AND GROUNDWATER INVESTIGATION

JOHN HASSALL, INC.
WESTBURY, NEW YORK

1.0 INTRODUCTION

1.1 General

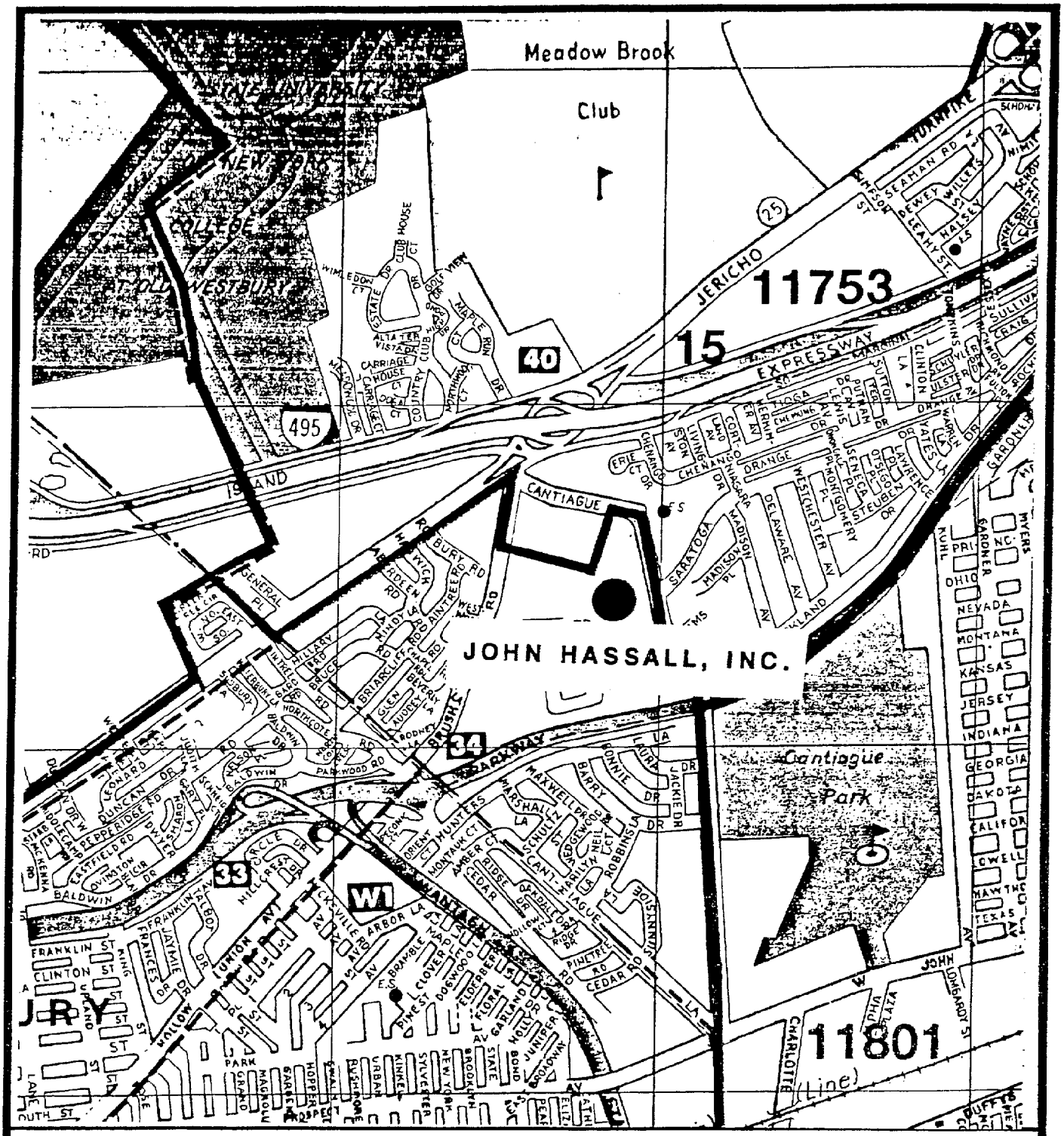
The following Soil and Groundwater Investigation Report has been prepared for John Hassall, Inc. by CA Rich Consultants, Inc. (CA RICH). The John Hassall facility is located at Cantiague Rock Road, Westbury, NY as shown on Figure 1. This report summarizes the field investigative procedures and sampling results of a Nassau County Department of Health (NCDH) approved field program, which included:

- installation of one (1) groundwater monitoring well
- collection and analysis of five (5) soil boring samples
- collection and analysis of one (1) groundwater sample

All work was performed in accordance with our approved work plan for this investigation dated December 18, 1991.

1.2 Purpose

The purpose of this investigation was to identify the vertical and horizontal extent of suspected contamination originating from an area that formerly contained eleven (11) underground storage tanks (USTs). This investigation was also in direct response to the NCDH request that a monitoring well be installed at the John Hassall facility having a screen depth that intercepts and straddles the groundwater table surface.



LOCATION MAP: JOHN HASSALL, INC.

CA RICH CONSULTANTS, INC. Certified Ground-Water and Environmental Specialists	John Hassall, Inc. Westbury, New York	
	Prepared By: STS	Date: April 1992
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: EAW	Figure: 1

1.3 Background

In 1991, the area that contained the USTs was excavated and all of the tanks were removed. During the removal process, soil was removed from an area approximately 50 feet by 50 feet and to depth of approximately 25 feet. The excavation was lined with an industrial plastic liner and backfilled to grade with clean soil. After the excavation and backfilling procedures were completed, a 4-inch diameter PVC monitoring well, designated MW-1, was installed adjacent to the former tank area with a final completion depth of approximately 135 feet below grade. This well is reported to be screened from 105 feet to 135 feet below land surface.

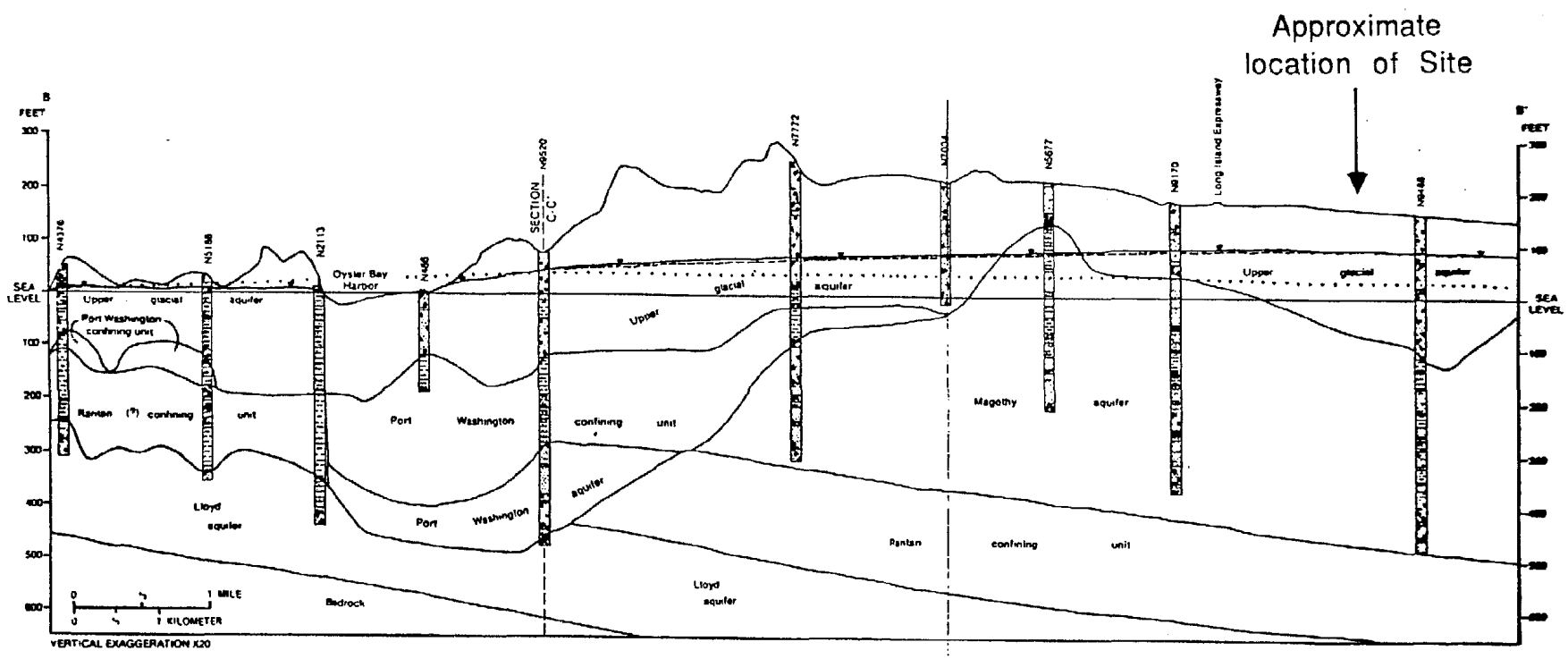
Subsequent measurements of the depth to water in MW-1 indicated that the well screen was installed below the measured water table surface of 81.23 feet above mean sea level (MSL) or approximately 75.5 feet below grade. The Nassau County Department of Health (NCDH) has since requested that an additional monitoring well be installed in the area of the former USTs with well a screen that intercepts and straddles the water table surface.

A hydrogeologic cross-section representative of the area surrounding the John Hassall facility is included in Figure 2. As reported by the U.S.G.S., the Upper Glacial Formation underlies the John Hassall facility to a depth of approximately 200 feet. The Upper Glacial Formation is followed in turn by the Magothy Formation, the Raritan Clay, the Lloyd Sand and bedrock.

2.0 FIELD ACTIVITIES

2.1 General

The field sampling program performed at the John Hassall facility began on March 2, 1992 and all field activities were overseen by Mr. Peter Paul, a field representative of NCDH. Initial field activities consisted of the drilling and installation of a 2-inch PVC monitoring well. The monitoring well was located as close as possible to the former tank area based upon existing site accessibility. Figure 3 is a schematic representation of the former excavation area and monitoring well locations.

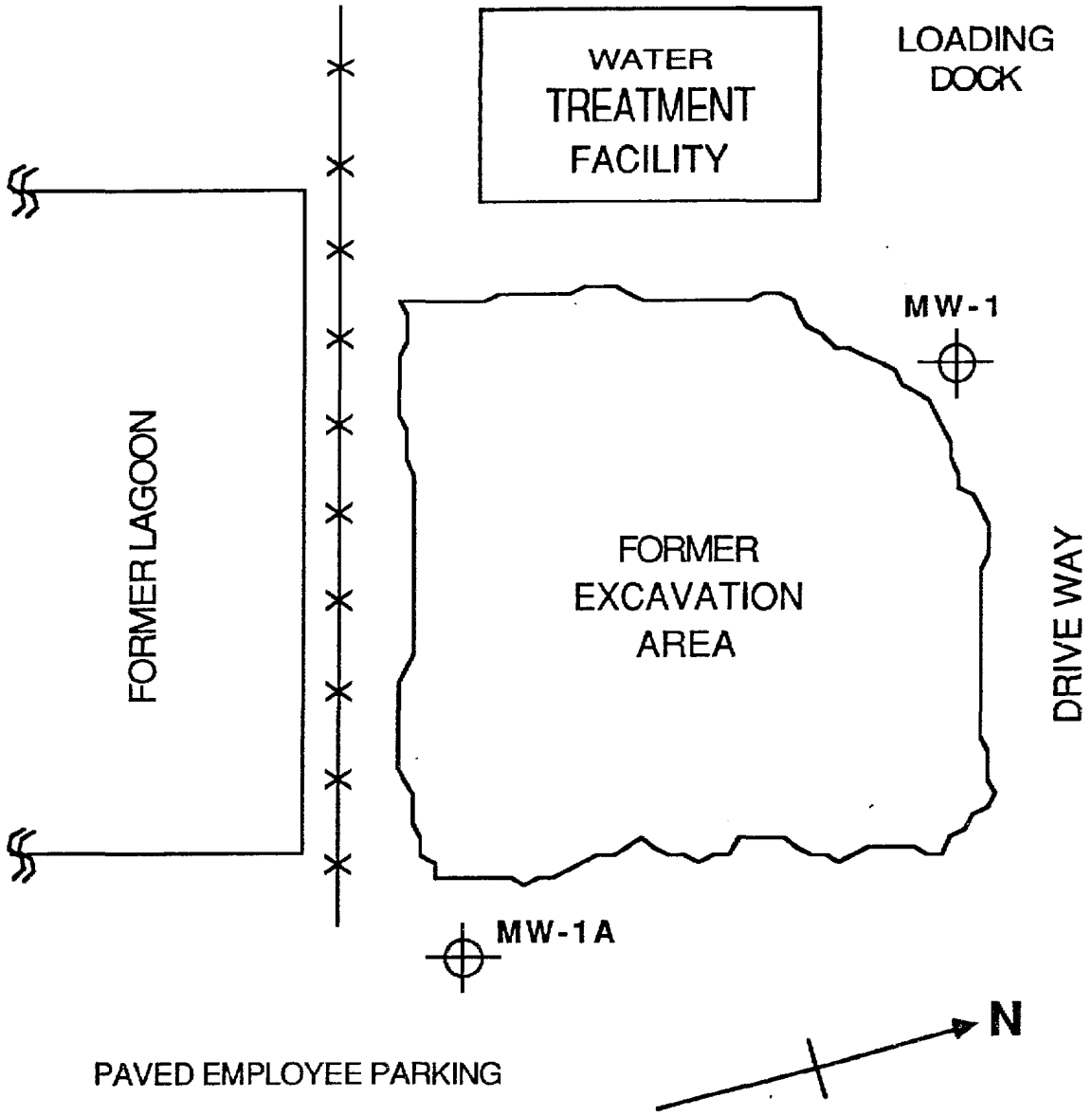


Kilburn & Krulikas (1987)

REPRESENTATIVE HYDROGEOLOGICAL CROSS-SECTION

CA RICH CONSULTANTS, INC Certified Ground-Water and Environmental Specialists	John Hassall, Inc. Westbury, NY	
	Prepared By: RH	Date: December 1991
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: EAW	Figure: 2

NCDOH27010



EXCAVATION AREA AND MONITORING WELL LOCATION MAP

CA RICH CONSULTANTS, INC. Certified Ground-Water and Environmental Specialists	John Hassall, Inc. Westbury, New York
	Prepared By: NBG — Date: April 1992
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: EAW — Figure: 3

The newly installed monitoring well is designated MW-1A, and has a total completion depth of 91.5 feet below land surface. A total of fourteen (14) split spoon soil samples were collected from the monitoring well boring, five (5) of which were submitted to Ecotest Laboratories, Inc. of North Babylon for chemical analysis. A groundwater sample was collected two (2) weeks after installation and development of MW-1A was completed.

2.2 Monitoring Well Installation

Drilling activities were performed by Land, Air, Water Environmental Services Inc. on March 2 and 3, 1992. Installation of MW-1A was performed using the dry hollow stem auger method of drilling. Monitoring well MW-1A was screened with a 2-inch diameter 20 slot (0.020 inch slotted) PVC screen and gravel packed with Morie No. 1 sand pack. The well casing was 2-inch diameter PVC pipe with a locking, flush-mounted, protective curb box. A complete well construction diagram is appended.

The well was developed on March 5, 1992 using a Brainard Killman hand activated pump. Approximately 40 gallons of water were removed from the well and contained in a 55 gallon steel drum. The well development water was treated by the John Hassall facility's wastewater treatment system.

2.3 Soil Sampling and Analysis

A total of fourteen (14) split spoon soil samples were collected during the drilling of MW-1A. Soil samples were collected continuously from 25 feet to 30 feet, and then every five (5) feet to a total depth of 87.5 feet below land surface. Upon opening each split spoon sample, the soil was visually inspected for evidence of contamination and geologic characterization. An undisturbed soil sample was then placed into laboratory issued sample jars and into air tight zip-lock bags. Care was taken not to disturb the sample thus keeping volatilization of the soil to a minimum. The soil sample contained in the zip-lock bag was slightly heated prior to performing head space analysis.

Head space analysis is a field technique used to screen soil samples for volatile organic constituents. Soil screening was performed using an HNU Systems Photoionization Detector (HNU) and a Foxboro Model 128 Organic Vapor Analyzer (OVA). The observed meter detections were all less than 3.0 parts per million (ppm) and are recorded on the appended boring log.

A total of five (5) soil samples were selected for the following chemical analysis: volatile organics (method 8240, GC/MS), semi-volatile organics (method 8270, GC/MS), total RCRA metals plus nickel (EPA SW-846). All samples were placed in a cooler under chain-of-custody documentation, accompanied with ice packs and a volatile organics trip blank.

2.4 Groundwater Sampling and Analysis

A period of two (2) weeks after development was allowed for well equilibration prior to collection of a groundwater sample from MW-1A. On March 19, 1992, CA RICH personnel met with Mr. Peter Paul of NCDH to sample MW-1A. The static water level of MW-1A was measured prior to purging the well to derive the well's volume, which was calculated to be 2.5 gallons. A total of 10 gallons of water were removed from the well and placed into a 55 gallon drum prior to collection of the groundwater sample. Specific conductance, temperature and pH measurements were recorded upon removal of each well volume and are presented on Table 2. The purged water was also treated by the Facility's wastewater treatment system.

The groundwater sample was collected using a pre-cleaned, stainless steel bailer and placed into laboratory issued sample jars. A split groundwater sample was collected by NCDH and tested for volatile organics.

The groundwater sample was submitted to Ecotest Laboratories, Inc. for the following chemical analysis: volatile organics (method 624, GC/MS), semi-volatile organics (method 625, GC/MS), total RCRA metal plus nickel (EPA SW-846). The sample was placed in a cooler under chain-of-custody documentation, accompanied with ice packs and a volatile organics trip blank.

2.5 Measurement of Water Table Elevation

On March 27, 1992 the depth to water was measured in both MW-1 and MW-1A to the nearest 0.01 foot using an engraved, chalked steel tape. The elevations of the top of the monitoring well casings were surveyed to the nearest 0.01 foot (MSL, USGS datum) by Albert Tay, L.S. The water table elevation for existing well MW-1, screened from 135 to 105 feet below grade, was 81.23 feet above (MSL). The water table elevation for the newly installed well MW-1A, screened from 91.5 to 66.5 feet below grade, was calculated to be 81.24 feet. These measurements indicate that there is hydraulic communication between these two screened zones and that the vertical gradient is negligible. The elevation data is presented in the following tabulation:

Well No.	Elev. TOC (ft.)	Depth of GW(ft.)	Elev. GW(ft)	Elev. of Well Screens
MW-1	156.20	74.97	81.23	21.20 to 51.20
MW-1A	156.73	75.49	81.24	65.23 to 90.23

3.0 ANALYTICAL RESULTS

3.1 Soil Samples

Soil samples submitted for laboratory analysis were selected based upon field head space measurements, depth and geologic composition. A summary of the analytical detections in the soil samples is presented in Table 1.

The boring generally encountered fine to coarse Upper Glacial sand and gravel. A clayey zone, that could possibly retard contaminant migration, was encountered between 55 and 60 feet below grade. Soil samples were collected from one location above, one location within, and two locations below this clayey horizon. Four of these samples were collected above the water table surface and one within the screened area of the well.

Results of the volatile organic analysis indicate the presence of 111 trichloroethane (TCA) at a concentration of 2 parts per billion (ppb) in soil sample MW-1A(70-72.5). This detected concentration is well below the draft NYSDEC guidance value of 7,000,000 ppb. No other volatile organic constituents were detected in soil samples submitted for analysis.

Results of the semi-volatile organic analysis indicate the presence of Bis(2-Ethylhexyl) Phthalate, a common plasticizer used in the construction of labware, in all soil samples collected at concentrations ranging from 80 to 220 ppb. The observed concentrations of Bis(2-Ethylhexyl) Phthalate are well below the draft NYSDEC guidance value of 50,000 ppb.

Results of the inorganic total metals analysis indicate low levels of arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and nickel. All reported detections are at least one order of magnitude less than NYSDEC guidance values.

3.2 Groundwater Sample

A summary of the analytical detections in the groundwater sample collected from MW-1A is presented in Table 2.

Results of the volatile organic analysis indicate the presence of 11 dichloroethane (DCA) at a concentration of 9 ppb, 111 trichloroethane (TCA) at a concentration of 12 ppb and trichloroethene (TCE) at a concentration of 1 ppb. Observed concentrations of TCA and DCA are slightly higher than NYSDEC-T.O.G.S. Ambient Water Quality Standards and NYSDOH Principal Organic Contaminant (POC) Maximum Contaminant Level (MCL), which are 5 ppb for both of these compounds. The TCE detection was below the MCLs. No other volatile organic constituents were detected in the groundwater sample collected.

Results of the semi-volatile organic analysis did not indicate the presence of semi-volatile organic constituents in the groundwater sample collected.

Results of the inorganic total metals analysis indicate low levels of arsenic, barium, chromium, lead, mercury and nickel. All reported detections are less than NYSDEC Ambient Water Quality Standards and NYSDOH Primary Contaminant MCLs with the exceptions of lead and chromium. Lead was detected at 0.050 parts per million (ppm), and has a corresponding NYSDEC standard of 0.025 ppm. Chromium was detected at 0.05 ppm and has a corresponding NYSDEC standard of 0.05 ppm. It is important to note that the water sample was unfiltered and quite turbid.

4.0 DISCUSSION AND RECOMMENDATIONS

In response to NCDH's request, monitoring well MW-1A was screened from 66.5 feet to 91.5 feet below land surface, thus intercepting the water table interface which was measured to be at 75.49 feet below grade. Simultaneous groundwater elevations measured in monitoring wells MW-1 and MW-1A indicate a negligible vertical groundwater gradient.

The analytical detections in the soil samples tested are well below any applicable draft NYSDEC clean-up guidance values. Although inorganic analytical detections were relatively more frequent and higher at the depths of 25 and 57 feet when compared to the deeper samples, the reported detections were all significantly below applicable draft NYSDEC clean-up guidance values. In this case, these detections support the rationale that higher detections would be found nearest the apparent source - the former tanks - and in the 55 to 60 foot clayey zone. The sands below the clayey zone contained lower inorganic concentrations as shown in the 70 and 80 foot samples.

Trichloroethene was detected in groundwater at a concentration of 1 ppb and is below NYSDOH MCL and NYSDEC T.O.G.S value of 5 ppb. TCA was detected in groundwater at a concentration of 12 ppb, while DCA, a degradation by-product of TCA, was detected at 9 ppb. These values are both slightly higher than NYSDOH MCL and NYSDEC T.O.G.S value of 5 ppb. Inorganic metals analyses of the groundwater sample indicate the presence of total lead at a concentration of 0.050 ppm.

This reported concentration is above the NYSDEC T.O.G.S. for lead of 0.025 ppm. Inorganic metals analyses also indicate the presence of total chromium at a concentration of 0.05 ppm. This reported concentration is equal to the NYSDEC T.O.G.S. for chromium of 0.05 ppm. All other inorganic detections were below NYSDOH MCL and NYSDEC T.O.G.S values.

CA RICH recommends that a second confirmatory groundwater sample be collected from MW-1A. Analytical parameters should be the same as the initial sample round, with the exception that a dissolved metals sample also be collected. If the second sampling round results in elevated detections of the organic and inorganic constituents identified in this investigation, CA RICH recommends that two to three additional observation wells be installed at the John Hassall facility. This will; 1) assist in identifying the localized groundwater flow direction beneath the John Hassall facility; and 2) provide the necessary information to design an appropriate groundwater monitoring program.

If you have any questions or matters that need further clarification, please do not hesitate to contact our office.

Respectfully submitted,

CA RICH CONSULTANTS, INC.

Steven Sobstyl (mg)
Steven T. Sobstyl
Environmental Scientist

Eric Weinstock (mg)
Eric A. Weinstock
Sr. Hydrogeologist, Project Manager

STS/EAW:mg
Attachments

cc: Tim Mulvihill

TABLE 1

SUMMARY OF ANALYTICAL DETECTIONS IN SOIL
John Hassall, Inc.
Westbury, New York.

Boring Depth(ft) Date Units Parameter	MW-1A (25-27.5) 3/2/92 ug/Kg	MW-1A (50-52.5) 3/2/92 ug/Kg	MW-1A (57.5-60) 3/2/92 ug/Kg	MW-1A (70-72.5) 3/2/92 ug/Kg	MW-1A (80-82.5) 3/3/92 ug/Kg	Trip Blank N/A 3/3/92 ug/L	NYSDEC Clean-up Guidance Values* ug/Kg
VOLATILE ORGANICS							
1,1,1-Trichloroethane	ND	ND	ND	2	ND	ND	7,000,000
SEMIVOLATILE ORGANICS							
Bis(2-Ethylhexyl) Phthalate	160	220	80	90	90	NT	50,000
INORGANIC METALS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		mg/Kg
Total							
Arsenic	0.84	1.3	4.0	0.75	0.65	NT	80
Barium	6.80	2.3	5.4	2.3	1.5	NT	4000
Cadmium	0.010	<0.01	<0.01	<0.01	<0.01	NT	80
Chromium	16	3.6	4.3	3.6	2.2	NT	400**
Lead	8.5	1.3	3.1	1.2	0.70	NT	250
Mercury	<0.005	<0.005	0.013	<0.005	<0.005	NT	20
Selenium	<0.05	<0.05	0.083	<0.05	<0.05	NT	No Value
Silver	0.08	<0.05	0.05	<0.05	<0.05	NT	200
Nickel	1.5	1.5	2.2	1.6	<0.50	NT	2000

ND = Indicates Not Detected
NT = Indicates Not Tested
* = These values where obtained from NYSDEC docuement "Draft Cleanup Policy and Guidelines", Volume II-Appendix C, October 1991 and are not to be considered as a promulgated standard.
** = Value for Chromium as hexavalent Chromium (Chromium (IV)).

NCDOH27018

TABLE 2

SUMMARY OF ANALYTICAL DETECTIONS IN GROUNDWATER
John Hassall, Inc.
Westbury, New York

Parameters / Well ID / Date	MW-1A 3/19/92	*NYSDOH MCL Value	**NYSDEC T.O.G.S	Trip Blank 3/19/92
Units	ug/L	ug/L	ug/L	ug/L
Volatile Organics				
1,1-Dichlorethane	9	5.0	5.0	ND
1,1,1,-Trichloroethane	12	5.0	5.0	ND
Trichloroethene	1	5.0	5.0	ND
Semi-Volatile Organics	ND	ND	ND	NT
Units	mg/L	mg/L	mg/L	mg/L
Metals (Totals)				
Arsenic	0.003	0.05	0.025	NT
Barium	0.50	1.0	1.0	NT
Chromium	0.05	0.05	0.05	NT
Lead	0.050	0.05	0.025	NT
Mercury	0.00028	0.002	0.002	NT
Nickel	0.11	No Value	No Value	NT

Field Data
MW-1A

	Purge Vol. 2.5 gals.	Purge Vol. 5 gals.	Purge Vol. 7.5 gals.	Purge Vol. 10 gals.
pH	5.88	5.48	5.5	5.5
Temperature	11°C	12°C	13°C	13°C
Specific Conductance	220	250	250	250

*NYSDOH - New York State Department of Health maximum contamination levels as per Chapter 1 State Sanitary Code, Part 5, Drinking Water Supplies (Statutory Authority: Public Health Law 225),Subpart 5-1, November 28, 1988.

**NYSDEC - New York State Department of Environmental Conservation values as per Division of Water Technical and Operational Guidance Series (1.1.1.), AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES, September 25, 1990

NT - Not Tested

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-2-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

Inspector *STS* Organic Vapor Instruments *OVA* Page *1 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
						Asphalt-Fill, Dark brown silty sand and gravel.		9:30 AM
2						Light brown-Tan, Coarse sand and gravel.		No Visual Staining No Odor
5						Drill without split spoon sampling to 25'below grade.		
10						Light brown-tan, Coarse sand and gravels, some large cobbles.		
20								
25	1	13,18, 19,27	25 to 27.5	30"/20"	0.3	Tan-rust, coarse sand and gravel-broken white (quartz) sand.		No Visual Staining No Odor
27	2	7,10, 11,14,15	27.5 to 30	30"/16"		Tan-rust, coarse sand and gravel w/white fine sand and quartz.		
30								
35	3	5,7, 10,11,10	35 to 37.5	30"/16"	0.2	Tan-rust, coarse sand w/white fine sands and quartz.		
37								
40	4	7,9, 15,17,22	40 to 42.5	30"/15"	0.0	Tan-rust, coarse sand w/white fine sands and quartz.		
42								
45								

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-2-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

Inspector *STS* Organic Vapor Instruments *OVA* Page *2 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
45	5	8,11, 16,29,27	45 to 47.5	30"/18"	0.2	White-tan, coarse sand w/small quartz pebbles.		11:30 AM No Odor No visual Staining
47								
50	6	8,15, 21,22,23	50 to 52.5	30"/17"	0.2	(50-51)White-tan, coarse sand w/small quartz pebbles.		
52.5						(51-52.5) Very fine white sand w/reddish bands of fine sand.		
55	7	6,14, 15,15,17	55 to 57.5	30"/30"	0.2	Very fine red sand, w/very fine white sand (lenses), 5-10% red silty clay.		Lenses appear to be native organic deposits
57	8	8,9, 14,15,28	57.5 to 60	30"/28"	3.0	Very fine red silty clayey sand w/bands of dark brown black organic lenses.		No Odor No visual Staining
60	9	6,20, 25,29,32	60 to 62.5	30"/28"	0.0	(60-61.5) Very fine red silty clayey sand w/bands of dark brown-black organic lensess.		
62						(61.5-62.5) White fine-medium sand.		
65	10	17,23, 32,26,27	65 to 6.5	30"/28"	0.0	Medium-coarse white sand		
67								
70	11	7,8, 34,37,34	70 to 72.5	30"/26"	0.0	Medium-coarse, white-tanish sand w/pebbles and white small pebbles		
72								
74						Lost down hole Hammer at 75-77.5		
75								

CA RICH CONSULTANTS, INC.

Project *John Hassall* Location *Westbury, NY* Boring Number *MW-1A*

Date Drilled *3-3-92* Drilling Company *Land Air & Water* Water Table Depth *75.49 (T.O.C.)*

Total Depth *91.5 feet* Method Used *Hollow Stem Auger*

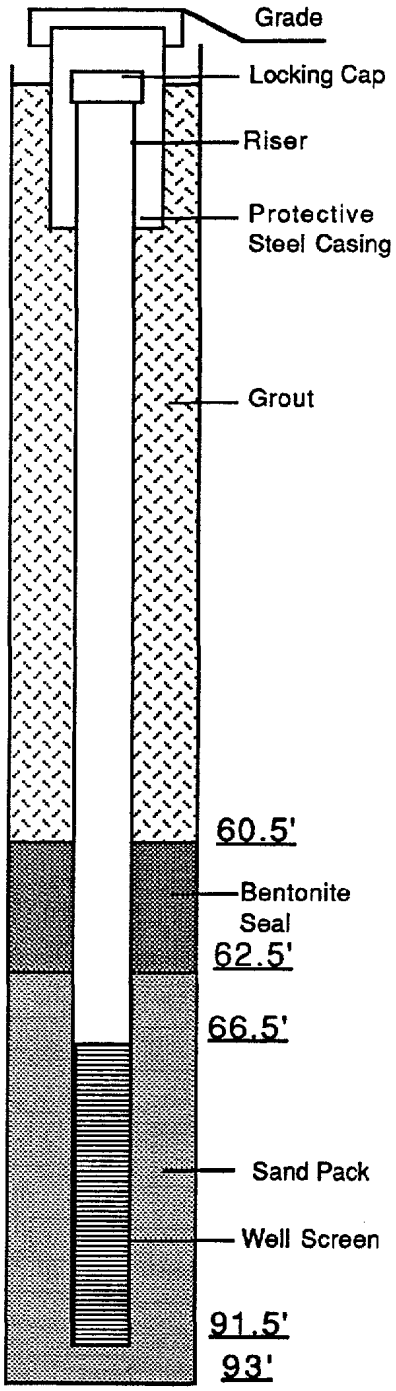
Inspector *STS* Organic Vapor Instruments *OVA* Page *3 of 3*

Depth (feet)	Sample Number	Blows/6" 140 lbs.	Sample Interval	Adv./ Recov.	Organic Vapor PPM	Sample Description	Strata	Comments
75	12	14, 27, 43, 49, 67	75 to 77.5	30"/27"	0.0	Light-tan, fine sand w/medium white sands.		9:15 AM Tip of spoon moist Water at appr. 76.8'
77								
80	13	4,9, 12,27,48	80 to 82.5	30"/30"	0.0	Light-tan, fine-medium grained sand.		
82								
85	14	8,17, 23,27,59	85 to 87.5	30"/30"	0.0	Tan, medium-coarse sand w/some small pebbles.		Final Sample
87								End boring 91.5'

CA RICH CONSULTANTS, INC.
Certified Ground-Water and Environmental Specialists

WELL CONSTRUCTION SUMMARY

Project: *J. Hassall* Client: *J. Hassall* Well ID: *MW-1A*



DRILLING SUMMARY

Drilling Co: *L. A. W.* Drillers: *Carl Pederson*
Drill Rig Make/Model: *Mobile B-61*
Borehole Diameters: *4"* Drilling Fluid: *None*
Bits/Depths: *5'*
Total Depth: *93'* Depth to Water: *75.31' (T.O.C.)*
Supervisory Geologist: *STS*

WELL DESIGN

Casing Material: *PVC* Diameter: *2"* Length: *66.5'*
Screen Material: *PVC* Diameter: *2"* Length: *25'*
Slot Size: *10* Setting: *91.5-66.5*
Filter Material: *MORIE #1* Setting: *91.5-62.5*
Seals Material: *Bentonite* Setting: *62.5-60.5*
Grout: *Cement (Portland)* Setting: *60.5-1.5*
Surface Casing Material: *Steel* Setting: *Flush*

TIME LOG

	Started	Completed
Drilling:	*3-2-92*	*3-3-92*
Installation:	*3-3-92*	*3-3-92*
Development:	*3-5-92*	*3-5-92*

WELL DEVELOPMENT

Method: *Brainard Killman Hand Pump*
Static Depth to Water: *75.31(T.O.C.)*
Pumping Depth to Water: *N/A*
Pumping Rate: *1GPM* Specific Capacity: *N/A*
Volume Pumped: *40 Gals*

APPENDICES

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C921017/1 04/06/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Erick Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/19/92 RECEIVED:03/20/92

SAMPLE: Water sample, MW-1A

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Bromomethane	ug/L	<1
Chloroethane	ug/L	<1
Trichlorofluomethane	ug/L	<1
11 Dichloroethene	ug/L	<1
Methylene Chloride	ug/L	<1
t-1,2-Dichloroethene	ug/L	<1
11 Dichloroethane	ug/L	9
Chloroform	ug/L	<1
111 Trichloroethane	ug/L	12
Carbon Tetrachloride	ug/L	<1
Benzene	ug/L	<1
12 Dichloroethane	ug/L	<1
Trichloroethene	ug/L	1
12 Dichloropropane	ug/L	<1
Bromodichloromethane	ug/L	<1
2chloroethvinylether	ug/L	<1
t 13 Dichloropropene	ug/L	<1
Toluene	ug/L	<1
c 13 Dichloropropene	ug/L	<1
112 Trichloroethane	ug/L	<1
Tetrachloroethene	ug/L	<1
Chlorodibromomethane	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
m + p Xylene	ug/L	<2
o Xylene	ug/L	<1
Bromoform	ug/L	<1
1122Tetrachloroethan	ug/L	<1
m Dichlorobenzene	ug/L	<1
p Dichlorobenzene	ug/L	<1
o Dichlorobenzene	ug/L	<1

cc:

REMARKS: Analysis performed by EPA method 624.

DIRECTOR

rn= 4600 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C921017/1 04/06/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Erick Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/19/92 RECEIVED:03/20/92

SAMPLE: Water sample, MW-1A
UNITS: ug/L

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<1	1,2-Diphenylhydrazine	<1
Bis(2-chloroethyl)ether	<1	4-Bromophenyl phenyl ether	<1
13 Dichlorobenzene	<1	Hexachlorobenzene	<1
14 Dichlorobenzene	<1	Phenanthrene	<1
12 Dichlorobenzene	<1	Anthracene	<1
Bis(2-chloroisopropyl)ether	<1	Di-n-Butyl Phthalate	<1
N-Nitrosodi-n-propylamine	<1	Fluoranthene	<1
Hexachloroethane	<1	Benzidine	<10
Nitrobenzene	<1	Pyrene	<1
Isophorone	<1	BenzylButylPhthalate	<1
Bis(2-chloroethoxy)methane	<1	Benzo(a)anthracene	<1
124-Trichlorobenzene	<1	3,3'-Dichlorobenzidine	<1
Naphthalene	<1	Chrysene	<1
Hexachlorobutadiene	<1	Bis(2-ethylhexyl)phthalate	<1
Hexachlorocyclopentadiene	<1	Di-n-octyl Phthalate	<1
2-Chloronaphthalene	<1	Benzo(b)fluoranthene	<1
Dimethyl Phthalate	<1	Benzo(k)fluoranthene	<1
Acenaphthylene	<1	Benzo(a)pyrene	<1
2,6-Dinitrotoluene	<1	Indeno(1,2,3-cd)pyrene	<1
Acenaphthene	<1	Dibenzo(a,h)anthracene	<1
2,4-Dinitrotoluene	<1	Benzo(ghi)perylene	<1
Diethyl Phthalate	<1		
Fluorene	<1		
4-Chlorophenyl phenyl ether	<1		
N-Nitrosodiphenylamine	<1		

cc:

REMARKS:

DIRECTOR

rn= 4601 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C921017/1 04/06/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Erick Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/19/92 RECEIVED:03/20/92

SAMPLE: Water sample, MW-1A

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/L	0.003	
Barium as Ba	mg/L	0.50	
Cadmium as Cd	mg/L	<0.001	
Chromium as Cr	mg/L	0.05	
Lead as Pb	mg/L	0.050	
Mercury as Hg	mg/L	0.00028	
Selenium as Se	mg/L	<0.002	
Silver as Ag	mg/L	<0.01	
Nickel as Ni	mg/L	0.11	

cc:

REMARKS:

DIRECTOR

rn= 4602 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C921017/2 04/06/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Erick Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/10/92 RECEIVED:03/20/92

SAMPLE: Water sample, Trip Blank

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Bromomethane	ug/L	<1	o Xylene	ug/L	<1
Chloroethane	ug/L	<1	Bromoform	ug/L	<1
Trichlorofluomethane	ug/L	<1	1122Tetrachloroethan	ug/L	<1
11 Dichloroethene	ug/L	<1	m Dichlorobenzene	ug/L	<1
Methylene Chloride	ug/L	<1	p Dichlorobenzene	ug/L	<1
t-1,2-Dichloroethene	ug/L	<1	o Dichlorobenzene	ug/L	<1
11 Dichloroethane	ug/L	<1			
Chloroform	ug/L	<1			
111 Trichloroethane	ug/L	<1			
Carbon Tetrachloride	ug/L	<1			
Benzene	ug/L	<1			
12 Dichloroethane	ug/L	<1			
Trichloroethene	ug/L	<1			
12 Dichloropropane	ug/L	<1			
Bromodichloromethane	ug/L	<1			
2chloroethvinylether	ug/L	<1			
t 13 Dichloropropene	ug/L	<1			
Toluene	ug/L	<1			
c 13 Dichloropropene	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Tetrachloroethene	ug/L	<1			
Chlorodibromomethane	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS: Analysis performed by EPA method 624.

DIRECTOR

rn= 4603 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/6 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Water sample, TB-3/3

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Bromomethane	ug/L	<1	o Xylene	ug/L	<1
Chloroethane	ug/L	<1	Bromoform	ug/L	<1
Trichlorofluomethane	ug/L	<1	1122Tetrachloroethan	ug/L	<1
11 Dichloroethene	ug/L	<1	m Dichlorobenzene	ug/L	<1
Methylene Chloride	ug/L	<1	p Dichlorobenzene	ug/L	<1
t-1,2-Dichloroethene	ug/L	<1	o Dichlorobenzene	ug/L	<1
11 Dichloroethane	ug/L	<1			
Chloroform	ug/L	<1			
111 Trichloroethane	ug/L	<1			
Carbon Tetrachloride	ug/L	<1			
Benzene	ug/L	<1			
12 Dichloroethane	ug/L	<1			
Trichloroethene	ug/L	<1			
12 Dichloropropane	ug/L	<1			
Bromodichloromethane	ug/L	<1			
2chloroethvinylether	ug/L	<1			
t 13 Dichloropropene	ug/L	<1			
Toluene	ug/L	<1			
c 13 Dichloropropene	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Tetrachloroethene	ug/L	<1			
Chlorodibromomethane	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS: Analysis performed by EPA method 624.

DIRECTOR

rn= 3679 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/1 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (25-27 1/2), 10:40

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/Kg	0.84	
Barium as Ba	mg/Kg	6.8	
Cadmium as Cd	mg/Kg	0.010	
Chromium as Cr	mg/Kg	16	
Lead as Pb	mg/Kg	8.5	
Mercury as Hg	mg/Kg	<0.005	
Selenium as Se	mg/Kg	<0.05	
Silver as Ag	mg/Kg	0.08	
Nickel as Ni	mg/Kg	1.5	

cc:

REMARKS:

DIRECTOR

rn= 3664 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/1 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (25-27 1/2), 10:40

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<1	Ethyl Benzene	ug/Kg	<1
Vinyl Chloride	ug/Kg	<1	m + p Xylene	ug/Kg	<2
Bromomethane	ug/Kg	<1	o Xylene	ug/Kg	<1
Chloroethane	ug/Kg	<1	Bromoform	ug/Kg	<1
Trichlorofluomethane	ug/Kg	<1	1122Tetrachloroethan	ug/Kg	<1
11 Dichloroethene	ug/Kg	<1	m Dichlorobenzene	ug/Kg	<1
Methylene Chloride	ug/Kg	<1	p Dichlorobenzene	ug/Kg	<1
t-1,2-Dichloroethene	ug/Kg	<1	o Dichlorobenzene	ug/Kg	<1
11 Dichloroethane	ug/Kg	<1			
Chloroform	ug/Kg	<1			
111 Trichloroethane	ug/Kg	<1			
Carbon Tetrachloride	ug/Kg	<1			
Benzene	ug/Kg	<1			
12 Dichloroethane	ug/Kg	<1			
Trichloroethene	ug/Kg	<1			
12 Dichloropropane	ug/Kg	<1			
Bromodichloromethane	ug/Kg	<1			
2chloroethvinylether	ug/Kg	<1			
t 13 Dichloropropene	ug/Kg	<1			
Toluene	ug/Kg	<1			
c 13 Dichloropropene	ug/Kg	<1			
112 Trichloroethane	ug/Kg	<1			
Tetrachloroethene	ug/Kg	<1			
Chlorodibromomethane	ug/Kg	<1			
Chlorobenzene	ug/Kg	<1			

cc:

REMARKS: Analysis performed by EPA method 8240.

DIRECTOR_____

rn= 3665 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/1 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (25-27 1/2), 10:40
UNITS: ug/Kg

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<40	1,2-Diphenylhydrazine	<40
Bis(2-chloroethyl)ether	<40	4-Bromophenyl phenyl ether	<40
13 Dichlorobenzene	<40	Hexachlorobenzene	<40
14 Dichlorobenzene	<40	Phenanthrene	<40
12 Dichlorobenzene	<40	Anthracene	<40
Bis(2-chloroisopropyl)ether	<40	Di-n-Butyl Phthalate	<40
N-Nitrosodi-n-propylamine	<40	Fluoranthene	<40
Hexachloroethane	<40	Benzidine	<400
Nitrobenzene	<40	Pyrene	<40
Isophorone	<40	BenzylButylPhthalate	<40
Bis(2-chloroethoxy)methane	<40	Benzo(a)anthracene	<40
124-Trichlorobenzene	<40	3,3'-Dichlorobenzidine	<40
Naphthalene	<40	Chrysene	<40
Hexachlorobutadiene	<40	Bis(2-ethylhexyl)phthalate	160
Hexachlorocyclopentadiene	<40	Di-n-octyl Phthalate	<40
2-Chloronaphthalene	<40	Benzo(b)fluoranthene	<40
Dimethyl Phthalate	<40	Benzo(k)fluoranthene	<40
Acenaphthylene	<40	Benzo(a)pyrene	<40
2,6-Dinitrotoluene	<40	Indeno(1,2,3-cd)pyrene	<40
Acenaphthene	<40	Dibenzo(a,h)anthracene	<40
2,4-Dinitrotoluene	<40	Benzo(ghi)perylene	<40
Diethyl Phthalate	<40		
Fluorene	<40		
4-Chlorophenyl phenyl ether	<40		
N-Nitrosodiphenylamine	<40		

cc:

REMARKS:

DIRECTOR

rn= 3666 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/2 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (50-52 1/2), 11:30

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/Kg	1.3	
Barium as Ba	mg/Kg	2.3	
Cadmium as Cd	mg/Kg	<0.01	
Chromium as Cr	mg/Kg	3.6	
Lead as Pb	mg/Kg	1.3	
Mercury as Hg	mg/Kg	<0.005	
Selenium as Se	mg/Kg	<0.05	
Silver as Ag	mg/Kg	<0.05	
Nickel as Ni	mg/Kg	1.5	

cc:

REMARKS:

DIRECTOR_____

rn= 3667 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/2 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (50-52 1/2), 11:30

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<1	Ethyl Benzene	ug/Kg	<1
Vinyl Chloride	ug/Kg	<1	m + p Xylene	ug/Kg	<2
Bromomethane	ug/Kg	<1	o Xylene	ug/Kg	<1
Chloroethane	ug/Kg	<1	Bromoform	ug/Kg	<1
Trichlorofluomethane	ug/Kg	<1	1122Tetrachloroethan	ug/Kg	<1
11 Dichloroethene	ug/Kg	<1	m Dichlorobenzene	ug/Kg	<1
Methylene Chloride	ug/Kg	<1	p Dichlorobenzene	ug/Kg	<1
t-1,2-Dichloroethene	ug/Kg	<1	o Dichlorobenzene	ug/Kg	<1
11 Dichloroethane	ug/Kg	<1			
Chloroform	ug/Kg	<1			
111 Trichloroethane	ug/Kg	<1			
Carbon Tetrachloride	ug/Kg	<1			
Benzene	ug/Kg	<1			
12 Dichloroethane	ug/Kg	<1			
Trichloroethene	ug/Kg	<1			
12 Dichloropropane	ug/Kg	<1			
Bromodichloromethane	ug/Kg	<1			
2chloroethvinylether	ug/Kg	<1			
t 13 Dichloropropene	ug/Kg	<1			
Toluene	ug/Kg	<1			
c 13 Dichloropropene	ug/Kg	<1			
112 Trichloroethane	ug/Kg	<1			
Tetrachloroethene	ug/Kg	<1			
Chlorodibromomethane	ug/Kg	<1			
Chlorobenzene	ug/Kg	<1			

cc:

REMARKS: Analysis performed by EPA method 8240.

DIRECTOR_____

rn= 3668 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/2 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (50-52 1/2), 11:30
UNITS: ug/Kg

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<40	1,2-Diphenylhydrazine	<40
Bis(2-chloroethyl)ether	<40	4-Bromophenyl phenyl ether	<40
13 Dichlorobenzene	<40	Hexachlorobenzene	<40
14 Dichlorobenzene	<40	Phenanthrene	<40
12 Dichlorobenzene	<40	Anthracene	<40
Bis(2-chloroisopropyl)ether	<40	Di-n-Butyl Phthalate	<40
N-Nitrosodi-n-propylamine	<40	Fluoranthene	<40
Hexachloroethane	<40	Benzidine	<400
Nitrobenzene	<40	Pyrene	<40
Isophorone	<40	BenzylButylPhthalate	<40
Bis(2-chloroethoxy)methane	<40	Benzo(a)anthracene	<40
124-Trichlorobenzene	<40	3,3'-Dichlorobenzidine	<40
Naphthalene	<40	Chrysene	<40
Hexachlorobutadiene	<40	Bis(2-ethylhexyl)phthalate	220
Hexachlorocyclopentadiene	<40	Di-n-octyl Phthalate	<40
2-Chloronaphthalene	<40	Benzo(b)fluoranthene	<40
Dimethyl Phthalate	<40	Benzo(k)fluoranthene	<40
Acenaphthylene	<40	Benzo(a)pyrene	<40
2,6-Dinitrotoluene	<40	Indeno(1,2,3-cd)pyrene	<40
Acenaphthene	<40	Dibenzo(a,h)anthracene	<40
2,4-Dinitrotoluene	<40	Benzo(ghi)perylene	<40
Diethyl Phthalate	<40		
Fluorene	<40		
4-Chlorophenyl phenyl ether	<40		
N-Nitrosodiphenylamine	<40		

cc:

REMARKS:

DIRECTOR_____

rn= 3669 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/3 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (57 1/2-60), 12:55

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/Kg	4.0	
Barium as Ba	mg/Kg	5.4	
Cadmium as Cd	mg/Kg	<0.01	
Chromium as Cr	mg/Kg	4.3	
Lead as Pb	mg/Kg	3.1	
Mercury as Hg	mg/Kg	0.013	
Selenium as Se	mg/Kg	0.083	
Silver as Ag	mg/Kg	0.05	
Nickel as Ni	mg/Kg	2.2	

cc:

REMARKS:

DIRECTOR

rn= 3670 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/3 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (57 1/2-60), 12:55

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<1	Ethyl Benzene	ug/Kg	<1
Vinyl Chloride	ug/Kg	<1	m + p Xylene	ug/Kg	<2
Bromomethane	ug/Kg	<1	o Xylene	ug/Kg	<1
Chloroethane	ug/Kg	<1	Bromoform	ug/Kg	<1
Trichlorofluomethane	ug/Kg	<1	1122Tetrachloroethan	ug/Kg	<1
11 Dichloroethene	ug/Kg	<1	m Dichlorobenzene	ug/Kg	<1
Methylene Chloride	ug/Kg	<1	p Dichlorobenzene	ug/Kg	<1
t-1,2-Dichloroethene	ug/Kg	<1	o Dichlorobenzene	ug/Kg	<1
11 Dichloroethane	ug/Kg	<1			
Chloroform	ug/Kg	<1			
111 Trichloroethane	ug/Kg	<1			
Carbon Tetrachloride	ug/Kg	<1			
Benzene	ug/Kg	<1			
12 Dichloroethane	ug/Kg	<1			
Trichloroethene	ug/Kg	<1			
12 Dichloropropane	ug/Kg	<1			
Bromodichloromethane	ug/Kg	<1			
2chloroethvinylether	ug/Kg	<1			
t 13 Dichloropropene	ug/Kg	<1			
Toluene	ug/Kg	<1			
c 13 Dichloropropene	ug/Kg	<1			
112 Trichloroethane	ug/Kg	<1			
Tetrachloroethene	ug/Kg	<1			
Chlorodibromomethane	ug/Kg	<1			
Chlorobenzene	ug/Kg	<1			

cc:

REMARKS: Analysis performed by EPA method 8240.

DIRECTOR_____

rn= 3671 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/3 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (57 1/2-60), 12:55
UNITS: ug/Kg

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<40	1,2-Diphenylhydrazine	<40
Bis(2-chloroethyl)ether	<40	4-Bromophenyl phenyl ether	<40
13 Dichlorobenzene	<40	Hexachlorobenzene	<40
14 Dichlorobenzene	<40	Phenanthrene	<40
12 Dichlorobenzene	<40	Anthracene	<40
Bis(2-chloroisopropyl)ether	<40	Di-n-Butyl Phthalate	<40
N-Nitrosodi-n-propylamine	<40	Fluoranthene	<40
Hexachloroethane	<40	Benzidine	<400
Nitrobenzene	<40	Pyrene	<40
Isophorone	<40	BenzylButylPhthalate	<40
Bis(2-chloroethoxy)methane	<40	Benzo(a)anthracene	<40
124-Trichlorobenzene	<40	3,3'-Dichlorobenzidine	<40
Naphthalene	<40	Chrysene	<40
Hexachlorobutadiene	<40	Bis(2-ethylhexyl)phthalate	80
Hexachlorocyclopentadiene	<40	Di-n-octyl Phthalate	<40
2-Chloronaphthalene	<40	Benzo(b)fluoranthene	<40
Dimethyl Phthalate	<40	Benzo(k)fluoranthene	<40
Acenaphthylene	<40	Benzo(a)pyrene	<40
2,6-Dinitrotoluene	<40	Indeno(1,2,3-cd)pyrene	<40
Acenaphthene	<40	Dibenzo(a,h)anthracene	<40
2,4-Dinitrotoluene	<40	Benzo(ghi)perylene	<40
Diethyl Phthalate	<40		
Fluorene	<40		
4-Chlorophenyl phenyl ether	<40		
N-Nitrosodiphenylamine	<40		

cc:

REMARKS:

DIRECTOR_____

rn= 3672 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/4 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (70-72 1/2), 13:15

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/Kg	0.75	
Barium as Ba	mg/Kg	2.3	
Cadmium as Cd	mg/Kg	<0.01	
Chromium as Cr	mg/Kg	3.6	
Lead as Pb	mg/Kg	1.2	
Mercury as Hg	mg/Kg	<0.005	
Selenium as Se	mg/Kg	<0.05	
Silver as Ag	mg/Kg	<0.05	
Nickel as Ni	mg/Kg	1.6	

cc:

REMARKS:

DIRECTOR

rn= 3673 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/4 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (70-72 1/2), 13:15

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<1	Ethyl Benzene	ug/Kg	<1
Vinyl Chloride	ug/Kg	<1	m + p Xylene	ug/Kg	<2
Bromomethane	ug/Kg	<1	o Xylene	ug/Kg	<1
Chloroethane	ug/Kg	<1	Bromoform	ug/Kg	<1
Trichlorofluomethane	ug/Kg	<1	1122Tetrachloroethan	ug/Kg	<1
11 Dichloroethene	ug/Kg	<1	m Dichlorobenzene	ug/Kg	<1
Methylene Chloride	ug/Kg	<1	p Dichlorobenzene	ug/Kg	<1
t-1,2-Dichloroethene	ug/Kg	<1	o Dichlorobenzene	ug/Kg	<1
11 Dichloroethane	ug/Kg	<1			
Chloroform	ug/Kg	<1			
111 Trichloroethane	ug/Kg	2			
Carbon Tetrachloride	ug/Kg	<1			
Benzene	ug/Kg	<1			
12 Dichloroethane	ug/Kg	<1			
Trichloroethene	ug/Kg	<1			
12 Dichloropropane	ug/Kg	<1			
Bromodichloromethane	ug/Kg	<1			
2chloroethvinylether	ug/Kg	<1			
t 13 Dichloropropene	ug/Kg	<1			
Toluene	ug/Kg	<1			
c 13 Dichloropropene	ug/Kg	<1			
112 Trichloroethane	ug/Kg	<1			
Tetrachloroethene	ug/Kg	<1			
Chlorodibromomethane	ug/Kg	<1			
Chlorobenzene	ug/Kg	<1			

cc:

REMARKS: Analysis performed by EPA method 8240.

DIRECTOR_____

rn= 3674 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/4 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (70-72 1/2), 13:15
UNITS: ug/Kg

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<40	1,2-Diphenylhydrazine	<40
Bis(2-chloroethyl)ether	<40	4-Bromophenyl phenyl ether	<40
13 Dichlorobenzene	<40	Hexachlorobenzene	<40
14 Dichlorobenzene	<40	Phenanthrene	<40
12 Dichlorobenzene	<40	Anthracene	<40
Bis(2-chloroisopropyl)ether	<40	Di-n-Butyl Phthalate	<40
N-Nitrosodi-n-propylamine	<40	Fluoranthene	<40
Hexachloroethane	<40	Benzidine	<400
Nitrobenzene	<40	Pyrene	<40
Isophorone	<40	BenzylButylPhthalate	<40
Bis(2-chloroethoxy)methane	<40	Benzo(a)anthracene	<40
124-Trichlorobenzene	<40	3,3'-Dichlorobenzidine	<40
Naphthalene	<40	Chrysene	<40
Hexachlorobutadiene	<40	Bis(2-ethylhexyl)phthalate	90
Hexachlorocyclopentadiene	<40	Di-n-octyl Phthalate	<40
2-Chloronaphthalene	<40	Benzo(b)fluoranthene	<40
Dimethyl Phthalate	<40	Benzo(k)fluoranthene	<40
Acenaphthylene	<40	Benzo(a)pyrene	<40
2,6-Dinitrotoluene	<40	Indeno(1,2,3-cd)pyrene	<40
Acenaphthene	<40	Dibenzo(a,h)anthracene	<40
2,4-Dinitrotoluene	<40	Benzo(ghi)perylene	<40
Diethyl Phthalate	<40		
Fluorene	<40		
4-Chlorophenyl phenyl ether	<40		
N-Nitrosodiphenylamine	<40		

cc:

REMARKS:

DIRECTOR_____

rn= 3675 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/5 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (80-82 1/2), 10:35

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Arsenic as As	mg/Kg	0.65	
Barium as Ba	mg/Kg	1.5	
Cadmium as Cd	mg/Kg	<0.01	
Chromium as Cr	mg/Kg	2.2	
Lead as Pb	mg/Kg	0.70	
Mercury as Hg	mg/Kg	<0.005	
Selenium as Se	mg/Kg	<0.05	
Silver as Ag	mg/Kg	<0.05	
Nickel as Ni	mg/Kg	<0.50	

cc:

REMARKS:

DIRECTOR_____

rn= 3676 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/5 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (80-82 1/2), 10:35

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<1	Ethyl Benzene	ug/Kg	<1
Vinyl Chloride	ug/Kg	<1	m + p Xylene	ug/Kg	<2
Bromomethane	ug/Kg	<1	o Xylene	ug/Kg	<1
Chloroethane	ug/Kg	<1	Bromoform	ug/Kg	<1
Trichlorofluomethane	ug/Kg	<1	1122Tetrachloroethan	ug/Kg	<1
11 Dichloroethene	ug/Kg	<1	m Dichlorobenzene	ug/Kg	<1
Methylene Chloride	ug/Kg	<1	p Dichlorobenzene	ug/Kg	<1
t-1,2-Dichloroethene	ug/Kg	<1	o Dichlorobenzene	ug/Kg	<1
11 Dichloroethane	ug/Kg	<1			
Chloroform	ug/Kg	<1			
111 Trichloroethane	ug/Kg	<1			
Carbon Tetrachloride	ug/Kg	<1			
Benzene	ug/Kg	<1			
12 Dichloroethane	ug/Kg	<1			
Trichloroethene	ug/Kg	<1			
12 Dichloropropane	ug/Kg	<1			
Bromodichloromethane	ug/Kg	<1			
2chloroethvinylether	ug/Kg	<1			
t 13 Dichloropropene	ug/Kg	<1			
Toluene	ug/Kg	<1			
c 13 Dichloropropene	ug/Kg	<1			
112 Trichloroethane	ug/Kg	<1			
Tetrachloroethene	ug/Kg	<1			
Chlorodibromomethane	ug/Kg	<1			
Chlorobenzene	ug/Kg	<1			

cc:

REMARKS: Analysis performed by EPA method 8240.

DIRECTOR

rn= 3677 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C920796/5 03/25/92

C.A. Rich Consultants, Inc.
404 Glen Cove Avenue
Sea Cliff, NY 11579
ATTN: Eric Weinstock

SOURCE OF SAMPLE: J.H., Westbury
COLLECTED BY: Client DATE COL'D:03/02/92 RECEIVED:03/04/92

SAMPLE: Soil sample, MW-1A, (80-82 1/2), 10:35
UNITS: ug/Kg

ANALYTICAL PARAMETERS		ANALYTICAL PARAMETERS	
N-Nitrosodimethylamine	<40	1,2-Diphenylhydrazine	<40
Bis(2-chloroethyl)ether	<40	4-Bromophenyl phenyl ether	<40
13 Dichlorobenzene	<40	Hexachlorobenzene	<40
14 Dichlorobenzene	<40	Phenanthrene	<40
12 Dichlorobenzene	<40	Anthracene	<40
Bis(2-chloroisopropyl)ether	<40	Di-n-Butyl Phthalate	<40
N-Nitrosodi-n-propylamine	<40	Fluoranthene	<40
Hexachloroethane	<40	Benzidine	<400
Nitrobenzene	<40	Pyrene	<40
Isophorone	<40	BenzylButylPhthalate	<40
Bis(2-chloroethoxy)methane	<40	Benzo(a)anthracene	<40
124-Trichlorobenzene	<40	3,3'-Dichlorobenzidine	<40
Naphthalene	<40	Chrysene	<40
Hexachlorobutadiene	<40	Bis(2-ethylhexyl)phthalate	90
Hexachlorocyclopentadiene	<40	Di-n-octyl Phthalate	<40
2-Chloronaphthalene	<40	Benzo(b)fluoranthene	<40
Dimethyl Phthalate	<40	Benzo(k)fluoranthene	<40
Acenaphthylene	<40	Benzo(a)pyrene	<40
2,6-Dinitrotoluene	<40	Indeno(1,2,3-cd)pyrene	<40
Acenaphthene	<40	Dibenzo(a,h)anthracene	<40
2,4-Dinitrotoluene	<40	Benzo(ghi)perylene	<40
Diethyl Phthalate	<40		
Fluorene	<40		
4-Chlorophenyl phenyl ether	<40		
N-Nitrosodiphenylamine	<40		

cc:

REMARKS:

DIRECTOR

rn= 3678 NYSDOH ID# 10320

verizon

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75038
(972) 718-4621

RECEIVED
DEC 27 2001
Hazardous Waste Remediation
NYSDEC Region 1

December 21, 2001

Mr. Robert Stewart
Region 1
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790

Re: Agreement (Index Number: W1-0844-98-08)
Former GTE site, Hicksville, NY
Surface Soil Sampling, Golf Course Driving Range

Dear Mr. Stewart:

Enclosed are four copies of the results of the surface soil sampling from the samples collected on November 7, 2001. The samples were collected at the Nassau County Parks and Recreation Department Golf Course Driving Range adjacent to the Former GTE Site.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at (972) 718-4621 or via facsimile (972) 719-0065.

Sincerely,

Alvin E. Ludwig
Vice President - Controller

cc: Barbara Youngberg
Division of Solid and Hazardous Materials
Bureau of Pesticides and Radiation
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7255

William Gilday
Bureau of Environmental
Exposure Investigation
New York State Department of Health
Flannegan Square, Room 300
547 River Street
Troy, New York 12180-2216

Denise D'Ambrosio, Esq.
New York State Department of
Environmental Conservation
200 White Plains Road, 5th Floor
Tarrytown, NY 10591-5805

Michael W. Ander
URS Corporation
One Continental Towers, Suite 1000
1701 Golf Road
Rolling Meadows, IL 60008

Jean M. Agostinelli
GTE Operations Support Incorporated
600 Hidden Ridge Dr. (HQE03E75)
Irving, Texas 75038

Pam M. Cox
O'Brien & Gere Engineers, Inc.
5000 Brittonfield Parkway
Syracuse, NY 13221

Carol Scholl
URS Corporation
One Continental Towers, Suite 1000
1701 Golf Road
Rolling Meadows, IL 60008

Surface Soil Sampling at the Golf Course Driving Range

On November 7, 2001, ten surface soil samples were collected on the Nassau County Parks Department Golf Course Range ("the driving range") adjacent to the Former Sylvania Electric Products Facility at 70, 100, and 140 Cantiague Rock Road in Hicksville, New York. The samples were collected at the request of the New York State Department of Health (NYSDOH) to evaluate the lateral extent of above-background gamma emitting radioactive materials that could indicate the presence of process residuals (particularly uranium and thorium progeny), if any. Work was conducted in coordination with Jerry Rigi, New York State Department of Environment Conservation.

Sampling

The sample locations were based on a 140-foot grid with point (0,0) in the southwest corner of the driving range. This grid was altered as the property boundaries were not rectangular (see attached figure). Prior to sampling, radiological activity in counts per minute (cpm) were collected by the New York State Department of Environmental Conservation (NYSDEC) Bureau of Radiation & Hazardous Site Management using a Ludlum Model 3 rate meter with a two-inch by two-inch sodium-iodide (NaI) gamma scintillation detector (Model #44-10). The readings were compared to a background reading of 8,932 cpm also collected by NYSDEC. Field readings are provided in the table below:

Sampling Designation	2" x 2" NaI Probe Reading (cpm)
GCDR-1	11,067
GCDR-2	9,971
GCDR-3	9,741
GCDR-4	10,073
GCDR-5	7,755
GCDR-6	7,866
GCDR-7	10,545
GCDR-8	9,430
GCDR-9	9,419
GCDR-10	8,624
GCDR-Background	8,932
Notes: GCDR – Golf Course Driving Range cpm – counts per minute	

The locations were designated as the Golf Course Driving Range (GCDR). The highest counts per minute were measured at GCDR-1, GCDR-4, and GCDR-7. Since GCDR-1 was the highest measurement taken, a duplicate soil sample was collected from this location for quality assurance/quality control (QC/QC) purposes. Additionally, NYSDEC split samples from GCDR-1 and GCDR-7.

At several of the locations, the soil was loosened with a pick to facilitate the collection of the soil samples. The surface soil samples were then collected with a stainless steel trowel. The trowel was rinsed with deionized water and dried with paper towels between sampling points to verify residual soils were not cross contaminating the sampling locations. Following sampling, the locations were filled with clean sand. Photographs of the sampling locations are attached to this report.

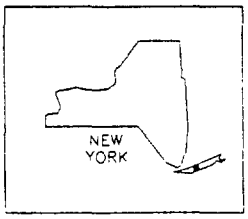
The samples were analyzed for radionuclides using gamma spectrometry (LANL ER-130 Method, 901.1 modified). Analytical results are presented in Table 1.

Figures

I:\DIV82\PROJECTS\5816009\DWG\801.DWG

FIGURE 1

SOURCE: USGS 7.5 MINUTES HICKSVILLE QUADRANGLE MAP, 1967.



STATE LOCATION MAP

GTE OPERATIONS SUPPORT INCORPORATED
FORMER SYLVANIA ELECTRIC PRODUCTS
INCORPORATED FACILITY
HICKSVILLE, NEW YORK

SITE LOCATION MAP

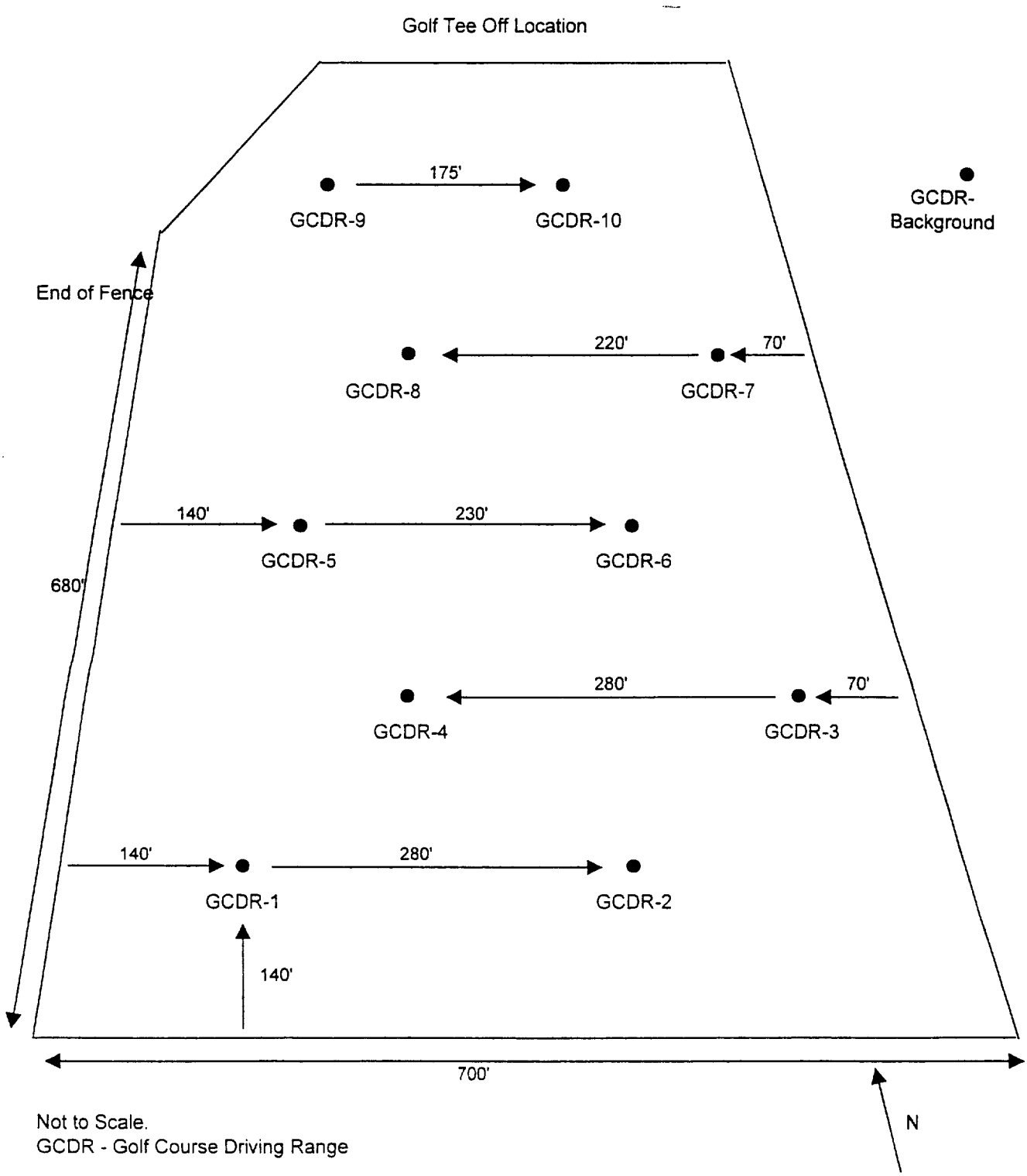
4000 0 4000

1"=4000'

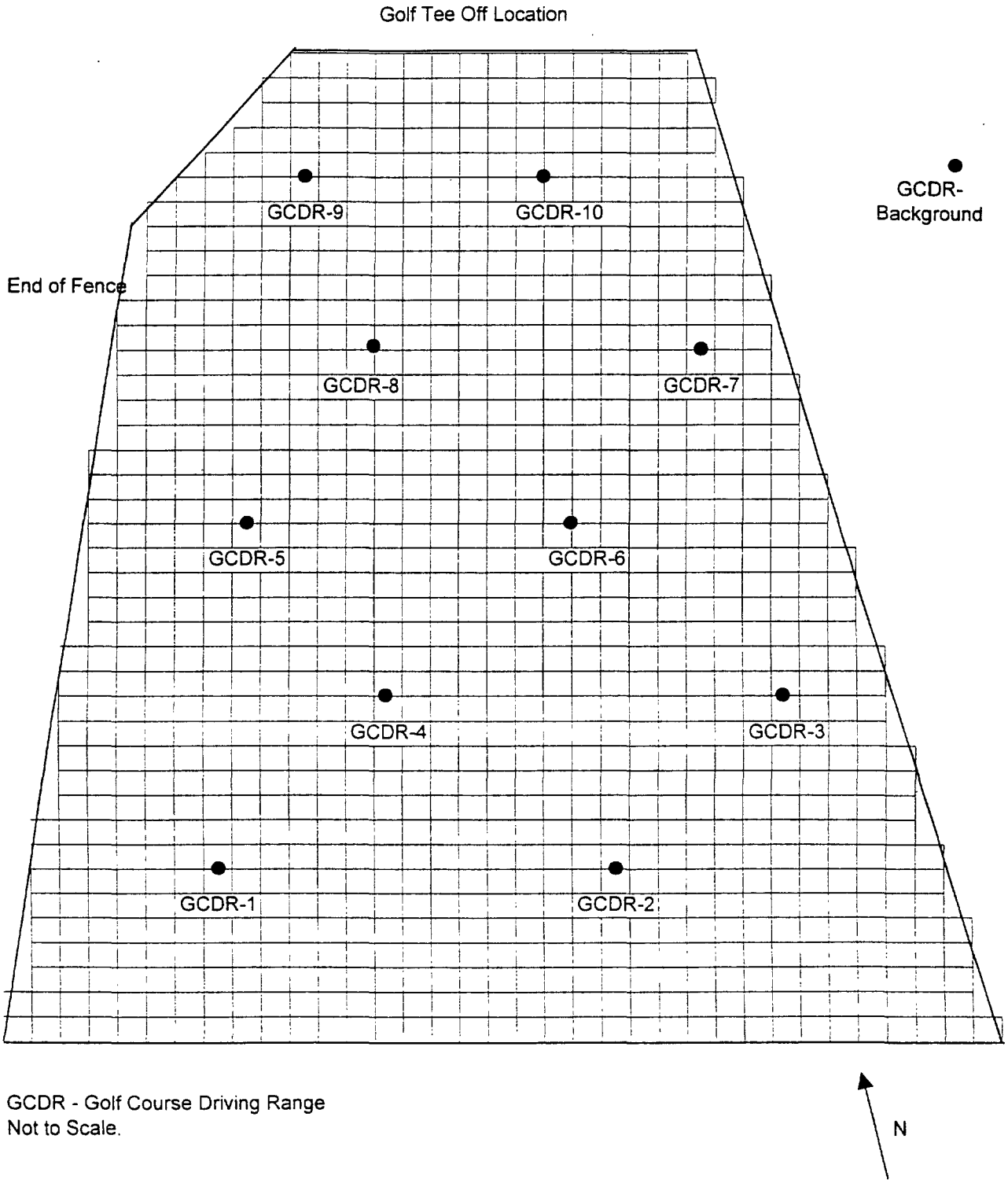
5816.009.801
February 2001

O'BRIEN & GERE ENGINEERS INC.

NYSDEC 006488

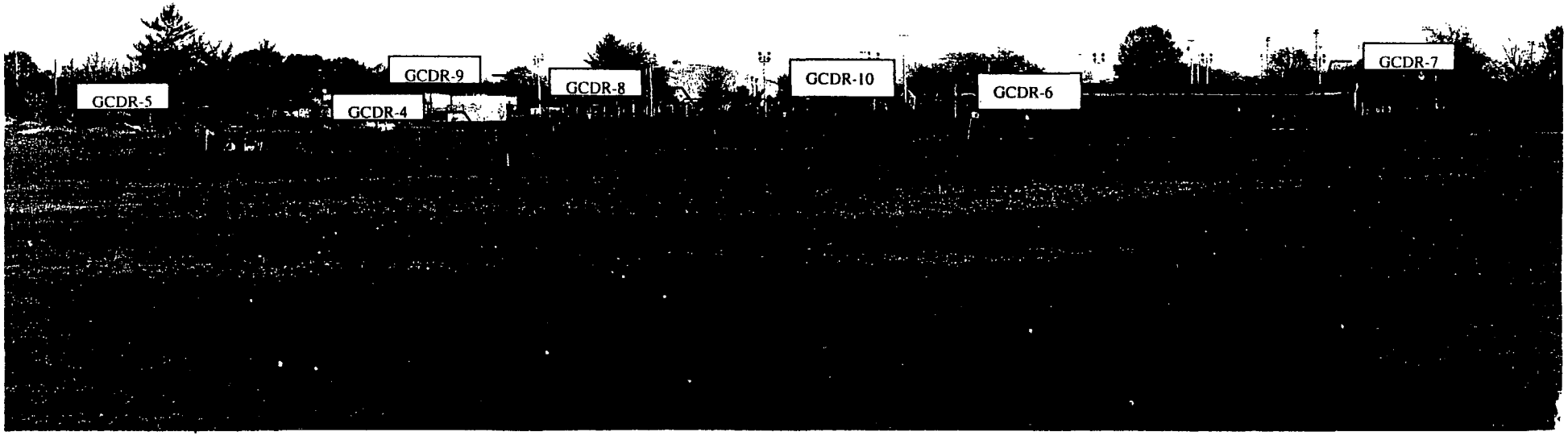


Not to Scale.
GCDR - Golf Course Driving Range



GCDR - Golf Course Driving Range
Not to Scale.

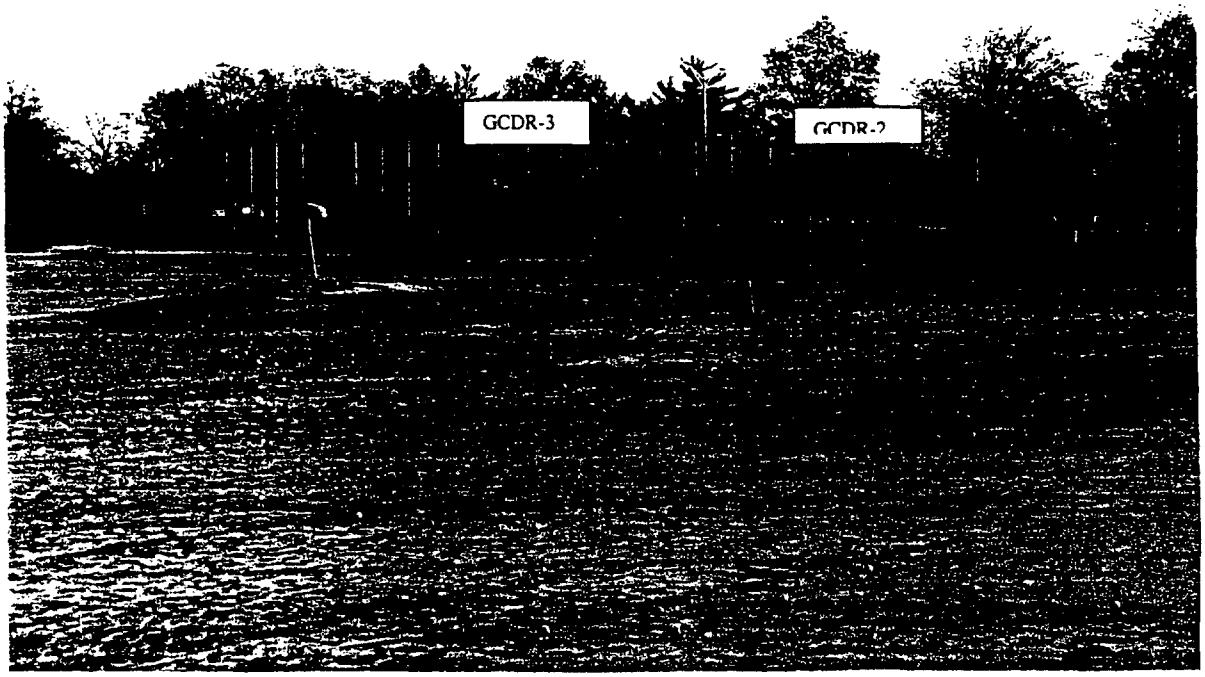
Photographs



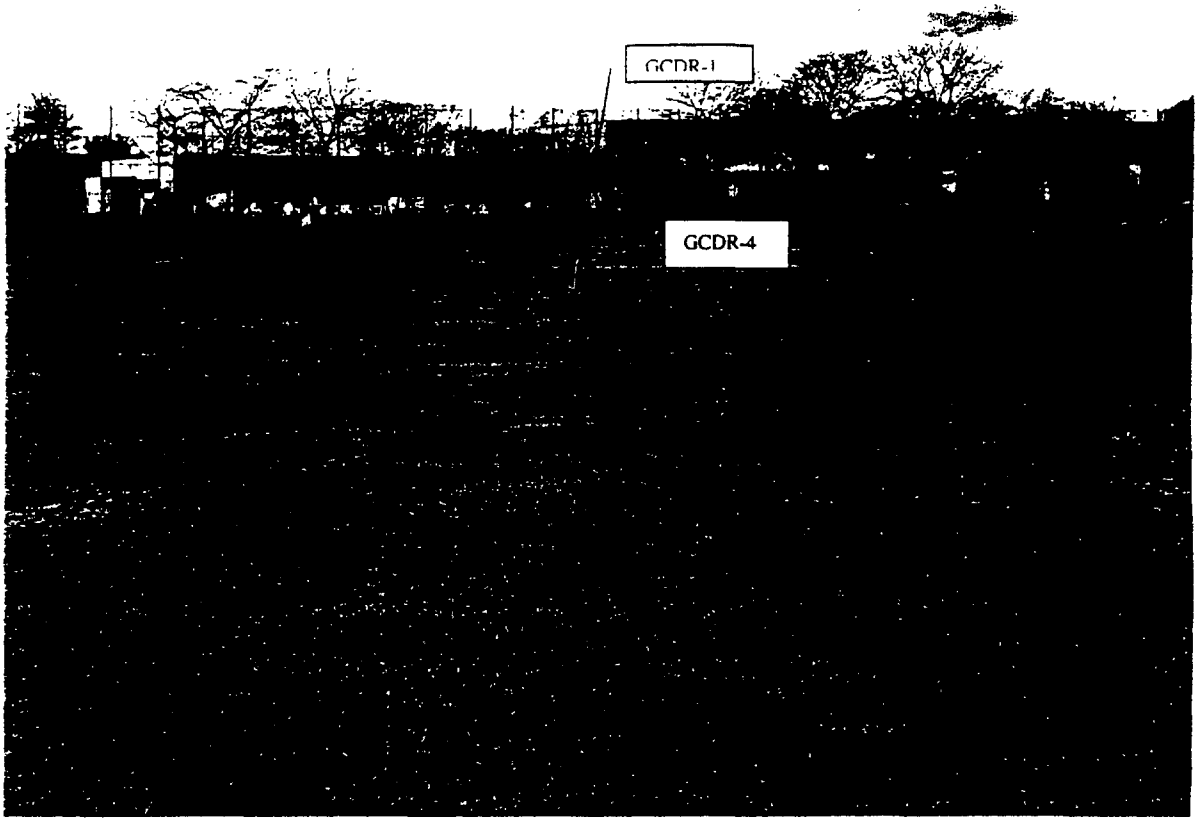
ıotograph 1: Panoramic view of Golf Course Driving Range (GCDR) surface soil locations (GCDR-4 through GCDR-10)

NYSDEC 006492

Photograph 2: Background surface soil sample.

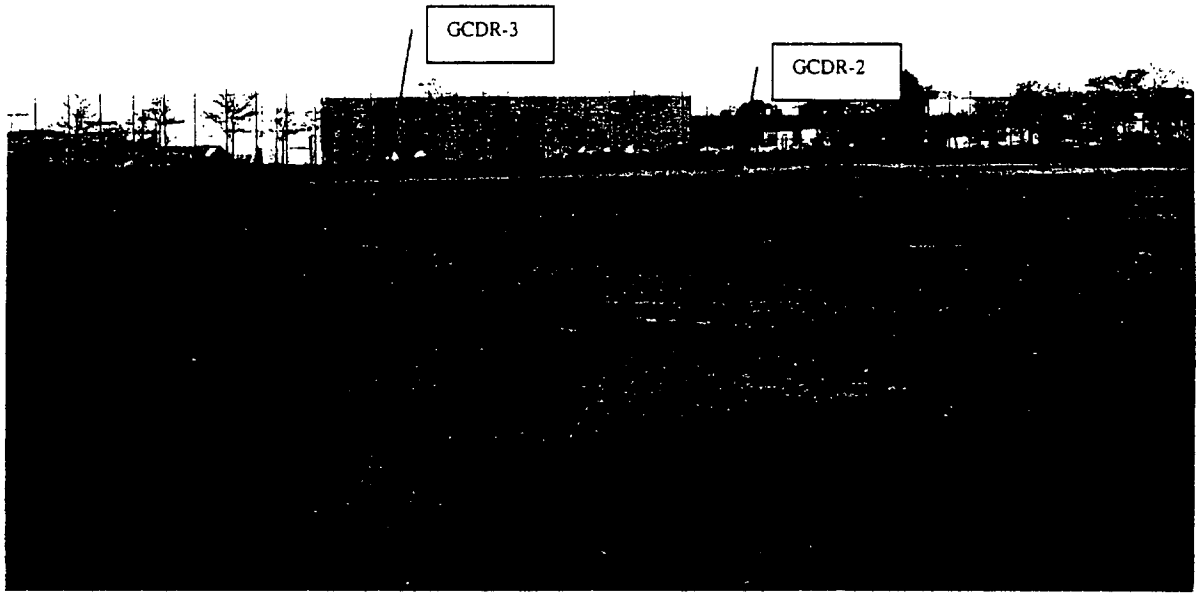


Photograph 3: Golf Course Driving Range (GCDR) sample locations 2 and 3.



Photograph 4: GCDR sample locations 1 and 4.

Photograph 5: GCDR-1. Camera pointing southwest.



Photograph 6: GCDR 2 and 3. Camera pointing south – southwest.

Photograph 7: GCDR 1, 4, and 6. Camera pointing southwest.

Analytical Results - Table 1

O'BRIEN & GERE ENGINEERS, INC.

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, NY
Soil
EPA 901.1 Gamma Spectroscopy Data

Compound	Sample ID	Duplicate	GCDR-1	GCDR-10	GCDR-2	GCDR-3	GCDR-4	GCDR-5	GCDR-6	GCDR-7
	Sample Depth									
	Sample Date	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001
	Property									
	Lab Sample ID	T5085	T5075	T5084	T5076	T5077	T5078	T5079	T5080	T5081
	Units	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g
Actinium-228		1.2+/-0.15	1.3+/-0.12	1.0+/-0.13	1.2+/-0.15	1.2+/-0.12	1.3+/-0.29 U	0.64+/-0.072	0.60+/-0.13 U	1.3+/-0.12
Bismuth-211		2.7+/-7.5	3.2+/-9.0	2.6+/-7.2	2.8+/-7.9	3.1+/-8.7	2.9+/-8.0	1.5+/-4.1	1.3+/-3.5	3.2+/-8.8
Bismuth-212		1.4+/-0.42	1.6+/-0.46	1.2+/-0.37	1.3+/-0.46	1.3+/-0.39	1.5+/-0.54	0.75+/-0.29	0.54+/-0.17 U	1.3+/-0.39
Bismuth-214		0.92+/-0.10	1.2+/-0.13	0.83+/-0.11	1.1+/-0.14	1.2+/-0.12	1.0+/-0.13	0.51+/-0.069	0.45+/-0.061	1.0+/-0.11
Cesium-137		0.44+/-0.087	0.37+/-0.079	0.090+/-0.030	0.099+/-0.033	0.21+/-0.044	0.30+/-0.066	0.15+/-0.037	0.047+/-0.018	0.24+/-0.053
Francium-223		-0.088+/-0.066 U	-0.037+/-0.12 U	-0.0056+/-0.21 U	-0.26+/-0.25 U	-0.044+/-0.10 U	-0.00016+/-0.26 U	-0.039+/-0.070 U	-0.050+/-0.14 U	-0.11+/-0.10 U
Lead-210		1.0+/-3.9	-0.090+/-1.6 U	-0.31+/-3.1 U	0.35+/-3.7 U	1.4+/-5.4 U	0.23+/-3.7 U	0.32+/-1.5 U	-0.81+/-3.6 U	1.7+/-6.6 U
Lead-211		0.43+/-0.43 U	-0.062+/-0.31 U	-0.14+/-0.27 U	-0.31+/-0.31 U	-0.10+/-0.29 U	-0.12+/-0.33 U	-0.16+/-0.18 U	0.014+/-0.18 U	0.071+/-0.28 U
Lead-212		1.4+/-0.24	1.3+/-0.15	1.2+/-0.22	1.4+/-0.61	1.2+/-0.14	1.4+/-0.61	0.62+/-0.076	0.43+/-0.086	1.3+/-0.15
Lead-214		1.1+/-0.23	1.1+/-0.22	0.81+/-0.17	0.97+/-0.20	1.1+/-0.22	0.97+/-0.21	0.56+/-0.12	0.49+/-0.10	1.1+/-0.22
Potassium-40		10+/-2.0	11+/-2.1	9.637+/-1.8	12+/-2.2	11+/-2.2	11+/-2.1	8.5+/-1.6	7.2+/-1.4	11+/-2.2
Protactinium-231		3.9+/-1.3 U	0.70+/-0.41 U	1.4+/-0.53 U	0.84+/-0.49 U	0.50+/-0.38 U	1.7+/-0.64 U	0.17+/-0.24 U	0.67+/-0.31 U	0.47+/-0.38 U
Protactinium-234		0.58+/-0.71 U	0.31+/-0.27 U	0.23+/-0.23 U	0.13+/-0.20 U	0.23+/-0.24 U	0.22+/-0.25 U	0.031+/-0.10 U	0.024+/-0.10 U	0.31+/-0.32 U
Protactinium-234m		14+/-3.8	14+/-3.9	1.6+/-1.5 U	5.4+/-2.1 U	2.0+/-1.7 U	3.3+/-1.9 U	2.4+/-1.3 U	1.6+/-1.1 U	2.4+/-1.6 U
Radium-223		0.50+/-0.16 U	0.49+/-0.15 U	0.36+/-0.15 U	0.26+/-0.11 U	0.39+/-0.15 U	0.22+/-0.095 U	0.17+/-0.078 U	0.11+/-0.051 U	0.41+/-0.13 U
Radium-224		6.8+/-1.5	1.7+/-0.69	13+/-2.4 U	1.7+/-6.2	1.2+/-0.54	0.44+/-6.3 J	0.78+/-0.40	0.83+/-0.33 U	1.4+/-0.63
Radium-226		0.92+/-0.10	1.2+/-0.13	0.83+/-0.11	1.1+/-0.14	1.2+/-0.12	1.0+/-0.13	0.51+/-0.069	0.45+/-0.061	1.0+/-0.11
Thallium-208		0.44+/-0.082	0.44+/-0.077	0.34+/-0.072	0.37+/-0.078	0.39+/-0.069	0.38+/-0.074	0.20+/-0.039	0.17+/-0.036	0.42+/-0.069
Thorium-227		6.2+/-2.7 U	0.47+/-0.23 U	2.2+/-0.97 U	2.9+/-1.3 U	0.43+/-0.21 U	2.7+/-1.2 U	0.19+/-0.10 U	1.1+/-0.46 U	0.43+/-0.20 U
Thorium-231		0.58+/-0.87 U	0.99+/-0.36	-0.015+/-0.50 U	-0.67+/-0.56 U	0.51+/-0.23	-0.96+/-0.54 U	0.41+/-0.18	-0.22+/-0.21 U	0.55+/-0.23
Thorium-234		15+/-6.2	8.8+/-3.8	1.5+/-0.93 U	2.1+/-1.5	1.9+/-1.1	2.4+/-1.3 U	0.74+/-0.55	0.35+/-0.45 U	2.0+/-1.1
Uranium-235		0.93+/-0.14	0.67+/-0.089	0.031+/-0.086 U	0.21+/-0.11 U	0.18+/-0.042	0.26+/-0.12 U	0.087+/-0.026 J	0.047+/-0.059 U	0.18+/-0.042

NOTES: U - not detected, J - estimated value

Results are +/- 2 sigma uncertainty

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NYSDEC 006497

O'BRIEN & GERE ENGINEERS, INC.

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, NY
Soil
EPA 901.1 Gamma Spectroscopy Data

Compound	Sample ID	GCDR-8	GCDR-9	GCDR-Background
	Sample Depth			
	Sample Date	11/07/2001	11/07/2001	11/07/2001
	Property			
	Lab Sample ID	T5082	T5083	T5086
	Units	pCi/g	pCi/g	pCi/g
Actinium-228		1.1+/-0 25 U	1.1+/-0.11	0.96+/-0.096
Bismuth-211		2.4+/-6.8	3.0+/-8.4	2.5+/-7.0
Bismuth-212		1.2+/-0.43	1.4+/-0.41	1.3+/-0.39
Bismuth-214		0.84+/-0.17 U	0.99+/-0.11	0.87+/-0.099
Cesium-137		0.20+/-0.050	0.31+/-0.062	0.19+/-0.043
Francium-223		-0.15+/-0.22 U	-0.15+/-0.099 U	-0.11+/-0.091 U
Lead-210		-1.7+/-7.1 U	0.78+/-3.2 U	0.89+/-3.5 U
Lead-211		-0.31+/-0.29 U	0 043+/-0.26 U	-0.14+/-0.25 U
Lead-212		1.0+/-0.47	1.1+/-0.13	0.93+/-0.11
Lead-214		0.84+/-0.18	0.99+/-0.20	0.92+/-0.18
Potassium-40		9.815+/-1.9	11+/-2.0	11+/-2.0
Protactinium-231		1.3+/-0.53 U	0.44+/-0.34 U	0.41+/-0.31 U
Protactinium-234		0.029+/-0.16 U	0.13+/-0.16 U	0.074+/-0.13 U
Protactinium-234m		0.98+/-1.5 U	2.0+/-2.0 J	4.4+/-2.0
Radium-223		0.23+/-0.084 U	0.38+/-0.12 U	0.30+/-0.10 U
Radium-224		2.2+/-4.8	0.95+/-0.49	0.85+/-0.49
Radium-226		0.84+/-0.17 U	0.99+/-0.11	0.87+/-0.099
Thallium-208		0.35+/-0.074	0.39+/-0.063	0.31+/-0.056
Thorium-227		2.3+/-0.97 U	0.42+/-0.20 U	0.30+/-0.15 U
Thorium-231		-1.1+/-0.47 U	0.57+/-0.24	0.57+/-0.22
Thorium-234		0.94+/-0.79 U	1.2+/-0.77	1.5+/-0.80
Uranium-235		0.13+/-0.092 U	0.11+/-0.10 J	0.14+/-0.035

NOTES: U - not detected, J - estimated value

Results are +/- 2 sigma uncertainty

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File Number 5816.009

NYSDEC 006498

verizon

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75038
(972) 718-4621

RECEIVED
DEC 27 2001
Hazardous Waste Remediation
NYSDEC Region 1

December 21, 2001

Mr. Robert Stewart
Region 1
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790

Re: Agreement (Index Number: W1-0844-98-08)
Former GTE site, Hicksville, NY
Surface Soil Sampling, Golf Course Driving Range

Dear Mr. Stewart:

Enclosed are four copies of the results of the surface soil sampling from the samples collected on November 7, 2001. The samples were collected at the Nassau County Parks and Recreation Department Golf Course Driving Range adjacent to the Former GTE Site.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at (972) 718-4621 or via facsimile (972) 719-0065.

Sincerely,

Alvin E. Ludwig
Vice President - Controller

cc: Barbara Youngberg
Division of Solid and Hazardous Materials
Bureau of Pesticides and Radiation
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7255

William Gilday
Bureau of Environmental
Exposure Investigation
New York State Department of Health
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547 River Street
Troy, New York 12180-2216

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Michael W. Ander
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Surface Soil Sampling at the Golf Course Driving Range

On November 7, 2001, ten surface soil samples were collected on the Nassau County Parks Department Golf Course Range ("the driving range") adjacent to the Former Sylvania Electric Products Facility at 70, 100, and 140 Cantiague Rock Road in Hicksville, New York. The samples were collected at the request of the New York State Department of Health (NYSDOH) to evaluate the lateral extent of above-background gamma emitting radioactive materials that could indicate the presence of process residuals (particularly uranium and thorium progeny), if any. Work was conducted in coordination with Jerry Rigi, New York State Department of Environment Conservation.

Sampling

The sample locations were based on a 140-foot grid with point (0,0) in the southwest corner of the driving range. This grid was altered as the property boundaries were not rectangular (see attached figure). Prior to sampling, radiological activity in counts per minute (cpm) were collected by the New York State Department of Environmental Conservation (NYSDEC) Bureau of Radiation & Hazardous Site Management using a Ludlum Model 3 rate meter with a two-inch by two-inch sodium-iodide (NaI) gamma scintillation detector (Model #44-10). The readings were compared to a background reading of 8,932 cpm also collected by NYSDEC. Field readings are provided in the table below:

Sampling Designation	2" x 2" NaI Probe Reading (cpm)
GCDR-1	11,067
GCDR-2	9,971
GCDR-3	9,741
GCDR-4	10,073
GCDR-5	7,755
GCDR-6	7,866
GCDR-7	10,545
GCDR-8	9,430
GCDR-9	9,419
GCDR-10	8,624
GCDR-Background	8,932
Notes: GCDR – Golf Course Driving Range cpm – counts per minute	

The locations were designated as the Golf Course Driving Range (GCDR). The highest counts per minute were measured at GCDR-1, GCDR-4, and GCDR-7. Since GCDR-1 was the highest measurement taken, a duplicate soil sample was collected from this location for quality assurance/quality control (QC/QC) purposes. Additionally, NYSDEC split samples from GCDR-1 and GCDR-7.

At several of the locations, the soil was loosened with a pick to facilitate the collection of the soil samples. The surface soil samples were then collected with a stainless steel trowel. The trowel was rinsed with deionized water and dried with paper towels between sampling points to verify residual soils were not cross contaminating the sampling locations. Following sampling, the locations were filled with clean sand. Photographs of the sampling locations are attached to this report.

The samples were analyzed for radionuclides using gamma spectrometry (LANL ER-130 Method, 901.1 modified). Analytical results are presented in Table 1.

Figures

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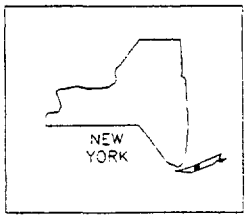
FIGURE 1

SOURCE: USGS 7.5 MINUTES HICKSVILLE QUADRANGLE MAP, 1967.



STATE LOCATION MAP

GTE OPERATIONS SUPPORT INCORPORATED
FORMER SYLVANIA ELECTRIC PRODUCTS
INCORPORATED FACILITY
HICKSVILLE, NEW YORK

SITE LOCATION MAP

4000 0 4000

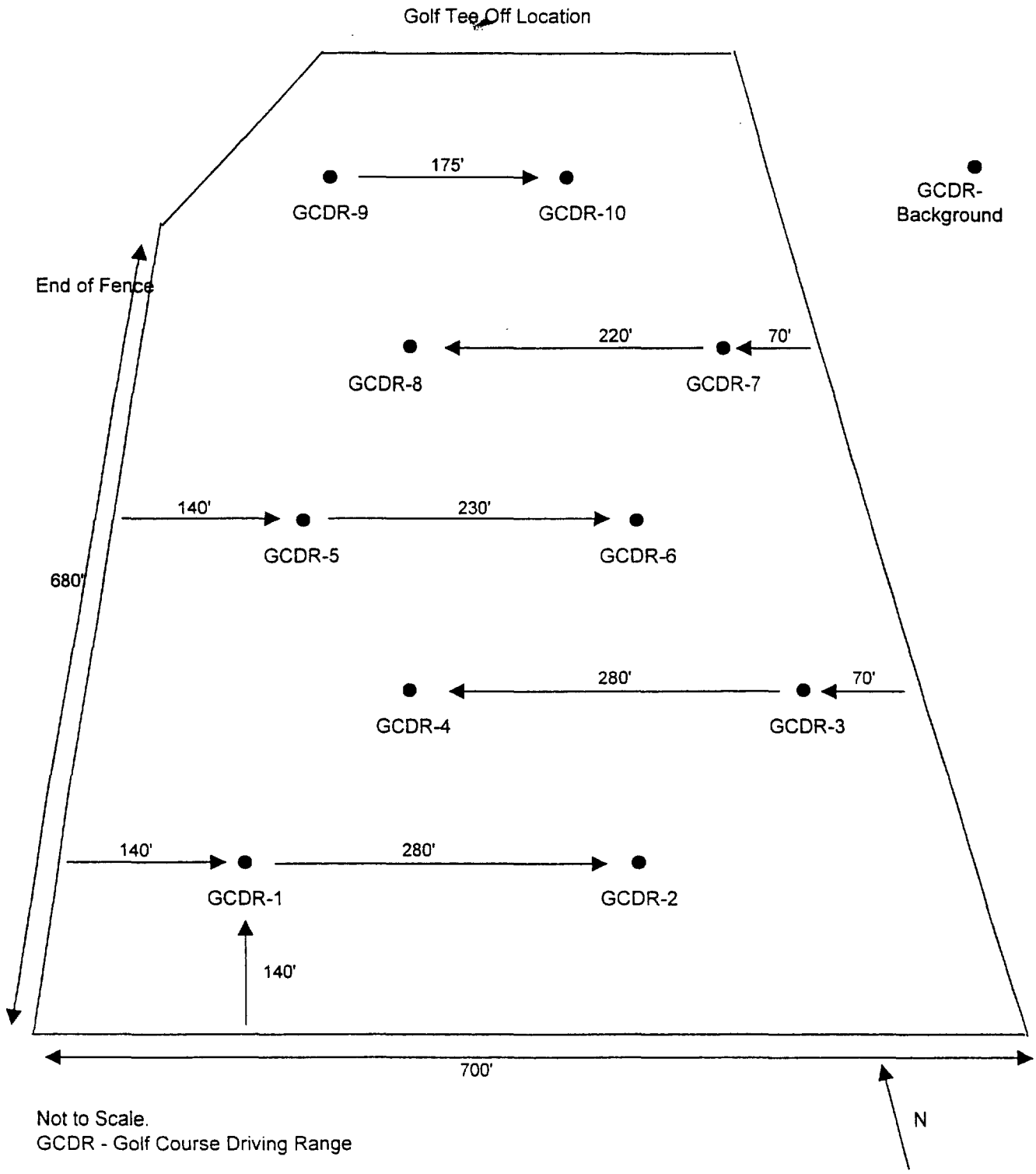
1"=4000'

5816.009.80

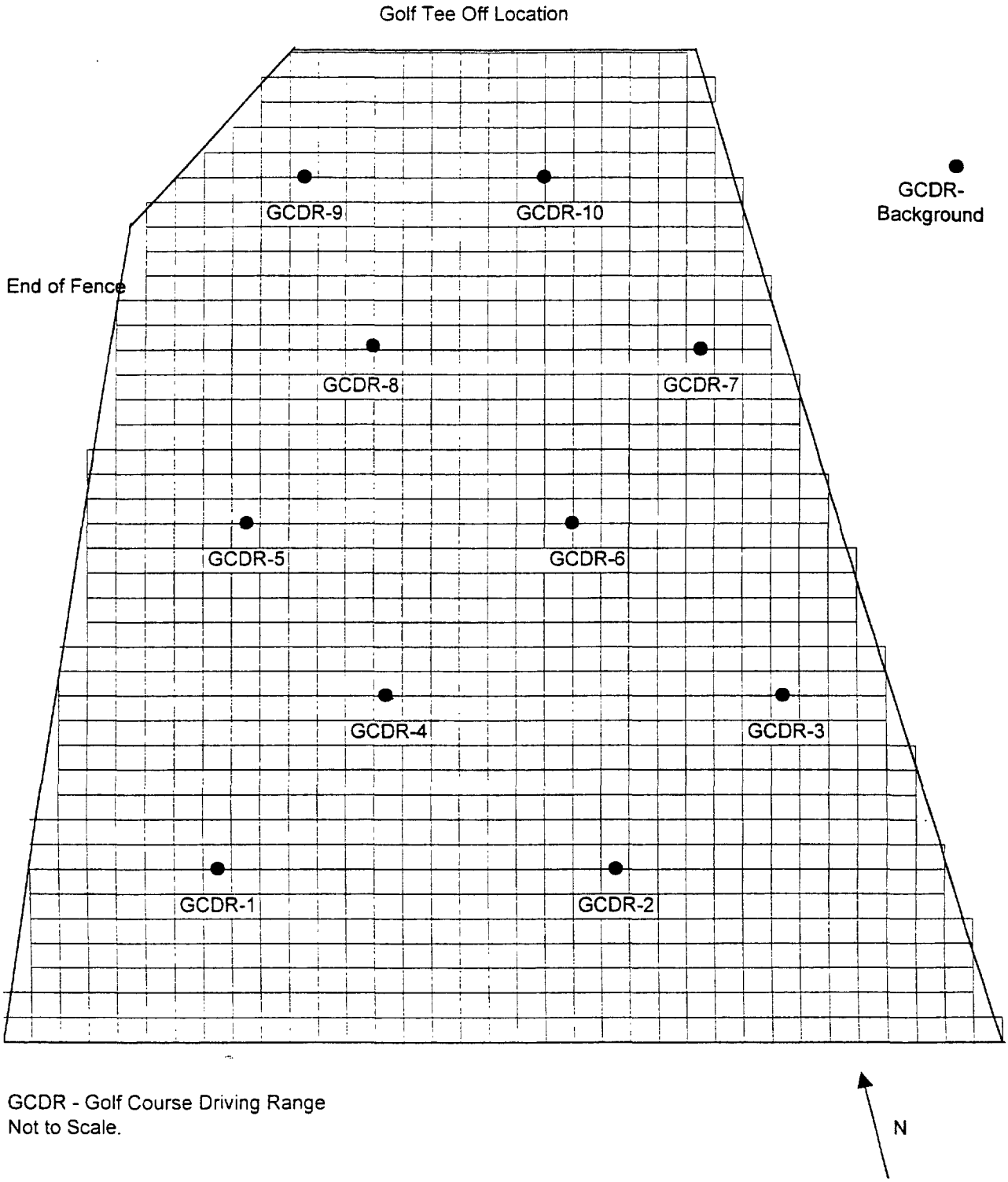
February 2001

O'BRIEN & GERE ENGINEERS INC.

NYSDEC 006503

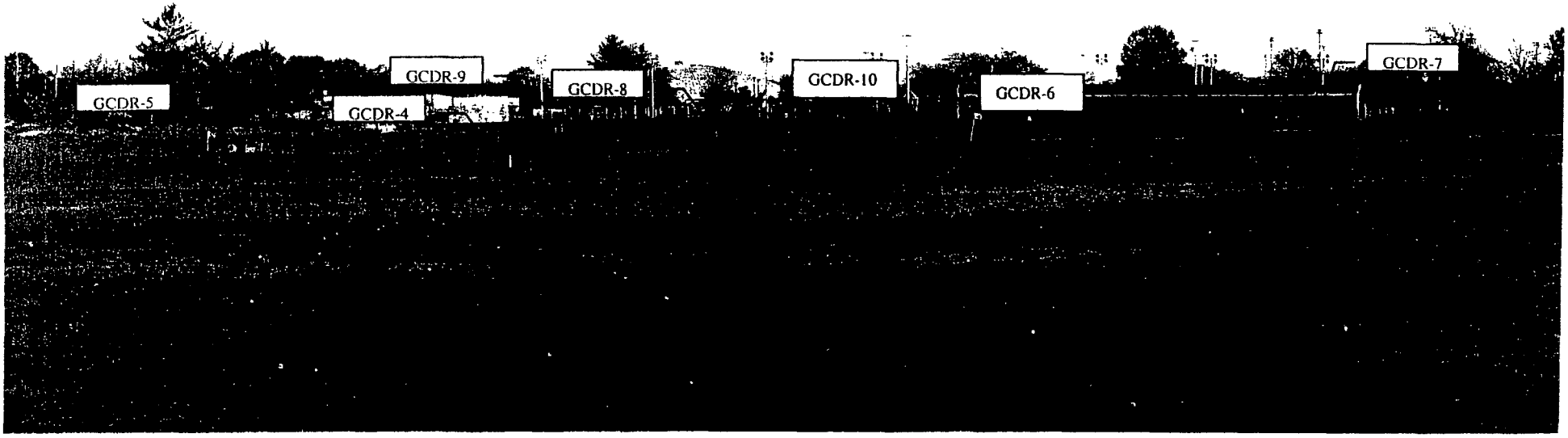


Not to Scale.
GCDR - Golf Course Driving Range



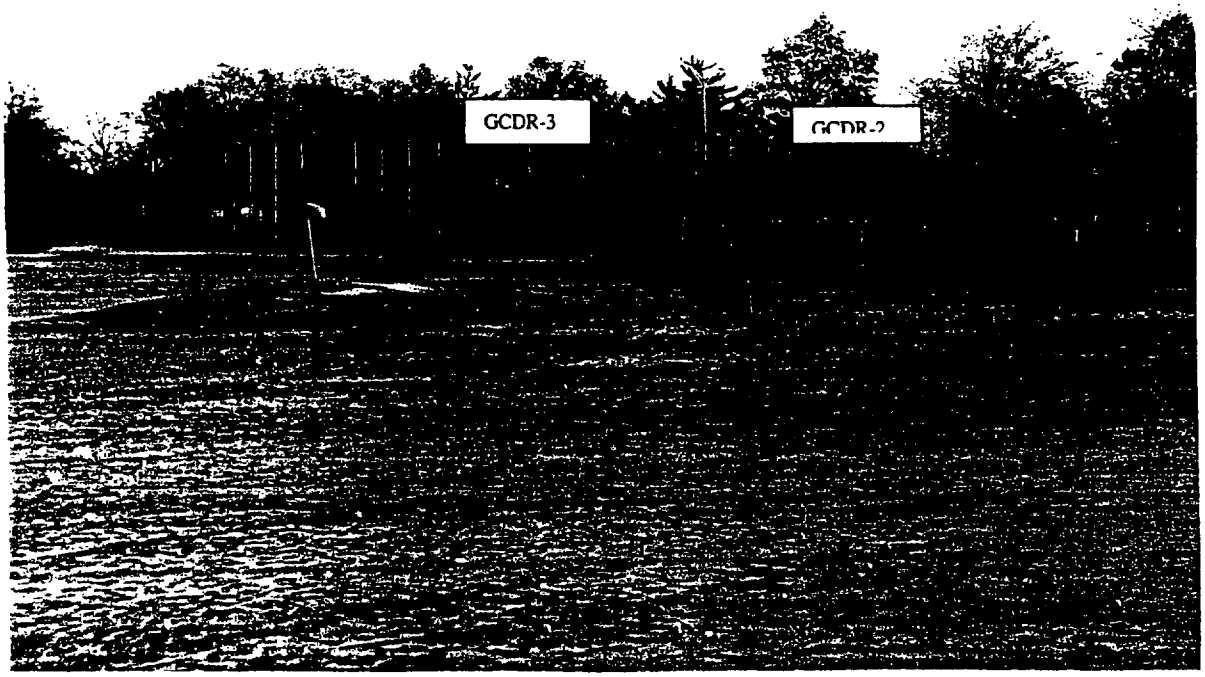
GCDR - Golf Course Driving Range
Not to Scale.

Photographs

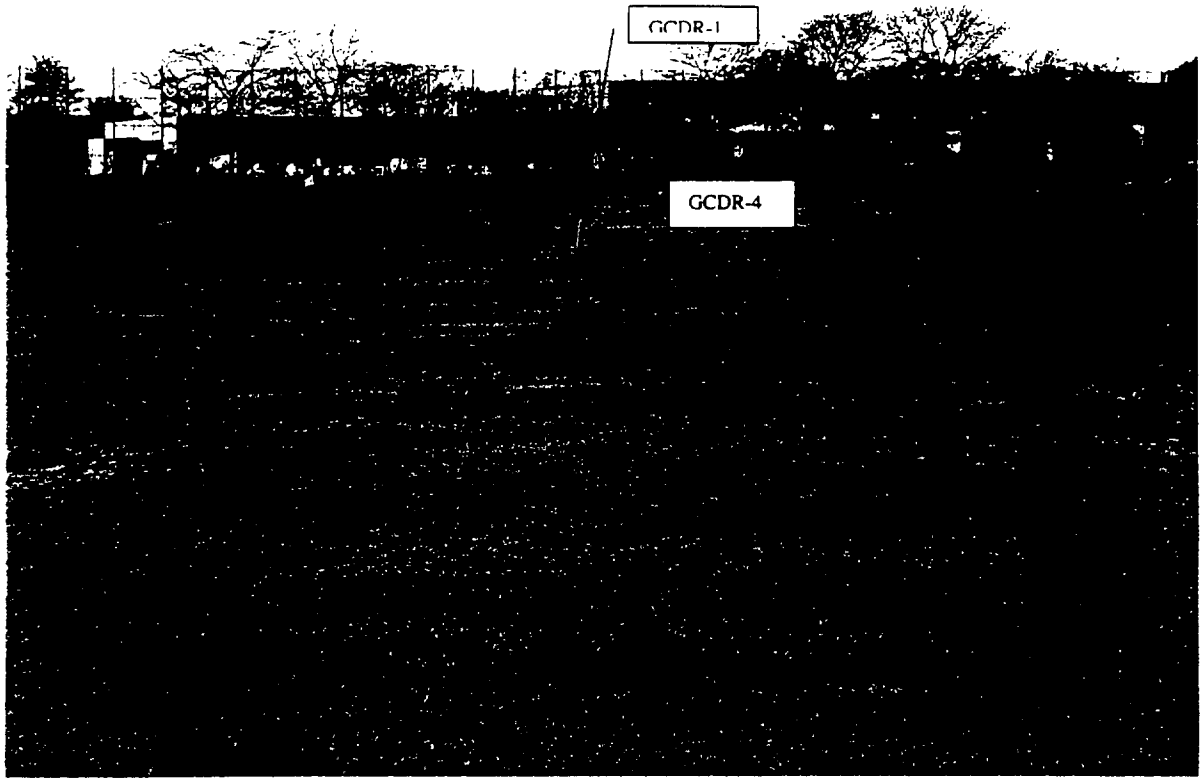


iotograph 1: Panoramic view of Golf Course Driving Range (GCDR) surface soil locations (GCDR-4 through GCDR-10)

Photograph 2: Background surface soil sample.

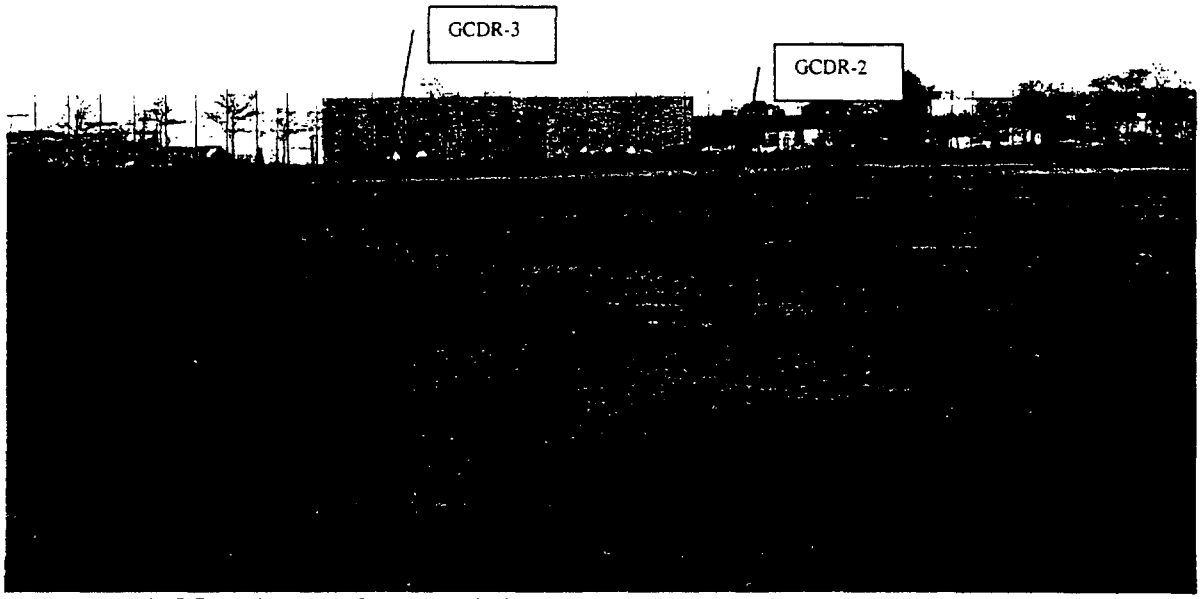


Photograph 3: Golf Course Driving Range (GCDR) sample locations 2 and 3.



Photograph 4: GCDR sample locations 1 and 4.

Photograph 5: GCDR-1. Camera pointing southwest.



Photograph 6: GCDR 2 and 3. Camera pointing south – southwest.

Photograph 7: GCDR 1, 4, and 6. Camera pointing southwest.

Analytical Results - Table 1

O'BRIEN & GERE ENGINEERS, INC.

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, NY
Soil
EPA 901.1 Gamma Spectroscopy Data

Compound	Sample ID	Duplicate	GCDR-1	GCDR-10	GCDR-2	GCDR-3	GCDR-4	GCDR-5	GCDR-6	GCDR-7
	Sample Depth									
	Sample Date	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001	11/07/2001
	Property									
	Lab Sample ID	T5085	T5075	T5084	T5076	T5077	T5078	T5079	T5080	T5081
	Units	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g
Actinium-228		1.2+/-0.15	1.3+/-0.12	1.0+/-0.13	1.2+/-0.15	1.2+/-0.12	1.3+/-0.29 U	0.64+/-0.072	0.60+/-0.13 U	1.3+/-0.12
Bismuth-211		2.7+/-7.5	3.2+/-9.0	2.6+/-7.2	2.8+/-7.9	3.1+/-8.7	2.9+/-8 0	1.5+/-4.1	1.3+/-3.5	3 2+/-8.8
Bismuth-212		1.4+/-0.42	1.6+/-0.46	1.2+/-0.37	1.3+/-0.46	1.3+/-0.39	1.5+/-0.54	0.75+/-0.29	0.54+/-0.17 U	1.3+/-0 39
Bismuth-214		0.92+/-0.10	1.2+/-0.13	0.83+/-0.11	1.1+/-0.14	1.2+/-0.12	1.0+/-0.13	0.51+/-0.069	0.45+/-0.061	1.0+/-0.11
Cesium-137		0.44+/-0.087	0.37+/-0.079	0.090+/-0.030	0.099+/-0.033	0.21+/-0.044	0.30+/-0.066	0.15+/-0.037	0.047+/-0.018	0.24+/-0.053
Francium-223		-0.088+/-0.066 U	-0.037+/-0.12 U	-0.0056+/-0.21 U	-0.26+/-0.25 U	-0.044+/-0.10 U	-0.00016+/-0.26 U	-0.039+/-0.070 U	-0.050+/-0.14 U	-0.11+/-0.10 U
Lead-210		1.0+/-3.9	-0.090+/-1.6 U	-0.31+/-3.1 U	0.35+/-3.7 U	1.4+/-5.4 U	0.23+/-3.7 U	0.32+/-1.5 U	-0.81+/-3.6 U	1 7+/-6 6 U
Lead-211		0.43+/-0.43 U	-0.062+/-0.31 U	-0.14+/-0.27 U	-0.31+/-0.31 U	-0.10+/-0.29 U	-0.12+/-0.33 U	-0.16+/-0.18 U	0.014+/-0.18 U	0 071+/-0.28 U
Lead-212		1.4+/-0.24	1.3+/-0.15	1.2+/-0.22	1.4+/-0.61	1.2+/-0.14	1.4+/-0.61	0.62+/-0.076	0.43+/-0.086	1.3+/-0.15
Lead-214		1.1+/-0.23	1.1+/-0.22	0.81+/-0.17	0.97+/-0.20	1.1+/-0.22	0.97+/-0.21	0.56+/-0.12	0.49+/-0.10	1 1+/-0.22
Potassium-40		10+/-2.0	11+/-2.1	9 637+/-1.8	12+/-2.2	11+/-2.2	11+/-2.1	8.5+/-1.6	7.2+/-1.4	11+/-2.2
Protactinium-231		3.9+/-1.3 U	0.70+/-0.41 U	1.4+/-0.53 U	0.84+/-0.49 U	0.50+/-0.38 U	1.7+/-0.64 U	0.17+/-0.24 U	0.67+/-0.31 U	0 47+/-0.38 U
Protactinium-234		0.58+/-0 71 U	0.31+/-0.27 U	0.23+/-0.23 U	0.13+/-0.20 U	0 23+/-0.24 U	0.22+/-0.25 U	0.031+/-0.10 U	0.024+/-0.10 U	0 31+/-0 32 U
Protactinium-234m		14+/-3.8	14+/-3.9	1.6+/-1.5 U	5.4+/-2.1 U	2.0+/-1.7 U	3.3+/-1.9 U	2.4+/-1.3 U	1.6+/-1.1 U	2.4+/-1.6 U
Radium-223		0.50+/-0 16 U	0.49+/-0.15 U	0.36+/-0.15 U	0.26+/-0.11 U	0.39+/-0.15 U	0.22+/-0.095 U	0.17+/-0.078 U	0.11+/-0.051 U	0.41+/-0.13 U
Radium-224		6.8+/-1.5	1.7+/-0.69	13+/-2.4 U	1.7+/-6.2	1.2+/-0.54	0.44+/-6.3 J	0.78+/-0.40	0.83+/-0.33 U	1.4+/-0.63
Radium-226		0.92+/-0 10	1.2+/-0.13	0.83+/-0.11	1.1+/-0.14	1.2+/-0.12	1.0+/-0.13	0.51+/-0.069	0.45+/-0.061	1 0+/-0 11
Thallium-208		0.44+/-0 082	0.44+/-0.077	0.34+/-0.072	0.37+/-0.078	0.39+/-0.069	0.38+/-0.074	0.20+/-0.039	0.17+/-0 036	0 42+/-0.069
Thorium-227		6.2+/-2.7 U	0.47+/-0.23 U	2.2+/-0.97 U	2.9+/-1.3 U	0.43+/-0.21 U	2.7+/-1.2 U	0.19+/-0.10 U	1.1+/-0.46 U	0.43+/-0.20 U
Thorium-231		0.58+/-0.87 U	0.99+/-0.36	-0.015+/-0.50 U	-0.67+/-0.56 U	0.51+/-0.23	-0.96+/-0.54 U	0.41+/-0.18	-0.22+/-0.21 U	0.55+/-0.23
Thorium-234		15+/-6.2	8.8+/-3.8	1.5+/-0.93 U	2.1+/-1.5	1.9+/-1.1	2.4+/-1.3 U	0 74+/-0.55	0.35+/-0 45 U	2.0+/-1.1
Uranium-235		0.93+/-0.14	0.67+/-0.089	0.031+/-0.086 U	0.21+/-0.11 U	0.18+/-0.042	0.26+/-0.12 U	0.087+/-0.026 J	0 047+/-0.059 U	0.18+/-0.042

NOTES: U - not detected, J - estimated value

Results are +/- 2 sigma uncertainty

Date Printed 12/14/2001 11 26.11
DBF File N:\5816\009\DATA\TEMPDATA DBF
EXP File N:\5816\009\DATA\TABSUPW EXP

File Number. 5816 009

NYSDEC 006512

O'BRIEN & GERE ENGINEERS, INC.

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, NY
Soil
EPA 901.1 Gamma Spectroscopy Data

Compound	Sample ID	GCDR-8	GCDR-9	GCDR-Background
	Sample Depth			
	Sample Date	11/07/2001	11/07/2001	11/07/2001
	Property			
	Lab Sample ID	T5082	T5083	T5086
	Units	pCi/g	pCi/g	pCi/g
Actinium-228		1.1+/-0.25 U	1.1+/-0.11	0.96+/-0.096
Bismuth-211		2.4+/-6.8	3.0+/-8.4	2.5+/-7.0
Bismuth-212		1.2+/-0.43	1.4+/-0.41	1.3+/-0.39
Bismuth-214		0.84+/-0.17 U	0.99+/-0.11	0.87+/-0.099
Cesium-137		0.20+/-0.050	0.31+/-0 062	0.19+/-0.043
Francium-223		-0.15+/-0.22 U	-0.15+/-0 099 U	-0.11+/-0.091 U
Lead-210		-1.7+/-7.1 U	0.78+/-3.2 U	0.89+/-3.5 U
Lead-211		-0.31+/-0.29 U	0.043+/-0.26 U	-0 14+/-0.25 U
Lead-212		1 0+/-0.47	1.1+/-0.13	0.93+/-0.11
Lead-214		0.84+/-0.18	0.99+/-0.20	0.92+/-0.18
Potassium-40		9.815+/-1.9	11+/-2.0	11+/-2.0
Protactinium-231		1.3+/-0.53 U	0.44+/-0.34 U	0.41+/-0.31 U
Protactinium-234		0.029+/-0.16 U	0.13+/-0.16 U	0.074+/-0.13 U
Protactinium-234m		0.98+/-1.5 U	2.0+/-2.0 J	4.4+/-2.0
Radium-223		0.23+/-0.084 U	0.38+/-0 12 U	0.30+/-0.10 U
Radium-224		2.2+/-4.8	0.95+/-0.49	0.85+/-0.49
Radium-226		0.84+/-0.17 U	0.99+/-0.11	0.87+/-0.099
Thallium-208		0.35+/-0.074	0.39+/-0 063	0.31+/-0.056
Thorium-227		2.3+/-0.97 U	0.42+/-0 20 U	0.30+/-0.15 U
Thorium-231		-1.1+/-0.47 U	0.57+/-0 24	0.57+/-0.22
Thorium-234		0.94+/-0.79 U	1.2+/-0.77	1.5+/-0.80
Uranium-235		0.13+/-0.092 U	0.11+/-0.10 J	0.14+/-0.035

NOTES: U - not detected, J - estimated value

Results are +/- 2 sigma uncertainty

Date Printed 12/14/2001 11 26:11
DBF File N:\5816\009\DATA\TEMPDATA DBF
FXP File N:\5816\009\DATA\TABSUPW FXP

File Number: 5816.009

NYSDEC 006513

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Radiation & Hazardous Site Management, Eighth Floor
625 Broadway, Albany, New York 12233-7255
Phone: (518) 402-8579 **FAX:** (518) 402-8646
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

October 2, 2001

Mr. Alvin Ludwig
Vice President - Controller
GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75308

Dear Mr. Ludwig:

Re: Former Sylvania Site, Hicksville
Proposed Sampling of Cantiague Park Golf Course Driving Range (09/25/01)

The Radiation Section has reviewed GTE's proposed sampling locations for the Cantiague Park Golf Course Driving Range, which you transmitted by letter dated September 25, 2001. We concur with the proposed sampling locations. In addition, we agree with the recommendations made by the State Health Department in their October 1, 2001 letter to you.

Please let us know when you have scheduled this work. If you have any questions, please contact Jerry Riggi of this Bureau at 518-402-8579.

Sincerely,

Barbara Youngberg
Chief, Radiation Section
Bureau of Radiation & Hazardous Site Management

BY/
cc: A. Salame-Alfie, NYSDOH
R. Stewart, DEC Region 1
A. Cava, DEC RSHME, Region 1

35

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

October 1, 2001

RECEIVED
OCT 3 2001
Hazardous Waste Remediation
NYSDEC Region 1

Mr. Alvin E. Ludwig
Vice President - Controller
Verizon
GTE Operations Support Incorporated
600 Hidden Ridge Drive
Irving, Texas 75038

Re: Former Sylvania Site, Hicksville, N.Y.

Dear Mr. Ludwig:

This is in response to your letter dated September 25, 2001 where you requested agreement on the proposed additional surface soil sampling at the Cantiague Park Golf Course Driving Range. We have reviewed the proposed surface soil sampling locations and agree that they meet our recommendations, as discussed during our meeting on September 19, 2001.

We would like to suggest obtaining at least one background sample from the park, which is an area not likely to be affected by past operations. In addition it would be beneficial to obtain exposure rate and count rate measurements at sample locations using appropriate instrumentation. To avoid potential misinterpretation of analysis, it would be advantageous to inquire if areas selected for sampling had been recently fertilized with high potassium or phosphate fertilizers.

If you have any questions please contact Robert Alibozek or myself at (518) 402-7556.

Sincerely,

Adela Salame-Alfie

Adela Salame- Alfie Ph.D.
Assistant Director
Bureau of Environmental Radiation Protection

Cc: B. Youngberg
R. Stewart

\\DEPSERV\VOL2\BERP_MAT\ENV\ADELA\CHRONO\sylvania.doc

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Radiation & Hazardous Site Management, Eighth Floor
625 Broadway, Albany, New York 12233-7255
Phone: (518) 402-8579 **FAX:** (518) 402-8646
Website: www.dec.state.ny.us

RECEIVED
OCT 9 2001
Hazardous Waste Remediation
NYSDEC Region 1

Erin M. Crotty
Commissioner

October 2, 2001

Mr. Alvin Ludwig
Vice President - Controller
GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75308

Dear Mr. Ludwig:

Re: Former Sylvania Site, Hicksville
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Please let us know when you have scheduled this work. If you have any questions, please contact Jerry Riggi of this Bureau at 518-402-8579.

Sincerely,

Barbara Youngberg

Barbara Youngberg
Chief, Radiation Section
Bureau of Radiation & Hazardous Site Management

BY/
cc: A. Salame-Alfie, NYSDOH
R. Stewart, DEC Region 1
A. Cava, DEC RSHME, Region 1

→ Bob Stewart
NYSDEC - Stony Brook
FYI

MEMORANDUM

NASSAU COUNTY DEPARTMENT OF HEALTH

240 Old Country Road - Mineola, New York 11501

RECEIVED
JAN 15 2002
Hazardous Waste Remediation
NYSDEC Region 1

To: Department of Public Works
Att: Tim Kelly

Date: January 4, 2002

From: Bureau of Environmental Protection

Subject: Surface Soil Sampling at Cantiague Park Golf Range

Enclosed for your information is laboratory analytical data for surface soil sampling performed at the Cantiague Park Driving Range on November 7, 2001. The sampling was performed as requested by the New York State Department of Health to further characterize the site following a review of the initial May 8 and 9, 2001 sampling data. Please forward a copy to any contact you have at the Parks Department if appropriate.

Questions concerning the data should be addressed to Bill Gilday at the State Health Department or Jerry Riggi at the NYSDEC (518) 402-8575.

John L. Lovejoy

JLL:jp
Enc.

(902C)

hitemco
A Barson Company

70 Cantiague Road
Hicksville, New York 11801
516-931-3500

November 3, 1978

New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Sirs:

Subject application which was returned here as being incomplete has been revised as required and is herewith resubmitted for your approval.

As requested we have appropriately filled out the Thermal Discharge and Material Storage Area Form and the Industrial Chemical Survey Form and are forwarding same herewith.

A check for $200.00 covering the SPDES application fee is also enclosed.

Very truly yours,

S. Priceman
Vice President

SP:dj

NY 0106691

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FORM "C" FOR A STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) PERMIT
INDUSTRIAL OR MINING

8/25/78

1. APPLICANT DATA

PPLICATION TYPE: ☑ New ☐ Renewal ☐ Modification

IF RENEWAL OR MODIFICATION, GIVE PREVIOUS APPLICATION NO., EFFECTIVE DATE, EXPIRATION DATE: No. NY– | Effective Date | Expiration Date

OWNER'S NAME (Corporate, Partnership or Individual): HITEMCO DIV. BARSON CORP.

TYPE OF OWNERSHIP: ☑ Corporate ☐ Individual ☐ Partnership ☐ Public

OWNER'S MAILING ADDRESS (Street, City, State, Zip Code): 70 CANTIAGUE RD HICKSVILLE NY 11801

REFER ALL CORRESPONDENCE TO: (Name, Title and Address): S. PRICEMAN V.P. ADDRESS AS ABOVE

TELEPHONE NO. (Include Area Code): 516 | 931-3500

FACILITY NAME: HITEMCO DIV

FACILITY LOCATION (Street or Road): SEE ABOVE

CITY, TOWN OR VILLAGE: HICKSVILLE

COUNTY: NASSAU

GIVE EXPLICIT DIRECTIONS TO LOCATION, If Necessary:

NATURE OF BUSINESS OR TYPE OF FACILITY: SPECIAL METALLURGICAL COATINGS

NO. OF EMPLOYEES: 20

NO. OF SHIFTS: 1

2. IF ALL YOUR WASTE IS DISCHARGED TO A PUBLICLY OWNED WASTE TREATMENT FACILITY AND/OR A LICENSED WASTE SCAVENGER AND TO THE BEST OF YOUR KNOWLEDGE YOU ARE NOT REQUIRED TO OBTAIN AN SPDES PERMIT, COMPLETE THIS SECTION ONLY, SIGN APPLICATION AND RETURN.

AND/OR

NAME AND ADDRESS OF MUNICIPALITY RESPONSIBLE FOR RECEIVING WASTE

NAME AND ADDRESS OF LICENSED WASTE SCAVENGER

3. PRODUCTION DATA (Use additional forms, if necessary)

PRINCIPAL TYPES OF PROCESSING DONE AT THIS FACILITY

1. BRAZE TYPE COATINGS (VACUUM FIRED)
2. PACIC CEMENTATION COATINGS.
3. PLASMA, FLAME, ARC COATINGS.
4. MACHINING, GRINDING.

PRINCIPAL PRODUCTS AND AMOUNTS PRODUCED PER TIME UNIT	RAW MATERIALS AND AMOUNTS CONSUMED PER TIME UNIT
1. SEE ABOVE (NOT QUANTIFIABLE)	1.
2.	2.
3.	3.
4.	4.
5.	5.

4. DOES ANY OF YOUR DISCHARGES CONTAIN OR IS IT POSSIBLE FOR ANY DISCHARGE TO CONTAIN ONE OR MORE OF THE FOLLOWING SUBSTANCES ADDED A A RESULT OF YOUR OPERATIONS, ACTIVITIES OR PROCESSES?

☑ Aluminum	☐ Arsenic	☐ Boron	☑ Chromium	☐ Flourides	☐ Lead	☑ Nickel	☐ Selenium	☑ Tin
☐ Ammonia	☐ Barium	☐ Cadmium	☑ Copper	☐ Gold	☐ Manganese	☐ Oil & Grease	☑ Silver	☑ Zinc
☐ Antimony	☐ Beryllium	☐ Chlorine	☐ Cyanide	☐ Iron	☐ Mercury	☐ Phenols	☐ Sulfides	

☐ Corrosion control chemicals (specify) _____

☐ Halogenated organics or halogenated hydrocarbons (e.g. chlorinated, flourinated or brominated) (specify) _____

☐ Herbicides or pesticides (specify) _____

☐ Radioactivity (specify) _____

☐ Slimicides, biocides or algaecides (specify) _____

☐ Substituted aromatics (e.g. derivatives of benzene, pyridene, biphenyl, napthalene, coal or petroleum tar, etc.) (specify) _____

☐ Surfactants (specify) _____

☐ None of the above

Specify the trade names and manufacturer of any chemicals used at this facility which are not listed above and whose specific constituents are not known to you. _____

Explanation of above: (Attach additional sheets, if necessary) ABOVE CHECKED SUBSTANCES SHOULD BE PRESENT ONLY IN EXTREMELY SMALL QUANTITIES

5. SLUDGE DISPOSAL If sludge is created as a result of processing or treatment, what is ultimate disposal p

6. DISCHARGE DATA (Continued) (See Instructions) ATTACH SKETCH SHOWING OUTFALL LOCATIONS

OUTFALL NO.	☐ Proposed ☐ Replacement ☑ Existing ☐ Expansion	TYPE OF WASTE PRIMARILY NON CONTACT COOLING WATER (SEE ATTACHMENT)	TYPE OF TREATMENT (If none, so state) NONE
DESIGN FLOW Gal/Day	ACTUAL FLOW 13000 Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☑ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☑ No If "Yes", describe in comments
PERIOD OF DISCHARGE 12 Months per year	7 Days per week	24 Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters ?	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☑ Yes ☐ No	If "Yes", Name of nearest Surface Water ?	Distance Ft.	SOIL TYPE / Depth to Water Table

OUTFALL NO.	☐ Proposed ☐ Replacement ☐ Existing ☐ Expansion	TYPE OF WASTE	TYPE OF TREATMENT (If none, so state)
DESIGN FLOW Gal/Day	ACTUAL FLOW Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☐ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☐ No If "Yes", describe in comments
PERIOD OF DISCHARGE Months per year	Days per week	Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of nearest Surface Water	Distance Ft.	SOIL TYPE / Depth to Water Table

OUTFALL NO.	☐ Proposed ☐ Replacement ☐ Existing ☐ Expansion	TYPE OF WASTE	TYPE OF TREATMENT (If none, so state)
DESIGN FLOW Gal/Day	ACTUAL FLOW Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☐ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☐ No If "Yes", describe in comments
PERIOD OF DISCHARGE Months per year	Days per week	Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of nearest Surface Water	Distance Ft.	SOIL TYPE / Depth to Water Table

OUTFALL NO.	☐ Proposed ☐ Replacement ☐ Existing ☐ Expansion	TYPE OF WASTE	TYPE OF TREATMENT (If none, so state)
DESIGN FLOW Gal/Day	ACTUAL FLOW Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☐ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☐ No If "Yes", describe in comments
PERIOD OF DISCHARGE Months per year	Days per week	Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of nearest Surface Water	Distance Ft.	SOIL TYPE / Depth to Water Table

7. COMMENTS:

8. I hereby affirm under penalty of perjury that information provided on this form and any attached supplemental forms is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

APPLICANT'S SIGNATURE (See Instructions)	Date	Printed Name	Title
Seymour Priceman	8/18/78	SEYMOUR PRICEMAN	V.P.

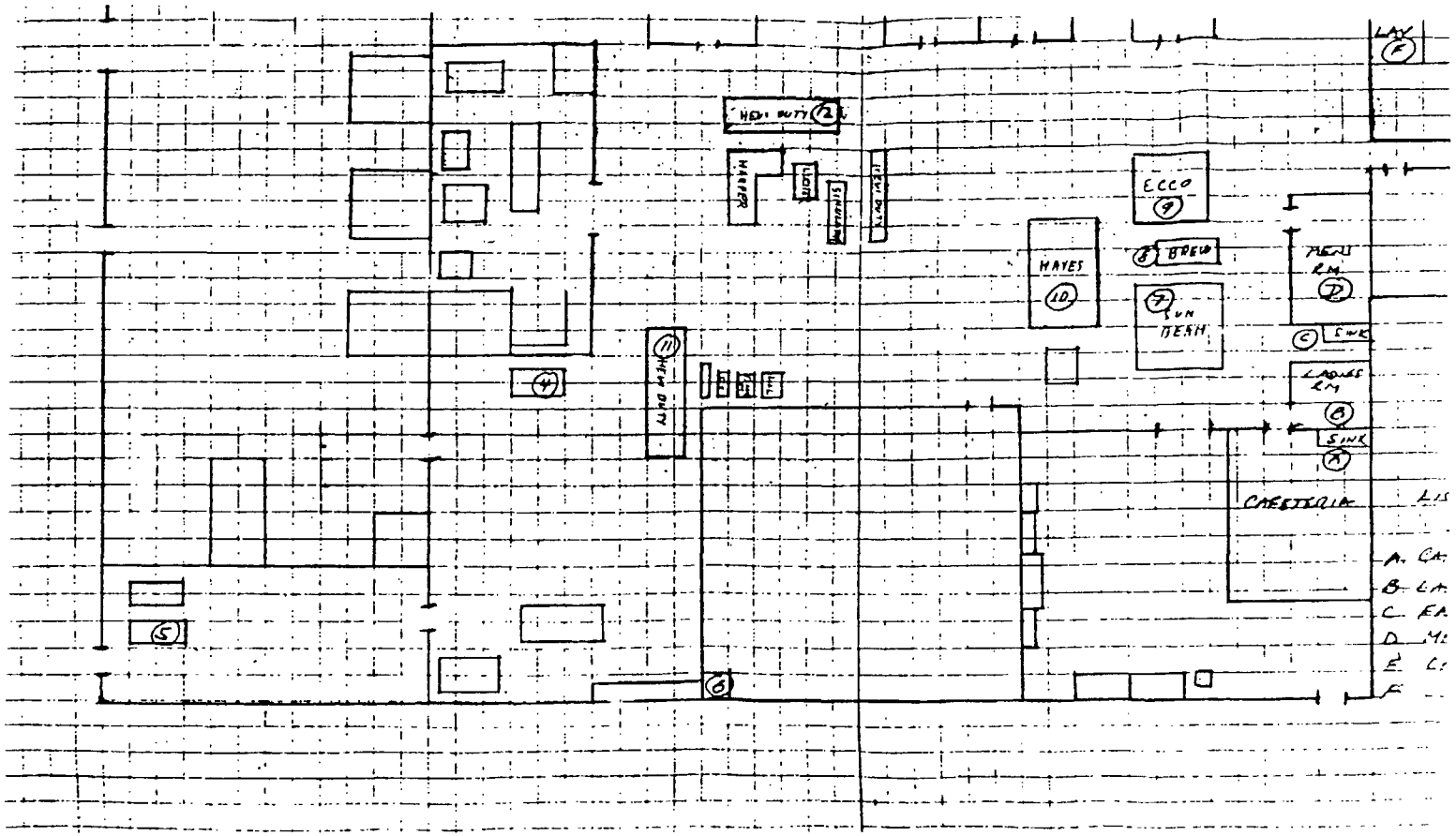
hitemco
A Barson Company

70 Cantiague Road
Hicksville, New York 11801
516-931-3500

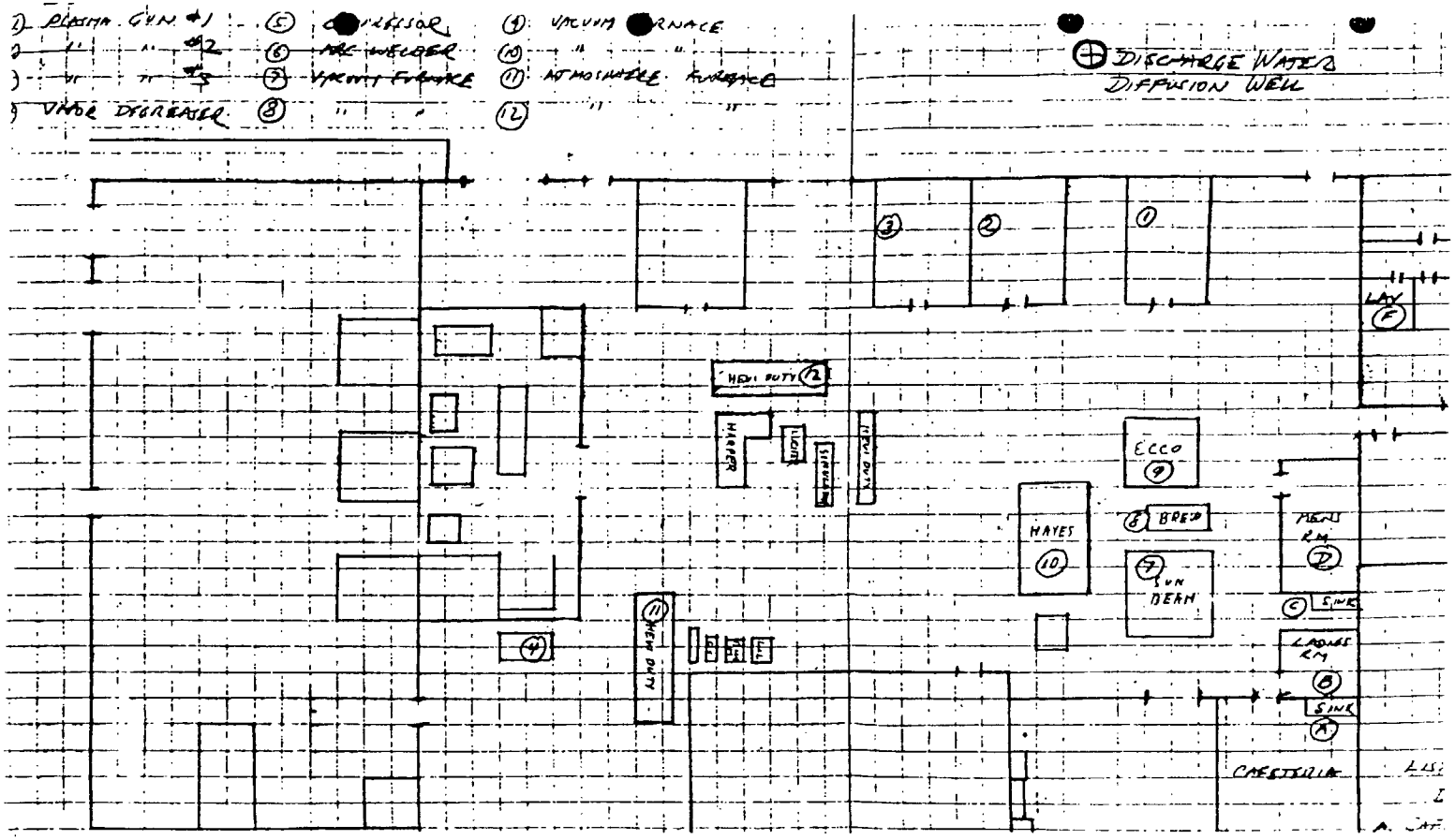
ATTACHMENT TO SPDES APPLICATION FORM "C"

TYPE OF WASTE

Total discharge is approximately 13,000 Gallons/Day approximately 95 - 98% of which is non-contact cooling water. (This water contacts only cooling jackets and cooling coils on furnaces and plasma guns). The balance of water (260 - 650 gallons/day) is used in water wash (Air Scrubber) units for Flame Spray operations to separate air borne particles of metals or ceramics being sprayed from effluent air. Sediment in water scrubbers is manually removed periodically. Carry over to discharged water is minimal. Some of this balance of water (approximately 100 - 200 Gallons/Day) is used to wash parts after pack coating operation. This discharge will contain small quantities of aluminum, aluminum oxide and ammonium chloride.



NYSDEC 011509



NYSDEC 011510

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LMD: TRACE ORGANICS

LOG ACCESS NO.: 101239

SOURCE: HI TEMCO - 70 CANTIAGUE RD., HICKSVILLE

MATRIX: WATER

DATE SAMPLED: 12/01/81

DATE RECEIVED: 12/01/81

DATE COMPLETED: 12/13/81

time : 3:45pm

transported on ice

101239

NYSDEC 011518

[illegible] HALOGENATED - GASES	MDL (ppb)	RESULTS (ppb)
[illegible]ETHANE	NA	NA
[illegible]ROCHLOROMETHANE	NA	NA
[illegible]OMOMETHANE	NA	NA
[illegible]YL CHLORIDE	1	NA
[illegible]LOROETHANE	NA	NA

VOLATILE HALOGENATED

METHYLENE CHLORIDE	11A	539
TRICHLOROFLUOROMETHANE	11	< 11
1,1-DICHLOROETHYLENE	11	11
1,1-DICHLOROETHANE	380	275
t-1,2-DICHLOROETHYLENE	275	<275
CHLOROFORM	11	< 11
1,2-DICHLOROETHANE	220	<220
1,1,1-TRICHLOROETHANE	11	4818
CARBONTETRACHLORIDE	11	< 11
1,2-DICHLOROPROPANE	NA	NA
BROMODICHLOROMETHANE	11	< 11
TRICHLOROETHYLENE	11	13063
c-1,3-DICHLOROPROPENE		
DIBROMOCHLOROMETHANE	11	< 11
1,1,2-TRICHLOROETHANE		
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	11	< 11
TETRACHLOROETHYLENE	11	< 11
1,1,2,2-TETRACHLOROETHANE	NA	NA

VOLATILE NON-HALOGENATED

BENZENE	3	ND
TOLUENE	3	39
CHLOROBENZENE	3	< 3
ETHYLBENZENE	3	< 3
XYLENE	3	< 3
DICHLOROBENZENE	10	< 10

[illegible] PERCENTAGE CONCENTRATION
[illegible]

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : HiTemco
Address: Cantiague Rock Rd. Hicksville, N.Y.

Inspector

DATE	COMMENTS
4/6/81	On 4/6/81 at 2:00 PM L. Sama + J. Schuchter met with Sy Priceman + Al Zarnowski of HiTemco Division - Banson Composites Corp., To deliver The final version of Their SPDES permit, effective 4/1/81
	Permit requirements were discussed + Mr. Priceman agreed To begin weekly composite sampling.
	Mr. Priceman indicated That current use of 1,1,1-Trichloroeth would be discontinued after switching To Trichloroethyl after a new degreasing unit is installed. Current usage of solvents includes 1,1,1-Trichloroethane, Trichloroethylene + acetone. Currently waste oils + acids are being stored for removal by scavenger. Possible sources of organic contamination in wastewater could be caused by employees pouring small amounts of Trichloroethylene (& spot cleaner) into The aluminum pack coating washing sink. After monitoring for inorganics is established, a sample of wastewater will be analyzed for volatile organics.
	J Schuchter

EH 109a 1/68
DH-1198, 9/71

NYSDEC 011548

composite of waste streams

NASSAU COUNTY DEPARTMENT OF [illegible]
DIVISION OF LABORATORIES [illegible]
ENVIRONMENTAL HEALTH LABORATORY [illegible]

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 000919

SAMPLE ID: VENCO, HICKSVILLE

MATRIX: WATER

DATE SAMPLED: 09/23/80

DATE RECEIVED: 09/23/80

DATE COMPLETED: 09/25/80

PARAMETER	RESULTS
BENZENE	0
TOLUENE	0
XYLENE	0
* ALIPHATIC HYDROCARBON	[illegible]
METHYLENE CHLORIDE	6
1,1,1 TRICHLOROETHANE	1764
TRICHLOROETHYLENE	12
TETRACHLOROETHYLENE	4

OCT 7 1980

NYSDEC 011552

BACTERIOLOGICAL AND CHEMICAL EXAMINATION
OF PUBLIC WELL WATER - NASSAU COUNTY
DIVISION OF LABORATORIES AND RESEARCH
Nassau County Department of Health

FIELD NO. LL-1 ☒ ROUTINE ☐ RE-SAMPLE ☐ SPECIAL
DL 7 5/71
DATE 9-23-80
TIME 2:30pm
COL. BY L. Lutzker
Industrial waste-water

PREMISES: Hi Temco Div - Barson Corp
NAME OF OWNER OR DISTRICT: S. Priceman
LOCATION: 70 Cantiague Road, Hicksville
POINT OF COLLECTION: ab - composite of waste streams - air scrub, settling tank
☐ BACTERIOLOGICAL EXAMINATION ☒ CHEMICAL EXAM., COMPLETE ☐ CHEMICAL EXAM., SPECIAL
TAP FLAMED: ☐ YES ☐ NO NOW?
CHLORINE RESIDUAL: OT OT+A pH
IF SAMPLE IS FROM WELL, IS SANITARY SURVEY ☐ SATISFACTORY? ☐ UNSATISFACTORY? (Explain)

REMARKS, EXPLANATIONS:
Al, Cr TOT, Cu, Ni, Ag, Zn, Cl
Fe, F, TKN, NO2, NO3, SO4, TDS, pH

LAB. NO. 100
NUMBER (2-6)
REC. CODE (7-9)
DATE (11-16)
SOURCE (1A) ☐ 2T ☐ 2T(T) ☐ OTHER (Explain)(3)
LAB. (17-24) 1.0
COL. 1. MPN/100 ML
APC/ML 35° C-24 hrs.
Lactose Broth 24 hrs. 48 hrs. % Gas
Lactose Bile Brilliant Green 24 hrs. 48 hrs. Lac.
Results Confirmed
Vol.
10 ml. 1 ml. 0.1 ml.
Color
Turbidity
Odor Cold
Odor Hot
Total Iron ml. Sample 0.44
Mn. ml. Sample
Free CO_2 (Nomograph)
Fluoride DISTILLATE ml. Samp. 0.17
Examined by
ml. sample Albumin Nitrogen
ml. sample Ammonia N 64-65
Bk.
TKN 0.99
ml. sample Nitrates N 17-20 2.0
ml. sample Nitrites N 72-76 16.5
ml. sample KMnO4
(NH4)2C2O4
ml. sample Oxygen Consumed 21-23
ml. sample Chlorides 24-29 33.0
ml. sample Total Hardness 30-32
ml. sample T-ALK 25-30 7.1
ml. sample Hydrogen Ion Conc. pH
mg/L
Spec. Cond. (Field) 14-18 1.0
Dish No.
Dish + Solids
Solids 80-82 110
Total Solids
MBAS 59-61
Temp. (Field) 61-63
CA Hardness 68-69
D.O. (LAB) 54-56
Cr, TOT 55-57 0.12
Temp. (Lab) 69-70
P-ALK 69-70
Phos. (Total) 69-70
Phos. (Ortho) 71-74
GENERAL ANALYSIS
CODE RESULT
Al 17-22 1.2
Cu 23-28 0.10
Ni 45-54 0.12
Ag 35-40
Zn 41-46 1.4
TDS 47-52 255
SO4 53-58 7
59-

NYSDEC 011553

THOMAS S. GULOTTA
COUNTY EXECUTIVE

KATHLEEN A. GAFFNEY, M.D., M.P.H.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501-4250

NOV 30 1994

November 28, 1994

Mr. Robert Stewart
NYSDEC
Building # 40
SUNY @ Stony Brook
Stony Brook, N.Y. 11790-2356

Re:Investigation of Monitoring Well
North of Air Techniques

Dear Bob:

I am enclosing for your files a copy of industrial chemical surveys (ICS) and Article XI applications of facilities in the vicinity of Air Techniques.

A summary of the enclosed is as follows:

70 Cantiague Rock Road, Hicksville

1977 ICS	Photoronics Corp.
1977 ICS	Hi Temco Div. of Barton Composites
1979 ICS	E.D.I. Products Inc.
Misc.	Air Techniques

100 Cantiague Rock Road, Hicksville

Article XI application	Harbor Distributing Corp. (also known as Magazine Distribution)

140 Cantiague Rock Road, Hicksville

Article XI application	Ventarama Skylight Corp.
Air Permit	Gilbert Displays
1977 ICS	Eaton Corp.

170 Cantiague Rock Road, Hicksville

Article XI application	Nassau County DPW Garage
" " "	" " S.T.O.P. Facility

I hope this material will assist you in your investigation as to the source of tetrachloroethylene contamination found in the upgradient monitoring well.

Should you need any further assistance, please feel free to contact me at (516) 571-3314.

Very truly yours,

Laurie S. Lutzker

Laurie S. Lutzker, R.S.
Bureau of Environmental Management

LSL:sb
Encs.
4762J

ALBANY, NEW YORK 12203

SAMPLE - Immed

Nassau County
Department of Health
240 Old Country Road
Mineola, New York 11

INDUSTRIAL CHEMICAL SURVEY

PART I

moved

NAME	SIC CODE (If known)	OFFICE USE
PHOTORONICS CORP.	3821	

COMPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
70 CAPITAL [illegible] RD	HICKSVILLE	N.Y.	11[illegible]

PLANT NAME (If different)	CONTACT NAME	TELEPHONE
	J. McGOVERN, V.P. / S. BLINE, M. PLANT MGR.	Area [illegible] 822-8

PLANT ADDRESS (If different) Street	CITY	STATE	ZIP CODE

PRINCIPAL BUSINESS OF PLANT	Number of Employees at this Facility
[illegible] PARTS OPTICS & [illegible] PARTS	

NOTE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☐
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number ☐☐☐☐☐☐☐ ☐ Yes ☐
   Do you discharge liquid wastes in any other manner? ☐ Yes ☐
   Explain _____ (Accepted [illegible] Cooling Water)

If any of the above are "Yes":

a. Do you discharge process or chemical wastes – (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☐ Yes ☐
b. Do you discharge non-contact cooling water? ☐ Yes ☐
c. Do you discharge collected storm drainage only? ☐ Yes ☐
d. Do you discharge sanitary wastes only? ☐ Yes ☐

AIR

1. Does your facility have sources of possible emissions to the atmosphere? ☐ Yes ☐
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) ☐☐☐☐☐☐☐☐☐☐

SOLID & LIQUID WASTES

1. List Name and Address of Firm (including yourself) removing wastes other than office and cafeteria refuse.

Name			
Address	City	State	Zip Code
Name			
Address	City	State	Zip Code

2. List Location(s) of Landfill(s) owned and used by your facility.

		Active	Inactive
1		☐	☐
2		☐	☐

PESTICIDES

Does this facility:

- Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☐
- Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☐
- Formulate Pesticides? ☐ Yes ☐
- Repackage Pesticides? ☐ Yes ☐

NYSDEC 011623

PART III

Photronics

SUBSTANCES OF CONCERN

(include gases and waste oils)

e all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do not use chemicals used only in analytical laboratory work.

Name Of Substance/Trade Name Supplier and Address	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reaction, blend, packaged, distributed, no longer used, etc.)
[illegible]		10 GAL	5 GAL			SPRAY [illegible]
						[illegible]
[illegible]		250	165 GAL			[illegible]
[illegible]		250	165 GAL			[illegible]
		[illegible]				
acetone		275	55	✓		cleaning
toluene		275	55	✓		cleaning

STATIONARY COMBUSTION AND INCINERATION

A) Heating System — None ☐ Boiler ☐ Space Heaters ☐
B) Fuel — Electric ☐ Gas ☐ Oil ☐
C) Incinerator — Yes ☐ No ☐

I hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE (Owner, Partner, or Officer) | DATE

NYSDEC 011624

INDUSTRIAL INVESTIGATION FOLLOW UP

Firm Photo Ronics Corp [optics & machine parts]

Address 70 Cantiague ~~Park~~ Rd. Hicksville, N.Y., 11801

Owner _____ Contact name M. Siblano Phone 822 8480

Address of owner _____ Phone _____

Date of follow up 2/15/77 Reinspection date 2/15/77

Date closed _____

Reason for investigation

☒ Abatement ☒ Sample ☒ SPDES Permit ☐ Reinspection

ACTION CODES

1. ☐ Violation corrected
2. ☐ Violation Notice
3. ☑ Sample (heavy metals)
4. ☑ SPDES Appl.
5. ☐ Referred to _____
6. ☐ Survey
7. ☐ NO Action
8. ☐ Dye Test
9. ☐ Other

ACTION CODE	COMMENTS	INSPECT/ DATE
2.	Dumps waste acetone & toluene into ~~strom~~ storm drain in parking lot. Drain empties into sump in rear of building. Explained to Mr Siblano that this is a violation of state law, and asked him to store wastes in 55 gallon drums and have ~~so~~ these wastes picked up by a recycling comp. Mr Siblano said he would no longer dump wastes & ~~cole~~ would collect them in the drums.	2/15/77 TC
	Sampled sump ~~for~~ for heavy metals because of characteristic Cr^{+3} green color. Sump has 2 influent pipes, both ~~one~~ of which ~~was~~ were running. One appeared to be clear, the other had a grayish color & a acidic ~~sode~~ odor.	TP
4	SPDES mailed certified 2/16/77	
3	sampled 8/23 results attached	

NYSDEC 011625

NASSAU COUNTY DEPARTMENT OF HEALTH

DIVISION OF ENVIRONMENTAL SERVICES

CHRONOLOGICAL SUMMARY OF ORGANICS SAMPLING

INDUSTRIAL/MUNICIPAL WASTES, NASSAU COUNTY

RESULTS (ug/1)

Date Collected	Date Analyzed	Lab.	Vinyl Chlorides	CHLOROETHYLENE 1,2 DI	CHLOROETHYLENE 1,1,2 TRI	CHLOROETHYLENE TETRA	Trifluoro Trichloro Ethane	1,1,1 TriChloro Ethane	Chloroform	Toluene	Bromo Dichloro Methane	Carbon Tetrachloride	Benzene	Methlyne Chloride
(1)	(1a)	(2)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
7/26	8/29	SHD 7-26-8 PRECO-Indust. cesspool outside bldg.(SW) Plainview				900				>1%		700	>1%	**
7/26	"	SHD 7-26-9 Johnson & Hoffman-tumbling barrel in plant-prior to dumping Cable Place			>10000	***		***	***					**
7/26		SHD 7-26-10 NC Storm Basin #178 South section Hicksville			-	-		-	-	-		-	-	**
8/23		SHD 8-23-1 Hooker Chemical Sump Hicksville												
8/23		SHD 8-23-2 Photronics Sump Hicksville												
8/23		SHD 8-23-3 Powers-Fiat Cesspool-Hicks.												
8/23		SHD 8-23-4 T&S Brass Brze.tank near cesspool Westbury												
8/24		SHD 8-23-5 Liberty Finishing-outfall tank = Farmingdale												
8/30		SHD 8-30-1 Glen Cove Storm Drain between Slater & Photocircuits												
8/30		SHD 8-30-2 Glen Cove ground water well #20												
8/30		SHD 8-30-3 H.O.Penn Mach. drywell Westbury												
8/30		SHD8-30-4 VEECO Waste Water #1 tank, Plainview												
8/30		SHD 8-30-5 Gen'l Instrument Sump HICKS												

LEGEND: * Analysis Still Underway; ** Not Analyzed For; + Detected; - Not Detected

NYSDEC 011626

8-23-2

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH, ENVIRONMENTAL HEALTH CENTER
ALBANY, N.Y. 12201

REQUEST FOR ANALYSIS

FOR LAB USE ONLY

LAB ACCES NO. ____ (YEAR) ____ (LAB) ____ (ACC. NO.): SAMPLE REC'D. ____ (MONTH) ____ (DAY) ____ (HOUR):

TESTING PATTERN ____ NUMBER OF RECORDS ____:

PROGRAM CODE 520: NAME BUREAU OF INDUSTRIAL WASTES

SAMPLING SITE

NO. OF SAMPLES IN SHIPMENT ____

A. NUMBERED STATION-STA. (SOURCE) NO. ____:

B. UNNUMBERED SITE-DRAINAGE BASIN NO. ____: N.Y. GAZETTEER NO. ____:

LOCATION (CITY OR TOWN) HICKSVILLE COUNTY NASSAU

LATITUDE 4 °____'____"N LONGITUDE 7 °____'____"W:

COMMON NAME, SUBWATERSHED, MILE POINT PHOTRONICS 20 CANTIAGUE ROCK RD

(75 CHAR. MAX.)

EXACT DESCRIPTION OF SITE (50 CHARACTERS MAX.) SUMP IN REAR OF BUILDING

TIME OF SAMPLING

GRAB/COMPOSITE FINISH 8 (MONTH) 23 (DAY) ____ (HOUR):

COMPOSITE START 23 (DAY) ____ (HOUR): ELAPSED TIME: ____ (DAYS) ____ (HOURS)

COMPOSITE ACCORDING TO TIME: ____ ML. EVERY ____ MIN.

COMPOSITE ACCORDING TO FLOW: VOLUME REPRESENTED BY SAMPLE ____

TYPE OF SAMPLE (SELECT FROM LIST) 34: DESCRIPTION: INDUSTRIAL WASTE (COOLING WATER)

COMPLAINTS, OBSERVATIONS, REASONS FOR SUBMISSION

☐ ILLNESS	☐ IMPAIRED USAGE	☐ ROUTINE SURVEIL	☐ INTERRUPTION IN CHLORINATION
☐ TASTE/ODOR	☐ STANDARDS VIOL.	☑ SPECIAL STUDY	☐ REPAIRS IN DISTRIBUTION SYSTEM
☐ TURBIDITY	☐ FISHKILL	☐ NEW EQUIP. OR PROC.	☐ IMPROPER SHIELDING OF WELL
☐ COLOR	☐ ALGAE, WEEDS	☐ EQUIP. FAILURE	☐ APPARENT SOURCE OF POLLUTION
☐ CORROSION:	☐ NATURAL DISASTER:	☐ OTHER:	☐ OTHER:

REPORT RESULTS TO (NO. OF COPIES): CO 1 RO 1 LPHE 1 LHO ____ FED ____ 0: ENTER 0, 1, OR 2

ATTENTION OF: 3 FLEISHER: (10 CHARACTERS MAX.)

M.B. Fleisher (SUBMITTED BY) Public Health Engr. (TITLE)

SOURCE OF POLLUTION

DISTANCE ____ TYPE ____

TYPE OF WELL CONST.: ____

CHARACTER OF SOIL: ____

OTHER OBSERV. ____

DATA AND FIELD MEASUREMENTS

CLOUD COVER (%)	____	WATER TEMP. °C	____	PRECHLORINATION lb/M gal.	____
AIR TEMP. °C	____	pH (UNITS)	____	POSTCHLORINATION lb/M gal.	____
ODOR CODE	____	COND.	____	RESIDUAL CHLORINE mg/1	____
ODOR INTENSITY	____	DISS. OXYGEN mg/1	____	COAGULANTS OR OTHER ADDITIONS:	
TURBIDITY	____	COLOR CODE	____	TYPE ____	
SUSP. MATTER	____	BOTTOM DEPOSITS	____	AMOUNT ____	UNITS

TREATMENT DATA

NYSDEC 011627

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LAB ACCESSION NO: 00779 YR/MO/DAY/HR SAMPLE REC'D: 77/08/24/10

REPORTING LAB: 17 EHC ALBANY
PROGRAM: 520 INDUSTRIAL WASTES
STATION (SOURCE) NO:
DRAINAGE BASIN: NY GAZETTEER NO: 2952 COUNTY: NASSAU
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: PHOTRONICS 20 CANTIAGUE ROCK RD HICKSVILLE

EXACT SAMPLING POINT: SUMP IN REAR OF BUILDING
TYPE OF SAMPLE: 34 IND. WASTE, UNCHLOR.
MO/DAY/HR OF SAMPLING: FROM 23/99 TO 08/23/99
REPORT SENT TO: CO (1) RO (1) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
023609	1,1,1-TRICHLORETHANE	MCG/L	5.	LT
036609	CARBON TETRACHLORIDE	MCG/L	5.	LT
038909	BROMODICHLOROMETHANE	MCG/L	5.	LT
039009	CHLOROFORM	MCG/L	5.	LT
041109	TRICHLOROETHYLENE	MCG/L	14.	
041209	TETRACHLOROETHYLENE	MCG/L	2.5	LT

DATE COMPLETED: 9/16/77

ASST. COMMR. FOR ENVIRONMENTAL HEALTH
NASSAU COUNTY HEALTH DEPT.
240 OLD COUNTRY ROAD

NYSDEC 011628

ATTENTION OF: FLEISHER

...STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

Nassau County
Department of Health
240 Old Country Road
Mineola, New York 1150

INDUSTRIAL CHEMICAL SURVEY

PART I

...NY NAME: Hi Temco Div. of Barter Composites		SIC CODE (If known): 3479	OFFICE USE ONLY
...NY MAILING ADDRESS: 70 Cantiague Rk. Rd.	CITY: Hicksville	STATE: N.Y.	ZIP CODE: 11801
NAME (If different): —	CONTACT NAME: Mr. H. Nelson	TELEPHONE Area: 516	931-350
ADDRESS (If different) ...et: —	CITY: —	STATE: —	ZIP CODE: —
...IPAL BUSINESS OF PLANT: Metallurgical Coatings.		Number of Employees at this Facility: 20.	

(If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

PART II
Discharge Information

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☑ N
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number ☐☐☐☐☐☐☐ ☐ Yes ☑ N
3. ...you discharge liquid wastes in any other manner? ☑ Yes ☐ N
   Explain Toilets

If a... of the above are "Yes":

a. Do you discharge process or chemical wastes – (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☐ Yes ☑ N
b. Do you discharge non-contact cooling water? ☑ Yes ☐ N
c. Do you discharge collected storm drainage only? ☑ Yes ☐ N
d. Do you discharge sanitary wastes only? ☐ Yes ☑ N

1. Does your facility have sources of possible emissions to the atmosphere? ☑ Yes ☐ N
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) 2 8 2 4 0 0 4 2 5 3

1. List Name and Address of Firm (including yourself) removing wastes other than office and cafeteria refuse.

Name	Address	City	State	Zip Code	Active	Inactive
Master Sanitation Co.	P.O. 625	Huntington	N.Y.	11743	☐	☐
					☐	☐

~~Kem~~ Removes degreaser sludge & other wastes

2. List Location(s) of Landfill(s) owned and used by your facility.
   1 _____
   2 _____

1. ...this facility:
   Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☑
   Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☑
   Formulate Pesticides? ☐ Yes ☑
   Repackage Pesticides? ☐ Yes ☑

SUBSTANCES OF CONCERN

(include gases and waste oils)

...cle all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do not ...de chemicals used only in analytical laboratory work.

C. Substance/Trade Name ...pplier and Address	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.)
Paint Thinners (Chiefly Toluol)		3	3	✓		Not dumped
Solvents (Ester type)		50	50	✓		" "
Acetone		30	50			Cleaning metals Not dumped
Trichloroethylene		250	50			Used in degreaser (See Carting for sludge removal)

Final Discharge Point

- ☐ Sewers
- ☒ Cesspools
- ☒ Sumps or basins For Cooling water & collected storm water only
- ☐ Drums
- ☐ Landfills
- ☐ Other

Recommended Action

- ☐ Immediate abatement
- ☒ Sample
- ☒ SPDES Appication SIR
- ☐ Reinspection
- ☐ Referred to _____
- ☐ No Action

TATIONARY COMBUSTION AND INCINERATION

. Heating System	☐ None	☒ Boiler	☒ Space Heaters
. Fuel	☐ Electric	☐ Gas	☒ Oil #2
. Incinerator	☐ Yes	☐ No	

...reby ...m under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements ... punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

(Owner, Partner, or Officer) H U Nelson — DATE 2-10-77

...d or Typed): H-U-NELSON — TITLE GM.

...ore Name

NYSDEC 011630

INDUSTRIAL CHEMICAL SURVEY
BUREAU OF WATER POLLUTION CONTROL

Nassau County Department of Health
240 Old Country Road, Mineola, N.Y. 11501 Tel. 535-2404

Part I

Company Name	E.D.I. PRODUCTS INC.	SIC (if known) Code	
Company Mailing Address	70 CANTIAGUE RD. HICKSVILLE		Zip
Plant Name (if different)	SAME	Contact Name MR. F. BADER	Tel. 935-877
Plant Address	SAME	Village	Water Distr. / Code / Zip 1180
Principal Business of Plant	MFG. DENTAL PRODUCTS & EQUIP	No. Employees at this Facility	30

Part II

COMPLETE LIST OF CHEMICALS USED (See attached)

PART III - DISCHARGE INFORMATION

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? If yes, name of system: ☐ Yes ☒ No
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? If yes, enter Permit No. ☐ Yes ☒ No
3. Do you discharge liquid industrial wastes in any other manner? If yes, explain: ☐ Yes ☒ No
4. If any of the above are yes:
   a. Do you discharge process or chemical wastes, i.e., water used in manufacturing, including direct contact cooling water and scrubber water? ☐ Yes ☒ No
   b. Do you discharge non-contact cooling water? ☐ Yes ☒ No
   c. Do you discharge sanitary wastes? ☒ Yes ☐ No

AIR

1. Does your facility have sources of possible emissions to the atmosphere? PAINT SPRAY BAKING OVEN ☒ Yes ☐ No
2. Enter location and facility code as shown on your Air Pollution Control Application for Permits & Certification (if applicable)
3. Heating System: ☐ None ☒ Boiler ☒ Space Heater | Type of Fuel #2: ☐ Electric ☐ Gas ☒ Oil | Incinerator: ☐ Yes ☒

SOLID & CONCENTRATED LIQUID WASTES

1. List name and address of firm (incl. yourself) removing wastes other than office and cafeteria refuse (industrial scavenger)

Name	PASELY SOLVENTS	Name	
Address		Address	

2. List location(s) of landfills owned and used by your Facility

		Active	Inactive
a.			
b.			

PEST

Does this facility manufacture, produce, formulate or repackage pesticides? ☐ Yes ☒ No

Signature (owner, partner, or officer)	Frank Bader	Date	
Name (printed or typed)	FRANK BADER	Title	GEN'L MGR
Inspector's Name	[illegible]	Date of Inspection	1/19/79

NYSDEC 011631

Nassau County Department of Health | Company E.D.L. | Site Code | Water District | Code

PART II - CHEMICALS USED (include gases and oils)

INSTRUCTIONS: Complete all information for those chemicals your facility has used, stored, distributed, or otherwise disposed of since January 1, 1977. Do not include chemicals used only in analytical laboratory work.

Name of Chemical/Trade Name, Supplier and Address	Code	Avg Annual Usage	Gal	Lbs	Use of Chemical	Final Disposition of Chemical
1 1 1 TRICHLOROETHANE		300	X		TANK DEGREASER for CLEANING PARTS	PASELY TAKES WASTES
ACETONE		<55	X		PAINTS	EVAPORATE +
LACQUER THINNER		55	X		PAINTS	EVAPORATE +
PAINTS (will increase)		250	X		SPRAY PRODUCTS	WASTES IF AND TO PASELY
CUTTING OILS		200	X		MACHINING	RESIDUAL TO WASTE DRUM
LUBRICATING OILS		200	X		MACHINERY	TO RECLAIMER

FOR OFFICE USE ONLY

RECOMMENDED ACTION

2 ☐ Immediate Abatement
3 ☐ Sample
4 ☒ SPDES Application S+R
5 ☒ Refer To: Air Pollution
6 ☐ Re-inspection
7 ☐ No Action
9 ☐ Other (specify)

EH 651B 3/77

NYSDEC 011632

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent: Air techniques
Address: 70 Cantiague rd Hicksville

Inspector

DATE	COMMENTS
1/6/84	Visited Air Techniques + spoke to Mr Frank Bader Executive V.P. who had called this office regarding the finding of buried drums on Air Techniques property.
	Inspection of the property revealed some torn + crushed drums which were removed from a piping trench approximately 4 ft underground. There were approximately 7 drums removed from the pit however there was no liquid or solid material in any of these containers. The trench was located on the north side of the building + ran in a east + south direction.
	Approximately 20 ft east of the trench another drum was uncovered which was approximately half full of a liquid material having a solvent odor. The drum had been punctured therefore it could not be ascertained as to how much material it originally contained. Another container could be seen in the excavation area so I had the crane operator remove it. Two five gallon containers filled with soil were removed + after more probing 4 more 55 gal drums were removed. Two contained liquid + were placed in a dumpster + two others were crushed + filled with soil. Two of the drums contained the welding stuffer chemicals - perchloroethylene. Mr Bader was informed that soil + water samples would be

EH 109a 1/68 taken [illegible]
DH-1198 9/71

NYSDEC 011633

INVESTIGATION SUMMARY	Date Opened 1-5-87	Reason for Investigation	Reinsp. Dates	Location of Complaint
Bureau of Land Resources Mgmt. Nassau County Dept. of Health	Received by J.S. ☑ Phone 8:30PM ☐ Mail ☐ Walk-In ☐ Survey	☐ Complaint ☐ Survey ☐ Permit ☐ Other	1. 2. 3.	Bob Maine Address: 70 Cantiague Rd. City or Town: Hicksville Census Tract

Notified of Confidentiality ☐ Yes ☐ No | Investigation ☐ Prev.Closed ☑ New ☐ In Proc. | Date Closed

COMPLAINANT		(owner)	
Name: Frank Bader, Exec. V.P., Air Techniques		Name: Same as complainant	
Address: 70 Cantiague Rd.	Apt.#	Address	Apt.#
City or Town: Hicksville	Tel. 433-7676	City or Town	Tel. 433-7676

NATURE OF COMPLAINT

		Specify (Where Necessary)
☐ Oil Spill	☐ Dead Fish, Birds, Ducks	Several drums found buried under asphalt parking lot during excavation of warehouse foundation (northwest of onsite recharge basin)
☐ Discoloration	☐ Garbage	
☐ Odor	☐ Sewage	
☐ Jelly Fish	☐ Scum	
☐ Industrial Waste	☑ Other (specify) ABANDONED DRUMS	

INSPECTION REPORT

Violation	Violation Notice Issued?	Violation	Dye Test Performed?	Results
☐ Yes ☐ No	☐ Yes ☐ No Date	☐ N.C.Pub.Health Law ☐ N.Y.S.Sanitary Code ☐ N.Y.S.DEC. Law	☐ Yes ☐ No	☐ Pos. ☐

Sample Taken	Date Viol.Corrected:	Case Solution:	Referred to:
☐ Yes ☐ No Total Lab.#	Total Complaints Resolved:	☐ Oper.Discont. ☐ New System ☐ System Repaired ☐ No Action	Date

Date	COMMENTS AND ACTION TAKEN	S
1-5-87	Mr. Bader, executive vice president of Air Techniques phoned this department to advise us that during construction of a new warehouse behind his facility, the contractor had uncovered several steel drums (more than 1") with unknown contents. These were covered back over with sand. Mr. Bader is discussing sampling and removal with Jack Leibel of Chemical Mgmt. Inc. who is responsible for Mr. Bader informing this Department. I advised Mr. Bader that ~~after~~ removal of the drums to a secure area was acceptable to this Department,	

Approved | Date

NYSDEC 011634

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent :
Address:

Inspector

DATE	COMMENTS
	but that additional work might be required if the dams had leaked and if any spillage had entered the groundwater. I suggested he contact ~~[illegible]~~ Tony Candela of the NYSDEC to advise them of the situation. He agreed to do so.
	On 1-5-87 at 3:45 PM, Mr. Candela phoned and requested NCDH investigate the matter and keep him informed. I agreed to do so.
	J Schechter
1-5-87	I phoned Mr. Bader and advised him that NCDH would be investigating the matter for the DEC. I agreed to contact him ~~by~~ tomorrow ~~[illegible]~~ morning so that we could set a time for inspection.
	J Schechter

EH 109a 1/68
DH-1198 9/71

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

84-92

Nassau County Department of Health

Instructions

Complete all Sections.

Mail this Application Form, along with your Plot Sketch and Material Flow Sketch, within 2 weeks to:

Bureau of Land Resources Management
Nassau County Department of Health
240 Old Country Road
Mineola, N.Y. 11501

For Health Department Use Only

Facility Number:	Date Received: 12/19/84

Department Action: ☒ Approved ☐ Interim ☐ Not Required By:

Permit Number	Start Date:	Exp. Date:

1. Facility Name	2. Address	3. Tel. #
AIR TECHNIQUES INC.	70 Cantiague Rock Rd. Hicksville, NY11801	433-7676
4. Owner's Name	**5. Address**	**6. Tel. #**
Louis Brooks (President)	" " " " " " "	433-7676
7. On-Site Supervisor	**8. Address**	**9. Tel. #**
Frank Bader (Vice President)	" " " " " " "	433-7676
10. Engineer (if applicable)	**11. Address**	**12. Tel. #**

13. Has this department ever approved plans and specifications and or engineering reports for this facility? ☒ Yes Date ☐ No

14. List Wastes Generated (use additional sheet if needed).

Name of Constituents	Check One: Hazardous	Check One: Non-Hazardous	# of Gals. Generated Per Month: Maximum	# of Gals. Generated Per Month: Average	Maximum # of Gals. Accumulated Before Disposal
Lacquer thinners	X		87.	75.	210
Perchlorethylene	X		15.	10.	110
Honing oil / Cutting oil	X		25.	18.	165

15. Names of Waste Haulers J.K. Waste Oil Services Inc. , Pride Solvents and Chemical Co., Techtronics Ecological Co.

16. Briefly describe facility operation: (use additional sheet if needed)

Manufacture of Air Compressors and Film Processors. We generate wastes of:

Lacquer thinners (Painting Operation
Perchlorethylene (Degreasing Operati
Honing Oils (Machining Operatio

B. Kattle 516 271-4736
C. Walden 212 347-4511

NYSDEC 011636

I hereby affirm under penalty of perjury, that the information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief.

Signature | Title Production Manager | Date 12-18-84

Air Techniques Inc.
70 Cantiague Rock Road
Hicksville, NY

December 14, 1984

MATERIALS FLOW SKETCH
(See attached site plan)

#1. Receiving Dock
#2. Storage Shed for Lacquer Thinners
#3. Storage of Open Drums of Lacquer Thinners
#4. Drum Storage of Wastes
#5. Outside Tank Storage (Perchlorethylene)
#6. Drum Storage of Oils

MATERIALS FLOW DESCRIPTION

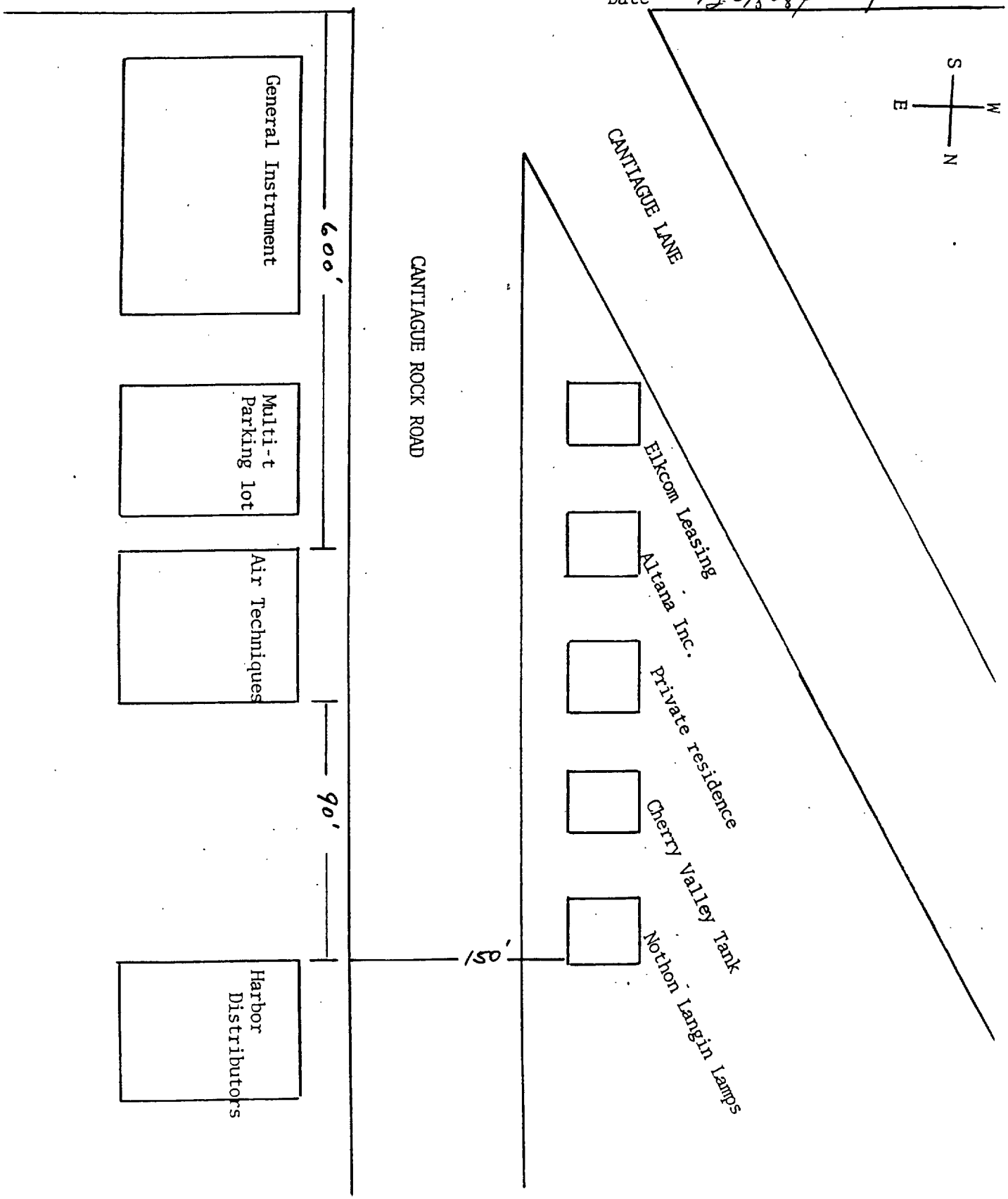
Lacquer Thinners, Perchlorethylene and Honing/Cutting Oils:

Materials are received at the loading dock (Location #1), off loaded via hose to outside storage tank (Location #5) or as 55 gallon drums and/or 5 gallon cans to storage area (Locations #2, #3, and #6)

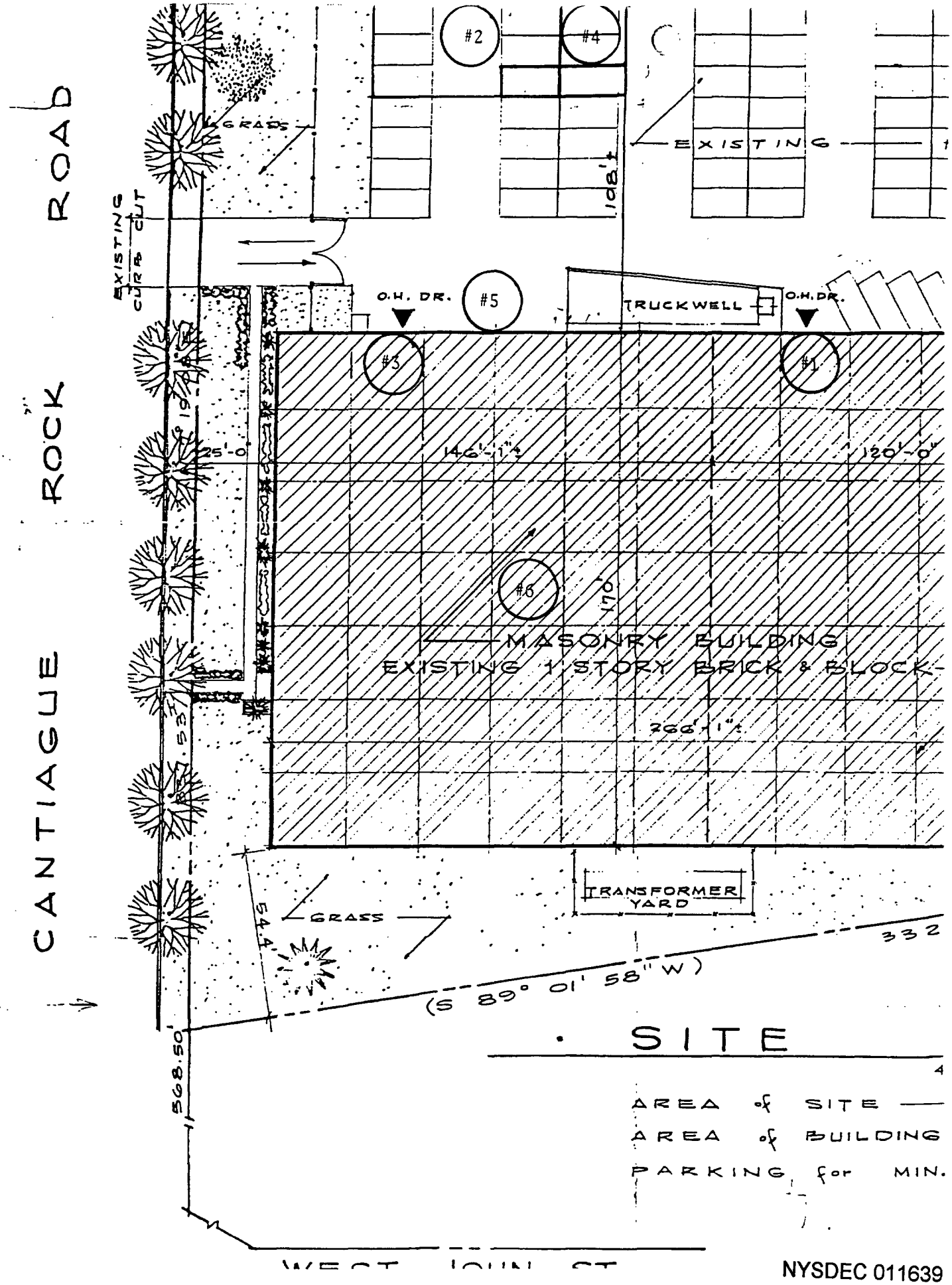
Waste materials are stored in 55 gallon drums in the drum storage area (Location #4) awaiting cartage by NY state approved industrial waste collector.

PLOT SKETCH

Air Tech ques-70 Cantiague Rock Road
Hicksville, NY
Signature C. Wald
Title Plant Manager
Date 12-18-84



NYSDEC 011638



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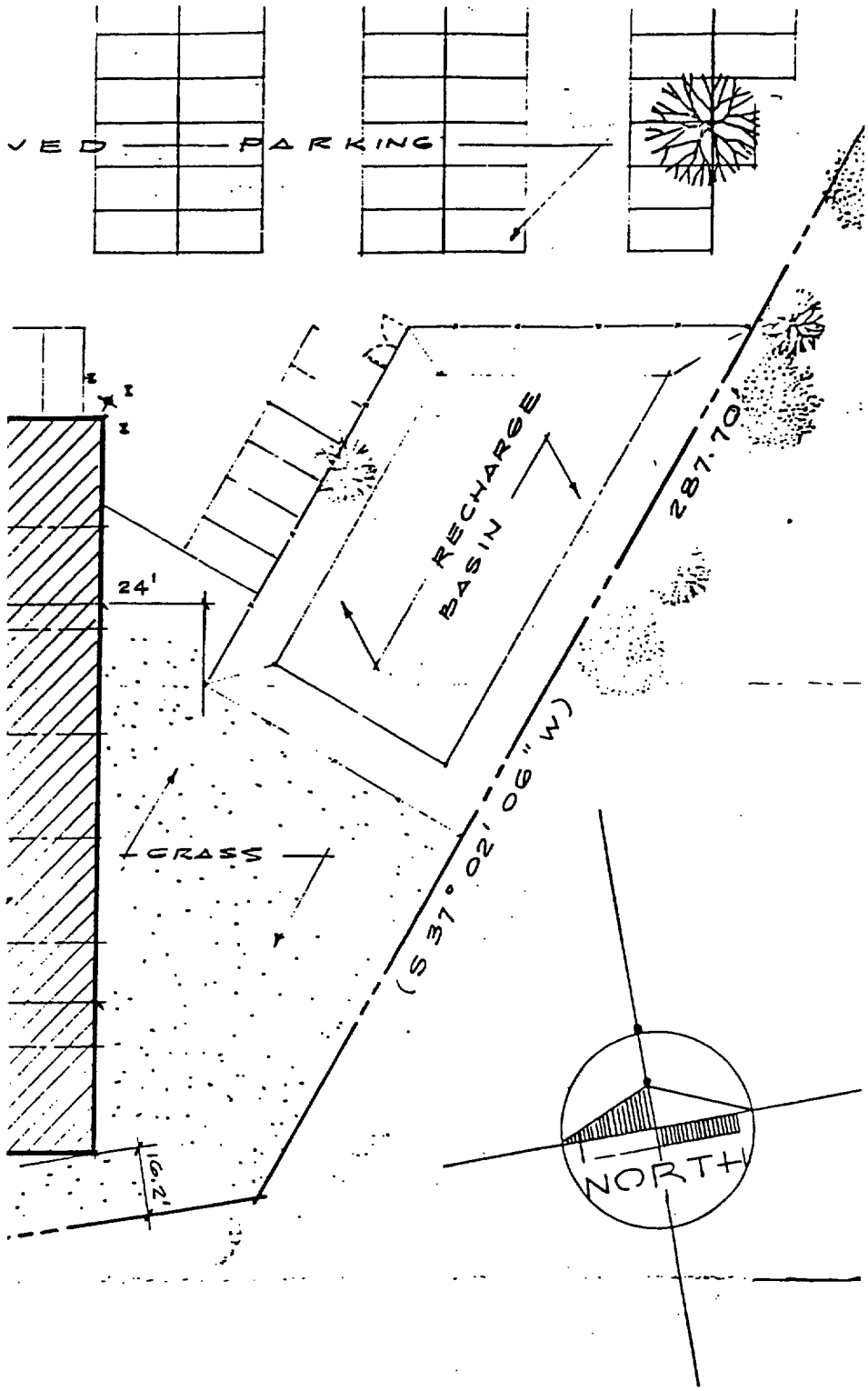


PLAN

8 SCALE : 1" = 40'

(2.8845 ACRES) 125,648.82 SQ.FT.

45,230 SQ.FT

100 CARS

70 Cantiague Road
Hicksville, New York

NYSDEC 011640

EXHIBIT C

CHEMICAL INVENTORY

MACHINE SHOP:

ALCOA
Remelt Ingot 500 lbs.

CARPENTER TECHNOLOGY CORP./RYERSON
316 Stainless Steel 10,000 lbs.
(Fe, Mn, C, P, S, Si, Cr, Ni, Al, Cr, Columbium, Cu, Mo, Se, Ta, Va, N, Ti, W

CAST-RITE METAL CO.
Aluminum Metal Castings 1,000 lbs.

CONCORDIA INDUSTRIES
Copper Alloy Ingots 500 lbs.

LANCASTER MALLEABLE
Cast Iron 4,000 lbs.

LIQUID CARBONIC/HUNTERDON INDUSTRIAL GASES
Oxygen gas 1/130 cu. ft.
Acetylene gas 1/130 cu. ft.

NELSON STUB WELDING DIVISION
Stainless Steel Welding Stud 100 lbs.

OIL-DRI CORP.
Fuller's Earth (HORMITE) 250 lbs.
Magnesium Aluminum Silicate

SMALL TUBE PRODUCTS
Low Brass, Cartridge Brass, Yellow Brass, Red Brass, Trumpet Metal, Low Leaded Brass Tube, Copper Nickel, Commercial Bronze, Inhibited Admiralty 2,000 lbs.

SMALL TUBE PRODUCTS
Copper Alloy 100 lbs.

T.E.CONKLIN BRASS & COPPER CO., INC./MONARCH BRASS & COPPER CO./ MANHATTAN BRASS AND COPPER
Copper and Copper Alloys 4,000 lbs.

T.E.CONKLIN BRASS & COPPER CO., INC./HADCO ALUMINUM & Metal Corp/MANHATTAN BRASS AND COPPER
Aluminum Alloys 2,000 lbs.

PERI-PRO:

SCHWARTZ CHEMICAL CO.
Rez-N-Glue H-94 10 gals.

Chlorinated solvents, mono-methyl methacrylate, acetic acid

Rez-N-Bond #1 — 10 gals.
Chlorinated solvents, inhibitors

ELECTRONICS:

KONFORM
Conformal Coat C416 — 24/12 oz. cans

MULTICORE
Solder flux X32 — 5 gals.
Solder thinner X71F — 5 gals.

ENGINEERING LAB:

WHIPMIX
Hi Temp investment molding cement — 25 lbs.

GENERAL ASSEMBLY/SHIPPING:

GASKETS, INC.
Ceramic Refractory Fiber — 10 lbs.
Fiberfrax Bulk Fiber

MANVILLE
Marnite Calcium Silicate Board — 50 lbs.
Calcium Silicate, Calcium Silicate Reinforcing fiber, natural organic fiber, pigments

USG ACOUSTICAL PRODS. CO. — 50 lbs.
Mineral Fiber Boards

THE BABCOCK & WILCOX CO.,/REFRACTORY PRODUCTS CO.
Kaowool Blanket/ Ultrafelt Products — 100 lbs.
Refractory Fiber Insulation
Refractory Ceramic Fiber- Alumnosilicate

3M
Nextel (tm) 312 Ceramic Fiber with 170 sizing — 5 lbs.
Aluminoborosilicate fiber

THE SOUNDCOAT, INC.
Soundfoam — 300 lbs.
Embossed w/GP-2 w/self adhesive backing
urea-urethane copolymer, acrylic adhesive, vinyl coating

MC DANEL REFRACTORY CO.
Silica oxide — 200 lbs.
Aluminum oxide

NORTON CO.
Alundum Cement EA-1900 — 50 lbs.
Aluminum Oxide, Silica — 50 lbs.

KRAMER INDUSTRIES	
Kramoco #1030	50 lbs.
Water, borax, EDTA citric acid, biodegradable detergent	
SARGEANT WELCH	
Vacuum pump oil 1407K-11	5 gals.
Kyanite cement	100 lbs.
COTRONICS	
Alumina ceramic RTC-60	100 lbs.
SHIPPING:	
RADVA CORP.	
Molded Expanded Polystyrene	2,000 lbs.
Polystyrene, Pentane	
MACHINE SHOP A:	
CINCINNATI MILACRON MARKETING CO	
Cimstar 52	50 gals.
SUNOCO	
Solnus AC 300	110 gals.
SHELL	
Telus Oil 32	55 gals.
Petroleum Hydrocarbons, Organic Zinc Dithiophosphate, Polymethacrylate, Substituted Calcium Benzoates	
Telus Oil 132	55 gals.
HANGSTERFERS	
Hangsterfers Hardcut	30 gals.
MILES	
Waylube Light	55 gals.
MACHINE SHOP B:	
SHELL	
Telus Oil 100	100 gals.
Telus Oil 38	55 gals.
Telus Oil 68	55 gals.
MARGOLIS	
Silogram Soluble Oil	55 gals.
MILES	
Super Soluble Oil	
Kleer-Sulf Cutting oil	165 gals.

SUNNEN
MB30 Honing Oil- Mineral Oil 165 gals.

HARCROSS
1,1,1-Trichloroethane 55 gals.

DOW
Freon TMS 40 gals.

MILES
Transmission fluid 110 gals.

MACHINE SHOP C:

MARGOLIS
Silogram Soluble Oil 40 gals.

SHELL
Telus 100 55 gals.
Telus 32 55 gals.
Petroleum Hydrocarbons, Organic Zinc Dithiophosphate, Polymethacrylate, Substituted Calcium Benzoates

STOCK ROOM AREA B- PHOTOGRAPHIC CHEMICALS:
(Approximately 5000 gallons of developer and 5000 gallons of fixer stored in Stock Room B)

FR CHEMICALS, INC.
Air Techniques Fixer
Water, Ammonium Thiosulfate, Sodium Sulfite, Acetic Acid

Air Techniques Developer
Water, Sodium Sulfite, Potassium Hydroxide, Hydroquinone, Boric Acid

Peri Pro Developer
Water, Sodium Sulfite, Potassium Carbonate, Hydroquinone

Peri Pro Fixer
Water, Ammonium Thiosulfate, Sodium Sulfite, Acetic Acid
Air Techniques Developer/Starter
Water, Acetic Acid, Sodium Bromide

PICKER INTERNATIONAL
Photographic Solutions

RT Developer
Water, Potassium sulfite, Sodium sulfite, Hydroquinone, Sodium Tetraborate

RT Fixer
Water, Ammonium Thiosulfate, Sodium Bisulfite, Sodium Acetate, Aluminum Sulfate, Sodium Tetraborate

DARK ROOM:

EASTMAN KODAK CO.
Kodak RP X-OMAT Developer Replenisher Part A 5 gals.
Water, Potassium/Sodium Sulfite Solution, Hydroquinone, Potassium Hydroxide, Sodium Carbonate, Diethylene glycol

Kodak RP X-OMAT Developer Replenisher Part B 5 gals.
Acetic Acid, 1-Phenyl-3-pyrozolidinone, water

Kodak RP X-OMAT Developer Replenisher Part C 5 gals.
Water, Glutaraldehyde, Acetic Acid, 5-Nitroindazole

Kodak GBX Developer and Replenisher 5 gals.
Water, Sodium Sulfite, Hydroquinone, Diethylene glycol, Potassium hydroxide

Kodak GBX Fixer and Replenisher 5 gals.
Water, Ammonium Thiosulfate, Sodium metabisulfate, Sodium acetate

Kodak Rapid Fixer Part A 5 gals.
Water, Ammonium thiosulfate, Sodium acetate, boric acid

Kodak Rapid Fixer, Part B 5 gals.
Water, Aluminum sulfate, Sulfuric acid

Kodak 55 Developer 5 gals.
Water, Sodium sulfite, Hydroquinone, Potassium Hydroxide

COMPRESSORS:
SPECIALTY GAS CORP.
Argon gas 5/242 cu. ft.

LIQUID CARBONIC/HUNTERDON INDUSTRIAL GASES
Acetylene gas 2/130 cu. ft.
Oxygen gas 2/122 cu. ft.

Molecular Sieve 330 lbs.

STOCK ROOM AREA D:

Molecular Sieve 1,400 lbs.
Potassium Sodium Alumno Silicate (Zeolite)

KALI-CHEMIE
Dessicant- silica gel 75 lbs.

SMALL QUANTITIES IN VARIOUS LOCATIONS:
(Such as 5 gallon, 1 gallon, 1 quart, 1 pint and smaller sized containers)

LOCTITE
Adhesive/Sealant 271 Polyglycol dimethacrylates, Bis Phenol A fumarate resin, Saccharin, Cumene Hydroperoxide, N,N- Dialkyltoludines

Adhesive No. 916, Cyano Acrylate Ester
Ethyl Cyanoacrylate, Dibutyl Phthalate, Hydroquinone

Adhesive No. 918
Ethyl cyanoacrylate, Dibutyl Phthalate, Hydroquinone

Superbonder 416 Instant Adhesive, Cyanoacrylate Ester
Ethyl cyanoacrylate, Poly(methyl methacrylate), Hydroquinone

Adhesive/Sealant 242, Anaerobic
Polyglycol Dimethacrylate, Polyglycol Oleates, Saccharin, Silicon Dioxide, Cumene Hydroperoxide, N,N-Dialklytoluidine

Adhesive/Sealant 271

Hydraulic Sealant 569
Polyglycol Dimethacrylates, Polyglycol Dioctates, Polybutyl Methacrylate, Cumene Hydroperoxide, Saccharin, N,N-Dialkyltoluidines

Superbonder 416

Screw Lock/Grad EV
Polyglycol dimethacrylates, Polyglycol dioctoates, Cumene Hydroperoxide, Cellulose Acetate butyrate, Trialklylamine

Adhesive/Sealant 242

Pipe Sealant w/Teflon
Polyglycol Dimethacrylates, Bis Phenol A Fumarate Resin, Mica, Polyglycol Octoates, 1-Octanol, Polytetrafluoroethylene, Titanium Dioxide, Silicon Dioxide, Cumene Hydroperoxide

Locquick primer, Loctite

Hydraulic sealant, Loctite

RC-620 retaining compound, Loctite

Molycote aerosol spray, Loctite

Locktite Anti-seize

Superbonder 414

Superbonder 430

Locktite 918, Loctite

3M
Scotch-Grip (R)Plastic Adhesive 4475
Polyurethane resin, vinyl chloride/vinyl acetate, copolymer, antioxidant blend, methyl ethyl ketone

DOW CORNING CORP.
Molykote (R) 312 R Bonded Lubricant
Methylene Chloride, 1,1,1-Trichloroethane, Butyl Acetate, Antimony Compounds

MANCHESTER TOOL CO.
Refractory Metal Carbide
Cemented Carbide Product with Cobalt binder

LEXINGTON CUTTER CORP.
All Admas Cemented Tungsten Carbide Grades

DOW CORNING CORP.
Molycote (R) 321 R Bonded Lubricant
Molycote (R) Metal Protector
Perchloroethylene

SKF BEARING INDUSTIRES
Quaker Ferrocote 5815, Quaker Ferrocote 5870, Harry Miller Steelgard 52/100, Mobilarma 245, Shell Alvania Grease 3, Shell Alvania Fett RS, Mobilux EP 2, Lubriko M-24-M, Chevron SRI Grease 2, Kyodo Multitemp SRL, Tectyl 437, Winsor R.P. 533-AR-MR-2, Chevron SRL Grease 2, Ferrocote 5856 HP

RYERSON
Plastics

SMALL TUBE
Oxygen Free Electronic Metal
Copper

XEROX
Developer for magnetic toner
Carrier: Steel Powder, Acrylate (Styrene Polymer)
Toner: Bisphenol A Propylene Oxide Fumarate, Iron Oxide, Carbon Black, Amorphous Silica, Zinc Stearate

AMP,INC.
Terminal Lubricant PIN 27011-31561230
Petroleum Naphtha, 2-Ethyoxyethanol

PERMABOND INTERNATIONAL
Permabond 108 Super Glue
Ethyl-2-cyanoacrylate

RYERSON
Plastics
Stainless Steel
Nickel
Aluminum

FERGUSON
Plastics

FISHER SCIENTIFIC
Silica Gel- Hydroxylated Silicon Dioxide

NALCO
Nalcoag 1050 Colloidal Silica

KENNAMETAL
Refractory Metal Carbide
Tool Steel
Ceramic

HANDY AND HARMAN
Trimet 258, Brazing Filler Metal

KERR MANUFACTURING CO.
Supervest 20/Satincast 20
Cristobalite, Calcium sulphate (Hemi hydrate), Silica, Alkyl Naphthalene Sulfonate

SAUERIESEN CEMENTS CO.
Insa-Lute Adhesive Cement (Paste) No.1, No.14
Sodium silicate cement

Electric Resistor Cement (Paste) No.78
Sodium Silicate Cement

Elmer's glue

Permabond #108

Thread sealant, slick tile, Laco

Super 77 adhesive, 3M

RTV -732 Silicone, Dow Corning

Threadlock 262, Loctite

O ring grease #55, Dow Corning

High vacuum grease, Dow Corning

Permatex battery protector #SA-9

Glass cleaner, Gemini

Epoxy adhesive, Devcon

Epoxy Hardener, Devcon

Scotchweld Epoxy 1838L, 3M

RTV 737 Silastic, Dow Corning

Bug and tar remover, Turtle Wax

Krylon crystal clear spray paint, Borden

Silicone II, G.E.

Adhesive HF 303 for PVC Durr

Mold release 00205, spray on, Sherwin Williams

Molycote metal protector, Dow Corning

Sorbead dessicant

Trimet 258

Easy Flo 3 AWS Spec A5.8, BAG-3

HandyFlux AWS Class 3A

Plasti Kleen Solvent
PVC Gloo
PVC Primer

EXXON CO., USA
Propane 4 cylinders

The following assorted plastics are stored at various locations and total approximately 5,000 pounds:

THORGREN TOOL & MOLDING CO., INC.
Polypropylene, Polycarbonate, Nylon, Acetal

BORG WARNER
Cycolac ABS Plastic

UNIROYAL ENGINEERED PRODUCTS CO.
Royalite 57 and 59

ABS-PVC Alloy
Acrylonitrile-Butadiene-Styrene-Polyvinyl Chloride

POLYURETHANE PRODUCTS CORP
Polyurethane elastomer

E.I. DU PONT
Zytel Nylon Resins
66 Nylon-Polyhexamethylene Adipamide

DU PONT/ROHM AND HAAS
Acrylic (Lucite/Plexiglass)

PAINT SHOP:

Naphtha	5 gals.
Dolph Varnish, Hi Therm DC-359	2 gals.
PRIDE SOLVENTS Perchloroethylene	165 gals.
KRAMER INDUSTRIES Blast-O-Mix #2 silica and glass	200 lbs.
Kramalon Grain Fused Aluminum Oxide	200 lbs.
ARGUS (Seagrave) Brown Wrinkle Bake Alkyd Bake Enamel 273829 Mineral Spirits, VM & P Naphtha, Xylene	50 gals.
Flat Black AD Lacquer Nitrocellulose Lacquer 160-74 ("Black Satin") Nitrocellulose, Acetone, Butyl Acetate, Diisononyl Phthalate DINP, Heptane, Isopropyl Alcohol, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Toluene	55 gals.
Black Wrinkle Alkyd Bake Enamel Mineral Spirits, VM & P Naphtha, Xylene	50 gals.
517 Pale Gold Lacquer Modified Cellulose Lacquer Aromatic 100, Denatured Ethyl Alcohol, Isopropyl Alcohol, Methyl Isobutyl Ketone, N-Butyl Alcohol, Toluene, Xylene	70 gals.
Lacquer Thinner 300 Solvent Thinner Acetone, Butyl Acetate, Isopropyl Alcohol, Toluene	55 gals.
Retarder 320 Solvent Mixture Butyl Cellosolve, Xylene	5 gals.
Copper Gloss Lacquer Nitrocellulose Lacquer 255321 NItrocellulose, Acetone, Butyl Acetate, Diisononyl Phthalate	50 gals.

DINP, Ethyl Acetate, Ethyl Alcohol, Heptane, Isopropyl Alcohol, Methyl Ethyl Ketone (MEK), Methyl Isobutyl Ketone, Toluene, (also contains chromium and lead)

255318 Almond Beige Gloss 50 gals.
Nitrocellulose Lacquer
Nitrocellulose, Acetone, Butyl Acetate, Diisononyl Phthalate DINP, Heptane, Isopropyl Alcohol, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Toluene

P8585 Zinc Chromate Primer 55 gals.
Modified Polyester Enamel
Zinc Chromate, Heptane, VM & P Naphtha, Xylene (also contains Chromium)

Blue Acrylic Metallic Lacquer 50 gals.
Acrylic Bake Enamel
Aliphatic Petroleum Distillate, Aromatic 100, Toluene, Xylene

SEAGRAVE
M5614 Gloss Almond Compliant Enamel 50 gals.
Alkyd Enamel
Aliphatic Petroleum Distillates, Xylene, Aromatic Petroleum Distillates, Xylene, 1,1,1-Trichloroethane

11.4.0220 Blue Metallic Compliant 70 gals.
Alkyd Enamel
Aliphatic Petroleum Distillates, Xylene, 1,1,1-Trichloroethane

HARCROSS
Acetone 55 gals.

SHERWIN WILLIAMS
Polane T Plus Polyurethane Enamel 25 gals.
Non-Lead Colors,
Black F63 B70
Toluene, Xylene, Methyl Isobutyl Ketone, Methyl n-Amyl Ketone, Cyclohexanone, Isopropyl Acetate, n-Butyl Acetate, Talc, Titanium Dioxide, Carbon Black

Polane Plus Catalyst V66 V44 25 gals.
Methyl n-Amyl Ketone, Toluene Diisocyanate Polymer, free Toluene Diisocyanate

Polane Reducer R7 K84 25 gals.
Toluene, Ethylbenzene, Xylene, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Isopropyl Acetate, n-Butyl Acetate,

INDUSTRIAL FINISHING PRODUCTS, INC.
10588 Gloss Green Lacquer 25 gals.
Acetone, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Isopropyl Alcohol 99, Toluol, Xylol, Butyl Cellosolve, Ethyl Acetate, Lead, Chromium

RANDOLPH

Lt. Blue Bake Enamel	10 gals.
Dark Blue Bake enamel	5 gals.
White Semi Gloss Bake Enamel	5 gals.
Black Conductive Solvent E-3212	5 gals.

Solvent lbs.-3212 Thinner for Acrylic 5 gals.
Acetone, Methyl Ethyl Ketone, Propylene Glycol Methyl Ether Acetate, Butyl Acetate, Cyclohexanone, Butyl Alcohol, Toluol, Xylene

WASTE STORAGE AREA:

Waste Perchloroethylene	3/55 gal. drums
Flammable Liquid, N.O.S. Stillbottoms	1/55 gal. drums
Flammable Liquid, N.O.S. Paint Solvent	3/55 gal. drums
Waste Water Soluble Oil	8/55 gal. drums

Nassau County Department of Health
Bureau of Land Resources Management
240 Old Country Road, Mineola, N.Y. 11501

Tel. 535-2406
Fax 535-3369

(Facility Inquiry / Inspection)

Pursuant to NCPHO Article XI Sec. 4.a.

Facility Name: MA[illegible] DISTRIBUTION			**Permit Required:**
Address: 1[illegible] CANT[illegible] AVE. ICA			Zip Code:
Contact Person: [illegible]	Title: MGR.	Phone No.: ( )[illegible]-23[illegible]	
Principal Business: DISTRIBUTION		Years at this Location: 1.5	
Property Owner:			
Address:			Zip Code:
Contact Person:	Title:	Phone No.: ( ) -	

Underground Injection Control

Number of Floor Drains: none	Effluent: Sewer X	Dry Well	Other	
Other Discharges: yes ___	no X	Source:	Disposition:	

Product Storage – Petroleum & Chemical

Tanks: Total No.

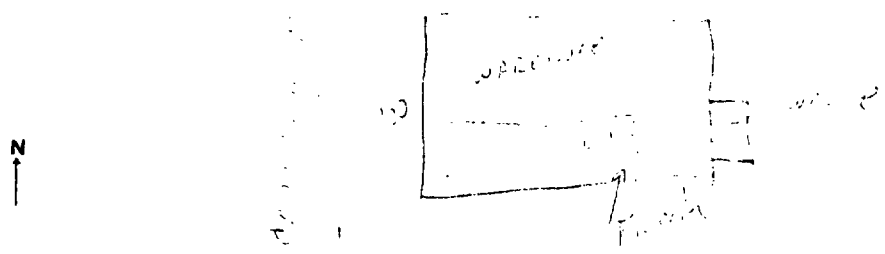
Tank No.	Capacity	Material	Location
1	10K	DIESEL	U
2	[illegible]	IN[illegible] 3D5	U
3	2K	LEADED GAS	U
4	200G	[illegible]	IND-ABOVE
5	100G	[illegible]	OUT-ABOVE
6	100G	[illegible]	OUT-ABOVE

Areas: Total No.

Dry Storage		Estimated Amt
> 2000 lbs.	FORM[illegible]	15T
Chlorinated Solvents		
> 50 gals.		
Combined Chemicals		230
> 250 gals.	OIL [illegible]	
Waste Chemicals		
> 27.5 gals.		

Wells on Site	Sanitary System
Type:	Sewer X On Site

Plot Sketch



Indicate Nearest Crossroads

LEGEND
AG = Aboveground tank
UG = Underground tank
X = Fill pipe
Ø = Vent pipe
S = Storage area
D = Dry Well
F = Floor Drain
C = Cesspool
M = Monitoring Well
W = Water Supply Well

Application Package Hand Delivered:	Yes	No
Comments: DR [illegible] RE[illegible] AS [illegible] NEW NAME - [illegible]		

NYSDEC 011653

Person Interviewed: [illegible] Date: [illegible]
Inspector: Date: [illegible]

EH 945

Nassau County Department of Health
NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS
STORAGE FACILITY PERMIT
FORM 1-GENERAL INFORMATION (SEE INSTRUCTION SHEET)

RECEIVED
AUG 5 1987
N.C.D.H. — BWPC

If applicable, check the following:
☐ Municipality
☐ Public School
☐ Other tax-supported institutions

If tax exempt facility, enter N.Y. State Exempt Organization Certificate No. and enclose a copy:

For Office Use Only

Facility I.D.	Date rec'd.
38037	8-5-87
Fee Exempt Fac. ☐ Yes ☑ No	Permit Months: 60

Check all that apply to your facility: ☒ Tank Storage ☐ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☑ New ☒ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Post Office	State	Zip	Phone
Harbor Distributing Corporation	100 Cantiague Rock Road	Hicksville	NY	11801	433-2300

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
P.O. Box E, Hicksville, NY 11802	Ellen Toomey, Controller	Ext. 204

Facility Owner	Street Address	Post Office	State	Zip	Phone
Stephen A. Spry, President	100 Cantiague Rock Rd	Hicksville	NY	11801	433-2300

Property Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
[illegible]	100 Cantiague Rock Rd	Hicksville	NY	11801	433-2300

Tank Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
Stephen A. Spry	100 Cantiague Rock Rd	Hicksville	NY	11801	433-2300

Name that should appear on Permit (Permittee)
(If different from Facility Owner) Stephen A. Spry

Permittee's Street Address	Post Office	State	Zip	Phone
100 Cantiague Rock Rd	Hicksville	NY	11801	433-2300

Permittee's Relationship to Facility Owner: ☒ Same ☐ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot
	17	11	499	0099

Forms Attached (Check all that apply) ☒ Form 2 - Tank Registration ☒ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true and correct to the best of my knowledge and belief.

Print Name	Signature	Title	Date
Ellen Toomey	Ellen A. Toomey	Controller	8/4/87

☐ D.P.

NYSDEC 011654

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only

RECEIVED

Date Application Received AUG 5 1987

Facility I.D. 38037

Reviewed By N.C.D.H. — BWPC

Date Reviewed 8/31/87

Action: ☐ Not Req'd. ☑ Approved ☐ Disapproved

No. of Months 60

Facility Name: Harbor Distributing Corporation

Facility Address: 100 Cantiague Rock Road, Hicksville, NY 11801

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection	Secondary Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condition
1	1	4	10,000	9	9	9	9	1	[illegible]	Diesel fuel	1	01982	5	5	2	1	2		
1	2	4	2,000	9	9	9	9	1	[illegible]	Unleaded gas	1	01982	5	5	2	1	2		
1	3	4	2,000	9	9	9	9	1	[illegible]	Leaded gas	1	01982	5	5	2	1	2		
1	4	1	200	1	9	9	9	1	06361	15W40 oil	1	01983	5	5	1	1	1		
1	5	3	100	8	9	9	9	2	09671	Waste oil	1	01983	5	5	2	2	8		
1	6	3	100	8	9	9	9	2	09671	Waste oil	1	01983	5	5	2	2	8		

NYSDEC 011655

EH 858 4/86

Date Submitted _____ Page ____ of _____ ☐ D.P.

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

RECEIVED

For Office Use Only

Date Application Received AUG 5 1987	Facility I.D. 38037
Reviewed By N.C.D.H. BWPC	Date Reviewed 8/31/87
Action: ☐ Not Req'd. ☒ Approved ☐ Disapproved	No. of Months 60

Facility Name
Harbor Distributing Corporation

Facility Address
100 Cantiague Rock Road, Hicksville, NY 11801

Action: ☒ Register Existing Area ☐ Add Area ☐ Remove Area ☐ Modify Area — Area No. S-1

Location: ☒ Indoors ☐ Outdoors — Bulk Storage Max.Quantity Stored: — Container Storage Max.No. 8 Max.Vol. 250

Secondary Containment: ☐ Impervious Berm/Dike ☒ Impervious Floor/Pad ☒ Roof ☒ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply) ☐ Concrete ☐ Steel ☐ Other (Specify): — Security ☒ Yes ☐ No

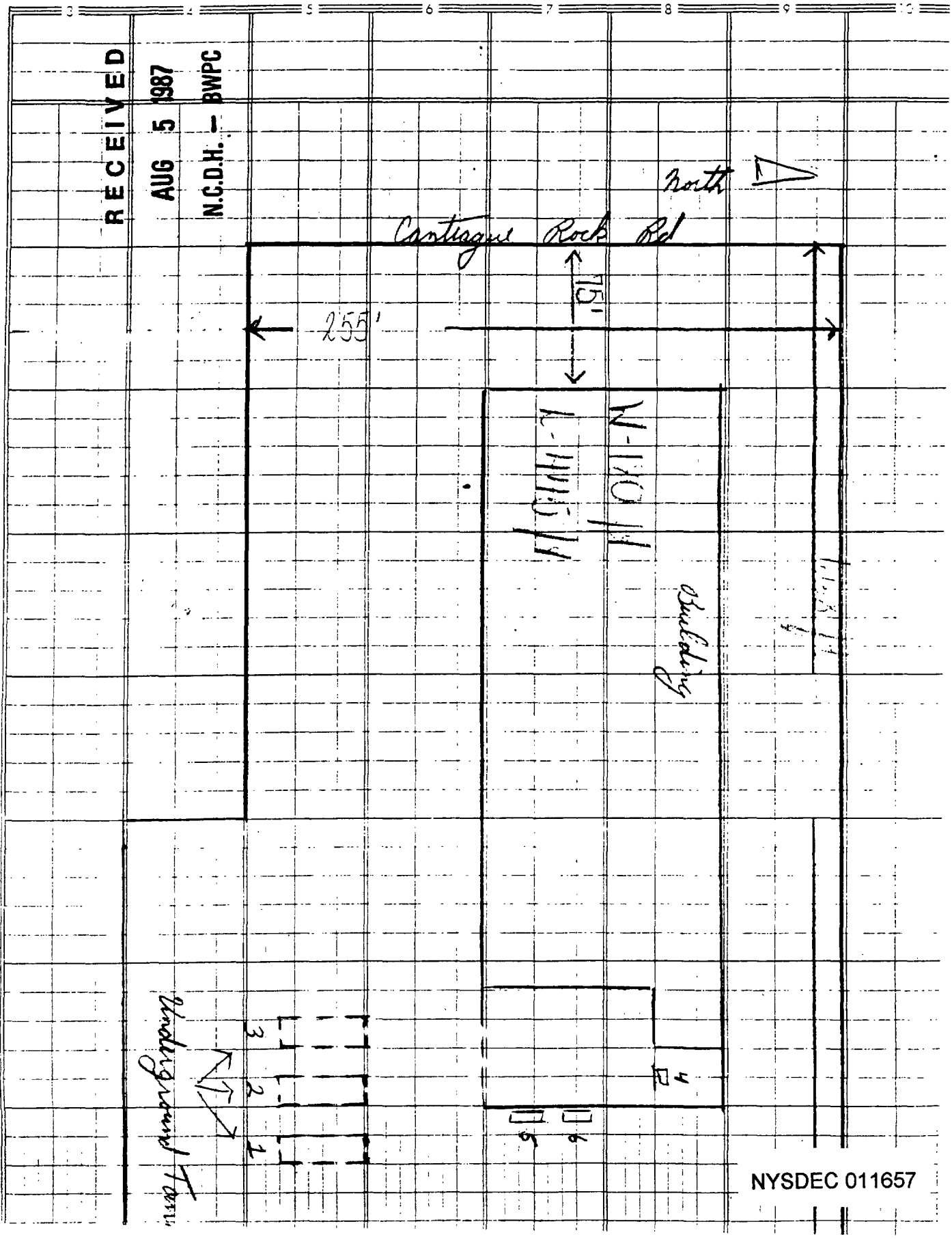
Type	NCDH Number	Material Name	Physical State	Amount Stored: Average Quantity	Amount Stored: Units	Storage Method: Average Number	Storage Method: Type
1	SAE 80W/90 EPAP1GL-5 06381	gear lube	1	120 ~~lbs.~~	1	2	1
1	Multi purpose EP grade 2 04131	grease	2	120 lbs.	1	3	2
1	Code solvent-66 05811	mineral spirits	1	55 gals.	1	1	1
1	Multi-purpose #2 04131	grease	2	35 lbs.	1	1	2
1	Dexron purpose 09061	auto transmission fluid	1	55 gals.	1	1	1

NYSDEC 011656

EH 859 4/86
DH-2791 11/86

Date Submitted _____ Page ____ of ____ ☐ D.P.

RECEIVED
AUG 5 1987
N.C.D.H. — BWPC



NYSDEC 011657

/9-001 (4/85)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CON

PETROLEUM BULK STORAGE APPLI

SECTION A—Instructions on Back

SECTION B—Instructions on Ba

PPLICATION NUMBER
06791

RANSACTION TYPE
Check one

[X] Registration

[ ] Transfer

Transfer, Existing PBS Number

[ ] Substantial Facility Modification

[ ] Information Correction

BS Number

OFFICIAL USE ONLY

1. NAME OF FACILITY
Harbor Distributing Corporation

2. ADDRESS (Number and Street)
100 Cantiague Rock Road

3. CITY, TOWN, VILLAGE: Hicksville | 4. STATE: NY | 5. ZIP CODE+4: 11801

6. COUNTY: Nassau | 7. TELEPHONE: (516) 433-2300

1. NAME OF OWNER
Harbor Distributing Corporation

2. ADDRESS (Number and Street)
100 Cantiague Rock Road

3. CITY, TOWN, VILLAGE: Hicksville | 4. STATE: NY | 5. ZIP CODE+4: 11801

[redacted] 7. TELEPHONE: (516) 433-2300

1. NAME OF OPERATOR
Island Leasing Corp.

2. ADDRESS (Number and Street)
100 Cantiague Rock Road

3. CITY, TOWN, VILLAGE: Hicksville | 4. STATE: NY | 5. ZIP CODE+4: 11801

[redacted] 7. TELEPHONE: (516) 433-5520

1. NAME OF EMERGENCY CONTACT
Pat Pagano -- Island Leasing Corp.

2. ADDRESS (Number and Street)
100 Cantiague Rock Road

3. CITY, TOWN, VILLAGE: Hicksville | 4. STATE: NY | 5. ZIP CODE+4: 11801

[redacted] NYSDEC 011658 7. TELEPHONE: (516) 433-5520

hereby affirm under penalty of perjury, that information provided on this form is true o the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME/TITLE OF REPRESENTATIVE
Ellen A. Tammell, Controller

Action	Tank Number	Location	Capacity	Tank Type	Product Stored	Status	Installation Date	Lea
1	1	1	1100000	1	6	1	1982	6
1	2	1	200000	1	1	1	1982	6
1	3	1	200000	1	2	1	1982	6

RECEIVED
DEC 1 1986
WATER UNIT
DEC REGION 1

KEY FOR SECTION B (Instructions on back)

ACTION
1 Register existing tank
2 Add Tank
3 Close/Remove Tank
4 Modify Tank

LOCATION
1 Underground
2 Underground vaulted, with access
3 Underground vaulted, no access
4 Aboveground
5 Aboveground on crib, etc.
6 Aboveground—10%

TANK TYPE
1 Bare steel or steel with black asphalt coating
2 Steel in vault
3 Steel with interior epoxy lining
4 Steel retrofitted with cathodic protection
5 Steel with cathodic protection
6 Fiberglass coated steel
7 Fiberglass reinforced plastic
8 Double walled

PRODUCT STORED
1 Leaded gasoline
2 Unleaded gasoline
3 Nos. 1, 2 or 4 fuel oil
4 Nos. 5 or 6 fuel oil
5 Kerosene
6 Diesel
7 Other

STATUS
1 In service
2 Temporarily out
3 Permanently out

INSTALLATION DATE
This location
Month/year (mmhhd)

LEAK
1 Ele
2 Vap
3 Sar
4 In-t
5 Oth
6 Nor

SECO
1 Dik
2 Vau
3 Doc
4 Unc
5 Oth
6 Nor

PROD

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PETROLEUM BULK STORAGE APPLICATION

—Instructions on Back

SECTION B—Instructions on Back

g Corporation

Road

4. STATE	5. ZIP CODE + 4
NY	11801

7. TELEPHONE (516) 433-2300

g Corporation

Road

4. STATE	5. ZIP CODE + 4
NY	11801

7. TELEPHONE [redacted] (516) 433-2300

p.

Road

4. STATE	5. ZIP CODE + 4
NY	11801

7. TELEPHONE [redacted] (516) 433-5520

ACT

and Leasing Corp.

Road

4. STATE	5. ZIP CODE + 4
NY	11801

7. TELEPHONE [redacted] (516) 433-5520

formation provided on this form is true
statements made herein are punishable
210.45 of the Penal Law.

Action	Tank Number	Location	Capacity	Tank Type	Product Stored	Status	Installation Date	Leak Detection	Secondary Containment	Product Gauge	Piping Type	Dispenser	Test Certificate Enclosed	Official Use Only
1	1	1	10000	1	6	1	1982	6		0	7	2		[redacted]
1	2	1	12000	1	1	1	1982	6		0	7	2		
1	3	1	12000	1	2	1	1982	6		0	7	2		

RECEIVED
DEC 1 1986
WATER UNIT
DEC REGION 1

KEY FOR SECTION B (Instructions on back)

ACTION
1 Register existing tank
2 Add Tank
3 Close/Remove Tank
4 Modify Tank

LOCATION
1 Underground
2 Underground vaulted, with access
3 Underground vaulted, no access
4 Aboveground
5 Aboveground on crib, etc.
6 Aboveground—10%

TANK TYPE
1 Bare steel or steel with black asphalt coating
2 Steel in vault
3 Steel with interior epoxy lining
4 Steel retrofitted with cathodic protection
5 Steel with cathodic protection
6 Fiberglass coated steel
7 Fiberglass reinforced plastic
8 Double walled

PRODUCT STORED
1 Leaded gasoline
2 Unleaded gasoline
3 Nos. 1, 2 or 4 fuel oil
4 Nos. 5 or 6 fuel oil
5 Kerosene
6 Diesel
7 Other

STATUS
1 In service
2 Temporarily out
3 Permanently out

INSTALLATION DATE
This location
Month/year (mmyy)

LEAK DETECTION SYSTEM
1 Electronic
2 Vapor well
3 Sampling well
4 In-tank system
5 Other
6 None

SECONDARY CONTAINMENT
1 Diking
2 Vault
3 Double wall tank
4 Underground liner
5 Other
6 None

PRODUCT GAUGE

PIPING TYPE
1 Steel/Iron
2 Galvanized Steel
3 Wrapped Steel
4 Fiberglass
5 Cathodically protected
6 Double walled
7 Unknown

DISPENSER METHOD
1 Submersible
2 Suction
3 Gravity
4 Loading rack

NYSDEC 011659

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NASSAU COUNTY DEPARTMENT OF HEALTH

SEQNC NO: 1-R-0232
RUN DATE: 10/19/92

C 282400 6219 00001 W I
LOCATION FAC EP

CERTIFICATE TO OPERATE AN AIR CONTAMINATION SOURCE
PROCESS, EXHAUST OR VENTILATION SYSTEM UNIT
RENEWAL APPLICATION

OWNER	FACILITY	
(1) GILBERT DISPLAYS INC	GILBERT DISPLAYS INC	(11) CONFIDENTIAL STATUS NON-CONFIDNT
(2) 140 CANTIAGUE ROCK RD	140 CANTIAGUE ROCK RD	(12) APPLICATION STATUS IN COMPLIANC
(3) HICKSVILLE (4) NY	HICKSVILLE (9) 11801	DATE OF LAST CHANGE 04/01/92
(5) 11801	REP: CHARLES EDWARDS, MGR 822-1500	PRIOR CO ISSUE DATE 01/16/92
		PRIOR CO EXPIRATION DATE 01/15/93

EMISSION POINT 00001
(41)UTM-E: 622.5 KM. (42)STACK HEIGHT: 27 FT. (43)EXIT VELOCITY: 43.00 FT/SEC (44)SIC: 2511 (45)AGENCY-CODE-1: C (COUNTY
(46)UTM-N: 513.0 KM. (47)STACK STRUC: 6 FT. (48)EXIT FLOW: 7985.00 ACFM (49)CO FEE: $100.00 (50)AGENCY-CODE-2: C (COUNTY
(51)GRND ELEV: 145 FT. (52)STACK DIAM: 24 IN. (53)EXIT TEMP: 75 DEGR F (54)CO CONDITIONS: 1 3

UNIT 1
(55)HOURS/DAY: 3.0 (56)DAYS/YEAR: 200 (57)% OP BY SEASON: 25 25 25 25 (58)SOURCE CODE: 1306 PAINT SPRAYING (OTHE
(59)BLDG: (60)FLOOR NAME: (61)RULE 1: 228.00 (62)RULE 2: 212.00

PROCESS/UNIT DESCRIPTION (72)DESCRIPTION 1. SPRAY BOOTH

CONTROL EQUIPMENT (73)TYPE: 099 NONE

AIR CONTAMINANTS	CAS NUMBER	EMISSION RATE	EMISSIONS ACTUAL	UNIT	HOW DET	PERMISSIBLE	% CONTROL EFFICIENCY	HRLY ACTUAL LBS/HOUR	ANNUAL EMISSIONS (LBS/YEAR) ACTUAL	10x	PERMISSIBLE
TOTAL ORGANIC SOLVE	(085) NY998-00-0	(086) (087)	5.510	(088) 09	(089) 06	(090) 5.600	(091)	(092) .156	(093) 93.600	(094) 0	(095) 95.20
PARTICULATES	(096) NY075-00-0	(097) (098)	.001	(099) 20	(100) 06	(101) .001	(102) 85.0	(103) .007	(104) 4.100	(105) 0	(106) 4.100
TOTAL ORGANIC SOLVE	(107) NY998-00-0	(108) (109)	.220	(110) 09	(111) 06	(112) .220	(113)	(114) .220	(115) 132.000	(116) 0	(117) 132.000
PARTICULATES	(118) NY075-00-0	(119) (120)	.001	(121) 20	(122) 06	(123) .001	(124) 85.0	(125) .094	(126) 56.400	(127) 0	(128) 56.400
METHYL CHLOROFORM	(129) 00071-55-6	(130) (131)	6.380	(132) 01	(133) 06	(134) 6.380	(135)	(136) 6.380	(137) 3828	(138) 0	(139) 3828
METHYLENE CHLORIDE	(140) 00075-09-2	(141) (142)	3.310	(143) 01	(144) 06	(145) 3.310	(146)	(147) 3.310	(148) 1986	(149) 0	(150) 1986

SPECIAL CONDITIONS (151)CONDITION
1. AQI COMPLIANCE REQUIRED
2. VERIFIED ODOROUS EMISSIONS MAY REQUIRE THE
3. INSTALLATION OF ODOR CONTROL EQUIPMENT.
4. THIS CERTIFICATE TO OPERATE IS ISSUED CONDITIONALLY
5. PENDING LABORATORY VERIFICATION OF PART 228
7. COMPLIANCE FROM SAMPLE TO BE COLLECTED.

CONTINUED ON NEXT PAGE

NYSDEC 011660

Nassau County Department of Health
NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

FORM I-GENERAL INFORMATION (SEE INSTRUCTION SHEET)

If applicable, check the following:
- ☐ Municipali
- ☐ Public School
- ☐ Other tax-supported institutions

If tax exempt facility, enter N.Y. State Exempt Organization Certificate No. and enclose a copy:

For Office Use Only

Facility I.D.	Date Rec'd.
55852	1/5/91
Fee Exempt Fac. ☐ Yes ☒ No	Permit Months: 12

Check all that apply to your facility: ☒ Tank Storage ☐ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☒ New ☐ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Post Office	State	Zip	Phone
VENTARAMA SKYLIGHT CORP	140 Cantiague Rock Road	HICKSVILLE	N.Y.	11801	516 931 020

If Facility Mailing Address is different from above indicate: Name	Street Address	Facility Contact Person (Name & Title)	Phone
SAME		STEPHEN K. BECHTOLD -PRES	516 931 020

Facility Owner (Business Owner)	Street Address	Post Office	State	Zip	Phone
STEPHEN K. BECHTOLD -PRES	306 Ocean Ave	NORTHPORT	N.Y.	11768	516 757 228

Property Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
SAME					

Tank Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
SAME					

Name that should appear on Permit (Permittee)
(If different from Facility Owner) VENTARAMA SKYLIGHT CORPORATION - STEPHEN K. BECHTOLD, PRES

Permittee's Street Address	Post Office	State	Zip	Phone
140 CAntiague Rock Road	Hicksville	N.Y.	11801	516 931 02(

Permittee's Relationship to Facility Owner: ☒ Same ☐ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot
	017	11	499	0100

Forms Attached (Check all that apply) ☐ Form 2 - Tank Registration ☐ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true and correct to the best of my knowledge and belief.

Print Name	Signature	Title	Date
STEPHEN K. BECHTOLD	Stephen K. Bechtold	PRESIDENT	3-13-91

EH 857 1/90
DH - 2512. 11/88 Rev. 12/87

☐ D.P.

NYSDEC 011661

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 3/15/91	Facility I.D. 55852
Reviewed By WS	Date Reviewed 3/15/91
Action: ☐ Not Req'd. ☒ Approved ☐ Disapproved	No. of Months 12

Facility Name VENTARMA SKYLIGHT CORPORATION

Facility Address 140 CANTIAGUE ROCK ROAD, HICKSVILLE, NY, 11801

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection Sys.	Secondary Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condition
1	1	1	275	1	2	2	na	2	9671	MOTOR OIL - USED	T	12/87	5	5	2	2	2		

EH 858 4/86
DH-2513 11/86

Date Submitted 3/13/91

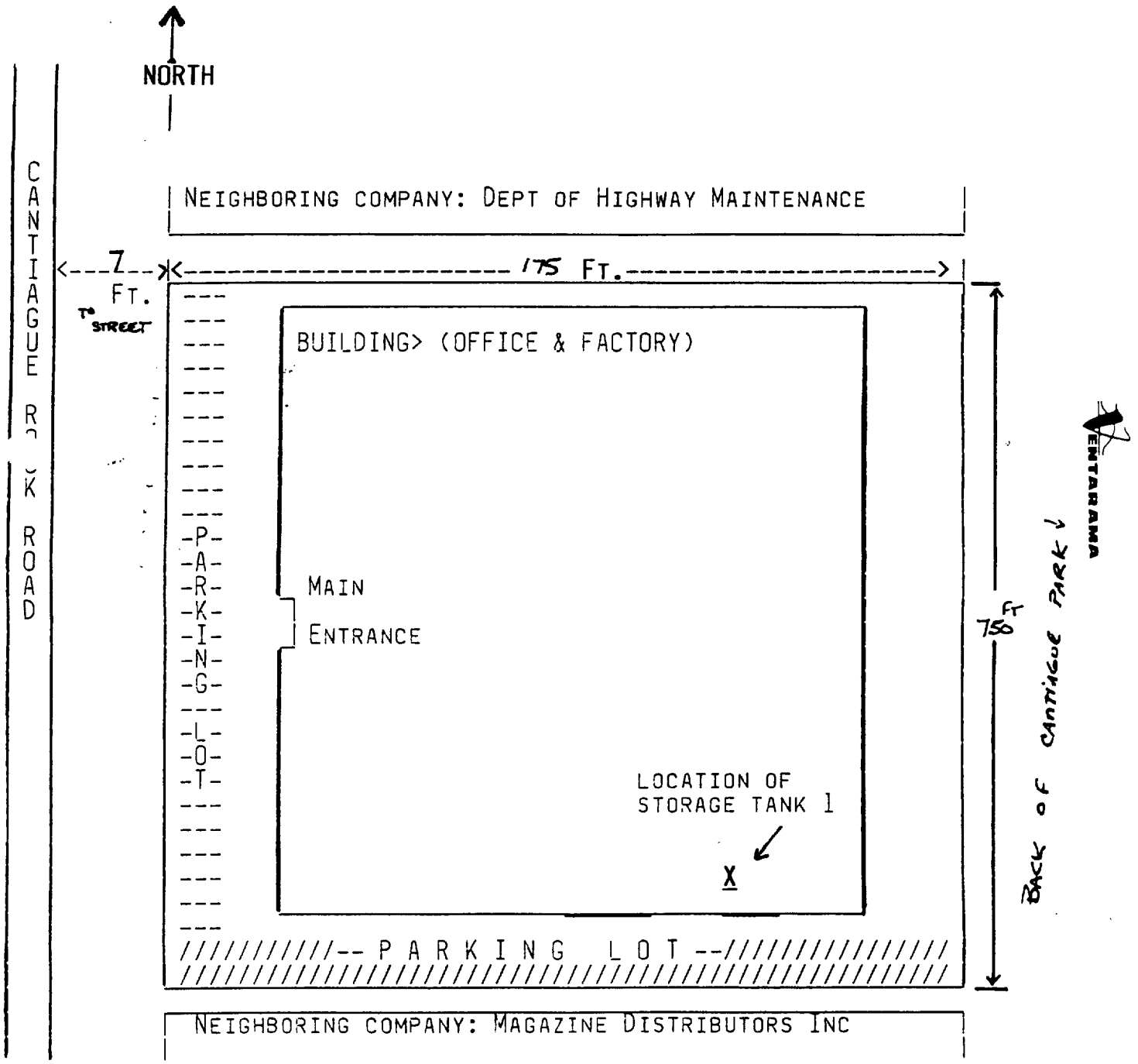
Page 1 of 1

☐ D.P.

NYSDEC 011662

VENTARAMA SKYLIGHT CORPORATION

140 Cantiague Rock Road, Hicksville, New York 11801 • 516-931-0202



IDENTIFICATION BLOCK:
SECTION: 11
BLOCK: 499
LOT: 0100

VENTARMA SKYLIGHT CORPORATION
140 CANTIAGUE ROCK ROAD
HICKSVILLE, N.Y., 11801

VENTARAMA SKYLIGHT CORPORATION
140 Cantiague Rock Road, Hicksville, New York 11801 • 516-931-0202

February 22, 1990

Nassau County Dept. of Health
240 Old Country Road
Mineola, N.Y. 11501

Attention: Gilbert Kruse

Dear Mr. Kruse:

In reponse to your notice of Violation No. 90T109 of February 2, 1990, we propose the following:

The sandblast box in question had become run down and is due for rebuilding. We have not used it since your visit. We will remove the machine from its location and rebuild it. This will take approximately a month. During that time, we will investigate various methods of eliminating the emission caused by this source. Following that investigation, we will determine whether to vent the machine to the outside or to have the air cleaned and recirculated back into the building.

When we have come to a conclusion as to how to best eliminate or minimize the existing condition, we will contact you. In the meantime, the opening through the exterior will be plugged.

Sincerely yours,

Stephen K. Bechtold, President
VENTARAMA SKYLIGHT CORPORATION

SKB:ar

76-12-8 (6/86)

A-2-8000NOCD07109 @ A0202 90 Inspected on 02/02/90 AT 225 AM (PM) time

LOC FAC EP

WHITE - APPLICANT
PINK - DATA ENTRY
YELLOW - REGIONAL OFFICE

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF AIR RESOURCES

NOTICE OF COMPLIANCE DETERMINATION

BUREAU OF AIR QUALITY MANAGEMENT
NASSAU COUNTY DEPARTMENT OF HEALTH
240 OLD COUNTRY RD
MINEOLA, N.Y. 1

TO
Name: Ventarama Skylight Corp
Address: 140 Cantiague Rock Rd.
City: Hicksville ZIP: 11801
Contact: Dick Arnett 931-0202

FOR
Source Description: sand blasting process
☐ INSPECTION
☒ COMPLAINT
☐ OTHER
Type: ~~Parts~~ 90T109 TZ

MULTIPLE EMISSION POINTS

LIST IF MORE THAN ONE

INSPECTION COMMENTS (DESCRIBE VIOLATION, IF ANY)

Particulates on ground outside facility, underneath wall vent. Contact states this is a sandblasting process using silica. No Air 100 on file. Contact will supply MSDS on processes and equipment. Will send Application to facility. See attached

COMPLIANCE STATUS

☒ NON COMPLIANCE: PLEASE TAKE NOTICE THAT based upon this inspection, there is reason to believe that you are in violation of Article 19 of the New York Environmental Conservation Law and the regulation promulgated thereunder 6NYCRR Part(s) 201, 211-2.

PLEASE TAKE FURTHER NOTICE THAT the sanctions for such violations include a civil penalty of up to $10,000 plus $500 per day the violation continues a criminal fine of up to $10,000 per day of violation, and/or imprisonment of up to one year per day of violation.

YOU ARE HEREBY DIRECTED TO TAKE CORRECTIVE ACTION

☐ IN COMPLIANCE
☐ SOURCE SHUT DOWN
☐ SOURCE REMOVED
☐ OTHER Type

DISPOSITION

☒ AGREEMENT FOR VOLUNTARY COMPLIANCE BY 02/02/90 ☒ REINSPECTION TO BE MADE BY 02/20/90
☒ OTHER expect BY / /
☐ FURTHER ACTION NOT REQUIRED ☐ PRIOR ACTION (S) COMPLETE

INSPECTION PERFORMED BY (print) 826/GCK TITLE PH Sen I
DEC REPRESENTATIVE'S SIGNATURE G. Kruse DATE 02-02-90

DEC RESERVES THE RIGHT TO TAKE FURTHER ENFORCEMENT ACTION FOR ANY VIOLATION NOTED IN THIS NOCD OR ANY OTHER VIOLATION OF THE ENVIRONMENTAL CONSERVATION LAW

for further information please contact -
name
title phone no

NYSDEC 011665

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

[9T109]

Owner or Agent: Ventarama Skylight
Address: 140 Centrague Rock Rd Hicks

Inspector 826

DATE	225PM COMMENTS
2/2/90	Observed dryer-type vent on side of bldg approx 5' from ground, with grey-white residue on bldg and ground on the Ventarama property as well as NCDPW property (1'-3') (2 Polaroid shots, different angles)
	There was a brief shower just minutes ago between the time DPW personnel state it was seen emanating from bldg + after DPW Haz Mat retrieved a some from ground, and my inspect No fugitive emissions seen at this time.
	Met Bob Davis NCDPW 170 Centrague Rock Rd workers just reported having had a problem with it depositing on their vehicles in this parking lot, since last summe but "never mentioned it till now
	Get back to Mr. Davis @ 932-4703

NYSDEC 011666

VENTARAMA SKYLIGHT CORPORATION
140 Cantiague Rock Road, Hicksville, New York 11801 • 516-931-0202

8/21/91

NASSAU COUNTY DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y.
11501
Att: **Mr. Robert Weitzman, Public Health Engineer**
Bureau of Land Resources Management

Re: Facility # 055852
Application fee & Tank registration fee requests
Response to your letter dated 8/14/91

Dear Mr. Weitzman,

In response to your letter dated August 14, 1991, please see enclosed letter dated April 10, 1991 concerning the removal of the petroleum storage tank pending the sale of our building.

We expect to go to final closing on the sale of this facility within 3-4 weeks. Our plans for the future of Ventarama are still being formulated. If we do remain in business, and relocate to another site, our operational procedure will be changed to eliminate the need for tank storage. Oil changes will be performed at local garages.

As promised, (copy enclosed), we have had this tank pumped empty and removed. There was no evidence of leakage, spillage, or ground contamination at that time. We trust this meets with your approval.

Respectfully,

Stephen K. Bechtold

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

Nassau County
Department of Health
240 Old Country Road
Mineola, New York 115

INDUSTRIAL CHEMICAL SURVEY

PART I

NY NAME	SIC CODE (If known)	OFFICE USE ON
EATON CORP.	~~7549~~ 3429	

COMPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
140 CARTIAGUE ROCK RD.	HICKSVILLE	N.Y.	11802

PLANT NAME (If different)	CONTACT NAME	TELEPHONE
	RUBERT PULASKI, SER. MGR	Area 516 - 433-52

PLANT ADDRESS (If different) Street	CITY	STATE	ZIP CODE

PRINCIPAL BUSINESS OF PLANT: SERVICE & SELL FORK-LIFTS

Number of Employees at this Facility: 55

NOTE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☒ N
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number ☐☐☐☐☐☐☐ ☐ Yes ☐ N
3. Do you discharge liquid wastes in any other manner? ☐ Yes ☒ N
   Explain _____

If any of the above are "Yes":

a. Do you discharge process or chemical wastes – (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☐ Yes ☐ N
b. Do you discharge non-contact cooling water? ☐ Yes ☐ N
c. Do you discharge collected storm drainage only? ☐ Yes ☐ N
d. Do you discharge sanitary wastes only? ☐ Yes ☐ N

AIR

1. Does your facility have sources of possible emissions to the atmosphere? PAINT SPRAY BOOTH ☒ Yes ☐ N
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) ☐☐☐☐☐☐☐☐☐☐

SOLID & CONCENTRATED LIQUID WASTES

1. List Name and Address of Firm (including yourself) removing wastes other than office and cafeteria refuse.

Name			
Address	City	State	Zip Code
Name			
Address	City	State	Zip Code

2. List Location(s) of Landfill(s) owned and used by your facility.

		Active	Inactive
1		☐	☐
2		☐	☐

NYSDEC 011668

PESTICIDES

1. Does this facility:
   Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☐ NO
   Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☐ NO
   Formulate Pesticides? ☐ Yes ☐ NO
   Repackage Pesticides? ☐ Yes ☐ NO

Eaton
SPDES -
SAMPLE

PART III

SUBSTANCES OF CONCERN

(include gases and waste oils)

Complete all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do no: nclude chemicals used only in analytical laboratory work.

Name Of Substance/Trade Name Supplier and Address	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reacted, blended packaged, distributed, no longer used, etc
LINDK BY CLEMSEAL		300 GAL/yr	4 DRUMS			STEAM CLEANING TRU
MONMOUTH JCT NJ						
ENAMEL		200 GALS	20 GAL			TOUCH-UP NEW TRUCKS BEFORE SHIPMENT.
KEROSINE BASE SOLN		25 GAL	50 GALS			CLEANING SM ACC PARTS

STATIONARY COMBUSTION AND INCINERATION

A) Heating System — None ☐ Boiler ☐ Space Heaters ☒
B) Fuel — Electric ☒ Gas ☒ Oil ☐
C) Incinerator — Yes ☐ No ☐

NYSDEC 011669

...eby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements ... are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NATURE (Owner, Partner, or Officer) [signature] DATE 1/12/77

E (Printed or Typed) TITLE

INDUSTRIAL INVESTIGATION FOLLOW UP

Firm EATON CORP

dress 140 CANTIAGUE ~~AVE~~ Rock Rd. Hicksville, N.Y. 11802

Owner _____ Contact name Bob POLASKI Phone 433 5200

Address of owner _____ Phone _____

Date of follow up 2/28/77 Reinspection date _____

Date closed _____

Reason for investigation

☐ Abatement ☒ Sample ☒ SPDES Permit ☐ Reinspection

ACTION CODES

1. ☐ Violation corrected
2. ☐ Violation Notice
3. ☐ Sample
4. ☒ SPDES Appl.
5. ☐ Referred to _____
6. ☐ Survey
7. ☐ NO Action
8. ☐ Dye Test
9. ☐ Other

ACTION CODE	COMMENTS	INSPECT/ DATE
F	Hand delivered SPDES Application	2/28/77 TF
	Waste oil picked up for recycling -	
L	Maybe candidate for Vehicle Maintenance SPDES	fl 4/27/

NYSDEC 011670

APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
Municipal
FORM I-GENERAL INFORMATION (SEE INSTRUCTION SHEET)

☒ Municipality
☐ Public School
☐ Other Tax-supported institutions

Organization Certificate No. and enclose a copy: 999999

Fee Exempt Tax: ☒ Yes ☐ No

Permit No: 3

Check all that apply to your facility: ☒ Tank Storage ☐ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Mate

Reason for submitting application: ☒ New ☐ Renewal ☐ Change ☐ Construction

Facility Name	Street Address	Post Office	State	Zip	Phone
D.P.W. Garage Hicksville.	Cantiague Rock Rd.	Hicksville	N.Y.	11801	433 6881

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
DPW - 1 West Street Mineola NY 11501 ~~Cantiague Rock Road Hicksville New York~~	Ludwig Hasl - Commissioner ~~Joe Trimarchi Manager~~ Steven	433 6880

Facility Owner	Street Address	Post Office	State	Zip	Phone
County of Nassau	1 West Street	Mineola	N.Y.	11501	535-

Property Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
Same					

Tank Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
Same					

Name that should appear on Permit (Permittee) (If different from Facility Owner): County of Nassau

Permittee's Street Address	Post Office	State	Zip	Phone
1 West Street	Mineola	N.Y.	11501	535-42

Permittee's Relationship to Facility Owner: ☒ Same ☐ Operator of Facility ☐ Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot
	50-5 17	11	499	47

Forms Attached (Check all that apply): ☒ Form 2 - Tank Registration ☐ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Roa De-icing Mate

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true and correct to the best of my knowledge and belief.

Print Name	Signature	Title	Date
for Ludwig C. Hasl	Francis T. Walsh	Comm of Public Works	3/31/8

EH 857 4/87

NYSDEC 011671

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

RECEIVED

For Office Use Only

Date Application Received	APR 4 1988	Facility I.D 53155
Reviewed By	N.C.D.H. — BWPC	Date Reviewed 4/4/88
Action: ☐ Approved ☐ Disapproved	☐ Not Req'd.	No. of Months 36

Facility Name D.P.W. Garage Hicksville

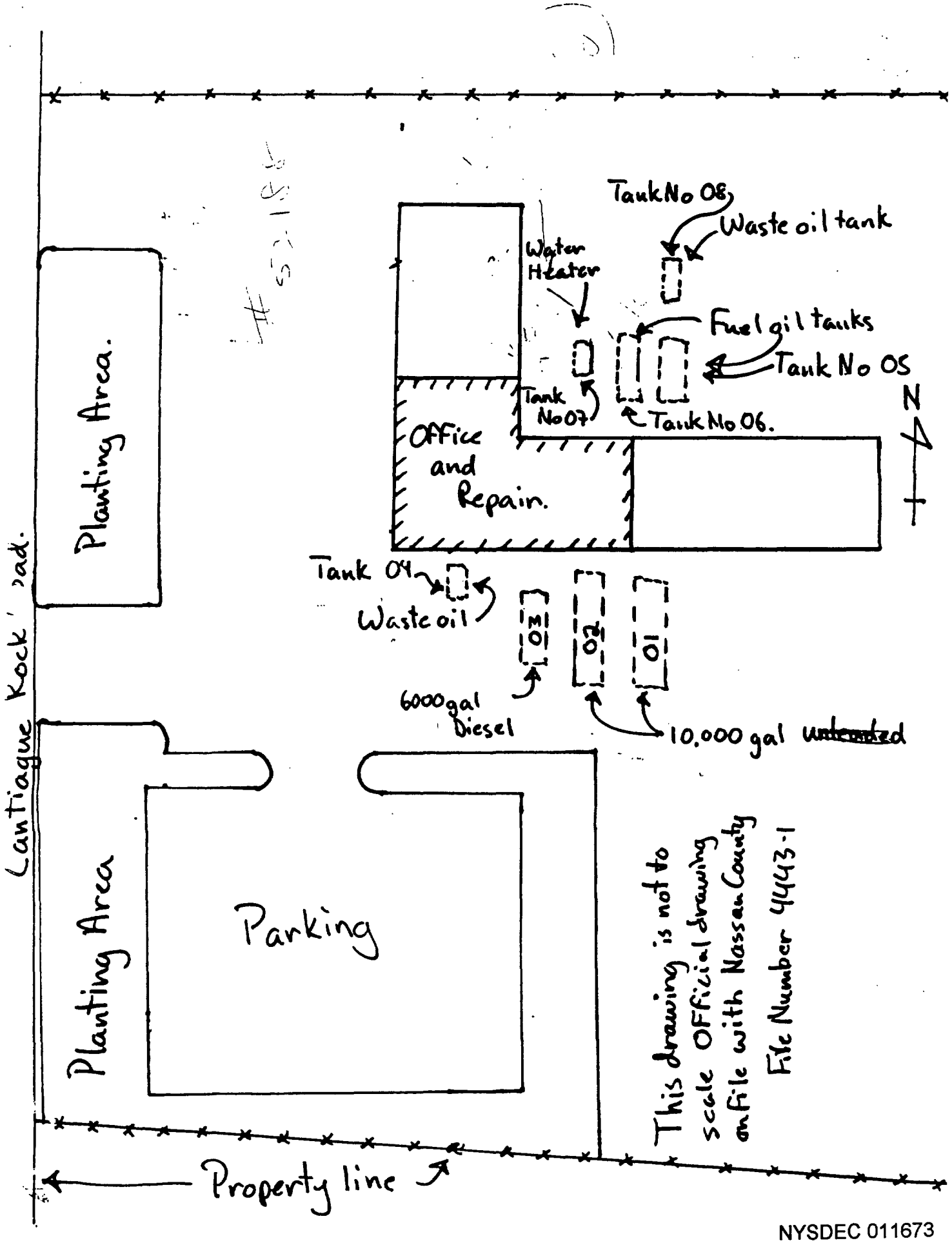
Facility Address Cantiague Rock Rd. Hicksville N.Y.

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection	Secondary Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condition
1	01	4	10,000	2	2	3	4	1	41231	UNLEADED FUEL	5	07/86	3	4	1	2	2		
1	02	4	10,000	2	2	3	4	1	41231	UNLEADED FUEL	5	07/86	3	4	1	2	2		
1	03	4	6,000	2	2	3	4	1	64731	DIESEL	5	07/86	3	4	1	2	2		
1	04	4	2,000	1	2	4	1	2	09671	WASTE OIL	1	1955	5	5	2	2	2		
1	05	4	6,000	1	2	4	1	1	64721	FUEL OIL	1	1955	5	5	2	2	2		
1	06	4	6,000	1	2	4	1	1	64721	FUEL OIL	1	1955	5	5	2	2	2		
1	07	4	3,000	1	2	4	1	1	64721	FUEL OIL	1	1955	5	5	2	2	2		
1	08	4	1,000	1	2	3	4	2	09071	WASTE OIL	1	1986	8	4	2	2	2		

EH 858 4/86
DH-2513 11/86

Date Submitted _____ Page ____ of _____ ☐ D.P.

NYSDEC 011672



NYSDEC 011673

76-12-8 (6/86)

A 2 8 0 0 0 0 N O C D 0 0 3 4 5 W A 0 4 0 3 9 0 Inspected on 04/03/90 AT 2:45 AM PM time

LOC FAC EP

WHITE - APPLICANT
PINK - DATA ENTRY
YELLOW - REGIONAL OFFICE

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF AIR RESOURCES

NOTICE OF COMPLIANCE DETERMINATION

BUREAU OF AIR QUALITY MANAGEMENT
NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTY RD
MINEOLA, N.Y. 11501

TO
Name N.C. D.P.W. Bldg.
Address 170 Cantiague Rock Rd.
City Hicksville ZIP 11801
Contact Rob't Davis, Supt. 932-4703

FOR
Source Description oil odor
☐ INSPECTION
☒ COMPLAINT
☐ OTHER
Type odor 900345

MULTIPLE EMISSION POINTS

LIST IF MORE THAN ONE

INSPECTION COMMENTS (DESCRIBE VIOLATION, IF ANY)

No petroleum odor in offices adjacent to garage containing 3000 gal. fuel oil tank. Evidence of overfilling. Odors reported by contact during previous deliveries, but only with windows open. Complainant will call if odor returns to office. See Attached.

COMPLIANCE STATUS

☐ NON COMPLIANCE - PLEASE TAKE NOTICE THAT based upon this inspection, there is reason to believe that you are in violation of Article 19 of the New York Environmental Conservation Law and the regulation promulgated thereunder 6NYCRR Part(s) _____, _____.

PLEASE TAKE FURTHER NOTICE THAT the sanctions for such violations include a civil penalty of up to $10,000 plus $500 per day the violation continues a criminal fine of up to $10,000 per day of violation, and/or imprisonment of up to one year per day of violation.

YOU ARE HEREBY DIRECTED TO TAKE CORRECTIVE ACTION

☐ IN COMPLIANCE
☐ SOURCE SHUT DOWN
☐ SOURCE REMOVED
☒ OTHER
Type _____

DISPOSITION

☐ AGREEMENT FOR VOLUNTARY COMPLIANCE BY / /
☐ REINSPECTION TO BE MADE BY / /
☐ OTHER _____ BY / /
☒ FURTHER ACTION NOT REQUIRED
☐ PRIOR ACTION (S) COMPLETE

INSPECTION PERFORMED BY (print) 826/GK 841/RD TITLE PH San I

DEC REPRESENTATIVE'S SIGNATURE D. Kruse DATE 04-03-90

DEC RESERVES THE RIGHT TO TAKE FURTHER ENFORCEMENT ACTION FOR ANY VIOLATION NOTED IN THIS NOCD OR ANY OTHER VIOLATION OF THE ENVIRONMENTAL CONSERVATION LAW

for further information please contact -
name
title
phone no

NYSDEC 011674

Nassau County Department of Health
NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

FORM I-GENERAL INFORMATION (SEE INSTRUCTION SHEET)

If applicable, check the following:
- [X] Municipality
- [ ] Public School
- [ ] Other tax-supported institutions

If tax exempt facility, enter N.Y. State Exempt Organization Certificate No. and enclose a copy:

For Office Use Only

Facility I.D.	Date Rec'd.
73242	5/9/90
Fee Exempt Fac. [X] Yes [ ] No	Permit Months: 12

Check all that apply to your facility: [X] Tank Storage [X] Container Storage [ ] Bulk Storage [ ] Storage of Road De-icing Materials

Reason for submitting application: [X] New [ ] Renewal [ ] Change [ ] Construction

Facility Name	Street Address	Post Office	State	Zip	Phone
S.T.O.P. Facility	170 Cantiaque Rock Road	Hicksville	NY	11801	

Facility Mailing Address (If different from above)	Facility Contact Person (Name & Title)	Phone
425 Salisbury Park Drive	Peter Witkowski, Director of HWSU	997-8282

Facility Owner	Street Address	Post Office	State	Zip	Phone
County of Nassau	1 West St.	Mineola	NY	11501	535-4233
Property Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
Same	Same	Same	Same	Same	Same
Tank Owner (If not Facility Owner)	Street Address	Post Office	State	Zip	Phone
Same					

Name that should appear on Permit (Permittee) (If different from Facility Owner)

Permittee's Street Address	Post Office	State	Zip	Phone
425 Salisbury Park Drive	Westbury	NY	11590	997-8282

Permittee's Relationship to Facility Owner: [ ] Same [X] Operator of Facility [ ] Other (Specify):

Principal Property Tax Code:	School District No.	Section	Block	Lot
	S.D. 5	11	499	47

Forms Attached (Check all that apply) [X] Form 2 - Tank Registration [X] Form 3 - Bulk & Container Storage Registration [ ] Form 4 - Storage of Road De-icing Materials

I hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, statements and exhibits is true and correct to the best of my knowledge and belief.

Print Name	Signature	Title	Date
Steven A. Fangmann	Steven A. Fangmann	Deputy Commissioner of Sanitation & Water Supply	5/1/90

EH 857 4/87

NYSDEC 011675

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 3 - BULK AND CONTAINER STORAGE REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 5/9/90	Facility I.D. 053242
Reviewed By [illegible]	Date Reviewed 5/10/90
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months 12

Facility Name: S.T.O.P. Facility

Facility Address: 170 Cantiaque Rock Rd, Hicksville

Action: ☐ Register Existing Area ☒ Add Area ☐ Remove Area ☐ Modify Area | Area No.

Location: ☐ Indoors ☒ Outdoors | Bulk Storage Max.Quantity Stored: | Container Storage Max.No. 50 Max.Vol. 2000 gal.

Secondary Containment: ☒ Impervious Berm/Dike ☒ Impervious Floor/Pad ☒ Roof ☒ Walls ☐ Floor Drain & Storage Tank ☐ None ☐ Other (Specify):

Construction Material of Dike & Pad (Check all that Apply) ☒ Concrete ☒ Steel ☐ Other (Specify): | Security ☒ Yes ☐ No

Type	NCDH Number	Material Name	Physical State	Amount Stored: Average Quantity	Amount Stored: Units	Storage Method: Average Number	Storage Method: Type
2	[illegible]	Household Hazardous Waste	1	1500	1	30	1

EH 859 4/86
DH-2791 11/86

Date Submitted May 1, 1990 Page 1 of 1 ☐ D.P.

NYSDEC 011676

NASSAU COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT
FORM 2 - TANK REGISTRATION
SEE INSTRUCTION SHEETS

For Office Use Only	
Date Application Received 5/4/90	Facility I.D. 053242
Reviewed By LG	Date Reviewed 5/10/90
Action: ☐ Not Req'd. ☐ Approved ☐ Disapproved	No.of Months 12

Facility Name S.T.O.P. Facility

Facility Address 170 Cantiaque Rock Rd, Hicksville

Action	Tank Number	Location	Design Capacity (Gallons)	Material of Construction	Internal Protection	External Protection	Piping	Type	Material Currently or Last Stored: NCDH Number	Material Currently or Last Stored: Name	Status	Tank Installation Date (Month/yr)	Leak Detection Sys.	Secondary Containment	Product Gauge	Dispenser Method	Fill	Additional Information for Abandoned Tanks: Date Last Used (Month/yr)	Additional Information for Abandoned Tanks: Condition
2	Ø1	3	1000	1	2	2	8	2	70 71	Waste Oil	1	2/1/90	5	1	2	3	2		

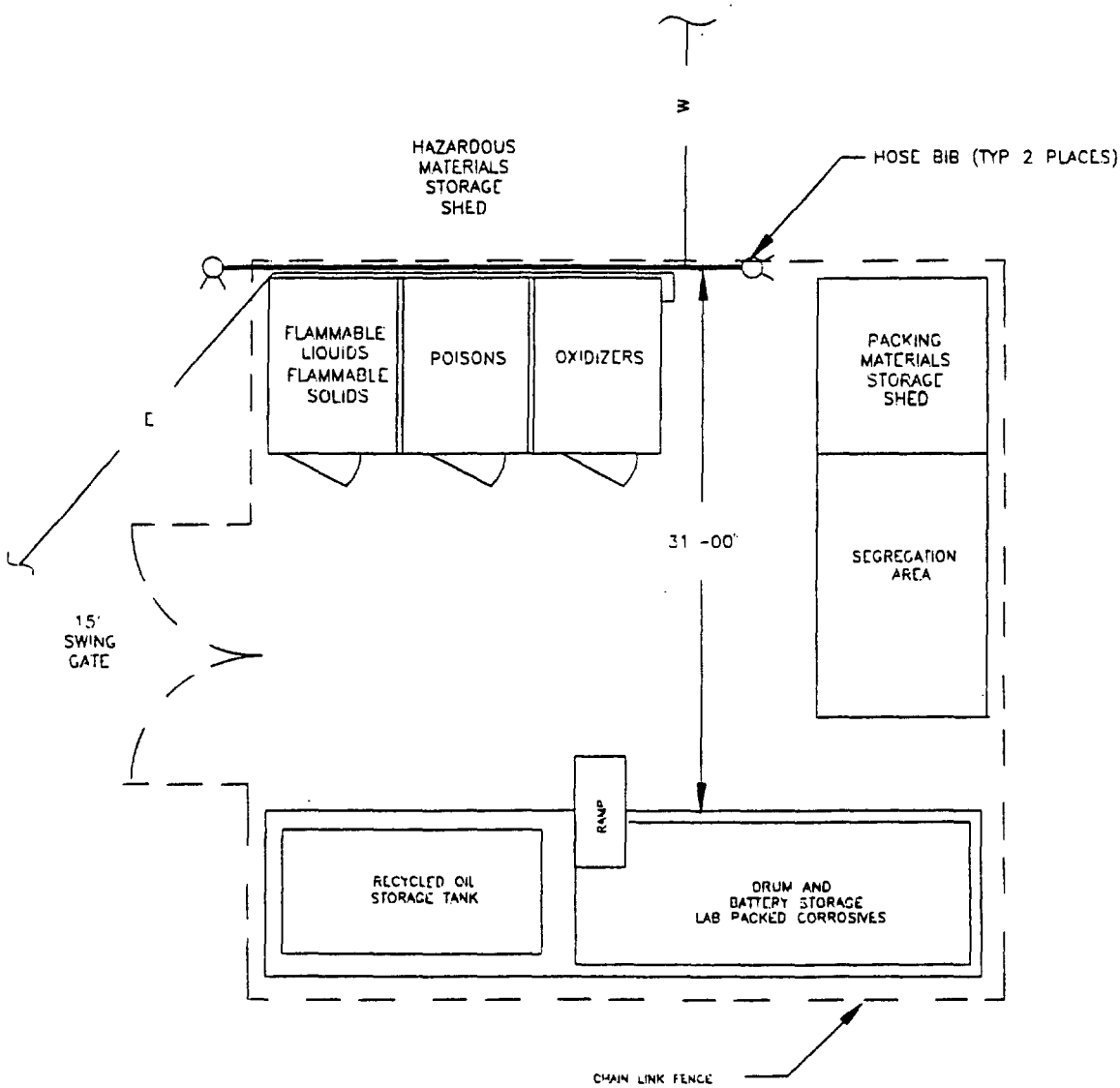
FH 858 4/86

Date Submitted May 1, 1990

Page 1 of 1

☐ D.P.

NYSDEC 011677



S.T.O.P. FACILITY
HAZARDOUS MATERIALS STORAGE LOCATIONS

NYSDEC 011678

II. FACILITY DESCRIPTION

1. Manufacturing Activities

The Alsy Manufacturing, Inc. facility at 270 Duffy Avenue, Hicksville, New York is engaged in the production of manufactured lamps, lamp components, and other lighting fixtures.

The facility is owned by Surrey Corporation and operated by Alsy Manufacturing Company, Inc..

2. Process Generating Hazardous Wastes

Spray lacquering and painting of manufactured lamp parts and the cleaning of parts and application equipment result in the generation of waste paint related material, solvent wastes, plus occasional off-spec commercial chemical products. Nickel and brass plating of lamp components result in the generation of wastewaters and spent electroplating solutions.

3. Storage and Treatment Facilities

The Alsy facility includes a hazardous waste container storage facility and a wastewater treatment system. The hazardous waste management area and storage are encompasses approximately 208 square feet. A site plan of the operations is provided within the Appendix. The areas to be closed are highlighted in yellow.

4. Wastewater Collection System

The electroplating area is located on the west side of the manufacturing facility and consists of 25 rectangular baths ranging in capacity from 425 gallons to 1200 gallons. The baths are positioned on a platform and are recessed through an elevated walkway. The entire electroplating area is surrounded by a sloped trench system where steam condensate (used in the process) collects and flows to a sump area. A sump pump then pumps the waters on a periodic basis through an overhead pipe to the wastewater treatment plant for processing and decontamination. The trenches also serve as a

NYSDEC 012195

containment system for either accidental spills or for excess "dragout" of manufactured lamp components. The trench system is capable of holding approximately 150 gallons of water.

A Site Plan of the manufacturing facility is shown in Appendix A. A schematic of the electroplating area is shown in Appendix B which also shows the trenches. A schematic of the wastewater treatment system is shown in Appendix C.

5. Wastewater Treatment System

Process Description

The wastewater treatment system operating at Alsy is designed to process and decontaminate process wastewaters generated in the electroplating area.

The major contaminants present in the processing wastewaters are cyanide, zinc, copper and nickel.

Cyanide Oxidation Tank

The brass rinses (containing cyanide) and trench waters are combined and sent to the cyanide oxidation tank where sodium hypochlorite and caustic are added under oxidation. The pH is controlled at a pH of 11 and sodium hypochlorite addition is controlled by an Oxidation Reduction Potential (ORP) indicator - controller. The tank is baffled to prevent back-mixing. In the cyanide oxidation tank, the following reaction takes place

$$CN + Cl_2 \rightarrow CNCl^-$$
$$CNCL + 2OH^- \rightarrow CNO^- + Cl^- + H_2O$$

Cyanate Reduction Tank

The overflow from the cyanide oxidation tank moves to the cyanate reduction tank where acid waters from the electroplating area are also added. In this tank ferric chloride solution and a dilute solution of sulfuric acid (or HCl) are added. The acid is added at a rate to maintain the pH at about 9.0. In the cyanate reduction tank the following reaction takes place:

$$2CNO^- + 4OH^- + 3Cl_2 \rightarrow 6Cl^- + 2CO_2 + 2H_2O + N_2$$

NYSDEC 012196

pH Adjustment Tank

The overflow from the cyanate reduction tank is sent to the pH adjustment tank where caustic is added to a pH of about 9.5 to precipitate the metals as metal hydroxides.

Flocculation Tank

The overflow from the pH adjustment tank is sent to the flocculation tank and a flocculant is added.

Forming Tank

This is a holding tank for the newly formed "flox" particles and a staging tank for the Lamella gravity settler.

Lamella Gravity Settlers

The wastewaters are pumped to the Lamella gravity settler. Settling occurs as the solution passes across a series of parallel plates angled from vertical. The sludge settles and is collected in a settling tank. The overflow, consisting of treated wastewater overflows goes to the discharge tank.

Discharge Tank

The discharge tank receives the overflow stream. A final pH adjustment is carried out at this stage before discharge of the waters to the sewers.

Settling Tank

This tank receives the underflow from the Lamella gravity settler. The overflow stream is sent back to the pH adjustment tank via the overflow return tank. The underflow is pumped periodically to the filter press.

Filter Press

The filter press filters and separates the solids from the waters. The filtrate is then sent through the discharge tank to the sewers.

The wastewater treatment plant treats approximately 10-12 gpm and operates 8 hours per day and 5 days a week.

NYSDEC 012197

TABLE 1

WASTEWATER TREATMENT UNIT TANK SUMMARY

(Wastes Per Unit of Operations)

TANK DESCRIPTION	CAPACITY (GALLONS)	WASTE TREATED	NYS DEC WASTE NO(S)
Cyanide Oxidation Tank	350	-brass rinses -trench waters	F007
Cyanate Reduction Tank	350	-acid wastewaters -overflow from oxidation tank	F007, F009, D002
pH Adjustment Tank	260	-overflow from Cyanate Reduction Tank	F007, F009, D002
Flocculation Tank	260	-overflow from pH adjustment tank	F007, F009
Forming Tank	150	-"floc" particles	F007, F009
Lamella Gravity Settler	175	-wastewaters from the forming tank	F007, F009
Discharge Tank	75	-overflow stream from gravity settlers	F007, F009
Settling Tank	150	-underflow from gravity settler	F007, F009
Filter Press	---	-filters and separator solids in wastewater	F007, F009, F006

NYSDEC 012198

TABLE II

CONTAINER STORAGE FACILITY

NOTE: All wastes are stored in DOT* specification containers
*DOT = Department of Transportation

WASTE DESCRIPTIONS	EPA/NYS DEC WASTE NO(S).
SOLVENTS 1,1,1 trichloroethane still bottoms; and paint related waste materials (including mixtures of): methyl ethyl Ketone xylene alcohols	F001, F002, F003 F005
OILS (including mixtures of): gear box oils lubricating oils cutting oils	---
WASTEWATER TREATMENT SLUDGE Spent Electroplating Process Solutions	F006 F008 F009
ACIDS AND CAUSTICS (including mixtures of): waste nickel strip solutions (sulfuric acid, etc.)	D002
OFF-SPEC COMMERCIAL CHEMICAL PRODUCTS: Paint Antiquing Compounds Cynide Containing Materials	D001 D002 P030

NYSDEC 012199

1. EXECUTIVE SUMMARY

The Alsy Manufacturing site (New York I.D. No. 130027 and EPA I.D. No. New) is an active industrial plating operation located on Duffy Avenue in the Town of Oyster Bay, Nassau County, New York. The site, situated on a 4-acre parcel of land, is approximately 3,000 ft northeast of the intersection of Wantagh State Parkway and Old Country Road (Figures 1-1 and 1-2 and Photos 1 through 8). The firm, which has been in operation since 1975, manufactures lamps and lampshades which involve various bronze plating, antiquing, and electroplating processes. Alsy Manufacturing (Al Gindel, President) leases the building from Surrey Corporation of Syosset, New York. Surrey Corporation purchased the property from Balatem Corporation in 1985. Alsy Cycle II, of 280 Duffy Avenue, is also located in the Alsy building. Although Cycle II is a separate corporation, it is considered part of the operations at Alsy. Prior to 1975, Metalab, a laboratory furniture manufacturer, occupied the building.

Various wastes are generated and stored at the Alsy plant including wastewater treatment sludge, paint thinner, paint strippers, and 1,1,1-trichloroethane. In 1977, Alsy was issued a SPDES permit which authorized two outlets for pollutants (industrial and sanitary) on the premises. From 1977 until 1983, Alsy repeatedly violated its permit by discharging pollutants in concentrations which exceeded permissable levels. Additionally, sampling by Nassau County Department of Health (NCDOH) indicated that additional heavy metals and volatile organics not authorized by the permit were also being discharged. In February 1984, a joint inspection by New York State Department of Environmental Conservation (NYSDEC) and NCDOH was conducted. Many violations, including unpermitted discharge points, were found. Analysis of samples taken during the

NYSDEC 012202

inspection indicated that much of the area behind the building contained heavy metal and volatile organic contamination including three industrial leachpools, several discharge pipes, and two trenches. A depression near some railroad siding was filled with overflow from one of the leachpools. A second inspection by the NYSDEC in August 1984 found many of the same problems. In addition, numerous rusted unlabeled drums were found.

In response to the severity of environmental conditions at the Alsy site, a Summary Abatement Order (SAO) was issued on 4 April 1985. Additional requirements were added to the order in July 1985. Although portions of the SAO were completed, NCDOH was informed by NYSDEC in April 1985 that the Consent Order would not be pursued. Instead, the case would be referred to the Attorney General for criminal prosecution. Both the NYSDEC and NCDOH believe further sampling and investigation is needed to assess possible soil and ground-water contamination.

Preliminary HRS scores for the Alsy Manufacturing site are as follows: $S_M = 32.87$; ($S_{gw} = 56.87$, $S_{sw} = 0$, $S_a = 0$); S_{FE} = NA; and $S_{DC} = 62.5$. Analytical results of sediment and leachpool samples indicate the onsite disposal of hazardous substances. However, ground-water quality data are lacking. In order to prepare a final HRS score for this site, analytical data regarding the quality of the ground water will be necessary, thus requiring performance of a Phase II investigation. If a release of contaminants to the ground water can be confirmed, the maximum attainable S_M is 37.93. The proposed Phase II study would include the installation of six test borings/observation wells, and the collection and analysis of ground-water samples, at a total estimated cost of $94,750.

NYSDEC 012203

Site Coordinates:

Latitude: 40° 45' 47"
Longitude 73° 31' 52"

ALSY MANUFACTURING

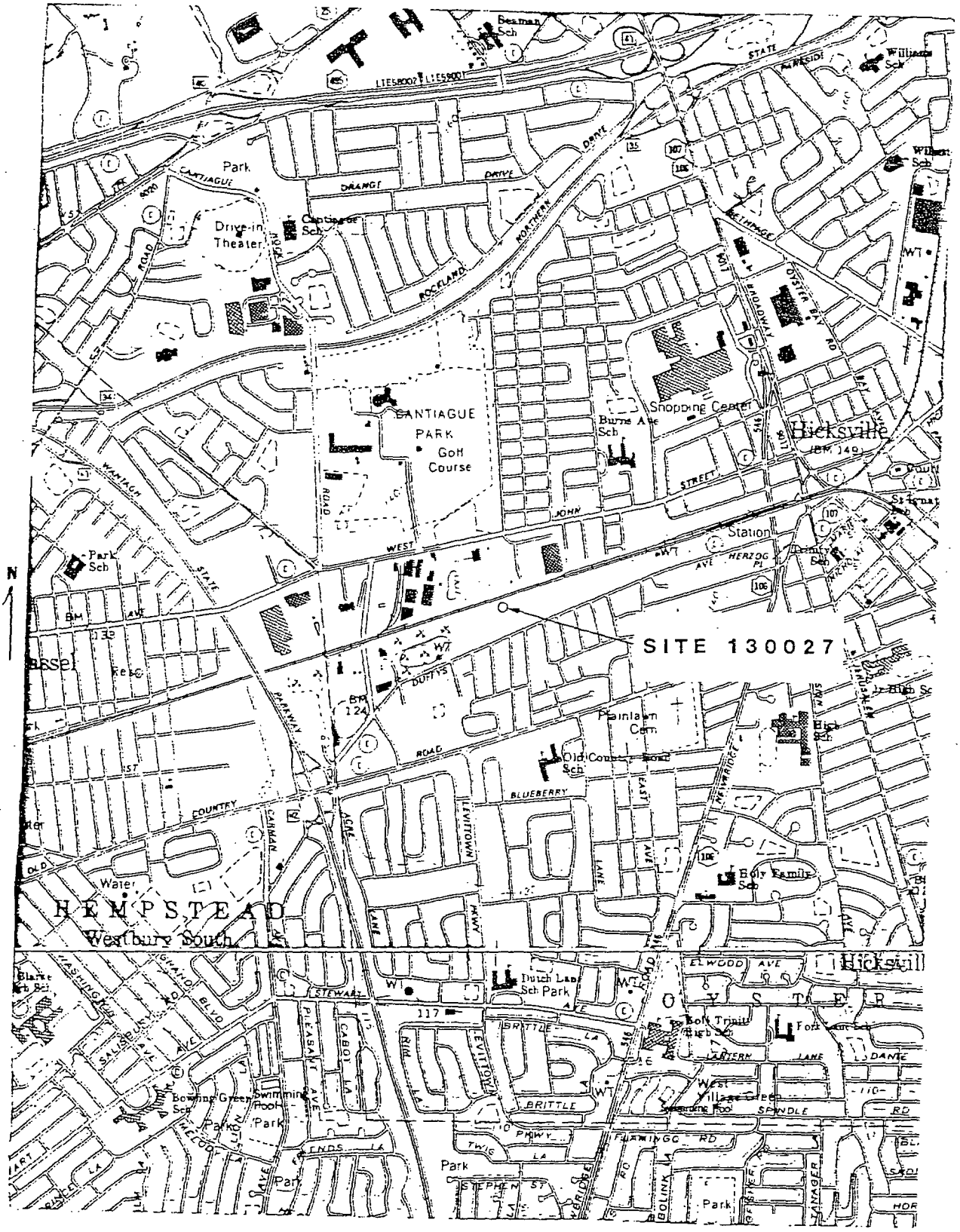


Figure 1-1. HICKSVILLE & FREEPORT QUADS.

Scale 1:24,000

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4. ALSY MANUFACTURING

4.1 SITE HISTORY

Alsy Manufacturing, Inc. is an industrial plating operation, situated on a 4-acre parcel of land, located along Duffy Avenue, Town of Oyster Bay, Nassau County, New York. The firm, which has been in operation at the site since 1975, manufactures lamps and lampshades which involves various bronze plating, antiquing, and electroplating processes (Appendixes 1.1-1 and 1.1-2). Alsy Manufacturing (Alvin Gindel, President) leases the building from Surrey Corporation of Syosset, New York, who purchased the property from Balatem Corporation in 1985 (Appendix 1.1-3). Alsy Cycle II, of 280 Duffy Avenue, is also located in the Alsy building. Although Cycle II is owned by separate corporation, it is considered part of the operations at Alsy. Prior to 1975, Metalab, a laboratory furniture manufacturer, occupied the building (Appendixes 1.1-4 and 1.1-5).

Various wastes are generated and stored at the Alsy plant including wastewater treatment sludge (110 gal/month) from cyanide, copper, and zinc contaminated wastewater; paint thinner (140 gal/month), acidic paint stripper (28 gal/month), and alkaline paint stripper, (28 gal/month) from the cleaning of painting equipment, and 1,1,1-trichloroethane (55 gal/4 months) from the vapor degreaser (Appendix 1.1-6). In 1977, Alsy was issued a SPDES permit which authorized two outlets for pollutants on the premises. The first outlet allowed Alsy to discharge industrial pollutants (copper, nickel, zinc, total nitrogen, cyanide, and chlorine) in concentrations specified by the permit. The second outlet allowed Alsy to discharge sanitary wastes (Appendix 1.1-7).

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During 1977/1978, self-monitoring data from Alsy showed that the industrial discharge effluent consistently exceeded permit limitations for copper, nickel, zinc, total nitrogen, and cyanide (Appendix 1.1-2). In addition, a New York State Department of Environmental Conservation (NYSDEC) inspection report dated 8 August 1978 notes that trichloroethylene was found in the discharge at a concentration of 420 mg/liter above the state limit of 50 mg/liter (Appendix 1.1-2). In 1980/1981, self-monitoring data from Alsy, analyzed by New York State Testing Laboratories, Inc., continued to show levels of copper, nickel, zinc, total nitrogen and cyanide above present limitations (Appendix 1.1-8). Additionally, sampling by Nassau County Department of Health (NCDOH) on 24 March 1981 indicated that additional pollutants not authorized by the permit (chloroform and trichloroethylene) were also being discharged (Appendix 1.1-9). NCDOH sampled again on 17 November 1983. Samples were found to contain elevated levels of aluminum, arsenic, copper, iron, chloride, methylene chloride, chloroform, 1,1,1-trichloroethane, toluene, xylene, and trace amounts of other volatile organics (Appendixes 1.1-10 and 1.1-11).

On 21 February 1984, representatives from the NYSDEC visited Alsy to sample their SPDES discharge for the SPDES Enhancement Sampling Program. Based on various observations, an inspection was made of the operations by both NYSDEC and NCDOH inspectors on 22 February 1984, and by NYSDEC inspectors on 24 February 1984. Many violations, including four unpermitted discharge points, were found (Appendixes 1.1-7, 1.1-12 through 1.1-14).

A 2-in. PVC pipe was discharging from the northern-facing wall on the western side of the building. Effluent from the pipe, as well as the ground in the immediate vicinity of the discharge, was observed to have a light green color.

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The discharge had created a wet swampy area approximately several inches deep and 25 ft by 25 ft square. The pipe was traced to a trough surrounding the plating area. It was found that a submersible pump was located in the trough which pumped overflow from the plating area to the roof and then down through the pipe. Walking east along the north portion of the building, a second 2-in. PVC pipe was found protruding from the wall. Although it was not discharging, a white stain was found on the ground surface below. South of this pipe, on the west wall, two pipes were found next to each other near ground surface. The ground in this area was also covered with a wet, whitish stain. Just north of this area, a 1/2-in. pipe was found protruding from a window and was discharging small amounts of hot water. On the second day of the inspection, 22 February, it was determined that the pipes which were creating a white stain on the ground were originating from slop sinks inside Alsy Cycle II. The white substance was a compound called "Gesso" which was described as a thick paint used to decorate glass lamps. The small pipe protruding from the window was found to be a bleed from the heating system (Appendixes 1.1-7, 1.1-12, and 1.1-13).

Another problem found by the inspectors were several leachpools that were nearly overflowing. Three leachpools were found in back of the building on the northwestern side. The northernmost (farthest from the building) was filled to within 6-in. of the cover. The next pool inline was uncovered and was observed to be within 2 ft of the cover. Based on the slope of the property, it was believed that these pools were full primarily due to runoff. A third pool was found, nearest to the building, which had a thick scum on the surface of the liquid. A strong odor of paint and solvents was detected. Walking towards the east on the north side of the building, the inspectors found another leachpool

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which was overflowing. A trench has been dug toward the east. Overflow from the pool was observed to be flowing down a sloped area into a depression near some railroad siding. The liquid level was as high as the rails. Mr. Stevens, Vice-President of Cycle II Division, informed the inspectors that the overflowing pool was a sanitary pool. A side trench was observed flowing into the main trench. It was traced back to Cycle II where a PVC pipe along a northeast facing wall was discharging water. It was determined that this pipe was also connected to the sinks in the paint area. The trench was covered with paint. Several uncapped barrels containing paint wastes were found in this area. It appeared that the barrels were being dumped or were overflowing into the trench (Appendixes 1.1-7, 1.1-12, and 1.1-13).

NYSDEC and NCDOH inspectors were also shown the waste storage area on the south side of the building. Approximately 10-12 drums were in an unbermed area. The asphalt in this vicinity contained recent stains of varying colors including a greenish stain (Appendixes 1.1-7, 1.1-12, and 1.1-13).

During the inspection, various samples were taken by NYSDEC. The SPDES discharge sample (southernmost leachpool) contained arsenic, copper, lead, nickel, zinc, cyanide, selenium, silver, chromium, 1,1-dichloroethene, 1,1,1-trichloroethane, toluene, and ethylbenzene. The middle leachpool was also sampled and was found to contain arsenic, copper, lead, nickel, and zinc. A sample from the first discharge point (plating line overflow) contained arsenic, copper, lead, nickel, selenium, zinc, 1,1-dichloroethene, 1,1,1-trichloroethane, toluene, and ethylbenzene. A sample from the ditch near the paint shop discharge contained elevated levels of some metals and volatile organics. The

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white discharge called "Gesso" was analyzed for metals. Cadmium, chromium, and lead were found to exceed drinking water standards (Appendixes 1.1-7, 1.1-15, and 1.1-16).

Based on the findings of the February 1984 inspection, a request for legal action was sent to the NYSDEC by the NCDOH in order to bring Alsy into compliance (Appendix 1.1-17). In addition, NCDOH sent a letter to Balatem Corp. requiring that Alsy connect to the public sewerage system (Appendix 1.1-18).

Both NCDOH and the NYSDEC notified Alsy of the violations found during the February 1984 inspection (Appendixes 1.1-19 and 1.1-20). The NYSDEC letter, which outlined 29 violations, also included a draft consent order (Appendixes 1.1-20 and 1.1-21). It was requested that Alsy cease all discharges and eliminate overflow from the plating room. The consent order called for the development and implementation of a remedial investigation (Appendix 1.1-20).

In August 1984, NYSDEC conducted an inspection of Alsy (Appendix 1.1-22). Samples taken from the southernmost and middle industrial leachpools were found to contain elevated levels of several metals and volatile organics (Appendix 1.1-23). It was discovered that a pumping operation was being utilized to pump out the middle leachpool, flooding the area east of this pool. Additionally, it was discovered that a discharge from the plating room was still being used. During the investigation, the NYSDEC official inspected the former storage area in an alley on the south side of the building. Numerous rusted, unlabeled drums were found. A blue material was found on the top of one leaking drum, and numerous stains were found on the asphalt in this area (Appendix 1.1-22).

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In September 1984, Alsy's draft renewal SPDES Permit was reviewed and rejected by the NCDOH because existing violations at the time were not addressed (Appendix 1.1-24). In the latter part of 1984, Soil Mechanics Drilling Corp., hired by Balatem Corp., conducted an investigation of the site (Appendix 1.1-25). Each day, an Alsy employee was observed pumping industrial wastes out of the leachpools into a dry well in the parking lot (Appendix 1.1-25). Although they were unable to substantiate this, NCDOH also believes that the dry wells, which currently receive surface water, may have received industrial waste (Appendix 1.1-4). During the site investigation, Soil Mechanics collected and subsequently analyzed, water samples from standing water behind the buildings (Sample A), from an existing "drywell" (Sample B), and from the existing "septic pools" (Sample C). Nickel and copper concentrations were found to the above allowable discharge concentrations in the existing drywell (Sample B) (Appendixes 1.1-16 and 1.1-25).

In December 1984 and February 1985, NYSDEC personnel gave depositions concerning inspections/investigations at Alsy (Appendixes 1.1-7 and 1.1-26). It was reported that Alsy's unpermitted and unauthorized discharges contained arsenic, copper, chromium, lead, nickel, selenium, silver, zinc, 1,1-dichloroethene, 1,2-dichloroethane, 1,1,1-trichloroethane, toluene, ethylbenzene, and methylene chloride. The concentration of 1,1,1-trichloroethane was 74,000 ppb; the concentration of toluene was 5,100 ppb. Arsenic, lead, copper, nickel, and zinc exceeded 6NYCRR effluent standards. In addition, samples from leachpools designated to receive the industrial SPDES discharge contained copper, nickel, zinc, and cyanide in concentrations which exceeded Alsy's SPDES permit. Also, the analyses indicated that pollutants were present in a leachpool which was

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not permitted to receive any industrial discharge. These pollutants included arsenic, selenium, silver, chromium, 1,1-dichloroethene, 1,1,1-trichloroethane, toluene, and ethylbenzene. Soil sample results indicated the presence of arsenic, cadmium, chromium, copper, lead, mercury, silver, zinc, and phenols (Appendixes 1.1-7, 1.1-12, and 1.1-26).

A NYSDEC memorandum of March 1985, discussing the referral of the Alsy matter to the Attorney General's office for prosecution, outlined Alsy's numerous violations and the severity of environmental conditions at the site and asks that Alsy be compelled to conduct immediate remediation (Appendix 1.1-27). In response to the Summary Abatement Order issued on 4 April 1985, Alsy sent a letter to NYSDEC outlining their efforts with the order (Appendixes 1.1-28 and 1.1-29). Alsy's efforts included a new pre-treatment system; permission to discharge industrial waste into the Nassau County Sewer System; cessation of industrial waste discharge into any underground tanks; sealing of unauthorized discharge outlets; sampling of its underground tanks to determine necessary measures required to remove these contents; and contracting a licensed professional engineer to drill borings for soil samples and install monitoring wells for ground-water analysis (Appendixes 1.1-29 and 1.1-30). Alsy connected all industrial wastewater discharges to the public sewer system on 3 April 1985 (Appendix 1.1-31). The sampling of the underground tanks, as well as the soil piles, was conducted by H2M for Alsy on 12 April 1985 (Appendixes 1.1-29 and 1.1-32).

In April 1985, a meeting was held at Alsy with representatives from the NYSDEC and NCDOH to evaluate Alsy's compliance with the Summary Abatement Order (SAO) (Appendix 1.1-33). Following the meeting, NYSDEC officials inspected the

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ongoing drilling operations being conducted by Soil Mechanics Drilling Corp., under contract to Alsy. The NYSDEC found the operations unacceptable (Appendix 1.1-33). Although several of the proposed monitoring wells were installed, the monitoring program was stopped, and the installed wells were never sampled (Appendix 1.1-4). On 8 May 1985, NYSDEC, Division of Environmental Enforcement, collected liquid samples from underground pools and catch basins, and soil/sludge samples from pools/catch basins and the ground surface. Samples were sent to ERCO Labs for analysis of EP Toxicity, total phenols, volatiles, and/or heavy metals (Appendixes 1.1-34 and 1.1-35). After site inspections in April and June of 1985, and receipt of analytical results of the 8 May sampling, NYSDEC notified Alsy of additional actions which were required to achieve compliance: removal of all liquid wastes from manholes, catch-basins, and leachpools; removal of all visually contaminated sludge plus an additional 2 ft of soil; removal of all related hazardous wastes from property by a licensed hauler; removal of all piping connected to manholes, catchbasins, and leachpools (Appendixes 1.1-36 and 1.1-37). Pumping out of the three industrial leachpools was completed on 25 May 1985 (Appendix 1.1-34). Sludge removal from the pools was completed by 28 August 1985 (Appendix 1.1-38).

On 4 June 1985, NYSDEC proposed a consent order requiring a remedial investigation of site contamination and a feasibility study for remediation (Appendixes 1.1-30 and 1.1-39). A NYSDEC compliance inspection on 26 July found that many, but not all, of the items required for fulfillment of the SAO had been completed (Appendix 1.1-31). On 20 September 1985, the Hazardous Waste Unit of

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NYSDEC informed NCDOH that the consent order would not be pursued. Instead, the case would be referred to the Attorney General for criminal prosecution (Appendix 1.1-31).

4.2 SITE TOPOGRAPHY

The Alsy Manufacturing site is located approximately 3,000 ft northeast of the intersection of the Wantagh State Parkway and Old County Road at an elevation of 125 ft above mean sea level. The regional slope of terrain is to the southwest with a slope of 0.3 percent. The site itself is primarily flat. Behind the building, in the northwest portion, the area slopes 1 percent to the south-southwest. In the northeast, the area drops approximately 4 ft down to the railroad spurs (Appendix 1.2-1 and EA Site Inspection). The Long Island Railroad runs along the northern border of the property on a raised bed approximately 4 ft above the site terrain.

In the northwest portion of the Alsy property, there are three dry wells located in an asphalt paved area. The three industrial leachpools are located to the east of the paved area. A covered, abandoned pool is located in this vicinity also. Continuing east on the north side of the building, there are two sanitary pools and a capped 6-in. PVC pipe near the fenceline. In the northeast corner, there is a line of railroad spurs running parallel to the building. The site is not entirely fenced (EA Site Inspection and Figure 1-2).

The Alsy operations are surrounded by the Long Island Railroad to the north, Duffy Avenue to the south, and commercial establishments to the east and west. The nearest commercial establishment is adjacent to the site on the western

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aquifer of concern for this Phase I investigation. Although the Lloyd aquifer (Lloyd Sand member of the Raritan Formation) has been developed by one well of the Westbury Water District, this aquifer is directly overlain by the thick, extensive, confining (low permeability) Clay member of the Raritan Formation. Therefore, the Lloyd Aquifer will not be considered further by the Phase I investigation.

Recharge to the upper glacial portion of the aquifer of concern is derived entirely from precipitation. Recharge to the Magothy portion and Lloyd aquifer is derived from the downward movement of water from each overlying aquifer. In general, recharge to the lower aquifer occurs near the center of Long Island to the ocean or Long Island Sound. The average annual precipitation in the area is reported by Isbister to be approximately 45 in., of which, about 22.5 in. are estimated to infiltrate to the water table (Appendix 1.3-1). The remainder of the precipitation is returned to the atmosphere by evapotranspiration, except for runoff to streams.

Based upon the Donaldson and Koszalka water table contour map for March 1979, the depth to ground water is estimated to be approximately 40 ft below grade, and the regional ground-water flow direction appears to be toward the south (Appendix 1.3-3). Additionally, Appendix 1.3-3 notes that there had been little change in the water table configuration since 1975. Depth to water data was not available for the onsite, unsecured monitoring wells of which three were observed during EA's site reconnaissance to be completed at or slightly below grade. Within 3 mi of the site, the aquifer of concern has been developed by: 5 Jericho Water District wells, 20 Hicksville Water District wells, 2 Plainview Water District wells, 1 Old Westbury Village Water District

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well, 9 Westbury Water District wells, 2 Bowling Green Estates Water District wells, and 9 Levittown Water District wells. The area within 3 mi of the site is served by the seven aforementioned water districts; plus, the Bethpage Water District, the East Meadow Water District, the Roosevelt Field Water District, and the Carle Place Water District. Appendix 1.3-4 provides a list of the active public wells located within 3 mi of the site.

4.4 SITE CONTAMINATION

Waste Types and Quantities

The Alsy Manufacturing Inc. site is an industrial firm which manufactures lamps and lampshades involving bronze plating, antiquing, and electroplating processes. Various wastes are generated and stored at the Alsy plant including wastewater treatment sludge (110 gal/month) from cyanide, copper, and zinc contaminated wastewater, paint thinner (140 gal/month), acidic paint stripper (28 gal/month), and alkaline paint stripper (55 gal/4 months) from the vapor degreaser (Appendixes 1.1-1, 1.1-2, and 1.1-6). From 1977 until 1983, self-monitoring data from Alsy, as well as data from NCDOH, indicates that Alsy's discharges were exceeding effluent limits provided in their SPDES permit. Additionally, it was apparent that pollutants not authorized by the permit (aluminum, arsenic, methylene chloride, chloroform, 1,1,1-trichloroethane, toluene, xylene, and trace amounts of other volatile organics) were also being discharged (Appendixes 1.1-2, 1.1-8, and 1.1-11).

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On 21, 22, and 24 February 1984, the NYSDEC along with NCDOH on 22 February, conducted inspections of Alsy and found many areas of concern. Overflow from the plating room was being pumped up to the roof and out of a pipe on the northwest side of the building, a pipe on the north facing wall and two pipes on the west facing wall were discharging wastes from two slop sinks in the Alsy Cycle II. A whitish stain found on the ground in the vicinity of the pipes was identified as "Gesso", a thick paint used to decorate lamps. In the northwestern portion of the property, three inline leachpools were found. The southernmost and middle leachpools were apparently receiving the SPDES industrial discharge. The northernmost leachpool was filled to within 6 in. of the cover. The middle leachpool was filled to within 2 ft of the cover. Inspectors noted that the third pool had a thick scum on the surface of the liquid, and a strong odor of paint and solvents. In the north central portion of the building, Alsy's sanitary pool was found to be overflowing. Liquid from the pool was flowing into a trench that had been dug to the east of the pool, and then into a depression near some railroad siding. The inspectors also found a side trench entering the main trench. It was traced back to Cycle II where a discharge was found exiting the northeast facing wall. The trench was covered with paint. Several uncapped barrels containing paint waste were found in this vicinity. The waste storage area on the south side of the building was also inspected. Recent stains of varying colors were found on the asphalt in the storage area (Appendixes 1.1-7, 1.1-12 through 1.1-14).

Samples taken during this inspection by the NYSDEC indicated that many hazardous wastes were being discharged. Results are as follows:

Southernmost leachpool:	Arsenic (34 mg/liter) Copper (18.0 mg/liter) Lead (0.6 mg/liter)

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Southernmost leachpool (continued):	Nickel (88.5 mg/liter) Selenium (4 mg/liter) Zinc (6.23 mg/liter) Cyanide (0.96 mg/liter) 1,1-dichloroethene (300 ppb) 1,1,1-trichloroethane (42,000 ppb) Toluene (6,600 ppb) Ethylbenzene (900 ppb)
* Middle leachpool:	Arsenic (10.5 mg/liter) Copper (6.30 mg/liter) Lead (111 mg/liter) Nickel (42.7 mg/liter) Zinc (1.69 mg/liter)
Plating line overflow:	Arsenic (50 mg/liter) Copper (59.9 mg/liter) Lead (120 mg/liter) Nickel (29.2 mg/liter) Selenium (2 mg/liter) Zinc (9.12 mg/liter) 1,1-dichloroethene (400 ppb) 1,1,1-trichloroethane (74,000 ppb) Toluene (5,100 ppb) Ethylbenzene (200 ppb)
Sanitary pool:	Arsenic (4 mg/liter) Lead (78 mg/liter) Toluene (700 ppb)
Junction ditch from overflowing sanitary cesspool and ditch discharge	Arsenic (39 mg/liter) Copper (1.8 mg/liter) Lead (1.9 mg/liter) Ethylbenzene (540 ppb)
Paint shop discharge:	Lead (8 mg/liter) Methylene chloride (1,100 ppb) Toluene (170 ppb) Ethylbenzene (11 ppb)
* "Gesso" - north side of building	Cadmium (0.24 mg/liter) Chromium (0.19 mg/liter) Lead (4 mg/liter)
* "Gesso" - west side of building	Cadmium (0.33 mg/liter) Chromium (0.14 mg/liter) Lead (4 mg/liter)
Treatment system discharge	Arsenic (10 mg/liter) Copper (0.65 mg/liter)

* Samples were analyzed for metals only.
Source: Appendix 1.1-15.

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August 1984, NYSDEC conducted another inspection of Alsy. Samples taken of the southernmost and middle leachpools were found to contain: arsenic (22-90 mg/liter), copper (4.38-11.8 mg/liter), lead (3.10-96.5 mg/liter), nickel (42.9-68.0 mg/liter), chloroform (190-330 ppb), bromodichloromethane (170-190 ppb), toluene (780-2,500 ppb), and ethylbenzene (34-55 ppb) (Appendixes 1.1-22 and 1.1-23).

On 14 November 1984, Soil Mechanics Drilling Corp. collected water samples of a discharge to a "drywell" (Sample B) and from septic pools (Sample C) at the Alsy Manufacturing site (Appendixes 1.1-16 and 1.1-25). Analytical data from the samples indicated nickel (17.18 mg/l) and copper (1.149 mg/l) in the discharge to the drywell above the allowable discharge standards.

On 8 May 1985, NYSDEC collected six water samples (No. E 185-222-01 through 07) and four sludge/soil samples (No. R 185-012-01, 01B, 02, and 03) from various underground pools/catch basins at the Alsy Manufacturing site. Samples were sent to ERCO Labs, in Massachusetts, for analysis of EP Toxicity, total phenols, volatiles, and/or heavy metals (Appendix 1.1-35). Analytical data from the samples indicated that the contents of the underground pools were contaminated with various metals and volatile organics (Appendix 1.4-1). On 5 July 1985, NYSDEC notified Alsy Manufacturing that on the basis of the analytical results of the 8 May sampling, the liquid wastes and sludge contained in manholes, catch basins, and leachpools were considered hazardous and should be disposed of as such (Appendix 1.1-37).

NYSDEC 012219

Ground Water

Although several monitoring wells were installed at the site in 1985, the program was stopped after NYSDEC found the drilling program unacceptable. The wells were never sampled (Appendixes 1.1-4 and 1.1-33).

Surface Water

No data available.

Soil

During the February 1984 inspection, two soil vapor samples were taken near the "Gesso" discharge points. Analysis of the samples indicated cadmium (0.24-0.33 mg/liter), arsenic (20.5-29.5 mg/liter), chromium (0.14-0.19 mg/liter), lead (4-6.2 mg/liter), selenium (9-18.3 mg/liter), barium (1.8 mg/liter), copper (55.9-252 mg/kg), mercury (0.22 mg/kg), nickel (20.2 mg/kg), silver (5.24 mg/kg), and zinc (287 mg/kg) (Appendixes 1.1-7 and 1.1-15).

As part of the 1984 SAO, Alsy was ordered to excavate contaminated soil and have it removed by a licensed hauler (Appendix 1.1-28). The soil was dug up and put in a mound on the north side of the building pending analysis (Appendix 1.1-1). On 12 April 1985, Alsy had two soil piles sampled by H2M, and the samples analyzed for EP Toxicity metals. Analytical data from the sample collected from the pile located northwest of the facility indicated the presence of the following metals: aluminum (1.90 mg/liter), nickel (6.57 mg/liter), copper (1.07 mg/liter), zinc (2.66 mg/liter), barium

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(0.40 mg/liter), cadmium (0.02 mg/liter), and lead (0.10 mg/liter). A second pile located to the east of the building was also sampled and anlysis indicated the presence of copper (0.04 mg/liter), zinc (0.30 mg/liter), and barium (0.30 mg/liter) (Appendixes 1.1-29 and 1.1-32). The soil pile located to the northwest of the Alsy building remains at the site today (EA Site Inspection).

During the sampling conducted on 8 May 1985 by NYSDEC DEE, soil/sludge samples were collected from the soil pile located northwest of the Alsy building (No. R 185-012-04), the sludge crust in the railroad siding area (No. R 185-012-05), along the west wall of Cycle II in the discharge areas for the two Cycle II sinks and a plating overflow (No. R 185-012-06), and in the shipping and loading dock area near the dumpster (No. R 185-012-07) (Appendix 1.1-35). Of the EP Toxicity metals analyzed for, only lead (at the detection level of 0.40 ppm) and cadmium (0.066 ppm) were detected in samples collected along the west wall of Cycle II and near the dumpster in the loading dock area, respectively. Total phenolics were observed at concentrations of 0.51-1.8 ppm (Appendix 1.4-1). The soil pile located to the northwest of the Alsy building remains at the site today (EA Site Inspection).

On 18 April 1985, NCDOH collected soil samples from test borings completed at the site by Soil Mechanics Drilling Corp. Samples, obtained at 5-ft and 25-ft depths in the soil borings, were analyzed for EP Toxicity metals. Of the metals analyzed for, copper (<0.05-2.95 mg/liter), iron (0.08-0.36 mg/liter), manganese (<0.05-0.28 mg/liter), nickel (<0.05-4.30 mg/liter), and zinc (<0.05-0.72 mg/liter) were detected (Appendixes 1.4-2 and 1.4-3).

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Appendix 1.1-11

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

FRANCIS T. PURCELL
County Executive

December 13, 1983

Mr. Jack Ehrenfeld, General Manager
Alsey Mfg. Co.
270 Duffy Avenue
Hicksville, N.Y. 11801

Received from:
Nassau Co. Dept. of Health

Dear Mr. Ehrenfeld:

Recently a sample was collected of your industrial wastewater discharge. Analysis of this sample for organic chemicals shows it to contain certain chemicals in concentrations exceeding allowable amounts.

Constituent	Allowable Limit	Test Result
Methylene Chloride	50 ug/l	63 ug/l
Total Organics*	100 ug/l	154 ug/l

*Includes chloroform 9 ug/l, 1,1,1 trichloroethane 30 ug/l, toluene 39 ug/l, xylene 13 ug/l.

A copy of the test result has been enclosed for your reference. Please investigate the source of this contamination and take measures to eliminate it. Contact this office by December 28, 1983 to report on your success.

Analysis of the sample for inorganic chemicals has not been completed. The results will be forwarded to you when they are received by this office.

I may be contacted at 535-2284 if you have any questions.

Very truly yours,

Howard Schaefer

Howard Schaefer
Bureau of Land Resources Management

HS:no
Enc.

HOLZMACHER, McLENDON & MURRELL, P.C. • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICES
575 BROAD HOLLOW ROAD, MELVILLE, NEW YORK 11747 • (516) 694-3040
APPROVED DRINKING WATER LABORATORY IN NEW YORK, NEW JERSEY & CONNECTICUT

p2 of 22

Client Name and Address

N.Y.S. DEC
50 Wolf Road
Albany, NY 12233

SPDES Outfall 001
12" Cesspool

Alsy

Lab. No. 452014, 452015

Sample Description:
DEC ID#E-184-207-01

Date Sampled: 2/21/84
Time Sampled:
Collected By: RG 99

PRIORITY PURGEABLE ORGANICS POLLUTANTS

COMPOUND	ug/l
Chloromethane	ND
Bromomethane	ND
Vinyl chloride	ND
Chloroethane	ND
Methylene chloride	ND
Trichlorofluoromethane	ND
1,1-dichloroethene	300
1,1-dichloroethane	ND
Cis/Trans-1,2-dichloroethene	ND
Chloroform	ND
1,2-dichloroethane	ND
1,1,1-trichloroethane	42000
Carbon tetrachloride	ND
Bromodichloromethane	ND
1,2-dichloropropane	ND
Trans-1,3-dichloropropene	ND
Trichloroethene	ND
Dibromochloromethane	ND
1,1,2-trichloroethane	ND
Cis-1,3-dichloropropene	ND
Benzene	ND
2-chloroethylvinyl ether	ND
Bromoform	ND
1,1,2,2-tetrachloroethane	ND
Tetrachloroethene	ND
Toluene	6600
Chlorobenzene	ND
Ethylbenzene	900
Acrolein 1)	ND
Acrylonitrile 1)	ND

Method limit of detection: lower than 100 ug/l

Quantification limit: 100 ug/l

ND - Under detection limit

* - Detected, but less than 100 ug/l

1) Method limit of detection: lower than 1000 ug/l

Detection limits modified due to sample dilution.

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REVISION NO. 1

GROUNDWATER INTERIM REMEDIAL MEASURE PILOT TEST DESIGN REPORT GROUNDWATER RECIRCULATION WELL TECHNOLOGY OPERABLE UNIT NO. 2 FORMER GENERAL INSTRUMENT CORPORATION SITE HICKSVILLE, NEW YORK

PREPARED

BY

ESC ENGINEERING OF NEW YORK, P.C.

NOVEMBER 27, 2002

REVISION NO. 1: JANUARY 13, 2003

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Professional Engineer Certification

I certify that I am an engineer licensed in the State of New York who has received a baccalaureate and post-graduate degree in engineering and have sufficient training and experience in remediation, groundwater hydrology, and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgements regarding engineering design. I further certify that this report, *Groundwater Interim Remedial Measure, Pilot Test Design Report, Groundwater Recirculation Well Technology*, dated November 27, 2002, and revised January 13, 2003, was prepared under my direction.

John P. Black, P.E.
P.E. 062818-1

1. 13. 03
Date

STATE OF NEW YORK
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NYSDEC 012430

1.0 Introduction

Groundwater Recirculation Technology has been selected for implementation as an offsite Interim Remedial Measure (IRM) associated with the former General Instrument Corporation (GIC) site (Site Number 1-30-020) located in Hicksville, New York. ESC Engineering, of New York, P.C., will implement the IRM in a phased approach to refine the design parameters and gather information on the stratigraphy and hydrogeology of the IRM location. The first phase of the IRM will consist of installing a nested monitoring well cluster and installing and operating a single pilot test groundwater recirculation well to provide the necessary data for full-scale design. This pilot test design report has been prepared to supplement the rationale for selection of the groundwater IRM described in letters from ESC Engineering to the New York State Department of Environmental Conservation (NYSDEC) dated October 11 and November 8, 2002. This report provides a detailed plan outlining the technical approach for the pilot test and specifies the equipment and procedures to be followed to implement the pilot test. A schedule for implementing both the pilot test and the full-scale IRM is included in Appendix A while a health and safety plan is provided in Appendix B. Upon completion of the pilot test, ESC Engineering will complete the final design and submit a full-scale IRM design report to the NYSDEC.

Groundwater at the former GIC site has been affected by volatile organic compounds (VOCs), including trichloroethene (TCE) and associated degradation products. Source control actions have been implemented at the site but residual concentrations and upgradient sources are known to exist. Sampling results from previous groundwater investigations indicate that impacted groundwater has migrated downgradient of the former GIC site property boundary. The IRM will address offsite groundwater contamination and consists of groundwater recirculation wells installed in a phased approach in the downgradient portion of the VOC plume. Groundwater recirculation technology was selected following an evaluation of several potential remedial options. This technology was identified as the preferred strategy in part because of success with this technology at other sites on Long Island in treating the full vertical and horizontal extent of VOC plumes.

1.1 Site Description

The former GIC site is located at 600 West John Street northeast of the intersection of West John Street and Cantiague Rock Road in Hicksville, New York (Figure 1). The 11.5-acre site is located in a light industrial section of Hicksville and was developed in 1960 for the General Instrument Corporation (GIC; now Vishay General Semiconductor [VGS]). GIC occupied two one-story buildings and one two-story building for the research, design, and manufacture of semiconductors, radar systems, and electronic equipment until operations ceased in 1994. The majority of the former GIC site is either paved or occupied by buildings.

The site is surrounded by industrial and commercial properties (Sheet 1). Neighboring properties include Air Techniques (formerly GTE) to the north, rental warehouse space to the east, and property formerly used by King Kullen to the south. Waste Management, Inc., is currently redeveloping a portion of the King Kullen property, while a portion of the building on the King Kullen property is occupied by a blood bank. The remainder of the King Kullen property is vacant, with portions being used for storage of cars and roll-off containers. We understand that Costco is proposing to build a retail member-only store on a portion of the King-Kullen property.

A number of hazardous waste generators as defined by the Resource Conservation and Recovery Act (RCRA) and several inactive hazardous waste sites are located within 1 mile of the site. Of particular note, the Anchor Chemical Superfund Site, located at 500 West John Street less than 0.25-mile east of the former GIC site, had several leaking underground storage tanks with detections of up to 24,000 micrograms per liter (µg/l) total VOCs in onsite groundwater. The site was delisted from the NPL with no further action for groundwater. The plume with 24,000 µg/l of total VOCs has never been delineated.

1.2 Site History

GIC occupied the site from 1960 until manufacturing operations ceased in 1994. Two one-story buildings and one two-story building were used for offices and research and manufacturing operations. Long Island Industrial currently owns the property and leases the buildings to industrial and commercial tenants.

In the early 1980s, three potential areas of VOC releases were identified on the former GIC site: a former 2,000-gallon underground waste solvent tank (Area A), a former 1,000-gallon

underground waste solvent tank (Area B) and a sump in an underground tunnel (Area C). The 2,000-gallon tank was immediately taken out of service. In 1986, GIC entered into a Consent Order with the NYSDEC and the former GIC site was listed as an inactive hazardous waste disposal site. Under the Consent Order, GIC agreed to identify and investigate releases of contaminants onsite and offsite. In January 1990, GIC and NYSDEC entered into a second Consent Order to conduct a Remedial Investigation/Feasibility Study (RI/FS). Two operable units (OU-1 and OU-2) were defined: onsite soil contamination is referred to as OU-1 while affected groundwater is referred to as OU-2.

In 1994, a soil vapor extraction (SVE) system was installed as an IRM to address onsite soil contamination. In March 1997, the NYSDEC issued a record of decision (ROD) for OU-1 requiring SVE for treatment of onsite soils. As a result of the ROD, the system was upgraded in 1997 and the system continues to operate. Closure testing conducted in the fall of 2001 indicated that Areas B and C were sufficiently remediated to allow shutting down the system but that continued operation in Area A soils was still producing benefits. Additional testing was conducted in Areas B and C in December 2002 to confirm the results and the system continues to operate in Area A.

Since 1997, several groundwater investigations have been conducted to delineate the extent of offsite groundwater contamination. During the Phase III RI, three monitoring wells (W-15, W-16, and W-17) were installed in an east-west orientation on the northern portion of the King Kullen property. Well depths ranged from 130 feet to 170 feet below ground surface (bgs) and the total VOC concentrations ranged from 272 to 1,360 µg/l. Three soil borings (SB-1, SB-2, and SB-3) were installed in 1998 along a north-south line on the King Kullen property in an attempt to delineate the southern boundary of the groundwater plume. Groundwater samples were collected from screens in the augers as the soil borings were advanced. VOCs were detected in each of the borings. Soil boring SB-3, which was installed to 150 feet bgs, was converted to monitoring well W-18. A groundwater sample collected in July 2001 from W-18 contained 3,450 µg/l of total VOCs.

In 2001, a Phase IV RI was completed to further delineate the plume to the south and to aid in the design of an offsite IRM. Six soil borings (SB-4 to SB-9) were installed along an east-west line across the southern boundary of the King Kullen property just north of the railroad tracks. Soil borings SB-4, SB-6, and SB-9 were converted into well pairs W-19S/D, W-20S/D,

and W-21. Concentrations of total VOCs in groundwater samples[1] on the order of 1,000 µg/l were detected in each of the borings. While the concentrations of VOCs generally peaked at depths ranging from 110 to 180 feet bgs, the concentrations remained above target delineation concentrations at the termination depths of each of the borings. The maximum boring depth was 205 feet at location SB-8.

In April 2002, ozone injection was proposed as an offsite groundwater IRM to be located along the southern boundary of the King Kullen property just north of the Long Island Railroad in the vicinity of monitoring wells W-18, W-19 and W-20. However, results from the Phase V RI, which was completed during the summer of 2002, warranted reevaluation of the proposed IRM. Four additional monitoring wells (W-26, W-27, W-28, and W-30) were installed on the southern boundary of the Ackerman property and on the eastern portion of the DOT property. Total VOC concentrations in samples collected from these wells (screened from 252 to 285 feet bgs) ranged from 468 µg/l to 3,858 µg/l. These results indicate that the core of the VOC mass is downgradient of the King Kullen property and at deeper depths than previously determined. Based on this new data, an engineering reevaluation of potential remedial technologies was performed. ESC Engineering's letter of October 11, 2002, summarizes this reevaluation, which concluded that implementing groundwater recirculation well technology along the southern boundary of the Ackerman property will allow collection and treatment of nine times greater mass of VOCs than the previous IRM proposal.

1.3 Summary of Constituents of Concern and Site Hydrogeology

Analysis of groundwater elevations recorded during historic sampling events indicates that the groundwater flow direction is toward the south. As described in the Phase V investigation report, the plume associated with the former GIC site extends from the source areas under the King Kullen property located south of the former GIC property to beyond the southern boundary of the Ackerman property (Stearns & Wheler, 2002b). Based on historical chemical usage and sampling data, Stearns & Wheler estimated that there are at least six converging plumes (one of which is attributable to GIC) in the vicinity of the former GIC site. A database

[1] These samples of groundwater were collected through screens near the leading edge of the augers and are not from developed monitoring wells.

report identified 22 potential sources of constituents of concern (COCs) within one mile of the GIC site.

Constituents of Concern

As described previously, the primary COCs associated with the former GIC site are chlorinated solvents including TCE and associated degradation compounds. Other VOCs such as xylenes, ethylbenzene, and dichlorobenzene have also been detected. Samples from monitoring wells W-19S/D, the easternmost wells on the King Kullen property, contained primarily PCE. Since the affected groundwater originating from the former GIC site was a mixture of chlorinated hydrocarbons with a comparatively low percentage of PCE, it has been assumed that the groundwater contaminants in W-19 are from a separate source. Groundwater samples from monitoring wells W-18 and W-20S/D on the King Kullen property and W-26, W-27, and W-30 on the Ackerman property are similar in nature and are believed to define the plume originating from the former GIC site. This characterization is supported by the hydrogeology of the area in which plumes move in a southern direction with very little lateral dispersion.

Data from groundwater samples collected during the installation of soil borings and monitoring wells in July 2002 along the southern Ackerman property line suggest that the plume extends from approximately 160 to more than 340 feet bgs. Boring W-30 was advanced to the limit of the drilling equipment (340 feet bgs), and the total VOCs concentration in the groundwater sample from the augers was 965 μg/l, indicating that the vertical limit of the plume has not yet been defined. However, the data shows that the total VOC concentrations decrease with depth below approximately 280 feet bgs and that the majority of the VOC mass in this area is between approximately 200 to 280 feet bgs.

Site Hydrogeology

Using data collected from slug tests performed during the RI, Stearns & Wheler calculated the following average hydraulic conductivities and groundwater seepage velocities at the former GIC site:

Depth (feet bgs)	Hydraulic Conductivity (feet per day)	Seepage Velocity (a)	
		(feet per day)	(feet per year)
70 to 80	285	1.14	410
110 to 120	77	0.31	110
Average	NA	0.72	260

(a) Assumes hydraulic gradient of 0.0008 ft/ft and effective porosity of 0.2.

The average seepage velocity of 260 feet per year is consistent with calculated seepage velocities based on hydraulic conductivity values cited in the literature for the upper glacial aquifer in Long Island (130 to 270 feet per day). Using these published hydraulic conductivity values results in calculated groundwater flow velocities of 187 to 388 feet per year (0.52 to 1.08 feet per day).

While these groundwater flow velocities are useful as an order of magnitude estimate, a large degree of uncertainty is associated with data of this type for the reasons listed below and it therefore has limited usefulness for the IRM design:

- The slug tests performed during the RI were conducted in a depth range of 70 to 120 feet bgs, which is shallower than the targeted zone for the IRM (200 to 360 feet bgs), and in a location approximately 2,000 feet upgradient of the IRM location.
- The RI data tabulated above represents the average values of several individual slug tests with results that varied by up to two orders of magnitude.
- The existing data does not provide an indication of expected vertical hydraulic conductivity and potential low permeability layers in the IRM treatment zone.

The uncertainty in existing horizontal hydraulic conductivity data and the absence of stratigraphy data are primary among the reasons for conducting a pilot test before proceeding with a full-scale design. Final design of the full-scale system will not be completed until the pilot well yield is measured.

2.0 Pilot Test Technical Approach

The proposed IRM selected for OU-2 associated with the former GIC site is Groundwater Recirculation Technology. In recent years, the technology has been used to both hydraulically contain and remove VOC mass from groundwater. Four types of groundwater recirculation well systems are commercially available, including NoVOCs™, Unterdruck-Verdampfer-Brunnen (UVB), Density Driven Convection (DDC), and C-Sparger®. After evaluating each of the types, ESC Engineering selected a UVB well system for the IRM. IEG Technologies Corporation (IEG) of Mooresville, North Carolina, licenses use of UVB well systems in the United States.

2.1 UVB Technology Description

UVB well systems consist of a single well with multiple screened intervals hydraulically separated by inflatable packers. A submersible pump extracts groundwater from one of the screened intervals, and pumps it to a below-grade air stripper located in a vault near the ground surface. The treated groundwater is then injected into the subsurface through the remaining screened intervals. Under ideal conditions, the simultaneous extraction and injection causes a spherical zone of circulation to develop around the well casing. The shape of the zone of circulation can vary depending on the isotropic nature of the subsurface. The air stripper blower extracts the VOC-laden vapor from the well and discharges it either to vapor treatment equipment located above grade (e.g., granular activated carbon [GAC]) or directly to the atmosphere. Details for the proposed UVB well are shown on Sheet 2.

UVB well technology was selected for the IRM in part because of the documented success of this technology at the Brookhaven National Labs (BNL) site in Upton, New York, where subsurface conditions, target depths, and contaminants are similar to those encountered at the IRM location. Seven UVB wells at the BNL site achieved 92.82 percent average removal efficiency during startup of the system.

UVB well technology was also selected because of the flexibility inherent in this type of system to allow modifications to account for unanticipated site conditions. The UVB well can be modified to change which zones are used for injection or extraction. The configuration could permit the injection of an oxidant such as ozone or potassium permanganate into the subsurface through the discharge piping or top of the well casing.

2.2 IRM Objectives

The primary objectives of the IRM are to:

1. control the rate of migration of VOCs downgradient from the former GIC site
2. remove VOC mass from groundwater

This IRM is not meant to treat groundwater contamination associated with sources other than the former GIC site. As described in the Phase V RI Report, groundwater contamination identified in samples from the easternmost well (W-26) and the westernmost well (W-28) along the southern boundary of the Ackerman property is likely attributable to sources other than the former GIC site (Stearns & Wheler 2002b). The IRM will be designed to treat the plume originating from the former GIC site, and will also address those portions of this plume that have commingled with plumes from other sources. While some COCs from other plumes may be removed from the subsurface due to the relatively high permeability of the aquifer, the IRM cannot capture all of the offsite plumes in the vicinity.

2.3 Pilot Test Objectives and Technical Approach

The primary objectives of the pilot test are to:

1. provide data on the stratigraphy in the vicinity of the IRM
2. provide data on the yield of a UVB well located at the southern boundary of the Ackerman property at a depth of 280 feet (nominal)
3. determine achievable groundwater injection rates at upper and lower boundaries of the targeted treatment zone
4. allow measurements of the mass removal for a single well
5. interpret the practical zone of influence[2] of a single well to define the final UVB well spacing

One UVB well (UVB-1) will be installed and operated during the pilot test. The UVB well will be installed at the location shown on Sheet 1 on the Department of Transportation (DOT) property located west of the Ackerman site. The UVB well will be located approximately 60 feet away from existing monitoring well W-27. Based on performance data from the BNL

site and the available hydraulic conductivity data, IEG estimated a practical zone of influence for the UVB well of 118 feet. Therefore, monitoring well W-27 is expected to be within the recirculation zone. VOC concentrations, water levels, and dissolved oxygen (DO) concentrations will be periodically monitored at well W-27 (hereafter referred to as W-27M) and a new shallow well (W-27S) to be installed adjacent to W-27M during the pilot test as an attempt to verify the development of the recirculation zone.

Based on the vertical distribution of contaminants in the IRM area, the preliminary design for construction of the UVB well will be as follows:

Screen Type	Interval (feet bgs)
Upper Injection	200-220
Extraction	265-295
Lower Injection	340-360

This preliminary design places the extraction screen at the zone of highest VOC concentrations and the two injection screens near the upper and lower bounds of the VOC plume (see Phase V RI Report, Stearns & Wheler 2002b). This configuration will develop two circulation cells to treat all of the groundwater across the plume face. The upper circulation cell will be a standard flow cell in which the total head in the upper screened interval is increased and a reduced total head is created in the middle screened interval due to the pumping action. In contrast, the lower circulation cell will be a reverse flow cell as the total head in the lower screened is increased and a reduced total head is created in the middle screened interval due to the pumping action. The final depth of the screened intervals may be adjusted based on geologic stratigraphy data collected in the field.

A new monitoring well cluster (W-35) consisting of three wells (W-35S, W-35M, and W-35D) will be installed 120 feet downgradient of the UVB well as shown in Sheet 1. Based on the anticipated practical zone of influence estimated by IEG, ESC Engineering expects this monitoring well cluster to be outside the practical zone of influence of the UVB well. The screened intervals of the shallow, middle, and deep wells will mirror the screened intervals for the UVB well. The deepest monitoring well will be installed first, and ESC Engineering's onsite

[2]The practical zone of influence is described as the maximum horizontal distance that a particle of water will travel

hydrogeologist will continually log the soil samples from the borehole to provide a complete geologic description of the vertical soil profile from grade to 360 feet bgs. The boreholes for the shallow and middle monitoring wells will not be logged. During full-scale operation, this well cluster will serve as the monitoring point for tracking the concentration of VOCs leaving the recirculation cell at three depth horizons. Groundwater treated during the pilot test is not expected to reach this well before the full-scale system is installed. Baseline groundwater samples will be collected from each monitoring well and the UVB well and will be analyzed for VOCs and inorganic parameters, including total iron, dissolved iron, total hardness, alkalinity, pH, DO, total bacteria count, and presence of iron bacteria (Table 1).

Critical evaluation and full-scale design parameters that this pilot test will determine include:

- achievable extraction rate
- achievable injection rate to the upper screened interval under static head of approximately 65 feet (the groundwater table is encountered at approximately 70 feet bgs and the air stripper sump will be located approximately 5 feet bgs, yielding a static head of approximately 65 feet of treated water over the pressure in the groundwater unit)
- achievable injection rate to the lower screened interval
- geologic stratigraphy of the soil profile in the treatment zone, particularly the location of potential low permeability layers that could impede the development of the recirculation zone
- qualitative understanding of vertical and horizontal hydraulic conductivity
- air stripper efficiency
- geochemistry and biochemistry of the aquifer in the treatment zone and the need for additional water treatment to prevent chemical and/or biological fouling
- VOC mass removal rate
- practical zone of influence

from the outer edge of the circulation cell to the extraction screen within one year.

3.0 Pilot Test Equipment and Materials

Although monitoring well cluster W-35S/M/D will only provide baseline groundwater data during the pilot test, the geological data on potential clay layers in the vicinity of the test are considered fundamental. The monitoring well cluster will be installed first, followed by the installation of monitoring well W-27S and the UVB well. Generic cut sheets and typical sketches of the proposed equipment made available by IEG can be found in Appendix C.

3.1 Monitoring Well Construction

Four monitoring wells will be added to the existing array to monitor the IRM: three wells in monitoring well cluster W-35S/M/D and W-27S, using a rotosonic drill rig equipped with 4-inch diameter drill casing. Rotosonic drill rigs use an oscillator or head with eccentric weights driven by hydraulic motors to generate high sinusoidal force in a rotating pipe drill. A dual string assembly allows vibratory advancement of an outer casing and an inner casing used to collect soil samples. During drilling, a continuous 4-inch diameter soil core will be removed from the borehole in 10-foot sections. ESC Engineering's onsite hydrogeologist will classify and log the soil cores during the installation of the deep well. The hydrogeologist will attempt to obtain samples of the soil from a one-foot interval for estimation of the unit weight. Samples of the soil from each of the proposed screened horizons will be collected and shipped to Geotechnics in Pittsburgh, Pennsylvania, for testing of the grain-size distribution and specific gravity of the solids in each screened interval and in any startigraphic zone with potentially much lower hydraulic conductivity (silt or clay). These analyses will aid the design and selection of the filter pack and screen slot sizes for the UVB well, help locate the positions of the screens, and provide information to estimate variations in hydraulic conductivity between the screened intervals.

Each of the monitoring wells will be constructed of 2-inch inside diameter (ID) flush-threaded, polyvinyl chloride (PVC) or carbon steel well casing equipped with 0.020-inch slot well screen (subject to change based on observed field conditions). The shallow and deep wells will each be constructed with 20 feet of screen positioned to mirror intervals for the injection and extraction screens of the UVB well, while the middle well will be constructed with 30 feet of screen. As stated previously, ESC Engineering anticipates these intervals to be 200 to 220 feet

bgs, 265 to 295 feet bgs, and 340 to 360 feet bgs; however, the actual construction of each well, including the screen size openings, may be modified based on field observations.

An additional monitoring well will be installed inside the anticipated practical zone of influence adjacent to monitoring well W-27M. The existing monitoring well W-27M is screened from 275 to 285 feet bgs, which mirrors the proposed middle (extraction) screened interval of the UVB well. This new well (W-27S) will be screened from approximately 200 to 220 feet bgs to mirror the proposed upper screened interval of the UVB well. This new well will be constructed in a similar manner to the W-35 cluster.

A quartz sand filter pack will be placed in the annular space between the casing and the surrounding formation in each well to a level approximately 1 foot above the top of the screened interval. An approximately 2-foot-thick bentonite seal will be placed on top of the filter pack to form a seal. Once the seal has set, bentonite-cement grout will be installed to seal the remaining annular space. Each well will be completed with a flush-mounted steel protective cover set in a concrete pad.

Each of the monitoring wells will be developed no sooner than 24 hours after the installation of the well seal. The wells will be developed using a pump until the development water is relatively free of suspended sediment and the pH, temperature, conductivity, and turbidity have stabilized. Field measurements will be considered stable when two successive readings vary by less than 10 percent. If the water remains turbid, or the *in situ* measurements do not stabilize, the completion of the well development will be determined by the onsite hydrogeologist. If a submersible pump is used for the development activities, the pump will be decontaminated before each use. Decontamination rinsate and development water will be temporarily stored onsite in a portable storage tank, pumped through liquid-phase activated carbon, and discharged to the ground surface following the protocol used for the remedial investigation. Soil cuttings generated during the installation activities will be contained in a Department of Transportation-approved (DOT-approved) roll-off box(es). The roll-off boxes will be labeled and staged onsite for later disposal in accordance with state and federal regulations.

After well development is completed, slug tests will be performed on wells W-35S/M/D and W-27S/M to estimate hydraulic conductivity in the formation around each screened interval. The slug tests will involve raising the water level in the well by adding either a weighted object

or slug of water of known volume to the well and determining the time required for the water level to return to a static groundwater elevation. Pressure transducers and a datalogger will be used to monitor the change in head in the well.

3.2 UVB Well Construction

IEG Technologies of Mooresville, North Carolina licenses the use of Groundwater Recirculation Technology in the United States. The UVB well will be installed after completion of the monitoring wells using either mud rotary or dual rotary drilling techniques. As described previously, the UVB well will be installed to approximately 360 feet bgs, with screened intervals anticipated from 200 to 220 feet bgs, 265 to 295 feet bgs, and 340 to 360 feet bgs. The final depth and actual location of each screen will be determined after analysis of the soil profile interpreted from the deep monitoring well boring.

The UVB well casing will be constructed of 10-inch diameter PVC or steel well casing. The extraction and injection screens will be constructed of 10-inch diameter continuous-wrap stainless steel well screen. At this time it is anticipated that the extraction screen will be 0.020-inch slot and the injection screens will be 0.040-inch slot. The screen sizes will be verified after the results of the grain-size analyses are received from the geotechnical laboratory. The soil cuttings from the UVB well will be placed in the roll-off box(es) with the cuttings from the monitoring wells and managed in the same manner. The UVB well will be developed and water generated during this process will be managed as described above for monitoring well cluster W-35S/M/D and W-27S.

Two inflatable packers will be installed inside the UVB well to isolate the upper, middle, and lower screened intervals. The packers will be custom built to fit the inside diameter of the well casing but will be similar to model YEP-7.50/9.50 manufactured by Roctest Inc. (refer to Appendix C for specifications). The packers will be equipped with custom cores to allow for installation of the effluent and influent piping, pump cables, inflation line, and transducer cables as shown on Sheet 2. The packers will be set below the upper and middle screened intervals.

Pressure transducers will also be installed in each screened interval to measure fluctuations in total head when the system is in operation. The pressure transducers will be non-venting and will either be equipped with dataloggers or have the ability to be connected to a datalogger.

3.3 Groundwater Extraction Pump

The groundwater extraction pump will be a 4-inch diameter submersible pump capable of yielding a minimum of 60 gallons per minute (gpm) against a head of 70 feet of water. A variable speed pump will be specified to allow adjustment of the extraction rate to match the injection rate of the well. The initial design flow rate of 60 gpm is based on flow rates measured in similar UVB wells at the BNL site. This yield is consistent with the average groundwater velocity of 260 feet per year calculated by Stearns & Wheler, a practical zone of influence of 118 feet, and an effective porosity of 0.2. Given these properties, the calculated flow rate into the treatment zone of the UVB well is approximately 30 gpm. Therefore, the initial design flow rate of 60 gpm will provide for two passes through the recirculation zone. Given that the actual hydraulic conductivity in the treatment zone is likely less than estimated by Stearns & Wheler at 60 gpm, the number of passes through the treatment zone will likely be more than two.

3.4 Air Stripper and Blower

The proposed UVB well will be equipped with a below-grade air stripper supplied by IEG Technologies and installed in a 48-inch diameter double-walled HDPE well vault. The air stripper will consist of a removable tray and sump as illustrated in Sheet 2. The air stripper is manufactured in Germany, is specific to this technology, and is available in two sizes (30 or 80 gpm). IEG has recommended the larger air stripper based on the predicted flow rate. The design of the air stripper is proprietary and therefore cut sheets are not available from the manufacturer.

The blower to be used during the pilot test will be sized by IEG Technologies based on anticipated VOC loading, a maximum groundwater flow rate of 80 gpm, and a target removal efficiency of 90 to 95 percent. The blower will be equipped with a variable frequency drive so that the airflow rate through the air stripper can be optimized in the field. Based on site-specific data, IEG has indicated an airflow range of 700 to 1,200 standard cubic feet per minute. IEG was unable to provide ESC Engineering a detailed cut sheet for the air stripper and blower; however, general details and specifications are included in Appendix C. Sampling ports will be installed on the influent and effluent lines from the air stripper so that data may be collected to evaluate mass removal and efficiency over time.

3.5 Vapor Treatment Equipment

During the pilot test, air stripper off-gas will be treated using vapor-phase GAC units configured in series before discharge to the atmosphere. Ports will be provided to allow sampling of vapors before, between, and after the treatment units. Vapor samples will be collected during the pilot test to verify successful VOC removal and evaluate the need for carbon for the full-scale IRM design.

Based on the maximum observed total VOC concentration detected in the monitoring wells installed during the Phase V RI, the anticipated VOC mass loading onto the air stripper is approximately 0.114 pounds per hour. This was calculated as follows:

$$\begin{aligned}\text{VOC Loading Rate (lbs/hr)} &= \text{VOC Concentration } (\mu g/l) \times \text{Extraction Rate (gpm)} \\ &= 3858\ \mu g/l \times 60\ \text{gpm} \times 3.785\ l/\text{gal} \times 2.205 \times 10^{-9}\ \text{lbs}/\mu g \\ &= 0.00193\ \text{lbs/min} \times 60\ \text{min/hr} \times 24\ \text{hrs/day} \\ &= 2.78\ \text{lbs/day}\end{aligned}$$

Assuming an air stripper removal efficiency of 90 percent (typical of these strippers), 2.50 pounds of VOCs per day (a total of approximately 75 pounds over 30 days) will require carbon treatment during the pilot test. Assuming a 5 percent adsorption capacity, 1,500 pounds of carbon will be required to remove the VOCs from the air stream. GAC units loaded with new carbon and meeting this requirement will be delivered to the site for the pilot test. A minimum of two 1,000-pound carbon units will be installed in series during the pilot test. When vapor sampling indicates that carbon in the first unit is spent, the second unit will be used as the primary treatment unit until a carbon change-out can occur. The system will not be allowed to operate for more than 5 days in this mode. At the time of change out, one new carbon vessels will be installed as the secondary unit and a second new carbon unit will be staged on site for installation as needed.

4.0 Pilot Test Procedures and Monitoring

The pilot test will be conducted over a 30-day period. This will allow evaluation of the yield of the well, monitoring of the response of the formation to reintroduction of the treated water, monitoring of the treatment efficiency, and evaluation of the mass removal rates after treatment of approximately 1 million gallons of groundwater. Table 1 outlines the sampling and analysis plan to be implemented during the pilot test.

4.1 Baseline Groundwater Sampling

Baseline water level measurements and six baseline groundwater samples will be collected at the time of the UVB well development from the pilot test area. Samples will be collected from the extraction zone of the UVB well, the three new monitoring wells in cluster W-35, existing monitoring well W-27M, and monitoring well W-27S. The samples will be analyzed for VOCs and inorganic parameters including total iron, dissolved iron, total hardness, alkalinity, pH, DO, total bacteria count, and presence of iron bacteria at STL Connecticut in Shelton, Connecticut, a New York State ELAP and ASP laboratory. STL will be used to ensure uniformity in the analyses and protocols with the investigation program.

The groundwater samples will be collected in accordance with ESC Engineering's standard operating procedures (SOPs). Copies of these SOPs that are applicable to this project are included in Appendix D. Any non-disposable equipment such as water level indicators will be decontaminated before use. One trip blank will be collected and analyzed for VOCs during the baseline sampling, while one duplicate sample and one equipment blank will be collected for QA/QC purposes.

4.2 Determination of Optimum Extraction and Injection Flow Rates

The stratigraphic information collected during installation of the deep monitoring well will be used to position the UVB well. The relative spacing of the extraction and return screens will be maintained, but the well may be positioned higher or lower to adapt to stratigraphic characteristics of the groundwater bearing zone.

The properties of the groundwater system could vary significantly in the area of the pilot test from those measured in the upgradient wells. In order to determine the optimum extraction

rate, ESC Engineering will perform injection tests isolating the upper and lower screens before the air stripper is installed. First, the packers will be set at the desired depths above the lower and middle screened intervals and fully inflated. The injection piping to the lower screened interval will be valved closed, isolating the middle and upper screened intervals. The down-well submersible pump will be turned on and the extraction rate will be monitored using a flow meter installed on the extraction piping inside the well vault. Water will be injected into the subsurface through the upper screen.

Pressure in the well will be monitored using transducers installed in each of the screened intervals. When the pump is first turned on, the pressure in the extraction interval will decrease while the pressure in the upper interval will increase. Once the circulation cell has developed, these pressures will reach equilibrium indicating the extraction rate is equal to the injection rate. The extraction rate will then be increased and the pressures will again be allowed to equilibrate.

This process will continue by adjusting the extraction rate of the pump until the maximum extraction rate from the middle screened interval that can reach equilibrium with the injection rate into the upper screened interval has been achieved. It has been IEG's experience that the initial time to reach equilibrium is relatively short (on the order of minutes in some cases) in sandy aquifers such as that of Long Island. The time to reach equilibrium will gradually increase throughout the test until equilibrium can no longer be achieved, indicating the maximum injection rate into the subsurface.

The valve on the discharge piping to the lower screened interval will then be opened for injection into the lower screen. A submersible sump pump located in the bottom of the collection tray will pump the water from the tray to the lower screened interval. The injection test will proceed in a similar manner as the injection test on the upper screened interval, with the exception that the water level in the collected tray will be monitored to prevent injection into the upper screened interval. Pressure data collected during the injection tests will be used to refine the preliminary model prepared to estimate the practical zone of influence.

After the maximum achievable flow rates into the upper and lower screened intervals are determined, the system will be turned on with injection into both intervals. The system will be balanced by adjusting the extraction rate while maintaining similar injection rates into the upper and lower screened intervals. Once the system has been balanced and the maximum extraction

and injection rates have been determined, the air stripper will be installed and the full system will be started.

4.3 VOC Removal Efficiency

The "optimum flow rate" will be the maximum injection rate that can be balanced between the upper and lower injection screens while also maintaining greater than 90 percent VOC removal efficiency. As described in Section 3.4, the blower will be equipped with a variable frequency drive so that the flow rate through the blower can be adjusted. Because every application of this technology is site-specific based on flow rates, COC composition, and COC concentrations, VOC removal efficiency can be predicted from data collected from similar sites but must be verified in the field. Therefore, after the system has been started with injection into both the upper and lower screened intervals at the maximum injection rate, ESC Engineering will collect influent and effluent groundwater samples to optimize the air stripper removal efficiency. A minimum of three sets of samples will be collected at separate flow rates to develop a relationship between the blower flow rate and removal efficiency at the maximum injection rate. Air flow from the air stripper will be measured using a Dwyer flow sensor (a self averaging pitot tube) installed on the transfer piping to the blower. Vapor samples and PID measurements will also be collected from the influent, between the carbon vessels, and from the carbon effluent to verify successful VOC removal and evaluate the need for carbon for the full-scale IRM design. A summary of the samples to be collected is included in Table 1. While waiting for analytical results, the blower will be operated at the highest VOC mass removal rate based on PID measurements.

4.4 Performance Monitoring

During the pilot test, performance monitoring will consist of groundwater sampling, vapor sampling, and collection of flow measurements and other physical data. The groundwater sampling program will consist of the following events:

1. baseline sampling (6 samples, 1 trip blank, 1 equipment blank, and 1 duplicate sample for QA/QC purposes) at the time the UVB well is developed
2. influent and effluent samples (at the maximum groundwater injection rate) while operating at three different airflow rates

3. weekly samples for the first four weeks after startup from the influent and effluent, including one duplicate sample for every 20 groundwater samples collected during the pilot test
4. groundwater samples from W-27S and W-27M at the end of the 30-day pilot period

The baseline samples will be analyzed for VOCs, total iron, dissolved iron, total hardness, alkalinity, pH, and DO, total bacteria count, and presence of iron bacteria. Influent and effluent samples during the startup period will be analyzed for VOCs only to evaluate the air stripper efficiency. Groundwater samples collected during the pilot period will be analyzed for VOCs, total iron, dissolved iron, total hardness, alkalinity, pH, and DO.

Vapor samples will also be collected using Microseeps samplers or a similar approved method from the influent, between the GAC units, and from the effluent of the GAC units during the pilot test. As described in Section 4.3, vapor samples will be collected at three different blower flow rates to evaluate VOC removal efficiency at the maximum groundwater injection rate. Real-time vapor concentration data will be collected simultaneously using a PID for comparison. Vapor samples will be collected weekly for laboratory analysis from the flow to the treatment system, between the two units, and of the discharge. One duplicate sample will be collected for every 20 vapor samples collected for QA/QC purposes. The vapor samples will be analyzed for VOCs by Microseeps of Pittsburgh, Pennsylvania, following Microseeps' Method AM4.03 pending approval by the NYSDEC, or by another approved method. A copy of the Microseeps analytical method is provided in Appendix E.

Throughout the pilot test, additional data such as pressure, flow, dissolved oxygen, and water levels measurements will be collected. A summary of the additional field data to be collected (subject to change based on operating conditions) is included in Table 2.

4.5 Reporting

During the pilot test, ESC Engineering will prepare a brief weekly progress report for submission to the NYSDEC. The progress report will include information about operation during the previous week including estimated hours of operation, system shut downs, samples collected, and PID, pressure and flow measurements. An estimate of the VOC mass removal rate will be calculated based on the PID and flow measurements.

At the completion of the pilot test, ESC Engineering will incorporate the data collected into the full-scale design report. The report will include a summary of the data collected, the analytical laboratory reports, and an evaluation of the overall system performance. Information collected during the startup of the system will be modeled to estimate the practical zone of influence of the UVB well. An evaluation of the data collected during the pilot test period will be used to optimize the full-scale design. The full-scale design report will be prepared and submitted to the NYSDEC in early June 2003.

5.0 Schedule

A schedule for implementation of the UVB pilot test and full-scale system is presented in Appendix A. After the wells are installed in late February 2003, the pilot test is scheduled to begin in March. The pilot test is scheduled to be completed in early May 2003. Based on the findings of the pilot test, ESC Engineering will complete the IRM design and submit a full-scale design report to the NYSDEC by June 9, 2003. Upon receiving the NYSDEC's approval, full-scale construction will occur in July and August 2003 with startup scheduled for mid-September 2003. To accelerate mass removal of VOCs, the pilot test UVB well will be continuously operated throughout this period.

While it may seem notable that the monitoring wells in cluster W-35 will not be sampled during the pilot period, the estimated hydraulic conductivities suggest that the influence of the UVB well should not be detectable at that location before October 2003. These wells will be sampled during the first quarterly performance monitoring event scheduled for December 2003.

6.0 References

ESC Engineering of New York, P.C. 2002a. Letter from Mr. John P. Black, P.E., to Mr. Kevin Carpenter, Senior Environmental Engineer, of the NYSDEC regarding Engineering Evaluation and Rationale for Selection of Interim Remedial Measures, Former General Instrument Corporation Site, Hicksville, New York. October 11, 2002.

ESC Engineering of New York, P.C. 2002b. Letter from Mr. John P. Black, P.E., to Mr. Kevin Carpenter, Senior Environmental Engineer, of the NYSDEC regarding Response to Comments on Rational for Interim Remedial Measures Selection, Former General Semiconductor Site, Hicksville, New York. November 8, 2002.

Stearns & Wheler Companies. 2002a. Groundwater IRM, Ozone Injection System Design Report, General Semiconductor, Inc., Hicksville, New York. April 2002.

Stearns & Wheler Companies. 2002b. Off-Site Groundwater Investigation, Phase V, Summer 2002, Vishay-General Semiconductor, Inc., Hicksville, New York. October 2002.

NYSDEC 012452

Tables

Table 1
Proposed Sampling and Analysis Plan
Groundwater Interim Remedial Measure Pilot Test Design
Former General Instrument Corporation Site
Hicksville, New York

Well	Matrix	Analyses	Frequency
Monitoring Well Drilling Program			
W-35D	Soil	Grain Size Analysis (ASTM D422) Specific Gravity	Single sampling event, each screened interval for UVB-1
Baseline Groundwater Sampling			
W-35S/M/D UVB-1 W-27M W-27S Duplicate	Groundwater	VOCs (EPA 8260) Total Iron (EPA 6010) Dissolved Iron (EPA 6010) Total Hardness (EPA 130.1) Alkalinity (EPA 310.1) pH (EPA 9040) Dissolved Oxygen (EPA 360.2) Total Bacteria Count (ATP) Presence of Iron Bacteria	Single sampling event
Trip Blank Equipment Blank	Water	VOCs (EPA 8260)	Single sampling event (baseline sampling)
Startup Period			
UVB-1 Influent UVB-1 Effluent	Groundwater	VOCs (EPA 8260)	At three blower airflow rates after startup of the system injecting into both screened intervals at the maximum groundwater injection rate
Carbon Influent Between Vessels Carbon Discharge	Vapor	VOCs (Microseeps AM4.03) VOCs (using PID)	At three blower airflow rates after startup of the system injecting into both screened intervals at the maximum groundwater injection rate
Pilot Period			
UVB-1 Influent UVB-1 Effluent Duplicate	Groundwater	VOCs (EPA 8260) Total Iron (EPA 6010) Dissolved Iron (EPA 6010) Total Hardness (EPA 130.1) Alkalinity (EPA 310.1) pH (EPA 9040) Dissolved Oxygen (EPA 360.2)	Weekly; One duplicate sample for every 20 samples collected during the pilot test
Carbon Influent Between Vessels Carbon Discharge Duplicate	Vapor	VOCs (Microseeps AM4.03) VOCs (using PID)	Weekly; One duplicate sample for every 20 samples collected during the pilot test
W-27M W-27S	Groundwater	VOCs (EPA 8260) Total Iron (EPA 6010) Dissolved Iron (EPA 6010) Total Hardness (EPA 130.1) Alkalinity (EPA 310.1) pH (EPA 9040) Dissolved Oxygen (EPA 360.2)	At the end of the 30-day pilot period.

Table 2
Summary of Field Data to be Collected During Pilot Test
Groundwater Interim Remedial Measure Pilot Test Design
Former General Instrument Corporation Site
Hicksville, New York

Well	Matrix	Field Parameter	Frequency
Baseline Groundwater Sampling			
W-35S/M/D UVB-1 W-27M W-27S	Groundwater	Water Level Dissolved Oxygen	Single sampling event
Startup Period			
UVB-1	Groundwater	Pressure Head at Each Screened Interval	Continuous (frequency of logging data to be determined)
W-35S/M/D W-27M W-27S	Groundwater	Water Level Dissolved Oxygen	After startup of the system injecting into both screened intervals at the maximum groundwater injection rate
UVB-1 Influent UVB-1 Effluent	Groundwater	Flow Rate	After startup of the system injecting into both screened intervals at the maximum groundwater injection rate
Carbon Influent Between Vessels Carbon Discharge	Vapor	Flow Rate Pressure Through Carbon VOCs (using PID; see Table 1)	At three blower flow rates after startup of the system injecting into both screened intervals at the maximum groundwater injection rate
Pilot Period			
UVB-1	Groundwater	Pressure Head at Each Screened Interval	Continuous (frequency of logging data to be determined)
W-35S/M/D W-27M W-27S	Groundwater	Water Level Dissolved Oxygen	Weekly
UVB-1 Influent UVB-1 Effluent	Groundwater	Flow Rate	Weekly
Carbon Influent Between Vessels Carbon Discharge	Vapor	Flow Rate Pressure Through Carbon VOCs (using PID; see Table 1)	Weekly

Note: Parameters and frequencies listed in this table are subject to change during the pilot test based on field conditions and do not include data that are collected in accordance with ESC Engineering's SOPs.

Figures

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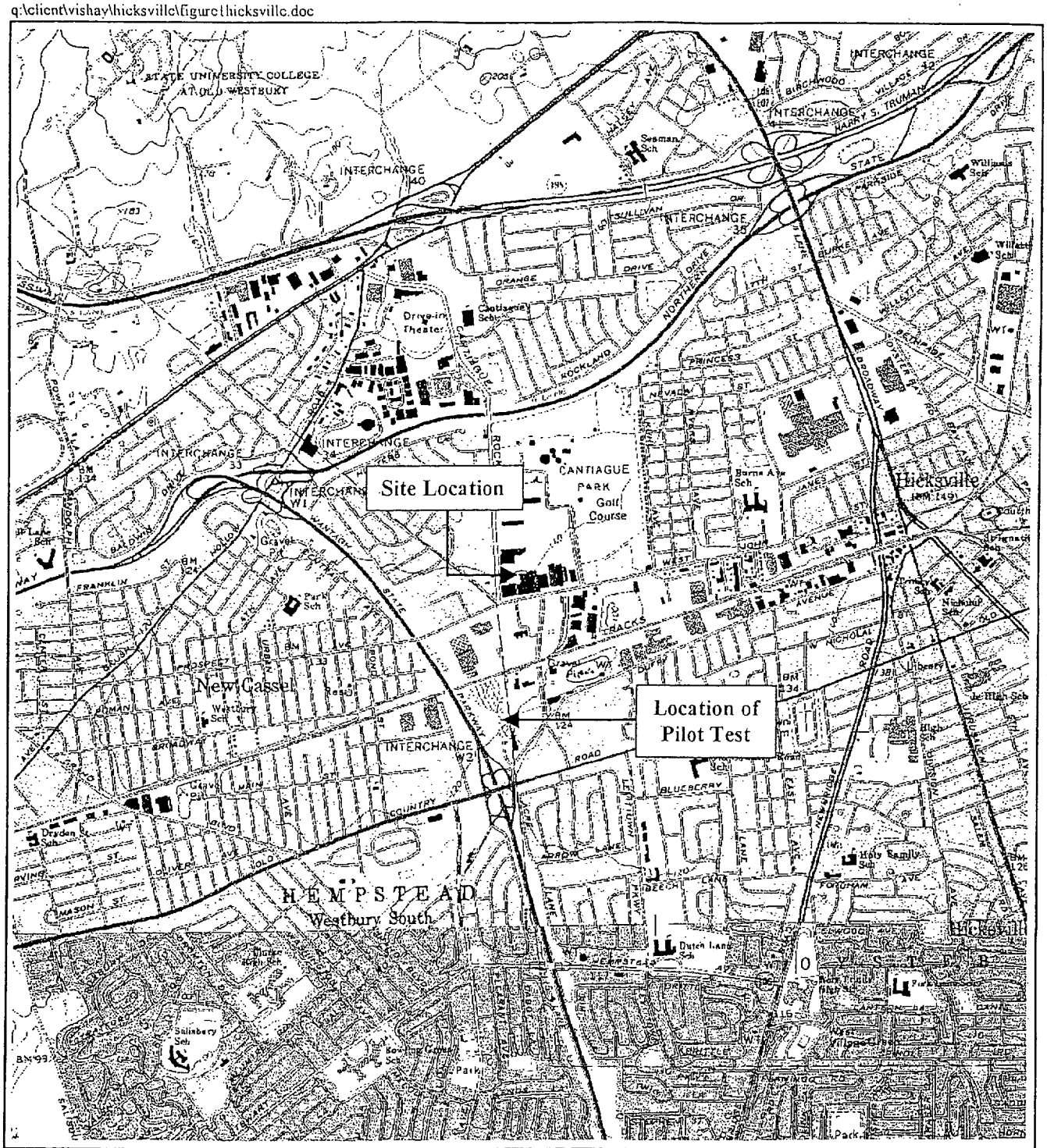
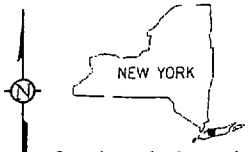


Reference

7.5 Minute Series Topographic Quadrangle
Hicksville, New York
Photorevised 1979 Scale 1:25,000 Metric



Quadrangle Location

Scale in Meters

0 500 1000

0 1000 2000

Scale in Feet

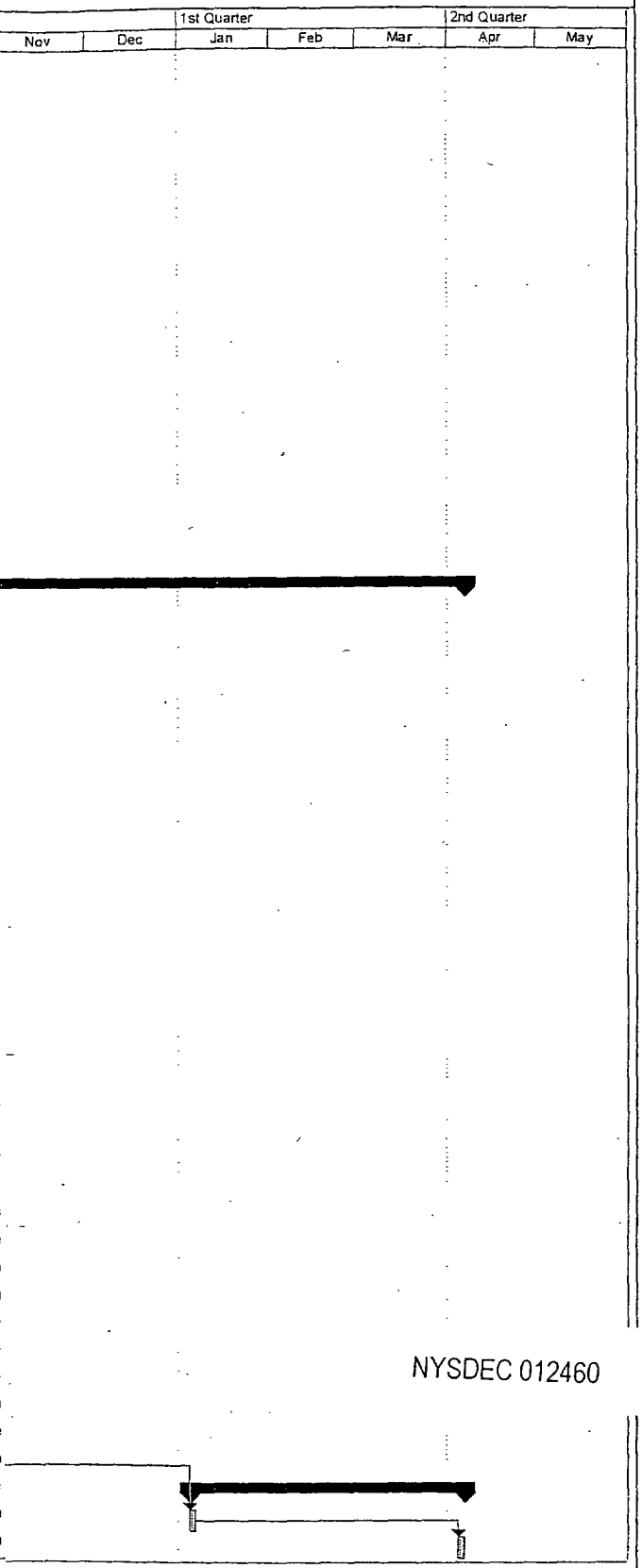
ENVIRONMENTAL STRATEGIES CORPORATION
11911 FREEDOM DRIVE, SUITE 900
RESTON, VIRGINIA 20190
703-709-6500

Figure 1
Site Location
Former General Semiconductor, Inc., Site
Hicksville, New York

Sheets

Appendix A – Schedule

ID	Task Name	Duration	S
1	**Operable Unit No. 1**	**75 days**	**Mon**
2			
3	**Area A SVE System**	**75 days**	**Mon**
4	Optimization Plan	5 days	Mon
5	Peer Review	1 day	Thu
6	Response to Comments	5 days	Mon
7	Step tests and sampling – Individual Wells	5 days	Mon
8	Laboratory Testing and QA/QC	20 days	Mon
9	Data Summary and Recommendations	10 days	Mon
10	Area A Report	0 days	Fri
11			
12	**Area B and C Sampling**	**35 days**	**Mon**
13	Area B Soil Vapor Probe	5 days	Mon
14	Laboratory Testing and QA/QC	20 days	Mon
15	Area C Tunnel and Background Sampling	5 days	Mon
16	Laboratory Testing and QA/QC	20 days	Mon
17	Data Summary and Recommendations	10 days	Mon
18	Area B and C Report	0 days	Fri
19			
20	**Operable Unit No. 2**	**396 days**	**Thu**
21			
22	**Phase V Remedial Investigation**	**27 days**	**Thu**
23	Draft RI Report	27 days	Thu
24	Draft Due to NYSDEC	0 days	Fri
25			
26	**IRM**	**255 days**	**Wed**
27	Letter Explaining Rationale	8 days	Wed
28	Submit Letter	0 days	Fri
29	NYSDEC Review	5 days	Mon
30	Submit Response to NYSDEC's Comments	15 days	Mon
31	NYSDEC Review	7 days	Mon
32	Draft Pilot Test Design Report	40 days	Mon
33	Draft Pilot Test Design Report Due	0 days	Sun
34	NYSDEC Review	15 days	Mon
35	Final Pilot Test Design Report	16 days	Mon
36	Contractor Selection	30 days	Mon
37	Access Agreements	3 mons	Mon
38	Equipment Procurement	6 wks	Tue
39	Utility Installation	12 days	Mon
40	Deep Monitoring Well Installation	5 days	Mon
41	Shallow and Medium Depth Monitoring Well Installations	5 days	Mon
42	Pilot Well Installation	5 days	Mon
43	Equipment Installation and Pilot Startup	10 days	Mon
44	Pilot Period	30 days	Mon
45	Draft Full-Scale Design Report	75 days	Mon
46	Draft Full-Scale Design Report Due	0 days	Mon
47	NYSDEC Review	19 days	Tue
48	Final Full-Scale Design Report	10 days	Tue
49	NYSDEC Review	9 days	Tue
50	Well Drilling - Full-scale Treatment System	20 days	Mon
51	Equipment Installation	9 days	Tue
52	Full-Scale Startup	10 days	Mon
53	**IRM Monitoring Program**	**66 days**	**Mon**
54	1st Sampling Event - Q4-2003	2 days	Mon
55	2nd Sampling Event - Q1-2004	2 days	Mon



NYSDEC 012460

Project: Revised_Project Mgt 2002
Date: Mon 01/13/03

Task | Progress
Split | Milestone

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Appendix B – Health and Safety Plan

Technical Data 60 GPM Model 60S

DIMENSIONS AND WEIGHTS

MODEL NO.	FIG.	HP	MOTOR SIZE	DISCH. SIZE	DIMENSIONS IN INCHES A	B	C	D	E	APPROX. SHIP WT.
60S20-4	A	2	4"	2" NPT	32.6	15.1	17.5	3.8	3.9	39
60S30-5	A	3	4"	2" NPT	40.7	20.6	20.1	3.8	3.9	64
60S50-7	A	5	4"	2" NPT	48.8	23.6	25.2	3.8	3.9	75
60S50-9	A	5	4"	2" NPT	53.9	23.6	30.3	3.8	3.9	80
60S75-13*	A	7 1/2	4"	2" NPT	70.1	29.6	40.5	3.8	3.9	105
60S100-18*	A	10	4"	2" NPT	97.3	43.9	53.4	3.8	3.9	160

NOTES: All models suitable for use in 4" wells, unless otherwise noted.
Weights include pump end with motor in lbs.
* Also available with 6" motor.

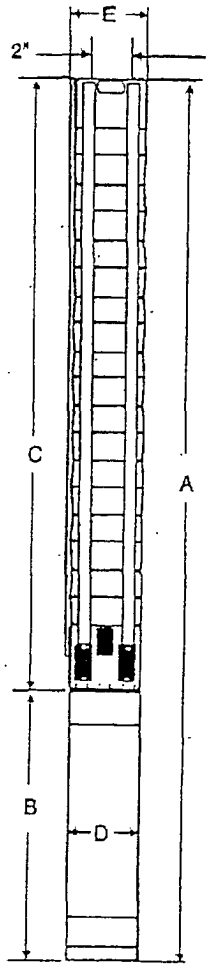


Fig. A

MATERIALS OF CONSTRUCTION

COMPONENT	CYLINDRICAL SHAFT (4-18 Stgs.)
Check Valve Housing	304 Stainless Steel
Check Valve	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel
Impeller	304 Stainless Steel
Suction Interconnector	304 Stainless Steel
Inlet Screen	304 Stainless Steel
Pump Shaft	431 Stainless Steel
Straps	304 Stainless Steel
Cable Guard	304 Stainless Steel
Priming Inducer	316 Stainless Steel
Coupling	329/420/431 Stainless Steel**
Check Valve Seat	NBR/316 Stainless Steel
Top Bearing	NBR/316 Stainless Steel
Impeller Seal Ring	NBR/316 Stainless Steel
Intermediate Bearings	NBR/316 Stainless Steel
Shaft Washer	LCP (Vectra®)
Split Cone	304 Stainless Steel
Split Cone Nut	304 Stainless Steel
Coupling Key	Not Required**

NOTES: Specifications are subject to change without notice.
Vectra ® is a registered trademark of Hoechast Calanese Corporation.
** If using 6" non-standard motors, refer to 329/416 Stainless Steel for coupling and 302/304 for the coupling key.

GRUNDFOS
GRUNDFOS PUMPS CORPORATION • 2555 Clovis Avenue • Clovis, CA • 93612
Area Centers: Allentown, PA • Atlanta, GA • Chicago, IL • Clovis, CA • Dallas, TX • Seattle, WA
(800) 333-1366 • FAX (800) 333-1363
Canada: Mississauga, Ontario • Mexico: Apodaca, N.L.

NYSDEC 012462

LSP-TL-1060 6/96
PRINTED IN USA

Date: 02-18-02

IEG TECHNOLOGIES
MOORESVILLE, NC
REMEDIATION BLOWER

Performance Requirements			Selection	
Actual Volume	1250	Cu Ft / Min	Model and Size	AF-15-1121-8
			Impeller Diameter	16.50
Static Pressure	17.000	Inches W.G.	Impeller Material	Aluminum
Max Design Temperature	200	Degrees F		
Inlet Conditions				
			Density	0.0732
Operating Temperature	70	Degrees F	Volume	1250
Specific Gravity	0.000		Static Pressure	17.00
Altitude	0	Feet	Power @ Condition	5.45
Inlet Pressure	-10.000	Inches W.G.	Power @ 0.075 Lb / Cu Ft	5.58
Density at Static Pressure	0.0732	Lb / Cu Ft	Fan Speed	3524
			Impeller Tip Speed	15221
			Static Efficiency	61
			Outlet Velocity	3581
			% of Max Fan Speed	90
			Max Fan Speed	3935
			* Recommended Motor	7-1/2

*Includes factors for belt loss.

Sound Data

Sound Power Levels @ 10E-12 Watts

Frequency	LW dB
63	92
125	87
250	92
500	100
1000	96
2000	91
4000	85
8000	80

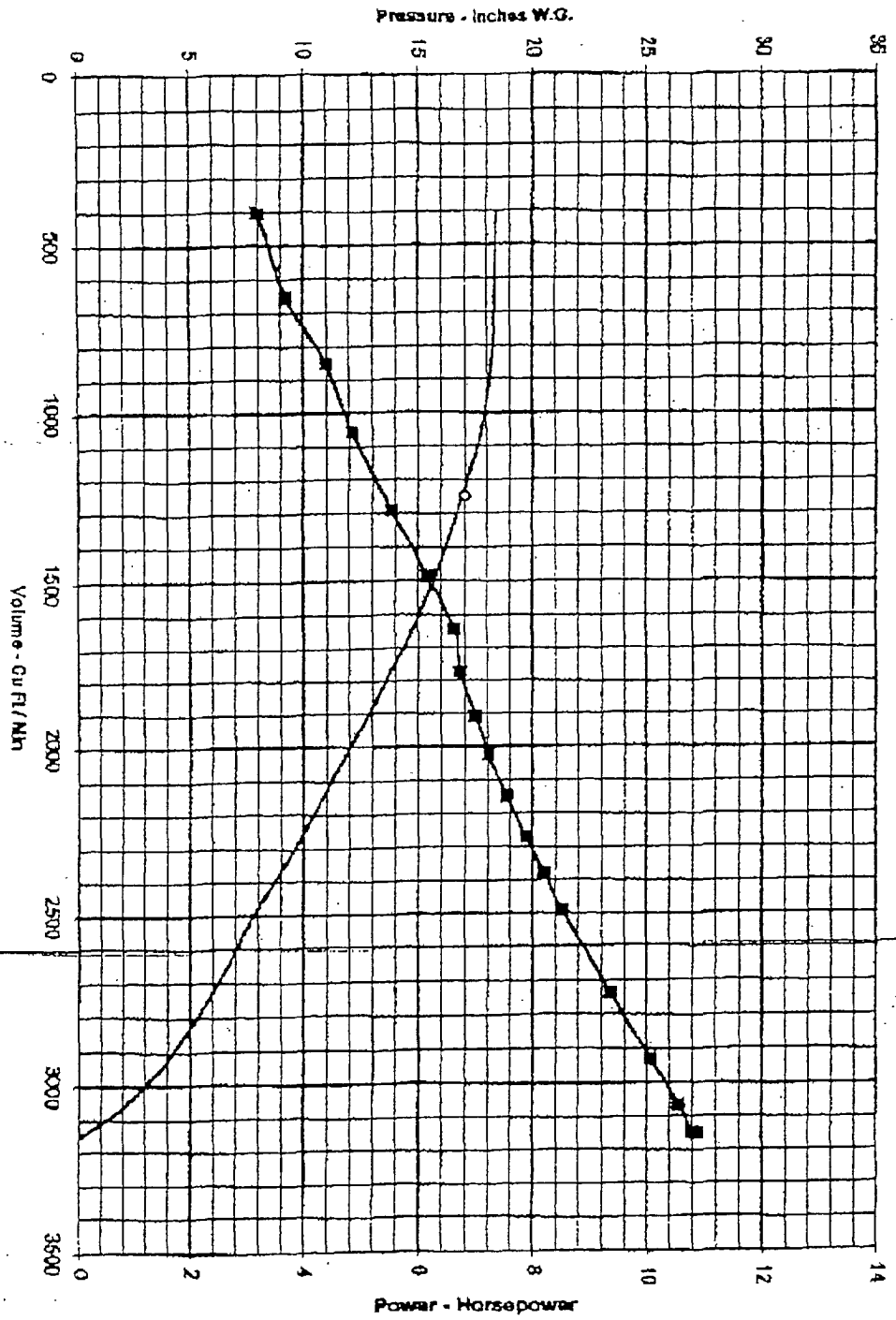
Estimated DBA @ 5 Feet
98

The sound power level ratings are shown in decibels, referred to 10E-12 watts calculated per AMCA Standard 301. Values shown are for inlet LWI sound power levels for Installation Type B, free inlet, ducted outlet. Ratings do not include the effects of duct end correction.

dbA value shown was obtained in Installation Type B tests conducted in the AFC Laboratory. dbA value obtained for your installation may be different. dbA level shown is for comparative purposes only.

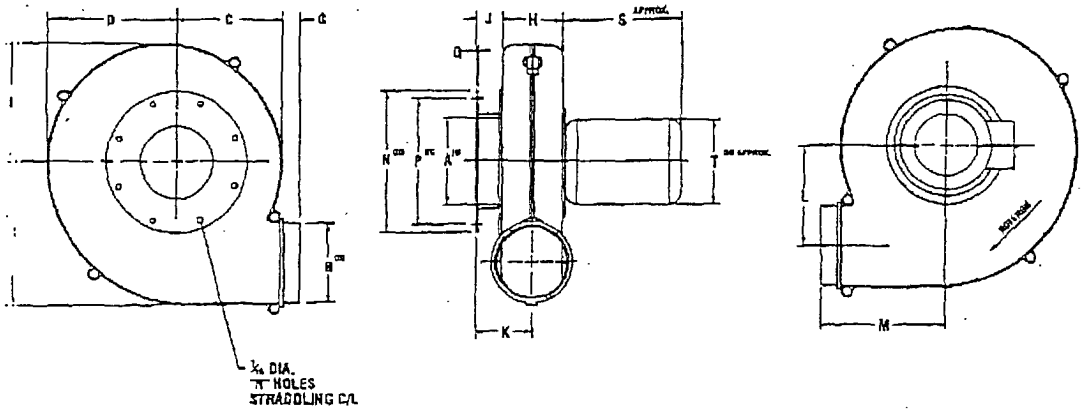
Copyright (C) 1999 by American Fan Company Fairfield, OH

NYSDEC 012463



AF-15-1121-8* 3515 RPM 0.0732 Lb / Cu Ft

ARR'T 4 INLET FLANGE MOUNT



ALL DIMENSIONS SHOWN IN INCHES

56-C, 143-TC, 145-TC	2¾	4	4⅝	5⅝	5½	6⅞	1⅜	3½	1⅜	3⅛	4⅜	6⅝	7⅞	8	¼	4	14
	3⅝												9	7¾		8	
56-C, 143-TC, 145-TC	3⅝	4	6	7¼	6⅝	7¼	1⅜	3¼	1⅞	3⅝	5¼	7⅝	9	7½	¼	8	20
	4⅝												10	8½			
56-C, 143-TC, 145-TC	5½	5	6⅞	8⅝	7½	9	1⅞	3¼	1⅝	3½	6½	7⅝	11	9½	¼	8	35
56-C, 143-TC, 145-TC 182-TC, 184-TC	6¼	6	7¾	9¼	8½	10⅝	1⅞	4¼	1⅝	3½	7⅝	8⅝	11	9½	⅝	8	40
143-TC, 145-TC, 182-TC, 184-TC, 213-TC, 215-TC	6¾	8	9¾	11	10	12	1⅝	5⅞	2	4⅝	7⅞	10⅝	11	9½	½	8	58
	7½												13½	11¾		8	
	9⅝												18	14¼		12	

	25	11½	6¼
	33	11½	7
	45	11½	7
	60	14½	9
	70	14½	9
	120	16	10½
	140	16	10½

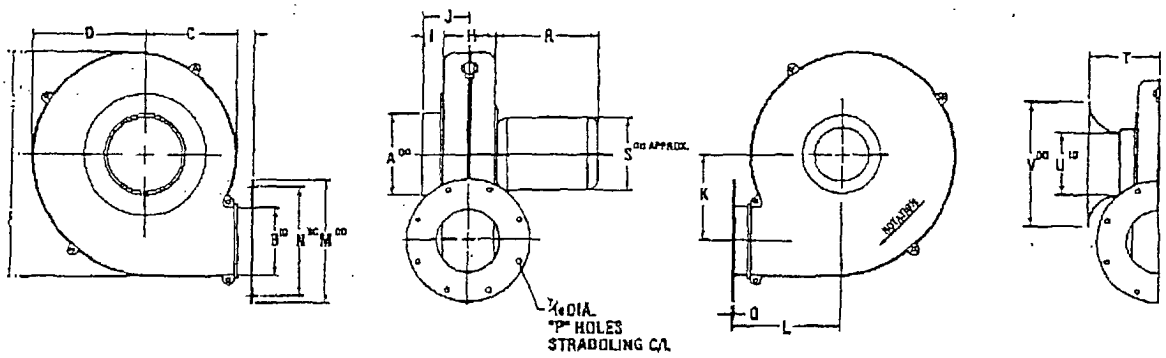
NOTES:

① For optional outlet flange, see drawing AFA11421F

② Inlet flange is welded to inlet side housing

③ Housing, flange, and wheel are constructed of cast aluminum

ARR'T 4 OUTLET FLANGE MOUNT



ALL DIMENSIONS SHOWN IN INCHES

56-C, 143-TC, 145-TC	3	3⅝	4⅞	5⅝	5½	6⅞	1⅝	3½	1⅜	2¾	4⅝	6⅝	9	7½	8	¼	14
	4																
56-C, 143-TC, 145-TC	4	3⅝	6	7¼	6½	7¼	1⅞	3¼	1⅜	3⅝	5⅝	7⅝	9	7½	8	¼	20
	5																
56-C, 143-TC, 145-TC	6	4⅝	5⅞	8⅝	7½	9	1⅞	3¾	1½	3⅝	6⅝	8⅝	10	8½	8	⅝	35
56-C, 143-TC, 145-TC 182-TC, 184-TC	7	5½	7¾	9¼	8½	10⅝	1⅞	4¼	1½	3⅝	7⅝	9⅝	11	9½	8	⅝	40
143-TC, 145-TC, 182-TC, 213-TC, 215-TC	7	7½	9¾	11	10	12	2⅛	5¼	1½	4⅜	7¼	11⅞	13½	11¾	8	⅝	56
	8															¼	
	10															½	

	25	11½	6¼
	33	11½	7
	45	11½	7
	60	14½	9
	70	14½	9
	120	16	10½
	140	16	10½

	3	4¼	2⅝	5¼
	4	4¾	3⅝	7¼
	4	4⅝		
	5	5⅞	4⅝	9¼
	6	6⅝	5½	11
	7	6⅞	6½	13
	7	7¾		
	8	8¼	7½	15
	10	9¼	9½	19

NOTES:

① For optional inlet flange, see drawing AFA11421F

② Inlet flange is welded to motor side housing and bolted to inlet side housing

③ Housing, flange, and wheel are constructed of cast aluminum

NYSDEC 012465

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INFLATABLE PACKERS

YEP Series

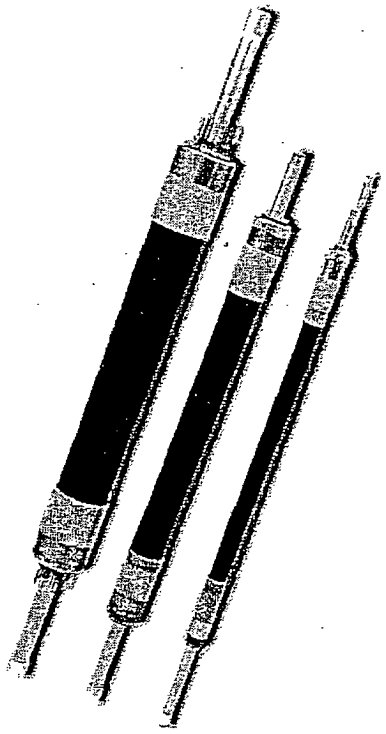
GENERAL

The YEP Packer is a fixed head packer comprised of a reinforced, expandable gland fitted with tough, elastic collars at both of the gland's extremities. The YEP packer has a zero leak tolerance. The seals on the packer heads form pressure tight joints from which even minute quantities of air or fluid cannot escape.

The inflatable gland can be readily replaced in the field using standard pipe wrenches.

The standard packer element is supplied with 40 inch (1 meter) long glands. Two or more packer elements can be linked to form single and multiple zone packer assemblies.

Custom assemblies with flush joint construction include shrouds to house downhole equipment such as sampling pumps, sample cylinders, geochemical probes, pressure transducers or flowmeters, feedthrough tubes to enable passage of lead lines, or Viton or Viton clad and neoprene sleeves.



DESCRIPTION

The YEP packer is comprised of an inflatable gland and an inner core pipe, which runs the entire length of the packer and on which two fixed sealing heads are mounted. Two vulcolan end collars, two retaining rings and two lock nuts terminate the gland assembly.

The core pipe is fitted with a female pipe thread at both extremities. A 1/4" tubing connector fits on the inflation port on the upper head and accepts the inflation line. A removable plug seals the outlet on the lower head of a single packer element.

The standard straddle packer configuration is comprised of upper and lower single packer elements connected by a length of perforated pipe and a corresponding length of intermediate inflation line with fittings. When used in a straddle packer configuration, the plug on the lower head of a single packer is replaced with a fitting that mates with the intermediate inflation line.

The YEP single packer element may be used to form a multiple packer assembly of more than 2 elements. This inline configuration allows the borehole to be segmented into multiple zones of varying lengths. All packers may be inflated simultaneously or separately if supplied with individual inflation lines leading from the packer to the surface.

The lowering rods or a continuous length of flexible tubing can be used to inject or withdraw fluid from the zone isolated by the packers. The use of tubing requires a coaxial, slotted adaptor to permit both the rods and tubing to connect to the top of the packer.

APPLICATIONS

- ✔ PRESSURE GROUTING IN FRACTURED OR UNCONSOLIDATED FORMATIONS
- ✔ PERMEABILITY TESTING IN SOIL OR ROCK BOREHOLES
- ✔ GROUNDWATER SAMPLING
- ✔ SEALING ELEMENTS FOR SOIL OR ROCK BOREHOLES
- ✔ METHANE GAS CONTROL AND COLLECTION IN MINES
- ✔ SEGMENTING BOREHOLES INTO MULTIPLE ZONES
- ✔ TESTING PIPELINES
- ✔ ISOLATING WATER WELL PUMPS FROM SILT PRODUCING ZONES
- ✔ MONITORING FORMATION PRESSURE
- ✔ LOCATION AND FLOW CHARACTERIZATION OF WATER PRODUCING STRATA
- ✔ WATER INFUSION FOR DUST CONTROL IN COAL MINES

SPECIFICATIONS

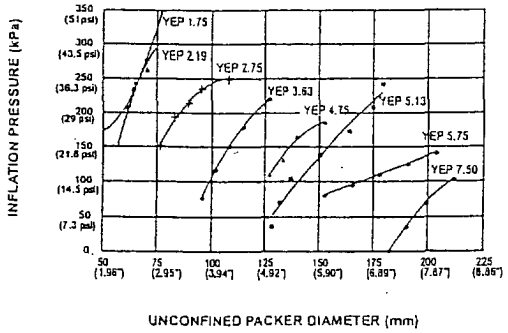
TABLE 1

MODEL NUMBER	DEFLATED DIAMETER in.	DEFLATED DIAMETER mm	INSIDE DIA. CORE PIPE in.	INSIDE DIA. CORE PIPE mm	CORE PIPE FEMALE COUPLING SIZE	STANDARD GLAND LENGTH	OVERALL LENGTH	INFLATION PORT TUBING CONNECTION	STANDARD STRADDLE ZONE LENGTHS	MINIMUM STRADDLE ZONE LENGTHS
YEP-1.75/3.00	1.75	44.5	0.51	12.9	3/8" NPT					
YEP-2.19/3.25	2.19	55.6	.635	16.1	1/2" NPT					
YEP-2.75/4.25	2.75	70.0	.822	20.9	3/4" NPT					
YEP-3.63/5.00	3.63	92.2	1.00	25.4	1" NPT	39.4 in. / 1 m	60 in. / 1.5 m	1/4 in. / 6 mm	5 ft. / 1.5 m	12 in. / 305 mm
YEP-4.75/6.50	4.75	120.7	1.38	35.1	1¼" NPT				10 ft. / 3.0 m	
YEP-5.13/7.00	5.13	130.2	1.38	35.1	1¼" NPT					
YEP-5.75/8.00	5.75	146.0	1.38	35.1	1¼" NPT					
YEP-7.50/9.50	7.50	190.5	3.00	76.2	3" NPT					

TABLE 2 : GLAND DIFFERENTIAL PRESSURE RATING IN A SMOOTH BOREHOLE

DIA. IN / MODEL / MM	1.75	2.00	2.25 / 57	2.50 / 64	2.75 / 70	3.00 / 76	3.25 / 83	3.50 / 89	3.75 / 95	4.00 / 102	4.25 / 108	4.50 / 114	4.75 / 121	5.00 / 127	5.25 / 133	5.50 / 140	5.75 / 146	6.00 / 152	6.25 / 159	6.50 / 165	6.75 / 171	7.00 / 178	7.25 / 184	7.50 / 191	7.75 / 197	8.00 / 203	8.25 / 210	8.50 / 216	8.75 / 222	9.00 / 229	9.25 / 235	9.50 / 241
YEP-1.75/3.00	1200 8.27	700 4.83	400 2.76	275 1.89	200 1.38	100 0.69	PSI MPa																									
YEP-2.19/3.25			1600 11.0	1400 9.65	700 6.44	400 3.00	200 1.38	PSI MPa																								
YEP-2.75/4.25						1400 9.65	700 6.44	350 2.41	250 1.72	150 1.03	75 .52	PSI MPa																				
YEP-3.63/5.00									1400 9.65	1250 8.62	850 5.86	500 3.44	250 1.72	175 1.21	PSI MPa																	
YEP-4.75/6.50													1300 8.96	1100 7.58	850 5.86	600 4.14	400 2.76	250 1.72	100 0.69	PSI MPa												
YEP-5.13/7.00															1200 8.27	1100 7.58	850 5.86	700 4.83	550 3.79	400 2.76	300 2.07	225 1.55	175 1.21	PSI MPa								
YEP-5.75/8.00																	1200 8.27	1175 8.10	1150 7.93	1000 6.90	900 6.21	800 5.52	625 4.31	500 3.45	400 2.76	250 1.72	PSI MPa					
YEP-7.50/9.50																								950 6.55	900 6.21	850 5.86	800 5.52	650 4.48	500 3.45	350 2.41	275 1.89	200 1.2

TABLE 3 : PACKER INERTIA - INFLATION PRESSURE VS DIAMETER



DIFFERENTIAL PRESSURE

For an injection test from surface, the differential pressure is equal to:

[Hydrostatic head of injected fluid] + [Pump injection pressure] + [Packer inertia (See table 3)] + [Packer seating pressure *1] - [Hydrostatic head of borehole fluid acting on packer]

For a pump-out test, the differential pressure is equal to:

[Hydrostatic head of borehole fluid acting on packer] + [Packer inertia (See table 3)] + [Packer seating pressure *1]

*1 the pressure to seat the packer is generally 50 psi (0.34 MPa).

ACCESSORIES

- Feedthrough lines to allow selective or serial inflation of a string of packers
- Housings for pumps or samplers located within or below a multiple packer assembly
- Stainless steel or aluminum construction
- Viton or Viton clad glands
- Custom gland diameters and lengths
- Flush joint construction

ORDERING INFORMATION

Please specify:

- Model
- Gland length
- Differential pressure rating required
- Hole diameter
- Configuration: single, straddle, multiple zone
- Straddle zone length

NYSDEC 012467

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E5030G-021202

ROCTEST TELEMAC

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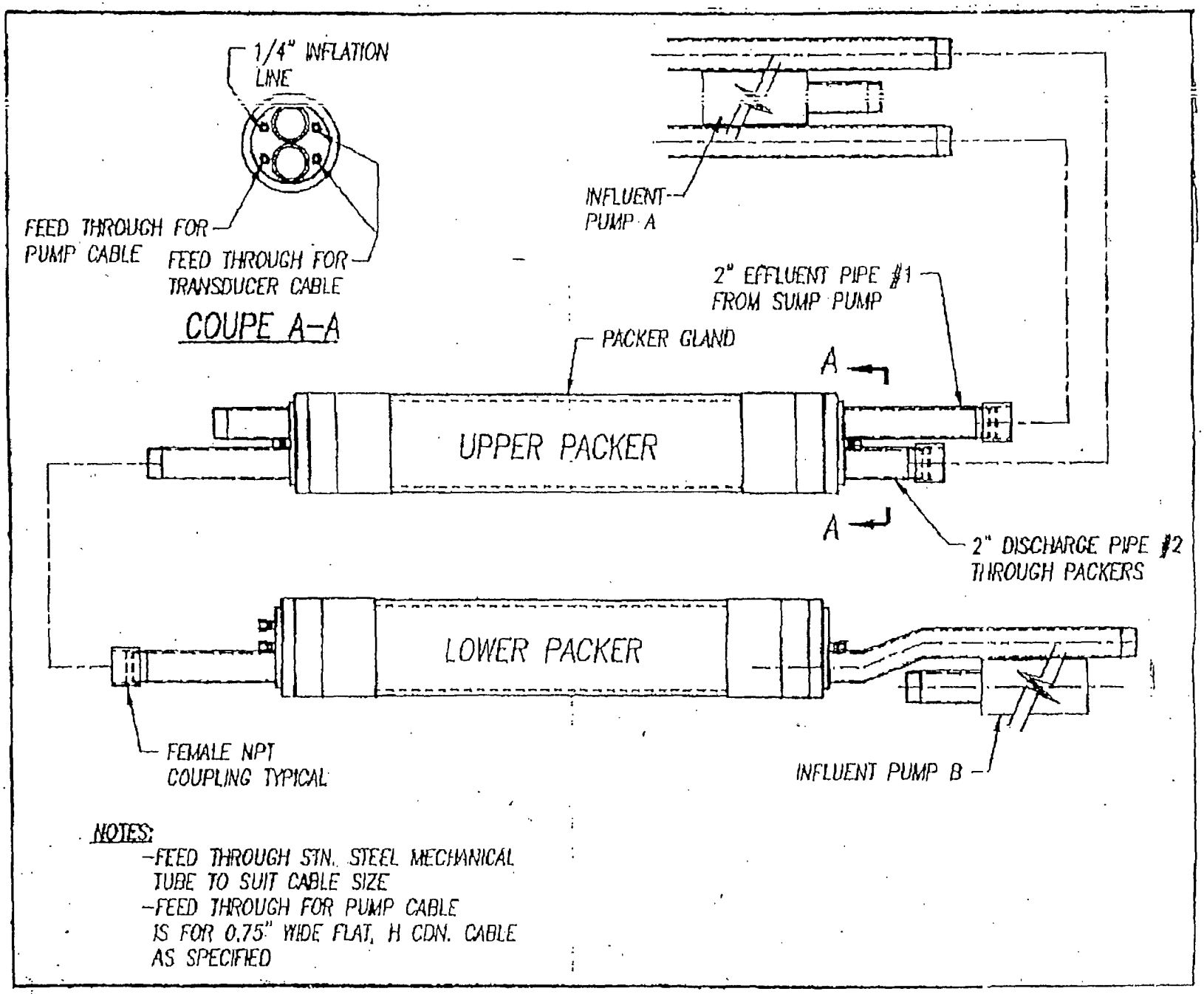
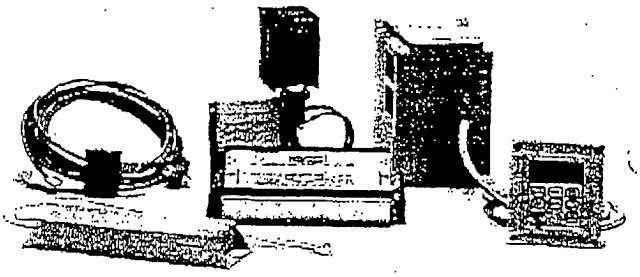

1/4" INFLATION LINE
FEED THROUGH FOR PUMP CABLE
FEED THROUGH FOR TRANSDUCER CABLE
COUPE A-A
INFLUENT PUMP A
2" EFFLUENT PIPE #1 FROM SUMP PUMP
PACKER GLAND
A
UPPER PACKER
A
2" DISCHARGE PIPE #2 THROUGH PACKERS
LOWER PACKER
FEMALE NPT COUPLING TYPICAL
INFLUENT PUMP B
NOTES:
-FEED THROUGH STN. STEEL MECHANICAL TUBE TO SUIT CABLE SIZE
-FEED THROUGH FOR PUMP CABLE IS FOR 0.75" WIDE FLAT, H CDN. CABLE AS SPECIFIED

FM100

FLUXMASTER



Product Specification

Applicable Motor Output (HP)	0.5	1	2	3	5	7.5	10	15	20	30	1	2	3	5	7.5	10	15	20	30
Rated Output Current (A)	3.1	4.5	7.5	10.5	17.5	26	35	49	64	87	2.3	3.8	5.2	8.8	13	17.6	25	[illegible]	38
Rated Capacity (KVA)	1.2	1.7	2.9	4	6.7	9.9	13.3	18.7	24.4	33.2	1.7	2.9	4	6.7	9.9	13.3	19.1	24.4	36.6
Output Voltage Max.	Three Phase 200 ~ 240V (Proportional to Input Voltage)										Three Phase 380 ~ 460V (Proportional to Input Voltage)								
Rated Input Voltage and Frequency	Three Phase 200 ~ 240V, 50/60Hz										Three Phase 380 ~ 460V, 50/60Hz								
Allowable Voltage Fluctuation	(+10%, -10%)										(+10%, -10%)								
Allowable Frequency Fluctuation	(+5%, -5%)										(+5%, -5%)								
Frequency Control Range	0.1 ~ 400Hz																		
Frequency Accuracy	Digital Command: 0.01% +14°F ~ 104°F (-10°C ~ 40°C) Analog Command: 0.4%, +14°F ~ 77°F (-10°C ~ 25°C)																		
Frequency Resolution	Digital Keypad Reference: 0.01Hz (0 ~ 99.99Hz), 0.1Hz (100 ~ 400Hz)																		
Frequency Setting Signal	0 - 5VDC, 0 - 10VDC, 0 - 20mA																		
Accel / Decel Time	0.1 ~ 3600 Seconds (Two Independent Accel / Decel or S-Curve Settings)																		
Peak Torque	Approximately 200% (300% of Inverter Unit Rated Output for 0.5HP Unit and Below)																		
V/F Pattern	18 Pre-Programmed Patterns (One Custom Pattern)																		
Instantaneous Overcurrent	Approximately 200% of Rated Current										Approximately 200% of Rated Current								
Overload Protection	150% Rated Output Current for 60 Seconds										150% Rated Output Current for 60 Seconds								
Motor Overload	Electronic Thermal Overload Relay										Electronic Thermal Overload Relay								
Overvoltage	230V Series: DC Bus Voltage exceeds 427V										460V Series: DC Bus Voltage exceeds 854V								
Undervoltage	230V Series: DC Bus Voltage drops below 200V										460V Series: DC Bus Voltage drops below 400V								
Momentary Power Loss	0 - 2 Seconds: FM100 can be restarted with Speed Search										0 - 2 Seconds: FM100 can be restarted with Speed S								
Heatsink Overheat	Protected by Thermostat										Protected by Thermostat								
Input Signals	Operation Signal	Forward / Reverse Operation, Individual Command																	
	Reset Signal	Released Protection (available to Protect Functions Operation)																	
	Programmable Multi-Functional Inputs	3 Programmable Inputs with the following signals available to select: Multi-Speed Commands (3) / Jog Operation / External Emergency Stop / External Coast Stop / Speed Search																	
Output Signals	Programmable Relay	1 Programmable Output with the following signals available to select: Run / At Speed																	
	Run Electrical Signal	Set Frequency / Frequency Detection / Overcurrent Detection / Change from NO to NC Contact																	
	Fault Contact	250VAC 1A, 30VDC 1A or less																	
	Digital Keypad Monitor	5 Digit 7 Segment LED Display Indicates Frequency / Output Frequency / Speed / Output Current / Output Voltage / DC Bus Voltage / Rotation Direction																	
	Analog Output Monitor	0 - 10VDC Analog Output; Possible to select: Output Frequency / Setting Frequency / Output Voltage / DC Bus Voltage																	
	Built-In Functions	Frequency Reference Bias / Gain, Upper and Lower Limit, Manual Torque Boost, Frequency Meter Gain / Auto Restart / Skip Frequency / S Curve																	
Location	Indoor (Protected from Corrosive Gases and Dust)																		
Ambient Temperature	14°F ~ 104°F (-10°C ~ 40°C)																		
Humidity	0 ~ 95% RH (Non-Condensing)																		
Vibration	0.5G (4.9m/s²)																		
Enclosure Type	NEMA 1																		
UL Listed	UL508C																		
EMC Standard	EN50081-1, EN50082-2 (with Optional Filter)																		

TECO–Westinghouse MOTOR COMPANY

YOUR INDUSTRIAL SOLUTIONS POWERHOUSE

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Edmonton, Alberta T5S 2K2
West 1-800-661-4023
East 1-800-268-4770

NYSDEC 012469

DWU/DWXU

Stainless Steel Submersible Sewage Pump

Built for the Pro . . .

Ebara Dominator series sewage pumps are designed for reliable pumping of waste water with suspended solids up to 2" in diameter.

Stainless Steel construction is ideal for residential, commercial, and industrial applications. Dual seals are a standard feature, enhancing the rugged, high service factor motor design.

New manufacturing techniques make the Dominator *superior* in dependability and efficiency. Quality components are stronger, dimensionally consistent, and they weigh much less than conventional cast iron parts.

When duty requirements demand material conformance for corrosion and erosion resistance, Ebara Stainless Steel is the choice!

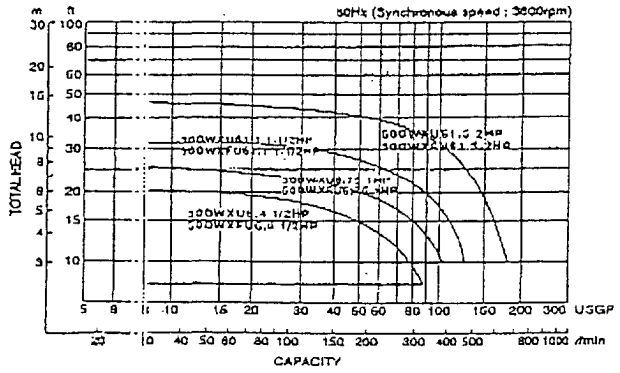
Ebara *guarantees* the product to be tough and reliable.

Features

- 304 stainless steel
- 2 inch solids handling
- Horsepower/kw & service factors
  - ½ horsepower/0.375 kw 1.87 SF
  - 1 horsepower/0.75 kw 1.4 SF
  - 1½ horsepower/1.1 kw 1.1 SF
  - 2 horsepower/1.5 kw 1.3 SF
- Single & three phase models – 60Hz
- Motor Type is 2 pole, dry submerged, rated continuous duty
- 25 foot power cord SOW-A/SO
- Class F motor insulation
- Max fluid temperature 104°F (40°C) continuous operation, fully submerged; 140°F (60°C) intermittent operation
- Automatic & manual operation
- Auto float switch is mechanical/non-mercury
- Discharge is NPT thread or 150 lb ANSI flange
- Double mechanical seal with viton elastomers
- Shielded ball bearings 50,000 hour
- Single channel & liquid vortex impellers
- Single phase models have thermal overloads
- Flows to 185 GPM
- Heads to 65 feet

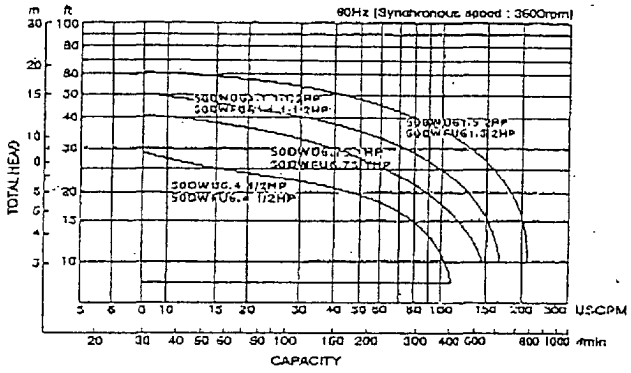
■ DWXU SELECTION CHART

- VORTEX IMPELLER
- SINGLE PHASE & THREE PHASE
- MANUAL OPERATION
- THREADED OR FLANGED DISCHARGE



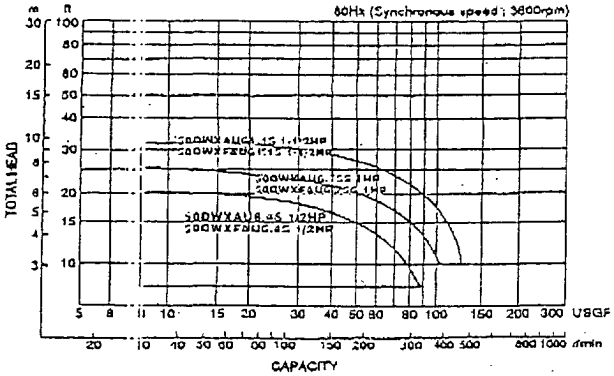
■ DWU SELECTION CHART

- SINGLE CHANNEL IMPELLER
- SINGLE PHASE & THREE PHASE
- MANUAL OPERATION
- THREADED OR FLANGED DISCHARGE



■ DWXAU SELECTION CHART

- VORTEX IMPELLER
- SINGLE PHASE
- AUTOMATIC OPERATION
- THREADED OR FLANGED DISCHARGE



■ DWAU SELECTION CHART

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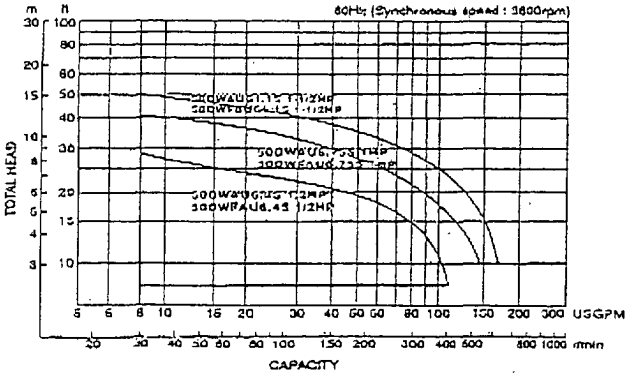
- SINGLE PHASE
- AUTOMATIC OPERATION
- THREADED OR FLANGED DISCHARGE



EBARA

EBARA INTERNATIONAL CORP.

1651 Cedar Line Drive • Rock Hill, SC 29730 • Phone: (803) 327-5005 • FAX: (803) 327-5097

Standard Operating Procedure – 1

Note Taking and Log Book Entries

Materials:

Permanently bound log book (no spiral-bound log books)
Black or blue ballpoint pen (waterproof ink)

Procedure:

1. Use black or blue ballpoint pen with waterproof ink. Felt-tip pens should not be used.

2. Reserve the inside front cover for business cards from key personnel who visit the site (including the person in charge of the log book).

3. On the first page of the log book, place a return for reward notice, ESC's phone number, and the project manager's name.

4. Enter the following on the second page of the log book: project name, project number, project manager's name, onsite contacts, onsite telephone number and address, telephone numbers for all key personnel, and emergency fire and medical telephone numbers.

5. Number each page, initial each page, and put the date at the top of each page. Start a new page for each day. At the end of a day, summarize the day's activities, sign the page, and put a slash through the rest of the blank lines. Start the next day on a new page.

6. Enter the time (in military time, e.g., 0830) in the left column of each page when an entry is recorded in the field notebook.

7. If a mistake is made in an entry, cross out the mistake with one line and initial the end of the line.

8. At all times, maintain the chain of custody on the field log book.

Content:

1. Be sure that log book entries are LEGIBLE and contain accurate and inclusive documentation of project field activities.

2. Provide sufficient detail to enable others to reconstruct the activities observed.

3. Thoroughly describe all field activities while onsite. Be objective, factual, and thorough. Language should be free of personal feelings or other terminology that might prove inappropriate.

4. Describe problems, delays, and any unusual occurrences such as wrong equipment or breakdowns along with the resolutions and recommendations that resulted.

5. Fully document any deviations from or changes in the workplan.

6. Describe the weather and changes in the weather, particularly during sampling events.

7. Sketch a map of the facility or areas onsite where activities are occurring, especially the location of sampling points.

8. During sampling activities, record all information pertaining to the sampling event. Include descriptive locations and diagrams of the sample locations, time, sample media, analysis, sampling procedure, equipment used, sizes and types of containers, preservation and any resulting reactions, sampling identification (especially for duplicate samples), shipping procedures (record airbill numbers), and addresses.

9. Note decontamination or disposal procedures for all equipment, samples, and protective clothing and how effectively each is performed.

10. If possible, photograph all sample locations and areas of interest. Maintain a photographic log in the field log book and include:

    Date, time, photographer, name of site, general direction faced, description of the subject taken, and sequential number of the photograph and the roll number.

11. Record the names and affiliations of key personnel onsite each day.

12. List all field equipment used and record field measurements, including distances, monitoring and testing instrument readings (e.g., photoionization detector (PID), organic vapor analyzer (OVA), pH, conductivity, model numbers, etc.), and calibration activities.

13. Record proposed work schedules and changes in current schedules in the log book.

14. Describe site security measures.

15. Include drum inventory for all investigation-derived waste (IDW) materials generated during site activities. Provide information on how IDW material was labeled.

Standard Operating Procedure - 2

Sample Container, Preservatives, & Holding Times

Scope:

This operating procedure describes the ways and means of selecting the appropriate sampling containers for environmental sampling.

Application:

The purpose of this procedure is to assure that sample volumes and preservatives are sufficient for analytical services required under EPA-approved protocols.

Materials:

Sample containers
Sample container labels
Indelible (waterproof) markers or pens
Clear tape

Procedures:

1. Refer to Table 1 for minimum sample volume and glassware types required for sampling a particular matrix and compound class.

2. Select the appropriate glassware (i.e., bottles or jars) from those provided by the analytical laboratory. Verify that the analytical laboratory has provided the correct number of sample containers and the correct preservatives for the project per the sampling plan requirements.

3. The analytical laboratory should always provide extra sample containers for all analytical parameters in case of breakage or other problems encountered in the field. This is particularly true for VOC sample containers (i.e., 40-ml vials).

4. Report any discrepancies or non-receipt of specific types of sample containers to the Quality Assurance Officer immediately. Arrangements should be made with the laboratory to immediately ship the missing or additional sampling containers to the project site.

5. Apply ESC sample labels to the sample containers.

6. Information on the sample labels should contain the following data:

   Site/Project name
   Project/Task number
   Unique sample identification number
   Sample date
   Time of sample collection (military system, e.g., 0000 to 2400 hours)
   Analytical parameters
   Preservative
   Sampling personnel

7. Once sample containers are properly labeled, the sample labels should be wrapped with clear tape to prevent deterioration of sample label.

8. Proceed with the sample collection per the sampling plan requirements.

9. Collected samples should be immediately placed in an iced cooler to maintain as close as possible a 4°C atmosphere for shipment to the analytical laboratory. Follow sample shipping procedures detailed in Sample Shipping Standard Operating Procedures.

10. Recommended order of sample collection:

    In-situ measurements (e.g., temperature, pH, specific conductance)
    Volatile organic analytes (VOA)
    Purgeable organic carbon (POC)
    Purgeable organic halogens (POX)
    Total organic halogens (TOX)
    Total organic carbon (TOC)
    Extractable organics
    Total petroleum hydrocarbons (TPH)
    Total metals
    Dissolved metals
    Microbiologicals
    Phenols
    Cyanide
    Sulfate and chloride
    Turbidity
    Nitrate and ammonia
    Radionuclides

Table 1

Sample Containers, Preservatives, and Holding Times

Analytical Parameter	Matrix	Sampling Container Size and Type	Preservatives	Maximum Holding Time
Metals, except mercury and hexavalent chromium	Solid	8-oz. glass jar	Cool to 4° C	180 days
Mercury	Solid	8-oz. glass jar	Cool to 4° C	28 days
Hexavalent chromium	Solid	8-oz. glass jar	Cool to 4° C	24 hours
Metals, except mercury and hexavalent chromium	Aqueous	500-ml plastic container with Teflon-lined plastic cap	HNO_3, pH<2 Cool to 4° C	180 days
Mercury	Aqueous	500-ml plastic container with Teflon-lined plastic cap	HNO_3, pH<2 Cool to 4° C	28 days
Hexavalent chromium	Aqueous	500-ml plastic container with Teflon-lined plastic cap	Cool to 4° C	24 hours
Volatile organics	Solid	4-oz. glass jar with Teflon-lined cap	Cool to 4° C	14 days
Volatile organics	Aqueous	Three 40-ml glass vials with Teflon-lined caps	HCl, Cool to 4° C	14 days
Semivolatile organics	Solid	8-oz. amber glass jar with Teflon-lined cap	Cool to 4° C	14 days to extraction 40 days from extraction to analysis
Semivolatile organics	Aqueous	Two 1,000-ml amber glass jars with Teflon-lined caps	Cool to 4° C	7 days to extraction 40 days from extraction

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Table 1

Sample Containers, Preservatives, and Holding Times

Analytical Parameter	Matrix	Sampling Container Size and Type	Preservatives	Maximum Holding Time
				to analysis
Cyanide	Solid	8-oz. glass jar	Cool to 4° C	14 days
Cyanide	Aqueous	One 500-ml plastic container	NaOH, pH>12, Cool to 4° C	14 days
TCLP Volatiles	Solid	8-oz. glass jar with Teflon-lined cap	Cool to 4° C	4 days to TCLP extraction 14 days from extraction to analysis
TCLP Semivolatile Organics	Solid	8-oz. glass jar	Cool to 4° C	4 days for TCLP extraction 7 days for preparative extraction 40 days from extraction to analysis
TCLP Metals, except Mercur	Solid	8-oz. glass jar	Cool to 4° C	80 days for TCLP extraction 180 days from preparative extraction to analysis
TCLP Mercury	Solid	8-oz. glass jar	Cool to 4° C	8 days for TCLP extraction 28 days from preparative extraction to analysis
Total Petroleum Hydrocarbons	Solid	4-oz. glass jar with Teflon-lined cap	Cool to 4° C	14 days for extraction 40 days for analysis
Total Petroleum Hydrocarbons	Aqueous	1-liter amber glass jar	Cool to 4° C	14 days for extraction 40 days for analysis

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Table 1

Sample Containers, Preservatives, and Holding Times

Analytical Parameter	Matrix	Sampling Container Size and Type	Preservatives	Maximum Holding Time
(EPA Method 418.1)				
Total Petroleum Hydrocarbons (EPA Method 8015 GRO)	Aqueous	2 40-ml glass vials	Cool to 4° C	14 days for extraction 40 days for analysis
Total Petroleum Hydrocarbons (EPA Method 8015 DRO)	Aqueous	2 40-ml glass vials	Cool to 4° C	14 days for extraction 40 days for analysis

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Standard Operating Procedure - 3

Groundwater Sampling

Materials:

- Bound sampling notebook
- Groundwater monitoring data log forms
- Well key
- Adjustable wrench or manhole wrench
- Plastic sheeting
- Photoionization detector (PID)
- Flashlight or mirror
- Electronic water level indicator or interface probe
- Bailer (bottom loading)
- Pump (for purging)
- Nylon or polyethylene rope
- Temperature, pH, and conductivity meters
- Other field meters, as appropriate (i.e., turbidity meter, DO meter, etc.)
- Sample bottles, labels, indelible markers, and clear tape
- Peristaltic pump
- 0.45-micron filter
- Teflon tubing
- Polyethylene tubing
- Pocket knife or scissors
- Saranex or Tyvek suit (if required by Health & Safety Plan)
- Nitrile gloves
- Vinyl gloves

Note: To sample using a low flow submersible pump, see SOP-3b.

Procedure:

1. Verify locations of wells, media to be sampled, and parameters to be analyzed for as specified in the sampling plan.

2. Prepare field log book with description of site, weather, participants, and other relevant observations, including all sampling data necessary to complete the groundwater monitoring data log (Refer to SOP-1). Inspect the well for soundness of protective casing and surface ground seal.

3. With the field personnel in Level C personal protective equipment, unless historical data warrants downgrading to Level D protective equipment, survey around the base of the well and wellhead with a PID; remove well cap, place probe of PID in wellhead, and record PID response in field book. Survey breathing zone to ensure that the level of personal protection is appropriate. Note observations on the groundwater monitoring data log.

4. Check for floating product layer (LNAPLs) and sinking free product layer (DNAPLs). Measure thickness with an oil/water interface probe in accordance with EPA or state guidance documents or requirements. (If NAPL sampling is required, see the sampling procedures in SOP-3a).

5. Measure the casing inside diameter (CID) and record in inches. From the top of the casing, measure the depth (in feet) to water (DTW) with an electronic water level indicator and record in the field log book. Static water level measurements must be recorded from the surveyor's mark at the top of the casing, if present. If no mark is present, mark a location with a metal file or indelible marker on the casing for future reference. Measure and record the total depth (in feet) (TD) of the well.

6. Monitoring wells should be sampled by starting with the upgradient (or clean wells) and proceeding downgradient (in the order from most to least contaminated wells) for the remaining monitoring wells.

7. Calculate the length of the water column in the well casing:

   length = (TD - DTW)

   Calculate the volume of water in gallons in one well casing:

   For a 2-inch well: or $vol=0.041\ d^2h$

   vol = [(TD - DTW) * 0.16] where: h = TD-DTW

   For a 4-inch well: d = diameter of well

   vol = [(TD - DTW) * 0.65]

   For a 6-inch well:

   vol = [(TD - DTW) * 1.47]

   or calculate the volume using the formula:

   $vol = (TD - DTW)(CID)^2(0.041)$ CID=casing inside diameter in inches

9. Remove a minimum of three well volumes before sampling. To determine the number of gallons required to purge the well, multiply the number of gallons in one well volume (calculations above) by three. Record the minimum purge volume in the field log book. Record water color, suspended particulates, discoloration of casing, casing diameter and material, any unusual occurrences during sampling, and any pertinent weather details in the field log book.

10. Place plastic sheeting around the well before beginning purging process. Once plastic is around well, the purging process may begin. Do not allow the bailer rope to come into contact with the ground surface (i.e., keep the rope on the plastic). Keep the plastic as clean as possible.

11. Carefully lower the bailer attached to bailer cord into the well and allow the bottom to sink 1 foot below the water surface to capture surficial water only. Remove bailer and inspect it for LNAPL. If any are found, or if sampling plan requires, secure samples of the LNAPL in accordance with SOP-3a for analysis if sufficient volume is present. Place collected samples on ice. DO NOT PURGE OR SAMPLE GROUNDWATER IN WELL CONTAINING LNAPL.

12. During the purging process, geochemical measurements (e.g., pH, conductivity, turbidity, and temperature) should be collected a minimum of four times (i.e., before purging and after the removal of each well volume). Record these data in the field log book.

13. Continue bailing at a uniform rate. Each time, empty the bailer into a calibrated container for measurement. Dispose of the contents in an appropriate container for later disposal in compliance with federal and state laws.

14. A decontaminated submersible pump may be used in place of a bailer to purge wells when the diameter of the well is large or the purge volume is large. Refer to SOP-16 for submersible pump decontamination procedures.

15. If well is bailed dry before removing three well volumes, allow well to recharge and proceed to sample. Wells shall not be bailed dry if doing so will cause recharge water to enter the well in a cascading fashion but instead will be bailed at a rate which will minimize the agitation of recharged water. If full recovery exceeds 2 hours, sample as soon as sufficient volume is available within 3 hours of purging.

16. After the minimum purge volume has been removed, review the geochemical measurements to ensure that readings have stabilized. Readings should be within 10% of the previous reading. If the geochemical measurements have not stabilized, continue to purge the well until the monitoring parameters do not vary more than 10 percent between two successive well volumes removed.

17. Affix a sample label to each sample container and complete all required information (sample no., date, time, sampler's initials, analysis, preservatives). Place clear tape over the label. Record sample number, well number, date, time, and the sampler's initials in the field book.

18. Collect the groundwater samples after purging is complete. While collecting samples, lower the bailer slowly to avoid agitating the water. Sample first for VOCs, taking care to remove all air bubbles from the vial and minimize agitation. Collect remaining organic samples then inorganic samples.

The recommended order of sample collection is as follows:

In field measurements (e.g., temperature, pH, specific conductance, turbidity, dissolved oxygen)
Volatile organic compounds (VOCs)
Purgeable organic carbon (POC)
Purgeable organic halogens (POX)
Total organic halons (TOX)
Total organic carbon (TOC)
Extractable organics

Total metals
Dissolved metals
Phenols
Cyanide
Sulfate and chloride
Turbidity
Nitrate and ammonia
Radionuclides

19. Thoroughly decontaminate all equipment used before proceeding to the next well. Discard used bailer cord, plastic sheeting, towels, gloves, etc., in a plastic bag.

20. Complete chain-of-custody forms with appropriate sampling information.

21. Complete both front and back of the groundwater monitoring data log (attachment) for each monitoring well or sampling point upon return from the field, using data from the field log book.

Filtering of Metal Samples:

1. Assemble peristaltic pump per operating manual instructions, which accompany pump.

2. At the pump intake, attach polyethylene tubing to the tubing at the head of the peristaltic pump. The polyethylene tubing should be long enough to extend to the bottom of the bailer. At the pump discharge end, attach a clean 0.45-micron filter (or appropriate sized filter) to the Teflon tubing.

3. Turn on the pump and draw the water from the bailer, through the pump and filter, and into the sample container.

4. Disassemble the pump head and discard the polyethylene and Teflon tubing and filter in a plastic bag.

May 2000

Groundwater Monitoring Data Log

Well No./Designation _____ Date: _____

Site Data

Site Name: _____ ESC Sampling Team _____

Site Address: _____ ESC project No.: _____

Weather Conditions: _____

Well Description

Well Location: _____

Well Security: _____

Casing Material: Inner _____ Outer _____

Organic Vapors (PID, OVA, TIP): Wellhead _____ ppm

Breathing Zone _____ ppm

Nonaqueous Phase (thickness): _____

Reference Point (e.g., top of PVC casing): _____

Purge Data

Purge Method: _____

(Note: Allow water level to equilibrate after removing well cap)

Total Well Depth (TD): _____ ft Depth to Water (DTW): _____

Casing Inner Diameter (CID): _____ inches

To calculate well volume: Well Vol.(gal)=$(CID)^2(0.04)(TD-DTW)$

Well Volume: _____ gal x 3=Purge Volume _____ gal

Purge Time: Begin _____ End _____

Prepurge Data: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume 1: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume 2: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume 3: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume 4: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume 5: Temp _____ pH _____ Spec. Cond._____Turb. _____Other _____

Volume Purged: _____ Purged Dry: Yes No

Disposal Method for Purgewater: _____

Water Description

Odor: Prepurge _____ Postpurge _____

Color: Prepurge _____ Postpurge _____

Sampling Data

Sampling Method: _____

Sampling Time: Begin _____ End _____

Analytical Parameters (circle appropriate parameters):

VOCs BNA BNE Total (Unfiltered) Metals

Dissolved (Filtered) Metals TPH PCB Cyanide

Other: _____

Comments: _____

Standard Operating Procedure - 15

Decontamination of Drilling Equipment

Materials:

Canvas or plastic tarp(s)
4-mil polyethylene liner
Pressurized steam cleaner (steam jenny)
55-gallon steel drums with bung (closed) tops
55-gallon steel drums with open tops, rings, lids, ring-nut and ring-bolt
Hammer, nails, duct tape, extension cord(s)
Wood boards - 4" x 4", 2" x 4" or 2" x6"
Portable wet/dry vacuum
Shovel, funnel, and squeegee

Construction of Decontamination Basin:

1. Place tarp(s) on flat, firm surface in an accessible area of the site away from areas of surface contamination. Use enough tarp to accommodate the rear of the drilling rig and hollow stem augers and to prevent overspray from the steam jenny from falling onto adjacent soil surfaces. If necessary, place more than one tarp on the ground. Overlap tarp edges and secure with duct tape. Area should be slightly inclined toward one corner so that the decontamination water will pool in one corner for easier pumping to the containment drums.

2. Place a layer of polyethylene liner on top of the tarp(s). If one sheet cannot completely cover the tarp, use another one. Overlap the sheets at the edges and secure with duct tape.

3. Place 4" x 4" boards along the tarp's outer edges toform a square or rectangular basin. Roll each 4" x 4" board toward the center so the tarp and polyethylene wrap completely around it at least once. Secure the tarp and liner to the top of the boards with nails, tacks or heavy-duty staples.
4. Place the drums, steam cleaner, and wet/dry vacuum adjacent to one side of the basin on the outside.

Decontamination Procedure:

1. Unload drilling equipment from the drilling rig and place in one side of the basin.

2. Activate the steam cleaner. Personnel performing steam cleaning should don rubber boots, Tyvek or Saranex suits, rubber gloves, and a hard hat with a face shield for splash protection.

3. Clean each piece of drilling equipment, including auger bits, drill bits, portable power augers, hollow stem augers, auger holders, split spoons, rod lifters, and drilling rods, by holding the nozzle of the steam cleaner a few inches away. Wood 2" x 4"s can be placed on the basin floor to prevent drilling equipment from coming into contact with solids that will build up beneath it as it is being steam cleaned.

4. After each piece is cleaned, place it on rows of 2" x 4" boards in a separate area of the basin.

5. If space allows, position the rear of the drill rig in the basin and use the steam cleaner to clean off rig surfaces and the hoist and derrick as needed.

6. Reload drilling equipment onto rig and drive it out of the basin.

7. Vacuum up liquids on the basin floor with the flexible hose of the portable wet/dry vacuum. A long-handled squeegee can be used to pool liquid together to aid vacuuming.

8. Remove accumulated solids from the basin floor with a shovel and place in open-top drums. During removal of the accumulated solids, be careful so that the polyethylene liner is not torn, cut, or punctured with the shovel.

9. Empty the canister of the wet/dry vacuum into a bung-top drum using a funnel.

10. Secure and tighten tops of drums and apply appropriate hazardous waste or nonhazardous waste labels to each drum. The accumulation date should be placed on each drum. An inventory of all onsite drums should be entered into the field log book by field personnel. All drums should be marked, numbered, or labeled with an indelible marker for future reference.

11. On completion of onsite work, the properly labeled and inventoried drums should be stored within a newly constructed pad or basin until disposal is arranged. This containment area should be constructed of wooden boards with a polyethylene liner, as described above.

12. Materials used in construction of the decontamination basin or pad should be disassembled and placed into a properly labeled drum for future disposal.

13. All drilling equipment and the drill rig should be decontaminated on arrival onsite and before the start of any drilling activity. On completion of site work, the drilling equipment and rig should be decontaminated by the drilling contractor before departure from the site.

May 2000

Standard Operating Procedure - 16

Decontamination of Submersible Pumps

Materials:

Polyethylene sheeting
Nonphosphate soap (Liquinox)
Tap water
Deionized water
Three (3) garbage cans
1 0-mil polyethylene liner
Plastic bags
Brushes
55-gallon drums
Isopropanol (optional)
Spray bottles
Paper towels

Decontamination Procedure:

1. Spread the plastic sheeting on a firm, hard surface and line the garbage cans with the appropriate size plastic bags. The area beneath the garbage cans may be lined with polyethylene sheeting to prevent spillage from seeping into the surface soils.

2. Fill one lined garbage can with nonphosphate soap and tap water solution, fill one lined garbage can with tap water, and fill one lined garbage can with deionized water.

3. If an oily film or residue is observed on the pump, the pump should be lightly sprayed with isopropanol to remove the oil, wiped clean with paper towels, allowed to air dry, and rinsed with deionized water.

4. Wash and scrub external parts of the pump and hose (pipe) with nonphosphate soap and hot water in a lined garbage can. Rinse external parts of the pump and hose with tap water, followed by deionized water.

5. Repeat step 3 if an oily film or residue is observed.

6. Clean internal pump parts and hose by placing pump into a garbage can filled with tap water for a least 5 minutes. Run water through pump until clean water is expelled. The discharge from the pump should be directed into a 55-gallon steel drum. Do NOT clean the internal parts of the pump and hose with the nonphosphate soap water solution.

7. Rinse internal parts of the pump and hose by placing the apparatus into a garbage can containing deionized water. Pump the deionized ~vater through the pump for at least 5 minutes. This water can be discharged to a concrete surface and allowed to evaporate.

8. Wrap pump hose in plastic sheeting to prevent possible contamination during transportation to the next location. Label the pump wrapping with the date of the latest decontamination for future reference.

Note: If the groundwater is known not to be grossly contaminated, it may be appropriate to discharge the decontamination water to the ground surface. However, before discharging decontamination water to the ground surface, this practice should be discussed with and approved by the ESC project manager. At no time should solvents used in decontamination be discharged to the ground surface.

Standard Operating Procedure - 17

Decontamination of Water Level Indicators

Materials:

Deionized water
Squirt bottles
Paper towel or Kimwipes

Decontamination Procedure:

1. Thoroughly wet a paper towel or Kimwipe with deionized water from a squirt bottle.

2. Clean tape by washing with a soapy solution and wiping with paper towel soaked with deionized water followed by wiping with a dry paper towel. To facilitate decontamination, two people can perform the procedure by placing a dry paper towel adjacent to the tape reel and the wet paper towel a few inches away from the dry paper towel toward the probe. Slowly reel in the tape ensuring that the tape is thoroughly wiped with both the paper towels. If necessary, repeat the procedure or replace the paper towels as they become soiled.

3. The water level probe can be cleaned by spraying the probe with deionized water and wiping it dry with a clean paper towel.

4. If persistent stains or oily films are present on the tape, apply pesticide-grade isopropanol to a paper towel and wipe tape until clean. Because solvents can damage the water level indicator tape, the tape must be thoroughly rinsed with deionized water and wiped dry with a clean paper towel. Allow tape to completely air dry.

5. Place water level indicator in the clean carrying case or in a clean plastic bag to prevent contamination during transportation to the next location.

6. Place used towels in the designated field trash container for proper disposal.

Standard Operating Procedure - 19

Decontamination of Sampling Equipment

Materials:

Tap water
Deionized or distilled water
10% nitric acid solution (mixed in squirt bottle)
Scrub brushes (short- and long-handled)
Buckets or trash cans
Nouphosphate detergent (Liquinox or Alquinox)
Pesticide-grade solvent (isopropanol, acetone, or hexane in spray bottle)
Aluminum foil
Polyethylene plastic sheeting, plastic garbage bags, and Ziploc® plastic bags
Paper towels or Kimwipes
Nalgene squirt bottles
Wire brush
Duct tape
Personal protective equipment (e.g., nitrile gloves, eye protection, skin protection)

Note: All sampling equipment must be decontaminated before shipment to the office.

Laboratory Decontamination Procedure:

Equipment Used for Sampling Environmental Media Containing Organic or Inorganic Compounds and Metals.

1. Place polyethylene sheeting on firm, flat surface to collect spillage during decontamination. Mix solution of nonphosphate detergent and tap water in bucket.

2. Wear appropriate personal protective equipment to prevent exposure to skin, eyes, and respiratory system.

3. Wipe contaminated sampling equipment with paper towels to remove residual soils or gross contamination. Heavy oils or grease may be removed with paper towels soaked with solvent (acetone or methanol).

4. Disassemble sampling equipment (e.g., split-spoon samplers, and bailers). Wash equipment thoroughly with nonphosphate soap and hot tap water solution. Teflon bailers must be disassembled and the inside washed with long-handled bottle brush or short-handled brush pulled through the bailer with rope.

5. Rinse the equipment with hot tap water.

6. If the equipment will be used to collect samples for metals analysis, follow tap water rinse with a 10% nitric acid solution rinse. Metal equipment (e.g., bucket augers) should not be rinsed with nitric acid solution because of problems with oxidizing the metal surfaces. Collect the nitric acid rinse in a separate bucket. Rinse the equipment with tap water.

7. Thoroughly rinse the equipment with deionized water.

8. Spray the equipment with solvents (acetone or methanol followed by hexane) and allow to completely air dry. The solvent equipment rinse must be collected in a separate bucket.

9. Rinse the equipment with analyte-free water using at least five times the volume of solvent used in the previous step.

10. After the equipment has been allowed to completely air dry, each piece must be individually wrapped with aluminum foil (shiny side out), and then wrapped in plastic. **Note: Decontamination solvents may introduce contaminants to environmental samples.** It is very important to ensure that the equipment has completely dried before wrapping the equipment for storage.

11. Label each piece of equipment with the date of decontamination, the initials of decontamination personnel, and the type of decontamination solutions used. This will allow other personnel to select the correct piece of sampling equipment for future use.

Field Decontamination:

1. Place polyethylene sheeting on firm, flat surface to collect spillage during decontamination. Mix solution of nonphosphate detergent and hot tap water (if available) in bucket.

2. Wear appropriate personal protective equipment to prevent exposure to skin, eyes, and respiratory system.

3. Wipe contaminated sampling equipment with paper towels to remove residual soils or gross contamination. Heavy oils or grease may be removed with paper towels soaked with solvent (acetone or methanol).

4. Disassemble sampling equipment (e.g., split-spoon samplers, and bailers). Wash equipment thoroughly with nonphosphate soap and hot tap water solution. Teflon bailers must be disassembled and the inside washed with long-handled bottle brush or short-handled brush pulled through the bailer with rope.

5. Rinse the equipment with hot tap water (if available).

6. Thoroughly rinse the equipment with deionized water.

7. Spray the equipment with solvent (acetone or methanol) and allow to completely air dry. The solvent equipment rinse must be conducted over a separate bucket. Allow the equipment to completely air dry. Note: Decontamination solvents may introduce contaminants to environmental samples. It is very important to ensure that the equipment has completely dried before continuing with decontamination.

Standard Operating Procedure – 20

Sample Shipping Procedures

Materials:

Sturdy plastic or metal ice cooler
Chain-of-custody forms
Custody seals
ESC mailing labels
Strapping, clear packing, and duct tape
Ziploc® plastic bags
Knife or scissors
Tape and dispenser
Extra labels, custody seals
Permanent marker
Surgical gloves or nitrile gloves (only for hazardous waste)
Large plastic bag (garbage can size)
Arrow labels or "This End Up" labels
Wet ice
Bubble wrap or other packing material
Universal sorbent materials
Sample container seals
Federal Express form (with ESC account number)
Vermiculite (or commercially available cat litter)

Procedures:

For shipping purposes, samples are segregated into two classes; environmental samples and restricted articles (i.e., hazardous materials). Environmental samples can also be categorized based on expected or historical analyte levels (i.e., low or high). An environmental sample is one that is not defined as a hazardous material by the Department of Transportation (DOT, 49 CFR Part 171.8). The DOT defines a "hazardous material" as a substance which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. Any material of a suspected hazardous nature, previously characterized as hazardous, or known to be hazardous is considered a restricted article.

In general, the two major concerns in shipping samples are protecting the samples from incidental breakage during shipment and complying with applicable DOT and courier requirements for restricted article shipments.

Protecting the samples from incidental breakage can be achieved by following "common sense." All samples should be packed in a manner that will not allow them to freely move about in the cooler or shipping container. Glass surfaces should not be allowed to contact each other. When possible, repack the samples in the same materials that they were originally received in from the laboratory. Each container should be cushioned with plastic bubble wrap, styrofoam, or other nonreactive cushioning material. Shipping hazardous materials should conform to the packaging, marking, labeling, and shipping instructions identified in 49 CFR Parts 172 & 173.

Environmental samples shall be packed for shipment using the following procedures:

1. Select a sturdy cooler in good condition. Secure and tape the drain plug with fiber tape. Line the cooler with a large, heavy-duty plastic bag. Place universal sorbent materials (e.g., sorbent pads) between the cooler and the heavy-duty plastic bag. If "wet ice" is used for sample preservation, then, the amount of sorbent material should be sufficient to absorb the volume of wet ice and samples.

2. Place 2-4 inches of bubble wrap or other packing material inside the heavy-duty plastic bag in the bottom of the cooler.

3. The sample packer should wear eye protection and protective gloves when handling the samples during the packing process.

4. After ensuring that sample container lids are closed and sealed, place the bottles in separate and appropriately sized Ziploc® polyethylene bags. Seal the bags with tape.

5. Wrap duplicate volatile organic (VOA) vials in one piece of bubble wrap or other packing material as a "VOA sandwich."

6. Place the bottles in the cooler with sufficient space to allow for the addition of more bubble wrap or other packing material between the bottles. Large or heavy sample containers should be placed on the bottom of the cooler with lighter samples (i.e., VOAs) placed on top to eliminate breakage.

7. Place the "wet ice" (i.e., ice packs) inside two sealed heavy-duty polyethylene bags (i.e., Ziploc®) and package the bags of ice on top of or between the samples. Pack enough ice in the cooler to chill the samples during transit. If the cooler is shipped on a Friday or Saturday for Monday delivery, double the amount of ice placed in the cooler. Fill all remaining space with bubble wrap or other packing material. Securely close and seal with tape the top of the heavy-duty plastic bag .

8. Place chain-of-custody form (and, if applicable, CLP traffic reports) into Ziploc® plastic bag and affix to the cooler's inside lid, then close the cooler. Securely fasten the top of the cooler shut with fiber tape. Place two signed and dated chain-of-custody seals on the top and sides of the cooler so that the cooler cannot be opened without breaking the seals.

9. Once cooler is sealed, shake test cooler to make sure that there are no loose sample containers in the cooler. If loose samples are detected, open the cooler and repack the samples.

10. Using clear tape, affix a mailing label and ESC's return address to the top of the cooler.

11. Mark the cooler with "This End Up" and arrow labels that indicate the proper upward position of the cooler.

12. Ship samples via priority overnight express to the contracted analytical laboratory for next morning delivery. If applicable, check for Saturday delivery.

13. Declare value of samples on the shipping form for insurance purposes. Note this declared value should reflect the cost to recollect the samples.

14. Record the tracking numbers from the Federal Express forms in the field notebook. Also, retain the customer's copy of the Federal Express airbill.

Hazardous materials should be packed according to the above procedures with the following additions:

1. Place samples in individual Ziploc® plastic bags and secure with a plastic tie.

2. Place samples in paint cans in a manner which would prevent bottle breakage (i.e., do not place glass against glass).

3. Place vermiculite or other absorbent packing material in the paint can around the samples. The amount of packing material used should be sufficient to absorb the entire contents of the sample if the container is broken during shipment.

4. Secure a lid to the paint can with can clips and label the outside of the can with sample numbers and quantity. Mark the paint can with "This End Up" and arrow labels that indicate the proper upward position of the paint can.

5. Package the paint cans in DOT boxes or coolers, with appropriate DOT shipping labels and markings on two adjacent sides of the box or cooler.

6. Ship the restricted articles via overnight courier following the courier's documentation requirements. A special airbill must be completed for each shipment. Retain a copy of the airbill for ESC records and tracking purposes, if necessary.

Standard Operating Procedure – 21

Field Quality Assurance/Quality Control Samples

Materials:

Sample containers
Sample container labels
Indelible marker or pen
Clear tape
Laboratory deionized water
Non-phosphate detergent (Liquinox or Alconox)
Pesticide grade solvent (isopropanol, acetone, or hexane) in a spray bottle
Clean sampling equipment
Chain-of-custody forms
Custody seals

Procedure:

1. Select the appropriate glassware for the field Quality Assurance/Quality Control (QA/QC) samples from those provided by the analytical laboratory. Refer to the ESC Standard Operating Procedure for Sample Container, Preservatives, and Holding Times to determine the appropriate bottles to use.

2. Field QA/QC samples include the following:

   trip blanks
   duplicate samples
   equipment blanks
   field blanks

3. Pre-prepared volatile organic compound (VOC) trip blanks should be provided by the analytical laboratory for all projects where VOCs are analytes. Trip blanks should accompany the sample bottles from the analytical laboratory to the site and accompany the sample containers at all times during the sampling event. One trip blank for each batch of samples, or for each day of sampling activities, should be submitted to the analytical laboratory for analysis of VOCs only.

4. One set of duplicate samples should be collected for every 20 samples of each matrix (e.g., soil and groundwater) collected during each independent sampling event or as determined by the site specific sampling plan. Soil and sediment duplicates should be collected by equally dividing the material between the two samples. The sample bottles should be filled by alternating between the two sample bottle sets. The procedures outlined in ESC's Standard Operating Procedure for collection of soil samples should be followed. Groundwater duplicates should be collected by alternately filling the two sample bottle sets from the same sampling vessel (e.g., bailer). The procedures outlined in ESC's Standard Operating Procedure for collection of groundwater samples should be followed. Field duplicate samples should be analyzed for all the analytes that are being analyzed for during the sampling event.

5. One equipment blank should be collected in the field at a rate of one per type of equipment per decontamination event not to exceed one per day or as determined by the site specific sampling plan. If dedicated sampling equipment is used, the equipment blanks should be prepared in the field before sampling begins. If field decontamination of sampling equipment is required, the equipment blanks should be prepared after the equipment has been used and field-decontaminated at least once. Equipment blanks should be prepared by filling or rinsing the precleaned equipment with analyte-free water (deionized) and collecting the rinsate in the appropriate sample containers. The samples should be labeled, preserved, and filtered (if required) in the same manner as the collected environmental samples. Equipment blanks should be analyzed for all the analytes that the environmental samples are being analyzed for. Decontamination of the equipment following equipment blank procurement is not required.

6. All QA/QC samples should be submitted to the analytical laboratory with unique sample numbers. Therefore, the QA/QC samples and duplicate samples should be labeled as separate environmental samples following the same numbering scheme used during that particular sampling event. However, on ESC's copy of the chain-of-custody form and in the field notebook the QA/QC samples should be clearly identified.

Note: This procedure may not be applicable for all circumstances. For instance, some states or EPA regions may have more stringent or different QA/QC requirements, which should be followed in those cases.

Standard Operating Procedure – 23

Underground Utility Locating

Application:

The purpose of this procedure is to ensure that all subsurface utilities (e.g., electrical lines, gas lines, telephone lines) are located and marked before initiating any intrusive activities (drilling, test pits, trenching). Compliance with this procedure will allow the work to be conducted safely and will minimize the potential for damaging underground utilities.

Materials:

Record of the communication utility locating form (Figure 1)
Bound field log book
Wooden stakes
Spray paint
Flagging tape
As-built subgrade utility drawing(s) (if available)
Hand auger or post-hole digger
Hand-held magnetic and/or cable locator
Facility as-built drawings

Procedure:

Pre-site Mobilization

1. Gather information on the onsite and offsite areas where intrusive activities will be conducted. This information should include the following:

   - Site address
   - Nearest cross street or street intersection
   - Map grid (if applicable)
   - Site boundaries

2. Contact the local utility service at least 72 hours before the start of the field activities. The telephone numbers for the locating service in selected states are listed in Table 1. (The telephone number is typically listed in the area Yellow Pages.) Provide the utility locating service with any information they request concerning the site and work activity in order to locate utilities at the site. (In California, the proposed drilling locations must be marked with white spray paint before contacting the locating services. The following information provided by the locating service should be documented in a record of communication utility locating form (Figure 1): utilities to be located and their corresponding colors, and utility clearance ticket number. The ticket number will be used by the various utility companies to reference the clearance request (see note below). The public utility companies will typically mark their lines up to the property lines unless a junction box or meter is present on the site. However, request that the utility companies mark their utilities in the work areas on the site.

Note: Some utilities (e.g., sewer, water, cable TV) may not be included with the utility locating service. These utility companies will have to be contacted directly by ESC for clearance before the start of intrusive activities.

3. If the field activities need to be started before the end of the 72-hour notification period, determines whether the locating service can expedite the request. As a general rule, no intrusive activities should be conducted along or near public right-of-ways until all utilities have been checked and marked in the area of investigation. Field activities may be conducted on private property if sufficient information is available to locate all underground utilities.

4. Identify a site contract familiar with the utilities on the property (e.g., plant manager, facility engineer, maintenance supervisor), and provide this individual with a site plan showing the proposed locations of all soil borings, monitoring wells, test pits, and other areas where intrusive activities will be conducted.

Site Mobilization

1. Locate all proposed drilling and trenching locations, both onsite and offsite, with spray paint, stakes, or other appropriate markers.

2. Verify that all utility companies listed by there municipal locating service have marked all underground lines in the area and whether the lines have been marked.

3. Review all available as-built utility diagrams and plans with the site contact to identify potential areas where underground lines may be present. If possible, obtain a copy(s) of the utility plans for future reference in the field. Check the drawings to ensure they are as-builts and not design plans.

Note As-built drawings are not always accurate for locating underground lines.

4. Conduct a walk the site contact and clear each proposed work area using the utility markings and information provided on the as-built plans. A minimum of 4 feet clearance should exist between utilities and proposed drilling locations, and a minimum of 6 feet between utilities and proposed trenching locations. If a utility conflict is identified, adjust the proposed location(s) using the criteria given above.

   During the site walk-through, attempt to obtain a general knowledge of the types of utilities present in the work areas. Check to see whether major electrical lines are aboveground. The presence of aboveground lines may indicate that there are non underground lines in that portion of the site. Underground sewer lines may be traced using the locations of manholes and storm water grates.

5. A private utility locating service should be contracted in cases where the public utility locating service does not mark utilities on the subject property and site-specific information concerning the type and location of potential underground lines is poor or nonexistent. A listing of several private subsurface utility locating firms is provided in Table 2.

   Another work option would be to use a hand-held magnetic or magnetic-cable locating device to clear each work area.

6. In areas where uncertainty still exists concerning the presence of underground utilities, a hand auger or post-hole digger should be used to probe the shallow subsurface before using any heavy equipment (drill rig, backhoe). The probe hole should be advanced a minimum of 4 feet below ground surface at each proposed drilling location. A sufficient number of probe holes should be completed so that the area is cleared for the proposed intrusive activity. For drilling, a minimum of three holes should be advanced at each location.

7. Discuss the site conditions with the subcontractor (e.g., driller, excavator), and recommend that care be used at the start of the intrusive activities. Field personnel should always consider the presence of unidentified utilities at each work area. Ensure the work is conducted safely.

8. If the scope of the intrusive activities expands to a new onsite or offsite area(s), review the existing information to determine whether the area(s) can be safely cleared of all potential underground utilities. If necessary, contact the municipal locating service and request another clearance for the new area(s) of investigation. (Remember, the new request will require another 72-hour period before all underground utilities can be cleared.)

Standard Operating Procedure – 26

Managing Investigation Derived Waste

Application:

The purpose of this SOP is to provide instructions for handling, storing, and sampling Investigation Derived Waste (IDW) pending disposal. *All IDW should be handled as hazardous waste unless information exists which would allow it to be classified as non-hazardous waste.* IDW generated during a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response action must be managed in compliance with applicable or relevant and appropriate requirements (ARARs) to the extent practicable and with applicable requirements of the CERCLA offsite policy. (EPA Guidance Document OERR Directive 9345.3-02)

IDW includes soil cuttings, development water, purge water, drilling fluids, decontamination fluids, personal protective equipment, and sampling equipment.

Materials:

Non-Hazardous and Hazardous Waste Labels
Investigation Derived Waste Log (Figure 1)
Permanent Ink Marking Pen Paint Stick/Pen
Sampling Equipment (Refer to Sampling SOPs)
Sample Jars
Chain of Custody Forms
Cooler

Procedure:

Hazardous IDW

1. All IDW should be handled as hazardous waste unless information exists which would allow it to classified as non-hazardous waste. New or existing site data (i.e., soil and groundwater results) and generator knowledge can be used to classify the IDW.

If site data or generator knowledge indicates that the IDW is determined to be hazardous the following procedures will apply:

- The IDW must be placed in DOT approved containers (55-gallon drum, roll-off container, or temporary storage tank).
- The containers must remain closed except when adding, sampling, or inspecting the material.
- All containers must be labeled with the words "Hazardous Waste".
- An accumulation start date and the contents of the container must be included on the label.
- Investigation Derived Waste Logs (Figure 1) must be completed before leaving the site. One copy of the log should be presented to the site contact and the original provided to the project manager. Once the material has been removed from the site, the IDW log should be stamped "Removed" and placed in the project file.

- The IDW containers must be stored in a secure onsite location (facility hazardous waste storage area if one exists).
- Disposal of the IDW must be completed within **90 days** of the date the waste was generated. If the facility is a small quantity generator, 180 days is allowed for shipment of the waste offsite.
- Onsite disposal may be allowed or appropriate under certain conditions. Refer to OERR Directive 9345.3-02 for guidance, especially for CERCLA sites.
- ESC personnel should notify the site contact that weekly inspections of the IDW must be conducted and documented.
- ESC personnel should also instruct the site contact that this waste must be included in the facilities annual or biannual reports.

2. If the IDW is presumed to be hazardous and sampling is required to confirm its classification, it should be labeled Hazardous Waste-Pending Analysis. The waste should be sampled before leaving the site (See sampling SOPs). It should be noted that EPA methods 8260 and 8270 may be more cost effective than running the full Toxicity Characteristic Leaching Procedure (TCLP) scan. TSD Facilities will usually specify the required analysis for their waste profiles.

Non-Hazardous IDW

1. If information exists to classify the IDW as non-hazardous waste, the following procedures can be implemented:

Soil Cuttings

- Spread around the borehole or other onsite location with the approval of facility personnel
- Place back in the boring
- Containerize and dispose offsite

Groundwater

- Pour onto ground next to well to allow infiltration
- Containerize and dispose offsite
- Discharge to POTW with approval of facility personnel
- Discharge to onsite wastewater treatment plant with approval of facility personnel

Decontamination Fluids

- Pour onto ground (from containers) to allow infiltration
- Containerize and dispose offsite
- Discharge to POTW with approval of facility personnel
- Discharge to onsite wastewater treatment plant with approval of facility personnel

PPE

- Double bag and deposit in site dumpster
- Containerize and dispose offsite

If the IDW is containerized and is non-hazardous, the following procedures will apply:

- The non-hazardous IDW must be placed in DOT approved containers (55-gallon drum, roll-off container, or temporary storage tank).

- The containers should remain closed except when adding, sampling, or inspecting the material.
- All containers must be labeled with the words "Non-Hazardous Waste".
- An accumulation date and the contents of the container should be included on the label.
- Complete the IDW log (Figure 1). One copy of the log should be presented to your site contact and the original should be given to the project manager.
- The IDW containers must be stored in a secure onsite location.
- Arrangements for disposal *should* be completed within 90 days of the accumulation start date.

Appendix E – Microseeps Analytical Method AM4.03

ANALYTICAL METHOD

AM4.03

ANALYSIS OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS

CONFIDENTIAL

MICROSEEPS

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ANALYTICAL METHOD AM4.03

ANALYSIS OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS

1.0 Scope and Application

1.1 Method AM4.03 is used to determine the concentration of any volatile organic compound in soil gas samples detectable with a flame ionization or electron capture detector. The compounds listed below are the most common analytes:

chloromethane	bromomethane
vinyl chloride	chloroethane
1,1-dichloroethylene	fluorotrichloromethane
methylene chloride	1,2-dichloropropane
1,1-dichloroethane	bromodichloromethane
1,2-dichloroethane	cis 1,3-dichloropropylene
trans 1,2-dichloroethylene	trans 1,3-dichloropropylene
chloroform	1,1,2-trichloroethane
1,1,1-trichloroethane	chlorodibromomethane
carbon tetrachloride	chlorobenzene
trichloroethylene	bromoform
tetrachloroethylene	1,2-dichlorobenzene
1,1,2,2-tetrachloroethane	1,4-dichlorobenzene
1,3-dichlorobenzene	acetone
benzene	toluene

1.2 This method is recommended for use by, or under the supervision of, analysts experienced in the operation of a gas chromatograph and in the interpretation of a chromatogram.

2.0 Summary of Method

The volatile organic compounds are analyzed using a Hewlett Packard Model 5890A Gas Chromatograph in conjunction with a Tekmar Model 7000 Automated Headspace Sampler and an H.P. 3396A Networking Integrator. A Supelco, 60M x 0.75mm i.d. Vocol, wide bore capillary column is used in conjunction with an output splitter connected to an electron capture detector and a flame ionization detector. The integrator is interfaced to a microcomputer for data storage and processing. Data transfer and analyses are facilitated using a chromatography data system (Chrom Perfect, Justice Innovations).

3.0 Interferences

3.1 Contamination by carryover can occur whenever high-level and low-level samples are sequentially analyzed. The Tekmar 7000 provides continuous flushing of the sample loop and sample valve while in the standby mode between analyses. This flush flow should be maintained and the sample valve and loop should be kept heated.

3.2 The analyst should demonstrate the absence of carryover contamination by analysis of the contents of the sample loop when purged with pure nitrogen. This demonstration should be performed prior to the analysis of a sample set and when carryover contamination is suspected (after high samples). In the event that 'ghost peaks' (peaks similar to previous sample) appear when a pure nitrogen sample is analyzed measures should be taken to eliminate the carryover contamination.

3.3 Extra peaks in a chromatogram can be actual peaks from a previous run. Contamination from late eluting peaks can occur when injection to injection time is too short or when the column conditioning program described in section 3.4 is not adequate. The HP 5890A is equipped with a temperature programmable oven which can be utilized to minimize this interference.

3.4 The analyst should be certain that all compounds have eluted from the previous analysis prior to analyzing any sample or standard. This can be accomplished by elevating the oven temperature after an analysis until such time that a clean stable baseline is obtained. If samples or standard chromatograms contain suspected 'extra peaks' the sample should be reanalyzed after a clean baseline is established.

3.5 Other interferences that affect the sample analysis can come from sample vials, vial septums, needles and equipment used to collect the sample. Before and during sample analysis, sample blanks (evacuated vials filled with high purity nitrogen, and sample vials from the field filled with ambient air) should be analyzed to assure the absence of interferences.

4.0 Materials and Equipment

4.1 Sample vials: 22 ml glass vials (Hewlett Packard #9301-0716 or equivalent). Vials should be free of all interfering compounds prior to use. This can be accomplished by washing and rinsing with hydrocarbon free water followed by heating to 100 degrees C for 1 hour followed by purging with pure nitrogen.

4.2 Septums: Teflon lined septums (Wheaton #224168 or equivalent) may be used.

4.3 Gas Chromatograph: The Hewlett Packard 5890A Gas Chromatograph is equipped with a Supelco, 60M x 0.75mm i.d. Vocol, wide bore capillary column connected to an electron capture detector and flame ionization detector.

4.4 Headspace Sampler: A Tekmar (Model 7000) equipped with a Tekmar (Model 7050) automated carrousel is used. The carrousel contains 50 slots for headspace vials. The vials are automatically transferred from the carrousel to a platen where they are heated for a preset time prior to injection. The headspace sampler also contains a heated sample valve, heated sample loop and heated transfer line to facilitate transfer of the sample onto the column in the gas chromatograph.

4.5 Data Collection: The output of the chromatograph is directed to a Hewlett Packard (HP-3396A) Networking Integrator which passes the data to a personal computer for data processing with Chrom Perfect software.

5.0 Sample Preparation and Analysis

5.1 Sample vial preparation: All sample vials should meet specifications as noted in sections 4.1 and 4.2 above. Vials should be tightly capped and evacuated to a pressure of less than 100 millitorr. The vial septum should be punctured only with needles of 22 gauge or smaller.

5.2 The evacuated sample vials should be filled with sample or standard gas to a positive gauge pressure. Sample vials should be used (filled with sample) within two weeks of preparation.

5.3 Place the 22 cc sample vials directly into the Tekmar 7050 carrousel and program the headspace autosample as described in section 8.2.

5.4 The headspace sampling unit will preheat the vial, mechanically puncture the septum, transfer the sample to the heated sample loop, then inject the sample into the column flow stream via a heated transfer line.

6.0 Standards and Calibrations

6.1 Gas standards or liquid standards may by used to achieve calibrations. In some situations it may be necessary to use both types of standards. Certified commercial gas standards are most desirable, but may not always be available for all the compounds or for the concentration levels of the compounds of interest.

NYSDEC 012507

6.2 Commercial gas standards are introduced by filling an evacuated 22ml headspace vial with standard gas. The gas standards are placed in the vials and analyzed in the same manner as samples (as described in section 5.0). The concentrations used are those certified by the manufacturer.

6.3 Liquid standard solutions are injected directly into a capped vial and allowed to vaporize. These standards may be produced from high purity compounds as described in Standard Preparation Method SP3 or from commercially available blends in methanol. The liquid standard solutions are placed in vials that meet specifications described in sections 4.1 and 4.2. The vials used must be capped and be at atmospheric pressure when the liquid standard is injected. The standard vial is then analyzed in the same manner as a sample vial as described in section 5.3.

6.4 At the beginning of a project or sample set, standards of appropriate calibration ranges will be run at least two times or until the results agree with a percent standard deviation no greater than 10%.

6.5 Calibration tables should be set up using an external standard method with the Chrom Perfect data system. It is recommended that the calibration table for individual compounds contain at least three standard concentration levels.

6.6 During the course of analyzing samples at least one standard should be run for every 10 samples.

6.7 The instrument response (for any one subsequent standard in section 6.5 above) must not vary by more than 25% from the mean of the initial calibration.

7.0 Quality Control

7.01 If the parameters set forth in section 6.6 are not met the analytical program will be terminated until the cause is determined and a solution is effected.

7.02 Before and during sample analysis, instrument blanks (sample loops filled with flush nitrogen) should be analyzed to assure the absence of interferences as described in section 3.0 above.

7.03 Before and during sample analysis, sample blanks (evacuated vials filled with high purity nitrogen, and sample vials from the field filled with ambient air) should be analyzed to assure the absence of interferences.

7.04 Prior to the analysis of a sample set, multiple standards, at different concentration levels, should be analyzed to establish an initial calibration table. During sample analysis, standards should be run at a rate of 1 for each 10 samples.

7.05 Standards analyzed during the course of analyzing samples are used to monitor individual compound calibration and peak retention time stability. All chromatograms should be examined by an experienced analyst.

7.06 The soil gas sample vial is pressurized at the time of sampling. This pressure preserves sample integrity since any leakage is out of the vial and does not result in contamination or sample dilution.

7.07 Throughout the analysis the headspace gas is injected mechanically from a sample loop to achieve a uniform sample size. The flow through the sample loop comes directly from the sample vial which has been pressurized.

7.08 The headspace sampling unit contains a heated platen as well as a heated sampling loop and transfer line. The latter two zones are continually flushed with nitrogen between sample analyses to minimize the chance of instrumental carry over. This nitrogen in the sample loop is injected periodically to check for instrument contamination.

7.09 Once the headspace vials are punctured in the headspace unit, the sample loop is allowed to equilibrate to atmospheric pressure just prior to injection. This insures that an accurate, equal volume will be injected each time. Each vial is analyzed one time only.

7.10 Calibration records are generated and stored in the computer. All such records will be maintained in the laboratory during the course of the project.

8.0 <u>Instrument Conditions</u>

8.1 Gas Chromatograph:
- Injection Temp. 220 deg. C.
- Flame Ionization Detector Temp. 220 deg. C.
- Electron Capture Detector Temp. 375 deg. C.
- Oven Temp. Program:
  - Initial temp. 35 deg. C.
  - Hold 10 min.
  - Rate 4 deg. min. to 135 deg. C.
  - Hold .01 min.
  - Rate 6 deg. min. to 219 deg. C.
  - Hold 15 min.
- Equilibration Time 1 min.
- Initial E.C.D. Signal Range 5

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REVISION NO. 1

HEALTH AND SAFETY PLAN
GROUNDWATER INTERIM REMEDIAL MEASURE
GROUNDWATER RECIRCULATION WELL TECHNOLOGY
OPERABLE UNIT NO. 2
FORMER GENERAL INSTRUMENT CORPORATION SITE
HICKSVILLE, NEW YORK

PREPARED

BY

ESC ENGINEERING OF NEW YORK, P.C.

NOVEMBER 27, 2002

REVISION NO. 1: JANUARY 13, 2003

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Acronym List

APR	air purifying respirator
bgs	below ground surface
CFR	Code of Federal Regulations
eV	electron volt
GIC	General Instrument Corporation
HASP	health and safety plan
IDLH	immediately dangerous to life and health
IP	ionization potential
IRM	Interim Remedial Measures
µg/l	micrograms per liter
MSA	Mine Safety Appliances
NIOSH	National Institute of Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
PEL	permissible exposure limit
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
RI/FS	remedial investigation/feasibility study
ROD	record of decision
SAR	supplied air respirator
SCBA	self-contained breathing apparatus
SVE	soil vapor extraction
TWA	time-weighted average
VOCs	volatile organic compounds

1.0 Introduction

1.1 General

This Health and Safety Plan (HASP) was prepared by ESC Engineering of New York, P.C. for the former General Instrument Corporation (GIC), site in Hicksville, New York. The HASP provides an overview of conditions at the facility and describes the safety procedures to be employed and the rationale for their selection. The HASP is intended to address any potentially health-threatening contingencies while work is being conducted related to the installation the Interim Remedial Measure (IRM) at the site. During the development of this HASP, consideration was given to current safety regulations and standards as defined by the U.S. Environmental Protection Agency, the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH). In addition, this HASP also describes the health effects for known contaminants and the procedures designed to account for the potential for exposure to unknown substances.

1.2 Scope and Applicability of the Health and Safety Plan

The purpose of this HASP is to define the requirements and designate protocols to be followed during the execution of field activities associated with the former GIC facility. This HASP is applicable to all ESC Engineering employees and any other employees directly subcontracted to ESC Engineering that are performing similar tasks. This HASP will be used to ensure that adequate site safety practices are used during the installation of the IRM. Other remedial subcontractors are required to develop and implement their own HASP that addresses the potential hazards encountered by its employees, and be at least as protective as ESC Engineering's HASP. Such a determination of equivalency will be made solely by the ESC Engineering health and safety officer.

All personnel working at the site must have appropriate OSHA training, review the appropriate HASP, and sign an agreement to comply with its requirements before entering an exclusion zone or a contamination reduction zone if such zones are established during the field activities. A copy of the HASP Certification is provided in Section 14.0. All ESC Engineering personnel working at the site will be briefed by the site health and safety coordinator and will be required to become familiar with the following sections of this plan:

- Contingency Plan and Emergency Procedures – Section 11.0
- Safety Rules and Personal Hygiene – Appendix A
- Field Standard Operating Procedures for Putting On and Decontaminating Personal Protective Equipment (PPE) – Appendix B
- Heat Stress and Heat Stress Monitoring – Appendix C

ESC Engineering personnel are included in a medical monitoring program that is described in Appendix D.

This HASP may be modified if it becomes evident to the site health and safety coordinator or others associated with this work that the provisions specified are not feasible or adequate to protect the health and safety of site personnel. Modifications shall be accomplished by consultation with ESC Engineering's health and safety committee, which shall recommend appropriate modifications after conferring with ESC Engineering's health and safety officer. All changes to this HASP shall be documented by completing a HASP change form, explained in Section 13.0. This form must be signed by the site health and safety coordinator, ESC Engineering health and safety officer, and the site coordinator. A copy of each completed form is to be included in each copy of the HASP and in the project files. The site health and safety coordinator will be responsible for informing staff and subcontractors of all changes to the HASP during the daily briefing meetings.

2.0 Site Background

2.1 Site Location and Description

The former GIC site is located at 600 West John Street northeast of the intersection of West John Street and Cantiague Rock Road in Hicksville, New York (Figure 1). The 11.5-acre site is located in a light industrial section of Hicksville and was developed in 1960 for the General Instrument Corporation (GIC; now Vishay General Semiconductor). GIC occupied two one-story buildings and one two-story building for the research, design, and manufacture of semiconductors, radar systems, and electronic equipment until operations ceased in 1994. The majority of the former GIC site is either paved or occupied by buildings.

The site is surrounded by industrial and commercial properties. Neighboring properties include Air Techniques (formerly GTE) to the north, rental warehouse space to the east, and property formerly used by King Kullen to the south. Waste Management, Inc., is currently redeveloping a portion of the King Kullen property, while a portion of the building on the King Kullen property is occupied by a blood bank. The remainder of the King Kullen property is vacant, with portions being used for storage of cars and roll-off containers.

A number of hazardous waste generators as defined by the Resource Conservation and Recovery Act and several inactive hazardous waste sites are located within 1 mile of the site. Of particular note, the Anchor Chemical Superfund Site, located at 500 West John Street less than 0.25 mile east of the former GIC site, had several leaking underground storage tanks with detections of up to 24,000 micrograms per liter (µg/l) total volatile organic compounds (VOCs) in onsite groundwater. The site was delisted from the NPL with no further action for groundwater. The plume with 24,000 µg/l of total VOCs has never been delineated.

GIC occupied the site from 1960 until manufacturing operations ceased in 1994. Two one-story buildings and one two-story building were used for offices and research and manufacturing operations. Long Island Industrial currently owns the property and leases the buildings to industrial and commercial tenants.

In the early 1980s, three potential areas of VOC releases were identified on the former GIC site: a former 2,000-gallon underground waste solvent tank (Area A), a former 1,000-gallon underground waste solvent tank (Area B) and a sump in an underground tunnel (Area C). The 2,000-gallon tank was immediately taken out of service. In 1986, GIC entered into a Consent

Order with the New York State Department of Environmental Conservation (NYSDEC) and the former GIC site was listed as an inactive hazardous waste disposal site. Under the Consent Order, GIC agreed to identify and investigate releases of contaminants onsite and offsite. In January 1990, GIC and NYSDEC entered into a second Consent Order to conduct a Remedial Investigation/Feasibility Study (RI/FS). Two operable units (OU-1 and OU-2) were defined: onsite soil contamination is referred to as OU-1 while affected groundwater is referred to as OU-2.

In 1994, a soil vapor extraction (SVE) system was installed as an IRM to address onsite soil contamination. In March 1997, the NYSDEC issued a record of decision (ROD) for OU-1 requiring SVE for treatment of onsite soils. As a result of the ROD, the system was upgraded in 1997 and the system continues to operate. Closure testing conducted in the fall of 2001 indicated that Areas B and C were sufficiently remediated to allow shutting down the system but that continued operation in Area A soils was still producing benefits. Additional testing was conducted in December 2002 in Areas B and C to confirm the results, and the system continues to operate in Area A.

Since 1997, several groundwater investigations have been conducted to delineate the extent of offsite groundwater contamination. During the Phase III RI, three monitoring wells (W-15, W-16, and W-17) were installed in an east-west orientation on the northern portion of the King Kullen property. Well depths ranged from 130 feet to 170 feet below ground surface (bgs) and the total VOC concentrations ranged from 272 to 1,360 µg/l. Three soil borings (SB-1, SB-2, and SB-3) were installed in 1998 along a north-south line on the King Kullen property in an attempt to delineate the southern boundary of the groundwater plume. Groundwater samples were collected from screens in the augers as the soil borings were advanced. VOCs were detected at in each of the borings. Soil boring SB-3, which was installed to 150 feet bgs, was converted to monitoring well W-18. A groundwater sample collected in July 2001 from W-18 contained 3,450 µg/l of total VOCs.

In 2001, a Phase IV RI was completed to further delineate the plume to the south and to aid in the design of an offsite IRM. Six soil borings (SB-4 to SB-9) were installed along an east-west line across the southern boundary of the King Kullen property just north of the railroad tracks. Soil borings SB-4, SB-6, and SB-9 were converted into well pairs W-19-S/D, W-20-S/D,

and W-21-S/D. Concentrations of total VOCs in groundwater samples[1] on the order of 1,000 µg/l were detected in each of the borings. While the concentrations of VOCs generally peaked at depths ranging from 110 to 180 feet bgs, the concentrations remained above target delineation concentrations at the termination depths of each of the borings. The maximum boring depth was 205 feet at location SB-8.

ESC Engineering's letter of October 11, 2002, concluded that implementing groundwater recirculation well technology along the southern boundary of the Ackerman property will allow collection and treatment of nine times greater mass of VOCs than the previous IRM proposal.

[1] These samples of groundwater were collected through screens near the leading edge of the augers and are not from developed monitoring wells.

3.0 Project Organization

A number of roles are required for the safe and efficient operation of a field team. These roles include site coordinator, health and safety officer, field team leader, site health and safety coordinator, and field team members. A team member may take on more than one role, but the roles must be clearly assigned and must cover all those required. The following guidelines outline assignment of responsibilities of field team members.

3.1 Site Coordinator

The ESC Engineering site coordinator is responsible for the overall operation of the project, including safety during investigation activities. Specific responsibilities include organization of all project work assignments, assigning personnel to specific duties, ensuring that the field team follows health and safety procedures approved by the ESC Engineering health and safety officer, and overall quality assurance/quality control of the project.

The site coordinator also will be responsible for the day-to-day progress of the project and will hold review and planning meetings as necessary with all technical staff, during which the current progress, problems encountered, and future direction will be discussed.

3.2 Health and Safety Officer

The health and safety officer is responsible for the design and implementation of the health and safety program for the former GIC facility. This includes developing a site HASP, ensuring that all onsite workers have met the necessary health and safety training requirements and are knowledgeable about the work they will perform, assigning a qualified site health and safety coordinator to the field team, verifying compliance with all applicable safety and health requirements, and updating equipment and procedures based on any new information.

3.3 Field Team Leader

The field team leader is responsible for the operation of the field team. Responsibilities include organization of field activities, compliance with the provisions of the site work plan, field documentation and recordkeeping, quality control of field activities, and communication

with the site's plant manager or designated contact. The field team leader, along with the site health and safety coordinator, must ensure that outside observers comply with the HASP.

3.4 Site Health and Safety Coordinator

The site health and safety coordinator works closely with the field team leader to enforce the provisions of the HASP during field activities. The site health and safety coordinator is responsible for implementing the procedures stipulated in the HASP; evaluating and amending the HASP daily to remedy deficiencies and post entry briefings; determining the levels of personal protection based on observations or changing field conditions; controlling site entry and exit; briefing the field team on the health and safety decontamination procedures required for various field activities; monitoring the field team for signs of stress or exposure; initiating emergency procedures, if necessary; verifying that field team members have met the health and safety requirements for field activities; being available to document and respond to any concerns or complaints made by personnel onsite; documenting unsafe work practices or conditions; and documenting any accidents or incidents that result in illness or injury to personnel. The site health and safety coordinator will have successfully completed an American Red Cross course in first aid. The site health and safety coordinator has the authority to halt any operation that threatens the health or safety of the field team or any third parties such as visitors or the surrounding community. The site health and safety coordinator will be under the direction of the health and safety officer concerning health and safety issues. The responsibilities of the site health and safety coordinator are included in Appendix F.

3.5 Field Team

The field team members are responsible for complying with the HASP, notifying the site health and safety coordinator of hazardous or potentially hazardous conditions, and carrying out specialized tasks during field operations. These tasks may include inspecting, calibrating, maintaining, and using field equipment; performing groundwater sampling activities; maintaining decontamination stations; preparing and decontaminating sampling equipment; collecting and preserving samples; and packaging and shipping samples according to proper chain-of-custody procedures.

4.0 Description of Planned Onsite Activities

4.1 Trenching and Excavation

Trenching and excavation activities will be conducted to allow for subsurface installation of remedial system components, such as the UVB well vaults and associated transfer piping. ESC Engineering employees will oversee the trenching and excavation work performed by others. Before initiating any surface penetrating activities, a photoionization detector (PID) will be used to measure the level of VOCs at the surface of each trenching and excavation area. Heavy equipment and machinery may be required during trenching and excavation activities. Potential hazards associated with trenching and excavation include physical contact with heavy equipment and machinery; slips, trips, and falls; dermal contact with contaminated soils, groundwater; and inhalation of VOCs.

At no time will an ESC Engineering employee enter a trench or excavation during the course of this work. In particular, trenches and excavations greater than 4 feet deep can be considered confined spaces, which are prohibited for entry by ESC Engineering staff.

Procedures to be implemented to reduce the hazards to ESC Engineering employees during trenching and excavation activities include air monitoring and the use of PPE such as steel-toed boots and chemical-resistant gloves.

Subcontractor employees may need to enter trenches or excavations to install the transfer piping and well vaults during the IRM. The subcontractor is required to prepare a HASP addressing trenching and excavation work that its employees may perform. The subcontractor must comply with all applicable safety requirements (e.g., 29 CFR 1926 Subpart P), as well as provide a "competent person" to supervise the work. The subcontractor's HASP must conform to applicable OSHA requirements and be at least as stringent as this HASP.

4.2 Well Installation

As part of the IRM, wells will be installed at various locations. Standard well installation techniques will be used for this work. An ESC Engineering hydrogeologist will oversee the well installation. Before initiating any surface penetrating activities, a PID will be used to measure the level of VOCs at the surface of each well installation area. Heavy equipment and machinery may be required during well installation activities. Potential hazards associated with well

installation include physical contact with heavy equipment and machinery; slips, trips, and falls; dermal contact with contaminated soils, groundwater; and inhalation of VOCs.

During well installation work, a significant amount of drilling will be performed. Although ESC Engineering employees oversee the drilling work performed by the subcontractor, our employees need to be aware of the specific drilling-related hazards that may be present onsite. The subcontractor is responsible for conducting drilling activities in a safe manner, consistent with OSHA requirements, and in compliance with its HASP.

In addition to the general heavy equipment and machinery hazards listed above, ESC Engineering employees should be aware of the following drilling-specific hazards:

- Wire rope "whip" hazards during use
- Any unguarded equipment, including gears and belts
- Any rotating equipment (keep loose clothing or other items away from rotating items)
- Hoisting hazards
- Proper leveling of the drill rig
- Starting the drill rig motor when the drill pipe is not secure
- Subcontractor applying too much down-pressure on the drill bit and having the machine topple over or bit shatter
- Drill rig contact with overhead/underground electric power lines
- Serious burns can occur if workers are not careful and touch the hot exhaust mufflers of the mud pump or drill rig engines

ESC Engineering employees must survey the work area thoroughly and select an observation point that provides adequate clearance from potential hazards.

4.3 Building Construction

Support buildings are needed to house remedial machinery and equipment onsite. The construction of support buildings will entail typical building methods, and these structures are anticipated to be small in size. Minor physical hazards such as materials and tools use and handling are expected. Procedures to be implemented to reduce the hazards during building construction activities include the use of PPE such as steel-toed boots and abrasion-resistant gloves.

4.4 Pipe Installation

In additional to trenching activities, pipe installation will also be performed onsite. ESC Engineering personnel will oversee the pipe installation. Before initiating any surface penetrating activities, a PID will be used to measure the level of VOCs at the surface of each pipe installation area. Heavy equipment and machinery may be required during well installation activities. Potential hazards associated with pipe installation include physical contact with heavy equipment and machinery; slips, trips, and falls; dermal contact with contaminated soils, groundwater; and inhalation of VOCs.

5.0 Exposure to Toxic Substances

The primary constituents of concern in soil and groundwater at the site are vinyl chloride, cis-1,2-dichloroethane, trichloroethene, tetrachloroethene, and dichlorobenzene. Toxicological information regarding the major constituents of concern are included in Appendix E.

Potential exposures to VOCs during installation of the IRM include dermal contact with impacted soil, groundwater, and inhalation of vapors. To protect workers from eye and skin contact, skin absorption, inhalation of fumes, PPE will be used.

6.0 Hazard Assessment

A literature review was conducted to find ionization potentials (IPs), exposure limits, and concentrations immediately dangerous to life and health (IDLH) for the constituents of concern in groundwater at the former GIC facility. Exposure limit data are expressed as time-weighted averages (TWAs). TWAs promulgated in OSHA regulations are referred to as permissible exposure limits (PELs). The American Conference of Governmental and Industrial Hygienists adopts values for exposure limits that are referred to as threshold limit values.

The IPs, exposure limits, and concentrations that are IDLH for constituents of concern are listed below. The exposure levels, IPs, and IDLH levels are used to establish which monitoring instruments will be needed. For example, the VOCs listed below have IPs ranging from 9.06 to 11.05. Therefore, a PID with an 11.7 electron volt (eV) lamp will be used to monitor the breathing zone of onsite personnel during all tasks.

These data are also used to establish action levels when upgrading from Level D PPE (i.e., no respiratory protection) to Level C PPE (i.e., dual-canister full-face air-purifying respirator) and select the appropriate types of outer garments, gloves, and respirator cartridges. Action levels triggering an upgrade in respiratory protection from Level D to Level C or Level B are established by examining exposure limit data and selecting the compound with the lowest PEL. For the former GIC facility, vinyl chloride has the lowest PEL of 1.0 parts per million (ppm), which will require constituent-specific screening. If no vinyl chloride is detected, the PEL for cis-1,2-dichloroethane and dichlorobenzene will be used as a reference (50 ppm).

Site work will be initiated in Level D protection. A PID with an 11.7 eV lamp, will be used to monitor total volatile organic concentrations in the breathing zone. Positive breathing zone readings are not expected, but if sustained readings of 1.0 ppm are obtained, work shall cease until vinyl chloride screening (using colorimetric techniques) shows this compound is not present above 0.5 ppm, the vinyl chloride action level (one-half the PEL). If no vinyl chloride is detected or detected below its action level, a tiered action level of 25 ppm (one-half the PEL of the next reference compound) will be incorporated.

In the event that vinyl chloride or overall VOC concentrations do not remain below the action levels, then engineering controls should be instituted to prevent vapors from reaching the breathing zone. This can be accomplished by covering open portions of trenches not being

excavated (e.g., spray application or soil cover) or changing work activities (move personnel farther away). If engineering controls cannot reduce breathing zone overall VOC readings to below the action level, then the level of protection will be upgraded to Level C. There is no PPE upgrade level for vinyl chloride concentrations above its action level. Vinyl chloride detected above the action level will require personnel to evacuate the work area, re-assess site conditions, and modify this HASP.

The work may occur during periods of hot weather. Site personnel must be aware of the hazards associated with heat stress when conducting sampling activities in PPE. Appendix C provides further details for recognizing heat stress.

Summary of Known Materials at the former GIC Facility
Hicksville, New York

Hazardous/Toxic Known Material:	Toxic Effects:	PEL/ TLV/ IDLH	Reactivity, Stability, Flammability:	IP (eV)
Vinyl Chloride	Lassitude (weakness, exhaustion);	1.0 ppm	Reacts with strong Oxidizers	9.99
	abdominal pain, gastrointestinal bleeding;	-- ppm		
	enlarged liver; pallor or cyanosis of extremities; potential carcinogen	5.0 ppm ceiling		
cis-1,2-Dichloroethane	Irritation eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; potential carcinogen	50 ppm --- ppm 100 ppm	Strong oxidizers & caustics; chemically-active metals such as magnesium or aluminum powder, sodium & potassium; liquid ammonia	11.05
Trichloroethene	Irritates eyes and skin	100 ppm	Reacts with strong Caustics	9.45
	Nausea	50 ppm 1,000 ppm		
Tetrachloethene	Irritates eyes, nose, and throat	100 ppm	Reacts with strong Oxidizers	9.32
	Dizziness	25 ppm 150 ppm		
Dichlorobenzene	Irritation eyes, nose; liver, kidney damage; skin blisters	50 ppm 50 ppm --- ppm	Reacts with strong oxidizers, aluminum, chlorides, acids, acid fumes	9.06

7.0 Site Controls

The former GIC facility is located in a heavily industrial section of Hicksville, New York (Figure 1). The location of the IRMs will include property owned by the New York State Department of Transportation, Ackerman, and the County of Nassau Department of Public Works. Access to the sites is restricted by chain-link fences that surround the facilities. Access to the facility is controlled through a gate.

8.0 Level of Protection

Staff members of ESC Engineering responsible for the project shall have completed a 40-hour health and safety training course fulfilling initial instruction requirements specified in Title 29 of the Code of Federal Regulations (CFR) 1910.120(e)(2).

Site activities are expected to be performed in Level D PPE with Level C being the contingency. Modifications of these levels are permitted to maximize efficiency. Levels of protection will be selected based on the concentration of the reference chemical in the ambient atmosphere based on PID readings and the potential for direct contact with material due to sampling.

A PID with an 11.7 eV probe or equivalent will be used to establish baseline conditions before operations begin. Readings will be taken upwind and downwind from work areas to determine background levels of VOCs in the air. Organic vapor levels will be monitored at the work area. The PID will also be used to measure the vapor levels in the breathing zone of onsite personnel. Sustained overall VOC readings greater than 25 ppm in the breathing zone will require an upgrade from Level D to Level C protection. There is no PPE upgrade available for vinyl chloride in this HASP.

The PID will be calibrated at least once at the start of each operating day or when the instrument displays erratic readings. In case of a malfunction, backup equipment will be delivered to the site within 1 day.

9.0 Personal Protective Equipment

9.1 Equipment

Level D PPE will consist of the following equipment:

- steel-toed work boots
- safety glasses
- latex gloves

Level C PPE will consist of the following equipment:

- dual-canister full or half-face air-purifying respirator (NIOSH approved)
- organics, dust, and pesticide respirator cartridges
- Tyvek or Saranex-coated Tyvek coveralls
- steel-toed work boots
- outer latex booties
- inner polyvinyl chloride surgical or latex gloves
- outer nitrile, viton, neoprene, or butyl gloves

The fit of the facepiece-to-face seal of the respirator affects its performance. The site health and safety coordinator will be responsible for ensuring that a good seal is maintained. After each day's use, the respirator will be inspected, cleaned, and stored.

Damaged PPE will be replaced immediately. Backup equipment will be kept onsite for replacement as necessary.

The following protective equipment will be discarded and replaced daily:

- respirator cartridges
- Tyvek coveralls
- outer booties
- inner surgical gloves
- outer gloves

Procedures for putting on PPE are given in Appendix B. Item 15 in Appendix B outlines procedures for containerizing PPE and personal decontamination wastes.

The level of protection provided by PPE selection may be upgraded or downgraded by the site health and safety coordinator based on changes in site conditions. When a significant change occurs, the hazards will be reassessed. Some indicators of the need for reassessment are as follows:

- a change of weather
- a change in ambient levels of contaminants

9.2 Inspection

Proper inspection of PPE features several sequences of inspection depending on specific articles of PPE and its frequency of use. The different levels of inspection are as follows:

- inspection and operational testing of equipment received from the factory or distributor
- inspection of equipment as it is issued to workers
- inspection after use or training
- periodic inspection of stored equipment
- periodic inspection when a question arises concerning the appropriateness of the selected equipment or when problems with similar equipment arise

The primary inspection of PPE in use for activities at the former GIC facility will occur before use and will be conducted by the user. This ensures that the device or article has been checked out by the user and the user is familiar with its use.

10.0 Onsite Safety Equipment

Several pieces of safety equipment will be provided near the work area. A PID will be used to detect organic vapors in the breathing zone of the workers upwind and downwind of each sampling location. It will also be used to measure background air concentrations before the start of work. Colorimetric (e.g., Draeger) tubes will be available to specifically identify airborne vinyl chloride at the site. A first aid kit will be kept onsite near the work area. Awareness of the location of the nearest telephone, water supply, and sanitary facility at each field activity location will be acknowledged by all appropriate personnel.

11.0 Contingency Plan and Emergency Procedures

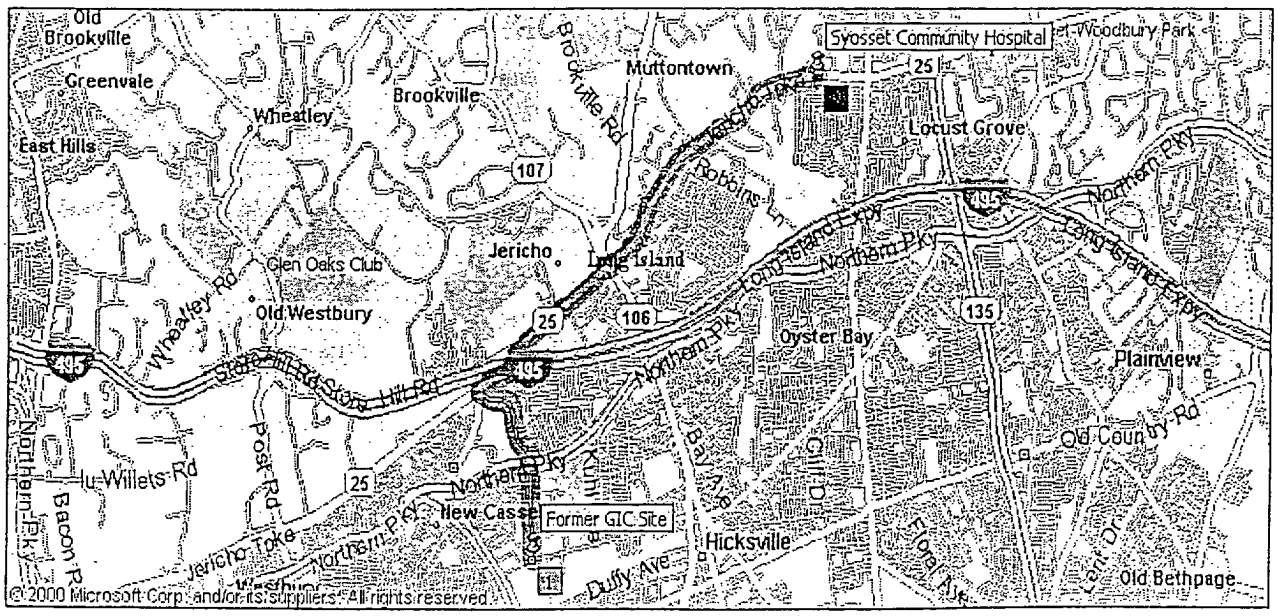
If PID readings indicate a sudden increase of constituents within the breathing zone to levels exceeding IDLH levels or if other threatening hazards are noted, ESC Engineering will evacuate the area. No personnel will return unless instrumentation, engineering judgment, or an emergency response official indicates that it is safe and proper to do so.

To obtain medical assistance as soon as possible in case of an emergency, the following telephone numbers, addresses, and directions for the nearest medical treatment facilities will be posted at the site:

Ambulance:	911 / (516) 289-1100
Police:	911 / (516) 364-0500
Fire department:	911 / (516) 933-3121
Poison control center:	(800) 942-5969
Syosset Community Hospital:	(516) 496-6500

DIRECTIONS TO HOSPITAL: Syosset Community Hospital, 221 Jericho Turnpike

1. Depart site going north on Cantiague Rock Road for 1.3 miles.
2. Turn right (east) onto SR-25 (Jericho Turnpike) for 3.4 miles. The Syossett Community Hospital will be on your left



NYSDEC 012533

12.0 Authorized Changes to the Health and Safety Plan

All changes to the HASP are to be documented by completing a Modification of Site Health and Safety Plan form, provided as Figure 2. This completed form must be signed by the site health and safety coordinator, the ESC Engineering health and safety officer, and the site coordinator. A copy of each completed form is to be included with each copy of the HASP and made a part of the project files.

13.0 References

American Conference of Governmental and Industrial Hygienists. 2001. 2000-2001 Threshold Limit Values and Biological Exposure Indices.

National Institute of Occupational Safety and Health. 2002. NIOSH Pocket Guide to Chemical Hazards.

Sittig, Marshall. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Edition.

14.0 Certification

This HASP has been reviewed and approved by the ESC Engineering health and safety officer. The plan satisfies the requirements of Occupational Safety and Health Act 1910.120 as implemented by the ESC Engineering health and safety committee for hazardous waste site field activities.

All site personnel have read the Health and Safety Plan and are familiar with its provisions.

NAME	SIGNATURE

Figures

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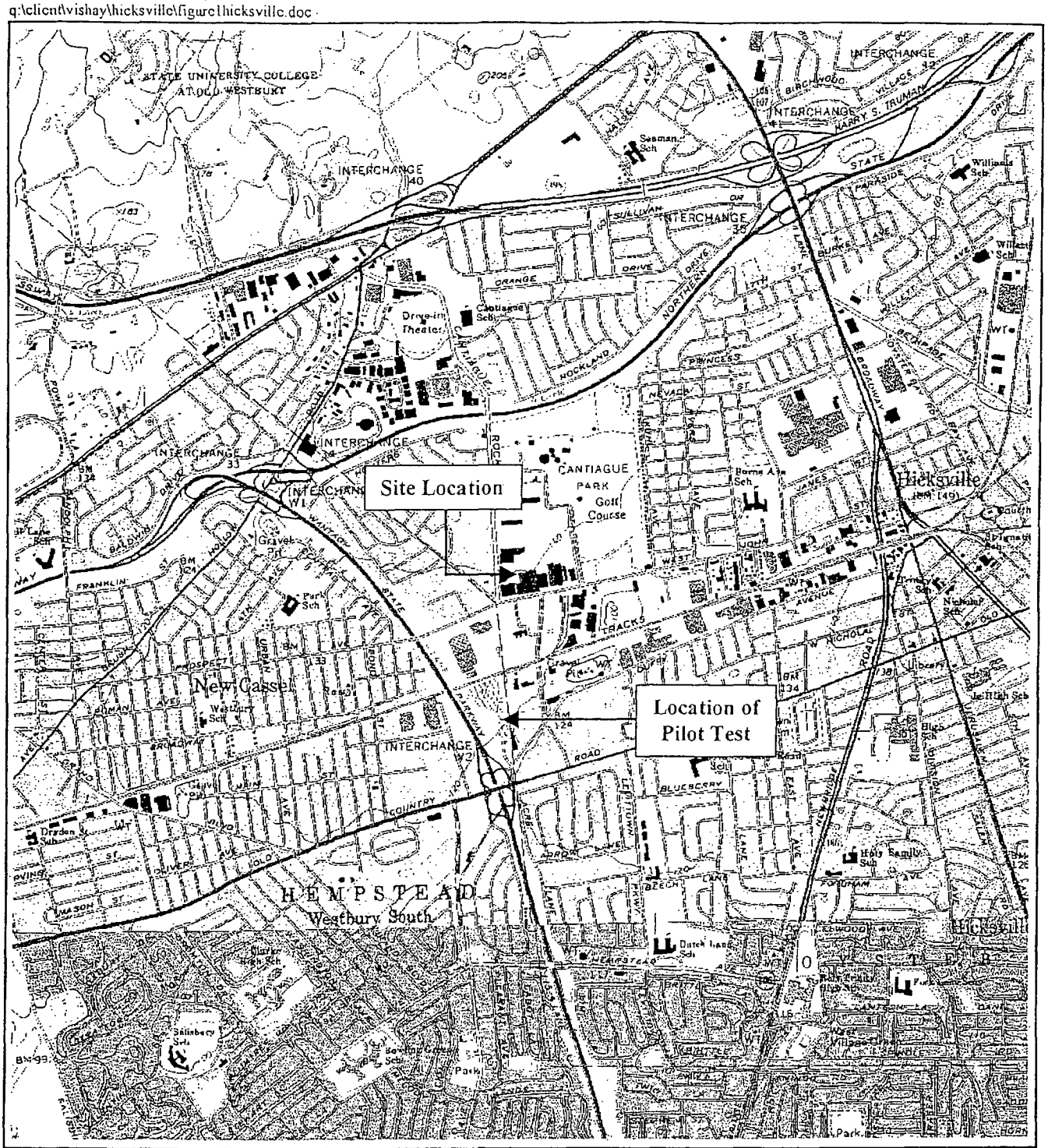


Reference

7.5 Minute Series Topographic Quadrangle
Hicksville, New York
Photorevised 1979 Scale 1:25,000 Metric

Quadrangle Location

Scale in Meters

0 500 1000

0 1000 2000

Scale in Feet

ENVIRONMENTAL STRATEGIES CORPORATION
11911 FREEDOM DRIVE, SUITE 900
RESTON, VIRGINIA 20190
703-709-6500

Figure 1
Site Location
Former General Semiconductor, Inc., Site
Hicksville, New York

NYSDEC 012538

Former General Semiconductor, Inc. Site
Hicksville, New York

Modification of the Site Health and Safety Plan

Change Number: _____

Date: _____

Sections of HASP Affected: _____

Modifications: _____

Approved:

_____ Site Health and Safety Coordinator

_____ Health and Safety Officer

_____ Site Coordinator

ESC Engineering of New York, P.C.
11911 Freedom Drive Suite 900
Reston, Virginia 20190
703-709-6500

Figure 2
Form for Modification of the Site Health and Safety Plan
Former General Semiconductor, Inc. Site
Hicksville, New York

Appendix A – Safety Rules and Personal Hygiene

Safety Rules and Personal Hygiene

1. Remove all facial hair that interferes with a satisfactory fit of respiratory protective equipment.
2. Do not wear contact lenses while wearing full-face respirators.
3. Do not take prescribed drugs unless specifically approved by a physician.
4. Do not take any illegal drugs or consume any alcohol within 8 hours of entering the exclusion zone.
5. In the work zone, do not eat, drink, smoke, chew gum or tobacco, or engage in any other practice that increases the probability of hand-to-mouth transfer or ingestion of material.
6. Wash hands and face thoroughly after leaving the work area and before eating, drinking, or any other activities.
7. Thoroughly wash entire body as soon as possible after removing Level C or Level B protective garments.
8. Whenever possible, avoid contact with contaminated or suspected contaminated surfaces.

Appendix B – Field Standard Operating Procedures for Putting On and Decontaminating Personal Protective Equipment

Field Standard Operating Procedures for Putting On and Decontaminating Personal Protective Equipment

1. Park vehicles outside the site boundaries.
2. During the prework safety meeting, the site manager will provide the following information:
   - A. a description of the site and known problem areas
   - B. the level of protection required
   - C. emergency medical information
   - D. the locations of the first aid kit, showers, telephones, nearest water supply, ice, and lavatory
3. Use the nearest lavatory.
4. Lay out and check safety gear.
5. Put on safety gear in the following order (Level B):
   - A. Saranex or Tyvek coveralls.
   - B. Chemical-resistant steel-toed work boots.
   - C. Connect suit and boots with tape.
   - D. Outer booties, if used.
   - E. Self-Contained Breathing Apparatus (SCBA) or Supplied-Air Respirators (SAR).
6. Put on SCBAs as follows:
   - A. Inspect (SCBAs).
     - (1).....Inspect before each use to ensure that they have been cleaned adequately.
     - (2).....Check material conditions for signs of pliability, deterioration, or distortion.
     - (3).....Check all connections for tightness
     - (4).....Check face shields for cracks or fogginess.
     - (5).....Check for proper setting and operation of regulators and valves (according to manufactures' recommendations).
     - (6).....Check operation of alarm(s).
   - B. Inspect (SARs).

(1).....Inspect before each use to ensure that they have been cleaned adequately.

(2).....Check air lines prior to each use for cracks, kinks, cuts, frays, and weak areas.

(3).....Check material conditions for signs of pliability, deterioration, or distortion.

(4).....Check all connections for tightness

(5).....Check face shields for cracks or fogginess.

C. Loosen all harness strap adjustments.

D. Place chin in chin cup and draw back evenly on strap adjustments - the two bottom straps first, then the two top straps, and the center top strap last.

E. Check that the face shield is centered evenly on the face and that the straps are not uncomfortably tight.

F. Check for leaks or proper facial seals.

(1).....To conduct a negative-pressure test, close the inlet part with the palm of the hand so it does not pass air, and gently inhale for about 10 seconds. Any inward rush of air indicates a poor fit. Note that a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.

(2).....To conduct a positive-pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

7. Put on safety gear in the following order (Level C):

A. Saranex or Tyvek coveralls.

B. Steel-toed work boots.

C. Connect suit and boots with tape.

D. Outer booties, if used.

E. Air purifying respirators (APRs), if required.

8. Put on APRs as follows:

A. Inspect.

(1).....Inspect before each use to ensure that they have been cleaned adequately.

(2).....Check material conditions for signs of pliability, deterioration, or distortion.

(3).....Examine cartridges and ensure that they are the correct type for the intended use, that the expiration date has not passed, and that they have not been opened or used previously.

(4).....Check face shields for cracks or fogginess.

B. Loosen all harness strap adjustments.

C. Place chin in chin cup and draw back evenly on strap adjustments - the two bottom straps first, then the two top straps, and the center top strap last.

D. Check that the respirator is centered evenly on the face and that the straps are not uncomfortably tight.

E. Check for leaks or proper facial seals.

(1).....To conduct a negative-pressure test, close the inlet part with the palm of the hand so it does not pass air, and gently inhale for about 10 seconds. Any inward rush of air indicates a poor fit. Note that a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.

(2).....To conduct a positive-pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

9. Put on the rest of the gear in the following order:

A. Raise hood

B. Hard hat

C. Surgical gloves

D. Outer gloves

E. Connect gloves and suit with tape

10. Select a buddy to act as a safety backup.

11. Check your buddy's equipment and have your buddy check yours for rips, tears, or malfunctions. Pay special attention to face shields, making sure that seals are good and, for APRs, that cartridges are securely in place.

12. If any equipment or gear gets damaged or if your suit tears badly, LEAVE THE EXCLUSION ZONE.

13. If you experience physical discomfort, breathing difficulties, light-headedness, dizziness, or other abnormalities, LEAVE THE EXCLUSION ZONE.

14. When you return, have your buddy check for external accumulation of contamination and remove it. Also check gear for damage.

15. Decontamination will be performed in steps as follows:

Step 1 - Segregated Equipment Drop: Deposit equipment used onsite (tools, sampling devices and containers, monitoring instruments, clipboards, etc.) in different containers with plastic liners. Each may be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination. This equipment may be reused if properly decontaminated.

Equipment:	various sizes of containers
.....	plastic drop cloths

Step 2 - Boot Cover and Outer Glove Wash and Rinse: (Optional - will be used at the Site Health and Safety Coordinator's discretion.)

Equipment:	pesticide sprayer with nozzle
.....	two wash basins or tubs
.....	scrub brush
.....	water
.....	liqui-nox nonphosphate soap solution (1%)

Step 3 - Tape Removal: Remove tape around boots and gloves, and deposit in container with plastic liner. Remove boot covers, then outer gloves, and place them in the container.

Equipment:	container (30-50 gallons)
.....	plastic liners
.....	folding chairs

Step 4 - Safety Boot Wash and Rinse: (Optional - will be used at discretion of ESC Engineering field team members.)

Equipment:	two wash basins or tubs
.....	scrub brush

..... water

..... liqui-nox solution (1%)

Step 5 - Protective Coverall Removal: With the assistance of a helper, remove protective coverall. Deposit in container with plastic liner.

Equipment: container (30-50 gallons)

..... folding chairs

..... plastic liners

Step 6 - Respirator Removal: Remove facepiece. Avoid touching face with gloves. If work is completed for the day, discard cartridges in lined container, and wash and rinse respirator following the procedures on page B-5.

Equipment: container (30-50 gallons)

..... plastic liners

Step 7 - Inner Glove Removal: Remove inner gloves and deposit in container with plastic liner.

Equipment: container (20-30 gallons)

..... plastic liners

16. For SCBAs, if low pressure warning alarm has sounded, signifying that approximately 5 minutes of air remain; LEAVE THE EXCLUSION ZONE.

17. Respirators will be cleaned daily by hand washing with Mines Safety Appliances (MSA) cleaner-sanitizer solution followed by a thorough rinse and air drying. NEVER ALLOW A RESPIRATOR TO DRY WITH THE STRAPS PLACED FORWARD ACROSS THE FACESHIELD BECAUSE THIS MAY CAUSE CHANGES IN THE FACE-TO-RESPIRATOR SEAL SURFACE. The specific procedures to be employed are as follows:

A. Remove all cartridges (canisters) and filters plus gaskets and seals not permanently affixed to their seats.

B. Loosen harness adjustment straps.

C. Remove exhalation valve cover.

D. Remove inhalation and exhalation valves.

E. Remove protective faceshield cover.

F. Wash facepiece in MSA cleaner/sanitizer powder mixed with warm water, preferably at a temperature of 120° F. Wash components separately from facepiece. Heavy soil may be removed from the facepiece surface using a medium-soft handbrush.

G. Remove all parts from the wash solution, and rinse twice in clean, warm water.

H. Air dry all parts in a designated clean area.

I. Pat facepieces, valves, and seats to remove any remaining soap residue, water, or other foreign material with a clean, damp, lint-free cloth.

J. Reassemble respirator.

K. Place respirator in a plastic bag and the respirator box or otherwise store the respirator to prevent exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact.

Appendix C – Heat Stress and Heat Stress Monitoring

Heat and Cold Stress

Heat Stress

Heat is one of the most common (and potentially serious) illnesses at hazardous waste sites where PPE is worn; therefore, regular monitoring and other preventive precautions are vital. Shelter from the sun will be provided during rest periods. If necessary, work will be performed during the cooler night hours. The signs and symptoms of heat stress are provided below. Initial work schedules will be approximately 90 minutes of work followed by 15 minutes of rest.

Signs and Symptoms of Heat Stress

- **Heat rash** may result from continuous exposure to heat or humid air.
- **Heat cramps** are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:
  - muscle spasms
  - pain in the hands, feet, and abdomen

- **Heat exhaustion** occurs from increased stress on various body organs, including inadequate blood circulation caused by cardiovascular insufficiency or dehydration. Signs and symptoms include:
  - pale, cool, moist skin
  - heavy sweating
  - dizziness
  - nausea
  - fainting

- **Heat stroke** is the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms include:

- red, hot, usually dry skin
- lack of or reduced perspiration
- nausea
- dizziness and confusion
- strong, rapid pulse
- coma

Source: National Institute of Occupational Safety and Health/Occupational Safety and Health Administration/U.S. Coast Guard/U.S. Environmental Protection Agency. 1985. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

Cold Stress

The types of cold-related stress are frostbite, hypothermia, and immersion or trench foot. Personnel performing field tasks in the winter months should be aware of the signs and symptoms of cold-related stress so they can take precautionary measures to avoid cold-induced injury and illness. The following is a brief synopsis of each type of cold-related stress.

Frostbite results when cells are cooled until ice crystals form inside them. Most injuries from frostbite are localized to the exposed part of the body. First degree frostbite or frostnip usually strikes the tips of fingers, toes, ears, nose, and chin or cheeks. It is usually painless, and the victim is often unaware of it. The skin turns pale or white from first degree frostbite. Second degree frostbite can occur in skin and its underlying tissue. The skin becomes firm and white, waxy, or translucent. As the injured area warms, it will become numb, and then will turn blue or purple and swell. The superficial capillaries have been injured, and edema fluid will leak out into the tissue. Stinging and burning pain and superficial blisters may develop. The throbbing, aching, and burning may last for some weeks, and the body part may become permanently red and be extremely sensitive if again exposed to the cold. Third degree frostbite involves freezing not only the skin and subcutaneous tissue but even muscle and bone. This serious injury usually involves the hands and feet. The tissues are cold, pale, and frozen to the touch. The injured area usually turns purple or blue and is extremely painful after thawing. Large blisters and tissue death (gangrene) may occur within the first day or two.

Generalized, severe, progressive body cooling is known as systemic hypothermia. This may occur at outside temperatures above freezing as well as below freezing. It occurs when the core temperature of the body falls below 95° F (35° C) and results when the body temperature controlling mechanism is overwhelmed. At 96.8° F, the body attempts to compensate for the cold. As core temperatures fall below 95° F, the body is unable to rewarm itself without outside assistance because of the failure of the temperature control system.

Hypothermia may be of acute duration if someone is suddenly immersed in cold water. Subacute hypothermia may occur in otherwise healthy people, such as skiers, mountain climbers, or lost hunters, subject to prolonged cold exposure and physical exertion. Chronic hypothermia may occur in old people or those who are ill.

Hypothermia may be mild to moderate, when the core temperature is between 81° and 95° F and the patient is conscious, or it may be severe, when the core temperature is below 80° F and the patient is unconscious.

The symptoms of hypothermia depend on the core temperature and become progressively more severe as the core temperature drops. Between 95° and 98.6° F, the first symptom is shivering, a subconscious attempt of the body to generate more heat through muscular action. In addition, certain semiconscious activities will occur, such as stamping the foot and dancing up and down. Below 95° F, difficulty in speaking, incoordination, stumbling, falling, and an inability to use the hands are seen. It is at this point that the loss of temperature control occurs and the body is unable to rewarm itself. Below 90° F, shivering decreases and the muscles become progressively rigid. Below 85° F, the victim becomes irrational and may fall into a coma. The pulse and respiration slow. Below 80° F, unconsciousness occurs. The pulse is weaker, and cardiac arrhythmias may be noted. Below 78° F, the respiratory and cardiovascular centers fail, with resulting pulmonary edema and ventricular fibrillation and then cardiac standstill. Ventricular fibrillation is the usual cause of death in these victims.

Even without a thermometer, the level of hypothermia may be noted by observing the victim's mental state. With a few degrees' drop in core temperature, the victim may become withdrawn, discouraged, or mildly depressed. As the temperature drops a few degrees more, to 94° F or below, the victim may become indecisive, confused, or disoriented and may make incorrect decisions. Below 86° F, sleepiness, lethargy, and confusion are obvious. These progressively become more severe until coma occurs. The comatose state, if allowed to continue, results in death. The stages of hypothermia may progress rapidly after the victim's temperature falls below 90° F.

Trench foot or immersion foot occurs from the wet cooling of an extremity over hours or days at a temperature above freezing while remaining relatively immobile. It used to be seen commonly in shipwrecked sailors or soldiers forced to remain in trenches for days at a time. The extremity is cold, swollen, waxy, mottled, and may be numb.

Preventive Work Guidelines

1. Exposure to cold will be terminated immediately when severe shivering becomes evident.
2. When air temperature falls below 30° F, dry bulb temperature and wind speed should be measured periodically and the wind chill factor should be calculated. (Weather radios are an adequate substitute.)
3. All work except for emergencies will be terminated when the wind chill is below -18° F.
4. Metal tool handles should be covered with thermal insulating material at temperatures below 30° F.
5. When work is performed continuously in the cold at a wind chill of below 20° F, heated shelter should be made available. A vehicle can be used for shelter if it is kept idling with the heater on.
6. Work will be arranged in such a way that sitting or standing still for long periods of time is minimized.
7. Keep warm, dry, and keep moving, but do not become overheated while working in the cold. Exercise fingers and toes.

Appendix D – ESC Engineering Medical Monitoring Program

ESC Engineering Medical Monitoring Program

The workers most likely to be exposed to contaminated materials at the site are sampling and inspection personnel. These personnel are included in a Medical Monitoring Program established by ESC Engineering.

The purposes of the Medical Monitoring Program are to identify any illness or problem that would put an employee at an unusual risk from exposures; to ensure that each employee can use negative-pressure respirators safely and withstand heat or cold stress; and to establish and maintain a medical data base for employees to monitor any abnormalities that may be related to work exposure and that could increase injury risk for the employee or others in the performance of job functions. The Medical Monitoring Program includes:

- a baseline physical examination
- a medical determination of fitness of duty, including work restrictions after any job-related injury or illness or nonjob-related absence lasting more than three working days
- the review of each site-specific Health and Safety Plan and potential exposure list to determine the need for specific biological and medical monitoring
- annual and exit physical examinations with attention given to specific exposures or symptoms

Baseline Physical Examination

A baseline physical examination will be performed on each employee engaged in hazardous waste activities. The purposes of this examination are to identify any illness or problem that would put an employee at unusual risk from certain exposures; to certify the safe use of negative-pressure respirators (OSHA Safety and Health Standard 29 CFR 1910.134); and to develop a database for the assessment of exposure-related events detected through periodic medical monitoring. Variable data, such as age, sex, race, smoking, prior employment and exposure history, that may have a bearing on the occurrence of subsequent events after employment begins will be gathered.

The content of the Baseline Physical Examination will include:

- medical, occupational, and fertility histories
- a physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems
- an electrocardiogram
- PA and lateral chest x-rays
- a pulmonary function test (FEV1, FVC, FEV 25-75)
- an audiogram
- a multichemistry blood panel, including kidney and liver function tests, CBC with differential, and urinalysis
- tests deemed necessary by symptoms or exposure history
- a red blood cell cholinesterase
- physical parameters, including blood pressure and visual acuity testing

Annual Physical Examination

An examination and updated occupational history will be performed on an annual basis during the anniversary month of the baseline physical examination. This annual examination serves to identify and prevent illness caused by cumulative exposure to toxic substances.

The Annual Physical Examination will include:

- a personal work history (based on specific project histories)
- a physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems
- pulmonary function test (FEV1, FVC, FEV 25-75)
- a multichemistry blood panel, including kidney and liver function test
- an audiogram
- tests deemed necessary by symptoms or exposure history
- an optional wellness profile

Return to Work Examination

Any job-related illness or injury will be followed by a medical examination to determine fitness for duty or possible job restrictions based on the physical findings of the medical examiner. A similar examination will be performed following three missed workdays caused by a nonjob-related illness or injury requiring medical intervention.

Exit Physical Examination

The content of the Exit Physical Examination will include:

- a personal work history (based on specific project histories).
- medical, exposure, and fertility histories
- a physical examination, stressing neurological, cardiopulmonary, musculoskeletal, and skin systems
- a pulmonary function test (FEV1, FVC, FEV 25-75)
- an electrocardiogram
- PA and lateral chest x-rays
- an audiogram
- a multichemistry blood panel, including kidney and liver function tests, CBC with differential, and urinalysis
- tests deemed necessary by symptoms or exposure history
- a red blood cell cholinesterase
- physical parameters, including blood pressure and visual acuity testing

Appendix E – Toxicological Information

NIOSH Pocket Guide to Chemical Hazards

Vinyl chloride	CAS 75-01-4
CH_2=CHCl	RTECS KU9625000
Synonyms & Trade Names Chloroethene, Chloroethylene, Ethylene monochloride, Monochloroethene, Monochloroethylene, VC, Vinyl chloride monomer (VCM)	**DOT ID & Guide** 1086 116P

Exposure Limits	NIOSH REL: Ca See Appendix A
	OSHA PEL: [1910.1017] TWA 1 ppm C 5 ppm [15-minute]
IDLH Ca [N.D.] See: IDLH INDEX	**Conversion** 1 ppm = 2.56 mg/m^3

Physical Description
Colorless gas or liquid (below 7°F) with a pleasant odor at high concentrations. [Note: Shipped as a liquefied compressed gas.]

MW: 62.5	BP: 7°F	FRZ: -256°F	Sol(77°F): 0.1%
VP: 3.3 atm	IP: 9.99 eV	RGasD: 2.21	
Fl.P: NA (Gas)	UEL: 33.0%	LEL: 3.6%	

Flammable Gas

Incompatibilities & Reactivities
Copper, oxidizers, aluminum, peroxides, iron, steel [Note: Polymerizes in air, sunlight, or heat unless stabilized by inhibitors such as phenol. Attacks iron & steel in presence of moisture.]

Measurement Methods
NIOSH 1007; OSHA 4, 75
See: NMAM or OSHA Methods

Personal Protection & Sanitation	**First Aid** (See procedures)
Skin: Frostbite Eyes: Frostbite Wash skin: No recommendation Remove: When wet (flammable) Change: No recommendation Provide: Frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support

READ FIRST

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin, and/or eye contact (liquid)

NYSDEC 012560

Symptoms Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]
Target Organs Liver, central nervous system, blood, respiratory system, lymphatic system **Cancer Site** [liver cancer]
See also: INTRODUCTION See ICSC CARD: 0082 See MEDICAL TESTS: 0241

NYSDEC 012561

NIOSH Pocket Guide to Chemical Hazards

Ethylene dichloride	CAS 107-06-2
$ClCH_2CH_2Cl$	RTECS KI0525000
Synonyms & Trade Names 1,2-Dichloroethane; Ethylene chloride; Glycol dichloride	**DOT ID & Guide** 1184 129

Exposure Limits	NIOSH REL: Ca TWA 1 ppm (4 mg/m^3) ST 2 ppm (8 mg/m^3) See Appendix A See Appendix C (Chloroethanes)
	OSHA PEL†: TWA 50 ppm C 100 ppm 200 ppm [5-minute maximum peak in any 3 hours]

IDLH Ca [50 ppm] See: 107062	**Conversion** 1 ppm = 4.05 mg/m^3

Physical Description
Colorless liquid with a pleasant, chloroform-like odor. [Note: Decomposes slowly, becomes acidic & darkens in color.]

MW: 99.0	BP: 182°F	FRZ: -32°F	Sol: 0.9%
VP: 64 mmHg	IP: 11.05 eV		Sp.Gr: 1.24
Fl.P: 56°F	UEL: 16%	LEL: 6.2%	

Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Incompatibilities & Reactivities
Strong oxidizers & caustics; chemically-active metals such as magnesium or aluminum powder, sodium & potassium; liquid ammonia [Note: Decomposes to vinyl chloride & HCl above 1112°F.]

Measurement Methods
NIOSH 1003; OSHA 3
See: NMAM or OSHA Methods

Personal Protection & Sanitation	**First Aid** (See procedures)
Skin: Prevent skin contact	Eye: Irrigate immediately
Eyes: Prevent eye contact	Skin: Soap wash promptly
Wash skin: When contaminated	Breathing: Respiratory support
Remove: When wet (flammable)	Swallow: Medical attention immediately
Change: No recommendation	
Provide: Eyewash, Quick drench	

READ FIRST

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, ingestion, skin absorption, skin and/or eye contact

NYSDEC 012562

Symptoms Irritation eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; [potential occupational carcinogen]
Target Organs Eyes, skin, kidneys, liver, central nervous system, cardiovascular system **Cancer Site** [in animals: forestomach, mammary gland & circulatory system cancer]
See also: INTRODUCTION See ICSC CARD: 0250 See MEDICAL TESTS: 0104

NYSDEC 012563

NIOSH Pocket Guide to Chemical Hazards

Trichloroethylene	CAS 79-01-6
$ClCH{=}CCl_2$	RTECS KX4550000
Synonyms & Trade Names Ethylene trichloride, TCE, Trichloroethene, Trilene	**DOT ID & Guide** 1710 160

Exposure Limits	NIOSH REL: Ca See Appendix A See Appendix C
	OSHA PEL†: TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 2 hours)
IDLH Ca [1000 ppm] See: 79016	**Conversion** 1 ppm = 5.37 mg/m^3

Physical Description
Colorless liquid (unless dyed blue) with a chloroform-like odor.

MW: 131.4	BP: 189°F	FRZ: -99°F	Sol(77°F): 0.1%
VP: 58 mmHg	IP: 9.45 eV		Sp.Gr: 1.46
Fl.P: ?	UEL(77°F): 10.5%	LEL(77°F): 8%	

Combustible Liquid, but burns with difficulty.

Incompatibilities & Reactivities
Strong caustics & alkalis; chemically-active metals (such as barium, lithium, sodium, magnesium, titanium & beryllium)

Measurement Methods
NIOSH 1022, 3800; OSHA 1001
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: No recommendation Provide: Eyewash, Quick drench	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

READ FIRST
Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver

injury; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system

Cancer Site [in animals: liver & kidney cancer]

See also: INTRODUCTION See ICSC CARD: 0081 See MEDICAL TESTS: 0236

NIOSH Pocket Guide to Chemical Hazards

Tetrachloroethylene	CAS 127-18-4
$Cl_2C=CCl_2$	RTECS KX3850000
Synonyms & Trade Names Perchlorethylene, Perchloroethylene, Perk, Tetrachlorethylene	**DOT ID & Guide** 1897 160

Exposure Limits	NIOSH REL: Ca Minimize workplace exposure concentrations. See Appendix A
	OSHA PEL†: TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 3-hours)
IDLH Ca [150 ppm] See: 127184	**Conversion** 1 ppm = 6.78 mg/m^3

Physical Description
Colorless liquid with a mild, chloroform-like odor.

MW: 165.8	BP: 250°F	FRZ: -2°F	Sol: 0.02%
VP: 14 mmHg	IP: 9.32 eV		Sp.Gr: 1.62
Fl.P: NA	UEL: NA	LEL: NA	

Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene.

Incompatibilities & Reactivities
Strong oxidizers; chemically-active metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash

Measurement Methods
NIOSH 1003; OSHA 1001
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: No recommendation Provide: Eyewash, Quick drench	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

READ FIRST

Respirator Recommendations NIOSH
At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck;

dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, liver, kidneys, central nervous system

Cancer Site [in animals: liver tumors]

See also: INTRODUCTION See ICSC CARD: 0076 See MEDICAL TESTS: 0179

NIOSH Pocket Guide to Chemical Hazards

o-Dichlorobenzene	CAS 95-50-1
$C_6H_4Cl_2$	RTECS CZ4500000
Synonyms & Trade Names o-DCB; 1,2-Dichlorobenzene; ortho-Dichlorobenzene; o-Dichlorobenzol	**DOT ID & Guide** 1591 152

Exposure Limits	NIOSH REL: C 50 ppm (300 mg/m^3)
	OSHA PEL: C 50 ppm (300 mg/m^3)
IDLH 200 ppm See: 95501	**Conversion** 1 ppm = 6.01 mg/m^3

Physical Description
Colorless to pale-yellow liquid with a pleasant, aromatic odor. [herbicide]

MW: 147.0	BP: 357°F	FRZ: 1°F	Sol: 0.01%
VP: 1 mmHg	IP: 9.06 eV		Sp.Gr: 1.30
Fl.P: 151°F	UEL: 9.2%	LEL: 2.2%	

Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.

Incompatibilities & Reactivities
Strong oxidizers, aluminum, chlorides, acids, acid fumes

Measurement Methods
NIOSH 1003; OSHA 7
See: NMAM or OSHA Methods

Personal Protection & Sanitation Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: When contaminated Remove: When wet or contaminated Change: No recommendation	**First Aid** (See procedures) Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

READ FIRST

Respirator Recommendations NIOSH/OSHA
Up to 200 ppm: (APF = 50) Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s)/(APF = 25) Any powered, air-purifying respirator with organic vapor cartridge (s)[£]/(APF = 50) Any self-contained breathing apparatus with a full facepiece/(APF = 50) Any supplied-air respirator with a full facepiece
Emergency or planned entry into unknown concentrations or IDLH conditions: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus
Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister/Any appropriate escape-type, self-contained breathing apparatus

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms Irritation eyes, nose; liver, kidney damage; skin blisters
Target Organs Eyes, skin, respiratory system, liver, kidneys
See also: INTRODUCTION See ICSC CARD: 1066

NYSDEC 012569

Site Health and Safety Coordinator Responsibilities

A site health and safety coordinator will be designated.

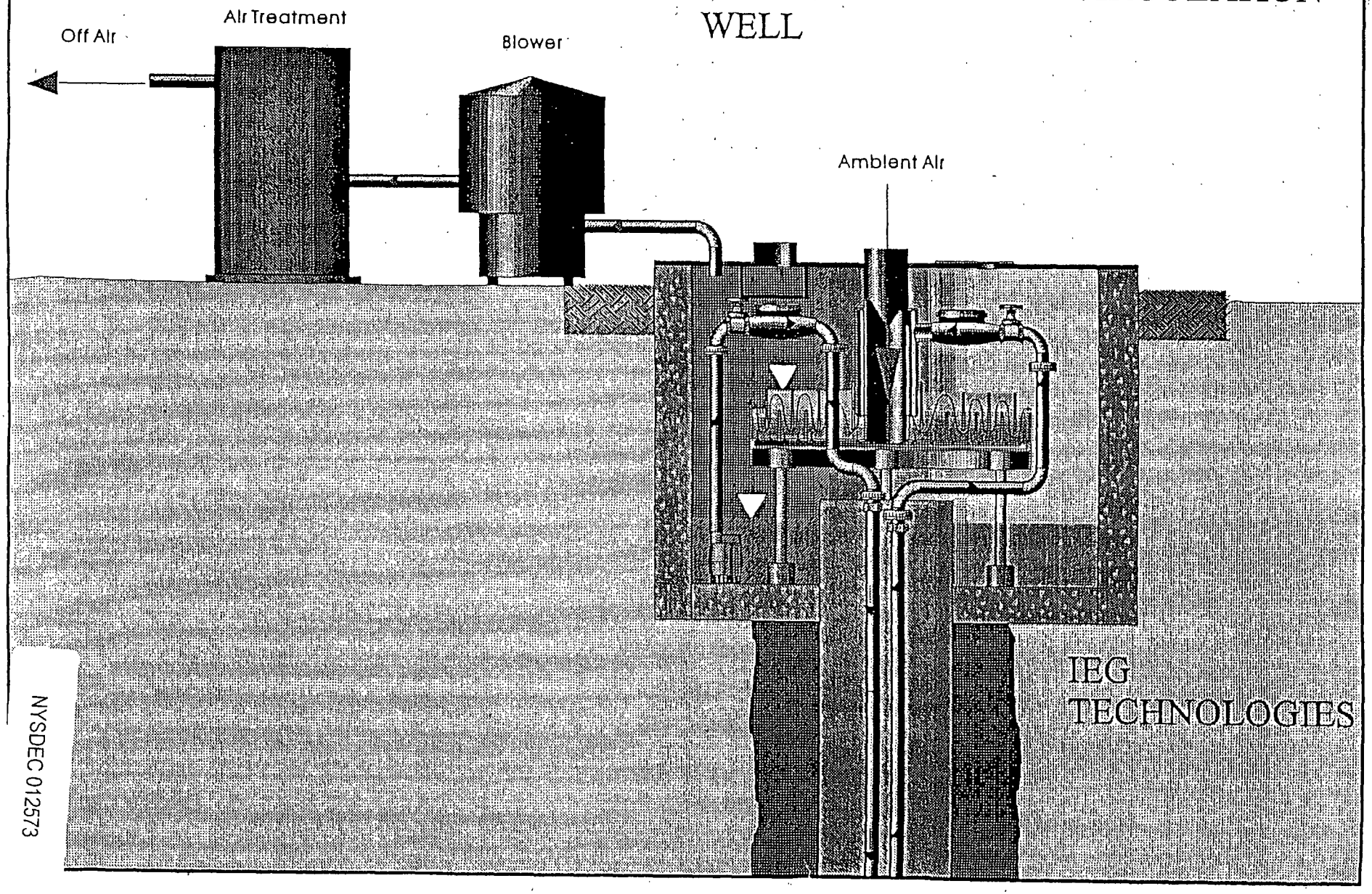
The responsibilities of the site health and safety coordinator will include the following:

- briefing personnel on the hazards at the site, the standard operating procedures to be employed, and emergency procedures
- conducting onsite health monitoring
- coordinating access control and site security, including responsibility for protection of third parties, such as visitors or the surrounding community.
- monitoring work practices and decontamination to ensure that required procedures are being followed
- being available to document and respond to any concerns or complaints made by personnel onsite
- documenting unsafe work practices or conditions
- documenting any accidents or incidents that result in illness or injury to personnel
- evaluating and amending the health and safety plan daily to remedy deficiencies and post entry briefings

Appendix F – Site Health and Safety Coordinator Responsibilities

Appendix C – Pilot Test Equipment Details

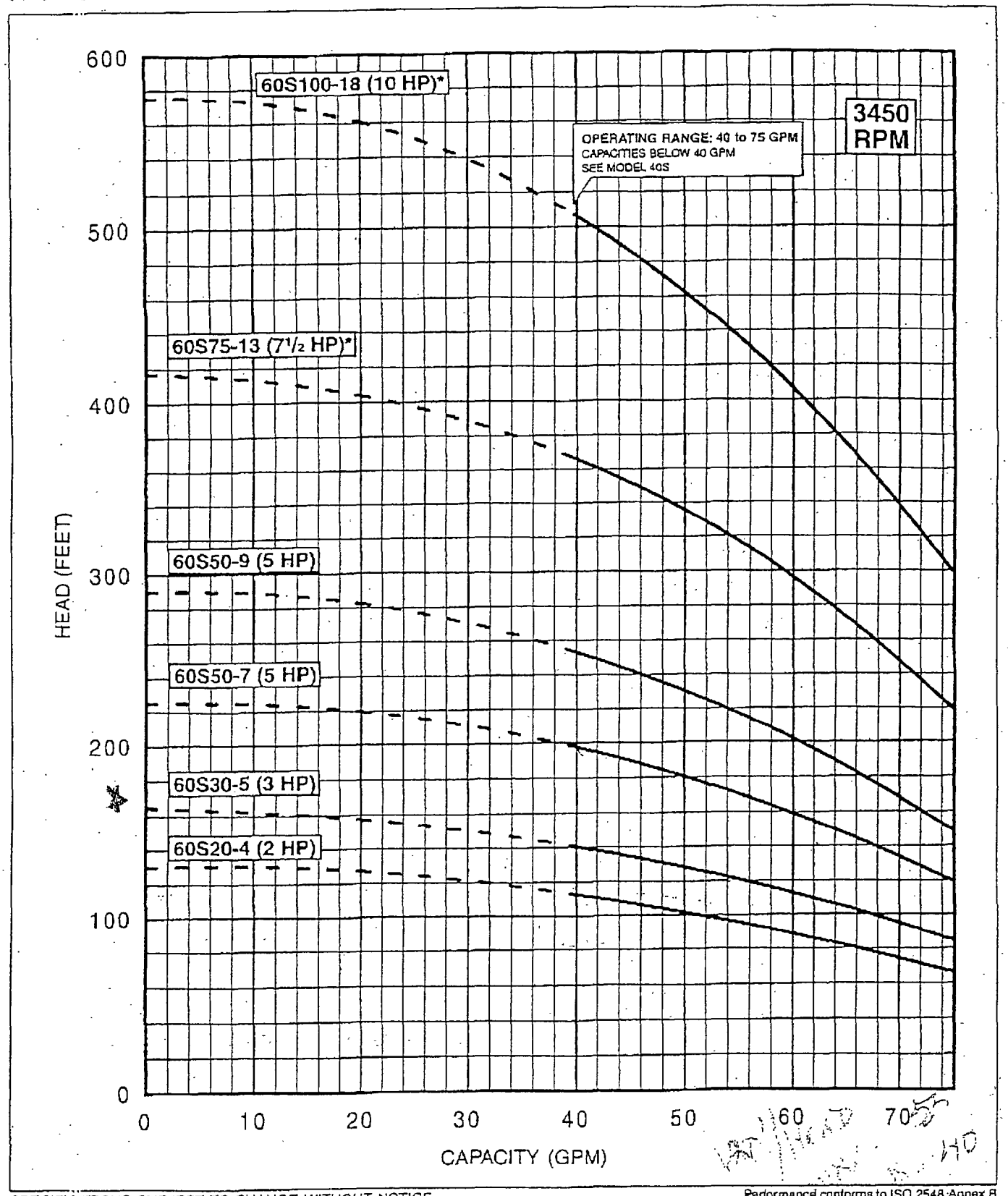
IEG LABYRINTH 1000 TREATMENT UNIT FOR VERTICAL CIRCULATION WELL



NYSDEC 012573

Model 60S 60 GPM Performance Curves

FLOW RANGE: 40 -75 GPM OUTLET SIZE: 2 " NPT NOMINAL DIA. 4"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
* Also available with 6" motor.

Performance conforms to ISO 2548 Annex B
@ 5 ft. min. submergence.

NYSDEC 012574

GRUNDFOS

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

FRANCIS T. PURCELL
County Executive

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E.
Asst. Deputy Commissioner
Div. of Environmental Quality

28-0280

VGR
RM
PG

August 31, 1979

Mr. George Hansen
Chief, PDES Section
Bureau of Standards & Compliance
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, N.Y. 112233

Re: Draft Permit
NY 0107387
Metco Inc.
325 Duffy Ave.
Hicksville, N.Y., Nassau County

Dear Mr. Hansen:

In reference to the above draft permit, this office has the following comments:

1. A sampling point should be provided for process water at Outfall 001 at a point prior to the admixture of non-contact cooling water and storm water.

2. Since the application indicates that process water will contain aluminum and zinc, the discharge limitations should include these metals. Sampling frequency should be on a monthly basis at Outfall 001.

3. An analysis of a sample of water collected from the well on property that is used for non-contact cooling purposes indicated on 4/14/78 the following contaminants:

Parameter	Sample (ug/l)
Trichloroethylene	200
Tetrachloroethylene	10
1,1,1-Trichloroethane	11

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SEP - 5 1979
ENVIRONMENTAL QUALITY
REGION 1

This analysis was conducted at the time that the previous facility T.O.D. Manufacturing Co. Inc., Permit Number NY0076309, occupied the site.

This office requests that for a period of three months, a monthly grab sample be taken of incoming water from the on-site well and from the total water discharge just prior to the recharge basin and the samples analyzed for trichloroethylene, tetrachloroethylene and 1,1,1 trichloroethane. This will demonstrate that there is no net addition of these organic contaminants to the groundwater. In addition, one grab sample should be taken after the three month period from the recharge basin itself to check overall performance.

Very truly yours,

Joseph Schechter
Public Health Sanitarian
Bureau of Wastewater Management

JS:ceg:r
cc: Gerald Robin, NYSDEC
Stony Brook

Copy to: Region 1 VSR GS file

15 (12/75)

New York State Department of Environmental Conservation

MEMORANDUM

TO: Mr. Hansen - Attn: Mr. Szeto
FROM: Mr. Loveridge
SUBJECT: Metco Inc.; NY 010 7387
Oyster Bay (T), Nassau County
DATE: June 13, 1979

0820-82

The attached draft permit was prepared based on information contained in a SPDES application and submitted sampling data.

This is for the existing ground water discharge of treated non-contact cooling and process water.

Attached for your information is a fact sheet describing the permitted outfall. It is recommended that regular monitoring reports be submitted on a semiannual basis.

If you have any questions, please call me.

WL/sr

Attachments

cc: Region 1

NYSDEC012778

RECEIVED
JUN 18 1979
ENVIRONMENTAL QUALITY
REGION 1

SPDES PERMIT FACT SHEET

Name Metco Inc.

Location Oyster Bay (T), Nassau County

Permit Number NY 010 7387 SIC Code 3542

Type of Operation and Major Products:

Machine shop operation and testing of new equipment by flame spraying.

Production Levels If Effluent Guidelines Exist:

N/A

Rationale For Permit Conditions:

Ground water standards for parameters.

Modifications From Previous Permit:

New Permit

NYSDEC012779

Prepared By: Walt Loveridge

Date: June 13, 1979

Copies:

Facility ID No. : NY 010 7387

Effective Date :

Expiration Date : June 30, 1981

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES)
DISCHARGE PERMIT

Special Conditions
(Part I)

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the provisions of the Federal Water Pollution Control Act, as amended by the Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, October 18, 1972, (33 U.S.C. §1251 et. seq.) (hereinafter referred to as "the Act").

Metco Inc.

(SIC 3542)

is authorized to discharge from the facility described below:

325 Duffy Avenue
Hicksville, New York

Oyster Bay (T), Nassau County

into receiving waters known as:

Ground Water (Class GA)

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or written authorization is given by the Department. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information, forms, and fees as are required by the Department of Environmental Conservation no later than 180 days prior to the expiration date.

By Authority of _____

Designated Representative of Commissioner of the
Department of Environmental Conservation

NYSDEC012780

_____ _____

Date Signature

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning and lasting until June 30, 1981 the discharges from the permitted facility shall be limited and monitored by the permittee as specified below:

Outfall Number	Effluent Parameter	Discharge Limitations kg/day (lbs/day) Daily Avg.	Daily Max.	Other Units (Specify) Daily Avg.	Daily Max.	Monitoring Reqmts. Measurement Frequency	Sample Type
001	(Process, noncontact cooling, and storm drains)						
	Flow			50,000 GPD	120,000 GPD	Instantaneou Monthly	
	Oil & Grease				15 mg/l	Monthly	Grab
	Iron				0.6 mg/l	Monthly	Grab
	Copper				1.0 mg/l	Monthly	Grab
002	Sanitary* Flow	850 GPD	10,000 GPD				
003	Sanitary* Flow	25 GPD	100 GPD				

* No monitoring required for sanitary waste to ground water.

NYSDEC012781

The pH shall not be less than 6.5 standard units nor greater than 8.5 standard units and shall be monitored as follows: monthly

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

The daily average discharge is the total discharge by weight or in other appropriate units as specified herein, during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges in appropriate units as specified herein divided by the number of days during the calendar month when the measurements were made.

The daily maximum discharge means the total discharge by weight or in other appropriate units as specified herein, during any calendar day.

ZX-AY, DB any AY ~~DB~~ ~~KG~~ JE SP

FRANCIS T. PURCELL
COUNTY EXECUTIVE

RECEIVED
MAR 27 1986
WATER UNIT
DEC REGION 1

NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, NEW YORK 11501

JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

FRANCIS V. PADAR, P.E., M.C.E.
DEPUTY COMMISSIONER
DIVISION OF ENVIRONMENTAL HEALTH

March 26, 1986

Mr. P. Barbato, P.E.
Regional Water Engineer
New York State Department
of Environmental Conservation
Building 40 - SUNY
Stony Brook, NY 11794

Legal File

Re: Metco Facilities at
Duffy Avenue and Miller Place,
Hicksville; SPDES Nos.
NY0107387 and NY0091375

Dear Mr. Barbato:

This is in response to your memo of March 4, 1986. Inspections by our representative have confirmed sewer hookups at both the above referenced facilities.

The following are in response to questions raised in each of the last five paragraphs of your memo:

Par. 1. At Duffy Avenue we confirm Metco uses water from its own well (N8880) on site and we found 1,1,1 Trichloroethane in this water supply. Table 1 attached shows the levels of three halogenated solvents found in the well by our Bureau of Public Water Supply in the years 1978-1984.

Trichloroethylene is the major contaminant; it appears to have significantly decreased in recent years. The previous occupant of the site was a company named T.O.D. who occupied the site for at least 20 years until 1978. Our records show they used Trichloroethylene. Their discharge was not monitored for organics.

Table 2 attached shows NCDH results for the levels of three organic contaminants in Metco's effluent. In general, the three contaminants in the discharge follow the same trend as in the well water supply except for the Tetrachloroethylene level which went up significantly in 1984. This jump appears to correlate with a leak reportedly in Metco's vapor degreaser which was later shut down and replaced. Subsequently, the Tetrachloroethylene in the effluent decreased.

Par. 2 & 3 Our records show that 1,1,1 Trichloroethane is used in Metco's processing of graphite pellets at their Miller Place location. They also use toluene. We have no information which would explain why high total nitrogen is in their effluent.

Table 3 shows results of samples taken by NCDH of Metco's effluent and analyzed for organics in 1981-1984. These show significant levels of 1,1,1 Trichloroethane. We found no toluene.

Par. 3 & 4 According to DPW they found 0.01 ppm of total chlorinated hydrocarbons in the Metco Miller Place effluent and 2.3 ppm in the Duffy Avenue effluent. They did not itemize compounds.

Par. 5 Our samples of effluent from Duffy Avenue during 1981 to 1985 showed zinc levels in the range of less than 0.05 mg/l to 0.20 mg/l. During the same time period at Miller place the range was from less than 0.05 mg/l to 0.19 mg/l. Accordingly, our results would confirm Metco's claim of low zinc levels.

Par. 6 We would agree with opting for dropping the issue with the Duffy Avenue facility since:

(1) We confirm previous contamination,
(2) they are connecting to the sewer, and
(3) there are "hot" spots of organic contamination upgradient of this site.

At Miller Place we do confirm your 1,1,1 Trichloroethane findings and are not aware of any upgradient "hot" spots which might be a cause. There is a 1,1,1 Trichloroethane "hot" spot downgradient. Accordingly, we would recommend as a minimum that Metco perform a preliminary cleanup of their outfall leaching pools and determine to what extent, if any, it is contaminated.

Since both facilities are hooked up to the sewers and only non-contact cooling water remains as a discharge and we will be inspecting both regularly under our Article XI program in the future, we would recommend that SPDES permits be deleted for both sites.

If you have any additional questions or comments, please let us know.

Very truly yours,

Gerard E Donohue

G. E. Donohue, M.C.E., P.E.
Deputy Director
Division of Environmental Health

GED:LS:dm
cc: M. Hamann
Att.

Table I - Results of Analyses of samples taken by NCDH-BPWS of private water supply well N3880 on Metco's Duffy Avenue, Hicksville, facility.

	Results (ppb)		
Constitutent	1,1,1 Trichloroethane	Tetrachloroethylene	Trichloroethylene
Year			
1978	11	10	200
1979	19	10	270
1980	11	6	350
1981	7	<1	228
1982	14	4	14
1983	18	3	18
1984	6	3	6

Table 2 - Results of Analyses of samples taken by NCDH-BLRM of effluent at Metco's Duffy Avenue, Hicksville, facility.

	Results (ppb)		
Constitutent	1,1,1 Trichloroethane	Tetrachloroethylene	Trichloroethylene
Year			
1979	11	10	200
1981	20	11	149
1982	20	5	140
1983	15	30	93
1984	9	270	72
1985	<1	<1	<1

>

Table 3 - Results of Analyses of samples taken by NCDH-BLRM of effluent at Metco's Miller Place, Hicksville, facility.

	Results (ppb)		
Constitutent	1,1,1 Trichloroethane	Tetrachloroethylene	Trichloroethylene
Year			
1981	4	<1	Not quantified
1982	240	2	1
1983	23	<1	<1
1984	87	<1	<3

GR

15 (12/75)

RECEIVED

FEB 26 1982

ENVIRONMENTAL

New York State Department of Environmental Conservation

MEMORANDUM

TO: MR. PAMCZYK

FROM: Bill Schwenker, Permits Administration Section Bill Schwenker

SUBJECT: SPDES #NY-0107387 FACILITY: METCO INC

(T), (C), (V) COUNTY: NASSAU

DATE:

Attached please find a copy of a letter from METCO INC (A. TERCHER) dated 2/2/82 for your information, comments and/or revised permit. Please respond by 3/15/82.

Attachment:

cc: 1 Region #
3/15 Tickler File (response date)
✓ SPDES File
EPA
County Health Department

3/15/82

DM/lms

It is suggested that they be permitted to submit monthly composite reports to cover each weekly sampling of inorganics.

G Rohin, Reg 1

NYSDEC012815

Bill Harvey

FEB 9 1982

W.S. Send to BWFP for evaluation & decision on request

METCO INC.

1101 PROSPECT AVENUE
WESTBURY, NEW YORK 11590
TELEPHONE: (516) 334-1300
CABLE: METCO
TELEX: 96-7759 METCO INC. WERY

February 2, 1982

Mr. George K. Hansen, P.E.
Chief, P.D.E.S., Permit Section
New York State Department of
Environmental Conservation
50 Wolf Road - Room 201
Albany, N.Y. 12233

Re: SPDES Permit No. NY 010-7387
Reference No. 28-0280

NYSDEC012816

Dear Mr. Hansen:

We are requesting relief from the monitoring requirements set forth in this permit. The enclosed copy of the latest "Discharge Monitoring Report" indicate that METCO Inc. has never approached the maximum discharge level listed for any of the various metals.

METCO Inc. is a company that manufactures flame-spray equipment and tests it for very short periods of time. While testing, very small amounts of wire or powder are used; and most of what is used is captured by the collection equipment, so only minute quantities are released by the water discharge. We are not a production spray facility.

Our records indicate that we are a conscientious and concerned company. However, our concern does not cease with the discharging of waste into our waters, but extends to matters of economy. We are concerned about the cost involved by the weekly sampling and monthly reporting that is required by us. We are certain that the Department of Health, which must follow up on these reports, share this concern.

Therefore, I am asking that you review our records, and on that basis, grant us relief from our present status by arranging for us to report on a semi-annual basis.

Very truly yours,

Abraham Teicher,
Supervisor, Plant Engineering

AT/mw

Encl.

A SUBSIDIARY OF
PERKIN-ELMER

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

FRANCIS T. PURCELL
COUNTY EXECUTIVE

JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

FRANCIS V. PADAR, P.E.
ASST. DEPUTY COMMISSIONER
DIV. OF ENVIRONMENTAL SERVICES

VGR

RECEIVED

DEC 5 1979

ENVIRONMENTAL QUALITY
REGION 1

November 29, 1979

Mr. George K. Hansen
Chief, PDES Section
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, N.Y. 11223

Re: (1) NY0106691, Hitemco, Hicksville
(2) NY0107387, Metco, Duffy Ave. Hicksville
(3) NY0107158, Metco, Westbury
(4) NY0091375, Metco, Miller Pl. Hicksville

Dear Mr. Hansen:

Your letter of 11/15/79 regarding the draft permit for Metco's Duffy Ave. facility (#2 above) and questions raised by Hitemco (#1 above) appeared to require further input from this office. We have studied the four permits referenced above and hopefully, the following observations and comments will be of some help to your office during the course of any further actions on these permits.

In summary, the equipment, processes and materials used by the first three facilities of Hitemco and Metco (1,2,3 above), are quite similar. Most of the equipment for all three is supplied by Metco. Materials produced in the fourth facility by Metco (#4 above) are also used by the first three facilities; i.e., Hitemco is a customer of Metco. Accordingly, there is a close relationship in the process and waste streams of both Metco and Hitemco.

The following detail is offered in further comparison of the operations and discharge permits at all four facilities:

NY-0091375 - Metco Inc., 220 Miller Place
Hicksville, N.Y.

This facility is a manufacturing plant that grades, screens, mixes and weighs metallic powders to be used in flame spray and plasma guns. Metal-filled wire is extruded in another process. Outfall 001 receives water used to wash down the drying ovens. This discharge flows to a settling tank prior to mixing with outfall 002. The second outfall receives a combination of wastewater from spray booth air scrubbers and non-contact cooling water. The flow of water into outfall 001 is at a low level and has only discharged twice in 1979. Analysis of wastewater from outfall 002 is in compliance for Cu, Cr Total, Cr^{+6}, Fe, Pb, Zn and Hg.

NY-0107158, Metco, Inc. 1101 Prospect Ave.
Westbury, N.Y.

This facility is primarily office headquarters and a research lab. Several spray booths are located here for testing of new equipment (flame spray guns) and for research purposes. The application for permit indicates that a discharge could contain Al, Cu, Fe and Zn. The final permit issued Sept. 1, 1979, lists outfall 001 as a combination of process wastewater and non-contact cooling water. The process wastewater is the overflow from the flame spray booth air scrubber units. (Metal wires and/or powders of Aluminum, brass, copper, zinc or steel are sprayed here.) Monitoring requirements for outfall 001 include analysis for iron and oil and grease from a quarterly grab sample.

NY-0107387, Metco, Inc. - Duffy Ave.
Hicksville, N.Y.

This plant is the main manufacturing facility for assembling, cleaning and testing of flame spray and plasma guns. Several spray booths are located here for testing of guns using metal wires and/or powders of aluminum, brass, copper, zinc or steel. Process wastewater is the overflow of water from the spray booth air scrubbers and could contain Al, Cu, Zn or Fe. Discharge outfall 001 receives process wastewater, non-contact cooling water from air compressors and degreasers, and stormwater. The draft permit notes that outfall 001 is a combination of process wastewater, non-contact cooling water and storm water. Monitoring requirements for outfall 001 include analysis for oil and grease, iron and copper, from a monthly grab sample.

NY-0106691, Hitemco, 70 Cantiague Road
Hicksville, N.Y.

This facility is engaged in applying special metallurgical coatings by flame spray and plasma gun. Process wastewater is the overflow of water from several spray booth air scrubbers, and occasionally an intermittent water discharge from a pack coating operation that introduces an aluminum oxide residue in a water wash operation. Outfall 001 receives process wastewater and non-contact cooling water. A draft permit dated 11/18/79 requires the facility to separate process wastewater from non-contact cooling water, and store it for removal by a licensed industrial waste scavenger.

Hitemco requested, in a letter to your office dated August 23, 1979, that Metco's permits be reviewed as Metco is presently permitted to discharge scrubber washwater of a similar nature to their discharge. They question whether it is reasonable to prohibit their discharge.

Several points should be raised at this point.

1. Process wastewater at all three Metco facilities includes scrubber washwater and non-contact cooling water. SPDES

permit NY-0107158 and draft permit NY-0107387 explicitly note that the discharge is a combination of process water and non-contact cooling water. A modification to draft permit NY-0107387 was requested on 8/31/79 by this office to require that a sampling point be provided prior to admixture of cooling water and storm water.

2. Applications for SPDES permits NY-0107387, and NY-0107158, indicate that process wastewater could contain Al, Zn, Cu and Fe. Process wastewater from both facilities is of a similar nature. Yet, the permit monitoring requirements are different. Both require monitoring for oil and grease and iron. Permit NY-0107387 also requires monitoring for copper. Neither requires monitoring for Aluminum and Zinc. In answer to our request to modify permit NY-0107387 to include analysis for Al and Zn, your office stated that data from other installations of the same company indicated that Al and Zinc were in such small quantities that monitoring would not be required. The only other Metco installation under permit is NY-0091375 where analysis for Aluminum is not required and wastewater is a combination of scrubber wash water and non-contact cooling water.

In view of the above, we note the following:

1. There is a close similarity in the actual operations and discharges between Hitemco, (#1) and two of Metco's facilities (#2, #3). However, there is a marked difference in the permit requirements between Hitemco (#1) and two Metco facilities (#2, #3). Consequently: (1) prohibition of Hitemco's discharge might be interpreted as arbitrary and inconsistent; i.e. Metco's similar discharge is permitted.

2. Monitoring requirements for Metco's facilities NY-0107158 and NY-0107387) are inconsistent with the applications for permit and with each other.

In view of these observations, it may be worthwhile to modify these permits to make them more uniform and possibly more reflective of the operations described.

I trust the above information is of some help to your office. If we can be of any further assistance in obtaining additional information or supplying further clarification, please contact this office at 535-2404.

Very truly yours,

Joseph Schechter

Joseph Schechter
Public Health Sanitarian
Bureau of Wastewater Management

JS:ceg:r
cc: Gerald Robin

AMENDED

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NOTICE OF COMPLETE APPLICATION

Applicant: Alsy Manufacturing Company Date: August 28, 1984

Address: 270 Duffy Avenue

Hicksville, NY 11801

Permits applied for and application number(s) 10-82-1088, State Pollutant Discharge Elimination System Permit

Project description and location. Town/City of Oyster Bay County of Nassau

The Department has made a tentative determination to approve this application for renewal of a permit for an existing discharge os 3,000 gallons per day of electroplating waste water into groundwater. The facility is located at 270 Duffy Avenue, Hicksville, New York, where the Applicant engages in lamp manufacturing. The proposed discharge is located within an area designated as a sole source aquifer. Pursuant to Environmental Conservation Law 17-0828, the following public water purveyors have been identified as having service areas or portions thereof located within a three (3) mile radius of the applicant's facility:

1. Plainview Water District, 10 Manetto Hill Road, Plainview, NY 11803
2. Bethpage Water District, 25 Adams Avenue, Bethpage, NY 11714
3. Hicksville Water District, Four Dean Street, Hicksville, NY 11802

SEE ATTACHED SHEET FOR CONTINUATION.

SEQR DETERMINATION: (check appropriate box)

☐ SEQR-1 Project is not subject to SEQR because it is an exempt, excluded or a Type II action.

☐ SEQR-2 Project is a Type I action: it has been determined that the project will not have a significant effect on the environment. A Negative Declaration has been prepared and is on file.

☒ SEQR-3 Project is an unlisted action; it has been determined that the project will not have a significant effect on the environment.

☐ SEQR-4 A draft environmental impact statement has been prepared on this project and is on file.

☐ SEQR-5 A final environmental impact statement has been prepared on this project and is on file

SEQR LEAD AGENCY New York State DEC

AVAILABILITY FOR PUBLIC COMMENT: Applications may be reviewed at the address listed below. Comments on the project must be submitted to the Contact Person indicated below by no later than October 5, 1984

CONTACT PERSON: Dennis W. Cole
NYSDEC, Bldg. 40, SUNY--Room 219 (516) 751-7900
Stony Brook, NY 11794

TO THE APPLICANT:

1. THIS IS NOT A PERMIT

2. This is to advise you that your application is complete and a review has commenced. Additional information may be requested from you at a future date, if deemed necessary, in order to reach a decision on your application.

3. Your project is classified MAJOR. Accordingly, a decision will be made within 90 days of the date of this Notice. If a public hearing is necessary, you will be notified within 60 days and the hearing will commence within 90 days of the date of this notice. If a hearing is held, the final decision will be made within 60 days after the hearing is completed.

4. Publication of this Notice in a newspaper is: ☒ required ☐ not required
If required, please consult the accompanying transmittal letter for further instructions.

CC: Chief Executive Officer Oyster Bay Town Supervisor
Environmental Notice Bulletin, Room 509, 50 Wolf Road, Albany, N.Y. 12233-0001
File

cc: A. Yerman
A. Adamczyk
L. Sama

NYSDEC012932

APPLICANT

Alsy Manufacturing Company
270 Duffy Avenue
Hicksville, NY 11801
List of Water Purveyors Continued

4. Hempstead Town Water Dept., 1995 Prospect Avenue, East Meadow, NY 11554

5. Westbury Water District, 160 Drexel Avenue, Westbury, NY 11590

6. Mitchel Field Water Supply, Nassau County DPW, One West Street, Mineola, NY 11501

New York State Department of Environmental Conservation
Regulatory Affairs Unit
Bldg. 40, SUNY--Room 219
Stony Brook, NY 11794

(516) 751-7900

Henry G. Williams
Commissioner

August 28, 1984

Alsy Manufacturing Company
270 Duffy Avenue
Hicksville, NY 11801

RE: Application for Permit to Discharge Under New York State Pollutant Discharge Elimination System (SPDES), SPDES Application No. NY-0102539
UPA Application No. 10-82-1088

Dear Sir:

1. Enclosed are the following:

[XX] a. The "Notice of Complete Application" (one page), a public notice to other potentially interested parties describing your discharge and this Department's intention to issue a permit. The Notice will be published in the Department's weekly Environmental Notice Bulletin, and, if item 2b is checked below, you must also have the Notice published in a local newspaper.

[XX] b. A copy of the draft SPDES discharge permit which contains the effluent limitations and monitoring requirements and other specific conditions that you will be required to comply with.

[ ] c. A ____ Consent Order or ____ Enforcement Compliance Schedule Letter (ECSL) with Schedule A, which contains an abatement schedule and interim effluent limitations and monitoring requirements that you will be required to follow to bring your discharge(s) into compliance with applicable federal and state water pollution control laws. Also, see item 2c below.

[ ] d. Other: _____

2. You are hereby requested to do the following:

[XX] a. Read over the enclosed documents carefully and notify this office immediately if there are any errors. If there are no errors, but you want to submit written comments, the comments should be sent to this office prior to October 5, 1984 .

NYSDEC012934

[XX] b. The Notice of Complete Application must be published unedited in its entirety one time only on any day during the week of September 17, 1984, in the OYSTER BAY GUARDIAN.

The Notice should not be revised or edited unless you have been authorized to do so by this office. Minor revisions will be authorized by phone if necessary.

Request the newspaper publisher to provide you with an affidavit of publication and promptly forward a copy of it to this office for filing with your application. You are responsible for the cost of publication.

You are advised that any delay or failure to comply with requirements for publication may necessitate appropriate legal action if there are existing discharges from your facility; or cancellation of your application if this is a proposed project.

[ ] c. The Consent Order or ECSL must be signed by a chief executive officer (e.g: city or village mayor, town supervisor, corporate president or vice president, owner or partner) and must be returned to this office before the cut-off date underlined in the body of the Notice. A signed copy of the Consent Order or ECSL will be attached to each copy of the issued permit. If you do not agree to sign the Consent Order or ECSL, this Department will have no other recourse but to initiate enforcement proceedings to secure your compliance with applicable effluent limitations and water quality standards mandated by the Federal Clean Water Act and State Environmental Control Law.

[ ] d. You failed to include with your application the full amount of the required fee which is $_____. Please submit a check or money order for the balance due in the amount of $_____, payable to the NYS Department of Environmental Conservation. Please indicate the SPDES Application Number on your check or money order. Legally, your application is incomplete until the fee is paid. However, in order to expedite processing of this application, we have enclosed the Notice of Complete Application and draft SPDES permit. The amount of the fee should be sent to this office on or before the "cut-off" underlined in the body of the Notice.

[ ] e. Other:_____.

If you call our office, please ask for Dennis Cole.

Very truly yours,

Daniel J. Larkin
Regional Permit Administrator

DJL:cc's
Enclosures
cc: SPDES file

NYSDEC012935

:0-17-1 (10/83)

10-82-1058

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

TRANSMITTAL SLIP

TO: A. Lauffer

DATE: 8/14/94

FROM: D. Lee

SOLID WASTE MANAGEMENT
DEC REGION 1

RE: Back in April I sent you a response received from Alsy Mfg Inc regarding their Part 360 permit. In their letter they state that they are exempt from filing for a permit as per part 360.1(f)(2)(iii) because they store no more than 1000 kg of hazardous waste/mo.

Do you agree with their statement? Yes!

DLR

FOR ACTION AS INDICATED:

- ☐ Please Handle
- ☐ For Your Information
- ☐ Comments
- ☐ Approval/Signature
- ☐ File
- ☐ Return to me by _____
- ☐ Prepare Reply for _____ Signature
- ☐ _____

NYSDEC012936

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF AIR

INTER-OFFICE SPEED MEMO
(USE ONLY FOR UNOFFICIAL CORRESPONDENCE)

TO: Dave DeRidder

DATE: 6/11/84

FROM: G. Robin / Bill O'Brien

REPLY REQUIRED BY: 10-92-1088 [illegible]

SUBJECT: Alsy Mfg
NY0102539

DATE RETURNED:

REPLY AT BOTTOM OF THIS FORM

Attached is the draft permit for public notice

7/17/84 - parameters added to industrial & sanitary outfalls as a result of DEC sampling.

RECEIVED
JUN 12 1984
N. Y. S. D. E. C.
REGULATORY AFFAIRS, REGION 1

REPLY

70-00-4 (8/79)
Formerly AIR -1

NYSDEC012937

Copies:

Facility ID No. NY- 010 2539

Effective Date (EDP) :

Expiration Date (ExDP) : May 31, 1985

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES)
DISCHARGE PERMIT

Special Conditions
(Part I)

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et. seq.) (hereinafter referred to as "the Act").

Permittee Name: Alsy Manufacturing Co.

Permittee Street: 270 Duffy Ave.

Permittee City: Hicksville State: NY Zip Code: 11801

is authorized to discharge from the facility described below:

Facility Name: Alsy Manufacturing Co.

Facility Location (C,T,V): Oyster Bay (T) County: Nassau

Facility Mailing Address (Street): 270 Duffy Ave.

Facility Mailing Address (City): Hicksville State: NY Zip Code: 11801

into receiving waters known as: Groundwater

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal as prescribed by Sections 17-0803 and 17-0804 of the Environmental Conservation Law and Parts 621, 752, and 755 of the Department's rules and regulations.

By Authority of _____

Designated Representative of Commissioner of the
Department of Environmental Conservation

_____ Date

_____ Signature

NYSDEC012938

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning EDP
and lasting until 5 years from EDP
the discharges from the permitted facility shall be limited and monitored by the permittee as specified below:

Outfall Number & Effluent Parameter	Discharge Limitations Daily Avg.	Daily Max.	Units	Measurement Frequency	Sample Type
001 Plating Process, Wastewater *					
Flow		NA		Continuous	Recorded
Copper-Total		1	mg/l	Monthly	Composite
Cyanide-Total		.4	mg/l	Monthly	Composite
Nickel-Total		2	mg/l	Monthly	Composite
Zinc-Total		5	mg/l	Monthly	Composite
Lead		0.05	mg/l	Monthly	Composite
Arsenic		0.05	mg/l	Monthly	Composite
Total Nitrogen		10	mg/l	Monthly	Composite
Phenol		.002	mg/l	Monthly	Composite
pH (Range)	6.5-8.5		SU	Monthly	Grab
Chloroform		.1	mg/l	Monthly	Grab
Dichlorobromoethane		.05	mg/l	Monthly	Grab
Methylene Chloride		.02	mg/l	Monthly	Grab
2,4-Dinitrophenol		.25	mg/l	Monthly	Grab
1,1,1-trichloroethane		0.035	mg/l	Monthly	Grab
1,1-dichloroethene		0.05	mg/l	Monthly	Grab
1,1-dichloroethane		0.05	mg/l	Monthly	Grab
Toluene		0.05	mg/l	Monthly	Grab
Benzene		Not detectable		Monthly	Grab
Ethylbenzene		0.05	mg/l	Monthly	Grab

* All discharges must be connected to sewers by May 31, 1985

1) The permit application must list all the corrosion/scale inhibitors or biocidal-type compounds used by the permittee. If use of new boiler/cooling water additives is intended, application must be made prior to use.

Definition of Daily Average and Daily Maximum

The daily average discharge is the total discharge by weight or in other appropriate units as specified herein, during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges in appropriate units as specified herein divided by the number of days during the calendar month when the measurements were made.

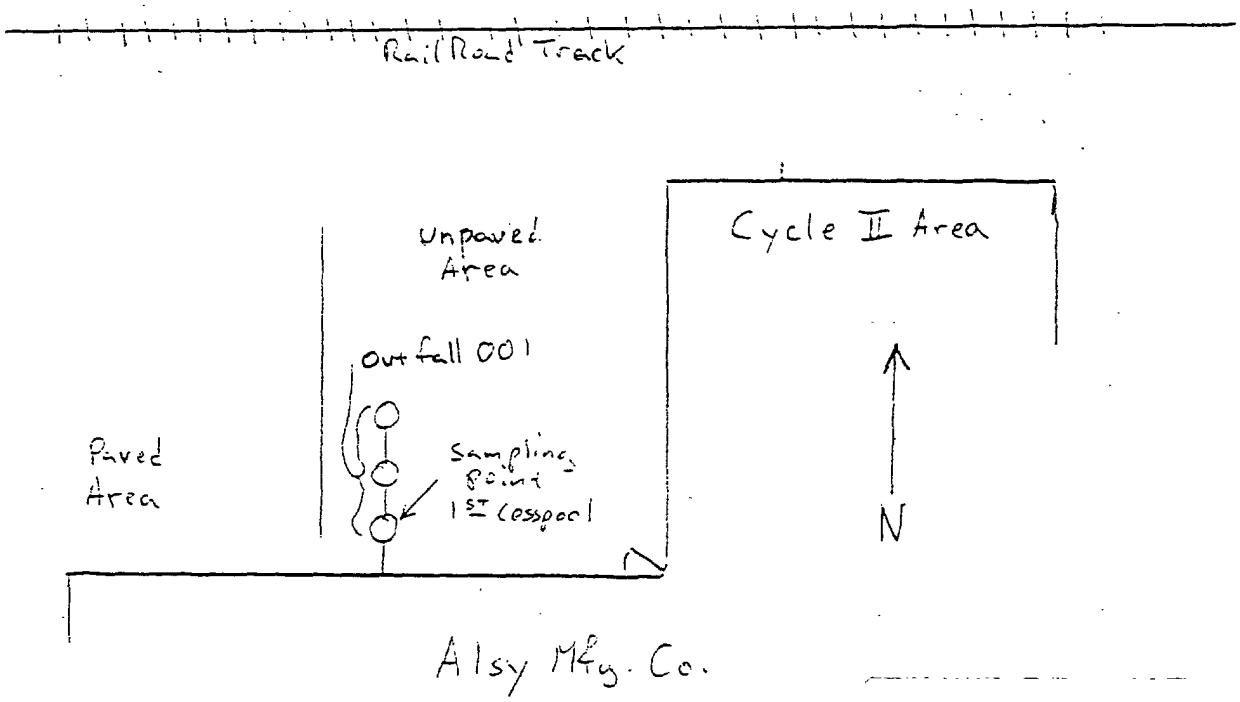
The daily maximum discharge means the total discharge by weight or in other appropriate units as specified herein, during any calendar day.

Monitoring Locations

Permittee shall take samples and measurements to meet the monitoring requirements at the locations(s) indicated below: (Show locations of outfalls with sketch or flow diagram as appropriate.)

Outfall 001

Samples are to be taken from the first cesspool (cesspool with steel cover) north of the building. This is the first cesspool considered as outfall 001.



MONITORING, RECORDING AND REPORTING

a) The permittee shall also refer to the General Conditions (Part II) of this permit for additional information concerning monitoring and reporting requirements and conditions.

b) The monitoring information required by this permit shall be summarized and reported by submitting a completed and signed Discharge Monitoring Report form once every 1 months to the Department of Environmental Conservation and other appropriate regulatory agencies at the offices specified below. The first report will be due no later than Thereafter, reports shall be submitted no later than the 28th of the following month(s): each month

DMR

Water Division
New York State Department of Environmental Conservation
50 Wolf Road - Albany, New York 12233

New York State Department of Environmental Conservation
Regional Engineer
Building #40 SUNY
Stony Brook, New York 11/94

Nassau County Department of Health
240 Old Country Road
Mineola, New York 11501

☐ (Applicable only if checked):

Dr. Richard Baker, Chief - Permits Administration Branch
Planning & Management Division
USEPA Region II
26 Federal Plaza
New York, New York 10278

c) If so directed by this permit or by previous request, Monthly Wastewater Treatment Plant Operator's Reports shall be submitted to the DEC Regional Office and county health department or county environmental control agency specified above. BMW-88 FORM

d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Reports.

f) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

g) Unless otherwise specified, all information submitted on the Discharge Monitoring Form shall be based upon measurements and sampling carried out during the most recently completed reporting period.

h) Blank Discharge Monitoring Report Forms are available at the above addresses.

NYSDEC012941

ALSY MFG. INC.
NEW YORK SHOWROOM
15 EAST 26th STREET
NEW YORK, N.Y. 10010
(212) 725-1517

March 19, 1984

10-82-1088 D

Mr. David DeRidder
Alternate Regional Permit Administrator
New York State Department of Environmental
Conservation
Regulatory Affairs Unit
Bldg. 40, SUNY - Room 219

Dear Mr. DeRidder:

Re: Part 360 Solid Waste Management
Facility Information Sheet
Alsy Manufacturing Company
Hicksville, New York

In response to your letter dated February 23, 1984, enclosed please find the completed "Part 360 Solid Waste Management Facility Information Sheet" for our manufacturing facility at Hicksville, New York.

In this regard, we would like to point out that Alsy Manufacturing Company will not store more than 1000 kilograms of hazardous wastes in each calendar month, and will remove hazardous wastes within 90 days from the date accumulation starts. Therefore, in accordance with Part 360.1(f) (2) (iii), Alsy Manufacturing will qualify for exemption from filing for a New York State Part 360 permit.

If you should have any questions or comments regarding this matter, please call or write this office.

Very truly yours,

Jack Ehrenfeld Gen'l. Mgr.

Jack Ehrenfeld

cc: Larry Sama (NCDH)
Raman Iyer (H2M)

NYSDEC012943

270 DUFFY AVENUE, HICKSVILLE, N.Y. 11801 (516) 822-5252 FACTORY INFORMATION: (800) 645-4172

PART 360
SOLID WASTE MANAGEMENT
INFORMATION SHEET

A. Company Name & Address: Alsy Manufacturing Company
270 Duffy Avenue
Hicksville, New York 11801

B. Briefly Describe How Wastes Are Generated: The wastewater treatment sludge, consisting of metal hydroxides, is generated from treating wastewaters containing cyanide, copper and zinc. The paint thinners and strippers are generated from cleaning the painting equipment, and 1,1,1-trichloroethane is generated from the vapor degreaser.

C. Specific Wastes Generated & Stored On-Site:

Waste	Liquid/Non-Liquid	Hazardous/Non-Hazardous	EPA Hazardous Waste Number
1) Wastewater Treatment Sludge	Non-Liquid	Hazardous (T)	F006
2) Paint Thinner	Liquid	Hazardous (I)	D001
3) Paint Stripper (Acidic)	Liquid	Hazardous (C, T)	D002
4) Paint Stripper (Alkaline)	Liquid	Hazardous (C, T)	D002
5) 1,1,1-trichloroethane	Liquid	Hazardous (T)	F002

D. Quantity of Each Waste Generated & Stored:

Waste	Generated/Month	Storage Period
1) Wastewater Treatment Sludge	110 Gallons	Less than 90 days
2) Paint Thinner	140 Gallons	Less than 90 days
3) Paint Stripper (Acidic)	28 Gallons	Less than 90 days
4) Paint Stripper (Alkaline)	28 Gallons	Less than 90 days
5) 1,1,1-trichloroethane	55 Gallons/4 Months	Less than 90 days

E. Method of Waste Disposal (Please indicate whether wastes are to be beneficially used, re-used, recycled, etc.):

The wastes are removed by a licensed industrial waste scavenger for off-site disposal.

Carl Hgl. 3-19-84

SIGNATURE OF RESPONSIBLE COMPANY OFFICER OR AUTHORIZED REPRESENTATIVE — DATE

NYSDEC012944

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

FRANCIS T. PURCELL
County Executive

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

June 2, 1983

Mr. Jack Ehrenfeld
Alsy Mfg. Co.
270 Duffy Avenue
Hicksville, N.Y. 11801

Dear Mr. Ehrenfeld:

The Discharge Monitoring Reports recently submitted to this office have been reviewed.

These reports show that the discharge has exceeded maximum and average values several times for pH, copper and zinc. In addition, reports submitted in 1982 also show several constituents above discharge limits. This is a violation of Article 17, Section 17-0501 of the Environmental Conservation Law.

Action to correct this situation must be taken as quickly as possible. Please contact this office by June 17, 1983 to describe the action you have taken to bring the discharge into compliance.

Very truly yours,

Howard Schaefer
Bureau of Land Resources Management

HS:ceg
cc: Daniel Larkin, NYSDEC,
Stony Brook

RECEIVED
JUN 1983
N. Y. S. D. E. C.
REGULATORY AFFAIRS, REGION 1

NYSDEC012951

ENVIRONMENTAL MANAGEMENT, LTD.
35 Orangeburg Road, Orangeburg, New York 10962 (914) 359-4434

Diana Rivet, Esq.
Donald J. Wanamaker

SP FILE

July 14, 1986

DEC REGION I

New York State
Department of Environmental Conservation
Regional Engineer
Region I Headquarters
Building 40, SUNY
Stony Brook, New York 11790

RE: Alsy Manufacturing Company (NY0102539)
270 Duffy Avenue
Hicksville, New York 11801

Dear Sir:

Enclosed herein is a copy of Alsy Manufacturing Company's (Alsy's) SPDES - DISCHARGE MONITORING REPORT (01-01-86 thru 06-30-86) which indicates that Alsy is no longer discharging wastewater under a SPDES permit. Alsy connected all wastewater discharges to the Nassau County Department of Public Works Sewage Treatment System in 1985.

As confirmed today (via telecom) with Ms. Sharon Smith, NYS DEC, (Albany headquarters), your letter of June 23, 1986 regarding this SPDES deletion is on file.

In order to avoid receiving a notice of not completing the Discharge Monitoring Report it has been submitted along with this cover letter and a copy of your letter of December 23, 1985 confirming that the facility's discharge ceased in 1985.

RE: Alsy Manufacturing Company (NY0102539)
270 Duffy Avenue
Hicksville, New York 11801

July 14, 1986

If you have any questions what-so=ever regarding the enclosed information please call me at the above telephone number.

Sincerely yours,

Donald J. Wanamaker

DJW/lw
enclosures

CC: NYS DEC
Waste Source Monitoring Section
Albany, New York 12233

Robert Gentille
Alsy Manufacturing Company

Burt Robbins
Alsy Manufacturing Company

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Depew Manufacturing Corporation Site No. 130038
Hicksville Nassau County

DATE: February 1993

Report

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., *Director*

By:

Lawler, Matusky & Skelly Engineers

NYSDEC013066

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE II INVESTIGATIONS

Depew Manufacturing Corporation
Town of Hicksville, Nassau County
NYSDEC I.D. No. 130038

Report

Prepared for:

DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road
Albany, New York 12233-7010

STATE OF NEW YORK
THOMAS E. PEASE
Lic. No. 057131-1
LICENSED PROFESSIONAL ENGINEER

LMSE-93/0131&576/047

STATE OF NEW YORK
EDWARD A. MAIKISH
No. 055116
LICENSED PROFESSIONAL ENGINEER

Prepared by:

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

NYSDEC013067

February 1993

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NYSDEC013071

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1	Site Survey Map, 9 June 1992	In pocket at back of report

NYSDEC013072

CHAPTER 1

EXECUTIVE SUMMARY

The Depew Manufacturing Corporation site is located at 359 Duffys Avenue in the unincorporated area of Hicksville, Town of Oyster Bay, Nassau County, New York (Figure 1-1). The site is the property of Hollywood Construction, Ltd., owned by George Prinz of Huntington, New York, and his former business partner, Joan Dvoskin, of Melville, New York. Mr. Prinz purchased the property from Mason Tucker, former president and owner of Depew. The site is flat, with one large building facing Duffys Avenue, the northern boundary. Charlotte Avenue Extension is the western boundary. Commercial properties border the site on the east, northeast, and south. Photos taken during the site reconnaissance are oriented to Figure 1-2.

Depew once manufactured and ground fiberglass tubes and rods, including fishing poles. Exactly when operations began is unknown, but records show the facility operated from at least 1973 to 1985. The Nassau County Department of Health (NCDOH) first identified improper handling of wastes in 1977 and requested that Depew obtain a State Pollutant Discharge Elimination System (SPDES) permit. Depew process wastewater exited the building via trenches or ditches on the eastern side and at the rear of the building, where it settled into a pit. The facility was cited for improper storage of drums and noncompliance with best management practices. Mr. Tucker filed for a U.S. Environmental Protection Agency (EPA) identification number for disposal of acetone and completed an Industrial Chemical Survey that provided information about raw material usage. Materials used on-site included acetone, styrene, 2-butanone (also known as methyl ethyl ketone), diallyl-phthalate, several polyester resins, and other organic chemicals.

NCDOH and the New York State Department of Environmental Conservation (NYSDEC) sampled the site on several occasions. Volatile organic compounds (VOCs), including ethylbenzene, styrene, toluene, and benzene, phthalates, and metals, were identified in high concentrations in the waste effluent and in the settling pit samples. Both NCDOH and

Lat 40°45'34"N
Long 73°32'51"W

Map source: USGS Freeport 7.5 Minute Quadrangle 1969 and Hicksville 7.5 Minute Quadrangle, 1967 both photorevised 1979

FIGURE 1-1

SITE LOCATION

DEPEW MANUFACTURING CORPORATION

NYSDEC I.D. No. 130038

1992 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

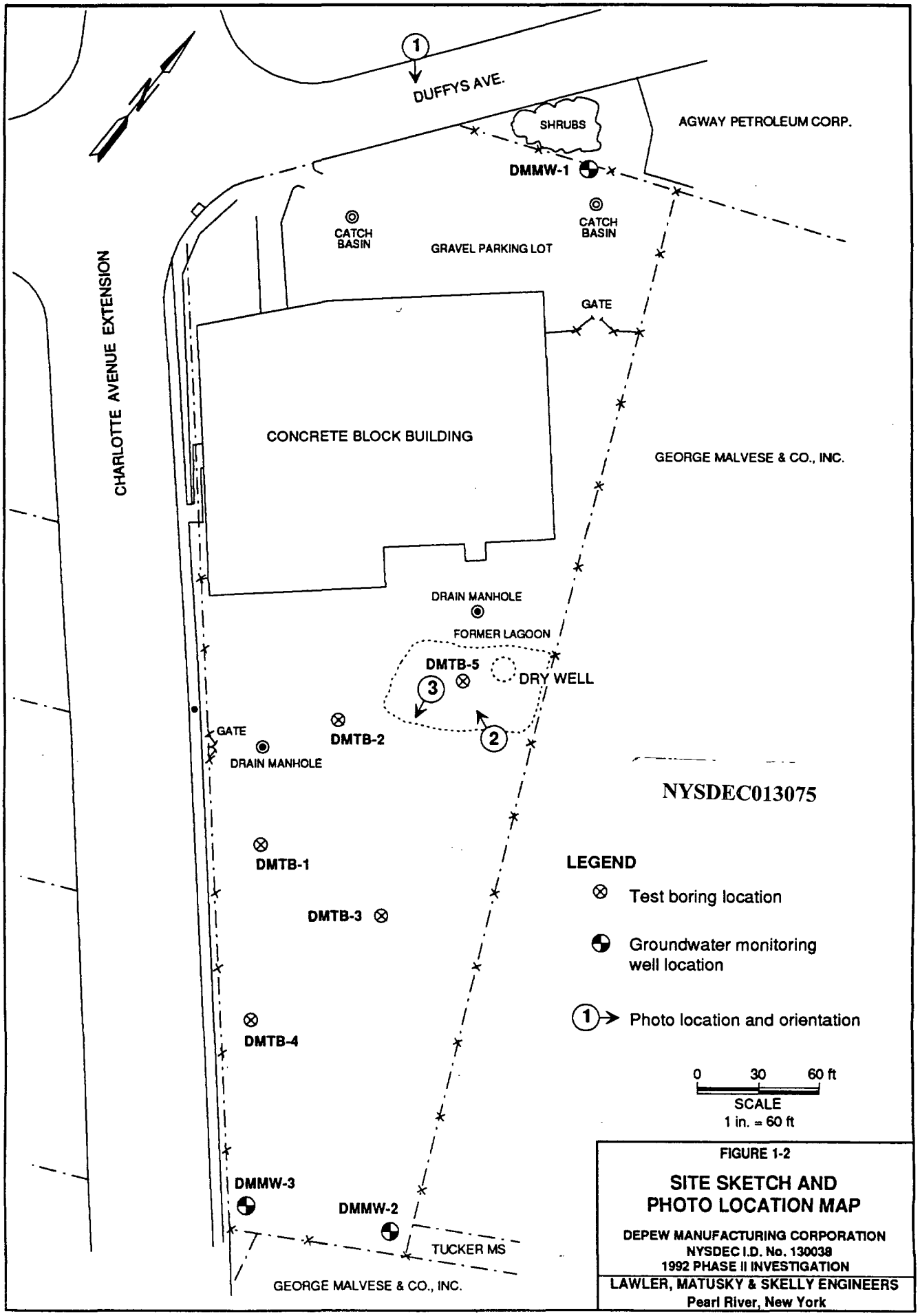


FIGURE 1-2

SITE SKETCH AND PHOTO LOCATION MAP

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

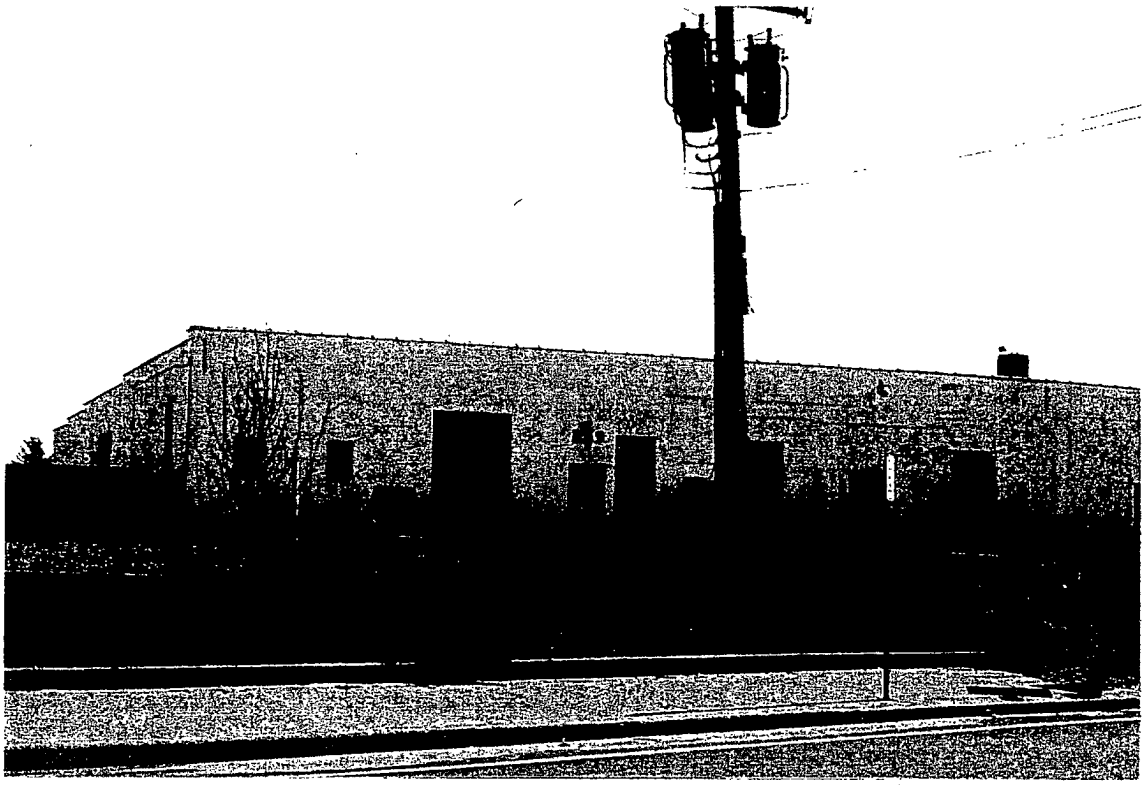


PHOTO 1. Former location of Depew Manufacturing. Looking southeast at front of building.

PHOTO 2. Looking west at back of building. Lagoon is in center with dry well to the right.

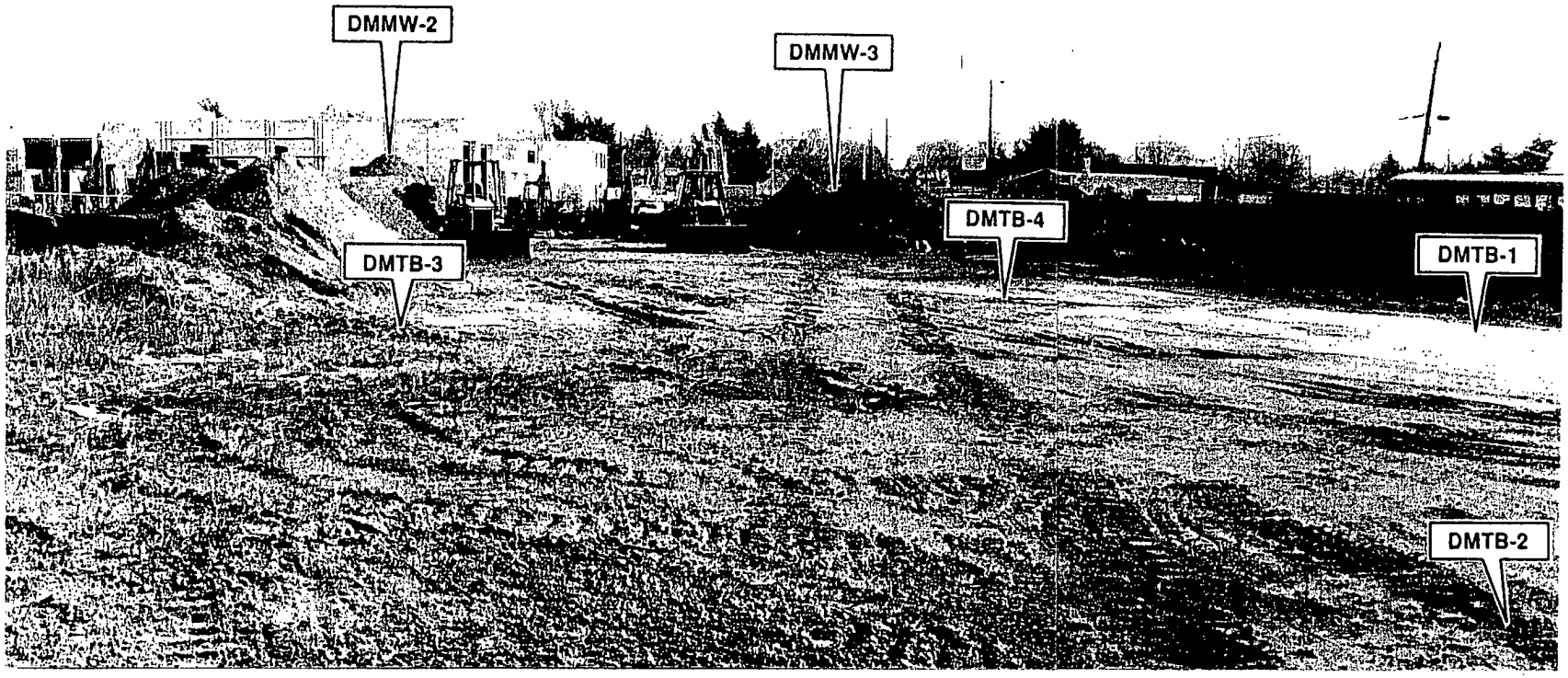


PHOTO 3. Looking south from the lagoon area. Soil borings located in this area as shown. Downgradient monitoring wells DMMW-2 and DMMW-3 are located behind dirt piles at southern property line.

NYSDEC013077

NYSDEC spent several years unsuccessfully trying to bring Depew into compliance, and the facility closed in March 1985.

In 1986 and 1987 the current owner, George Prinz, removed wastes from the settling pit and had them landfilled in Model City, New York. In July 1988 Roux Associates, Inc., completed a Phase I investigation at the site and concluded that a Phase II investigation should be conducted.

In March 1992 Lawler, Matusky & Skelly Engineers (LMS) began a Phase II investigation. Three monitoring wells and five soil borings were installed. Groundwater and soil samples were collected and analyzed.

Groundwater at the site is contaminated with 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, and metals, including chromium, iron, manganese, and sodium. Some standards were exceeded at both the upgradient and the two downgradient locations, and regional groundwater is known to be contaminated with chlorinated solvents. There is no conclusive evidence that Depew activities have impacted groundwater quality at the site.

Low-level, widespread contamination of soils by organic compounds at the rear of the building is a result of site wastes, heavy equipment operations, and/or the nature of deposited fill material. None of the site soils tested demonstrated hazardous waste characteristics. The levels of contaminants do not pose a threat to groundwater. It is recommended that the site be delisted. It is also recommended that areas with PCB concentrations greater than 1 mg/kg and ethylbenzene concentrations from 86 to 400 mg/kg be remediated.

NYSDEC013078

CHAPTER 2

OBJECTIVES

Lawler, Matusky & Skelly Engineers (LMS), under contract to the New York State Department of Environmental Conservation (NYSDEC), conducted a Phase II investigation of the Depew Manufacturing Corporation site, located in the unincorporated area of Hicksville in the Town of Oyster Bay, Nassau County, New York. The primary purpose of the investigation was to address specific concerns regarding the company's past waste handling and disposal practices and to determine whether waste that was deposited and subsequently removed from the site presents a significant threat to human health or the environment. Specific objectives of the Phase II investigation were to:

- Provide a geological and hydrogeological site assessment, including determination of depth to groundwater and aquifers of concern.
- Identify and evaluate the presence, concentration, and nature of contamination and determine, within the scope of work, its release to the environment.
- Determine the significance of any contaminant release and the degree to which it may threaten surrounding areas.
- Prepare a report documenting findings and provide recommendations for possible future work.

The Phase II investigation is discussed in detail in Chapters 3 and 4. The report includes the following appendices:

A - Boring Logs and Well Diagrams

B - Data Usability Summary

C - Pertinent Files or Records

NYSDEC013079

CHAPTER 3

DESCRIPTION OF PHASE II INVESTIGATION

3.1 LITERATURE REVIEW

LMS conducted a file search for pertinent reports and data on the Depew Manufacturing Corporation site. In addition to relevant files maintained by NYSDEC and the New York State Department of Health (NYSDOH), LMS' in-house files and publications were examined for site-related information. This review process updated the Phase I report and reevaluated it for completeness and accuracy.

The following Federal, state, county, and municipal offices and private citizens were contacted for information and data on past site activities and general information:

	Information Provided
Freedom of Information Officer External Programs Division U.S. Environmental Protection Agency 26 Federal Plaza, Room 907 New York, New York 10278 (212) 264-2657	Written communication
Mr. Ernest A. Regna, Chief Pesticides and Toxic Substances Branch U.S. Environmental Protection Agency Region II Edison, New Jersey 08837 (908) 906-6903	Written communication
Mr. Lloyd Wagner U.S. Department of the Interior U.S. Geological Survey, Water Resources Division P.O. Box 1669 Albany, New York 12201	Written communication

NYSDEC013080

	Information Provided
Ms. Laura Livingston, Chief Permits Administration Branch U.S. Environmental Protection Agency Region II Jacob Javits Federal Building New York, New York 10278 (212) 264-4333	Written communication Written documents
Mr. Daniel Eaton New York State Department of Environmental Conservation Division of Hazardous Waste Remediation Bureau of Hazardous Site Control 50 Wolf Road Albany, New York 12233-7010 (518) 457-0639	File reviewed Telephone communication
New York State Department of Environmental Conservation Region 1 Bldg. 40, SUNY Stony Brook, New York 11790 (516) 751-7900	File reviewed
Mr. Geoffrey Lacetti New York State Department of Health University Plaza Albany, New York 12203	File reviewed
Ms. Mildred Patrick Nassau County Department of Health 240 Old County Road Mineola, New York 11501-4250 (516) 535-3996	File reviewed
Mr. Joseph Gradel Nassau County Clerk's Office Rm. 111, 240 Old Country Road Mineola, New York 11501 (516) 535-2270	Written documents
Mr. George Prinz (current property owner) 31 Greenlawn Road Huntington, New York 11743 (516) 528-9804; (518) 433-2555	Telephone communication **NYSDEC013081**

	Information Provided
Ms. Joan Dvoskin (current property owner) 28 Villa Circle Melville, New York 11747 (516) 756-0039	Telephone communication
Mr. Mayson Tucker, President, Depew Manufacturing Corporation (previous property owner) 44 Burnham Place Manhasset, New York 11030 (516) 627-2667	Telephone communication
Aerial Cartographers of America 1722 West Oak Ridge Road Orlando, Florida 32809	Photograph

3.2 SITE RECONNAISSANCE

Before the site visit, the current owners of the property were informed of LMS' impending visit so that access to the site could be obtained. LMS briefly described the elements of the work plan and dates on which the tasks would be performed. The site reconnaissance was performed on 4 March 1992. During the reconnaissance LMS personnel:

- Met with current tenants
- Located a source of water and electricity, bathroom facilities, and the nearest phone and hospital for emergencies
- Determined access for drilling equipment and located parking areas for vehicles
- Noted overhead power lines, visible gas and water lines, and site security
- Photographed the site
- Calibrated air monitoring equipment and monitored the perimeter, proposed monitoring wells, and sampling locations (Ref. 1)
- Determined monitoring well, soil gas, boring, and sampling locations and an area for decontamination; located physical features described on the work plan sketch, such as the lagoon (settling pit) and the pad

NYSDEC013082

After the reconnaissance a utility markout was conducted prior to initiation of field activities.

The information gained from the site reconnaissance provided additional data required for preparation of a health and safety plan (HASP) to be followed by LMS personnel during the field work (Ref. 2). Based on this information and the literature review, it was decided that all field work would be performed at Level D with an air-purifying respirator, with a particulate filter available.

Monitoring well and sampling locations are shown on Figure 3-1 and Plate 1 (at the back of this report).

3.3 GEOPHYSICS SURVEY

A magnetometry survey (Ref. 3) was conducted at each well location, as recommended by NYSDEC. The purpose was to screen the subsurface for possible metallic material that could impede the drilling operation. This survey was the only geophysics performed at the Depew site.

Ambient magnetic field strength was first measured at two locations in the middle of the site. A regularly spaced grid (15-ft spacings) was established over each proposed well location. Readings were taken at each grid node, with the sensor's magnetic field paralleling magnetic north. The locations of the grid nodes are presented in Figure 3-2. There was no indication of buried metals at any of the proposed well locations.

3.4 SOIL GAS SURVEY

A soil gas survey (Ref. 4) was conducted at the site to determine where best to locate three new monitoring wells and other sampling locations. Using soil gas sampling equipment and an on-site gas chromatogram (GC), volatile organic compounds (VOCs) were measured at 21 soil gas points installed over the site (Figure 3-3).

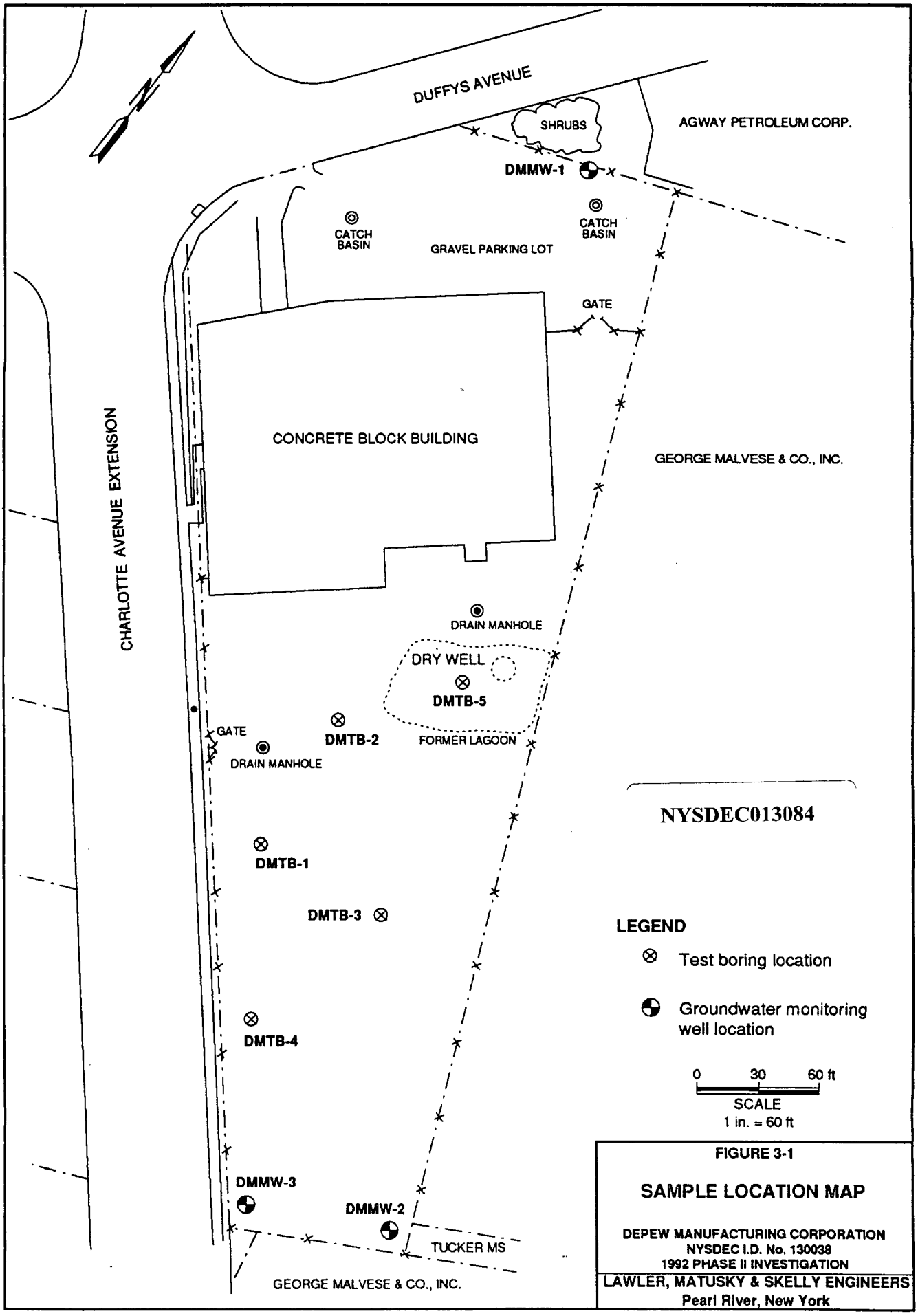
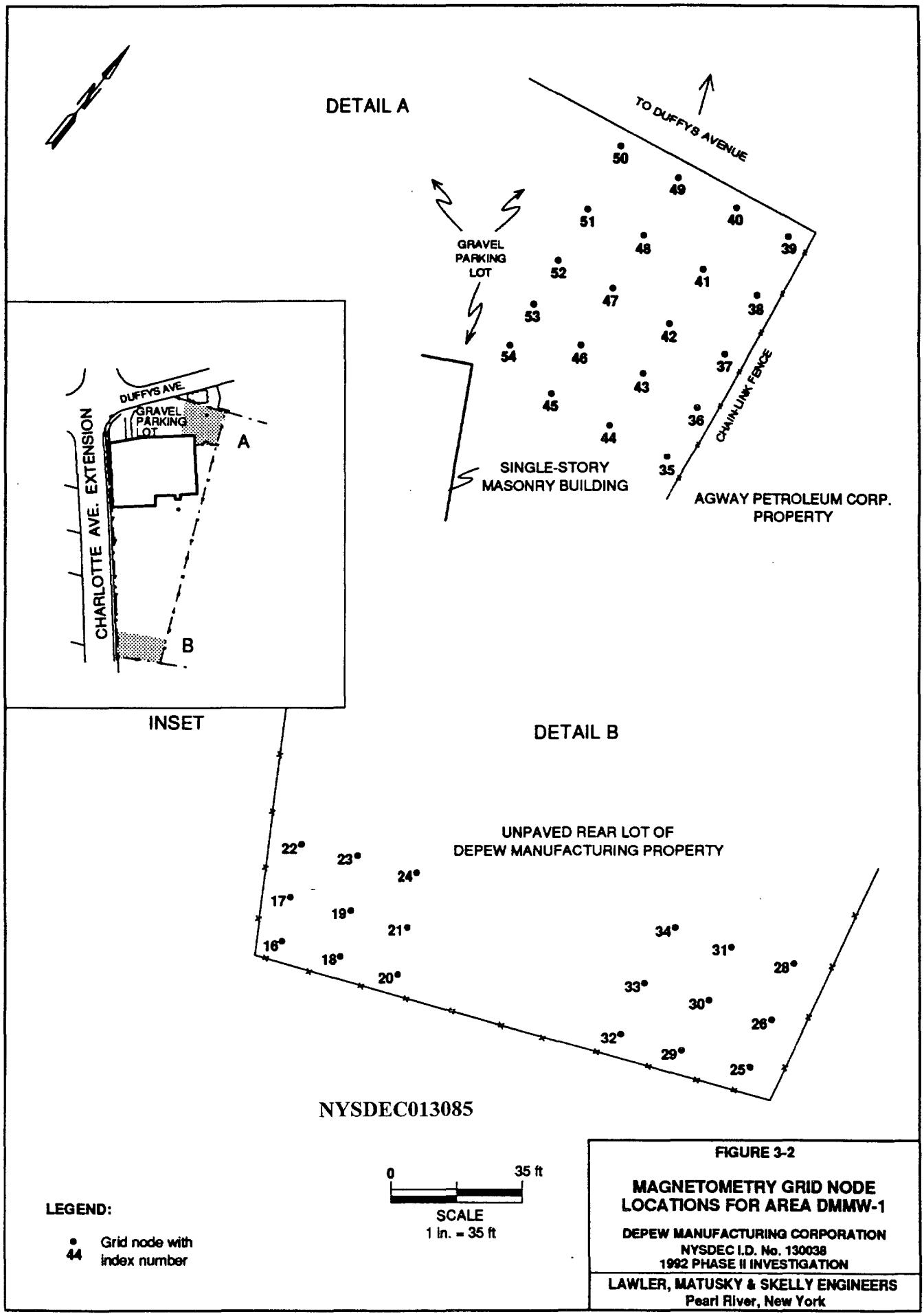


FIGURE 3-1

SAMPLE LOCATION MAP

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York



NYSDEC013085

FIGURE 3-2

MAGNETOMETRY GRID NODE LOCATIONS FOR AREA DMMW-1

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

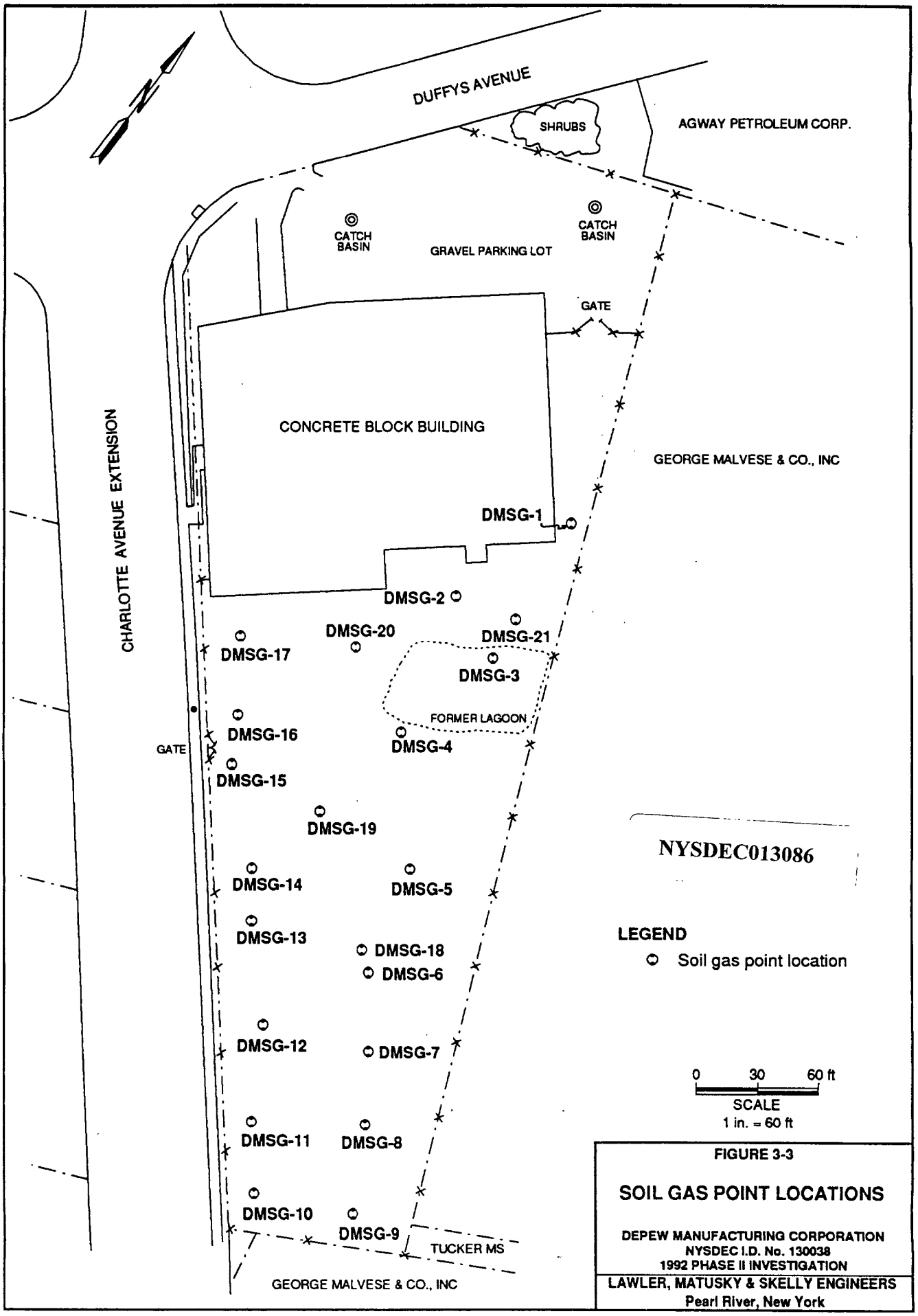


FIGURE 3-3

SOIL GAS POINT LOCATIONS

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

3.4.1 Installation of Sampling Points

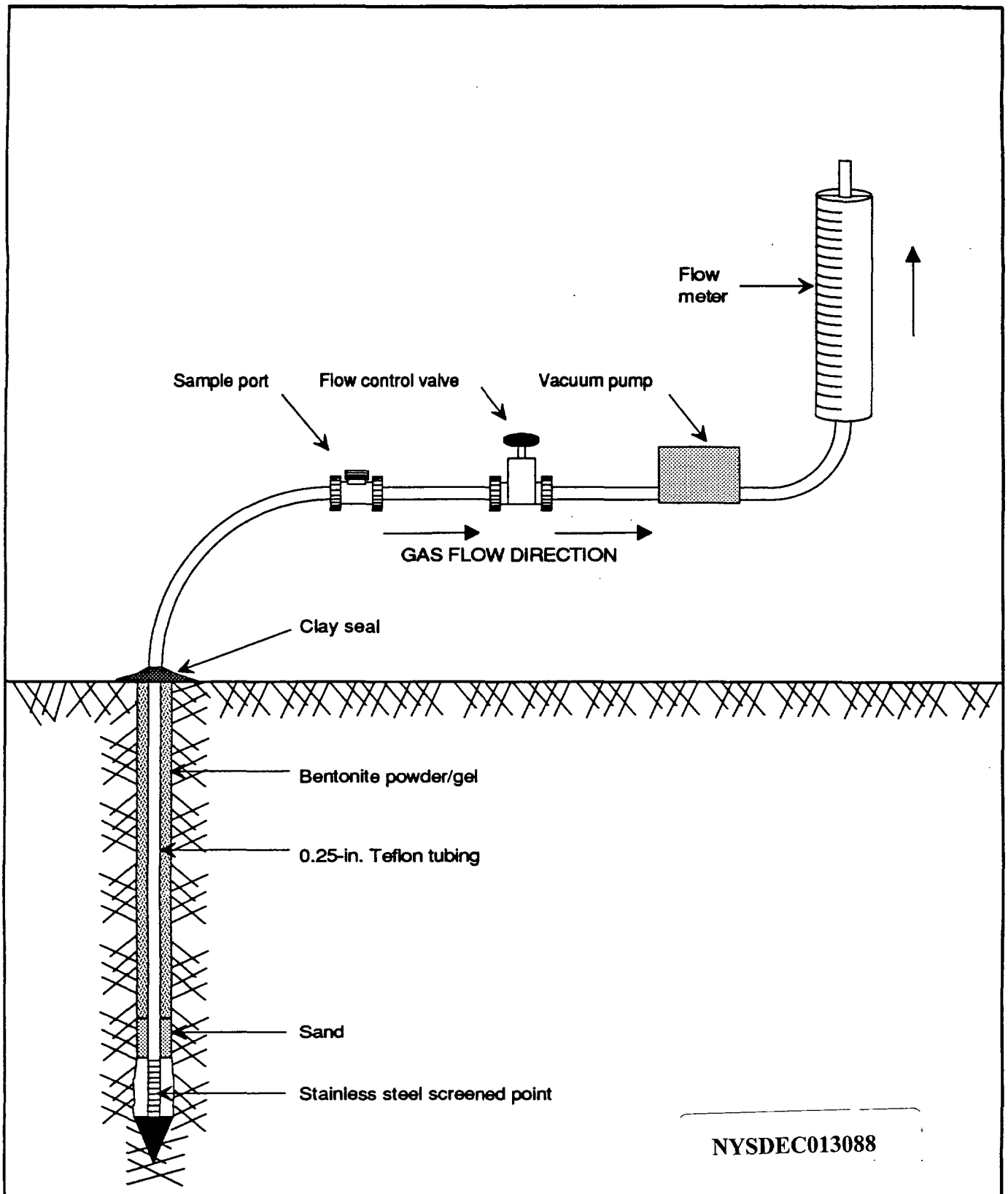
The Phase II work plan estimated that approximately 20 soil gas sampling points would be necessary. LMS personnel added one more point, DMSG-21, upon discovery of an underground storage tank; the sampling point was located near the tank.

The soil gas survey was initiated by LMS personnel on 12 March 1992. A pilot hole was advanced with a light hammer-probe between 3.5 and 3.7 ft at each point location to ensure that boulders or cobbles would not prevent installation of the soil gas point. Most of the site surface is composed of fairly compact gravelly sand. At each location a stainless steel soil gas point with attached Teflon tubing was driven to the desired depth using hollow drive rods and a slide hammer. The drive rods were then backed out of the hole, leaving the point at the bottom and an open annulus where the Teflon tubing exited the hole. A clean No. 0 grade silica sand was added to the annulus to a depth of at least 6 in. above the point to allow for a gas capture zone around the point's intake. The remainder of the annulus to ground surface was then sealed by adding alternating layers of bentonite powder and small volumes of water (Figure 3-4). The water hydrates the bentonite, which forms an effective seal against ambient air migrating into the point during sampling.

A soft clay seal was set around the Teflon tubing and a clay plug was placed on the end of the tube to prevent any foreign material from entering the tube. Each point was labeled and, where appropriate, flagged for easy identification in the field and possible sampling at a later date. After each point was installed, the equipment used during the installation was scrubbed down with a potable water-Alconox mix followed by a deionized water rinse.

3.4.2 Sample Collection

Soil gas samples were collected in the field using a battery-powered vacuum pump (manufactured by KV Associates) and a sample port, flow control valve, and flowmeter (Figure 3-4). The soil gas tubing from the hole was connected to the sampling port tee and the vacuum pump adjusted to 2 l/min; the pumping time was adjusted at each point so that the same volume of gas was purged. The soil gas at each point was monitored with an HNU



NYSDEC013088

FIGURE 3-4

SOIL GAS POINT CONSTRUCTION AND SAMPLE FLOW DIAGRAM

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

Source: Soil gas analysis report from Tetra-K Testing.

PI-101, a Foxboro organic vapor analyzer (OVA), and an MSA Model 361 combustible gas indicator (CGI) to screen for levels of contamination and assist in determining dilution ratios.

One to 5 ml of soil gas was withdrawn through the septum in the sampling port with a gas-tight syringe. The samples were then transported to a mobile laboratory for analysis.

3.4.3 Sample Analyses

The mobile laboratory services were provided by Tetra•K Testing of Westfield, Massachusetts. The soil gas samples were injected via packed-column injectors into an HNU Model 421 GC fitted with a temperature-programmable oven, photoionization detector (PID), flame ionization detector (FID), and electron capture detector (ECD) linked in series. This configuration allows simultaneous output from all three detectors with only one sample injection. The signals from the detector were plotted by three separate Hewlett-Packard Model 3396A integrators.

The GC column is a 0.125-in. by 6-ft stainless steel column packed with 1% SP-1000 on 60/80 Carbopack B (Supelco, Inc.). The oven is temperature-programmed from 80° to 200°C with a ramp of 15°C/min, an initial hold time of 3 min, and a final hold time of 25 min. The integrators were calibrated through injection of a standard and generation of response factors (amount/area) for each individual compound. Retention times and retention time windows were established for all compounds and then stored in the memory of the integrator. An external standard method of calibration was used to quantify sample results.

3.5 GROUNDWATER INVESTIGATION

NYSDEC013089

3.5.1 Test Borings to the Water Table

Three test borings to the water table were installed within the site boundaries during the investigation: one upgradient and the other two downgradient (Figure 3-1). The borings were labeled DMMW-1, -2, and -3 (DMMW-1 is the upgradient well.) The work took place during 13-16 April 1992. The drilling operation, including associated decontamination

procedures, inspection and logging of split-spoon samples, and air monitoring operations, was supervised by an LMS geologist, an LMS technician, or both. Drilling services were provided by Water Resources, Inc., of Bayside, New York. At each 5-ft interval, split spoons were advanced ahead of the hollow-stem augers. Air monitoring was performed with an MSA CGI and a Foxboro Model 128 OVA, both supplied by NYSDEC. An HNU PI-101 PID was on hand during the operation but was not used as the primary instrument because of calibration problems apparently caused by electronic malfunctions. An ionizing radiation counter, the dosimeter by Dosimeter Corporation, was also used during all drilling operations. The meters were calibrated at the start of each day with approved standard calibration gases. Monitoring was conducted over the borehole and over each split spoon as it was opened. Readings were compared with background measurements and recorded on the project data sheets.

At borings DMMW-1 and -3 the substrate encountered from the ground surface to the water table consisted of light brown to orange-brown fine to medium sands and gravel. The gravel was typically 25 to 35% by volume of the total sample but fluctuated between 10 and 50% for some split spoons. Gravel was predominantly fine to medium in size, as determined by the Wentworth classification scheme. Coarse gravel particles were encountered on occasion, as evidenced by shattered pebbles in the spoon. Gravel particles were subround to round in shape, and quartz was the dominant mineral.

The material at DMMW-2 was also sand and gravel, although generally finer grained than that found at the other two boring locations. Sand and gravel, fine to medium in size in the upper portions of the borehole, decreased in size with depth to a fine sand with some silt through the lowermost section of the borehole.

The water table was encountered at about 52 ft below the surface, consistent with the projections made by NYSDEC in the site work plan. Each boring was then extended an additional 15 ft into the water table with split spoons, which were retrieved at 5-ft intervals, resulting in a final boring depth of about 67 ft.

NYSDEC013090

3.5.2 Monitoring Well Construction

There were no monitoring wells in place at the Depew Manufacturing site prior to the Phase II investigation. Three wells were installed from 13 to 17 April 1992, one in an upgradient position, i.e., the north end of the site (DMMW-1), and two in downgradient positions, i.e., the south end of the site (DMMW-2 and -3). Figure 3-1 presents the locations. The wells were installed in the test borings to the water table; groundwater was encountered at approximately 52 ft. Each well was constructed with 20 ft of screen: 15 ft penetrated the water table; 5 ft extended above it. Boring logs and well diagrams are presented in Appendix A (Ref. 5).

The wells were constructed of 4-in. inside diameter (I.D.) PVC casing. The screen slot size was 0.010 in. A threaded end cap was attached to the bottom end of the screen section, and the casing joints were of the flush-threaded type. A sand pack, consisting of No. 1 morie well gravel (median grain size 1.0 mm) was installed around the screen. The sand pack extended 1 ft below and 2 to 4 ft above the screened section. The sand was added through the 6.25-in. I.D. hollow-stem augers, which were used to isolate the formation from the well during installation. The augers were pulled as the sand was added, resulting in a sand pack thickness of approximately 4 in. in all directions around the screen. A thick bentonite slurry was installed above the sand pack via a tremie system; this was followed by a 1-ft bentonite pellet seal hydrated with potable water. A standard bentonite-cement grout was then pumped via tremie, filling the annulus around the well casing from the top of the bentonite seal to the surface. DMMW-1 was completed with a locking pressure fitting and a flush-mounted curb-box. DMMW-2 and -3 were completed with push-on well caps and locking guard-pipes.

3.5.3 Well Development

NYSDEC013091

The three monitoring wells were developed on 17 and 20 April 1992. DMMW-1 and -3 were developed 72 and 48 hrs, respectively, after construction completion. DMMW-2 was completed on 17 April and developed after 72 hrs (Ref. 6). A submersible centrifugal pump manufactured by Grundfos was placed close to the bottom of the screened section and moved (while pumping) up and down (4 to 5 ft) to produce surging. The pump was then allowed

to run at a stationary position near the bottom until turbidity in the effluent water was below 50 nephelometric turbidity units (NTU) (as measured with a DRT-15C turbidimeter) and specific conductivity, pH, and temperature readings had stabilized. The pumping water level was measured periodically during the activity. The pump was moved to the midpoint of the water column in the well, surged, and allowed to pump until similar conditions were achieved. It was then moved to within 2 ft of the top of the water column, surged, and allowed to run until turbidity again fell below 50 NTU and the other parameters stabilized. The above procedure was then repeated. When final turbidity was below 50 NTU, development was terminated.

In general, specific conductivity, pH, and temperature stabilized fairly quickly, usually within 5 min of pumping commencement. Turbidity values declined much more slowly, resulting in development times of 1 to 1.5 hrs for DMMW-1 and -2. DMMW-3 was developed for considerably longer, probably because the amount of fine-grained material through the screened section was greater than at the other two wells. The wells were pumped at a rate of about 15 gallons per minute (gpm). The pumping water level at DMMW-1 and -2 was approximately 1 ft lower than the static water level. Drawdown at DMMW-3 was about 5 ft.

3.5.4 **Hydraulic Conductivity**

In situ hydraulic conductivity tests (slug tests) were performed at the site on 8 June 1992 (Ref. 7). A submersible pressure transducer and an Esterline-Angus mini-servo strip-chart recorder were used to log the aquifer response to artificially induced head differences in the upper portion of the screened intervals at each monitoring well. The Bouwer and Rice method for calculating hydraulic conductivity in confined aquifers with partially penetrating wells was applied to the data (Ref. 8). The calculated hydraulic conductivities for the three wells at the site are presented below.

WELL	HYDRAULIC CONDUCTIVITY (cm/sec)
DMMW-1	2.83×10^{-2}
DMMW-2	2.68×10^{-2}
DMMW-3	4.54×10^{-3}

NYSDEC013092

These values are consistent with published values for this portion of Long Island (see Section 4.4), corresponding to the lower range of values cited for the area. This is likely a reflection of the predominance of fine and medium sand and auxiliary silt through the screened intervals of the wells. DMMW-3 had an even greater percentage of fines through the screened section, which is reflected in its longer recovery time during slug testing and its increased drawdown during development relative to the other two wells (Ref. 7).

3.6 OTHER PHASE II WORK TASKS

There were no other Phase II work tasks performed at the site.

3.7 SAMPLING

3.7.1 Soil Sampling

Six soil samples were collected during the Phase II investigation. Although the work plan originally called for one background soil sample and only four soil boring samples, an additional soil boring sample was collected because of positive readings recorded during the soil gas survey.

As specified in the work plan, one upgradient soil sample was collected from the 1-2 ft interval at DMMW-1. Five test borings were advanced at locations based on the preliminary results of the soil gas survey (see Section 3.4). These locations, which are different from those designated in the Phase II work plan, are shown in Figure 3-1. The borings were advanced to collect soil samples for laboratory analysis (see Section 4.7). Four borings were advanced to 10 ft; the soil was sampled continuously with a split spoon. The fifth boring was advanced to 32 ft. This last boring was located in the middle of the former lagoon pit, which had been excavated of waste material to 20 ft and backfilled (see Section 4.1). Borings were labeled with the prefix *DMTB* and a boring number, e.g., DMTB-1. A portion of the soil from each split spoon was placed in 40-ml VOC vials immediately after the split spoon was opened.

The remainder of the sample was put aside and labeled with the depth information. When the final boring depth was reached, meter readings and soil descriptions for each interval were reviewed and the interval appearing to represent the worst-case boring condition was determined. The soil from the interval was then placed in appropriate sample jars to be analyzed for the remainder of the target compound list (TCL) parameters. These jars and the VOC vials corresponding to the same depth interval were labeled and placed on ice for shipment to the contract laboratory.

DMTB-1 encountered fill material to the end of the boring. The fill consisted of a fine, lightweight particulate material that was slightly fibrous in nature, sometimes mixed with a fine sand or silt. It varied in color from gray to black. Some of the spoons contained wood particles, usually quite decomposed. The material had a noticeable solvent-type odor. The fibrous material was possibly wood that had disintegrated under the influence of some chemical, although this could not be proved. The consistency of the material was similar to that of commercial diatomaceous earth. A soil sample collected from the 2-4 ft interval produced the highest OVA reading for the boring (14 units) and contained material that was black in color.

DMTB-2 encountered 2 ft of fill above native sand and gravel, which was present to the end of the boring (10 ft). A 1-in.-thick layer of organic silt was present in the 8-10 ft interval. A soil sample collected from the 4-6 ft interval produced the highest OVA reading for the boring - 11 units over background.

NYSDEC013094

DMTB-3 encountered sand and gravel fill to a depth of 3 ft, with occasional particles of hardened resin similar to those on the site surface. Some white fibers, apparently fiberglass, were also present. Native sand and gravel were found from 3 to 10 ft. A soil sample was collected from the 2-4 ft interval. The OVA reading for this interval was 20 units, which was twice as high as the only other (above background) reading for the boring.

DMTB-4 encountered fill to a depth of 6 ft. The material consisted of brown to black fine sand and silt with accessory gravel and some wood and concrete particles. Native sand and gravel were found to a depth of 10 ft. A soil sample collected from the 6-8 ft interval

provided OVA readings of 3-4 units. The overlying fill produced readings of 4-5 units, but superior recovery from the 6-8 ft interval dictated sample collection from that interval.

DMTB-5 was advanced through the fill that now occupies the settling pit. Augers were initially advanced to 20 ft, the depth to the bottom of the dry catch basin reportedly installed in the excavated lagoon at the time it was backfilled. A split spoon driven through the 20-22 ft interval produced a very low recovery consisting of gray sand and rounded gravel. A spoon driven from 23 to 25 ft yielded similar results. The material in both spoons had a pronounced solvent-type odor. Based on texture and appearance, this was native material below the settling pit, apparently discolored by leaching of the waste from the lagoon. The augers were advanced to 30 ft and a spoon was driven. The spoon had excellent recovery of gray sand and gravel, which also had a strong odor and produced OVA readings of between 20 and 70 units over the length of the split spoon. A soil sample was collected from this (30-32 ft) interval.

All of the soil samples were packed on ice in coolers and sent to the contract laboratory, Aquatec Inc., of Colchester, Vermont, for analysis of TCL VOCs, toxicity characteristic leaching procedure (TCLP) VOCs, TCL base/neutral and acid extractables (BNAs), TCL polychlorinated biphenyls (PCBs) and pesticides, target analyte list (TAL) metals, cyanide, extraction procedure (EP) toxicity, ignitability, corrosivity, and reactivity.

3.7.2 Groundwater Sampling

NYSDEC013095

LMS sampled the groundwater from the newly installed monitoring wells on 27 and 28 April 1992. One well was located on the upgradient edge of the property, two in the downgradient corners. All sampling locations (Figure 3-1) and methods were discussed with and approved by NYSDEC personnel before sampling was initiated.

The three monitoring wells (DMMW-1, -2, and -3) were purged and sampled according to NYSDEC protocols, and the samples were submitted to Aquatec for analysis. All groundwater samples were analyzed for TCL organics, volatile and semivolatile fractions, PCBs/pesticides, and TAL metals and cyanide in accordance with EPA Statement of Work

(SOW) protocol. The samples were also analyzed for chemical oxygen demand (COD), total suspended solids (TSS), and total dissolved solids (TDS).

Prior to sampling, the initial static water levels and monitoring well bottom depth were measured with an electric water level meter to the nearest 0.01 ft. The volume of water to be purged was calculated based on the borehole diameter and the height of the water column. The wells were purged with a stainless steel submersible pump and dedicated polyethylene tubing.

When purging, the general procedure is to purge from the bottom of the well first to remove any accumulated fines. The pumping rate is adjusted to maintain a steady recovery and pumping volume. The pump is surged up and down and gradually raised through the water column to ensure that the entire water column and sand pack are purged thoroughly. A minimum of three borehole volumes is usually purged from each well. Turbidity, specific conductance, pH, and temperature are measured at intervals with calibrated instruments during the purge process. The objective of the procedure is to ensure representative groundwater samples with turbidity values of 50 NTU or less to meet NYSDEC requirements of water clarity for sample analysis. Between wells, the submersible pump and electrical wire are thoroughly rinsed with 5 gal of distilled water.

Following the purge process at the Depew site, the wells were allowed to recover to at least 95% of the initial water column volume before sampling commenced. Samples were collected from the midwater column with dedicated laboratory-cleaned Teflon bailers. Temperature, pH, specific conductance, and turbidity were measured at the start and end of sampling (see table below). Samples were placed in precleaned bottles/vials provided by Aquatec. All sample bottles were labeled with the site name, job number, sample I.D., date/time, and parameters for analysis. Preservatives were added in the field where applicable. Sample containers were packed in iced coolers to maintain a temperature of 4°C and delivered each collection day to Aquatec via overnight courier under chain-of-custody protocol (Ref. 9).

MONITORING WELL I.D.	VOLUME PURGED (gal)	TEMPERATURE (°C) START/END	pH (UNITS) START/END	SPECIFIC CONDUCTANCE (μmhos/cm @ 25°C)	TURBIDITY (NTU) START/METALS*/END
DMMW-1	430	15.9/15.6	6.6/6.3	692/724	300/70/140
DMMW-2	490	15.1/14.5	6.4/6.4	350/336	18/45/69
DMMW-3	500	15.1/14.8	6.0/6.1	223/237	>200/>200/>200

*Metals sample turbidity measured to verify sample is <100 NTU. If metals sample was >100 NTU, an extra sample was collected and filtered for dissolved metals analysis.

3.7.2.1 ***DMMW-1.*** This upgradient monitoring well was purged with a submersible pump and dedicated polyethylene tubing. The well exhibited a good yield. It was purged at 10 gpm and the water level was drawn down approximately 0.5 ft. A total of 430 gal of groundwater was purged and discharged to the ground away from the well. Additional samples were collected for matrix spike (MS) and matrix spike duplicate (MSD) analyses. A representative from Total Environmental Services, Inc. (Bohemia, New York), a consulting firm hired by the site co-owner, George Prinz, collected split samples for Mr. Prinz. Sample water turbidity increased from 30 to 140 NTU during sample acquisition. The TAL metals sampled exhibited a turbidity of 70 NTU.

3.7.2.2 ***DMMW-2.*** This downgradient well in the southeast corner of the property was purged at 10 gpm and the water level was drawn down 0.65 ft. A total of 490 gal of water was purged from the well and discharged to the ground away from the well. Turbidity of the sample water increased during sample collection from 18 to 69 NTU. In addition to the regular set of sample bottles filled for DMMW-2, a second, blind duplicate set, labeled DMMW-4, was filled and sent to Aquatec as a check of their precision. The sample bottles for each analytical parameter (e.g., VOCs, metals) from each set of bottles (DMMW-2 and -4) were filled simultaneously to ensure sample homogeneity. Total Environmental Services, Inc., did not collect any samples from this monitoring well.

NYSDEC013097

3.7.2.3 ***DMMW-3.*** This downgradient well in the southeast corner of the site was purged in the same manner as the other two monitoring wells. It was purged initially at 10 gpm, and the water level was drawn down 6.5 ft after 150 gal was removed. The purge rate was decreased to 5 gpm, which caused the water level to rise to within 1.65 ft of the initial water

level. The well was purged until the turbidity of the discharged water was below 35 NTU. As sample turbidity was over 200 NTU during sample acquisition, an extra sample was collected and filtered through a 0.45-micron filter for dissolved TAL metals analysis. A slight sulfur-type odor was detected from the sample water. Total Environmental Services, Inc., did not collect any samples from this well.

3.8 AIR MONITORING

Air monitoring was performed as part of the site reconnaissance and drilling, groundwater, and soil sampling surveys at the Depew site. Instruments consisted of an HNU PI-101 PID, a Foxboro OVA FID, and an MSA Model 361 (not used during groundwater sampling), all supplied by NYSDEC. A perimeter survey was conducted during the initial site reconnaissance (Ref. 1). Readings were also recorded at the well locations and above and within the several catch basins at the site.

Background (upwind) concentrations were measured upon calibration of the air monitoring equipment at the start of each workday. Continuous monitoring of background conditions was performed throughout each workday, and the current background value was compared with readings recorded during other site operations. The results are discussed in Section 4.6.1.

NYSDEC013098

CHAPTER 4

SITE ASSESSMENT

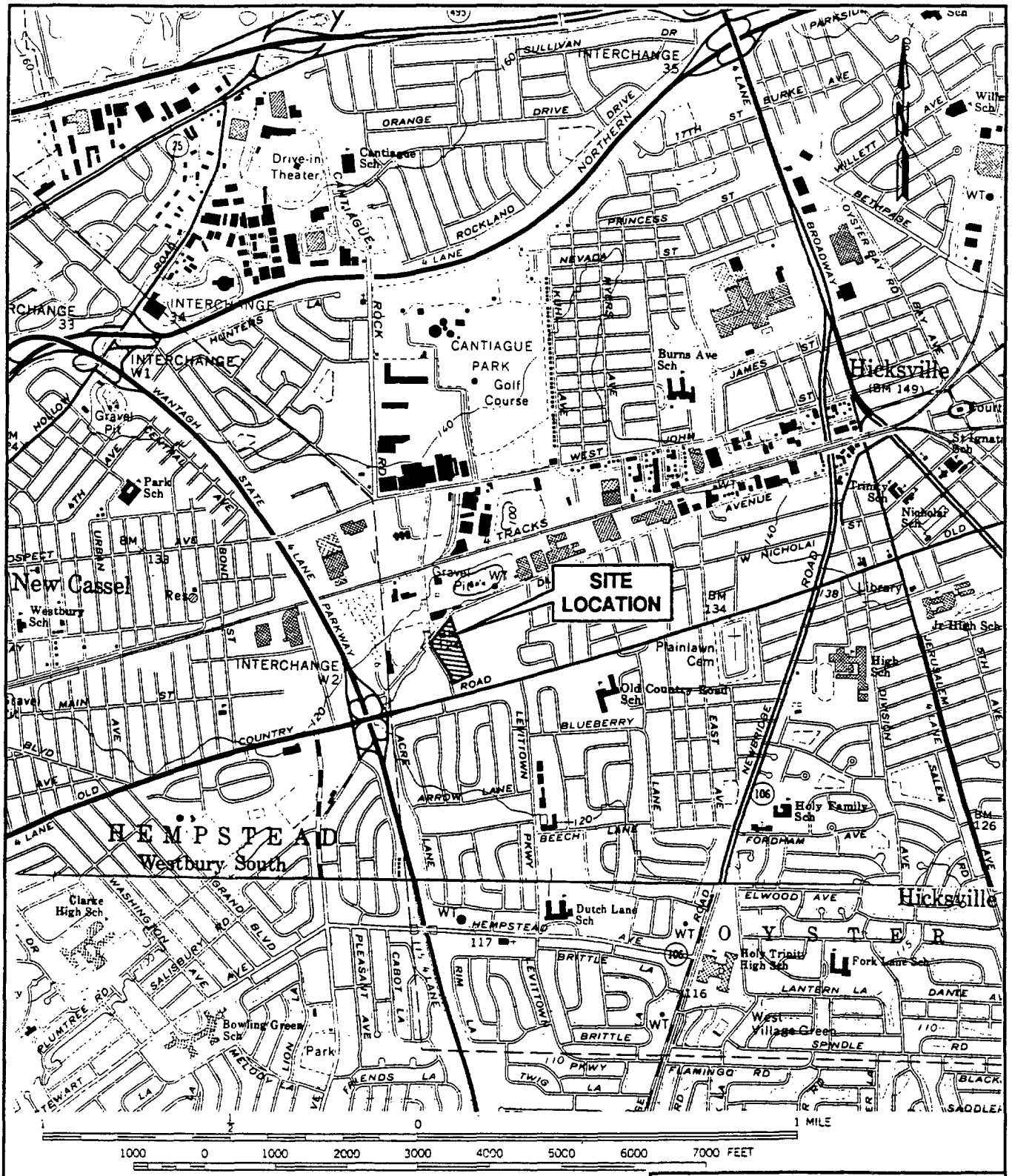
4.1 SITE HISTORY

The Depew Manufacturing Corporation site is located at 359 Duffys Avenue in the unincorporated area of Hicksville, Nassau County, New York (Figure 4-1). The one on-site building faces northwest onto Duffys Avenue. Charlotte Avenue Extension borders the site on the west. George Malvese & Co., Inc., a heavy equipment sales business, borders the site to the south and east; Agway Petroleum Corp. borders the site on its northeast corner. The approximately 2-acre site was once an active facility that manufactured and ground fiberglass rods and tubes, including fishing rods. During the plant's active life, wastes from plant operations were discharged and deposited on-site; some of the waste was drummed and stored on-site and some was removed by a registered industrial waste scavenger (Ref. 10). In December 1950 Mrs. Selma Tucker of Manhasset, New York, purchased the property from Mr. William Duffy. Mrs. Tucker's husband, Mayson Tucker, became sole owner of the property in 1958 (Ref. 11). Mr. Tucker was president and owner of Depew Manufacturing Corporation and the property until 1986. Manufacturing activities at this location may have begun as early as the 1950s, much earlier than the 1977 date cited in the Phase I investigation and NCDOH files (Refs. 12 and 13). Mr. Tucker moved Depew to Duffys Avenue from Wyandanch, New York, in the 1950s (Ref. 14).

A certificate to operate an air contamination source issued to the company documents installation of an air-cleaning cyclone in 1968, and describes the air contaminant as particulates from the sanding of fiberglass rods (Ref. 15). Mr. Tucker completed a Process, Exhaust or Ventilation System Permit application dated 11 December 1973. The permit was issued on 28 January 1974, with acetone named as the contaminant in a process described as impregnating fiberglass cloth with resin, then curing (Ref. 16).

NYSDEC013099

Files indicate that wastes from the manufacture and grinding of fiberglass rods and tubes, consisting of leftover raw materials, products, or by-products of materials used in the process,



Lat 40°45'34"N
Long 73°32'51"W

Map source: USGS Freeport 7.5 Minute Quadrangle 1969 and Hicksville 7.5 Minute Quadrangle, 1967 both photorevised 1979

FIGURE 4-1

SITE LOCATION

DEPEW MANUFACTURING CORPORATION

NYSDEC I.D. No. 130038

1992 NYSDEC PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

were generated at the site for at least 10 years. Process wastewater effluent reportedly left the building via a trench or ditches in the ground and exited the east side of the building (Figure 4-2). Waste effluent flowed to the rear of the building into a settling pit (Refs. 17 and 18). The settling pit is circular, about 35 to 40 ft in diameter, and unlined. Raw materials included solvents, polyester resins, and plasticizers (Refs. 19 and 20). These materials and the amounts used are listed in Table 4-1.

An industrial survey performed by NCDOH in 1977 indicated that Depew needed a SPDES permit (Ref. 13). An application was completed by Mr. Tucker in June 1979 (Ref. 27). Later that year NCDOH visited the site and reported large uncovered troughs of styrene and solvent chemicals as well as solvent and chemical vapor and particulate-laden air in the work space (Ref. 28). This began a series of inspections and analysis by NCDOH and noncompliance on the part of Depew (Refs. 13 and 29).

In July 1982 Mr. Tucker completed a Notification of Hazardous Waste Activity form and was issued an EPA identification number as a generator of hazardous waste (Ref. 30). The form identifies acetone (U002) as the hazardous waste handled at the facility (Ref. 31).

In 1984 Mr. Tucker completed an Industrial Chemical Survey that provided information about material usage for a still not granted SPDES permit (Ref. 19). The survey listed materials used at the facility and their average annual usage. As described in Table 4-1, the list included organic peroxide, 400 lb/yr; methyl ethyl ketone (MEK), 1500 lb/yr; acetone, 4950 gal/yr; styrene, 5550 gal/yr; Zelec, 700 lb/yr; P-16 (pecadox), 150 lb/yr; BYK A500, 800 lb/yr; and M-3300 polyester resin, 235,000 lb/yr.

A discharge permit effective until May 1985 (sewers had become available) was issued on 1 October 1984. The facility closed down in March 1985 (Ref. 13, p. 3).

In 1986 Depew was nominated as an inactive hazardous waste facility by NCDOH and was added to the Registry of Inactive Hazardous Waste Disposal Sites in New York State as a Class 2a site (Ref. 32).

NYSDEC013101

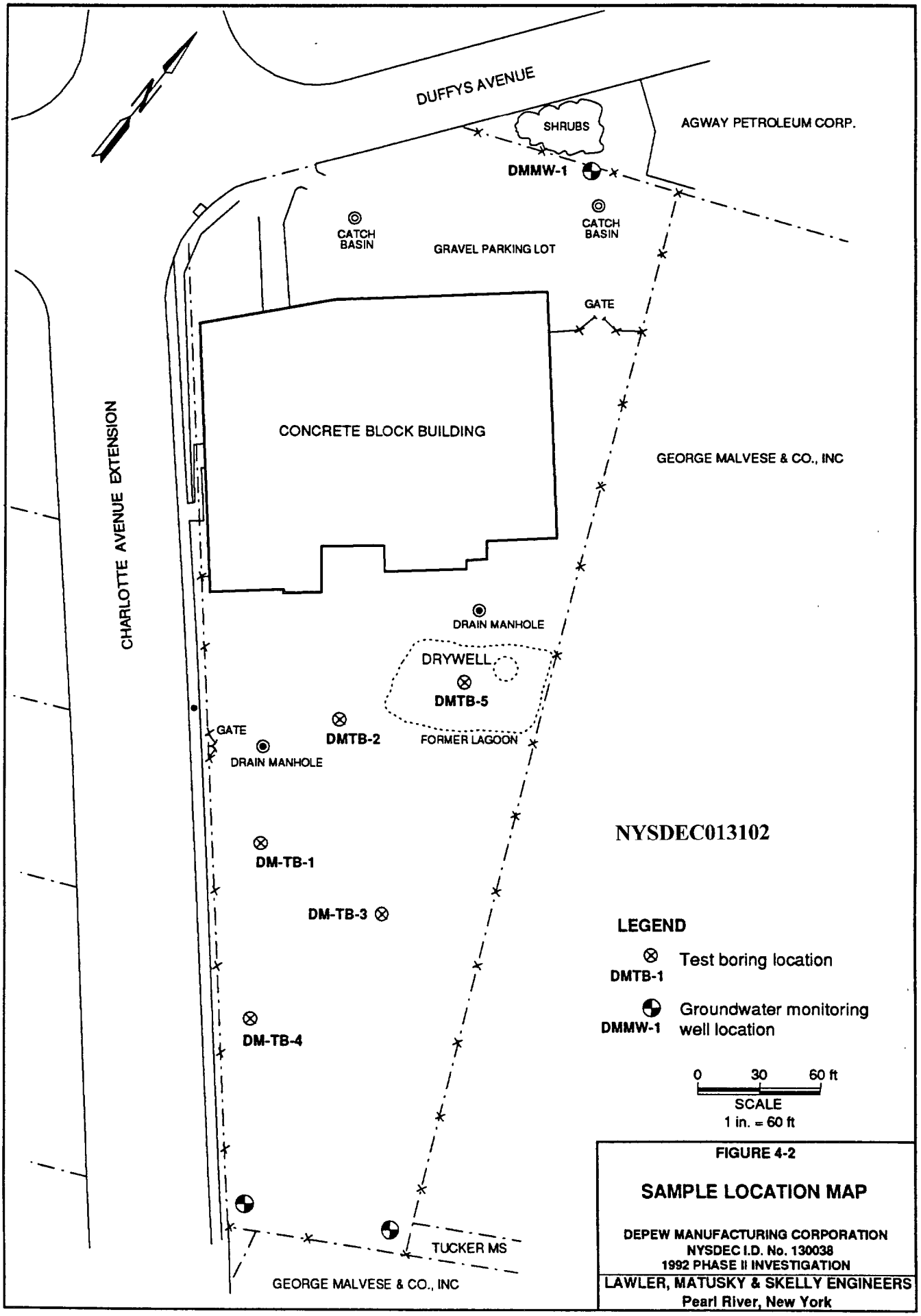


FIGURE 4-2

SAMPLE LOCATION MAP

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

TABLE 4-1

CHEMICALS USED AT DEPEW MANUFACTURING CORPORATION SITE

CHEMICAL/TRADE NAME[a]	SYNONYM/DESCRIPTION	REPORTED ANNUAL USAGE[a]
Acetone	Solvent; less dense than water	4950 gal
Styrene	Solvent; less dense than water	5550 gal
Aropol 7280 (tubular)	Water-emulsifiable polyester resin[b]	30,000 lb
BYK A500	Possibly N-sulfanilyl acetamide[c]	800 lb
DAP (tubular)	Diallyl-phthalate[d]; denser than water	3000 lb
M-50 (methyl ethyl ketone org.)	Solvent; 2-butanone; less dense than water	1500 lb
M 105	Unknown	1100 lb
M-3300 polyester resin	Polyester resin	235,000 lb
P-16 (pecadox)	Possibly a benzoic acid compound[e]	150 lb
Polylite polyester 92359	Polyester resin for molding purposes[f]	240,00 lb
Stypol 40-2462	Unsaturated polyester resin; used in pultrusion process[g]	300,000 lb
TBPB (tubular)	Unknown	640 lb
USP 245	Organic peroxide; unknown	400 lb
Zelec UN	Fatty alcohol phosphate; an antistatic agent[h]	700 lb

[a]Refs. 19 and 20.
[b]Ref. 21, p. 67.
[c]Ref. 22, p. 62.
[d]Ref. 22, pp. 568 and 910, and Ref. 23.
[e]Ref. 22, p. 966.
[f]Ref. 21, p. 572.
[g]Ref. 21, p. 665, and Ref. 24.
[h]Refs. 25 and 26.

NYSDEC013103

In June 1986 NCDOH and Dvirka and Bartilucci Consulting Engineers conducted a groundwater investigation program on parts of Long Island. The study named Depew as a possible contributor to known aquifer pollution in the area of the site. The study concluded that the regional aquifer was contaminated with xylene, 1,1,1-trichloroethane, dichloroethane, and trichloroethane (Ref. 33). Comments by NYSDOH in 1987 regarding the Phase I investigation noted that any prior leaching from the site would have added to an already contaminated aquifer (several groundwater contamination sources are in the area) (Ref. 34).

In December 1986 Mr. Tucker sold the property to Hollywood Construction, Ltd. (Ref. 11). Mr. George Prinz of Hollywood Construction, Ltd., and his former partner, Ms. Joan Dvoskin, are the current co-owners. As part of the property purchase, Mr. Prinz began removing fiberglass wastes from the site in November 1986. Fiberglass wastes were excavated from the lagoon, stored on-site and also inside the building, and then disposed of off-site at Modern Landfill, Inc., in Model City, New York (Ref. 35). Mr. Prinz operated an asbestos removal company and used the Duffys Avenue location to house his vehicles and conduct business. In January 1988 NCDOH visited the site to assess the waste removal status. There was no visible fiberglass waste outside the building; however, forty 55-gal drums and approximately 150 yd^3 of fiberglass waste remained inside the building (Ref. 36).

In July 1988 Roux Associates, Inc., completed the Phase I investigation of the Depew site and concluded that a Phase II investigation should be performed (Ref. 12).

On 23 August 1990 NYSDEC and NCDOH officials met with Mr. Prinz at the former Depew site. No fiberglass or waste was visible. The settling pit was overgrown with weeds, with a dry well at one edge. Two high-resin slabs (hardened fiberglass material) were observed, along with Mr. Prinz's work vehicles. The trenches inside the building were cemented over, and twenty 55-gal drums of fiberglass material had been excavated from the settling pit inside the building (Ref. 37).

NYSDEC013104

In March 1992 LMS began a Phase II investigation. No drums or fiberglass waste piles were observed during the initial site reconnaissance (March) or the building inspection conducted during field activities (April). Two tenants currently occupy the site, an excavation contractor

in the open area south of the building and a custom auto body shop that uses only a portion of the building.

4.2 SITE TOPOGRAPHY

The site is situated on the broad outwash plain that constitutes the southern half of the surface of Long Island and part of the northern half. The plain, basically lacking in relief, slopes gently southward from the site area (elevation 124 ft) to sea level at South Oyster Bay on the south shore. The distance between these points is about 9 miles, which translates to a gradient of 0.0026 ft/ft. North of the site the plain continues to rise for about 2 miles to an elevation of 160 ft. At this location are encountered the low (160-200 ft) hills of the Ronkonkoma Moraine, which trend east-northeast and west-southwest from this point in a linear fashion. About 2 miles north of the moraine is the parallel ridge of the Harbor Hill Moraine (elevation 250 to 300 ft). These two ridges form the drainage divide for most of western Long Island (Ref. 38).

The site is virtually flat, as is most of the area immediately surrounding it. West of the site, directly across the intersection of Duffys and Charlotte avenues, is a large (3-4 acres) stormwater retention basin of the type commonly found on Long Island (Ref. 39). This basin was dry throughout the duration of the field investigation.

The closest surface water body is a small, unnamed pond (P 992b) located 2.2 miles southwest of the site. It is close (less than 0.3 mile) to the head of East Meadow Brook, a small, south-flowing stream. In this area the stream is designated MDB-228. It is a Class C surface water body with Class C standards (Ref. 40).

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4.3 GEOLOGY

The outwash plain upon which the site is located is underlain by deposits of brown sand and gravel, approximately 75 ft thick, with occasional observable stratification (Ref. 41). These glacial outwash sediments were deposited by meltwater streams flowing southward as the glaciers receded late in the Pleistocene Epoch, about 8000 years ago (Ref. 41). These

deposits are typically variably sorted, with the gravel fraction exhibiting a round shape caused by abrasion in the streambed.

These outwash deposits lie unconformably over Upper Cretaceous Series coastal plain sediments, specifically the Matawan Group-Magothy Formation, undifferentiated. (As this terminology is cumbersome, the term *Magothy Aquifer* is substituted to indicate all of the Cretaceous coastal plain sediments included in the Matawan Group-Magothy Formation, undifferentiated. Small portions of the coastal plain sedimentary unit do exist above the water table, but because the majority, by far, is saturated, *Magothy Aquifer* is an acceptable term.) The Magothy Aquifer is approximately 560 ft thick beneath the site. Its lower surface slopes to the south, resulting in an increase in the unit's thickness in this direction and a decrease to the north (Ref. 39).

The Magothy Aquifer is composed mainly of fine, light-colored sand. The sand is sometimes clayey, and is interbedded with variously colored clays (Ref. 39). Gravel is common at the base of the aquifer. (See Section 4.4 for a discussion of the hydrogeology of these deposits.)

Beneath the Magothy Aquifer lies a major confining unit, the Clay Member of the Raritan Formation (Upper Cretaceous Series), which is between 150 and 200 ft thick. This unit unconformably underlies the Magothy Aquifer beneath most of Long Island.

Beneath the Clay Member is the Lloyd Sand Member, which makes up the second major aquifer for Long Island. Because of the great depth to the Lloyd Sand and the thickness and large areal extent of the overlying confining unit, this aquifer is considered to be isolated from the scope of this investigation and is not treated further. The crystalline igneous and metamorphic bedrock (Precambrian) underlying the Raritan Formation is likewise outside the scope of this investigation.

NYSDEC013106

4.4 HYDROGEOLOGY

The glacial deposits and the underlying Cretaceous coastal plain sediment (the Magothy Aquifer) together constitute the principal aquifer of Nassau County. Water in the principal

aquifer is under water table conditions in the upper portions and is increasingly subject to confining conditions with depth due to the presence of various lenses and layers of clay and clayey sand or silt in the Magothy Aquifer. The principal aquifer is approximately 550 ft thick beneath the site.

The water table exists in the glacial deposits (the upper glacial aquifer) at the site. As stated in Section 4.3, the upper glacial deposits are approximately 75 ft thick beneath the site. The water table was encountered at a depth of approximately 52 ft, which implies that the vertical extent of groundwater in the upper glacial aquifer beneath the site is approximately 23 ft. Approximately 2000 ft west of the site, the upper surface of the Magothy Aquifer rises and the water table is present in it, as opposed to the upper glacial. Isbister (Ref. 39) indicates that the water table exists in the Magothy over a large area to the west, north, and east of the site.

The inference is that the upper portions of the Magothy Aquifer are in direct hydraulic connection with the upper glacial aquifer, i.e., there is no appreciable confining layer or barrier to downward percolation between the upper glacial and Magothy aquifers. The regional water table contour map illustrates this condition (Ref. 39).

McClymonds and Franke (Ref. 42) have estimated the hydraulic conductivities of the upper glacial aquifer for the site area to be between 2000 and 2500 gallons per day per square foot (gpd/ft^2), which is equivalent to between 9.44×10^{-2} and 1.18×10^{-1} cm/sec based upon statistical analysis of island-wide well data. They report an average hydraulic conductivity for northern Nassau County of 1700 gpd/ft^2, or 8.02×10^{-2} cm/sec. They report somewhat lower values for north-central Nassau County, on the order of 1000 gpd/ft^2, or 4.72×10^{-2} cm/sec. They also report hydraulic conductivities for selected lithologic classes in the upper glacial aquifer. The values for medium, fine, and very fine sand and for sand with silt or clay layers range from 400 to 1800 gpd/ft^2, or 1.89×10^{-2} to 8.5×10^{-2} cm/sec.

As shown in Figure 4-3, the water table at the site slopes gently to the south at a gradient of 0.24%, or 0.0024 ft/ft. Monitoring well elevation data and static water level measurements

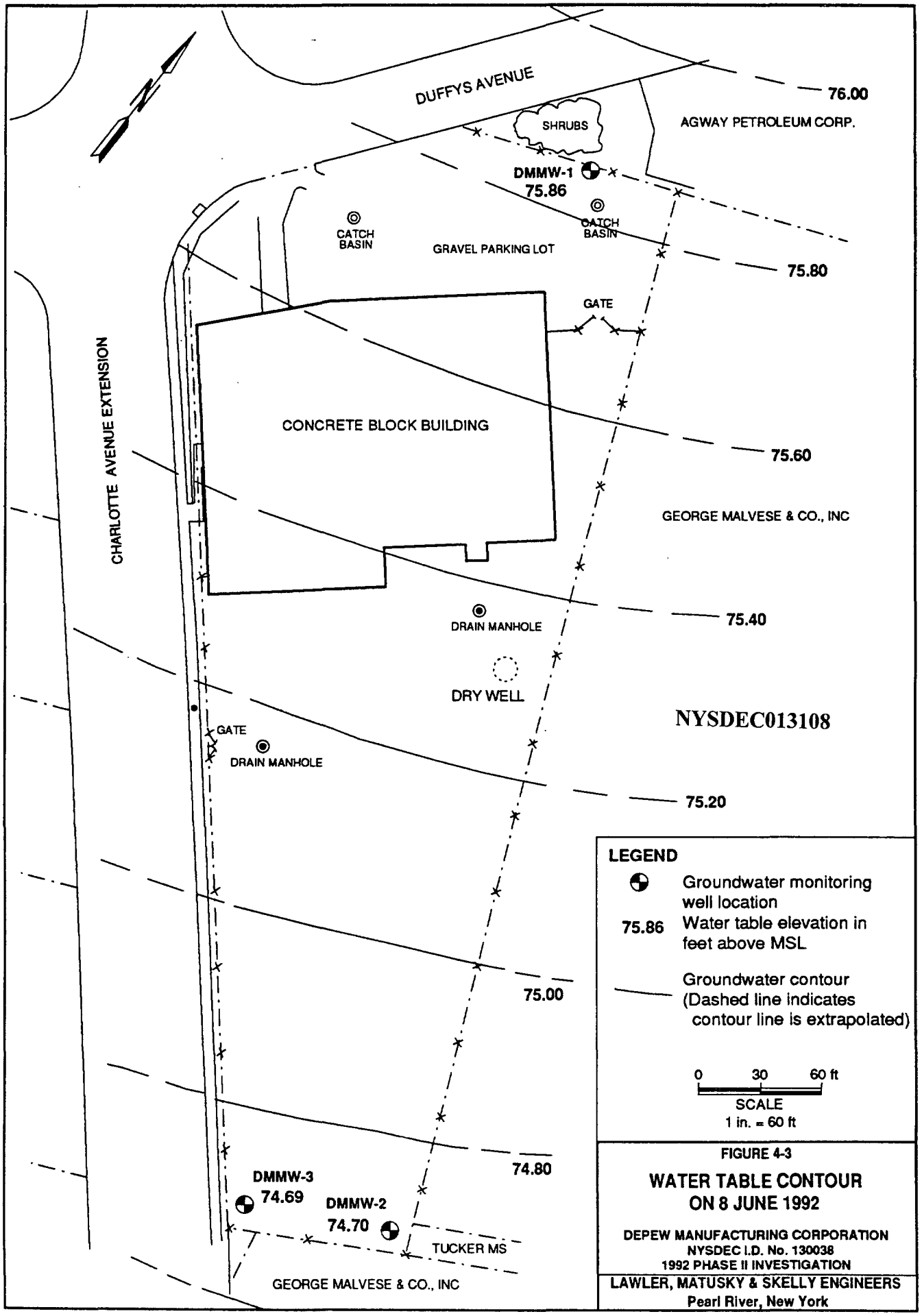


FIGURE 4-3

WATER TABLE CONTOUR ON 8 JUNE 1992

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

recorded on 8 June 1992 are presented below. It is concluded that water in the upper glacial aquifer flows toward the south.

WELL	ELEVATION GROUND SURFACE (ft)	ELEVATION TOP OF PROTECTIVE CASING (ft)	ELEVATION TOP OF PVC (ft)	DEPTH TO WATER (ft from top of PVC)	STATIC WATER TABLE ELEVATION (ft)
DMMW-1	127.12	127.09	126.83	50.97	75.86
DMMW-2	127.28	129.11	128.43	53.73	74.70
DMMW-3	126.32	127.75	127.17	52.48	74.69

All elevation data are in feet above mean sea level.

4.5 OTHER DATA

4.5.1 Aerial Photography

Aerial photographs from 1980 clearly show the building and settling pit (Figure 4-4). The property used for the Depew operation is much smaller than that observed by LMS during the Phase II field investigation. In the aerial photographs the operating portion of the property ends at the southern boundary of the settling pit. Heavy equipment vehicles that now border the site to the south and east also occupied the better part of the Depew yard, as shown in aerial photography (Figure 4-4).

NYSDEC013109

4.5.2 Previous Sampling

The Depew site was sampled several times by both the NCDOH and the NYSDEC regional offices (Tables 4-2 and 4-3). The site was first sampled in 1978 and again in 1980 and 1981 (Ref. 13). Information regarding these sampling events is limited. Samples are described as "discharge" and their concentration is reported in parts per billion (ppb). It is assumed that they were liquid effluent samples. In September 1978 benzene at 15 µg/l, toluene at 30 µg/l, and aluminum at 350,000 µg/l were reported in a sample of the discharge. In March 1980 benzene was reported at 46 µg/l. In May 1981 benzene, toluene, and aluminum were reported as nondetected. In January 1984 aluminum was reported at 149,000 µg/l (Ref. 13).

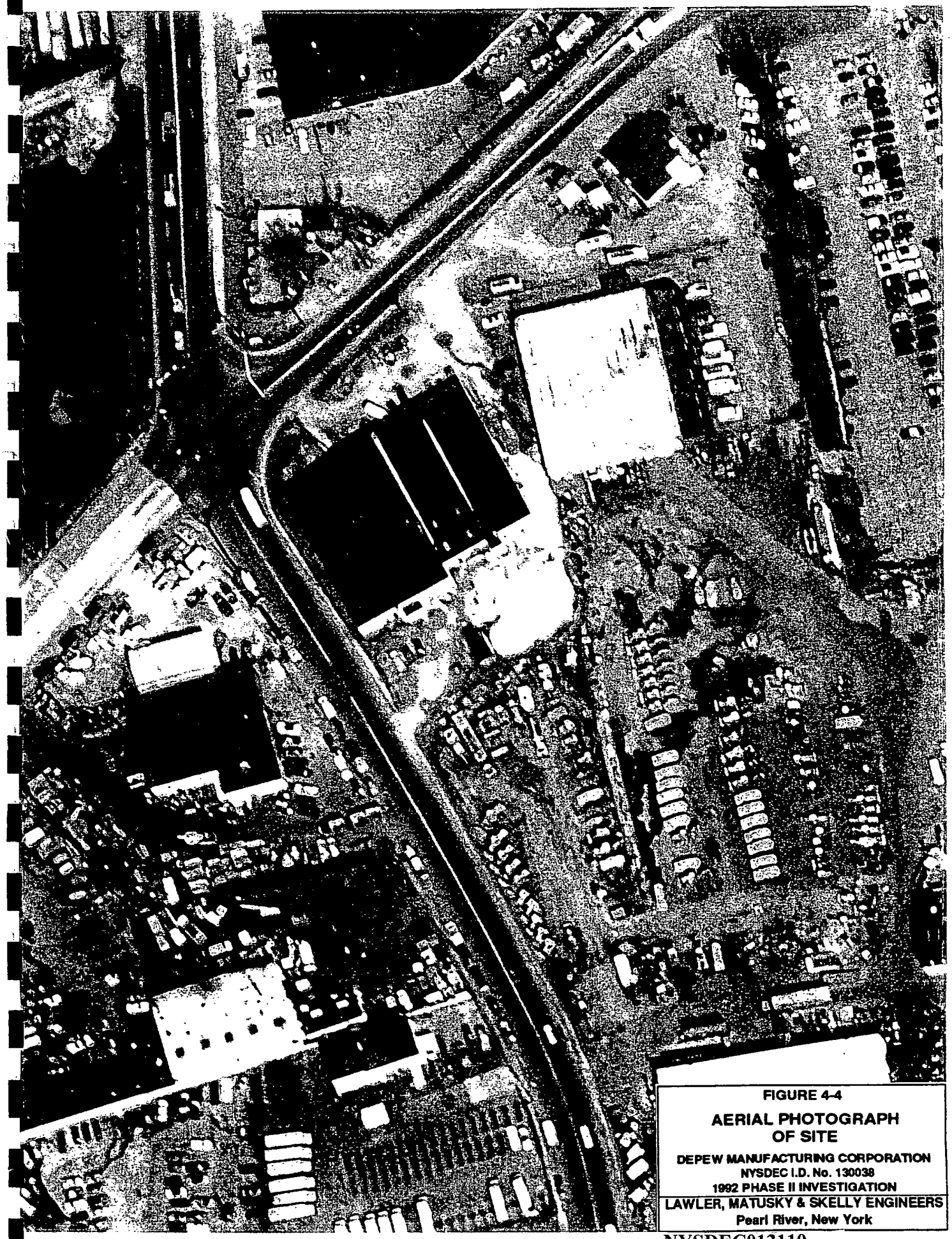


FIGURE 4-4

AERIAL PHOTOGRAPH OF SITE

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

NYSDEC013111

TABLE 4-2

ADDITIONAL DATA
WASTE EFFLUENT SAMPLING

	9/78	3/80	5/81	1/84	8/84	8/84	12/84	2/85
SAMPLE DESCRIPTION	INDUSTRIAL WASTE DISCHARGE	INDUSTRIAL WASTE DISCHARGE	INDUSTRIAL WASTE DISCHARGE	WASTE DISCHARGE	LIQUID/SLUDGE	LIQUID/SLUDGE	LIQUID	LIQUID
LOCATION	a	a	a	a	SETTLING PIT	SETTLING PIT	REAR OF BLDG.	SETTLING PIT
Aluminum	350,000		ND	149,000			22,500	
Arsenic					410			
Cadmium					1200			
Chromium					6600			
Copper					3500			
Lead					11,000			
Mercury					15			
Nickel					1700			
Selenium					475			
Silver					900			
Zinc					5400		460	
Phenols					2600			
Benzene	15	46	ND			1		22
Toluene	30		ND			3		20
Styrene						ND	2000	6000
Ethylbenzene						ND	42	130
Dimethylphthalate					450,000			
Di-n-butylphthalate								
bis(2-Ethylhexyl)phthalate								
Butylbenzylphthalate								
Xylenes (total)								
1,2 Dichloroethane								

All results in $\mu g/l$.
ND - Not detected.

[a]Location unknown.

NYSDEC013112

TABLE 4-3

ADDITIONAL DATA
SOIL AND WASTE SAMPLING

SAMPLE DESCRIPTION	1985	1985	1985	4/85	4/85	4/85	10/86	10/86	6/87
	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL/WASTE	SOIL/WASTE	SOIL
LOCATION	EAST SIDE OF BLDG.	REAR OF BLDG.	REAR OF SETTLING PIT	SUMP AT REAR OF BLDG.	EAST SIDE OF BLDG.	SUMP AT REAR OF BLDG.	INDOORS	OUTDOORS	SETTLING PIT
Aluminum									
Arsenic	0.33	0.908	0.98						13
Cadmium			8.19						5
Chromium									40
Copper									52
Lead									86
Mercury	0.016	20.8	0.07						0.27
Nickel	1.16								23
Selenium		0.36							
Silver									140
Zinc	6.93	8.1	11.6						
Phenols									
Benzene				95					
Toluene				500					
Styrene				400,000	511	110,000			
Ethylbenzene				17,000	114	54			
Dimethylphthalate							140,000	87,000	
Di-n-butylphthalate							4300	13,000	
bis(2-Ethylhexyl)phthalate							20,000	1900	
Butylbenzylphthalate								54,000	
Xylenes (total)					10	26			

All results in mg/kg.

In August 1984 two samples were collected from the settling pit. Benzene at 1 µg/l, toluene at 3 µg/l, and 1,2 dichloroethane at 2 µg/l were reported in one sample, while ethylbenzene and styrene were nondetected (Ref. 43). High concentrations of metals were identified in the second sample along with dimethylphthalate, which was detected at 450,000 µg/l (see Table 4-2) (Ref. 44).

In December 1984 a sample was collected from what is described as an effluent pipe at the rear of the building. The location indicates a discharge at the rear of building in addition to the one from the east side of the building (Refs. 17 and 45). Aluminum (22,500 µg/l), zinc (460,000 µg/l), ethylbenzene (42 µg/l), and styrene (2000 µg/l) were reported in the effluent sample (Refs. 13, 45, and 46) (Table 4-2).

In February 1985 a liquid sample from the settling pit identified benzene (22 µg/l), toluene (20 µg/l), ethylbenzene (6000 µg/l), and dimethylphthalate (130 µg/l) (Table 4-3) (Ref. 13). Solids samples collected in 1985 were analyzed by both NCDOH laboratories and Nytest Environmental, Inc., of Westbury, New York (Refs. 47 and 48). In April 1985 a sample taken from the sump at the rear of the building (it is assumed that this is the settling pit) was analyzed by NCDOH for volatile organics (Ref. 47). Benzene (95 mg/kg), toluene (500 mg/kg), ethylbenzene (17,000 mg/kg), and styrene (400,000 mg/kg) were detected in the sample (Table 4-3).

Also during 1985 Mayson Tucker, president of Depew, collected two samples for VOC analysis. Styrene (110,000 mg/kg), ethylbenzene (54 mg/kg), and total xylene (26 mg/kg) were identified in a sample taken from the sump behind the pit. Ethylbenzene (114 mg/kg), styrene (511 mg/kg), and total xylenes (10 mg/kg) were identified in the solids sample taken from the east side of the building (Ref. 48). Also in 1985, independent of NCDOH and NYSDEC, soil boring samples were analyzed for metals by Nytest (Ref. 49). Metals identified included arsenic, chromium, mercury, nickel, selenium, and zinc (see Table 4-3).

Soil and waste samples were collected during site remediation activities of 1986 and 1987 (Refs. 50 and 51). Table 4-3 summarizes the analytical data. In November 1986 NCDOH sampled waste soil that was being stored at the site prior to removal (Ref. 50). High

concentrations of phthalates identified in soil samples being stored inside the building included dimethylphthalate at 140,000 mg/kg, di-n-butylphthalate at 4300 mg/kg, and bis(2-ethylhexyl)phthalate at 20,000 mg/kg. This sample was also analyzed for halogenated pesticides, none of which were detected above 30 mg/kg. A waste soil sample collected from outdoors identified dimethylphthalate at 87,000 mg/kg, di-n-butylphthalate at 13,000 mg/kg, bis(2-ethylhexyl)phthalate at 1900 mg/kg, and butylbenzylphthalate at 54,000 mg/kg (Table 4-3). Halogenated pesticides found in this sample were not detected above 20 mg/kg.

In June 1987 a sample from the settling pit was analyzed for total metals and EP toxicity metals (Ref. 51). Total mercury was detected at 0.27 mg/kg. Arsenic, cadmium, chromium, copper, lead, nickel, and zinc were also detected (see Table 4-3). No EP toxicity metals were identified above the maximum concentration characteristic of EP toxicity (Ref. 52).

4.5.3 **Regional Sampling**

In June 1986 NCDOH and Dvirka and Bartilucci Consulting Engineers conducted a groundwater investigation of the region and produced a report titled "Investigation of Contaminated Aquifer Segments, Nassau County, N.Y." One of the locations investigated, West Hicksville, includes the Depew site (Ref. 33). Data obtained during the study are shown below:

WELL I.D.	LOCATION (IN RELATION TO DEPEW SITE)	DEPTH (ft) BELOW GROUND SURFACE	CONTAMINATION (TOTAL VOLATILE ORGANICS, μg/l)
WH-1	North/northeast, directly upgradient	60	<10
N9917	South/directly downgradient	73	<10
N9341	North/northwest upgradient	265	1000 to 10,000
N880	East upgradient	247	100 to 1000
WH-2	East upgradient	63	10 to 100
WH-6	South/southeast downgradient	64	100 to 1000

Four of the wells, WH-1, N9917, WH-2, and WH-6, are at approximately the same depth as wells installed during the Phase II investigation. Note that WH-1, an upgradient well, is

relatively uncontaminated; N9917, a downgradient well, is also uncontaminated (Figure 4-5). A much deeper well, N9341, is upgradient, though not directly, and is contaminated. This is also true of well N880, which is a deep well. The study indicates that contamination is occurring in localized regions at different depths, both deep and shallow. Several factors contribute to this, including the location of the sources and subsurface conditions such as the unconsolidated sand and the possibility of clay layers throughout the area. This is also a result of the nature of the contaminants: 1,1,1-trichloroethane, the principal contaminant of these wells, and other chlorinated organic solvents have been referred to as "sinkers" because of their tendency to sink downward through the porous subsurfaces (Ref. 53, Appendix A).

4.6 PHASE II RESULTS

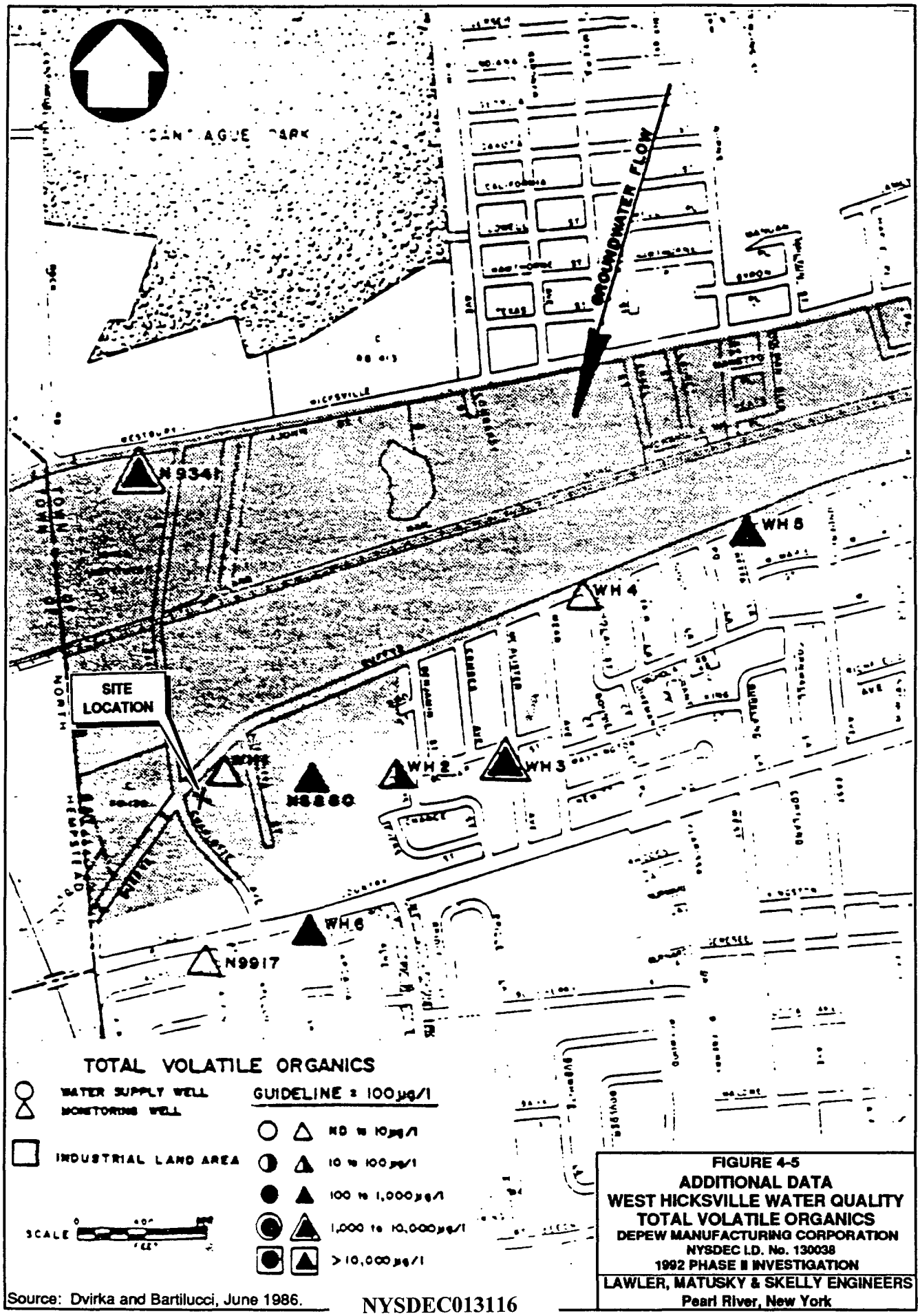
4.6.1 Site Inspection

LMS personnel visited the site on 4 March 1992 to determine and identify the tentative locations for drilling, the soil gas survey, and sampling as described in the work plan. A potable water supply for drilling and monitoring well installation and electricity were obtained on-site.

The site is currently active, with two tenants occupying the building and yard. A custom auto body shop occupies part of the building. An excavation contractor uses the yard. At the time of the inspection the contractor had several large piles of dirt (fill) located along the sides and at the back of the property. Piles of dirt were located on proposed monitoring well locations; after discussion the contractor agreed to move the piles for Phase II field activities.

The settling pit (referred to in county documents as the "old lagoon") in the rear of the building was filled with dirt and had weeds growing on it. A dry well, apparently fairly new, was located on the east side of the old settling pit. The settling pit is almost circular, approximately 35-40 ft in diameter. The resin slabs designated on the work plan sketch could not be located.

NYSDEC013115



Source: Dvirka and Bartilucci, June 1986.

FIGURE 4-5
ADDITIONAL DATA
WEST HICKSVILLE WATER QUALITY
TOTAL VOLATILE ORGANICS
DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION
LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

At the southeast property line (a proposed monitoring well location), and located directly on the adjacent property owned by George Malvese & Co. (a heavy equipment sales business), is a sump probably used for equipment washdown.

It was observed that the site was much larger than 0.25 acre as stated in the work plan, and was also larger than noted in aerial photography of 1980. The site is fenced on three sides, with the building making the fourth boundary; access is therefore limited.

Air monitoring was performed using an HNU PID, an OVA, and a dosimeter to detect the presence of possible airborne organic contaminants and to determine background conditions. Measurements were taken 4-6 ft above ground level and at the surface at several locations. No air contamination was found.

4.6.2 **Soil Gas Results**

The soil gas survey was conducted over the open rear lot south of the manufacturing building. Twenty-one soil gas points were installed and sampled. Ethylbenzene, the most prevalent VOC detected during the survey, was detected generally across the midsection of the lot. Where detected, concentrations were higher than the next most prevalent VOC detected, m-xylene. Benzene and toluene were also detected with ethylbenzene and m-xylene, but generally at lower concentrations. At only one point, DMSG-5, were both m- and p-xylene detected. One soil gas point, DMSG-20, yielded anomalous results in that toluene was detected in concentrations an order of magnitude greater than those for ethylbenzene, and no xylenes were detected (Figure 4-6).

Chlorinated solvents, specifically trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), and tetrachloroethylene (PCE), were generally detected at all of the same points as the benzene, toluene, ethylbenzene, and xylene (BTEX) compounds. Acetone and 2-butanone were detected at two points, DMSG-18 and -20 (Ref. 4).

NYSDEC013117

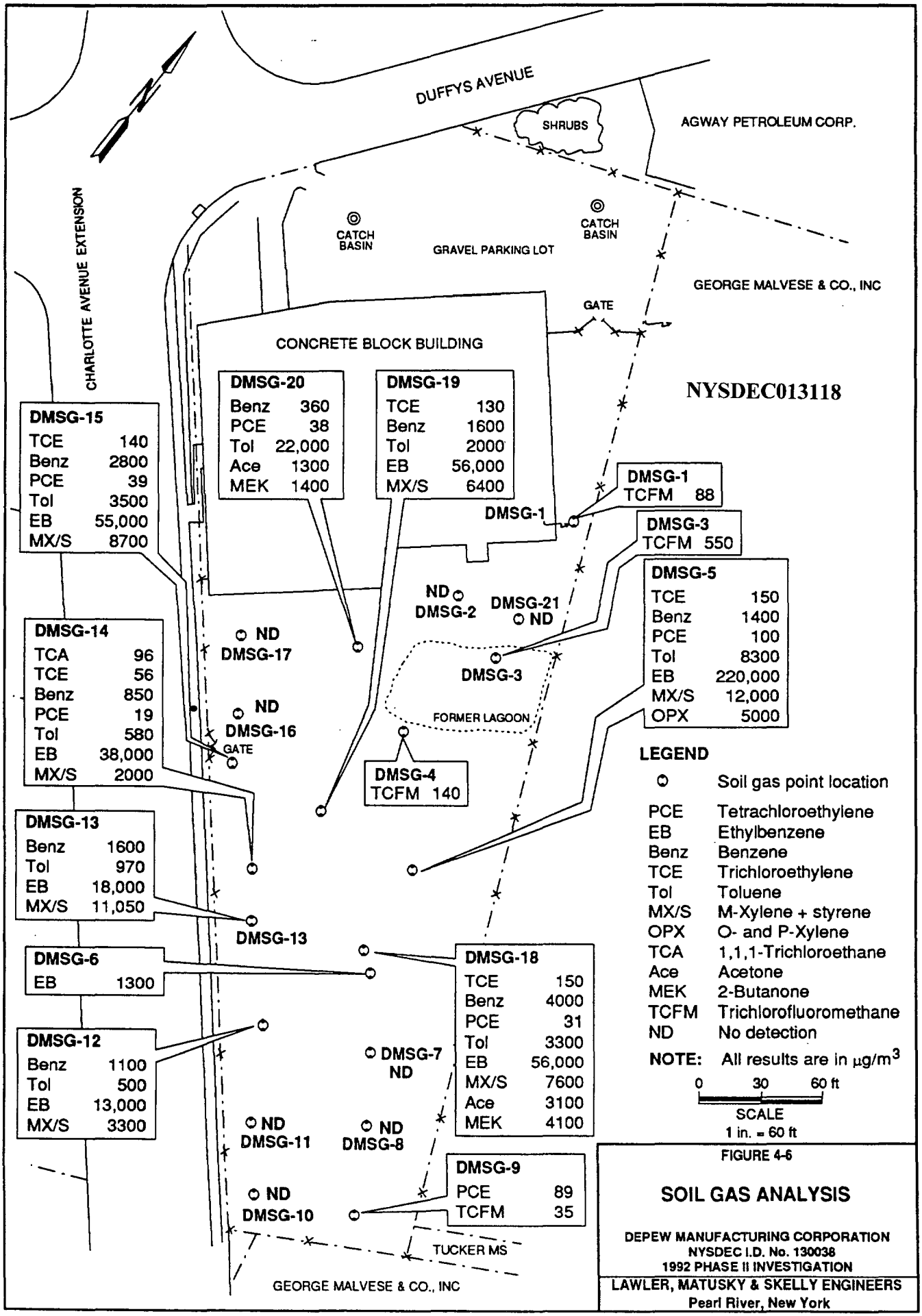


FIGURE 4-6

SOIL GAS ANALYSIS

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

4.6.3 **Subsurface Soil Data**

Subsurface soil samples collected from test borings were analyzed for the full TCL/TAL parameters, TCLP volatiles, EP toxicity metals, EP toxicity pesticides and herbicides, ignitability, corrosivity, and reactivity hazardous waste characteristics (Table 4-4). Results of testing are presented in Table 4-4 (Ref. 54). Data submitted were determined to be usable with appropriate qualifiers (Refs. 55 and 56).

Two samples from test boring DMTB-1 were analyzed. The first, from the 2- to 4-ft interval, was labeled DMTB-1 (2-4). The second, from the 6- to 8-ft interval, was labeled DMTB-1 (6-8 ft) and was analyzed for VOCs and semivolatile organic compounds. As recovery was low, this sample location was extended to a depth of 10 ft. DMTB-1 (6-10) was analyzed for semivolatile tentatively identified compounds (TICs), metals, EP toxicity metals, PCBs/pesticides, and ignitability, corrosivity, and reactivity characteristics. Where appropriate, the laboratory performed diluted sample analysis for DMTB-1 (2-4) and DMTB-1 (6-10); these samples were designated *DL*.

One sample was collected from DMTB-2, 4-6 ft interval; one sample from DMTB-3, 2-4 ft interval; and one sample from DMTB-4, 6-8 ft interval.

One sample was collected from DMTB-5 at the 30-32 ft interval. Additional analysis was performed on DMTB-5 (30-32 ft) as a diluted sample. DMTB-5 is the location of the settling pit that was previously excavated and backfilled. The 30-32 ft interval was chosen to evaluate conditions below the new fill material now in the settling pit. One sample was collected during monitoring well installation at DMMW-1 at the 1-2 ft interval. As it is located in the front of the building, this soil sample (DMMW-1) represents background soil conditions at the site. The other five test boring locations were located at the rear of the building, where Depew waste activity took place.

NYSDEC013119

As there are no soil standards for organic compounds or metals to use to determine soil quality, New York State-recommended soil cleanup objectives will be used to evaluate the presence of organic compounds in soil; eastern United States background soil concentration

TABLE 4-4 (Page 1 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-1 (6-8 ft)	DL DMTB-1 (6-8 ft)	MS DMTB-1 (6-8 ft)	MSD DMTB-1 (6-8 ft)	DMTB-2 (4-6 ft)	MS DMTB-2 (4-6 ft)	MSD DMTB-2 (4-6 ft)	FIELD BLANK 4/14/92 (mg/l)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
VOLATILE ORGANICS (mg/kg)										
Methylene chloride	4.30 b j	0.038 b j	4.30 b j d	4.50 b j	4.50j	0.004 b j	0.005 b j	0.005 b j	0.004 j	0.1
Acetone	3.20 b j	0.100 b	4.00 b j d	2.50 b j	4.60 b j	0.005 b j	0.004 b j	0.004 b j	ND	0.2
Carbon disulfide	ND	0.010 j	ND	ND	ND	ND	ND	ND	ND	NA
1,2-Dichloroethylene (total)	ND	0.020 j	ND	NR	ND	ND	ND	ND	ND	0.3
2-Butanone	ND	0.019 j	ND	ND	ND	ND	ND	ND	ND	0.3
Benzene	ND	0.045 j	ND	*	*	ND	*	*	ND	0.06
Toluene	0.600 j	0.230	0.850 d j	*	*	ND	*	*	ND	1.5
Chlorobenzene	ND	0.025 j	ND	*	*	ND	*	*	ND	1.7
Ethylbenzene	86.0	14.0 e	100 d	85.0	82.0	0.004 j	0.003 j	0.002 j	ND	5.5
Xylene (total)	16.0	5.30 e	21 d	17.0	16.0	ND	ND	ND	ND	1.2
Tentatively Identified Compounds										
Unknown ethylmethylbenzene	6.40 j	ND	5.60 j d	NR	NR	ND	NR	NR	ND	NA
Unknown dimethylcyclooctane	6.90 j	2.40 j	7.80 j d	NR	NR	ND	NR	NR	ND	NA
Pentalene, octahydro-	ND	0.067 j	ND	NR	NR	ND	NR	NR	ND	NA
Trycyclo [3.3.1.13,7] decane	ND	0.330 j	ND	NR	NR	ND	NR	NR	ND	NA
Unknown cyclic hydrocarbons	ND	0.560 j	ND	NR	NR	ND	NR	NR	ND	NA
Unknown cyclohexanes	ND	1.02 (2) j	ND	NR	NR	ND	NR	NR	ND	NA
Unknown	ND	0.320 j	ND	NR	NR	ND	NR	NR	ND	NA
Unknown cycloalkane	ND	1.42 (2) j	3.10 j d	NR	NR	ND	NR	NR	ND	NA
Unknown diethylmethylcyclohe	ND	0.160 j	ND	NR	NR	ND	NR	NR	ND	NA

* - Spiking compound; data not representative of actual sample concentration.
( ) - Number of compounds in total.
(b) - Ref. 57.
b - Found in associated blanks.
d - Concentration recovered from diluted sample.
e - Estimated concentration; exceeds GC/MS calibration range.
j - Estimated concentration; compound present below quantitation limit.

DL - Diluted sample analysis.
MS - Matrix spike.
NA - Not applicable.
ND - Not detected at analytical detection limit (Ref. 54).
NR - Not run.
MSD - Matrix spike duplicate.

NYSDEC013120

TABLE 4-4 (Page 2 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DL DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	DMMW-1A (1-2 ft) 7/28/92	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
VOLATILE ORGANICS (mg/kg)							
Methylene chloride	14.0 b j	0.007 b j	0.011 b j	0.026 b j d	0.006 b j	NR	0.1
Acetone	13.0 b j	0.008 b j	0.011 b j	0.017 b j d	ND	NR	0.2
Toluene	3.10 j	0.002 j	ND	ND	ND	NR	1.5
Ethylbenzene	400	0.060	0.830 e	0.033 d j	ND	NR	5.5
Xylene (total)	85.0	0.011	0.170	0.110 d	ND	NR	1.2
Tentatively Identified Compounds							
Unknown ethylmethylbenzene	44.0 j	ND	ND	ND	ND	NR	NA
Unknown dimethylcyclooctane	28.0 j	ND	0.220 j	0.270 j d	ND	NR	NA
Unknown hydrocarbons	ND	ND	0.073 j	0.100 j d	ND	NR	NA
Unknown cyclic hydrocarbons	ND	ND	0.146 (2) j	0.098 j d	ND	NR	NA
Unknown polycyclic hydrocarb	ND	ND	0.027 j	0.040 j d	ND	NR	NA
Unknown cyclohexanes	ND	ND	0.181 (2) j	0.219 (2) j d	ND	NR	NA
Unknown	ND	ND	0.046 j	0.052 j d	ND	NR	NA
Unknown alkane	ND	ND	0.013 j	ND	ND	NR	NA
Unknown methylpropylbenzene	ND	ND	0.015 j	ND	ND	NR	NA
Unknown tricyclodecane	ND	ND	ND	0.059 j d	ND	NR	NA

( ) - Number of compounds in total.
(b) - Ref. 57.
b - Found in associated blanks.
d - Concentration recovered from diluted sample.
e - Estimated concentration; exceeds GC/MS calibration range.
j - Estimated concentration; compound present below quantitation limit.

DL - Diluted sample analysis (Ref. 54).
NA - Not applicable.
ND - Not detected at analytical detection limit (Ref. 54).
NR - Not applicable.

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TABLE 4-4 (Page 3 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-1 (6-10 ft)	MS DMTB-1 (6-10 ft)	MSD DMTB-1 (6-10 ft)	DMTB-2 (4-6 ft)	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	DMMW-1A (1-2 ft) 7/28/92	+ FIELD BLANK 4/14/92 (mg/l)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
SEMIVOLATILE ORGANICS (mg/kg)												
n-Nitroso-di-n-propylamin	ND	ND	2.70 j	NU*	ND	ND	ND	ND	NU	ND	ND	NA
Naphthalene	1.00 j	3.60 j	3.10 j	NU*	ND	5.20 j	0.073 j	ND	NU	ND	ND	13.0
4-Chloro-3-methylphenol	ND	ND	2.30 j	NU*	ND	ND	ND	ND	NU	ND	ND	0.240
2-Methylnaphthalene	1.60 j	9.30 j	9.00 j	NU*	ND	13.0	0.180 j	0.460 j	NU	ND	ND	36.4
Dimethylphthalate	11.0	50.0	53.0	NU*	6.80	27.0	2.10	ND	NU	0.280 j	ND	2.0
Acenaphthene	ND	ND	1.70 j	NU*	ND	ND	0.057 j	ND	NU	ND	ND	50
Fluorene	ND	ND	ND	NU*	ND	1.50 j	0.073 j	ND	NU	ND	ND	50
Phenanthrene	0.480 j	1.40 j	1.90 j	NU*	ND	1.60 j	0.450	ND	NU	0.060 j	ND	50
Anthracene	ND	ND	ND	NU*	ND	ND	0.067 j	ND	NU	ND	ND	50
Di-n-butylphthalate	0.870 j	6.10 j	11.0 j	NU*	1.20	3.20 j	0.450	ND	NU	0.032 j	ND	8.1
Fluoranthene	ND	ND	ND	NU*	ND	ND	0.760	ND	NU	0.130 j	ND	50
Pyrene	ND	ND	1.80 J	NU*	ND	ND	0.370	ND	NU	0.140 j	ND	50
Butylbenzylphthalate	ND	ND	ND	NU*	0.980 j	ND	0.057 j	ND	NU	0.048 j	ND	50
Benzo(a)anthracene	ND	ND	ND	NU*	ND	ND	0.340 j	ND	NU	0.100 j	ND	0.22
Chrysene	ND	ND	ND	NU*	ND	ND	0.300 j	ND	NU	0.082 j	ND	0.40
bis(2-Ethylhexyl)phthalate	ND	ND	8.60 J	NU*	0.350 j	ND	0.096 j	ND	NU	0.120 j	ND	50
Benzo(b)fluoranthene	ND	ND	ND	NU*	ND	ND	0.490	ND	NU	0.150 j	ND	1.1
Benzo(k)fluoranthene	ND	ND	ND	NU*	ND	ND	0.270 j	ND	NU	0.095 j	ND	1.1
Benzo(a)pyrene	ND	ND	ND	NU*	ND	ND	0.300 j	ND	NU	0.093 j	ND	0.061
Indeno(1,2,3-c,d)pyrene	ND	ND	ND	NU*	ND	ND	0.120 j	ND	NU	0.081 j	ND	3.2
Dibenzo(a,h)anthracene	ND	ND	ND	NU*	ND	ND	0.061 j	ND	NU	0.051 j	ND	0.014
Benzo(g,h,i)perylene	ND	ND	ND	NU*	ND	ND	0.110 j	ND	NU	0.068 j	ND	50

+ - Due to low acid surrogate recoveries, acidic compound concentrations should be regarded as estimated.
(b) - Ref. 57.
j - Estimated concentration; compound present below quantization limit.
MS - Matrix spike.
NA - Not applicable.
ND - Not detected at analytical detection limit (Ref. 55).
NU* - MSD not representative of TCL compounds in the original analysis (Refs. 56 and 57).
NU - Not usable; data do not meet QA/QC requirements.
MSD - Matrix spike duplicate.

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TABLE 4-4 (Page 4 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-1 (6-10 ft)	MS DMTB-1 (6-10 ft)	MSD DMTB-1 (6-10 ft)	DMTB-2 (4-8 ft)	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	DMMW-1A + 7/28/92	FIELD BLANK 4/14/92 (mg/l)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
SEMIVOLATILE ORGANICS (mg/kg)												
Tentatively Identified Compounds												
Benzene, 1-ethyl-3-methyl-	3.60 j	18.0 j	NR	NR	ND	32.0 j	ND	ND	NU	ND	ND	NA
Benzene, 1-ethyl-4-methyl-	3.40 j	16.0 j	NR	NR	ND	27.0 j	ND	ND	NU	ND	ND	NA
Unknown C3-alkenylbenzene	2.60 j	14.0 j	NR	NR	ND	ND	0.260 j	ND	NU	ND	ND	NA
Unknown C13-alkane	6.40 j	32.0 j	NR	NR	ND	52.0 j	ND	5.00 j	NU	ND	ND	NA
Unknown C14-alkane	9.00 j	37.0 j	NR	NR	ND	52.0 j	ND	3.50 (2) j	NU	ND	ND	NA
Naphthalene, 1-methyl-	2.10 j	9.90 j	NR	NR	ND	ND	ND	ND	NU	ND	ND	NA
Phthalic anhydride	4.00 j	17.0 j	NR	NR	0.950 j	19.0 j	ND	ND	NU	ND	ND	NA
Unknown alkylcyclohexane	2.40 j	12.0 j	NR	NR	ND	22.0 j	ND	1.80 j	NU	ND	ND	NA
Unknown C15-alkane	10.0 j	38.0 j	NR	NR	ND	46.0 j	ND	4.10 j	NU	ND	ND	NA
Naphthalene, 2,6-dimethyl-	3.00 j	9.90 j	NR	NR	ND	18.0 j	ND	ND	NU	ND	ND	NA
Naphthalene, 1,3-dimethyl-	3.10 j	9.40 j	NR	NR	ND	17.0 j	0.260 j	ND	NU	ND	ND	NA
Unknown alkane	13.0 (2) j	46.0 (2) j	NR	NR	ND	73.0 (3) j	0.610 (2) j	10.8 (4) j	NU	1.48 (2) j	ND	NA
Pentadecane, 2,6,10,14-tetra	8.10 j	33.0 j	NR	NR	ND	34.0 j	0.430 j	3.20 j	NU	ND	ND	NA
Hexadecane, 2,6,10,14-tetra	9.00 j	31.0 j	NR	NR	ND	32.0 j	0.450 j	4.70 j	NU	ND	ND	NA
Unknown benzene derivative	6.00 j	13.0 j	NR	NR	2.10 j	ND	0.770 j	ND	NU	ND	ND	NA
Unknown phthalate	35.8 (4) j	144 (4) j	NR	NR	18.27 (7) j	93.0 (4) j	5.92 (4) j	ND	NU	0.850 (3) j	ND	NA

\+ - Due to low acid surrogate recoveries, acidic compound concentrations should be regarded as estimated.
( ) - Number of compounds in total.
(b) - Ref. 57.
j - Estimated concentration; compound present below quantitation limit.
M - Matrix spike.
NA - Not applicable.
ND - Not detected at analytical detection limit (Ref. 54).
NR - Not run.
NU - Not usable; sample extracted 5 days outside holding time (Refs. 55 and 56).
MSD - Matrix spike duplicate.

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TABLE 4-4 (Page 5 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-1 (6-10 ft)	DMTB-2 (4-6 ft)	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	+ DMMW-1A (1-2 ft) 7/28/92	FIELD BLANK 4/14/92 (mg/l)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
SEMIVOLATILE ORGANICS (mg/kg)										
Tentatively Identified Compounds										
Unknown	ND	ND	3.79 (7) j	ND	1.50 (3) j	ND	NU	2.490 (5) j	ND	NA
Phosphoric acid, triphenyl	ND	ND	0.59 j	ND	ND	ND	NU	ND	ND	NA
Unknown tris(tolyl)phosphate	ND	ND	1.59 (3) j	ND	ND	ND	NU	ND	ND	NA
Unknown C11-alkane	ND	ND	ND	16.0 j	ND	ND	NU	ND	ND	NA
Unknown C12-alkane	ND	ND	ND	13.0 j	ND	2.20 j	NU	ND	ND	NA
Unknown C6-alkenylbenzene	ND	ND	ND	ND	0.340 j	ND	NU	ND	ND	NA
Unknown aliphatic alcohol	ND	ND	ND	ND	0.280 j	ND	NU	ND	ND	NA
Unknown Aliphatic compund	ND	ND	ND	ND	ND	ND	NU	0.440 j	ND	NA
Nonacosane	ND	ND	ND	ND	0.340 j	ND	NU	ND	ND	NA
Benzo[E]pyrene	ND	ND	ND	ND	0.400 j	ND	NU	0.130 j	ND	NA
Unknown C31-alkane	ND	ND	ND	ND	0.380 j	ND	NU	ND	ND	NA
Unknown polyterpene derivati	ND	ND	ND	ND	0.650 j	ND	NU	ND	ND	NA
Undecane	ND	ND	ND	ND	ND	8.50 j	NU	ND	ND	NA
Dodecane	ND	ND	ND	ND	ND	9.80 j	NU	ND	ND	NA
Cyclohexane, hexyl-	ND	9.50 j	ND	ND	ND	2.00 j	NU	ND	ND	NA
Tridecane	ND	ND	ND	ND	ND	13.0 j	NU	ND	ND	NA
Tetradecane	ND	ND	ND	ND	ND	9.10 j	NU	ND	ND	NA
Unknown C16-alkane	ND	ND	ND	ND	ND	3.40 j	NU	ND	ND	NA
Pentadecane	ND	ND	ND	ND	ND	5.30 j	NU	ND	ND	NA
Hexadecane	ND	ND	ND	ND	ND	2.20 j	NU	0.23 b j	ND	NA
Hexadecanoic acid	ND	ND	ND	ND	ND	ND	NU	2.40 b j	ND	NA
Unknown decandioate	ND	ND	ND	ND	ND	ND	NU	1.100 b j	ND	NA
2-Pentanone, 4-hydroxy-4-me	ND	ND	ND	ND	ND	ND	NU	4.80 b j	ND	

+ - Due to low acid surrogate recoveries acidic compound concentrations should be regarded as estimated.
( ) - Number of compounds in total.
(b) - Ref. 57.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.

NA - Not applicable.
ND - Not detected at analytical detection limit (Ref. 54).
NU - Not usable; sample extracted 5 days outside holding time (Refs. 56 and 57).

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TABLE 4-4 (Page 6 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DL DMTB-1 (2-4 ft)	DMTB-1 (6-10 ft)	DL DMTB-1 (6-10 ft)	MS DMTB-1 (6-10 ft)	MSD DMTB-1 (6-10 ft)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
PESTICIDES/PCBs (mg/kg)							
alpha-BHC	0.002 j p	ND	ND	ND	ND	ND	0.11
beta-BHC	ND	ND	0.0036 j p	ND	0.0032 j p	0.0022 j p	0.2
delta-BHC	0.0037 j p	ND	0.0028 j p	ND	0.0026 j p	0.002 j p	0.3
Aroclor 1254	7.40 y c	8.00 c d	14.0 y c	18.0 c d	13.0 y	14.0 y	10.0[1]

PARAMETER	DMTB-2 (4-6 ft)	DMTB-3 (2-4 ft)	DL DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	DMMW-1A (1-2 ft) 7/28/92	FIELD BLANK 4/14/92 (mg/l)	NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES (b)
PESTICIDES/PCBs (mg/kg)									
alpha-Chlordane	ND	ND	ND	0.046	ND	NU	0.034 p	ND	0.54[2]
gamma-Chlordane.	ND	ND	ND	0.038 p	ND	NU	0.034	ND	0.54
Aroclor 1254	0.880 c	5.80 y c	6.60 c d	0.760 c	0.098	NU	ND	ND	10.0[1]
Dieldrin	ND	ND	ND	ND	ND	NU	0.012 j	ND	0.1
4,4'-DDE	ND	ND	ND	ND	ND	NU	0.056	ND	4.4
4,4'-DDD	ND	ND	ND	ND	ND	NU	0.053	ND	7.7
4,4'-DDT	ND	ND	ND	ND	ND	NU	0.004	ND	2.5

1 - Standard for total PCBs, subsurface.
2 - Standard for chlordane.
(b) - Ref. 58
c - Pesticide/PCB result confirmed by GC/MS analysis.
d - Concentration recovered from diluted sample.
j - Estimated concentration; compound present below quantitation limit.
p - Pesticide/Aroclor target analyte has >25% difference for the detected concentrations between the two GC columns.
y - Reported result derived from instrument response outside calibration range.
DL - Diluted sample analysis (Ref. 54).
MS - Matrix spike.
ND - Not detected at analytical detection limit (Ref. 54).
NU - Not usable; sample extracted 5 days outside holding time (Refs. 55 and 56).
MSD - Matrix spike duplicate.

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TABLE 4-4 (Page 7 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4)	DMTB-2 (4-6)	DMTB-3 (2-4)	DL DMTB-3 (2-4)	DMTB-4 (6-8)	DMTB-5 (30-32)	DMMW-1 (1-2)	TCLP STANDARDS
TCLP VOLATILE ORGANICS (mg/l)								
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	0.2
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	0.7
Chloroform	0.002 j b	0.002 j b	ND	ND	0.002 j b	0.002 j b	0.003 j b	6.0
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	0.5
2-Butanone	ND	ND	ND	ND	ND	ND	0.001 j b	200
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	0.5
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	0.5
Benzene	ND	ND	0.004 j	0.004 j d	ND	ND	ND	0.5
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	0.7
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	100

b - Found in associated blanks.
d - Concentration recovered from diluted sample.
j - Estimated concentration; compound present below quantitation limit.
DL - Diluted sample analysis (Ref. 54).
ND - Not detected at analytical detection limit (Ref. 54).

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TABLE 4-4 (Page 8 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-2 (4-6 ft)	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	EP TOX STANDARDS
HAZARDOUS CHARACTERISTICS							
Ignitability (°F)	>150	>150	>150	>150	>150	NR	140° c/c[3]
Corrosivity (pH)	7.44	8.13	7.64	8.59	8.18	6.75	2.0-12.5
Reactivity description	@	@	@	@	@	@	NS
Reactivity cyanide (mg/kg)	<35	<35	<35	<35	<35	<35	250
Reactivity sulfide (mg/kg)	<48	<48	<48	<48	<48	<48	550
Percent solids, total (%w/w)	85.1	97.6	87.8	90.6	95.5	95.5	-
EP TOX METALS (mg/l)							
Arsenic, total	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.0
Barium, total	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	100
Cadmium, total	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.0
Chromium, total	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.0
Lead, total	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.0
Mercury, total	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.2
Selenium, total	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	1.0
Silver, total	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	5.0
EP TOX PESTICIDES (mg/l)	ND	ND	ND	ND	ND	ND	-
EP TOX HERBICIDES (mg/l)	ND	ND	ND	ND	ND	ND	-

@ - Sample does not explode when percussed.
3 - Standards for liquids.
c/c - Closed cup flashpoint.
ND - Not detected at analytical detection limit (Ref. 54).
NR - Not run.
NS - No standard.

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TABLE 4-4 (Page 9 of 9)

SOIL DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMTB-1 (2-4 ft)	DMTB-1 (6-10 ft)	DUP DMTB-1 (6-10 ft)	DMTB-2 (4-6 ft)	DMTB-3 (2-4 ft)	DMTB-4 (6-8 ft)	DMTB-5 (30-32 ft)	DMMW-1 (1-2 ft)	FIELD BLANK 4/14/92 (mg/l)	EASTERN USA BACKGROUND SOIL CONCENTRATIONS (b)
TAL METALS (mg/kg)										
Aluminum	13,300 R	11,100 R	14,354 R	2,660 R	17,900 R	8,070 R	1,200 R	4,680 R	ND	33,000
Antimony	ND	ND N	ND	ND N	ND N	ND N	ND N	ND N	ND	N/A
Arsenic	4.7	4.0	4.8	1.4 B	3.3	6.3	0.45 B	1.7	ND	3.0 - 12.0 æ
Barium	45.9	40.6	41.3 B	10.0 B	61.0	48.9	4.0 B	11.2 B	ND	15 - 600
Beryllium	0.28 B	0.23 B	0.24 B	0.14 B	0.20 B	0.31 B	0.10 B	0.20 B	ND	0 - 1.75
Cadmium	3.8	3.8	4.0	ND	5.4	0.32 B	ND	ND	ND	0.1 - 1.0
Calcium	18,000	12,700	14,653	1,670	45,000	6,360	70.1 B	167 B	0.207 B	130 - 35,000 æ
Chromium	37. 4 N	42.3 N	37.4	7.5 N	41.9 N	14.4 N	2.5 N	5.4 N	ND	1.5 - 40.0 æ
Cobalt	4.3 B	4.7 B	5.0 B	1.8 B	3.4 B	4.3 B	0.39 B	2.6 B	ND	2.5 - 60.0 æ
Copper	22.5	21.2	20.2	4.4	60.0	23.6	1.3 B	3.2	ND	1.0 - 50.0
Iron	6,460 R	6,670 R	10,474 R	4,760 R	5,070 R	13,100 R	1,160 R	6,140 R	0.062 B	2,000 - 550,000
Lead	23.7	26.8	31.6	5.9	63.8	81.0	0.80	2.8	ND	4.0 - 61
Magnesium	2,270 R	1,710 R	3,077 R	588 B R	7,280 R	2,450 R	113 B R	805 R	ND	100 - 5,000
Manganese	72.7 R	69.9 R	139.6 R	55.1 R	59.6 R	153 R	5.0 R	85.4 R	0.001 B	50 - 5,000
Mercury	0.08 B	0.08 B	0.07 B	ND	0.10 B	0.13	ND	ND	ND	0.001 - 0.2
Nickel	23.5	23.4	23.3	2.9 B	19.4	8.8	1.1 B	4.1 B	ND	0.5 - 25
Potassium	ND	ND	ND	ND	ND	ND	ND	175 B	ND	8,500 - 43,000 æ
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1 - 3.9
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	N/A
Sodium	433 B	336 B	368 B	53.1 B	860 B	173 B	ND	14.8 B	0.165 B	6,000 - 8,000
Thallium	ND	ND	ND	ND	ND	ND	ND W	ND	ND	N/A
Vanadium	14.5	12.6	15.3	4.8 B	22.3	19.2	2.2 B	8.2	ND	1.0 - 300
Zinc	67.1 N	60.0 N	65.8	9.9 N	194 N	97.5 N	4.0 N	8.1 N	0.015	9.0 - 50
Cyanide	ND	0.99	ND	ND	ND	ND	ND	ND	ND	N/A

æ - New York State background concentration.
(b) - Ref. 57.
B - Value less than contract-required detection limit but greater than instrument detection limit.
N - Spiked sample recovery not within control limits.
R - Duplicate analysis not within control limits.
W - Post-digestion spike out of control limits; sample absorbance is less than 50% of spike absorbance.
ND - Not detected at analytical detection limit (Ref. 54).
N/A - Not available.
DUP - Duplicate sample analysis.

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ranges will be used to evaluate concentrations of metals in soil (Ref. 57). Characteristics of hazardous wastes, including descriptions of ignitability, corrosivity, reactivity, maximum concentrations of contaminants for characteristics of EP toxicity, and volatile TCLP parameters, will be used to determine whether soils collected are characteristic hazardous wastes (Refs. 58 and 59).

4.6.3.1 ***Volatile Organics.*** Methylene chloride was detected in all of the soil samples at estimated concentrations and also in laboratory blanks, i.e., DMTB-1 (2-4 ft), 4.30 mg/kg; DMTB-1 (6-8 ft), 0.038 mg/kg; DMTB-2 (4-6 ft), 0.004 mg/kg; DMTB-3 (2-4 ft), 14.0 mg/kg; DMTB-4 (6-8 ft), 0.007 mg/kg; DMTB-5 (30-32 ft), 0.011 mg/kg; soil sample DMMW-1 (1-2 ft), 0.006 mg/kg. Methylene chloride was the only VOC identified in DMMW-1, the background soil sample. Acetone was detected in all soil samples except DMMW-1 (1-2 ft) at estimated concentrations and in laboratory blanks. Acetone was identified in DMTB-1 (2-4 ft) at 3.20 mg/kg, in DMTB-1 (6-8 ft) at 0.100 mg/kg, in DMTB-2 (4-6 ft) at 0.005 mg/kg, in DMTB-3 (2-4 ft) at 13.0 mg/kg, in DMTB-4 (6-8 ft) at 0.008 mg/kg, and in DMTB-5 (30-32 ft) at 0.011 mg/kg.

Carbon disulfide, 2-butanone, 1,2-dichloroethylene, benzene, and chlorobenzene were identified only in DMTB-1 (6-8 ft) at 0.010, 0.020, 0.019, 0.045, and 0.025 mg/kg, respectively. Toluene was detected in DMTB-1 (2-4 ft), DMTB-1 (6-8 ft), DMTB-3 (2-4 ft), and DMTB-4 (6-8 ft) at 0.600, 0.230, 3.10, and 0.002 mg/kg, respectively. Ethylbenzene, which of all VOCs was found in the highest amounts, was detected in DMTB-1 (2-4 ft) at 86.0 mg/kg, in DMTB-1 (6-8 ft) at 14.0 mg/kg, in DMTB-2 (4-6 ft) at 0.004 mg/kg, in DMTB-3 (2-4 ft) at 400 mg/kg, in DMTB-4 (6-8 ft) at 0.600 mg/kg, and in DMTB-5 (30-32 ft) at 0.830 mg/kg. Xylene was detected in DMTB-1 (2-4 ft) at 16.0 mg/kg, in DMTB-1 (6-8 ft) at 5.30 mg/kg, in DMTB-3 (2-4 ft) at 85.0 mg/kg, in DMTB-4 (6-8 ft) at 0.011 mg/kg, and in DMTB-5 (30-32 ft) at 0.170 mg/kg.

Methylene chloride and acetone were detected at concentrations higher than the recommended cleanup objectives in DMTB-1 (2-4 ft), DMTB-1 (6-8 ft), and DMTB-3 (2-11 ft). Toluene, ethylbenzene, and xylene were detected at concentrations above the cleanup

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objectives in DMTB-3 (2-4 ft). Ethylbenzene and xylene were detected at concentrations higher than the soil cleanup objectives in DMTB-1 (2-4 ft) and DMTB-1 (6-8 ft).

TICs were detected in DMTB-1 (2-4 ft), DMTB-1 (6-8 ft), DMTB-3 (2-4 ft), and DMTB-5 (30-35 ft). The aggregate concentration of TICs was estimated at 13.3 mg/kg in DMTB-1 (2-4 ft), at 6.277 mg/kg in DMTB-1 (6-8 ft), at 72.0 mg/kg in DMTB-3 (2-4 ft), and at 0.721 mg/kg in DMTB-5 (30-32 ft). No TICs were identified in DMTB-2 (4-6 ft) or DMTB-4 (6-8 ft), or in soil sample DMMW-1 (1-2 ft).

4.6.3.2 ***Semivolatile Organics***. Estimated concentrations of naphthalene were identified in DMTB-1 (2-4 ft) at 1.00 mg/kg, in DMTB-1 (6-10 ft) at 3.60 mg/kg, in DMTB-3 (2-4 ft) at 5.20 mg/kg, and in DMTB-4 (6-8 ft) at 0.073 mg/kg. Estimated concentrations of 2-methylnaphthalene were detected in DMTB-1 (2-4 ft) at 1.60 mg/kg, in DMTB-1 (6-10 ft) at 9.30 mg/kg, in DMTB-3 (2-4 ft) at 13.0 mg/kg, in DMTB-4 (6-8 ft) at 0.180 mg/kg, and in DMTB-5 (30-32 ft) at 0.460 mg/kg.

Dimethylphthalate was identified in all the soil samples except DMTB-5 (30-32 ft). Dimethylphthalate concentrations were highest of all the semivolatile compounds. Dimethylphthalate was identified in DMTB-1 (2-4 ft) at 11.0 mg/kg, in DMTB-1 (6-10 ft) at 50.0 mg/kg, in DMTB-2 (4-6 ft) at 6.80 mg/kg, in DMTB-3 (2-4 ft) at 27.0 mg/kg, in DMTB-4 (6-8 ft) at 2.10 mg/kg, and in DMMW-1A (1-2 ft) at 0.280 mg/kg. Di-n-butylphthalate, like dimethylphthalate, was not detected in DMTB-5 (30-32 ft). Di-n-butylphthalate was identified in DMTB-1 (2-4 ft), DMTB-1 (6-10 ft), DMTB-2 (4-6 ft), DMTB-3 (2-4 ft), DMTB-4 (6-8 ft), and DMMW-1A (1-2 ft) at 0.870, 6.10, 1.20, 3.20, 0.450, and 0.032 mg/kg, respectively. Two other phthalates, butylbenzylphthalate and bis(2-ethylhexyl)phthalate, were detected only in DMTB-2 (4-6 ft), DMBT-4 (6-8 ft), and DMMW-1A (1-2 ft) at concentrations less than 1 mg/kg.

Fluorene was detected in DMTB-3 (2-4 ft) at 1.50 mg/kg and in DMTB-4 (6-8 ft) at 0.073 mg/kg.

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Phenanthrene was detected in DMTB-1 (2-4 ft), DMTB-1 (6-10 ft), DMTB-3 (2-4 ft), DMTB-4 (6-8 ft), and DMMW-1A (1-2 ft) at 0.480, 1.40, 1.60, 0.450, and 0.060 mg/kg, respectively. Twelve additional semivolatile compounds were detected only in DMTB-4 (6-8 ft) at concentrations less than 1 mg/kg; the aggregate concentration was 3.245 mg/kg. The compounds were acenaphthene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene.

Most of the above-mentioned semivolatiles were identified in DMMW-1A, the upgradient and background sample. Most of the concentrations are estimated. Four semivolatile compounds were detected above the recommended cleanup objectives: dimethylphthalate in all samples except DMTB-5 (30-32 ft); benzo(a)pyrene, dibenzo(a,h)anthracene, and benzo(a)anthracene in DMTB-4 (6-8 ft); and benzo(a)pyrene and dibenzo(a,h)anthracene in DMTB-1A (1-2 ft).

Many known and unknown semivolatile TICs were detected in the soil samples. TICs with aggregate sums exceeding 100 mg/kg were estimated in DMTB-1 (2-4 ft) at 121.5 mg/kg, in DMTB-1 (6-10 ft) at 489.7 mg/kg, and in DMTB-3 (2-4 ft) at 546 mg/kg. Lower concentrations of TICs were estimated in DMTB-2 (4-6 ft) at 27.29 mg/kg, in DMTB-4 (6-8 ft) at 12.59 mg/kg, and in DMTB-5 (30-32 ft) at 88.6 mg/kg. Soil sample DMMW-1 (1-2 ft) had an aggregate TIC concentration of 2.057 mg/kg; the sample data are unusable, however.

4.6.3.3 ***Pesticides and PCBs.*** Alpha-BHC was identified in DMTB-1 (2-4 ft) at an estimated concentration of 0.002 mg/kg. Beta-BHC was identified in DMTB-1 (6-10 ft) at an estimated concentration of 0.0036 mg/kg. Delta-BHC was identified in both DMTB-1 (2-4 ft) and DMTB-1 (6-10 ft) at estimated concentrations of 0.0037 and 0.0028 mg/kg, respectively. Alpha-chlordane was detected at 0.038 mg/kg in DMTB-4 (6-8 ft).

Six pesticides were identified at estimated concentrations in DMMW-1A (1-2 ft), the background sample. Alpha-chlordane was detected at 0.034 mg/kg; gamma-chlordane at 0.034 mg/kg; 4,4'-DDE at 0.056 mg/kg; 4,4'-DDD at 0.053 mg/kg; 4,4'-DDT at 0.004 mg/kg; and dieldrin at 0.012 mg/kg.

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Aroclor 1254 (PCB) was identified in all the soil samples except DMMW-1A (1-2 ft), the background sample. Higher concentrations were detected in DMTB-1 (2-4 ft) and DMTB-1 (6-10 ft) at 7.40 and 14.0 mg/kg, respectively. Lower concentrations were identified in DMTB-2 (4-6 ft) (0.880 mg/kg), DMTB-3 (2-4 ft) (5.80 mg/kg), DMTB-4 (6-8 ft) (0.760 mg/kg), and DMTB-5 (30-32 ft) (0.098 mg/kg).

4.6.3.4 ***Metals.*** Soil samples were analyzed for 23 metals and cyanide. All metals except antimony, selenium, and silver were detected in one or more of the soil samples (Table 4-4).

Aluminum concentrations ranged from 13,300 mg/kg in DMTB-1 (2-4 ft) to 1200 mg/kg in DMTB-5 (30-32 ft), lower than the reported range for soil concentrations for aluminum (Ref. 57). Arsenic concentrations ranged from 6.3 mg/kg in DMTB-4 (6-8 ft) to 0.45 mg/kg in DMTB-5 (30-32 ft) and are within reported soil concentrations. Likewise, barium, beryllium, calcium, cobalt, iron, magnesium, manganese, mercury, nickel,and vanadium were detected in all of the soil samples at concentrations that are within reported ranges (Ref. 58). Cadmium, chromium, copper, lead, and zinc were detected at concentrations above background native soil concentrations.

Concentrations of metals were consistently lower in DMTB-5 (30-32 ft), the sample taken below the settling pit and at the greatest depth. Soil sample DMMW-1 (1-2 ft), the background sample, and DMTB-2 (4-6 ft) had the next lowest concentrations of metals. Thus, the background sample did not consistently show the lowest metals concentrations. Soil sample DMMW-1 (1-2 ft) did not have any of the highest metals concentrations. Higher metals concentrations were detected mainly in DMTB-3 (2-4 ft) and to a lesser extent in DMTB-2 (4-6 ft) and DMTB-1 (6-10 ft). Cyanide was detected in DMTB-1 (6-10 ft) at 0.99 mg/kg. There are no background concentrations for cyanide.

4.6.3.5 ***TCLP Volatile Organics.*** The six soil samples were analyzed for TCLP volatile organics (Table 4-4). Chloroform, 2-butanone, and benzene were detected in a few of the soil samples, but at concentrations that did not exceed regulatory levels (Ref. 58).

4.6.3.6 ***Hazardous Characteristics.*** Six soil samples were tested for the hazardous waste characteristics of ignitability, corrosivity, and reactivity as well as EP toxicity metals and pesticides and herbicides. DMTB-1 (6-10 ft) was not analyzed for any of the above parameters, and soil sample DMMW-1 (1-2 ft) was not tested for ignitability.

None of the soil samples demonstrated ignitability, corrosivity, or reactivity characteristics. DMTB-1 (6-10 ft), which contained 0.99 mg/kg of cyanide, was not analyzed for the reactivity characteristic (Refs. 52 and 59).

Concentrations of metals, pesticides, and herbicides did not exceed maximum concentrations of contaminants for characteristics of EP toxicity (Refs. 52 and 59). Again, DMTB-1 (6-10 ft) was not analyzed for these parameters; the highest chromium concentration detected in any of the soil samples was detected at this location.

4.6.4 Surface Soil Data

No surface soil samples were collected during the Phase II investigation.

4.6.5 Monitoring Well Data

Three groundwater monitoring wells were sampled on 28 April 1992. Upgradient well DMMW-1 was located in the northeast portion of the site in front of the building near Duffys Avenue. DMMW-2 and -3 are both downgradient and located at the rear southeastern and southwestern corners of the property. Results of testing are presented in Table 4-5 (Ref. 54). DMMW-4 is the blind duplicate of DMMW-2. Reproduction of the blind duplicate was good, with the exception of the semivolatile TICs (Table 4-5). Data validation and usability reports were prepared and most data were determined to be usable with the appropriate qualifiers (Refs. 55 and 56). NYSDEC Class GA standards are used to evaluate groundwater quality. Natural ambient groundwater ranges for metals are used to indicate background metals concentrations in groundwater (Ref. 60, Appendix A).

TABLE 4-5 (Page 1 of 3)

GROUNDWATER DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMMW-1	MS DMMW-1	MSD DMMW-1	DMMW-2	DMMW-3	[Blind dup of DMMW-2] DMMW-4	TRIP BLANK 4/28/92 (mg/l)	NYSDEC CLASS GA STANDARDS
VOLATILE ORGANICS (µg/l)								
Methylene chloride	2 b j	3 b j	4 b j	2 b j	2 b j	2 b j	2 b j	5
1,1,1-Trichloroethane	5 j	5 j	5 j	ND	ND	ND	ND	5
4-Methyl-2-pentanone	4 j	1 j	ND	ND	ND	ND	ND	50
1,1,2,2-Tetrachloroethane	5 j	2 j	0.9 j	ND	ND	ND	ND	5
Styrene	2 j	1 j	ND	ND	ND	ND	ND	5
Tentatively Identified Compounds								
Butane, 1,3-dichloro-2-methy	5 j	NR	NR	ND	ND	ND	ND	50 GV
Acetaldehyde	ND	NR	NR	ND	ND	ND	ND	50 GV
SEMIVOLATILE ORGANICS (µg/l)								
bis(2-Ethylhexyl)phthalate	3 j	3 j	8 j	2 j	ND	2 j	NR	50

b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
GV - Guidance value.
MS - Matrix spike.
ND - Not detected at analytical detection limit (Ref. 54).
NR - Not run.
MSD - Matrix spike duplicate.

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TABLE 4-5 (Page 2 of 3)

GROUNDWATER DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMMW-1	MS DMMW-1	MSD DMMW-1	DMMW-2	DMMW-3	[Blind dup of DMMW-2] DMMW-4	NYSDEC CLASS GA STANDARDS
SEMIVOLATILE ORGANICS (µg/l)							
Tentatively Identified Compounds							
Octanoic acid	3 j	NR	NR	ND	ND	9 j	50 GV
Phthalic anhydride	5 j	NR	NR	ND	ND	ND	50 GV
Decanoic acid	3 j	NR	NR	ND	ND	6 j	50 GV
Dodecanoic acid	12 j	NR	NR	8 j	ND	17 j	50 GV
Hexadecane	15 j	NR	NR	4 j	ND	22 j	50 GV
Unknown alkane	25 (5) j	NR	NR	2 j	ND	31 (4) j	50 GV
Heptadecane	30 j	NR	NR	7 j	ND	48 j	50 GV
Pentadecane, 2,6,10,14-tetra	8 j	NR	NR	2 j	ND	13 j	50 GV
Octadecane	34 j	NR	NR	8 j	ND	48 j	50 GV
Nonadecane	35 j	NR	NR	8 j	ND	42 j	50 GV
Eicosane	24 j	NR	NR	5 j	ND	26 j	50 GV
Heneicosane	9 j	NR	NR	ND	ND	9 j	50 GV
Unknown	10 (2) j	NR	NR	13 (3) b j	6 (2) b j	38 (4) j	50 GV
Phenol, 4,4'-butylidenebis [2	9 j	NR	NR	3 j	ND	10 j	50 GV
Unknown dodecanoic acid este	6 j	NR	NR	ND	ND	10 j	50 GV
PESTICIDES/PCBs (µg/kg)	ND	ND	ND	ND	ND	ND	-

( ) - Number of compounds in total.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
GV - Guidance value.

NR - Not run.
MS - Matrix spike.
ND - Not detected at analytical detection limit (Ref. 55).
MSD - Matrix spike duplicate.

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TABLE 4-5 (Page 3 of 3)

GROUNDWATER DATA SUMMARY (APRIL 1992)

Depew Manufacturing Corporation NYSDEC I.D. No. 130038

PARAMETER	DMMW-1	[DIL] DMMW-1D	DMMW-2	DMMW-3	[Filtrate] DMMW-3F	[Blind dup of DMMW-2] DMMW-4	NYSDEC CLASS GA STANDARDS	NATURAL GW AMBIENT RANGES (n)
TAL METALS (µg/l)								
Aluminum	2,420	2,512	1,120	7,550	ND	1,440	NS	<5.0 - 1,000
Antimony	ND	ND	ND	ND	ND	ND	3.0 GV	-
Arsenic	2.1 B W	ND	ND	ND	ND	ND	25	<1.0 - 30
Barium	164 B	162 B	77.0 B	101 B	45.1 B	77.3 B	1,000	10 - 500
Beryllium	ND	ND	ND	0.65 B	ND	ND	3.0 GV	<10
Cadmium	ND	ND	ND	ND	ND	ND	10	<1.0
Calcium	47,900	47,212	15,200	15,500	14,700	15,300	NS	1,000 - 150,000
Chromium	110	109	ND	20.7	ND	ND	50	<1.0 - 5.0
Cobalt	ND	ND	ND	7.8 B	ND	ND	NS	<10
Copper	4.0 B	5.4 B	3.5 B	13.5 B	ND	ND	200	<1.0 - 30
Iron	3,270	3,310	2,720	21,800	4,340	3,110	300 (m)	10 - 10,000
Lead	3.0	3.0 B	1.1 B	6.9	ND	1.2 B	25	<15
Magnesium	13,400	13,192	3,050 B	2,850 B	2,310 B	3090 B	35,000 GV	1,000 - 50,000
Manganese	246	244	188	824	720	194	300 (m)	<1.0 - 1,000
Mercury	0.08 B	0.07 B	0.06 B	0.09 B	ND	ND	2.0	<1.0
Nickel	ND	ND	ND	7.9 B	ND	ND	NS	<10 - 50
Potassium	19,900	19,527	2,130 B	3,320 B	3,230 B	2,340 B	NS	1,000 - 10,000
Selenium	ND	ND	ND	ND	ND	ND	10	<1.0 - 10
Silver	ND	ND	ND	ND	ND	ND	50	<5.0
Sodium	79,400	78,463	45,300	22,400	21,500	45,400	20,000	500 - 120,000
Thallium	ND	ND	ND	ND	ND	ND	4.0 GV	-
Vanadium	5.3 B	6.1 B	ND	30.7 B	ND	ND	NS	<1.0 - 10
Zinc	43.2	39.8	19.5 B	40.2	28.2	25.8	300	<10 - 2,000
Cyanide	ND	ND	ND	ND	NR	ND	100	-

(m) - Iron and manganese not to exceed 500 µg/l.
(n) - Ref. 60.
B - Value less than contract-required detection limit but greater than instrument detection limit.
W - Post-digestion spike out of control limits; sample absorbance is less than 50% of spike absorbance.

DL - Diluted sample analysis.
GV - Guidance value.
ND - Not detected at analytical detection limit.
NR - Not run.
NS - No standard.

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4.6.5.1 *Volatile Organics*. Methylene chloride was detected in DMMW-1, -2, -3, -4, and the trip blank at concentrations below the quantitation limit and at concentrations below 5 µg/l, the NYSDEC Class GA standard. Several volatile organics identified in upgradient DMMW-1 and not in downgradient wells included 1,1,1-trichloroethane at 5 µg/l, 4-methyl-2-pentanone at 4 µg/l, 1,1,2,2-tetrachloroethane at 5 µg/l, and styrene at 2 µg/l. These concentrations are estimated. Concentrations of 1,1,1-trichloroethane and 1,1,2,2-tetrachloroethane were both 5 µg/l, which is the NYSDEC Class GA standard for both of these compounds. Concentrations of styrene and 4-methyl-2-pentanone were identified below the Class GA standard. One TIC was detected in DMMW-1 (Table 4-5).

4.6.5.2 *Semivolatile Organics*. One compound, bis(2-ethylhexyl)phthalate, was identified in DMMW-1 at 3 µg/l, in DMMW-2 at 2 µg/l, and in the blind duplicate DMMW-4 at 2 µg/l. These concentrations are below the NYSDEC Class GA standard of 50 µg/l (Table 4-5).

Fifteen semivolatile TICs were detected in DMMW-1; total concentrations were 228 µg/l. Ten were identified in DMMW-2, totaling 60 µg/l. In DMMW-4, the blind duplicate of DMMW-2, 14 semivolatile TICs totaling 329 µg/l were detected.

4.6.5.3 *Pesticides/PCBs*. No pesticides or PCBs were detected in any of the groundwater samples (Table 4-5).

4.6.5.4 *Metals*. Seven groundwater samples were analyzed for metals: DMMW-1 (the upgradient monitoring well location) and -1D (a diluted aliquot of DMMW-1); DMMW-2, -3, and -3F (a filtered sample of DMMW-3); DMMW-4 (the blind duplicate of DMMW-2); and a field blank.

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Four metals - chromium, iron, manganese, and sodium - exceeded groundwater standards. Chromium was identified in DMMW-1, the upgradient well, at an estimated 110 µg/l, above the standard of 50 µg/l. Chromium was also detected in DMMW-3 at 20.7 µg/l, below the standard but above natural ranges. Iron exceeded the 300 µg/l standard in DMMW-1 at 3270 µg/l, in DMMW-2 at 2720 µg/l, in DMMW-3 at 21,800 µg/l, and in DMMW-3F (the filtrate) at 4340 µg/l. Manganese exceeded the 300 µg/l standard in DMMW-3 at 824 µg/l and in

DMMW-3F at 720 µg/l. The sum of manganese and iron exceeded the 500 µg/l standard of manganese and iron together in DMMW-1, -2, -3, and -3F.

Aluminum was detected in DMMW-1 at 2420 µg/l, in DMMW-2 at 2512 µg/l, and in DMMW-3 at 7550 µg/l. Aluminum was not detected in DMMW-3F. Concentrations of aluminum are above natural background ranges (Ref. 60). Potassium was identified in DMMW-1 at 19,900 µg/l. This concentration is above natural ranges; however, there is no standard for potassium. Potassium was detected in lower concentrations in downgradient wells DMMW-2, -3, and -3F. Vanadium was detected in DMMW-3 at 30.7 µg/l, which is above the natural background range.

Other metals - arsenic, barium, beryllium, calcium, cobalt, copper, lead, magnesium, mercury, nickel, and zinc - were identified in groundwater below Class GA standards. Arsenic, the only metal detected in upgradient well DMMW-1, was not detected in any downgradient well. Beryllium, cobalt, and nickel were detected downgradient in DMMW-3 but not upgradient at DMMW-1.

4.6.6 Surface Water Data

No surface water samples were collected during the Phase II investigation.

4.6.7 Sediment Data

No sediment samples were collected during the Phase II investigation.

4.7 CONCLUSIONS

4.7.1 Soil

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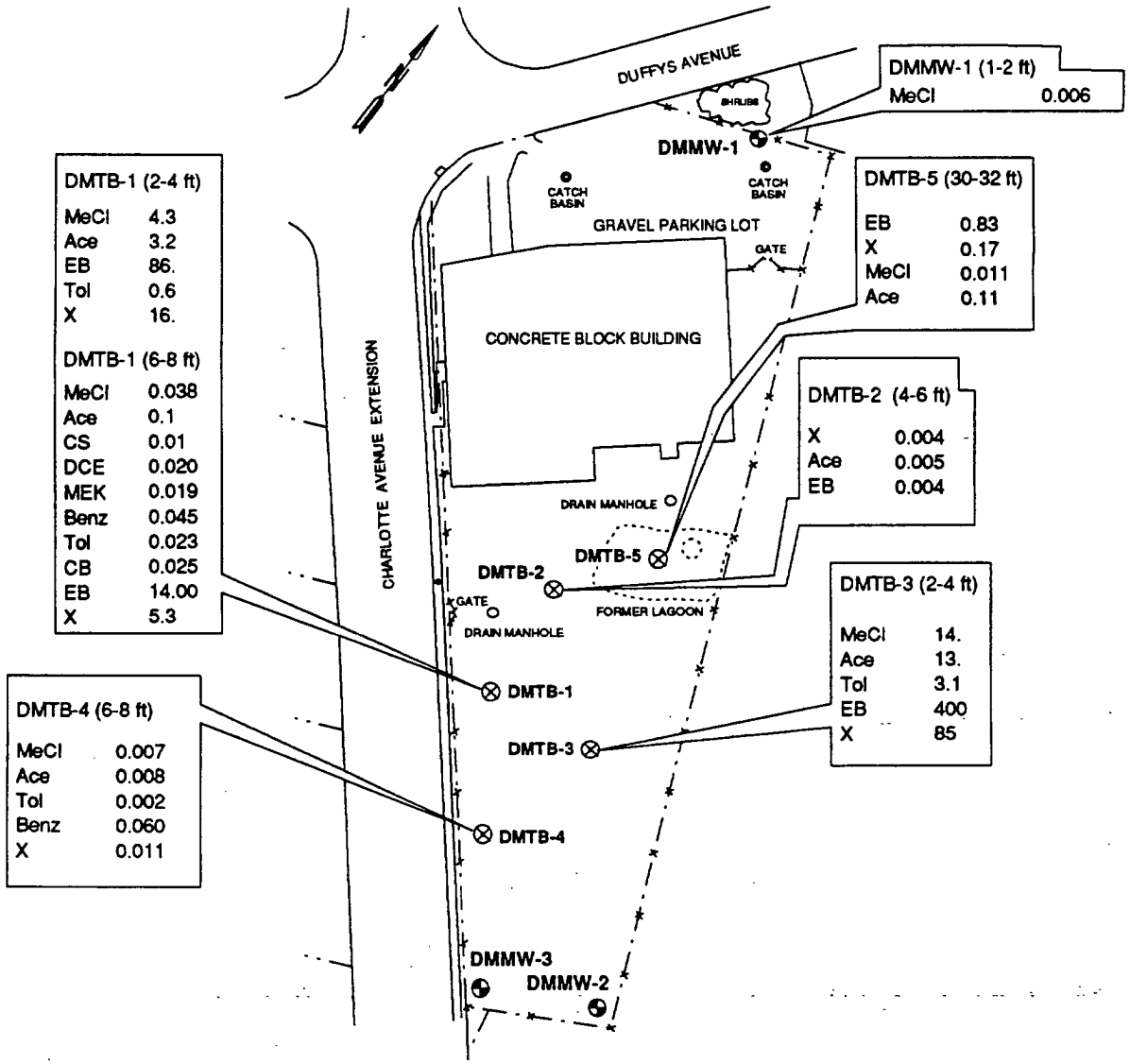
There appears to be minor volatiles contamination of the surface soils at the rear of the building (Figure 4-7). The volatiles found in highest concentrations were ethylbenzene and xylene, which are often associated with gasoline. As this area was used to store what appears



LIST OF ABBREVIATIONS

MeCl	Methylene chloride
Ace	Acetone
CS	Carbon disulfide
DCE	1,2-Dichloroethylene
MEK	2-Butanone
Benz	Benzene
Tol	Toluene
CB	Chlorobenzene
EB	Ethylbenzene
X	Xylene

LEGEND

⊗ Test boring location

◕ Groundwater monitoring well location

All concentrations in mg/kg

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0 50 100 ft

SCALE

1 in. = 100 ft

FIGURE 4-7

SOIL CONTAMINATION MAP
VOLATILE ORGANIC COMPOUNDS

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

to be heavy vehicular equipment (Figure 4-4), it is likely that this contamination was a result of gasoline spillage. Although the concentrations are significantly higher than the recommended soil cleanup objectives, the contaminants were found only near the surface (deepest 6 ft) and not in the groundwater. Therefore, it does not appear that these contaminants are a threat to the groundwater or environment. The EPA health-based concentration for these contaminants is much higher than that found at this site.

Two other volatiles, acetone and methylene chloride, also found in the surface soils at concentrations significantly higher than the recommended cleanup objectives, are likely related to usage at the Depew facility. However, again, the near-surface nature of the contamination, lack of significant concentrations in the groundwater, and levels below the health-based concentrations indicate that these contaminants will not present a threat to the groundwater or environment.

A number of low-level semivolatile compounds were found in both the background sample and site samples (most notably DMTB-4), which indicates that the source was likely the fill material deposited throughout the site or industrial usage of the site and general area (Figure 4-8). Other semivolatiles, benzo(a)pyrene and dibenzo(a,h)anthracene, were identified above the soil cleanup objectives but do not appear to pose any threat. A number of phthalates found in the soils are probably associated with site usage, but again they are below cleanup objectives.

Concentrations of PCBs, ranging from 0.098 mg/kg in DMTB-5 (30-32 ft) to 14.0 mg/kg in DMTB-1 (6-10 ft), are below the 50-ppm regulatory limit but above cleanup levels (Refs. 59 and 61). The source of PCB contamination is unknown; one source may be oil used to suppress dust when vehicles were stored there. Pesticides were detected in lower concentrations and their source is unknown.

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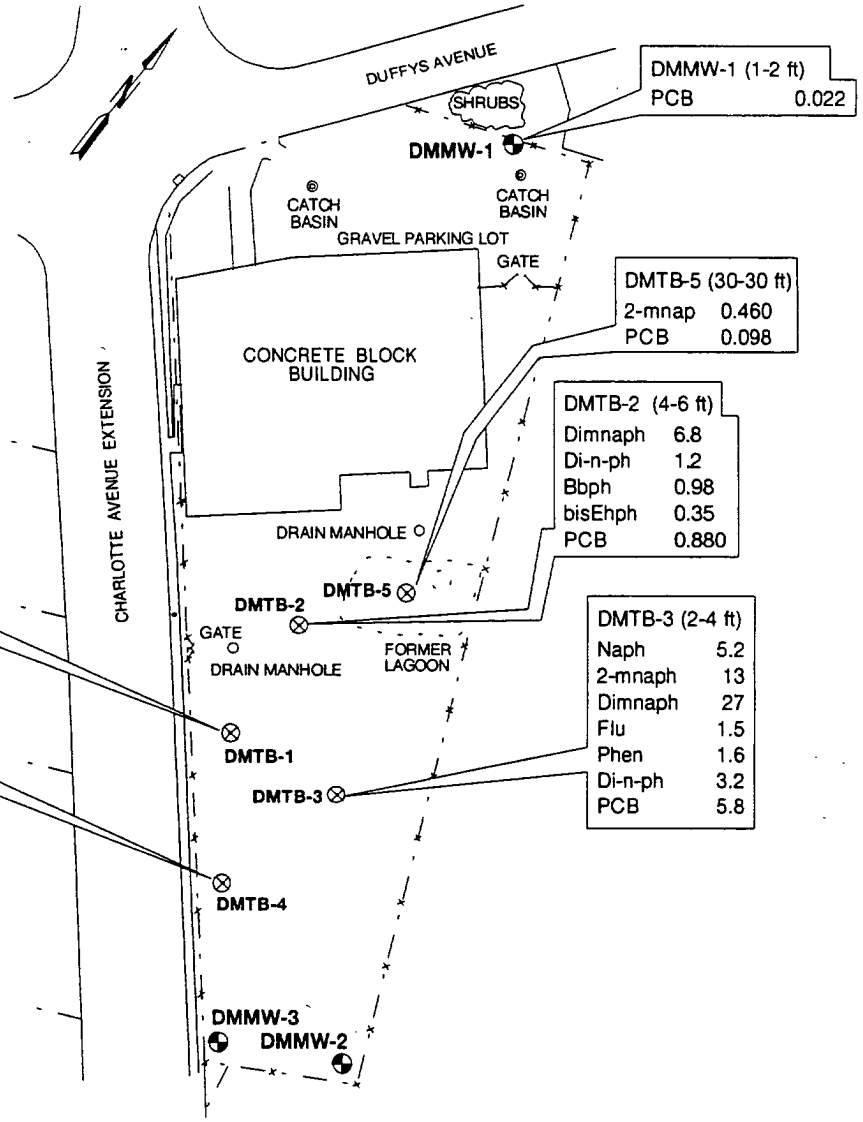
With the exception of DMTB-1 (6-10 ft), soil samples were analyzed for hazardous waste characteristics. Tests for hazardous waste included TCLP volatile organics; EP toxicity metals, pesticides, and herbicides; and ignitability, corrosivity, and reactivity. None of the soil samples tested was determined to be characteristic hazardous wastes.



LIST OF ABBREVIATIONS

Naph	Naphthalene
2-mnaph	2-methylnaphthalene
Dimnaph	Dimethylnaphthalene
Acen	Acenaphthene
Flu	Fluorene
Phen	Phenanthrene
Anth	Anthracene
Di-n-ph	Di-n-butylphthalate
Flu-anth	Fluoranthene
Pyr	Pyrene
Bbph	Butylbenzylphthalate
Benzo(a)	Benzo(a)anthracene
Chy	Chrysene
bisEhph	Bis(2-ethylhexyl)phthalate
Benzo(b)	Benzo(b)fluoranthene
Benzo(k)	Benzo(k)fluoranthene
Benzo(a)p	Benzo(a)pyrene
Indeno	Indeno (1,2,3-c,d) pyrene
Dibenzo(a,h)	Dibenzo(a,h)anthracene
Benzo(g,h)	Benzo(g,h,i)perylene
a-BHC	alpha BHC
b-BHC	beta BHC
d-BHC	delta BHC
achlo	alpha chlordane
gchlo	gamma chlordane
PCB	Aroclor 1254

LEGEND

⊗ Test boring location

Groundwater monitoring well location

All concentrations in mg/kg

NYSDEC013141

0 50 100 ft

SCALE
1 in. = 100 ft

FIGURE 4-8

SOIL CONTAMINATION MAP SEMIVOLATILE COMPOUNDS, PESTICIDES AND PCBs

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

4.7.2 Groundwater

Two VOCs, 1,1,1-trichloroethane and 1,1,2,2-tetrachloroethane, were detected in DMMW-1 at 5 µg/l, the state standard for these compounds in groundwater (Figure 4-9). These compounds were detected in the upgradient monitoring well but not the downgradient wells. These compounds have also been detected in groundwater in the region (Ref. 33). 4-Methyl-2-pentanone and styrene were also identified in DMMW-1, the upgradient well, but not in downgradient wells. These concentrations are estimated and below the Class GA standards. The presence of these compounds is probably not the result of site activity. Methylene chloride was detected in all the groundwater samples, in the field blank, and in the trip blank. The presence of methylene chloride is due to laboratory contamination.

One semivolatile compound, bis(2-ethylhexyl)phthalate, was identified in upgradient monitoring well DMMW-1 at 3 µg/l and in downgradient well DMMW-2 at 2 µg/l. Both concentrations are below the 50 µg/l standard. The upgradient concentration is not significantly higher than the downgradient concentration. Past site activities suggest that phthalates would be likely contaminants; however, they do not appear to be impacting groundwater quality at the site.

NYSDEC013142

Numerous volatile TICs were also detected in upgradient and downgradient monitoring wells. Several metals - chromium, iron, manganese, and sodium - exceeded groundwater standards in both the up- and downgradient monitoring wells. Chromium concentrations were higher at the upgradient well. Aluminum and vanadium concentrations were above natural ambient ranges. Both the highest and lowest concentration of aluminum occurred at a downgradient monitoring well. The vanadium concentration detected in DMMW-3, the downgradient monitoring well, was higher than in DMMW-1 and was above natural background levels. There is no conclusive evidence to link the detected metals in groundwater with past site activities as the standards are exceeded at the upgradient location (Figure 4-9).

Groundwater quality at the site does not appear to be affected by Depew operations. Contaminants may no longer be present at the depths (52-64 ft) at which the Phase II investigation wells were located. (Previous groundwater investigations in this area show that

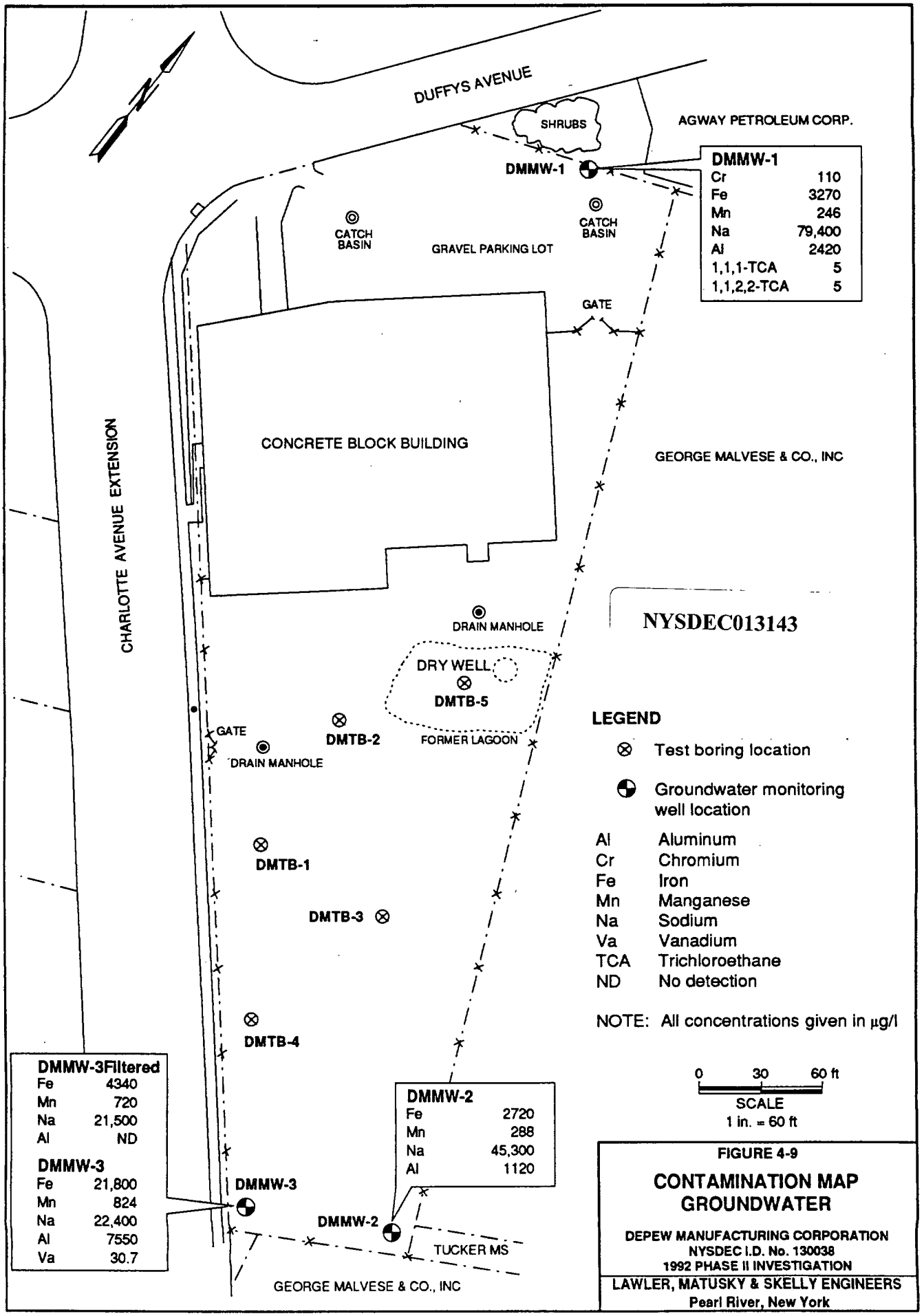


FIGURE 4-9

CONTAMINATION MAP GROUNDWATER

DEPEW MANUFACTURING CORPORATION
NYSDEC I.D. No. 130038
1992 PHASE II INVESTIGATION

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

regional groundwater at much greater depths may be affected.) Present conditions at the site are not likely to impact groundwater quality in the future.

4.8 RECOMMENDATIONS

Based on the results of this Phase II investigation, it is recommended that the Depew site be delisted. The soil samples indicated some contamination, but no listed hazardous wastes. The contamination appears to be near the surface, does not affect the groundwater, and does not pose an environmental or health hazard. However, because these levels of PCB and ethylbenzene are greater than the cleanup guidance levels (1 and 86 mg/kg, respectively), it is recommended that these contaminated soils be remediated. The groundwater data show no contamination from this site. The upgradient well has some contamination, which is not unexpected in light of the documented groundwater contamination surrounding this site.

Considering the solvent usage at this site, its disposal in the unlined pit, and documented concentrations in the waste, it is somewhat surprising that more contamination was not found. It appears that the present owner conducted an effective removal of the waste in the pit; the depth of the pit and the relatively low concentration of contaminants found in the sample below the fill indicate that contaminated soils under the pit have in all likelihood been removed.

The lack of contaminants in the groundwater may have resulted from the removal of the source (pit), natural cleansing of the aquifer over time, and/or the possibility that the pit had been effectively lined by the waste (resin), with minimal leaching of wastes.

In addition to delisting of the site, LMS recommends continued sampling of the monitoring wells as part of Nassau County's regional investigation of groundwater contamination in this area.

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[2] Lawler, Matusky & Skelly Engineers. 1992. Health and safety plan.

[3] Lawler, Matusky & Skelly Engineers. 1992. Magnetometry survey.

[4] Tetra•K Testing. Soil gas survey report.

[5] Lawler, Matusky & Skelly Engineers. 1992. Boring logs and well diagrams. [Appendix A]

[6] Lawler, Matusky & Skelly Engineers. 1992. Well development logs.

[7] Lawler, Matusky & Skelly Engineers. 1992. Permeability tests and calculations.

[8] Bouwer, H., and R.C. Rice. 1976. A slug test for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. *Water Resources Research* 12(3):423-428.

[9] Lawler, Matusky & Skelly Engineers. 1992. Sampling logs.

[10] Permit Compliance Inspection Report issued by NCDOH Department of Land Resources Management for Depew Manufacturing Corporation on 11 November 1983. Names Techtronics as registered industrial waste scavenger.

[11] Chain of Title search performed by H.W. McConnell, Nassau County Clerk, 10 June 1992.

[12] Phase I Investigation Report, Depew Manufacturing Corporation. 1988. Prepared by Roux Associates, Inc., subcontractor to Gibbs & Hill, Inc. [Appendix C]

[13] NCDOH Office of Industrial & Hazardous Waste Management Data supporting Request for Legal Action. Signed by M. Hamann. Data received by Environmental Quality Region 1 on 1 July 1986.

[14] Telephone conversation between M. Tucker, former property owner/former president of Depew, and C. Fern, LMS, regarding operation at 359 Duffys Ave., Hicksville, NY, 6 July 1992.

[15] NYSDEC/NCDOH Certificate to Operate an Air Contamination Source Process, Exhaust or Ventilation System Unit Renewal Application. Completed by Depew Manufacturing Corporation on 30 November 1983.

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[16] NYSDEC Process, Exhaust or Ventilation System Application for Environmental Analysis Rating and Permit to Construct or Certificate to Operate. Completed by Depew Manufacturing Corporation on 12 November 1973; certificate issued 28 January 1974.

[17] NYSDEC memorandum to file from B. O'Brien describing site conditions and sample collection. 2 August 1984.

[18] Letter to M. Tucker from L. Sama, public health engineer, Bureau of Wastewater Management, regarding a SPDES application. 27 June 1979.

[19] NYSDEC Industrial Chemical Survey completed by M. Tucker, owner/president of Depew Manufacturing Corporation. 24 January 1984. [Appendix C]

[20] List of chemicals used at the Depew site submitted by Depew Manufacturing Corporation (undated). Part of NCDOH file.

[21] Gardner, W., ed. 1978. *Handbook of Chemical Synonyms and Trade Names.* Boca Raton, FL: CRC Press, Inc. pp. 67, 572, 665.

[22] Sweet, D., ed. 1987. *Registry of Toxic Effects of Chemical Substances.* 1985-86 ed., Vol. 4. U.S. Department of Health and Human Services, Public Health Services. pp. 62, 568, 569, 910, 911, 966, 3965.

[23] Telephone communication between D. Pietrewicz, Hardwick Chemical Company, and C. Fern, LMS, regarding "DAP tubular." 8 June 1992.

[24] Telephone communication between P. Fricano, Cook Composite (formerly Freeman Chemical), of Port Washington, NY, and C. Fern, LMS, regarding Stypol 40-2462. 10 June 1992.

[25] Material Safety Data Sheet provided by DuPont Chemicals describing Zelec UN (lubricant).

[26] Telephone conversation between J. Ramee, Dupont, and C. Fern, LMS, regarding Zelec UN. 8 June 1992.

[27] NYSDEC Application Form "C" for a State Pollutant Discharge Elimination System (SPDES) Permit, Industrial or Mining. Completed by Mayson Tucker, owner/president of Depew Manufacturing Corporation. 15 June 1979.

[28] Correspondence from B.L. Calder, P.E., Chief, Engineering Section, Bureau of Air Quality Management, NCDOH, to Area Director of U.S. Department of Labor, OSHA, regarding observations made during Depew inspection. 14 November 1979.

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[29] NCDOH Bureau of Land Resources Management. Current Status of Matters Referred to DEC for Enforcement. Eighth Revision. 13 June 1988.

[30] EPA Notification of Hazardous Waste Activity. Completed by M. Tucker, former president Depew Manufacturing. 23 July 1982.

[31] 40 CFR 262.33. 1 July 1990. Protection of Environment. Containing a Codification of Documents of General Applicability and Future Effects.

[32] Correspondence from S. Juczak, P.E., NCDOH Director of Bureau of Land Resources Management, to G. Brezmer, P.E., NYSDEC, regarding Depew facility.

[33] NCDOH and Dvirka and Bartilucci Consulting Engineers. 1986. Investigation of contaminated aquifer segments, Nassau County, NY. [Appendix C]

[34] Correspondence from W. Gilday, public health sanitarian, NYSDOH Bureau of Environmental Exposure, to Mr. C. Goddard, NYSDEC, regarding the Phase I investigation and the aquifer in the Depew site area. 3 December 1987.

[35] Copies of invoice billing for services sent to Hollywood Commercial Renewal at 359 Duffys Ave., Hicksville, NY. Various dates, November 1988 through April 1987. Payment requested for disposal of fiberglass wastes at Model City, New York.

[36] Letter to L. Alden, NYSDEC, from M. Hamann, NCDOH, regarding site visit 29 January 1988.

[37] NCDOH Environmental Health Continuation Sheet. Comments from Inspector L. Lutzker regarding site visit of 23 August 1990.

[38] Cadwell, D.H., ed. Surficial Geologic Map of New York State, Lower Hudson Sheet. 1989. New York State Museum, Geological Survey. Map and Chart Series No. 40.

[39] Isbister, J. 1966. Geology and hydrology of northeastern Nassau County, Long Island, New York. Geological Survey Water-Supply Paper 1825. U.S. Government Printing Office. pp. 12-14, 16, 17, 22, 23, 28-31, 42, 43, 52, 53, and four plates.

[40] Title 6 Environmental Conservation Article 12, 885.6 and 885.9.

[41] Bloom, A.L. 1978. *Geomorphology*. Englewood Cliffs, NJ: Prentice-Hall, Inc. pp. 408-410.

[42] McClymonds, N.E., and O.L. Franke. 1972. Water-transmitting properties of aquifers on Long Island, New York. Geological Survey Professional Paper 627-E. U.S. Government Printing Office. pp. E4, E9-E11, E14, E15.

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[44] Results of data analysis performed by H2M regarding dimethylphthalate and metals. 1 August 1984.

[45] NCDOH Division of Laboratories and Research. Results of analyses performed on samples taken from effluent pipe at Depew site. 12 December 1984.

[46] NCDOH Division of Laboratories and Research. Results of analysis for trace organics performed on samples taken from Depew site. 3 January 1985.

[47] NCDOH Division of Laboratories and Research. Access No. 501126. Results of analysis performed on samples taken from Depew site. 25 April 1985.

[48] Nytest Environmental, Inc. Lab No. 85-10727(B). Results of analysis performed on two solid samples taken from sump behind building and east side of building on Depew site. 28 May 1985.

[49] Nytest Environmental, Inc. Lab No. 85-10991. Results of metals analysis performed on soil samples taken from Depew site and boring location map prepared by Soil Mechanics Drilling Corp.

[50] NCDOH Division of Laboratories and Research. Access Nos. 601559 and 601560. Results of analyses performed on soil samples taken from Depew site on 8 October 1986.

[51] NYSDOH Wadsworth Center for Laboratories and Research. Sample I.D. No. 871009072. 25 June 1987. Results of analysis performed on soil sample taken from drainage basin on Depew site on 23 June 1987.

[52] 40 CFR Parts 190 to 399. 1987. Protection of Environment. Containing a Codification of General Applicability and Future Effect. pp. 373-376.

[53] Schwille, F. 1988. *Dense Chlorinated Solvents in Porous and Fractured Media.* Chelsea, MI: Lewis Publishers. pp. 1-3, 125-127.

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NYSDEC013148

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[57] Memorandum to Regional Haz. Waste Remediation Engineers, Bureau Div. & Section Chiefs from Michael J. O'Toole, Jr., Director, Div. of Hazardous Waste Remediation. Division Technical and Administrative Guidance Memorandum. Determination of soil cleanup objectives and cleanup levels. 16 November 1992.

[58] AnalytiKEN, Inc. No date. Maximum concentration of contaminants for the toxicity characteristic (TCLP).

[59] 6 NYCRR Part 371. 1992. Identification and listing of hazardous wastes.

[60] Dragun, J. 1988. *The Soil Chemistry of Hazardous Materials.* Silver Spring, MD: Hazardous Materials Control Research Institute. pp. 76-79, 398-412, 421-433.

[61] 40 CFR Part 761. Polychlorinated biphenyls spill cleanup policy; final rule. pp. 10688-10710.

LIST OF SUPPORTING DOCUMENTATION

I REFERENCE DOCUMENTATION

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NCDOH Division of Laboratories and Research. Results of analysis for trace organics performed on samples taken from Depew site. 3 January 1985. [Ref. 46]

NCDOH Division of Laboratories and Research. Access No. 501126. Results of analysis performed on samples taken from Depew site. 25 April 1985. [Ref. 47]

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Nytest Environmental, Inc. Lab No. 85-10991. Results of metals analysis performed on soil samples taken from Depew site and boring location map prepared by Soil Mechanics Drilling Corp. [Ref. 49]

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6 NYCRR Part 371. 1992. Identification and Listing of Hazardous Wastes. [Ref. 59]

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40 CFR Part 761. Polychlorinated Biphenyls Spill Cleanup Policy; Final Rule. pp. 10688-10710. [Ref. 61]

II SUBCONTRACTOR OR SUBCONSULTANT REPORTS

- II.i Geophysics Survey [Ref. 3]
- II.ii Soil Gas Survey [Ref. 4]
- II.iii Data Validation Report [Ref. 56]
- II.iv Analytical Data Package [Ref. 54]
- II.v Grain-Size Analysis

III HEALTH AND SAFETY PLAN [Ref. 2]

IV SITE INSPECTION REPORT [Ref. 1]

V SAMPLING REPORT

Well Development Logs [Ref. 6]
Sampling Logs [Ref. 9]

VI PERMEABILITY TESTS AND CALCULATIONS [Ref. 7]

NYSDEC013153

APPENDIX A

BORING LOGS AND WELL DIAGRAMS

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMMW-1

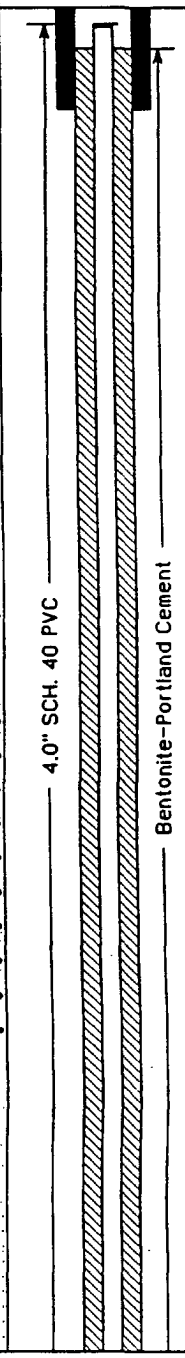
Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: FRONT GRAVEL PARKING LOT, NEAR SHRUB PATCH
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-13-92/4-14-92
Surface Elevation: 127.1
Depth to Water: 51.7
Total Depth: 70

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)
2	SS-1	1.5	DRY		BKGD	Lt. brown fmc sand, some f gravel (round)
6	SS-2	1.2	DRY		0.8	Lt. brown fmc sand, some fm gravel (round to subround), gravel is predominantly quartz
12	SS-3	1.4	DRY		0.2	Lt. orange-brown fmc sand, some fm gravel (round to subround)
16	SS-4	1.4	DRY		0.2	Similar material, gravel fraction decreasing slightly with depth
22	SS-5	1.0	DRY		10	
26	SS-6	1.2	DRY		15	
32	SS-7	1.1	DRY		--	
36	SS-8	1.4	DRY		6	Tan fm sand; slightly compact - trace dark minerals

LITHOLOGY

WELL DIAGRAM



NYSDEC013155

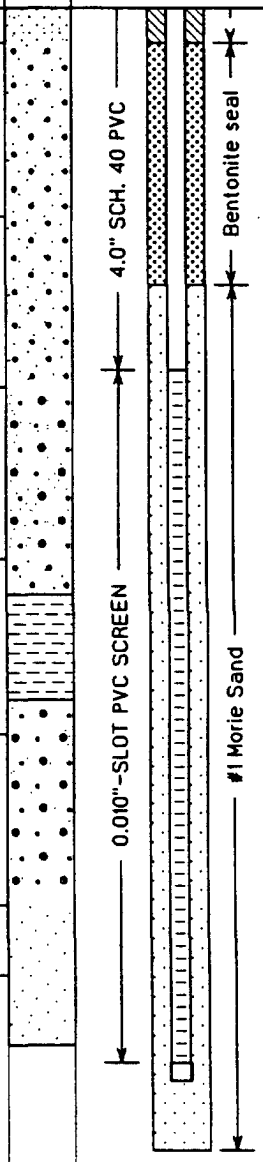
TEST BORING/MONITORING WELL CONSTRUCTION LOG	Page 2 of 2
Project Name: DEPEW MANUFACTURING	Boring I.D.: DMMW-1

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 578-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: FRONT GRAVEL PARKING LOT, NEAR SHRUB PATCH
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-13-92/4-14-92
Surface Elevation: 127.1
Depth to Water: 51.7
Total Depth: 70

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)
41	SS-9	1.3	DRY		2	Lt. brown medium sand, trace c sand and f gravel; occaisional rusty patches
43						
45	SS-10	1.0	DRY		BKGD	Yellow-brown to orange-brown fine sand, trace f gravel (round)
47						
49						
51	SS-11	1.0	DAMP		22	Lt. brown mc sand and fm gravel (round to subround)
53						
55	SS-12	1.2	WET		.2	upper 0.6: Tan fm sand, trace f gravel (rounded)
57						lower 0.6: Brown silt; soft
59						
61	SS-13	0.8	WET		10	Lt. brown fm sand, some fm gravel (round)
63						
65	SS-14	2.0	WET		.4	Lt. tan fm sand; very clean, grains subround to round
67						E.O.B.
69						
71						
73						
75						
77						

LITHOLOGY



NYSDEC013156

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMMW-2

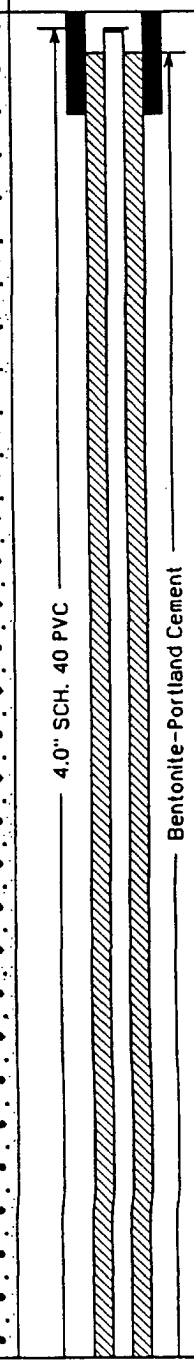
Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, SE CORNER
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-14-92/4-15-92
Surface Elevation: 127.3
Depth to Water: 53
Total Depth: 71

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine, m = medium, c = coarse)
2, 4	SS-1	1.2	DRY		BKGD	Brown fm sand, some fm gravel (subang to subround) - also glass
6, 8	SS-2	0.2	DRY		BKGD	pushed cobble - Lt. tan fm sand in shoe
10, 12, 14	SS-3	0.9	DRY		BKGD	Lt. brown fmc sand, some fm gravel (round to subround)
16, 18	SS-4	0.9	DRY		0.4	Lt orange-brown, fmc sand (c fraction subordinate), little fm gravel (round) - loose
20, 22, 24	SS-5	1.0	DAMP		BKGD	Similar material
26, 28	SS-6	0.1	DAMP		BKGD	pushed gneissic cobble, similar material to above in shoe
30, 32, 34	SS-7	1.1	DAMP		0.8	Lt. brown fmc sand, little f gravel (subround) - trace dark minerals, loose
36, 38	SS-8	0.3	DAMP		BKGD	Similar material to above

LITHOLOGY

WELL DIAGRAM



NYSDEC013157

TEST BORING/MONITORING WELL CONSTRUCTION LOG	Page 2 of 2
Project Name: DEPEW MANUFACTURING	Boring I.D.: DMMW-2

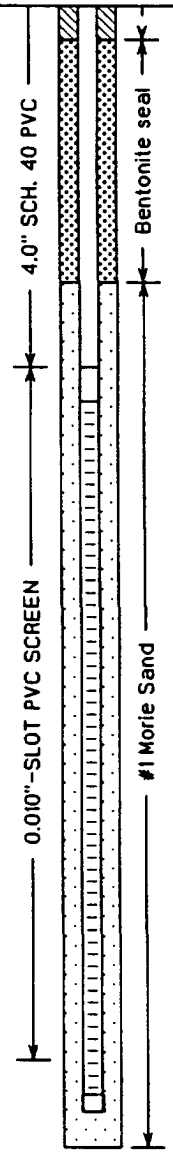
Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, SE CORNER
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-14-92/4-15-92
Surface Elevation: 127.3
Depth to Water: 53
Total Depth: 71

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine, m = medium, c = coarse)
41	SS-9	1.2	DAMP		3-5	Lt. orange-brown fmc sand (c fraction subordinate), trace fm gravel (subround) - gravel is mostly quartz
43						
45	SS-10	1.0	DAMP		BKGD	Similar material to above
47						
49						
51	SS-11	0.3	DAMP		BKGD	pushed cobble - Lt brown fm sand, trace fm gravel (subround) in shoe
53						
55	SS-12	1.5	WET		3	Lt tan fm sand (f fraction subordinate), trace f gavel (round)
57						
59						Similar material to above
61	SS-13	0.8	WET		0.8	
63						
65	SS-14	1.5	WET		BKGD	Gray-brown fmc sand (c fraction subordinate), grades downward in split-spoon to lt. brown fmc sand (c fraction subordinate), trace f gravel (round)
67						
69	SS-15	1.5	WET		BKGD	Lt. brown fm sand; very clean, grains subround to round
71						E.O.B.
73						
75						
77						

LITHOLOGY

WELL DIAGRAM



NYSDEC013158

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Project Name: DEPEW MANUFACTURING

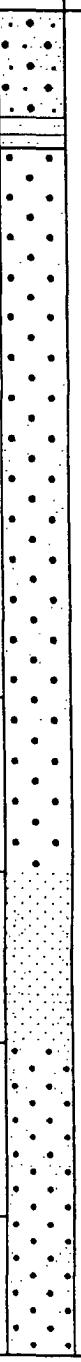
Boring I.D.: DMMW-3

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, SW CORNER
Geologist: JOSEPH MASTROMARCHI

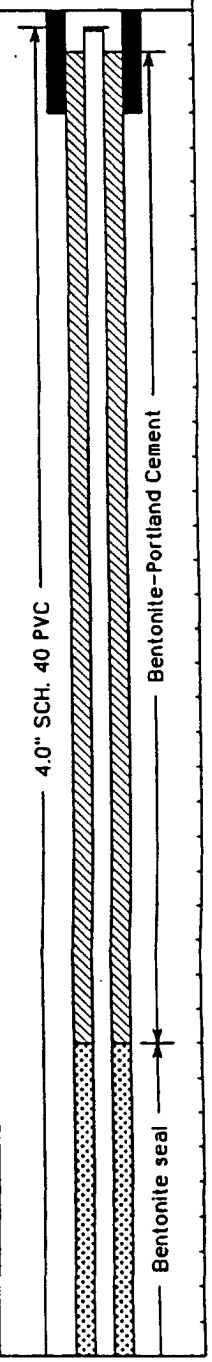
Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-16-92/4-17-92
Surface Elevation: 126.3
Depth to Water: 53
Total Depth: 70

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)
2, 4	SS-1	0.4	DAMP		BKGD	Dk. brown fmc sand and fm gravel (dk gray and white pebbles, angular) - (fill) 3-4 ft interval contains lt. brown clayey silt - observed in cuttings
6, 8	SS-2	0.8	DRY		BKGD	Lt. brown fmc sand (c fraction is subordinate), some fm gravel (subang to subround) - cobbles
10, 12, 14	SS-3	NR	--		--	No recovery, probably pushed cobble
16, 18	SS-4	0.8	DRY		BKGD	Lt. browm fm sand and fm gravel (subang to subround) - pounded through hematitic cobble
20, 22, 24	SS-5	0.9	DAMP		BKGD	Lt. brown fmc sand (c fraction subordinate), some fm gravel (rounded), trace silt
26, 28	SS-6	0.4	DRY		BKGD	Lt brown fm sand, trace f gravel (subround)
30, 32, 34	SS-7	1.5	DAMP		BKGD	Lt brown fmc sand (c fraction subordinate), some fm gravel (subround), trace silt
36, 38	SS-8	1.0	DAMP		BKGD	Lt. brown fm sand, some fm gravel (subround) - gravel is mostly quartz

LITHOLOGY



WELL DIAGRAM



NYSDEC013159

TEST BORING/MONITORING WELL CONSTRUCTION LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMMW-3

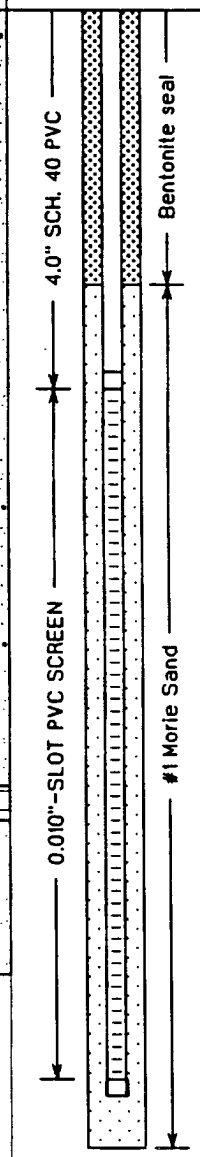
Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, SW CORNER
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN, 6.25-IN HSA
Date Begin/End: 4-16-92/4-17-92
Surface Elevation: 126.3
Depth to Water: 53
Total Depth: 70

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	PID READING	FID READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine, m = medium, c = coarse)
41	SS-9	1.0	DAMP		BKGD	Lt. brown fine sand, trace mc sand, trace f gravel (round) - 2-inch rusty interval near top of sample
43						
45						
47	SS-10	1.1	DAMP		BKGD	Lt. brown fm sand, some f gravel (round), trace silt
49						
51	SS-11	1.3	DAMP		BKGD	upper: Lt. brown to brown fm sand, little fm gravel (round) lower: Lt. brown fm sand and fm gravel, trace silt
53	SS-12	1.4	WET		BKGD	
55	SS-13	0.9	WET		BKGD	upper 0.7: Lt. brown fm sand, trace fm gravel (rounded) lower 0.6: Lt. brown fmc sand and fm gravel (round)
57	SS-14	0.8	WET		BKGD	Lt. tan fm sand, trace fm gravel (round), trace silt
59	SS-15	0.5	WET			Dark gray fm sand, some fm gravel (round) Lt gray fm sand
61	SS-16	1.7	WET		BKGD	Lt. brown fm sand - last 0.2 ft of sample brown silt, trace clay
63	SS-17	1.7	WET		BKGD	Brown f sand
65	SS-18	0.7	WET		BKGD	Brown f sand, trace silt
67						E.O.B.
69						
71						
73						
75						
77						

LITHOLOGY

WELL DIAGRAM



NYSDEC013160

TEST BORING LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMTB-1

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, 30 FT SW OF GATE
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN HSA
Date Begin/End: 4-20-92
Surface Elevation: 127
Depth to Water: NO WATER
Total Depth: 10

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	OVA READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)	LITHOLOGY
	SS-1				upper 1.2: Dk brown fmc sand, some fm gravel (subround), trace silt - (fill) lower 0.3: Lt. brown fm sand, some fm gravel (round) (fill)	
2		1.5	DAMP	BKGD		
	SS-2				upper 0.5: Browm fm sand, some fm gravel (subround) (fill) lower 0.6: Black fill consisting of a fine (silt and fine sand-sized) lightweight, fibrous particulate material; also wood chips (decomposed) - strong odor	
4		1.1	DRY	14		
	SS-3				Dark gray to black lightweight (fluffy) fine fibrous material - similar to above - odor	
6		0.4	DAMP	2		
	SS-4				Gray-white lightweight fiborus material, some fm gravel (round) - odor	
8		1.2	DRY	13		
	SS-5				Gray-black lightweight fibrous material mixed with fm sand, little fm gravel (subround); also wood particles	
10		1.2	DAMP	8		
					E.O.B.	

NYSDEC013161

TEST BORING LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMTB-2

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: REAR LOT, 60 FT E OF GATE
Geologist: JOSEPH MASTROMARCHI

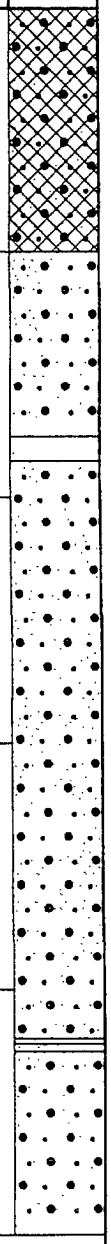
Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN HSA
Date Begin/End: 4-20-92
Surface Elevation: 127
Depth to Water: NO WATER
Total Depth: 10

GEOLOGIC DESCRIPTION

and = 35-50% | f = fine
some = 20-35% | m = medium
little = 10-20% | c = coarse
trace = 0-10%

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	OVA READING	GEOLOGIC DESCRIPTION
	SS-1				Brown fm sand and fm gravel (subround), trace silt - (fill) lowermost portion: gray powdery fibrous material (fill)
2		1.7	DAMP	4-5	Lt. brown fmc sand and fm gravel (subround quartz)
	SS-2				Two-inch fine sand interval near bottom of sample
4		1.0	DRY	BKGD	Brown fm sand and f gravel (subround)-
	SS-3				
6		1.3	DRY	11	Lt. brown fm gravel (subround) and fmc sand
	SS-4				
8		1.0	DRY	1-2	Lt tan fmc sand and fm gravel (subround)
	SS-5				One-inch dk. brown (organic) f sand and silt layer near top of sample
10		0.9	DRY	2-4	E.O.B.

LITHOLOGY



NYSDEC013162

TEST BORING LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMTB-3

Site Location: 359 DUFFY AVE., HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: CTR-REAR LOT, 10 FT E OF OLD RESIN SLABS
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN HSA
Date Begin/End: 4-20-92
Surface Elevation: 127
Depth to Water: NO WATER
Total Depth: 10.5

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	OVA READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)	LITHOLOGY
	SS-1	1.37	DAMP	BKGD	Brown fmc sand, little fm gravel (round), grading to black near bottom of sample, a few chips of hardened green resin, some glass fibers (fill)	
2	SS-2	2.0	DRY	20	upper 1.0: Black silt and fm sand, little fm gravel (subround), sheet metal fragment (fill) lower 1.0: Brown fm sand and fm gravel (subround quartz), little silt	
4	SS-3	0.7	DRY	9	Gray fm sand, little fm gravel (round) - odor	
6					Spoon refusal - driller reports cobble while augering to 6.5 ft	
8	SS-4	1.3	DAMP	BKGD	Lt. brown fmc sand and fm gravel (subround)	
10	SS-5	1.4	DAMP	BKGD	Lt. brown fmc sand and fm gravel (subround)	
					E.O.B.	

NYSDEC013163

TEST BORING LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMTB-4

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: 180 FT S OF BLDG. 25 FT E OF CHARLOTTE AVE.
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN HSA
Date Begin/End: 4-20-92
Surface Elevation: 127
Depth to Water: NO WATER
Total Depth: 10

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	OVA READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)	LITHOLOGY
	SS-1				Brown silt some fm gravel (subangular to subround), trace fm sand - fairly dense material, black wood chips in shoe, odor (fill)	
2		1.8	DAMP	BKGD		
	SS-2				Black f sand and silt, little fm gravel (subround) - concrete in shoe (fill)	
4		1.0	DRY	4-5		
	SS-3				Black f sand and silt, little fm gravel (subround)	
6		1.2	DAMP	4-5		
	SS-4				Brown fm sand, some fm gravel (subround), trace silt	
8		1.5	DAMP	3-4		
	SS-5				Brown fm sand, some fm gravel (subround), trace silt	
10		0.7	DAMP	BKGD		
					E.O.B.	

NYSDEC013164

TEST BORING LOG

Project Name: DEPEW MANUFACTURING

Boring I.D.: DMTB-5

Site Location: 359 DUFFY AVE. HICKSVILLE, N.Y.
Job Number: 576-047
Client: NYSDEC
NYSDEC Site I.D. 130038
Boring Location: IN MIDDLE OF OLD BACKFILLED LAGOON
Geologist: JOSEPH MASTROMARCHI

Drilling Co.: WATER RESOURCES, INC.
Drilling Method: 3.25-IN HSA
Date Begin/End: 4-20-92
Surface Elevation: 127
Depth to Water: NO WATER
Total Depth: 32

DEPTH (FT)	SPLIT-SPOON	RECOVERY	MOISTURE	OVA READING	GEOLOGIC DESCRIPTION (and = 35-50%; some = 20-35%; little = 10-20%; trace = 0-10%; f = fine; m = medium; c = coarse)	LITHOLOGY
2, 4, 6, 8, 10, 12, 14, 16, 18					Auger through shredded C & D fill to 20 ft - brick fragments, wood, plastic - Six-ft diameter concrete catch-basin is installed in east side of old excavated lagoon, reportedly at time of backfilling; depth is 20 ft - Strong acrid-sweet (solvent?) odor noted over borehole while drilling; OVA readings of 20 units above background	
20	SS-1	0.4	DAMP	5	Gray fmc sand and fm gravel (round) - odor	
22					Auger to 23 ft	
24	SS-2	0.5	DAMP	18	Gray fmc sand and fm gravel (round) - odor	
26, 28					Auger to 30 ft	
30	SS-3	1.5	DAMP	20-70	Gray fmc sand and fm gravel (round) - odor	
32					E.O.B.	
34						

NYSDEC013165

APPENDIX B

DATA USABILITY SUMMARY

DATA USABILITY SUMMARY

The final report from Data Validation Services concluded that all the samples collected from the Depew Manufacturing Corporation (NYSDEC I.D. No. 130038) site and analyzed by Aquatec Inc. were in compliance with NYSDEC Analytical Services Protocol (ASP) (December 1991) with the following exceptions:

BNAs

- As no matrix spike blank was processed with the BNA analyses, the BNA results for soil and water samples are all noncompliant.
- The extraction for soil sample DMMW-1 (1-2 ft) was conducted 10 days after the verified time of sample receipt (VTSR), five days outside the required holding time, causing this analysis to be noncompliant.
- The extraction for aqueous sample DMMW-1 was conducted six days after VTSR, one day outside the required holding time (five days), causing this analysis to be noncompliant.

Pesticides/PCBs

- As no matrix spike blank was processed with the pesticide/PCB analyses, the pesticide/PCB analyses for soil and water samples are noncompliant.
- The pesticide/PCB extraction for soil sample DMMW-1 (1-2 ft) was performed 10 days after VTSR, five days outside the allowable holding time, causing this analysis to be noncompliant. Furthermore, the analysis was not performed until 41 days after the extraction, violating the required holding time of 40 days.
- The gel permeation chromatography (GPC) calibration check produced outlying recoveries for dieldrin, causing the soil samples analyzed for pesticides/PCBs to be noncompliant.
- Samples DMTB-2 (4-6 ft), DMTB-3 (2-4 ft), and DMTB-4 (6-8 ft) were diluted to bring the relatively high Aroclor concentrations into calibration range. The dilutions were analyzed 43 days following extraction, three days beyond the required holding time (40 days from extraction).

After reviewing the data report and the validator's report, LMS concluded the following with respect to the noncompliant data:

NYSDEC013167

BNAs

- Although no matrix spike blank was processed with the associated soil and water samples, the reported data for the BNA fraction are unaffected and usable without qualification.

- As there were no BNA target compound list (TCL) compounds detected for soil sample DMMW-1 (1-2 ft), and only a few tentatively identified compounds (TICs) were detected, the holding time violation of five days may have compromised this sample. As this sample was collected to represent background concentrations at the site, no definitive statement concerning background conditions can be drawn from these results; therefore, there is no baseline to compare the TCL concentrations detected in the other soil samples. The noncompliant data are therefore unusable and resampling and reanalysis were necessary.

- Since the aqueous sample DMMW-1 was received within one day of sampling, the one-day violation in holding time will not significantly compromise the results for the BNA analysis. The reported results are usable without qualification.

Pesticides/PCBs

- Although no matrix spike blank was processed with the associated soil and water samples, the reported data for the pesticide/PCB fraction are unaffected and remain usable without qualification.

- Although one low-level Aroclor (1254) was detected in background soil sample DMMW-1 (1-2 ft), there were no TCL pesticides or TICs detected in this sample, which may have been compromised by the five-day violation in extraction holding time and analysis 41 days later. This sample was collected to represent background soil concentrations at the site. As there is no certainty that the holding time violations did not compromise the TCL concentrations potentially present in the sample, no comparison can be made with the other soil samples from the site. The reported noncompliant data for background soil sample DMMW-1 (1-2 ft) are therefore unusable and resampling and reanalysis were necessary.

- The outlying calibration check standard for dieldrin, which caused the soil and aqueous analyses to be noncompliant, does not directly affect the reported results. The reported data are therefore usable without qualification.

- The diluted samples found noncompliant due to a violation in the analysis holding time of 40 days had Aroclor 1254 confirmed by GC/MS in concentrations ranging from 0.760 mg/kg [DMTB-4 (6-8 ft)] to 6.600 mg/kg [DMTB-3 (2-4 ft)]. Although some low-level pesticides may have been diluted out, detectable concentrations of chlordane in DMTB-4 (6-8 ft) suggest that the holding time violation did not severely compromise the pesticide

concentrations in these samples. The data are therefore usable without qualification.

The validator found the remaining data compliant with NYSDEC ASP; however, several other issues possibly affecting data usability were reviewed by LMS. The results of that review are presented below.

The reported values for 2-butanone and chloroform in the toxicity characteristic leaching procedure (TCLP) volatile extracts are likely laboratory contaminants as these compounds were also detected in the associated TCLP extraction blank at similar concentrations. The reported data have been appropriately qualified, and should be considered laboratory artifacts and not due to site contamination. The volatile organic analysis for soil sample DMTB-5 (30-32 ft) initially contained ethylbenzene at the detection limit. As discussed in the case narrative, the diluted reanalysis detected ethylbenzene and xylene at approximately 10 times the original concentration and has been appropriately qualified as "estimated" by the laboratory.

As discussed in the case narrative, the BNA analyses for soil sample DMTB-1 (6-10 ft) was diluted forty-fold due to high concentrations of TICs in the original analysis. A laboratory review of the original analysis, matrix spike (MS), and matrix spike duplicate (MSD) suggested that the MSD may have suffered loss of contaminants during the GPC cleanup. Due to the poor correlation between the original analysis and the MS, the reported MSD data are not representative of the sample and will be usable only for matrix recovery information.

As discussed in the validator's report, minor surrogate outliers were encountered for the soil and aqueous fractions during the pesticide/PCB analyses. The surrogate recoveries are advisory only and therefore did not require further action. The overall usability of the data is unaffected.

NYSDEC013169

The poor correlation between DMTB-1 (6-10 ft) and DMTB-1MSD (6-10 ft), as indicated by the relative percent differences (%RPD) for iron (44%), magnesium (57%), and manganese (66%), is likely indicative of sample nonhomogeneity; the reported concentrations for iron, magnesium, and manganese should be considered estimated. Zinc data for the soil

samples may be biased high as the matrix spike recovery was 185%; reported concentrations should also be considered estimated. Although the soil antimony results have been reported as "nondetected," the antimony soil MS recovered at 44.6%; some concentrations may have exceeded the quantitation limit. Summarized thallium results for DMTB-5 (30-32 ft), which have been corrected with a "W" qualifier, were not flagged on the Form I sheets because of the outlying postdigest spike (122.5% above the limit of 115%). The aqueous samples flagged with an "E" qualifier have been removed on the summarized data for reasons fully discussed in the validator's report. The laboratory reported the silver postdigest soil spike sample recovery at 0%, but it was actually recovered at 108%, as indicated in the raw data.

Overall, the results of LMS' data usability review concluded that the BNA and pesticide/PCB data for the background soil sample DMMW-1 (1-2 ft) are unusable and resampling and reanalysis were necessary. The remainder of the data submitted for the Depew Manufacturing Corporation site are usable with the appropriate qualifications, as indicated in Data Validation Services' report.

Resample Data

Background soil sample DMMW-1 (1-2 ft) was resampled in July 1992 [designated DMMW-1A (1-2 ft)] and analyzed for BNAs and pesticides/PCBs. Initial BNA analysis of DMMW-1A (1-2 ft) produced a noncompliant recovery (3%) for the surrogate compound 2,4,6-tribromophenol (TBP), well below the allowable limit of 19%. The sample was reextracted (five days beyond the required holding time) and reanalyzed. The reanalysis also produced low surrogate recovery for TBP, which confirmed matrix interferences. However, due to the holding time violation and analytes detected in the associated method blank, the reanalyzed data are unreliable and are rejected. The initial analysis is usable with the qualification that due to low surrogate recoveries the reported concentrations for acid components are highly estimated; the data are reliable only to indicate the presence of these compounds.

The resample pesticide fraction was in compliance with ASP. All results were substantiated by the raw data. The data are usable without qualification.

APPENDIX C

PERTINENT FILES OR RECORDS

REFERENCE 12

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE 1 INVESTIGATION

Depew Manufacturing Company
Site No. 130038
Town of Oyster Bay, Nassau County

Final - July 1988

RECEIVED

AUG 30 1988

BUREAU OF
HAZARDOUS SITE CONTROL
DIVISION OF HAZARDOUS
WASTE REMEDIATION

Prepared for:

New York State
Department of
Environmental Conservation
50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole, P. E., Director

Prepared by:

Roux Associates, Inc.
Subcontractor to
Gibbs & Hill, Inc.

NYSDEC013173

A 31

CONVERSATION ACKNOWLEDGMENT FORM

Site Name: Depew Manufacturing Co. (I.D. No. 130038)
Date: June 10, 1987
Phone No. (516) 681-3885
Person Contacted: Mr. George Prinz
Interviewer(s): J. Byrnes, J. Yeary

Address: Huntington, NY
Type of Contact: In person

NYSDEC013174

Summary:

Mr. Prinz had purchased the Depew property in December 1986. Mr. Prinz is currently operating an asbestos contracting business under the name of Hollywood Commercial which removes and transports asbestos wastes from various job locations to state approved landfills.

Mr. Prinz was extremely helpful and cooperative during our site inspection visit. He informed us that when he purchased the property from Mr. Mason Tucker (owner of Depew Manufacturing), he signed a contract which included that he take full responsibility for any environmental problems that may exist on the property.

After moving into the facility Mr. Prinz began to excavate the lagoon which contained the solidified fiberglass waste. He transported the waste piles into his building in an effort to limit the threat of the pollutants migrating down to the ground water. The waste piles were then sealed properly and transported (with all the legal permits) along with asbestos waste from Mr. Prinz's contracting jobs. He has spent over $200,000 in the transportation and the disposal of wastes up to New York State landfills. There is still a large amount of waste piles sitting within the facility and Mr. Prinz is continuing the removal process.

Mr. Prinz informed us that he is very anxious to end this problem and that he will remove all the remaining wastes within the building and finish excavating the lagoon until the waste is no longer encountered. He then wishes to fill in the excavated pit with clean fill and black top the area for a parking lot.

Acknowledgement:

I have read the above transcript and I agree that it is an accurate summary of the information verbally conveyed to Roux Associates' interviewers.

Signature: George Prinz Sr. Date: June 23, 1987

On June 23, 1987 we revisited the Depew site and met with Mr. Prinz. We obtained a soil sample at the bottom of the pit which Mr. Prinz has excavated down to 25' below land surface. All wastes appear to be removed from pit and a pile of soil and waste is now adjacent to pit and covered with a tarp.

REFERENCE 19

NYSDEC013175

File
~~SPDES~~
Permits

The
DEPEW MANUFACTURING Corporation
MANUFACTURERS OF "Durolux" FIBERGLASS RODS AND TUBES
359 DUFFY AVENUE · HICKSVILLE, NEW YORK 11801
516 681-2900

January 25, 1984

Robert R. Willis
Nassau County Dept. of Health
Industrial & Hazardous Wastes Management
240 Old Country Road
Mineola, N.Y. 11501

Gentlemen,

Ref: Facility I.D. No. NY-010-7719

The attached "Industrial Chemical Survey" is being submitted in accordance with the hearing directive of December 1, 1984. As soon as we receive the analysis of our effluent discharge by an independant laboratory, it will be forwarded to you.

I hope this clears up the confusion and we will be issued our SPDES permit.

Very truly yours,

Mayson H. Tucker

Mayson H. Tucker

cc: Joan B. Scherb
Regional Attorney
State University at Stony Brook
Building 40
Stony Brook, N.Y. 11794

NYSDEC013176

BLRM

RECEIVED
JAN 30 1984
NCDH
BLRM

(83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

Reference

INDUSTRIAL CHEMICAL SURVEY

Please refer to attached table I

PART I

EASE COMPLETE AND RETURN TO THE ABOVE ADDRESS, ATTENTION: INDUSTRIAL CHEMICAL SURVEY.

MPANY NAME	SIC CODE (If known)	OFFICE USE ONLY
Depew Manufacturing Corporation	3949	

MPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
259 Duffy Avenue	Hicksville	New York	11801

NT NAME (If different)	CONTACT NAME	TELEPHONE Area
	Anthony D. Frank	(516) 681-2900

NT ADDRESS (If different) Street	CITY	STATE	ZIP CODE

NCIPAL BUSINESS OF PLANT

Manufacture of fiberglass rods

TE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☒ No
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number ☐☐☐☐☐☐☐ ☐ Yes ☒ No
3. Do you discharge liquid wastes in any other manner? ☒ Yes ☐ No
   Explain Process waste to collecting pit & sanitary waste to septic system.

If any of the above are "Yes":

a. Do you discharge process or chemical wastes – (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☒ Yes ☐ No
b. Do you discharge non-contact cooling water? ☐ Yes ☒ No
c. Do you discharge collected storm drainage only? ☐ Yes ☒ No
d. Do you discharge sanitary wastes only? ☐ Yes ☒ No

AIR

1. Does your facility have sources of possible emissions to the atmosphere? ☒ Yes ☐ No
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) 2 8 2 4 0 0 0 7 1 2

LIQUID WASTES

1. List Name and Address of Firm (Including yourself) removing wastes other than office and cafeteria refuse.

Name	Address	City	State	Zip Code
Techtronics Ecological Corporation	501 Flushing Ave.	Brooklyn	N.Y.	11205
Oyster Bay Sand & Gravel Inc.	292 Duffy Ave.	Oyster Bay	N.Y.	11771

NYSDEC013177

2. List Location(s) of Landfill(s) **owned** and used by your facility.

		Active	Inactive
1	N/A	☐	☐
2	N/A	☐	☐

PESTICIDES

1. Does this facility:
   Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☒ No
   Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☒ No
   Formulate Pesticides? ☐ Yes ☒ No
   Repackage Pesticides? ☐ Yes ☒ No
2. EPA Establishment Number ☐☐☐☐☐☐ – ☐☐ – ☐☐☐

PART III

SUBSTANCES OF CONCERN
(Refer to attached TABLE I)

Complete all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do not include chemicals used only in analytical laboratory work. Enter the name and code from Table I. If facility uses a substance in any of the Classes A – F which is not specified in the list, enter it as code class plus 99, e.g. B99 with name, usage, etc.

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.
USP 245 (organic peroxide)		400	25		x	blended
M-50 (methyl ethyl ketone org)		1500	100		x	blended
Acetone		4950	265	x		cleaner
Styrene		5550	165	x		blended
Zelec UN		700	50		x	blended
P-16 (pecadox)		150	15		x	blended
BYK A500		800	100		x	blended
M-3300 Polyester Resin		235000	16050		x	blended

NYSDEC013178

If you use chemicals of unknown composition, list trade name or other identification, name of supplier and complete information.

NAME OF SUBSTANCE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	SUPPLIER	PURPOSE OF USE (State whether produced, react blended, packaged, distribute no longer used, etc.)

I hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements made here are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

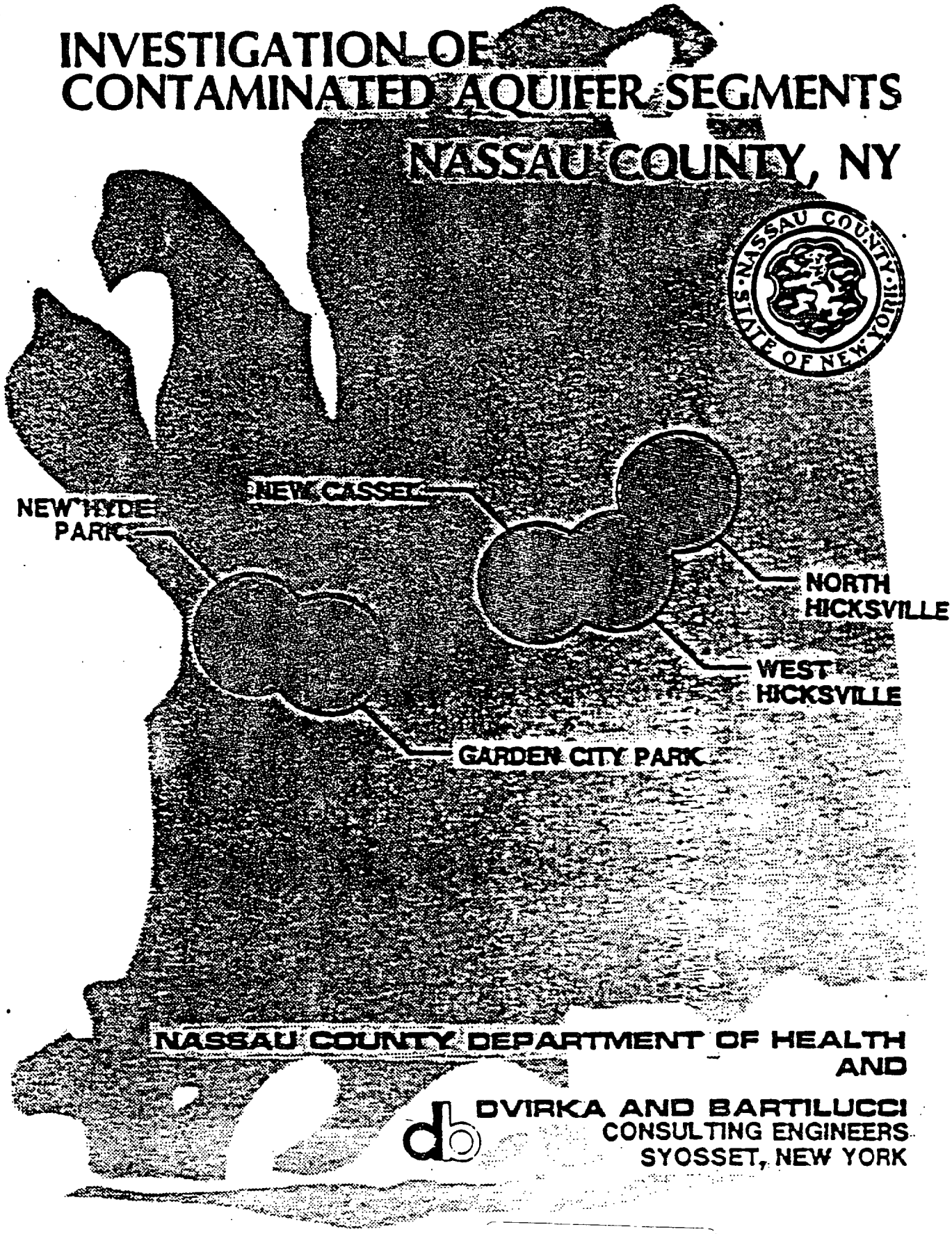
SIGNATURE (Owner, Partner, or Officer) Mayson H. Tucker — DATE 1/24/84

NAME (Printed or Typed) Mayson H. Tucker — TITLE Owner/President

REFERENCE 33

INVESTIGATION OF CONTAMINATED AQUIFER SEGMENTS

NASSAU COUNTY, NY



NASSAU COUNTY DEPARTMENT OF HEALTH
AND
DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
SYOSSET, NEW YORK

NYSDEC013180

June 1986

SUMMARY

As part of an overall effort to identify and mitigate groundwater contamination by synthetic organic chemicals, the New York State Legislature, through the New York State Health Department (NYSHD) appropriated special funding to conduct groundwater investigation programs on Long Island. Under contract with NYSHD, the Nassau County Department of Health (NCDH) has undertaken six special groundwater projects. The sixth of these projects, which is the investigation of sites of groundwater contamination by synthetic organic chemicals in Nassau County is the subject of this report.

To assist NCDH in the performance of this investigation, the County retained Dvirka and Bartilucci, Consulting Engineers, Syosset, New York, to provide environmental engineering and geohydrological services.

The purpose of this Investigation of Contaminated Aquifer Segments in Nassau County is to identify the most significant sites of groundwater contaminated by organic chemicals in the County, and to determine the extent, source and alternative methods for management of the contamination.

Based on a comprehensive assessment of organic chemical contamination of groundwater and water supply conducted under this investigation, and consideration of other current or planned

NYSDEC013181

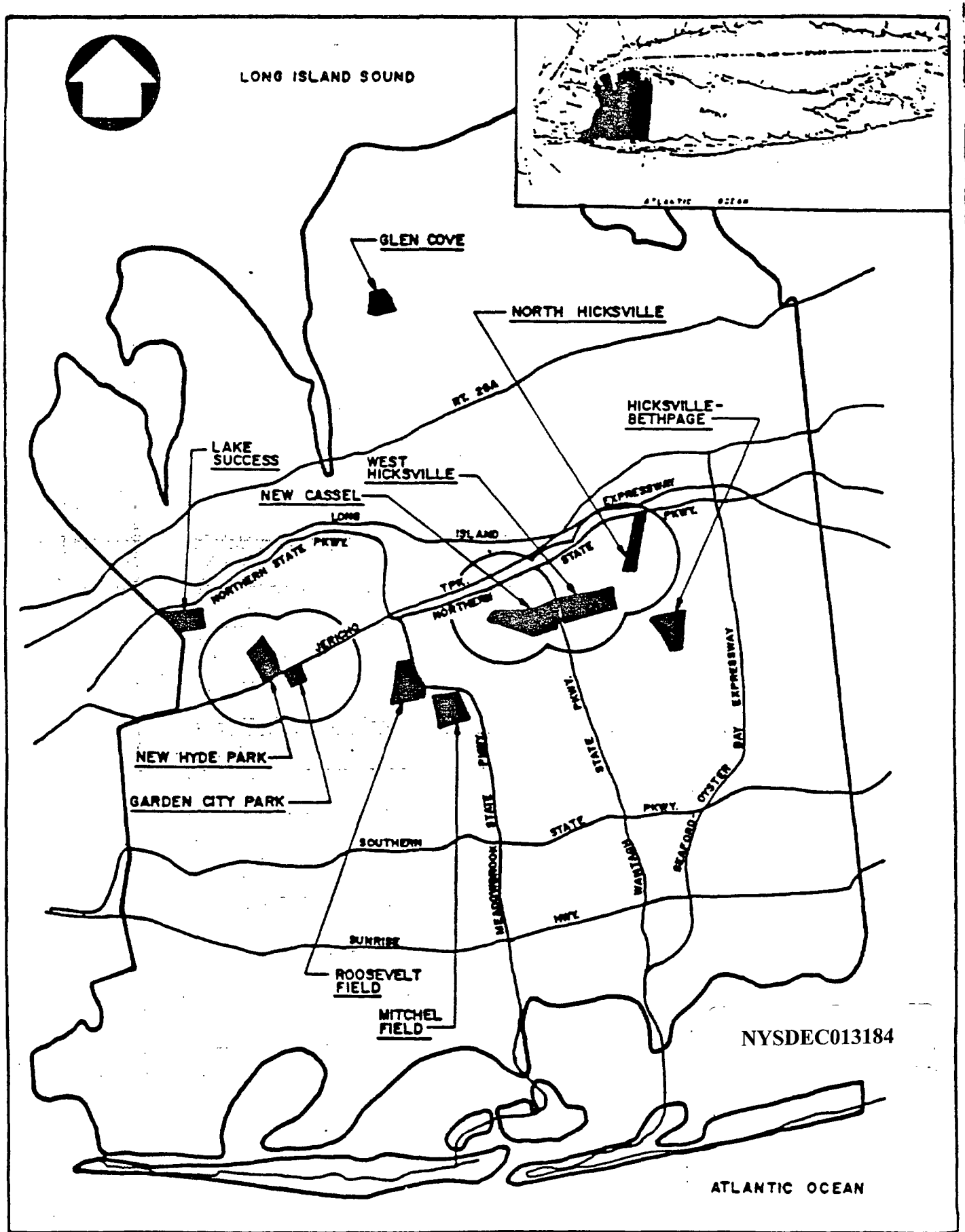
investigations, five sites were selected for this project. These sites center about industrial areas located in New Cassel; North Hicksville; West Hicksville; Garden City Park; and New Hyde Park.

As part of this study, 59 monitoring wells were installed. The locations of the wells drilled during Phase I of the project (29) were selected based upon a survey of industries in each of the areas, that according to NCDH records, handled synthetic organic chemicals. The locations of the Phase II wells (30) were selected to establish groundwater quality upgradient of the sites and to better define the extent of contamination, as well as to begin to identify possible contaminant sources.

In addition to the new wells installed as part of this project, data from 19 existing Nassau County monitoring wells and 18 public water supply wells were used in the investigation.

Based upon the results of data obtained from these wells, evaluation of site specific and regional hydrogeology, and assessment of information concerning possible contaminant sources, the findings in each area are summarized below. The order in which the sites are discussed reflects the severity of groundwater contamination and threat to water supply.

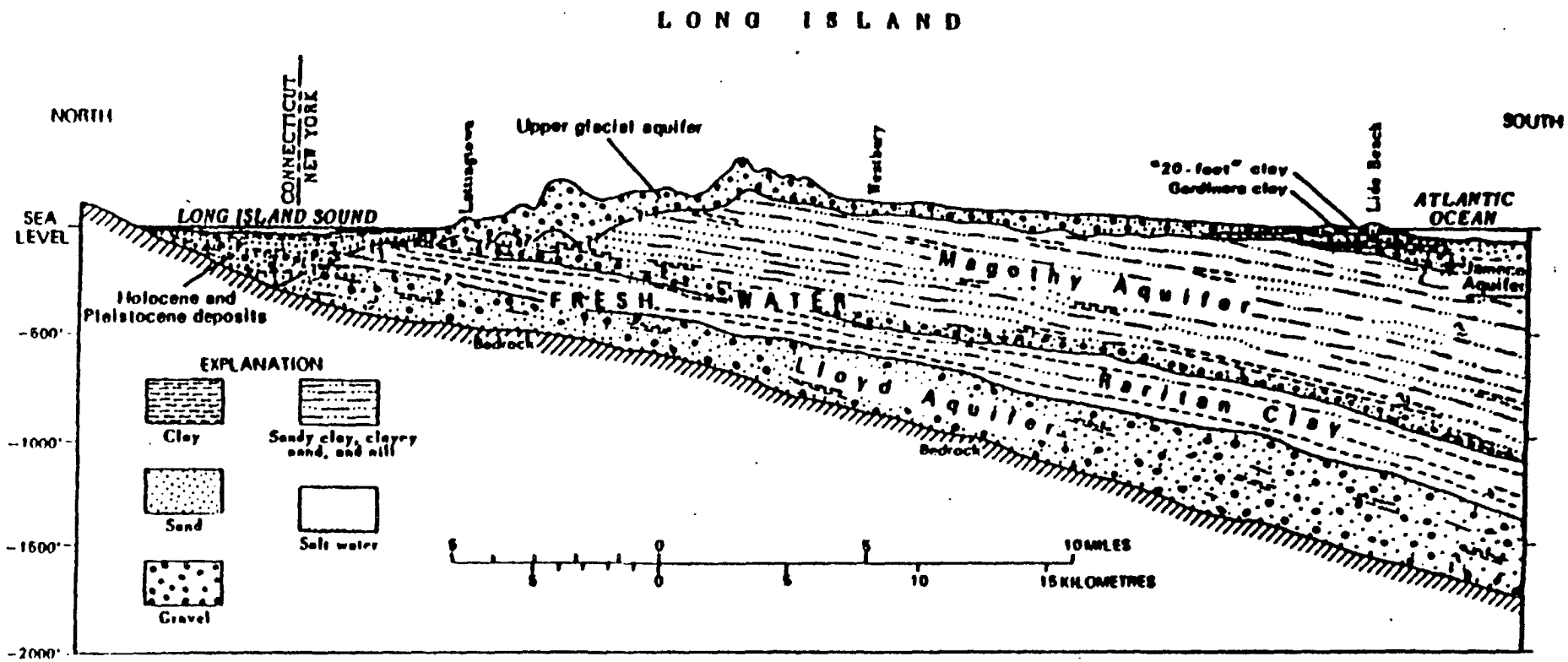
- <u>West Hicksville</u> - Some significant (maximum of 6,800 ug/l) and extensive contamination of groundwater was found in the area of West Hicksville. Although there are no upgradient monitoring wells, it appears based on land use that contamination is originating from the industrial area along West John Street and Duffy Avenue parallel to the Long Island Railroad. A number of waste disposal violations and spills have been reported in this area. Based on data obtained from deep monitoring wells in the area, contamination (approximately 2,700 ug/l total volatile organics) has migrated into the Magothy aquifer up to 265 feet below the surface. Although no water supply wells within and downgradient of the study area are presently contaminated with organic chemicals, there is a potential threat to water supply wells in the Bowling Green Water District. Clay layers that would impede contaminant migration are identified in deeper wells in West Hicksville, however, the stratigraphic continuity is unknown.



Dvirka and Bartilucci CONSULTING ENGINEERS

LOCATION OF SITES OVERLYING CONTAMINATED AQUIFER SEGMENTS IN NASSAU COUNTY

FIGURE NO. 1-1



Generalized section in central Nassau County showing principal aquifers and confining units (after Perlmutter and Geraghty, 1963, fig. 3).

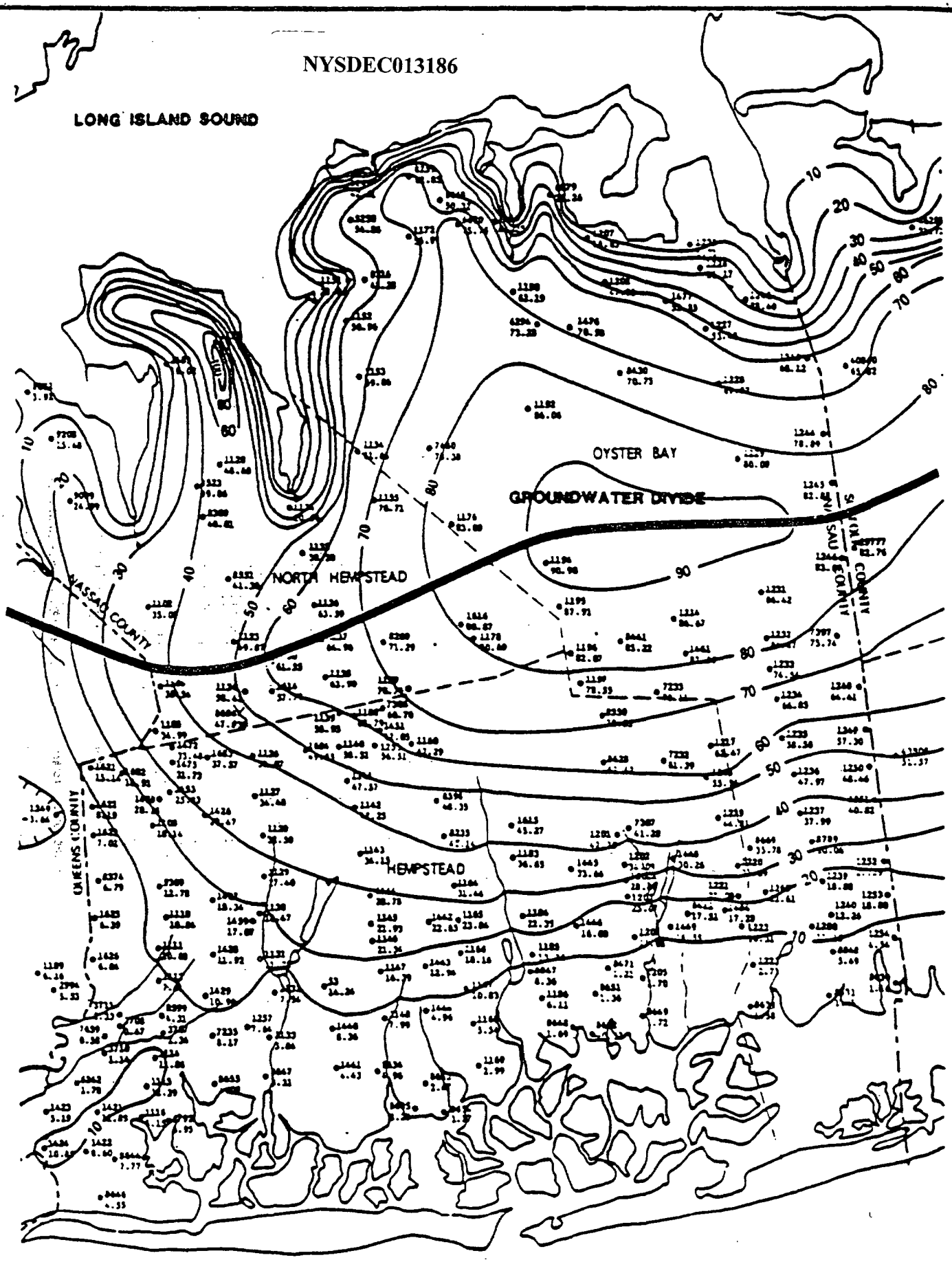
NYSDEC013185

Dvirka and Bartilucci

NASSAU COUNTY
HYDROGEOLOGIC CROSS SECTION

FIGURE NO.
1-2

NYSDEC013186



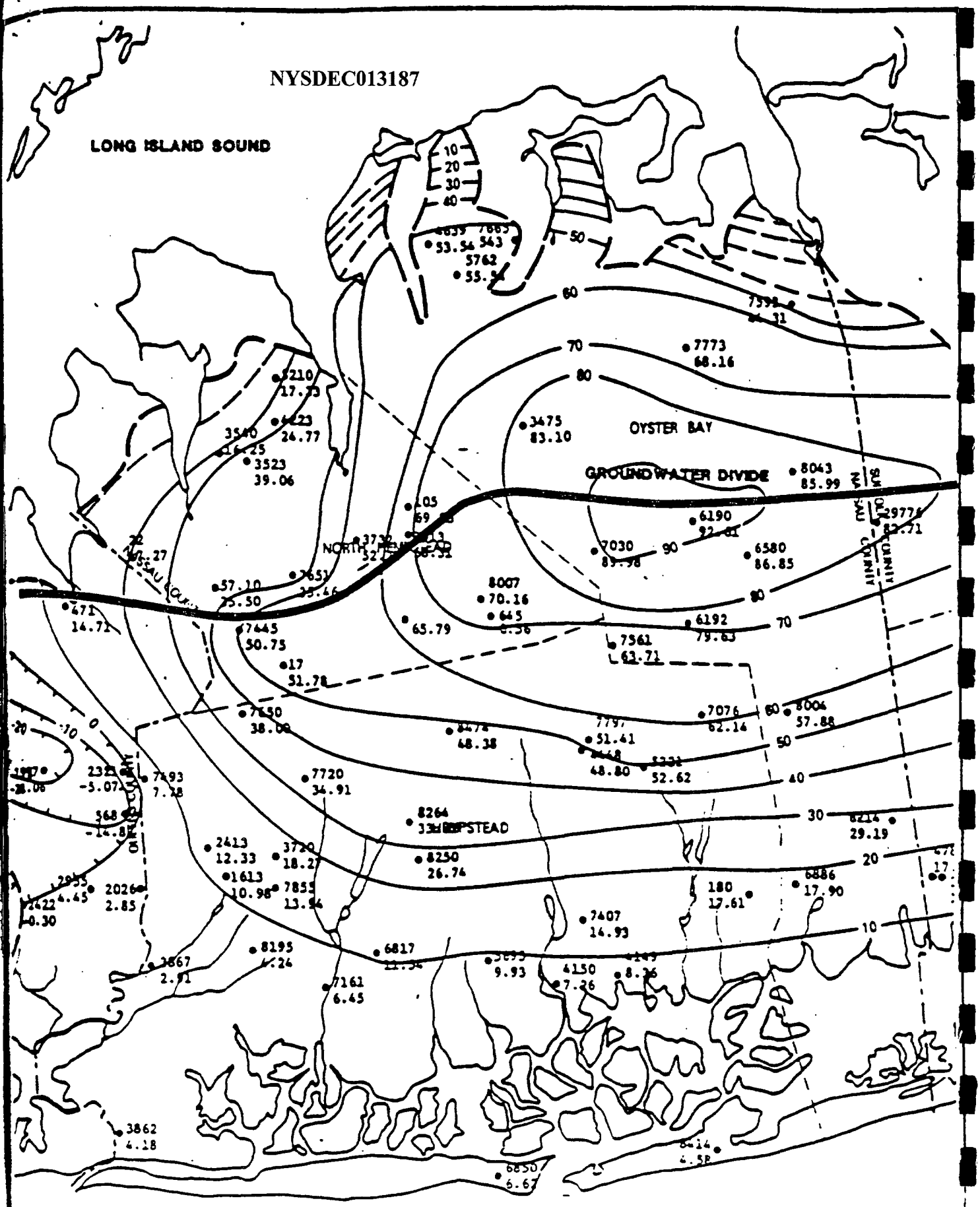
Dvirka and Bartilucci CONSULTING ENGINEERS

WATER TABLE ELEVATIONS IN NASSAU COUNTY

MARCH 1979

FIGURE 1-3

NYSDEC013187

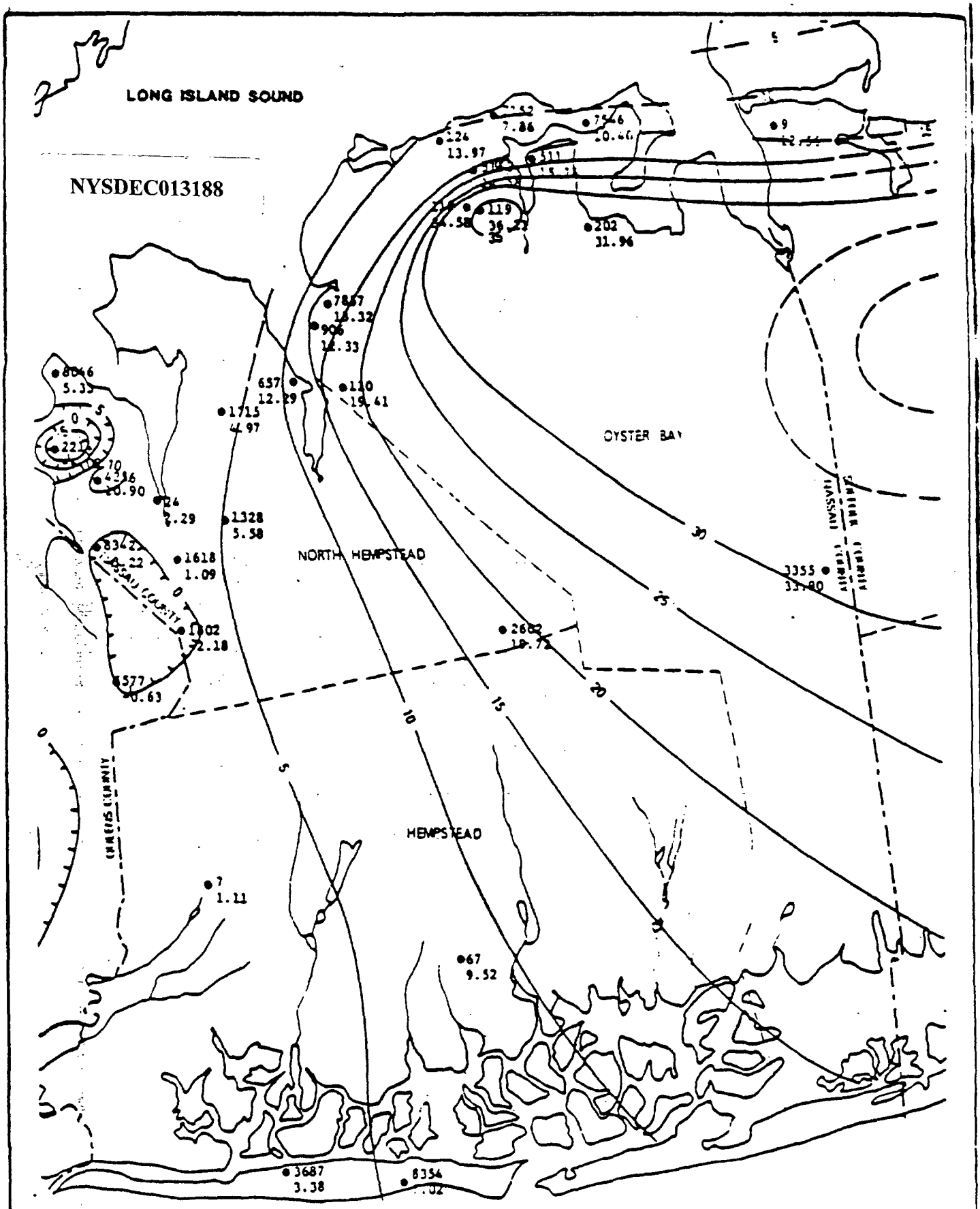


Dvirka and Bartilucci CONSULTING ENGINEERS

POTENTIOMETRIC SURFACE OF THE MAGOTHY AQUIFER IN NASSAU COUNTY

MARCH 1979

FIGURE 1-4



Dvirka and Bartilucci

POTENTIOMETRIC SURFACE OF THE LLOYD AQUIFER IN NASSAU COUNTY

JANUARY 1979

FIGURE 1-5

TABLE 2-1

WELLS INSTALLED DURING EACH PHASE OF DRILLING

West Hicksville	WH-1	(60)
	WH-2	(63)
	WH-3	(64)
	WH-4	(66)
	WH-5	(72)
	WH-6	(64)

Note: s -shallow
d -deep
( ) -depth below ground surface

TABLE 2-5

WATER LEVEL MEASUREMENTS FROM WEST HICKSVILLE MONITORING WELLS

March 10, 1986

Well Number	Measuring Point Elevation (feet above mean sea level)	Depth to Water (feet below measuring point)	Water-Level Elevation (feet above mean sea level)
WH-1	125.4	48.9	76.4
WH-2	130.9	54.8	76.1
WH-3	139.7	53.7	86.0
WH-4	133.7	56.5	77.1
WH-5	134.9	57.3	77.5

3.5 West Hicksville

3.5.1 Site Description

The area identified as West Hicksville in this report is located east of the Wantagh Parkway, west of North Broadway, north of Stewart Avenue and south of the Northern State Parkway in the Town of Oyster Bay (Figure 3-1). Monitoring wells installed as part of this investigation are shown in Figure 3-14.

There are ten monitoring wells located in the West Hicksville area. Most of the wells are clustered centrally between Duffy Avenue and Old Country Road.

NYSDEC013190

Information on the current industrial profile of West Hicksville indicates that the area is heavily industrialized with a wide variety of industrial categories, including chemical, electronics and electrical equipment. Table 3-10 provides an industrial profile of the area from 1977 to 1985 and estimates the annual organic chemical usage for each industry.

The residential area in West Hicksville, south of Old Country Road is considered to be of intermediate density with about approximately five to ten dwelling units per acre.

Industrial and commercial firms are concentrated generally along West John Street and Duffy Avenue, which run east and west along central Hicksville and adjacent to Long Island Railroad.

West Hicksville is served by the Hicksville Water District. The area is part of Nassau County Sewer District #3, and has been sewered since about 1980.

The area has been developed for about 30 years, and has exhibited no recent growth. The population of Hicksville, including the western and northern sections, decreased from 49,820 in 1970 to 41,727 in 1984.

There are two landfills within the West Hicksville area on West John Street and on Duffy Avenue. The West John Street landfill, owned by AGO Association (located east of Charlotte Street), has been abandoned. The only remaining active landfill

NYSDEC013191

Dvirka and

NYSDEC013192

WEST HICKSVILLE

WELL LOCATION AND IDENTIFICATION

FIGURE NO
3-14

TABLE 3-10

INDUSTRIAL PROFILE OF WEST HICKSVILLE

Source: NCHD Industrial Survey Program

Name	Location	Organic Chemicals Used	Amount Used Stored, Disposed, etc. Since 1977
Amperex Electronic Co.	230 Duffy Ave.	Benzene 1,1,1 trichloroethane	20 gals/yr 5,375 gals/yr
Four Star Association Inc.	260 Duffy Ave.	Methylene chloride	55 gals/yr
MHI Knitware Ltd.	270 Duffy Ave.	1,1,1 trichloroethane	55 gals/yr
Maganosonic Devices Inc.	290 Duffy Ave.	1,1,1 trichloroethane	660 gals/yr
Depew Mfg. Corp.	359 Duffy Ave.	Benzene Toluene	
Dyna Magnetic	200 Frank Rd.	Trichloroethylene	200 gals/yr
Model Communication	307 W. John St.	Trichloroethylene	10 gals/yr
Nestor Systems Inc.	489 W. John St.	Trichloroethylene	10 gals/yr
Universal Shallac and Supply Co.	495 W. John St.	Trichloroethylene	325 gals/yr
General Instrument Corp.	600 W. John St.	Trichloroethylene	3,600 gals/yr
Micro Contacts Inc.	62 Alpha Pl.	1,1,1 trichloroethane	1,920 gals/yr

NYSDEC013193

TABLE 3-10 (continued)

INDUSTRIAL PROFILE OF WEST HICKSVILLE

Source: NCHD Industrial Survey Program

Name	Location	Organic Chemicals Used	Amount Used Stored, Disposed, etc. Since 1977
Anchor Lithkemko	500 W. John St.	Methyl chloride 1,1,1 trichloroethane	
Metco	325 Duffy Ave.	Trichloroethylene Tetrachloroethylene Methylene chloride Trichlorotrifluoroethane	Varying quantities 50 - 400 gals/yr

NYSDEC013194

is located on Duffy Avenue. It is a municipal facility owned by New York State Department of Parks and Recreation and accepts agricultural waste, sweepings, rubbish and leaves.

There were several reported complaints concerning organic chemicals filed with the Nassau County Department of Health in the area of West Hicksville.

- o A spill in February 1982 by Mattiace Petrochemicals involved the discharge of methyl ethyl ketone (MEK) contaminating both the surrounding soil and groundwater. In September 1982, USEPA issued an Administrative Order to have Mattiace clean up the contaminated soil and groundwater. The firm complied with the cleanup order for five months (from May to October 1984) until the project was terminated due to lack of funds. Based upon this situation and the magnitude and severity of the spill, NYSDEC is requesting that EPA consider this site as a possible Federal Superfund Site. EPA is currently pursuing an administrative lawsuit against Mattiace Petrochemical and is continuing routine monitoring of the site.
- o In February 1984, Alsy Manufacturing located on Duffy Avenue was found discharging metals and volatile organic chemicals into leaching pools. NYSDEC issued an Abatement Order in April 1985 requiring that all discharges not in compliance with standards be immediately terminated and removal of all wastes

NYSDEC013195

from onsite leaching pools be undertaken. Cleanup of contaminated leaching pools was completed in May 1985. As of December 1985, Alsy Manufacturing had not fully complied with all requirements of the Abatement Order. The case has been referred to the State Attorney General's office for criminal prosecution and is currently under investigation by DEC and the Attorney General's office.

- A complaint against General Instrument (located at 600 West John Street) involved the contamination of soil caused by a leaking underground storage tank containing organic chemicals. General Instrument voluntarily commenced cleanup activities. By February 1984, a cleanup system had been installed and operated. Further testing by NYSDEC in August 1985 indicated inadequate operation. General Instrument was advised to alter the cleanup system which is now in the process of being completed. The case is currently under the supervision of the DEC Division of Solid and Hazardous Waste as a State Superfund site.
- Depew Manufacturing (located at 359 Duffy Avenue) was found to be discharging fiberglass containing styrene and aluminum to an open leaching lagoon. Voluntary action by Depew involved the bagging, removal and offsite disposal of the contaminated material to an approved waste disposal site.

NYSDEC013196

In addition to these possible contamination sources, an industrial profile in West Hicksville (1977-1985) along with estimated organic chemical usage and handling is provided in Table 3-10.

3.5.2 Geology

The wells installed as part of this groundwater investigation in the western part of Hicksville all tap the upper glacial aquifer. A hydrogeologic cross section is shown in Figure 3-15. The sediments encountered during drilling are unstratified deposits of sand and gravel. The USGS estimates the thickness of the upper glacial aquifer to be between 50 and 100 feet in this area. The lithologic log for Well N9463 (638 feet deep) describes sand, grit and gravel to 155 feet. Several clay layers are also described ranging in thickness from one to 15 feet thick.

The lithologic log for N8880 (247 feet deep) describes sand, grit and gravel for the first 62 feet. A significant clay layer exists between 70 and 98 feet below the surface. Smaller layers of clay are also described for this well, but are reported to be less than two feet thick.

The areal extent of these clay layers is unknown. They do not demonstrate clear stratigraphic continuity in wells N8880 and N9463.

NYSDEC013197

3.5.3 Hydrology

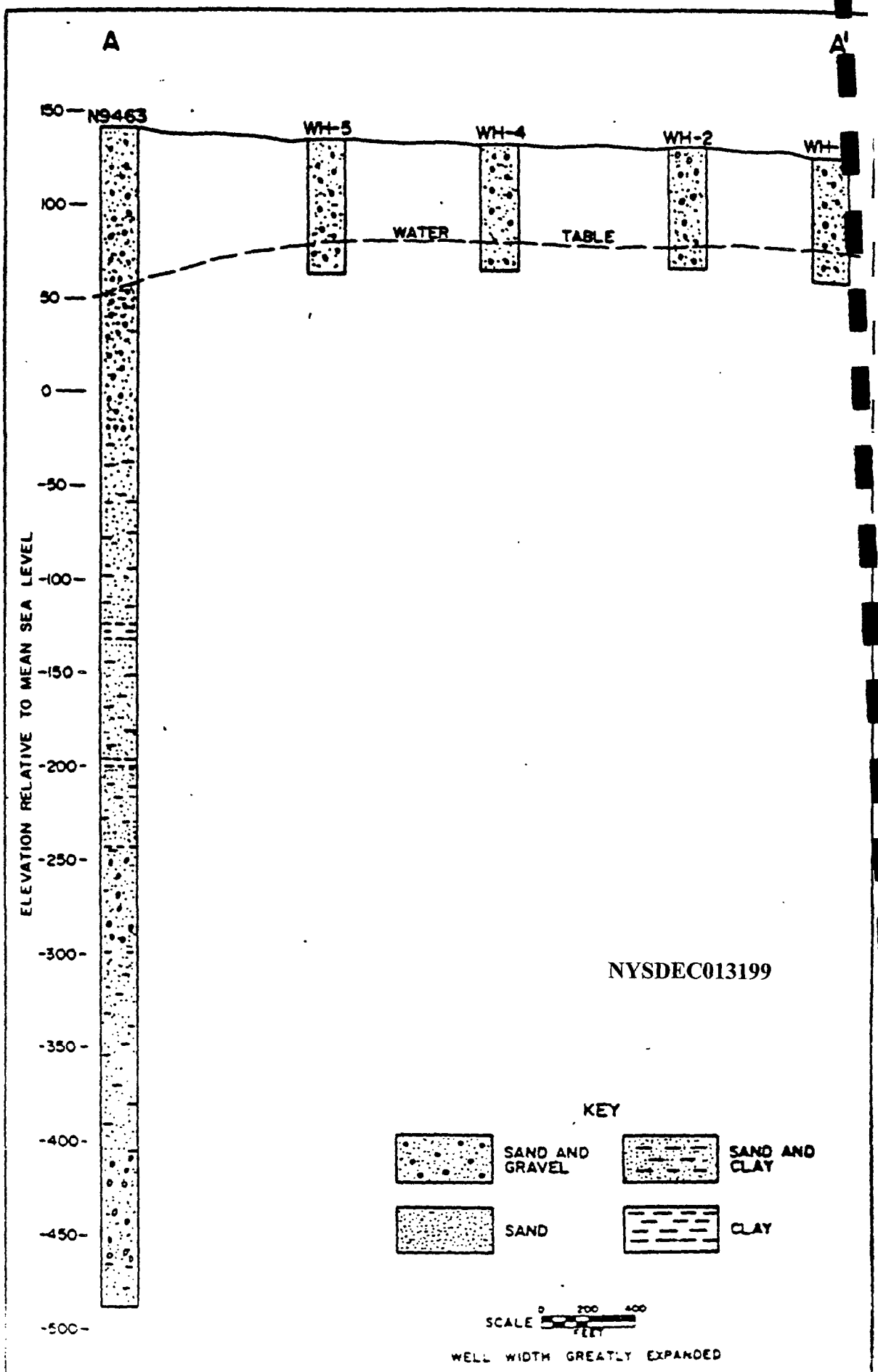
The regional flow pattern of the glacial aquifer in West Hicksville is towards the south and southwest. Static water level measurements from wells installed as part of this investigation generally follow this trend. One exception is WH-3 which appears to be on a local groundwater mound. Water levels in this well are reported to be ten feet above the other wells in the area in both sets of water level measurements taken from last year and this year. The cause of this groundwater mound is unknown. There is no recharge basin or reported injection well in the area or any other known reason for the high values. Because of the extremely high reported static water level, this value may be the result of a survey error and is discarded in the definition of the local flow regime. A map showing water level contours is provided in Figure 3-16. Additional data is needed at this site to more accurately determine groundwater flow.

There were no deep wells drilled in the West Hicksville area, therefore, the vertical component of groundwater is unknown. However, based on regional information, this area is part of the Magothy recharge zone.

3.5.4 Analytical Results and Findings

This preliminary contamination assessment is based upon at most three samples for each well taken between March 1984 and

NYSDEC013198



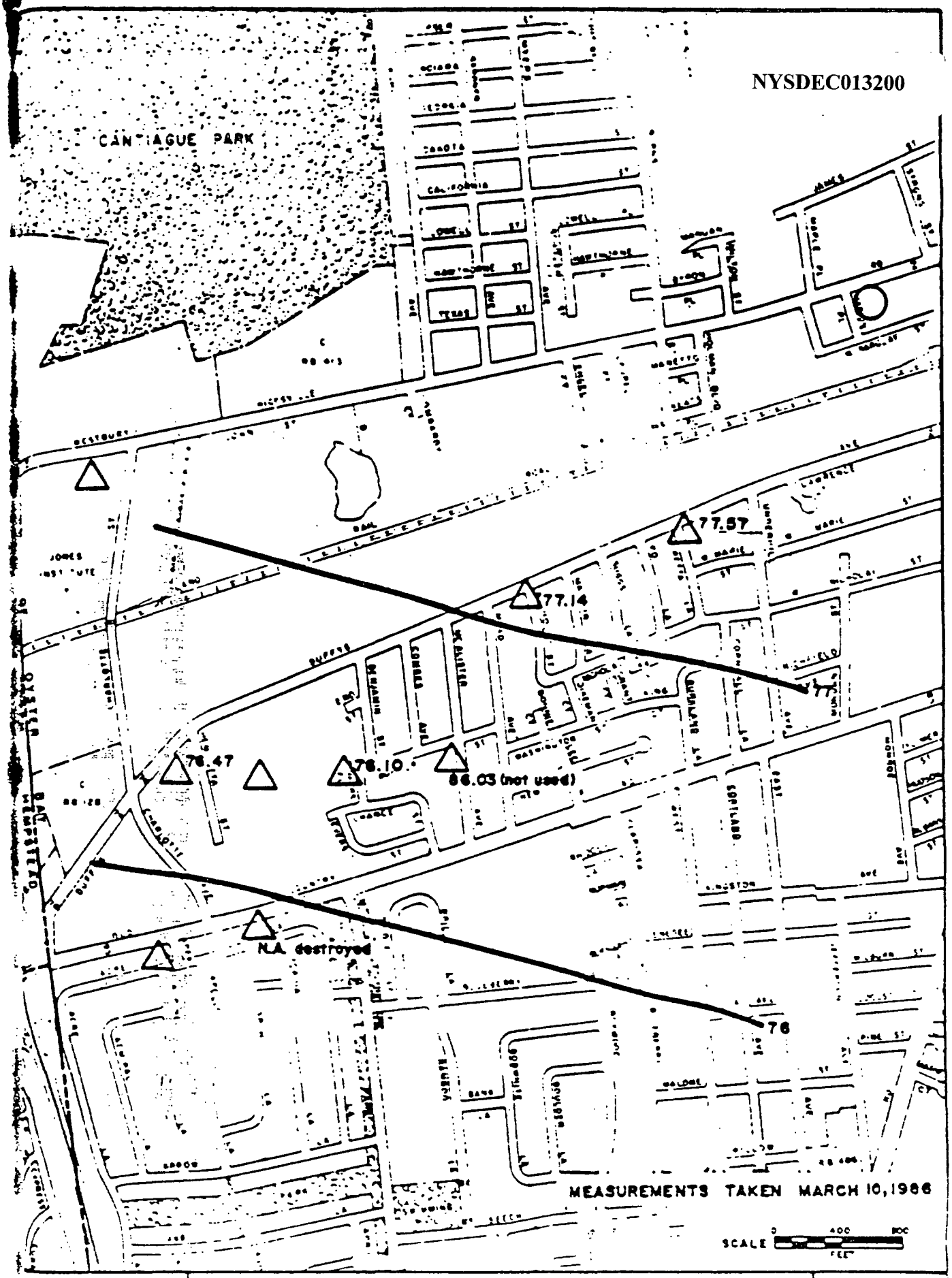
NYSDEC013199

Dvirka and Bartilucci CONSULTING ENGINEERS

WEST HICKSVILLE
HYDROGEOLOGIC CROSS SECTION A-A'

FIGURE NO.
3-15

NYSDEC013200



Dvirka and Bartilucci CONSULTING ENGINEERS

WEST HICKSVILLE
WATER LEVEL CONTOURS

FIGURE NO.
3-16

December 1985. Six wells were installed as part of this project, in addition to the four existing water supply wells and monitoring wells in the West Hicksville area. Analytical results for these wells are tabulated in Table 3-11 and a summary of water quality for total organic chemicals is provided in Table 3-12. A graphic representation of total volatile compounds is illustrated in Figure 3-17.

Analytical data for wells WH-1 and WH-4 reported almost nondetectable amounts of total volatile organic compounds. Each well had a maximum detected value of 4 ug/l for total organic compounds for three sets of samples.

Well WH-2 has a median value of 12 ug/l of 1,1,1-trichloroethane reported (the only compound detected). Wells WH-1, WH-4 and WH-3 are all below NYS Drinking Water Guidelines for organic chemicals.

Analytical results for Well WH-3 increased by an order of magnitude between sets of samples. Reported values for total organics increased from 688 ug/l to 6,844 ug/l in less than eight months. Additional data is needed for WH-3 to determine a consistent value or an increasing trend.

Analytical results for wells WH-5 and WH-6 also fluctuated between samples. Well WH-5 increased from 116 ug/l to 640 ug/l total organic compounds. Analytical results for WH-6

NYSDEC013201

reported 193, 64 and 319 ug/l for total volatile organics. Although wells WH-3, WH-5 and WH-6 exceed NYS Drinking Water Guidelines for organic compounds, additional data is also needed for these wells to determine consistency and trends.

In addition to the six monitoring wells installed as part of this investigation, four other wells (one water supply and three monitoring) exist in the West Hicksville study area. Analysis was based upon one sample obtained from each well and it was assumed that this information is representative. These four additional wells are N8880, N9341, N9917 and N9463. The analytical results for total organic compounds are 175, 2,691, 2 ug/l and non-detected, respectively. Well N-9463 is a water supply well (638 feet deep) in which no volatile organics were detected. The other three wells are: a Nassau County observation well (N9917) which is 73 feet deep, and two industrial wells (N8880 and N9341) which are 247 feet and 265 feet below ground surface, respectively. Based on these results, significant contamination has migrated into the Magothy aquifer up to at least 265 feet deep.

A principal contaminant in the wells is 1,1,1-trichloroethane. The largest concentration of 1,1,1-trichloroethane (5,400 ug/l) was detected in well WH-3. There are three industrial firms located less than a quarter of a mile upgradient of this well that report using significant quantities of this chemical. 1,1,1 trichloroethane may also have been used as a cesspool and drain cleaner prior to sewering.

NYSDEC013202

TABLE 3-11

ANALYTICAL RESULTS - WEST HICKSVILLE - GROUNDWATER QUALITY

WELL NUMBER	WH-1	WH-1	WH-1	WH-1	WH-2	WH-2	WH-2	WH-3	WH-3	WH-3	WH-4	WH-4	WH-4
WELL DEPTH	60	60	60	60	63	63	63	64	64	64	66	66	66
SAMPLE DATE	10/16/84	12/5/84	4/1/85	12/18/85	12/5/84	4/1/85	12/18/85	12/5/84	4/1/85	12/18/85	10/17/84	12/5/84	4/1/85
Trichlorofluoromethane	<3	<1	<1	NA	<1	<1	NA	<1	<1	NA	<3	<1	<1
Methylene Chloride }													
1,1,2-Trichlorotrifluoroethane } --	<4	<10	<4	<8	<10	<4	<8	<10	150	320	<10	<10	<4
1,1-Dichloroethylene }													
c & t-1,2-Dichloroethylene	<10	<15	<20	<14	<15		<18	<15	<20	<14	<10	<15	<20
t-1,2-Dichloroethylene						<5							
1,1-Dichloroethane	<15	<15	NA	<14	<15	NA	<16	<15	NA	<14	<15	<15	<10
c-1,2-Dichloroethylene						<20							
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	1	1	<1	1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	4	0	16	40	460	3400	<1	2	1
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1
Trichloroethylene	<1	<1	<1	<1	<1	<1	<1	5	44	700	<1	1	<1
Bromodichloromethane	<3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1
c-1,3-Dichloropropene }													
Dibromochloromethane } --		<2			<2			<2			<2	<2	
1,1,2-Trichloroethane }													
c-1,3 Dichloropropene }													
Dibromochloromethane } --	<2		<1	<1		<1	<1		<1	<1			<1
1,1,2-Trichlroroethane	7		<2	<1		<2	<1		<2	<1			<2
1,2-Dibromoethane	<10	<4	<2	NA	<4	<2	NA	<4	<2	NA	<10	<4	<2
Tetrachloroethylene	<1	<1	<1	<1	<1	<1	<1	17	12	23	<1	<1	<1
Bromoform	<4	<3	<1	<2	<3	<1	<2	<3	<1	<2	<4	<3	<1
Benzene	<3	<3	4	<3	<3	<3	<4	<3	<3	<3	<3	<3	<3
Toluene	<3	<3	<4	<4	<3	<4	<4	<3	<4	<4	<3	<3	<4
Chlorobenzene	<3	<2	<3	<3	<3	<3	<4	<3	<3	<3	<3	<3	<3
Ethylbenzene	<3	<3	<3	<4	<3	<3	<4	<3	<3	<4	<3	<3	<3
Xylene (o,m,p)	12	<3	<3	<4	<3	<3	<12	<3	<3	<4	<3	<3	<3
Dichlorobenzene (o,m,p)	<4	<5	<4	<7	<5	<4	<10	<5	<4	<7	<4	<5	<4
Total	12	0	4	0	4	0	16	62	608	4044	0	4	1

NYSDEC013203

NA-Not Analyzed NR-No Result Due To Technical Reasons [illegible]

WELL NUMBER	WH-4	WH-5	WH-5	WH-5	WH-6	WH-6	WH-6	WH-6
WELL DEPTH	44	72	72	72	44	44	44	44
SAMPLE DATE	12/17/85	12/5/84	4/2/85	12/17/85	10/19/84	12/5/84	4/2/85	12/18/85
Trichlorofluoromethane	NA	<1	<1	NA	<3	2	1	NA
Methylene Chloride 1,1,2-Trichlorotrifluoroethane 1,1-Dichloroethylene	<8	<10	<4	<8	11	<10	<4	8
c & t-1,2-Dichloroethylene	<19	34	<20	<19	25	23	<20	23
t-1,2-Dichloroethylene 1,1-Dichloroethane c-1,2-Dichloroethylene	<14	25	NA	<14	NR	44	NA	27
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	29	4	11	35	43	21	170
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethylene	<1	23	2	9	94	73	35	80
Bromodichloromethane	<1	<1	<1	<1	<3	<1	<1	<1
c-1,3-Dichloropropene Dibromochloromethane 1,1,2-Trichloroethane		<2			<2	<2		
c-1,3 Dichloropropene Dibromochloromethane 1,1,2-Trichloroethane	<1 <1		<1 <2	<1 <1			<1 <2	<1 <1
1,2-Dibromoethane	NA	<60	NR	NA	<10	<6	<2	NA
Tetrachloroethylene	<1	160	110	420	8	8	7	9
Bromoform	<2	<3	<1	<2	<6	<3	<1	<2
Benzene	<4	<3	<3	<4	<3	<3	<3	<4
Toluene	<4	<3	<4	<4	<3	<3	<4	<4
Chlorobenzene	<6	<3	<3	<6	<3	<3	<3	<6
Ethylbenzene	<6	<3	<3	<6	<3	<3	<3	<6
Xylene (o,m,p)	<12	<3	<3	<12	15	<3	<3	<12
Dichlorobenzene (o,m,p)	<10	<5	<4	<10	7	<5	<4	<10
Total	0	273	116	440	217	193	44	319

NA-Not Analyzed NR-No Result Due To Technical Reasons T-No Mention On Lab Reports

NYSDEC013204

TABLE 3-11

ANALYTICAL RESULTS
WEST HICKSVILLE - GROUNDWATER QUALITY

Well Number	N8800	N9341	N9463	N9917
Well Depth (feet)*	247	265	638	73
Sample Date	3/20/84	5/10/85	1/9/85	3/1/85
Trichlorofluoromethane	< 1	1	< 1	< 1
Methlyene Chloride)				
1,1,2-Trichlorotrifluoroethane) --	6	21	< 6	< 7
1,1-Dichloroethylene)				
c & t-1,2-Dichloroethylene	< 4	440	NA	< 7
t-1,2-Dichloroethylene	< 4	NA	NA	NA
1,1-Dichloroethane	< 5	66	NA	NA
c-1,2-Dichloroethylene	< 4	NA	NA	NA
Chloroform	< 1	2	< 1	< 1
1,1,1-Trichloroethane	16	16	< 1	1
Carbon Tetrachloride	< 1	2	< 1	< 1
Trichloroethylene	150	1600	< 1	1
Bromodichloromethane	< 1	<10	< 2	< 1
c-1,3-Dichloropropene)				
Dibromochloromethane) --	< 1	NA	< 3	NA
1,1,2-Trichloroethane)				
c-1,3-Dichloropropene)				
Dibromochloromethane) --	NA	<10	NA	< 1
1,1,2-Trichlroroethane	NA	< 1	NA	< 3
1,2-Dibromoethane	< 1	<10	< 5	< 2
Tetrachloroethylene	3	260	< 2	< 1
Bromoform	< 1	1	< 2	< 1
Benzene	< 3	< 3	< 3	< 5
Toluene	< 3	< 4	<15	< 3
Chlorobenzene	< 3	< 4	<15	< 3
Ethylbenzene	< 3	57	< 4	< 3
Xylene (o,m,p)	< 3	95	< 4	< 3
Dichlorobenzene (o,m,p)	< 6	130	<20	<10
Total	175	2,691	0	0

NYSDEC013205

TABLE 3-12

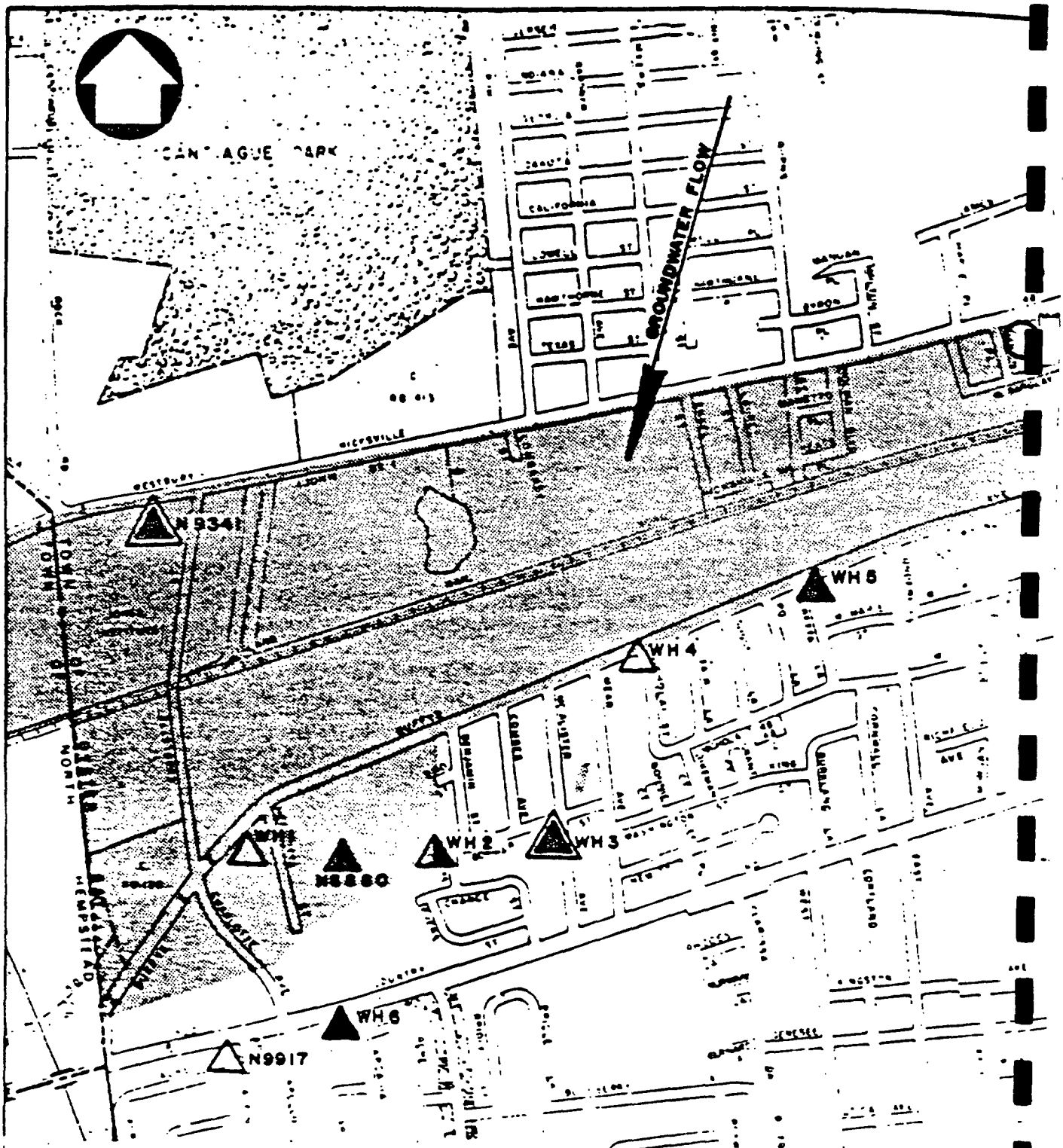
WEST HICKSVILLE - CONTAMINATED AQUIFER SEGMENTS
TOTAL ORGANIC COMPOUNDS
DATA SUMMARY
(ug/l)

West Hicksville	Depth* (Feet)	Mean	Range	Median	Number of Data Points
WH-1	60	1	0-4	0	3
WH-2	63	12	8-16		2
WH-3	64	3766	688-6844		2
WH-4	66	2	0-4	1	3
WH-5	72	378	116-640		2
WH-6	64	192	64-319	193	3
N8880	247	175			1
N9341	265	2691			1
N9463	638	0			1
N9917	73	2			1

Note: The first sample after well development was discarded in this data summary when more than one well analyses exist

* Below ground surface

NYSDEC013206



NYSDEC013207

Dvirka and Bartilucci Consulting Engineers

WEST HICKSVILLE
WATER QUALITY-TOTAL VOLATILE ORGANICS

FIGURE 3-1

Concentrations of 1,1,1-trichloroethane are not as high in the deeper wells. This contaminant is found up to 16 ug/l in wells 265 feet below land surface. The primary contaminant in the deeper wells is trichloroethylene.

Analytical results for well N8880 report elevated concentrations of trichloroethylene (150 ug/l), and well N9341 located about 2,000 feet north of this well reported 1,600 ug/l of this same chemical. Both wells are of similar depth (about 250 feet), which indicates that contamination has migrated into the Magothy aquifer. Because N9341 is not directly upgradient of N8880, the source of contamination is likely to originate from different sources.

Several firms in the vicinity of well N9341 are reported using up to 3,600 gallons per year of trichloroethylene. Two firms in the immediate vicinity had leaking underground storage tanks containing organic solvents and chemicals. However, because of the depth of more than 250 feet below land surface, it is more probable that the contamination source is located upgradient of the study area.

There is only one water supply well (N9463) located in the West Hicksville study area. Since most of the contaminated wells are located in the southern and western regions downgradient of the supply well, it appears that contamination of groundwater in West Hicksville does not pose a serious threat to this well.

NYSDEC013208

There are, however, two wells located southwest of Hicksville in the Bowling Green Water District, which may be downgradient of a portion of the contaminated aquifer segment. These wells, N8956 and N8957, contain less than detectable limit of organic compounds at the present time. There are several clay layers described in the lithologic logs for the deeper Hicksville wells which could impede the migration of contaminants, however, the areal extent and stratigraphic continuity of the clay is unknown. Without more site specific hydrogeologic information it is assumed that the contaminated groundwater in West Hicksville could pose a serious threat to the water supply wells downgradient.

NYSDEC013209

N
APPROXIMATE NORTH
DUFFYS
CHARLOTTE
STREET
AVENUE
EXTENSION
CHARLOTTE
AVENUE
COUNTY OF NASSAU
1 WEST STREET
MINEOLA, NY 11501
SECTION II
BLOCK 484
LOT 6A
BENCHMARK
NASSAU COUNTY
TOP OF CONTROL
ELEV. = 37.04
PETER CERNELLI
400 PLAINVIEW ROAD
PLAINVIEW, NY 11803
SECTION II
BLOCK 484
LOT 31
PETER CERNELLI
400 PLAINVIEW ROAD
PLAINVIEW, NY 11803
SECTION II
BLOCK 484
LOT 47
PETER CERNELLI
400 PLAINVIEW ROAD
PLAINVIEW, NY 11803
SECTION II
BLOCK 484
LOT 43
PETER CERNELLI
400 PLAINVIEW ROAD
PLAINVIEW, NY 11803
SECTION II
BLOCK 484
LOT 49
AMERICAN PROTECTION INDUSTRIES, INC.
2229 EAST DUFFYS BLVD
LOS ANGELES, CA 90064
SECTION II
BLOCK 484
LOT 50
TOWN OF OYSTER BAY
AUDREY AVE
OYSTER BAY, NY 11771
SECTION II
BLOCK H, LOT 468
GEORGE MALYSEK E.CO. INC.
SWITZ, ENGINEER C.T. ARCOLLI, P.E.
1500 STELLER PLACE
MINEOLA, NY 11501
SECTION II
BLOCK H
LOT 432
TUCKER MS
24 BURNAM PLACE
MANHASSET, NY 10030
SECTION II
BLOCK H
LOT 437
TRAFFIC LIGHT
FIRE HYDRANT
GATE
GRAVEL PARKING LOT
CONCRETE BUILDING
FOUNDATION FOR FUTURE PACKING CAN CENTER
STORAGE CONTAINER
DM TB-1
DM TB-2
DM TB-3
DM TB-4
DM TB-5
DM MW-1
DM MW-2
DM MW-3
DM MW-4
DM MW-5
DM MW-6
DM MW-7
DM MW-8
DM MW-9
DM MW-10
DM MW-11
DM MW-12
DM MW-13
DM MW-14
DM MW-15
DM MW-16
DM MW-17
DM MW-18
DM MW-19
DM MW-20
DM

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Depew Manufacturing Corporation Site No. 130038
Hicksville Nassau County

DATE: February 1993

Supporting Documentation

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., *Director*

NYSDEC013211

By:

Lawler, Matusky & Skelly Engineers

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK PHASE II INVESTIGATIONS

Depew Manufacturing Corporation
Town of Hicksville, Nassau County
NYSDEC I.D. No. 130038

Supporting Documentation

Prepared for:

DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road
Albany, New York 12233-7010

STATE OF NEW YORK
THOMAS E. PEASE
Lic. No. 057131-1
LICENSED PROFESSIONAL ENGINEER

LMSE-93/0132&576/047

STATE OF NEW YORK
EDWARD A. MAIKISH
No. 055116
LICENSED PROFESSIONAL ENGINEER

Prepared by:

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

NYSDEC013212

February 1993

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- II.v Grain-Size Analysis

III HEALTH AND SAFETY PLAN

IV SITE INSPECTION REPORT

V SAMPLING REPORT

VI PERMEABILITY TESTS AND CALCULATIONS

NYSDEC013213

SUPPORTING DOCUMENTATION

PART I

REFERENCE DOCUMENTATION

NYSDEC013215

REFERENCE 8

A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers With Completely or Partially Penetrating Wells

HERMAN BOUWER AND R. C. RICE

U.S. Water Conservation Laboratory, Agricultural Research Service, U.S. Department of Agriculture, Phoenix, Arizona 85040

A procedure is presented for calculating the hydraulic conductivity of an aquifer near a well from the rate of rise of the water level in the well after a certain volume of water is suddenly removed. The calculation is based on the Thiem equation of steady state flow to a well. The effective radius R_e over which the head difference between the equilibrium water table in the aquifer and the water level in the well is dissipated was evaluated with a resistance network analog for a wide range of system geometries. An empirical equation relating R_e to the geometry of the well and aquifer was derived. The technique is applicable to completely or partially penetrating wells in unconfined aquifers. It can also be used for confined aquifers that receive water from the upper confining layer. The method's results are compatible with those obtained by other techniques for overlapping geometries.

With the slug test the hydraulic conductivity or transmissibility of an aquifer is determined from the rate of rise of the water level in a well after a certain volume or 'slug' of water is suddenly removed from the well. The slug test is simpler and quicker than the Theis pumping test because observation wells and pumping the well are not needed. With the slug test the portion of the aquifer 'sampled' for hydraulic conductivity is smaller than that for the pumping test even though with the latter, most of the head loss also occurs within a relatively small distance of the pumped well and the resulting transmissibility primarily reflects the aquifer conditions near the pumped well.

Essentially instantaneous lowering of the water level in a well can be achieved by quickly removing water with a bailer or by partially or completely submerging an object in the water, letting the water level reach equilibrium, and then quickly removing the object. If the aquifer is very permeable, the water level in the well may rise very rapidly. Such rapid rises can be measured with sensitive pressure transducers and fast-response strip chart recorders or x-y plotters. Also it may be possible to isolate portions of the perforated or screened section of the well with special packers for the slug test. This not only reduces the inflow and hence the rate of rise of the water level in the well, but it also makes it possible to determine the vertical distribution of the hydraulic conductivity. Special packer techniques may have to be developed to obtain a good seal, especially for rough casings or perforations. Effective sealing may be achieved with relatively long sections of inflatable stoppers or tubing. The use of long sections of these materials would also reduce leakage flow from the rest of the well to the isolated section between packers. This flow can occur through gravel envelopes or other permeable zones surrounding the casing. Sections of inflatable tubing may have to be long enough to block off the entire part of the well not used for the slug test. High inflation pressures should be used to minimize volume changes in the tubing due to changing water pressures in the isolated section when the head is lowered.

So far, solutions for the slug test have been developed only for completely penetrating wells in confined aquifers. *Cooper et al.* [1967] derived an equation for the rise or fall of the water level in a well after sudden lowering or raising, respectively. Their equation was based on nonsteady flow to a pumped, completely penetrating well, and the solution was expressed as a series of 'type curves' against which observed rates of water level rises were matched. Values for the transmissibility and storage coefficient were then evaluated from the curve parameter and horizontal-scale position of the type curve showing the best fit with the experimental data. *Skibitzke* [1958] developed an equation for calculating transmissibility from the recovery of the water level in a well that was repeatedly bailed. The technique is limited to wells in confined aquifers with sufficiently shallow water levels to permit short time intervals between bailing cycles [*Lohman*, 1972].

To use the slug test for partially penetrating or partially perforated wells in confined or unconfined aquifers, some solutions developed for the auger hole and piezometer techniques to measure soil hydraulic conductivity [*Bouwer and Jackson*, 1974] may be employed. However, the geometry of most groundwater wells is outside the range in geometry covered by the existing equations or tables for the auger hole or piezometer methods. For this reason, theory and equations are presented in this paper for slug tests on partially or completely penetrating wells in unconfined aquifers for a wide range of geometry conditions. The wells may be partially or completely perforated, screened, or otherwise open along their periphery. While the solutions are developed for unconfined aquifers, they may also be used for slug tests on wells in confined aquifers if water enters the aquifer from the upper confining layer through compression or leakage.

THEORY

Geometry and symbols of a well in an unconfined aquifer are shown in Figure 1. For the slug test the water level in the well is suddenly lowered, and the rate of rise of the water level is measured. The flow into the well at a particular value of y can be calculated by modifying the Thiem equation to

$$Q = 2\pi KL \frac{y}{\ln (R_e/r_w)} \tag{1}$$

where Q is the flow into the well (length^3/time), K is the hydraulic conductivity of the aquifer (length/time), L is the height of the portion of well through which water enters (height of screen or perforated zone or of uncased portion of well), y is the vertical distance between water level in well and equilibrium water table in aquifer, R_e is the effective radius over which y is dissipated, and r_w is the horizontal distance

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NYSDEC013217

REFERENCE 10

r COMPLIANCE INSPECTION REPORT	Facility Name: DEPEW MANF CORP.	Changes in Name, Addr , Rep.:
u of Land Resources Management	Address: 359 DUFFY AVE HICKSVILLE	
u County Department of Health	Company Representative: REX JACKD	Title: FOREMAN Phone: 681-2900
t No.	☒ New ☐ Renewal	Effective Date of Permit: / Expiration Date of Permit:

Item	Yes	No	N/A
aste Storage and Handling			
. Adequate Spill Control?		✓	
3. No obvious infraction of Fire Code?			✓
C. Proper waste containers?	✓		
D. Proper Storage of incompatible wastes?			
E. Waste containers properly labeled?		✓	
F. Proper drum stack size and aisles?		✓	
G. Containers off ground and not leaking?		✓	
H. Waste stored in secure area?		✓	
Registered Industrial Waste Scavenger?	✓		
Name TECHTRONICS			
DEC # MUSHNAK BROTHERS			
Different scavenger since last report			
Records			
A, B, C Proper waste inventory records?	✓		

Item	Yes	No	N/A
3. Records (Cont'd.)			
D. Record of spills & notification of N.C.H.D.?			✓
E. Record of special sampling results?			✓
4. Records kept a minimum of 3 years?	✓		
5. Reports submitted on time?			
6. Waste storage in comformance with permit?		✓	
Quantities O.K.? Drums	✓		
Tanks			
Maximum storage time O.K.?	✓		
7. Sampling in conformance with permit?			✓
8. Is compliance schedule met as required by permit?			✓
9. Overall Inspection Rating			
☐ Satisfactory			
☒ Non-Compliance ☑ Major ☐ Minor			

e	Item	Comments
		1- 7 drums/year acetone
		meeting with Mr. Schutt Dec. 1st 1983 10:00 A.M.
		Attorney Frank Gen Manager for Depew
		Sump not cleaned for 2 1/2 years

NYSDEC013219

Robert B. Wilk	Date 11/10/83	Signature of Company Representative: [signature]	Date 11/10/83

REFERENCE 11

CC-B-3.67.
CC-517.9/75.

LAWLER, MATUSKY & SKELLY
ENGINEERS
JUN 22 1992

Nassau County Clerk's Search

(OFFICIAL)

No. 478

HAROLD W. McCONNELL

County Clerk

THIS IS TO CERTIFY THAT A SEARCH HAS BEEN MADE IN THE NASSAU COUNTY CLERK'S OFFICE AS FOLLOWS:

Chain of Title
(Conveyances)

Section 11
Block H
Lot 451

359 Duffy Avenue
Hicksville, New York

Carl Rumpf (described as Charles Rumpf) Babette Rumpf, his wife Hicksville, New York to August Hofmann Julia Hofmann, his wife New Hyde Park, New York		Deed-Warranty Dated 1/6/11 Recorded 1/18/11 Premises & more Liber 256 cp 126
August Hofmann, Donor Hicksville, New York to Augusta M. Bell, as Trustee Hudson Falls, New York		Deed-Trustee Dated 10/3/36 Recorded 10/4/36 Premises & more Liber 1928 cp 195
Arthur E. Bell 34 Willow Street Hudson Falls, New York, as successor Trustee between August Hofmann and Augusta Bell to James Mc Crosson Adelaide B. Mc Crosson, his wife 223 Wilson Avenue Westbury, New York		Deed-Warranty Dated 10/10/42 Recorded 12/17/42 Premises & more Liber 2566 cp 37 Tax $5.50
James Mc Crosson Adelaide B. Mc Crosson, his wife Duffy Lane, Hicksville, New York to Burroughs Landscape Construction Co., Inc. 141 East 44th Street New York City		Deed Dated 7/12/45 Recorded 7/17/45 Premises & more Liber 2908 cp 395 Tax $4.40
Burroughs Landscape Construction Co., Inc. 141 East 44th Street, N.Y., N.Y. to William Duffy 205 Duffy Avenue Hicksville, N.Y.		Deed-Warranty Dated 3/18/48 Recorded 3/19/48 Premises & more Liber 3543 cp 126 Tax $11.00
William Duffy Duffy Avenue, Hicksville, New York to Selma B. Tucker 44 Burnham Place Manhasset, New York		Deed-Bargain & Sale Dated 12/9/50 Recorded 12/21/50 Premises & more Liber 4391 cp 324 Tax $35.85

NYSDEC013221

No._____

Nassau County Clerk's
Search
(Official)

for

vs.

HAROLD W. McCONNELL
COUNTY CLERK OF NASSAU COUNTY
MINEOLA, L. I., N. Y.

NYSDEC013222

CC-B-3.67.
CC-517. 9/75.

Nassau County Clerk's Search

(OFFICIAL)

No. 478

HAROLD W. McCONNELL

County Clerk

THIS IS TO CERTIFY THAT A SEARCH HAS BEEN MADE IN THE NASSAU COUNTY CLERK'S OFFICE AS FOLLOWS:

Chain of Title

Selma Tucker 44 Burnham Place Manhasset, New York to Mayson H. Tucker Selma B. Tucker, his wife 44 Burnham Place, Manhasset, New York	from	Deed-Bargain & Sale Dated 3/1/56 Recorded 3/6/56 Premsies & more Liber 5980 cp 543
Mayson H. Tucker Selma B. Tucker, his wife 44 Burnham Place Manhasset, New York to Mayson H. Tucker 44 Burnham Place, Manhasset, New York		Deed-Bargain & Sale Dated 5/16/58 Recorded 6/16/58 Premises & more Liber 6383 cp 220
Mayson H. Tucker 359 Duffy Ave. Hicksville, N.Y. to Patricia T. Walker 10% Crescent Beach Rd., Glen Cove, N.Y. Mayson H. Tucker 90% ~~xx~~ 359 Duffy Ave., Hicksville, N.Y., as joint tenants		Deed-Bargain & Sale Dated 12/20/76 Recorded 12/31/76 Sec. 11, Blk. H, Lot 451 Liber 9011 cp 198
Patricia T. Walker No #, Crescent Beach Road Glen Cove, New York to Mayson H. Tucker 359 Duffy Avenue Hicksville, N.Y.		Deed-Quitclaim Dated 9/30/80 Recorded 10/2/80 Sec. 11, Blk. H, Lot 451 Liber 9297 cp 216
Mayson H. Tucker 44 Burnham Place Manhasset, New York to Hollywood Construction, Ltd. NY corp., 70 Broadway Hicksville, New York		Deed-Bargain & Sale Dated 12/19/86 Recorded 3/12/87 Sec. 11, Blk. H, Lot 451 Liber 9756 cp 383 Tax $3,000.00

Nothing else found to 6/16/92.
RG

Harold W. McConnell RG

Harold W. McConnell, County Clerk

NYSDEC013223

No. 478

Nassau County Clerk's
Search
(Official)

for

Lawler, Matusky & Skelly
PO Box 1509
Pearl River, NY 10965

vs.

359 Duffy Avenye
Hicksville, New York

HAROLD W. McCONNELL
COUNTY CLERK OF NASSAU COUNTY
MINEOLA, L. I., N. Y.

NYSDEC013224

No. 13159

NASSAU COUNTY CLERK'S OFFICE
MINEOLA, N.Y.

11-K

Paid by _____ Date _____

QUANTITY		AMOUNT
	JUN 18	10
	Fee Total	10
	R.E.T.T. Total	
	Mortgage Tax	
	Grand Total	10

Check#

Cash

CC-R-11K 17M 9/87

CC-2566 Rev. 9/87

NYSDEC013225

REFERENCE 13

Nassau County Department of Health
Office of Industrial & Hazardous Waste Management
Data Supporting Request for Legal Action

Date of Request:

NCDH Personnel Assigned:
Robert R. Willis

Property Owner's Name: Mayson Tucker

Property Owner's Address: Box 228
Manhasset, New York 1103

RECEIVED
JUL 18 1983
ENVIRONMENTAL QUALITY
REGION 1

Facility Name: Depew Manufacturing Corporation

Facility Address: 359 Duffy Avenue
Hicksville, New York 11801

Facility Contact Person: Mayson Tucker

1. Specific Violations

   a. Failure to remove wastes from exterior of their manufacturing plant. Violation of ECL Article 27, Part 360.8(a)(17) and 360.8(a)(21) of Title 6 of NYCRR.

   b. Past violations for which no investigation or cleanup has been done.

      1. Discharging industrial wastes without SPDES permit. ECL 17-0505 and 17-0701.

      2. Discharging industrial wastes in contravention of discharge standards. ECL 17-0501 and 17-0511.

   c. Disposal and storage of hazardous wastes without having first obtained a Part 360 Permit, violating ECL 27-0913.

The results of the analysis of the samples taken since 1978 are given in the following two tables. (A dash is indicated when a sample was not analyzed for a listed constituent)

NYSDEC013227

Samples of Discharge

Constituent	9/14/78	3/12/80	5/27/81	1/27/84	12/12/84*
Benzene	(DEC) 15 ppb	(NCDH) 46 ppb	(NCDH) ND	(NCDH) --	(NCDH) ND
Toluene	30 ppb	--	ND	--	ND
Ethyl benzene	m.s. peak	--	--	--	42 ppb
Styrene	--	--	m.s. peak	--	2,000 ppb
Aluminum	350 ppm	--	ND	149 ppm (Sol.1 ppm)	22.5 ppm

ND = Not Detected
* (Ref. #1)

Settling pit

Samples of Lagoon Contents

Constituent	Liquid/Sludge 8/1/84 (DEC-NYSHD)	Liquid/Sludge 8/1/84* (DEC-H2M)	Liquid 2/1/85 (NCDH)	Fiberglass 4/25/85*** (NCDH)
Benzene	1 ppb	--	22 ppb	95 ng/g
Toluene	3 ppb	--	20 ppb	500 ng/g
Ethyl benzene	ND	--	130 ppb	17,000 ng/g
Styrene	ND	--	6000 ppb	400,000 ng/g
Lead	--	11 ppm	--	--
Mercury	--	.005 ppm	--	--
Copper	--	3.5 ppm	--	--
Cadmium	--	1.2 ppm	--	--
Arsenic	--	.410 ppm	--	--
Selenium	--	.475 ppm	--	--
Silver	--	.9 ppm	--	--
Zinc	--	5.9 ppm	--	--
Phenols	--	2.6 ppm	--	--
Dimethyl phthalate	--	450 ppm**	--	--

ND - Not Detected
* (Ref. #2)
** Indicates hazardous waste
*** (Ref. #3)

An additional sample of the discharge taken June 7, 1979 by the NCDH and analyzed by New York Testing Labs indicated 580 ppb of benzene but the results of the analyses at this lab at that time were seriously questioned and therefore this result was discounted.

An additional sample of the lagoon wastes taken December 1985 had an EP Toxicity Test run on it, but no parameter standards were exceeded.

The facility ground fiberglass fishing rods used styrene (ethylene benzene) and paints.

2. Background Information

The facility manufactured fiberglass fishing rods from 1977 to 1985. The process involved the grinding of rods to shape with the use of a water spray to prevent dust. The water/fiberglass mixture was discharged through a trench in the ground to a recharge basin.

When an industrial survey was done by the NCDH February 1977, it was determined that a SPDES permit would be required. It took five years for a complete application for a SPDES permit to be submitted. A permit was finally issued October 1, 1984 (#NY-0107719), but with an expiration date of May 31, 1985 since sewers had become available in May 1984. The facility was closed down by March 31, 1985.

Inspections by the NCDH in January and November 1983 and March 1984 (Refs. 4, 5 & 6) revealed that piles of fiberglass wastes were accumulating in the discharge lagoon on the property to the rear of the building. At each inspection, the facility was requested to remove these wastes.

A NCDH Compliance Conference was held April 1984 which resulted in an agreement signed by Depew which indicated that the wastes would be removed by May 31, 1984 (Ref. #6). When samples of the sludge/liquid in the lagoon were taken in August 1984 by DEC (Ref. #7) and when NCDH inspections were done in January and March 1985, (Refs. #8 & #9) wastes still had not been removed.

Since the facility ceased operations March 31, 1985, the NCDH sent the facility a letter notifying them that the discharge had been in violation of discharge standards (Ref. #8) based on samples taken by DEC in August 1984 (Ref. #2) and by the NCDH in December 1984 (Ref. #1). Included in the letter was a request that the accumulated fiberglass wastes be removed and that the soil remaining at the bottom of the lagoon be tested by May 25, 1985 as a closure procedure. On May 28, 1985 an extension was granted to June 17, 1985 (Ref. #9).

Due to the fact that this target date was not met, a NCDH conference was held with facility June 1985 and a local agreement was developed with facility (owner) and buyer of the site. In August 1985, owner and buyer went to contract and agreed that owner was responsible for investigation and remediation, but that buyer would perfonm them. On August 16, 1985 facility signed agreement (Ref. #10) to remove fiberglass wastes by October 1, 1985, take bottom soil samples, install groundwater monitoring well and complete site investigation.

Problems developed with obtaining a disposal site, but were solved and removal began November 1985. Progress was slow and work came to a halt. On January 29, 1986, NCDH letter was sent to buyer requiring them to submit name of new transporter (Ref. #11). A contract with a new transporter was signed March 1986. Work was to begin April 1986, but never did due to disagreement over payment.

On May 8, 1986, the facility was notified by NCDH that work must be restarted by May 19, 1986, or matter would be referred to the NYSDEC for legal action. (Ref. #12). An inspection on May 19, 1986 revealed that no work had begun.

After additional information was obtained from DEC concerning sample results which indicated that the waste was hazardous, a letter was sent June 23, 1986 informing the facility that the waste is hazardous and that they could be subject to criminal charges. (Ref. #13)

3. Facts Describing Respondent's Cooperation or Lack Thereof:

It took five years for a complete application for a SPDES permit to be submitted and that occurred only after a DEC Compliance Conference was held December 1, 1983.

Two NCDH Compliance Conferences were held, each of which resulted in a written agreement by the facility to remove the wastes by a specific date. The facility did not live up to either of its written commitments.

4. Other Proceedings, if any, Involving Respondent

All drummed wastes have been removed as was required by the above written agreements under Article IX.

5. Recommendation

DEC Compliance Conference should be held for purpose of developing a Consent Order for cleanup of lagoon and investigation and remediation of site. A $20,000 fine should be included with $15,000 suspended for compliance with Consent Order schedule.

6. Compliance Schedule Recommendations

NYSDEC013230

See attached.

Marlena M. Hamann

Marlena M. Hamann

REFERENCE 14

NYSDEC013231

MEMORANDUM OF CONVERSATION

M r Mayson Tucker OF Depew Manufacturing
Previous owner (property) & V.P.

JOB: Depew DATE: July 6 1992
JOB NUMBER: S 76 047 TIME: 1:15 PM
CONCERNING: when started

AND DECIDED:

Mayson Tucker
44 Burnham Place, Manhasset New York
516 627 2667

- Told him & had chain of Title and asked when Depew Manufacturing started operating at Duffy Ave

He said - In 1950's when he purchased the property at Duffy Ave. There was 1 building there at the time and he added on three extensions over the time that he had it.

Depew Manufacturing started in Wyandanch Long Island and moved to Duffy Ave in Hicksville in 1950s

- ~~Now~~ Never Depew Chemical - always Depew Manufacturing

Says Patricia ~~B.~~ T Walker (whose name appears in title chain) is his daughter.

NYSDEC013232

CC: SIGNED: Christina Fern
CC: SIGNED:

LMS Lawler, Matusky & Skelly Engineers

REFERENCE 15

NYSDEC013233

B	0 0 0 0 3	35	4	20	17.6	250	17	2000	N F I ☐ ☐ X ☐	Sk	180	Plot Plan dated 11/27/70 ~~Bldg Plan dated 6/25/73~~

SEC. C

57. DESCRIBE PROCESS OR UNIT:

1) Impregnating fiberglass cloth with resin, then curing

NYSDEC013234

58. TOTAL NUMBER OF SIMILAR PROCESSES OR UNITS: 1

SEC. D

CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	FUEL TYPE	FLOW RATE (SCFM)	TEMP (°F)	PRESSURE DROP (IN. H_2O)	HORSE POWER	CONTAM'T CONTROL'D	EFFICIENCY (%)	HOW DET.	DISP. METH.	INITIAL COST ($)	OPER COST ($)	DATE INSTALLED	USEFUL LIFE
59. 10	60. Midland-Ross 271,000 Btu/hr	61. 7	62. 8,000	63. 250	64. 0.1	65. 3	66. 620	67. 75	68. 2	69. 9	70. 2,000	71. 10,000	72. 01/01/66	73. 10
74	75	76	77.	78	79	80	81.	82.	83.	84	85	86.	87. / /	88

SECTION E

CALCULATIONS IN DETERMINING INPUT OR PRODUCTION RATE, EMISSION RATE POTENTIAL AND ACTUAL EMISSIONS:

Glass processed: 1440 ft/hr x 0.25 lb/ft x 416 hr/yr = 150,000 lb/yr

1440 x 0.52 = 750 lb/hr

1440	0.52	48	36,000
max. rate 1440	0.113	48	7,800
		512	193,800

193,800 lb/yr ÷ 512 hr/yr = 378 lb/hr average use of glass cloth

3 188s

Resin content of impregnated cloth is 24%, so finished weight is 378 x 100/76 = 497 lb/hr of impreg.cloth
Resin used = 497 − 378 = 119 lb/hr average. Solvent/resin ratio = 1/4. Solvent used = 1/4 x 119 = 30 lb/hr avg.
Total input = 378 lb/hr cloth + 119 lb/hr resin + 30 lb/hr acetone = 527 lb/hr average

ERP = 4 x 14.8 = 59.2 lb/hr

At 75% recirculation, 25% of the solvent used is emitted. 25% x 30 = 7.5 lb/hr average emission

$\frac{750}{378}$ x 7.5 = 14.8 lb/hr max. emission rate

512 hr/yr ÷ 8 hr/day = 64 days/yr

proportional increase

2000 SCFM (exit flow rate) x 60 min/hr x 0.077 lb/ft³ air density = 15,400 lb/hr exit flow
7.5 lb/hr acetone emission ÷ 15,400 lb/hr exit flow = 0.486 lb/1000 lb undiluted exhaust gas

SECTION F

CONTAMINANT NAME	%	CODE	INPUT OR PRODUCTION	UNITS	ERP (LBS/HR)	HRS/DAY	DAYS/YR	PROPOSED RATING	ACTUAL EMISSIONS	UNITS	ACTUAL EMISSIONS (LBS/HR)
89. ~~Acetone (g)~~	90.	91. 620	92.	93.	94. 28.8	95. 8	96. 52	97. D	98. 7.2	99.	100. 7.2
104.	105.	106.	107.	108.	109.	110.	111.	112.	113.	114.	115.
119. Acetone (g)	120.	121. 620	122.	123	124. 59	125. 8	126. 6	127. D	128. 14.75	129.	130. 14.75
134. Acetone (g)	135.	136. 620	137.	138.	139. 13	140. 8	141. 6	142. D	143. 3.25	144.	145. 3.25
149.	150.	151	152.	153.	154.	155	156	157.	158.	159.	160.
164.	165	166.	167.	168.	169.	170.	171.	172.	173.	174.	175.

AGENCY USE ONLY

ENV. RATING	ALLOWABLE EMISSIONS	UNITS
101. D	102. 7.2	103
116. D	117. 14.75	118.
131. D	132 14.75	133.
146. D	147. 3.25	148.
161.	162	163.
176.	177.	178.

PROCESS CODE	APPLICABLE RULE
194.	195. 212

SEC. G

SOLID FUEL TYPE	SOLID FUEL LBS/HR	SOLID FUEL %S	OIL TYPE	OIL GPH	OIL %S	GAS TYPE	GAS CFH	GAS BTU/CF	CONTROL EQUIPMENT TYPE	CONTROL EQUIPMENT NUMBER	CONTROL EQUIPMENT TYPE	CONTROL EQUIPMENT NUMBER	CONTROL EQUIPMENT TYPE	CONTROL EQUIPMENT NUMBER
179.	180.	181	182.	183.	184.	185 3	186 212	187 1000	188 10	189. 1	190.	191.	192.	193.

NOTES 1. Plans must be submitted in triplicate with this application
2. Any person knowingly making any false statement or false report in connection with this application shall be liable for penalties as prescribed by law

OP	LOCATION	FACILITY	EMISSION POINT
2 I	2 8 2 4 0 0 0	7 1 2	0 0 0 0 3

AIR 100 I (4/73)

DUPLICATE

4-16-74

OP	LOCATION	FACILITY	EMISSION POINT
I	282400	0712	00003

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - CENTRAL OFFICE
YELLOW - APPLICANT
PINK - DIH
CARDBOARD - REGIONAL OFFICE

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR ENVIRONMENTAL ANALYSIS RATING AND PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

#127

PLEASE PRINT OR TYPE XX

SECTION A

1. NAME OF OWNER/FIRM MFG: Lepen Manufacturing Corporation
2. NUMBER AND STREET ADDRESS: 359 Duffy Avenue
3. CITY - TOWN - VILLAGE: Hicksville
4. STATE: N.Y.
5. ZIP: 11801
6. OWNER CLASSIFICATION: A. ☐ COMMERCIAL B. ☒ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE: Mayson H. Tucker, President
8. TELEPHONE: 516-681 2900
9. NAME OF AUTHORIZED AGENT: Irving Deutsch, P.E.
10. TELEPHONE: 516-483-2572
11. NUMBER AND STREET ADDRESS: 153 Betty Road
12. CITY - TOWN - VILLAGE: East Meadow
13. STATE: N.Y.
14. ZIP: 11554
15. NAME OF P.E. OR ARCHITECT PREPARING PLANS: Irving Deutsch - P.E.
16. NYS P.E. OR ARCH'T LIC. NO.: 27577
17. TELEPHONE: 516-483-2572
18. SIGNATURE OF REPRESENTATIVE OR AUTHORIZED AGENT: [signature]
19. FACILITY NAME (IF DIFFERENT FROM OWNER/FIRM):
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS):
21. CITY - TOWN - VILLAGE:
22. COUNTY:
23. BLDG. NAME OR NUMBER: Main
24. FLOOR NAME OR NUMBER: First
25. DATE APPLICATION COMPLETED: 11 / 12 / 73
26. EXPECTED DATE OF OPERATION: 1966 / - / 1966
27. PERMIT TO CONSTRUCT: A. ☐ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE: A. ☐ NEW SOURCE C. ☒ EXISTING SOURCE B. ☐ MODIFICATION

FOR AGENCY USE ONLY

29. LOCATION CODE	30. FACILITY ID. NO.	31. U.T.M.(E)	32. U.T.M.(N)	33. SIC NUMBER	34. DATE APPLICATION RECEIVED	35. DATE APPLICATION REVIEWED	36. REVIEWED BY:
282400	0712	622.5	512.8	3949	1/7/74 12/7/73	1/18/74 12/12/73	W.F. Riesler [illegible]

PERMIT TO CONSTRUCT

37. DATE ISSUED	38. EXPIRATION DATE	39. SIGNATURE OF APPROVAL
/ /	/ /	

40. CONDITIONS:
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL AIR POLLUTION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE
4. STACK TEST REQUIRED YES ☐ NO ☐

NYSDEC013235

RECOMMENDATION OF C.O. APPROVAL

41. DATE ISSUED	42. EXPIRATION DATE	43. SIGNATURE OF APPROVAL
01/28/74	01/27/77	[illegible]

44.
1. ☒ INSPECTED BY William P. Gallatin (Name) 12/5/73 (Date)
2. ☐ DOES NOT REQUIRE INSPECTION
3. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS PERMIT, CHANGES AS INDICATED ON FORM
4. ☐ I RECOMMEND ISSUANCE OF A PROVISIONAL CERTIFICATE TO OPERATE PENDING THE APPROVAL OF STACK TESTS
5. ☒ I RECOMMEND ISSUANCE OF A CERTIFICATE TO OPERATE THE SOURCE AS BUILT
6. ☒ HAVE EPISODE ACTION PLANS BEEN ACCEPTED FOR THIS SOURCE
EXEMPT ☒ YES ☐ NO ☐

UPON COMPLETION OF CONSTRUCTION, SIGN THE STATEMENT LISTED BELOW AND FORWARD TO THE APPROPRIATE FIELD REPRESENTATIVE

THE PROCESS, EXHAUST OR VENTILATING SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS	SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT: [signature]	DATE: 11/12/73

REFERENCE 16

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NASSAU COUNTY DEPARTMENT OF HEALTH

09/27/

282400 0712 00004 W I
LOCATION FAC EP

CERTIFICATE TO OPERATE AN AIR CONTAMINATION SOURCE
PROCESS, EXHAUST OR VENTILATION SYSTEM UNIT
RENEWAL APPLICATION

OWNER	FACILITY	
(1) DEPEW MFG CORP	(6) DEPEW MFG CORP	(11) CONFIDENTIAL STATUS NON-CONFIDENTIAL
(2) 359 DUFFY AVE	(7) 359 DUFFY AVE	(12) COMPLIANCE STATUS IN COMPLIANCE
(3) HICKSVILLE (4) NY	(8) HICKSVILLE (9) 11801	DATE OF LAST CHANGE 11/16/82
(5) 11801	(10) REP: M H TUCKER 681-2900	(13) PRIOR CO ISSUE DATE 12/22/82
		(14) PRIOR CO EXPIRATION DATE 12/21/83

EMISSION POINT 00006
(41)UTM-E: 622.5 KM. (42)STACK HEIGHT: 12 FT. (43)EXIT VELOCITY: 8.80 FT/SEC (44)SIC: 3949 (45)AGENCY-CODE-1: C (COUNTY)
(46)UTM-N: 512.8 KM. (47)HT ABV STRUC: -5 FT. (48)EXIT FLOW: 3300.00 ACFM (49)CO FEE: (50)AGENCY-CODE-2: C (COUNTY)
(51)GRND ELEV: 120 FT. (52)STK DIAM: 30X30 IN. (53)EXIT TEMP: 70 DEGR F (54)CO CONDITIONS: 1

UNIT I (55)HOURS/DAY: 8.0 (56)DAYS/YEAR: 240 (57)% OP BY SEASON: 25 25 25 25 (58)SOURCE CODE: A1103 SANDING OR GRINDING
(59)BLDG: (60)FLOOR NAME: GROUND (61)RULE 1: 212.00 (62)RULE 2:

PROCESS/UNIT DESCRIPTION (72)DESCRIPTION 1. SANDING FIBERGLASS RODS

CONTROL EQUIPMENT (73)TYPE: 005 CYCLONE (74)MFG: BAYLEY BLOWER CO (75)ID: 01 (76)DATE INSTALLED: 06/68
(77)DISPOSAL METHOD: 01 LANDFILL - ONSITE (78)USEFUL LIFE: 20 YEARS

AIR CONTAMINANTS	CAS NUMBER	ENV RATING	EMISSIONS ACTUAL	UNIT	NON ATT	PERMISSIBLE	% CONTROL EFFICIENCY	HRLY ACTUAL (LBS/HOUR)	ANNUAL EMISSIONS (LBS/YEAR) ACTUAL	10%	PERMISSIBLE
PARTICULATES	(085) NT075-00-0	(086) C	(087) .020	(088) 01	(089) 09	(090) .020	(091)	(092) .020	(093) 38.400	(094) 0	(095) 33.400

SPECIAL CONDITIONS (151)CONDITION 1. AG-1 COMPLIANCE

NYSDEC013237

(15)PRIOR COMMENTS (16)BY 001DLC (17)DATE 11/01/82	(18)CURRENT COMMENTS (19)BY (20)DATE	(21)COMPLIANCE
1. SATIS	1. [illegible]	(22)DATE OF NEXT ACTION / /
2.	2. CYCLONE NO. [illegible] USED	CERTIFICATE TO OPERATE
3.	3. ON M H TUCKER 681-2900	(23)ISSUE DATE ~~12/22/82~~
4.	4.	(24)EXPIRATION DATE ~~12/21/83~~
5.	5.	(25)CO FEE 50

ISN PER'S SIGNATURE: DATE: ISSUING OFFICER'S SIGNATURE: DATE:

REFERENCE 17

A19

New York State Department of Environmental Conservation

MEMORANDUM

TO: File
FROM: Bill O'Brien
SUBJECT: Depew Mfg. sampling on 8/1/84

DATE: August 2, 1984

I went to Depew Mfg. with Ed Smith, NYSDOH on 8/1/84 to take samples from their process wastewater effluent to be analysed for various aromatic organics (NYSDOH 503.1 GC Analysis) and suspended solids to be analyzed by NYSDOH. The effluent appears to leave the plant through a ditch on the east side of the building. The ditch contained no liquid but a whitish sludge. Sludge apparently removed from the ditch formed berms on both sides. The effluent then enters a settling pit on the south side of the building. One end of the pit contained liquid, from which the sample was taken. A sample of the sludge from the other end of the pit was taken to H2M for analysis (Sample #E184-299-01). The pit was surrounded by a berm several feet high apparently composed of sludge removed from the settling pit and hardened plastic resins which appeared to have been poured on the ground and berm. The site was generally very messy with piles of dried sludge and patches of hardened plastic resin. While the toxicity or hazardous nature of the solid waste on the site has not been established, it is definitely not being properly managed. This may or may not represent a violation.

The aestic problem of the solid waste on this site is probably the cause of much of the opposition that has arisen to the granting of a SPDES permit to this facility.

sp
cc: A. Yerman
G. Robin
P. Barbato
H. Schaefer, NCDH

NYSDEC013239

Ref. = 7

REFERENCE 18

NYSDEC013240

June 27, 1979

Mr. Mayson Tucker
Depew Mfg. Corp.
359 Duffy Ave.
Hicksville, N. Y. 11801

Re: SPDES Application

Dear Mr. Tucker:

We are returning enclosed your SPDES application Form "C". It is incomplete and has been sent to the wrong office. Please make the following corrections and additions and resubmit it to the proper office as noted below:

1. In reality you have at least 3 outfalls. One should be your sanitary waste. Please so indicate and estimate flow. The other two are the two trenches ~~or ditches~~ which carry your machine waste water to the settling pit. Please indicate flows and show locations on diagram you submitted.

2. Please attach a list of the materials you use in your processing; similar to the list you submitted to this office: copy attached. Please make corrections and indicate quantities used per year.

3. Enclosed is a list of fees based on your industrial waste discharge flow rate. Make the check out as indicated at the bottom of the fee schedule after you total your flows and select the proper fee.

NYSDEC013241

4. Make 3 copies of the application and mail them to:

   Mr. George Hansen
   Chief PDES Section
   New York State Dept.
   of Environmental Conservation
   50 Wolf Road
   Albany, N.Y. 12233

5. Mail one copy of the application to this office to my attention.

If you have any questions, please call this office at 535-2404.

Very truly yours,

L. Sama
Public Health Engineer
Bureau of Wastewater Management

LS:ceg:r
Enclosure

REFERENCE 20

The
DEPEW MANUFACTURING Corporation
MANUFACTURERS OF "Durolux" FIBERGLASS RODS AND TUBES
359 DUFFY AVENUE · HICKSVILLE, NEW YORK 11801
516 OV 1-2900

CHEMICALS.

Name	address.	usage yearly
2-Mercaptothiazoline	Aldrich Chem Co 940 St.Paul Ave Milwaukee, Wisc	3 KG
USP 245	Argus Chem Co 850 Morton Ave Richmond Cal	900#
TBPB (Tubular)	PFG Industries 49 Keswick Lane Plainview, N.Y.	640#
M105	PFG Indust as above	1100#
Acetone	Pasley Solv and Chem 556 Commercial Ave Garden City, N.Y.	20M#
Aropol 7280 (tubular)	Ashland Chem Co Dublin, Ohio	30M#
Stypol 40-2462	Freeman Chem Co Pt.Washington Wisc.	300M#
Polylite Polyester 92359	Reichhold Chem Co White Plains, N.Y.	240M#
DAP (tubular)	Hardwicke Chem Co Columbia SC	3000#
Zelec UN	Dupont Co Wilmington, Del	700#
		1000

NYSDEC013244

M = Thousand

REFERENCE 21

Handbook of Chemical Synonyms and Trade Names

A Dictionary and Commercial Handbook
Containing over 35,000 Definitions

PROPERTY OF LAWLER, MATUSKY & SKELLY LIBRARY

Editor

WILLIAM GARDNER

Eighth Edition Revised and Enlarged by

EDWARD I. COOKE
M.A.(Cantab.), B.Sc.(Lond.), C.Chem., M.R.I.C.

and

RICHARD W. I. COOKE
M.B.B.S.(Long.), M.R.C.P.(U.K.), D.C.H.

NYSDEC013246

CRC Press, Inc.
Boca Raton, Florida

REFERENCE 22

REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES

1985-86 Edition

VOLUME 4

Edited by

Doris V. Sweet

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1988

For sale by the Superintendent of Documents, U.S. Government Printing Office
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S/N 17-33-00431-5

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

April 1987

NYSDEC013248

REF
RA
1231
.R3
1988
vol.4

REFERENCE 23

NYSDEC013249

M Dave Pietrowicz OF Hardwick Chem Co
803 254 1237

MEMORANDUM OF CONVERSATION

JOB: Depew DATE: 8 June 1992
JOB NUMBER: 576047 TIME: 10 Am
CONCERNING: chemicals used at Depew

AND DECIDED:

DAP tubular
is Diallyl phthalate
~~is~~ monomer, cross linking plasticizer
- is prepolymer

- for fiberglass - used as a crosslinking agent to make fiberglass ~~&~~ tubes and rods

Now sold by ARCO

NYSDEC013250

CC: SIGNED:
CC: SIGNED:

LMS Lawler, Matusky & Skelly Engineers

REFERENCE 24

M _____ OF Cook Composite

414 284 5541

MEMORANDUM OF CONVERSATION

JOB: Depew

DATE: 6-10-92 ; 7-7-92

JOB NUMBER: 576-047

TIME: 1030 AM

CONCERNING: Materials used when site was active

AND DECIDED:

Cook Composite formerly Freeman Chemical

Pat Fricano - Cook Composite

Stypol 40-2462

- especially manufactured for Depew - sold only to Depew
- is an unsaturated polyester resin used in the pultrusion process, is a pultrusion resin

resin is in liquid form, is in Styrene monomer
- is a blend of styrene & polyester
- use: add a catalyst and heat to product and glass shards (fiber glass) then mold into parts
- the polyester is made from maleic anhydride
phthalic anhydride
~~propylen~~ ~~propyl~~ propylene glycol

CAS Reg # 025037-66-5

- Depew Manufacturing or Depew Chemical
Address 359 Duffy Ave Hicksville

7-7-92 - Date prior to 73 or 74? 1st manufactured in June 1971 to the early 1990's

info from Pat Fricano
Cook Composite / Formerly Freeman Chemical
217 Freeman Drive
Port Washington WIS 53074

NYSDEC013252

CC: _____ SIGNED: Chris Fern

CC: _____ SIGNED: _____

LMS Lawler, Matusky & Skelly Engineers

REFERENCE 25

NYSDEC013253

LAWLER, MATUSKY & SKELLY
ENGINEERS

JUN 15 1992

DU PONT

MSDS
MATERIAL SAFETY DATA SHEET

Du Pont Chemicals

5917PP | Revised 25-Dec-90 | Printed 10-Jun-92

"ZELEC" UN Lubricant

MATERIAL IDENTIFICATION

Corporate Number	DU002441

"ZELEC" is a registered trademark of Du Pont.

Manufacturer/Distributor	Du Pont 1007 Market Street Wilmington, DE 19898	
Phone Numbers	Product Information Transport Emergency Medical Emergency	1-(800)441-7515 1-(800)424-9300 1-(800)441-3637
Chemical Family	ALCOHOL PHOSPHATE	
Trade Names and Synonyms	Phosphoric acid, C8-C16 alkyl esters	
Du Pont Registry Number	DP8-74-6	
TSCA Inventory Status	Reported/Included	
NPCA-HMIS Ratings	Health: 3 Flammability: 1 Reactivity: 0 Personal Protection rating to be supplied by user depending on use conditions.	

COMPONENTS

Material	CAS Number	Percent
NJ TRADE SECRET REGISTRY #00850201001-5376P		95-100
1-OCTANOL	111-87-5	0-2
1-DECANOL	112-30-1	0-2

(continued)

NYSDEC013254

PHYSICAL DATA

Boiling Point	~ 177°C (350.6°F) at 760 mm Hg. Decomposes
Water Solubility	Dispersible
pH	1.8 - 3.2
Odor	Mild, fatty alcohol
Form	Liquid
Color	Colorless to pale yellow
Specific Gravity	0.98

Appearance : Clear to slightly hazy, viscous

HAZARDOUS REACTIVITY

Instability	Stable.
Incompatibility	Incompatible with reactive metals, especially when powdered.
Decomposition	Will not occur below boiling point.
Polymerization	Polymerization will not occur.

FIRE AND EXPLOSION DATA

Flash Point	>100°C (212°F)
Method	PMCC
Fire and Explosion Hazards	No Information Available.
Extinguishing Media	Water Spray. Foam. Dry Chemical. CO_2.
Special Fire Fighting Instructions	Wear self-contained breathing apparatus. Wear full protective equipment.

HEALTH HAZARD INFORMATION

ANIMAL DATA

NJ Trade Secret Registry #00850201001-5376P

Oral ALD: 5500 mg/kg in rats
Skin Absorption ALD: > 8000 mg/kg in rabbits
D.O.T.: Skin corrosive

1-Decanol

Inhalation 1 hour ALC: > 71 mg/L in rats
Skin Absorption LD50: 3650 mg/kg in rabbits
Oral LD50: 4720 mg/kg in rats

(continued)

NYSDEC013255

HEALTH HAZARD INFORMATION (continued)

The product is corrosive to the skin, is corrosive to the eye, and is not a skin sensitizer in animals.

Toxic effects described in animals from repeated exposures by ingestion include body weight loss, gastritis and deaths.

There are no animal test data available to define carcinogenic, mutagenic, developmental or reproductive hazards.

HUMAN HEALTH EFFECTS

Skin contact may cause skin burns or ulceration. Evidence suggests that 1-Decanol can be absorbed in amounts capable of producing the effects of systemic toxicity.

Eye contact may cause eye corrosion with corneal or conjunctival ulceration.

Inhalation of 1-Decanol may cause irritation of the upper respiratory passages; or temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness.

Carcinogenicity	None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Applicable Exposure Limits	
1-OCTANOL	
AEL * (Du Pont)	None Established
TLV (ACGIH)	None Established
PEL (OSHA)	None Established
WEEL (AIHA)	50 ppm (8 hr TWA)

* AEL is Du Pont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

Safety Precautions	Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

FIRST AID

Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse.
Eye Contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
Ingestion	If swallowed, do not induce vomiting. Immediately give two glasses of water. Never give anything by mouth to an unconscious person. Call a physician.
Notes to Physician	Activated charcoal slurry may be administered. To prepare activated charcoal slurry, suspend 50 grams activated charcoal in 400mL water and mix thoroughly. Administer 5mL/kg, or 350mL for an average adult.

(continued)

NYSDEC013256

PROTECTION INFORMATION

Generally Applicable Control Measures and Precautions	Use only with adequate ventilation.
Personal Protective Equipment	EYE/FACE PROTECTION Wear coverall chemical splash goggles and face shield. RESPIRATORS Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection. PROTECTIVE CLOTHING Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, jacket, hood and boots.

DISPOSAL INFORMATION

Spill, Leak, or Release	NOTE: Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up. Flush spill area with water.
Waste Disposal	Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

SHIPPING INFORMATION

DOT	
Proper Shipping Name	CORROSIVE LIQUID N.O.S. (MIXED ALKYL ACID ORTHOPHOSPHATES)
Hazard Class	CORROSIVE MATERIAL
UN/NA No.	UN1760
DOT Labels(s)	CORROSIVE
DOT/IMO	
Proper Shipping Name	CORROSIVE LIQUID, N.O.S.(MIXED ALKYL ACID ORTHOPHOSPHATES)
Hazard Class	8
UN No.	UN1760
DOT/IMO Label	CORROSIVE
Special Information	III
	Shipping Containers Steel drum: 55 gal with epoxy/phenolic liner 30 gal with epoxy/phenolic liner Steel pail: 5 gal with baked on enamel lining

(continued)

NYSDEC013257

STORAGE CONDITIONS

Keep container tightly closed.

Freezing will affect physical condition but will not damage. Thaw and mix before using.

TITLE III HAZARD CLASSIFICATIONS

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS:

R.V. Daum
Du Pont Chemicals
Wilmington, DE 19898
800-441-9442

# Indicates updated section.

End of MSDS

NYSDEC013258

REFERENCE 26

NYSDEC013259

M Joann Ramel OF E. Dupont
303 774 1000

MEMORANDUM OF CONVERSATION

JOB: Depew DATE: June 8 1992

JOB NUMBER: 576 047 TIME: ~10 AM

CONCERNING: chemicals at Depew

AND DECIDED:

Zelec UN

Zelec - is an anti static agent used in textiles, plastics and film
- is an fatty alcohol phosphate

UN - is the grade
will send MSDS

NYSDEC013260

CC: SIGNED:

CC: SIGNED:

LMS Lawler, Matusky & Skelly Engineers

REFERENCE 27

SLUDGE DISPOSAL: If sludge is created as a result processing or treatment what is ultimate disposal p[illegible] Either is disposal pit with, [illegible] removal Pit

. DISCHARGE DATA (Continued) (See Instructions) ATTACH SKETCH SHOWING OUTFALL LOCATIONS

UTFALL NO. 001	☐ Proposed ☐ Replacement ☒ Existing ☐ Expansion	TYPE OF WASTE Outfall #1	TYPE OF TREATMENT (If none, so state) None
ES GN FLOW 600 Gal/Day	ACTUAL FLOW 600 Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☒ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☒ No If "Yes", describe in comments
ER OD OF DISCHARGE 12 Months per year	5 Days per week	7 Hours per day	
URFACE DISCHARGE ☒ Yes ☐ No	If "Yes", Name of Receiving Waters Pit	Classification	Waters Index No.
UBSURFACE DISCHARGE ☒ Yes ☐ No	If "Yes", Name of nearest Surface Water Ground Water	Distance ~~100~~ Ft.	SOIL TYPE Sandy Soil / Depth to Water Tab 100

LTFALL NO. 002	☐ Proposed ☐ Replacement ☒ Existing ☐ Expansion	TYPE OF WASTE Sanitary Waste	TYPE OF TREATMENT (If none, so state) Septic Tank
ESIGN FLOW ~~1000~~ 4000 Gal/Day	ACTUAL FLOW 500 Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☒ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☒ No If "Yes", describe in comments
ERIOD OF DISCHARGE 12 Months per year	5 Days per week	8 Hours per day	
URFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
UBSURFACE DISCHARGE ☒ Yes ☐ No	If "Yes", Name of nearest Surface Water Ground Water	Distance Ft.	SOIL TYPE ~~Sand~~ / Depth to Water Tab 100

OUTFALL NO. 003	☐ Proposed ☐ Replacement ☒ Existing ☐ Expansion	TYPE OF WASTE Sanitary Waste	TYPE OF TREATMENT (If none, so state) Cesspool
DESIGN FLOW 4000 Gal/Day	ACTUAL FLOW 500 Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☒ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☒ No If "Yes", describe in comments
PERIOD OF DISCHARGE 12 Months per year	5 Days per week	8 Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of nearest Surface Water	Distance Ft.	SOIL TYPE / Depth to Water Tab

OUTFALL NO.	☐ Proposed ☐ Replacement ☐ Existing ☐ Expansion	TYPE OF WASTE	TYPE OF TREATMENT (If none, so state)
DESIGN FLOW Gal/Day	ACTUAL FLOW Gal/Day	FREQUENCY OF DISCHARGE ☐ Continuous ☐ Intermittent ☐ Batch	IS FLOW EQUALIZATION PROVIDED? ☐ Yes ☐ No If "Yes", describe in comments
PERIOD OF DISCHARGE Months per year	Days per week	Hours per day	
SURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of Receiving Waters	Classification	Waters Index No.
SUBSURFACE DISCHARGE ☐ Yes ☐ No	If "Yes", Name of nearest Surface Water	Distance Ft.	SOIL TYPE / Depth to Water Tab

. COMMENTS:

NYSDEC013262

8. I hereby affirm under penalty of perjury that information provided on this form and any attached supplemental forms is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

APPLICANT'S SIGNATURE (See Instructions)	Date	Printed Name	Title
X Maryson Tucker	Jun 15, 79	MARYSON TUCKER	Pres

REFERENCE 28

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501

FRANCIS T. PURCELL
County Executive

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E.
Asst. Deputy Commissioner
Div. of Environmental Quality

AQM Ser. No. 251-79
November 14, 1979

To: File

Area Director
U.S. Dept. of Labor
OSHA
990 Westbury Rd.
Westbury N.Y. 11590

Re Depew Mfg. Corp.
359 Duffy Ave.
Hicksville, N.Y.

Dear Sir:

I should like to bring the following matter to your attention:

During a routine inspection of the firm's emission control equipment I noted the following:

1. Large uncovered troughs of styrene and solvent chemicals

2. The air in the work space was heavily laden with these solvent and chemical vapors

3. Particulate matter derived from grinding and sanding operations filled the air with resin and glass fiber particles

It is my opinion that this plant deserves an immediate evaluation. I shall appreciate being apprized of your findings.

Sincerely yours,

Bruce L. Calder, P.E.
Chief, Engineering Section
Bureau of Air Quality Mgmt.

BLC:gw

NYSDEC013264

REFERENCE 29

NYSDEC013265

Depew Manufacturing, Hicksville (continued)

5. Summary of Enforcement Items (continued)

On April 10, 1985 NCDH notified owner of violations. Due to the fact that the June 17, 1985 target date was not met, a NCDH conference was held with facility June 1985 and a second agreement was developed with facility (owner) and buyer of the site. In August 1985, owner and buyer went to contract and agreed that owner was responsible for investigation and remediation, but that buyer would perform them. On August 16, 1985 facility signed agreement to remove fiberglass wastes by October 1, 1985, take bottom soil samples, install groundwater monitoring well and complete site investigation.

Problems developed with obtaining a disposal site, but were solved and removal began November 1985. Progress was slow and work came to a halt. In January 1986, NCDH letter was sent to buyer requiring them to submit name of new transporter. A contract with a new transporter was signed March 1986. Work was to begin April 1986, but never did, due to disagreement over payment.

In May 1986, the facility was notified by NCDH that work must be restarted by May 19, 1986, or matter would be referred to the NYSDEC for legal action. An inspection on May 19, 1986 revealed that no work had begun.

After additional information was obtained from DEC concerning sample results which indicated that the waste was hazardous, a letter was sent June 1986 informing the facility that the waste is hazardous and that they could be subject to criminal charges.

On July 2, 1986 case was referred to DEC for legal action and on August 12, 1986 site was nominated by NCDH to be placed on State Superfund list.

NCDH was informed by DEC August 25, 1986 that legal action would be postponed pending submission of Phase II plan by new buyer. New buyer (as of August 29, 1986) removed most of fiberglass wastes from lagoon and placed them inside building in September 1986. By December 1986 all wastes had been removed from lagoon, some of which had been removed from site. In January 1987 site appeared on State Superfund list. In May 1987 Phase I investigation began with completion required by November 1987 but as of June 13, 1988 report revision was under review.

6. Listing of Enforcement Items

NCDH Compliance Conference and NCDH agreement signed	- April 1984	NYSDEC013266
Owner notified of violations by NCDH	- April 1985	

Depew Manufacturing, Hicksville (continued)

6. Listing of Enforcement Items (continued)

2nd NCDH agreement signed	-	August 1985
Cleanup began (but stopped within 2 months)	-	November 1985
NCDH sent letter requesting name of new transporter	-	January 1986
Contract with new transporter	-	March 1986
NCDH notified owner work must restart or referral would occur	-	May 1986
NCDH notified owner that waste is hazardous and could result in criminal charges	-	June 1986
Case referred to DEC	-	July 2, 1986
NCDH nominated site to State Superfund list		August 1986
DEC postponed legal action pending submission of Phase II plan		August 1986
Wastes removed from lagoon	-	September 1986
Some additional wastes removed from site	-	December 1986
Site placed on State Superfund List	-	January 1987
Phase I began	-	May 1987

7. Next Action Due

Phase I completion -

NYSDEC013267

REFERENCE 30

NYSDEC013268

Please print or type with ELITE type *(12 characters/inch)* in the unshaded areas only.

Form Approved OMB No. 158-S79016
GSA No. 0246-EPA-OT

EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.	
I. NAME OF INSTALLATION	
II. INSTALLATION MAILING ADDRESS	PLEASE PLACE LABEL IN THIS SPACE
III. LOCATION OF INSTALLATION	

microfiche

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act).*

DETACH

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
F NYD002046597 T/A C 1		

NYSDEC013269

I. NAME OF INSTALLATION

DEPEW MANUFACTURING CORP.

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX	CITY OR TOWN	ST.	ZIP CODE
359 DUFFY AVE,	HICKSVILLE, NEW YORK	NY	11801
	HICKSVILLE,	NY	11801

ENVIRONMENTAL PROTECTION AGENCY NEW YORK N.Y. AUG 3 10 4 AM '82 PERMITS ADMIN REGION 2

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER	CITY OR TOWN	ST.	ZIP CODE
359 DUFFY AVE			
	HICKSVILLE	NY	11801

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title)	PHONE NO. (area code & no.)
REX JATKO PRODUCTION SUPERVISOR	516 681 2900

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: MAYSON H TUCKER

DETACH

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*: F - FEDERAL; M - NON-FEDERAL — M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete Item VII)*
- [ ] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only — enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify)*:

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.:

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

I.D. – FOR OFFICIAL USE ONLY		
S W		T/L C 1
1	2 – 13	14 15

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31 U002	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNATED
Mayson H. Tucker	MAYSON H. TUCKER PRES.	7/22/82

EPA Form 8700-12 (6-80) REVERSE

Mayson H. Tucker

NYSDEC013270

REFERENCE 31

Code of Federal Regulations

Protection of Environment

40

PARTS 260 to 299

Revised as of July 1, 1990

CONTAINING
A CODIFICATION OF DOCUMENTS
OF GENERAL APPLICABILITY
AND FUTURE EFFECT

AS OF JULY 1, 1990

With Ancillaries

Published by
the Office of the Federal Register
National Archives and Records
Administration

as a Special Edition of
the Federal Register

NYSDEC013272

Hazardous waste No	Chemical abstracts No.	Substance
see F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,T)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-

% (R,T)

ivenience of the regu-
primary hazardous
erials have been indi-
(Toxicity), R (Reac-
and C (Corrosivity).
icates that the com-
toxicity.]

their correspond-
Waste Numbers

NYSDEC013273

Hazardous waste No.	Chemical abstracts No.	Substance
See F027	93-72-1	Silvex (2,4,5-TP)
[illegible]	18883-66-4	Streptozotocin
[illegible]	77-78-1	Sulfuric acid, dimethyl ester
[illegible]	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
[illegible]	95-94-3	1,2,4,5-Tetrachlorobenzene
[illegible]	630-20-6	1,1,1,2-Tetrachloroethane
[illegible]	79-34-5	1,1,2,2-Tetrachloroethane
[illegible]	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
[illegible]	109-99-9	Tetrahydrofuran (I)
[illegible]	563-68-8	Thallium(I) acetate
[illegible]	6533-73-9	Thallium(I) carbonate
[illegible]	7791-12-0	Thallium(I) chloride
[illegible]	7791-12-0	Thallium chloride TlCl
[illegible]	10102-45-1	Thallium(I) nitrate
[illegible]	62-55-5	Thioacetamide
U153	74-93-1	Thiomethanol (I,T)
[illegible]	137-26-8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
[illegible]	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	[1] 81-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

[1] CAS Number given for parent compound only.

(Approved by the Office of Management and Budget under control number 2050-0047)

[45 FR 78529, 78541, Nov. 25, 1980]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 261.33, see the List of CFR Sections Affected in the Finding Aids section of this volume.

NYSDEC013274

APPENDIX I—REPRESENTATIVE SAMPLING METHODS

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Agency to be representative of the waste.

Extremely viscous liquid—ASTM Standard D140-70 Crushed or powdered material—ASTM Standard D346-75 Soil or rock-like

REFERENCE 32

LS
RWK

FRANCIS T. PURCELL
COUNTY EXECUTIVE

NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, NEW YORK 11501

JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

FRANCIS V. PADAR, P.E., M.C.E.
DEPUTY COMMISSIONER
DIVISION OF ENVIRONMENTAL HEALTH

August 12, 1986

Gerald Brezner, P.E.
Regional Solid & Hazardous Waste Engineer
New York State Department of
Environmental Conservation
SUNY - Building #40
Stony Brook, New York 11794

Re: Depew Manufacturing
Hicksville, New York
Nomination as Inactive
Hazardous Waste Disposal Site

Dear Mr. Brezner:

Enclosed is a report nominating the above facility as an inactive hazardous waste disposal site.

This report has been prepared, due to the fact that there is contamination on site, but no plan for investigation and remediation. The case was referred to your Department on July 2, 1986 and it is felt that this would complete the documentation required for your unit to take appropriate action.

If you have any questions, you may contact me at 535-2288.

Very truly yours,

Stanley Juczak, P.E.
Director
Bureau of Land Resources Management

SJ:MH:rc
Enc.

NYSDEC013276

REFERENCE 34

NYSDEC013277

STATE OF NEW YORK
DEPARTMENT OF HEALTH
Corning Tower The Governor Nelson A. Rockefeller Empire State Plaza Albany, New York 12237

: Axelrod M D
mmissioner

December 3, 1987

DEC 0 9 1987

Mr. Charles Goddard
NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

RE: Depew Manufacturing, Hicksville (T), Nassau County, Site ID #130038

Dear Mr. Goddard:

We have reviewed the Phase I investigation for the above-referenced site and have the following comments:

Overall, this is a fairly accurate assessment.

Under the groundwater (GW) Section, it should be noted that any prior leaching from this site would have added to an already contaminated aquifer (There are several GW contamination sources within one mile). A discussion of local GW monitoring well results for solvents should be included. Especially helpful is the information and discussion in Investigation of Contaminated Aquifer Segments, June 1986, by the Nassau County Department of Health.

The proposed wells will probably intercept contamination coming from north of the site. Solvents which leached during Depew's active use of the lagoon (several years ago) have probably migrated a substantial distance south of the site by now.

If you have any questions, please contact me at 458-6306.

Sincerely,

William Gilday

William Gilday
Public Health Sanitarian
Bureau of Environmental Exposure Investigation

NYSDEC013278

jcg
cc: Mr. Tramontano

REFERENCE 35

NYSDEC013279

MODERN LANDFILL, INC
HAROLD & PLETCHER ROADS
PO BOX 209
MODEL CITY , NY 14107

INVOICE

No. 045027

DATE: 04/30/87

BILL TO: HOLLYWOOD COMMERCIAL RENEWAL
359 DUFFY AVE

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
359 DUFFY AVE

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

	DATE	DESCRIPTION	TICKET #	CONT ID	AMOUNT
L	03/30/87	10CY FIBERGLASS HOLLYWOOD TRK	59257	.	100.00
	04/03/87	20CY ASBESTOS	59441	.	300.00
T	04/03/87	20CY FIBERGLASS HOLLYWOOD TRK	59441	.	100.00
	04/08/87	20CY ASBESTOS	60181	.	300.00
L	04/08/87	20CY FIBERGLASS HOLLYWOOD TRK	60181	.	100.00
	04/15/87	20CY ASBESTOS	62908	.	300.00
W	04/15/87	20CY FIBERGLASS HOLLYWOOD TRK	62908	.	100.00
	04/22/87	20CY ASBESTOS	64230	.	300.00
SI	04/22/87	20CY FIBERGLASS HOLLYWOOD TRK	64230	.	100.00
	04/28/87	20CY ASBESTOS	64682	.	300.00
	04/28/87	20CY FIBERGLASS HOLLYWOOD TRK	64682	.	100.00

5/27/87 #4262

10.14.14

SALES TAX .00
TOTAL
AMT DUE 2100.00

PLEASE RETURN REMITTANCE COPY WITH PAYMENT
PAST DUE INVOICES WILL BE CHARGED 2% MONTHLY

NYSDEC013280

DERN LANDFILL, INC
RGLD & FLETCHER ROADS
O BOX 209
ODEL CITY , NY 14107

INVOICE

No. 043519

DATE: 03/31/87

HOLLYWOOD COMMERCIAL RENEWAL
359 DUFFY AVE

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
359 DUFFY AVE

HICKSVILLE , NY 11801

P.O. # :

ER NO. 4172.000

TERMS: NET 10

TE	DESCRIPTI		TICKET #	CONT ID	AMOUNT
3/02/87	20CY ASBESTOS		60586	.	300.00
03/02/87	20CY FIBERGLASS	HOLLYWOOD TRK	60586	.	100.00
03/05/87	20CY FIBERGLASS	HOLLYWOOD TRK	60687	.	100.00
03/05/87	20CY ASBESTOS		60687	.	300.00
03/09/87	20CY ASBESTOS		61091	.	300.00
03/09/87	20CY FIBERGLASS	HOLLYWOOD TRK	61091	.	100.00
03/16/87	20CY ASBESTOS		61983	.	300.00
03/16/87	20CY FIBERGLASS	HOLLYWOOD TRK	61983	.	100.00
03/30/87	10CY ASBESTOS		59257	.	150.00
03/30/87	10CY FIBERGLASS	HOLLYWOOD TRK	59257	.	100.00
03/30/87	20CY ASBESTOS		59256	.	300.00
03/30/87	20CY FIBERGLASS	HOLLYWOOD TRK	59256	.	100.00

SALES TAX .00
TOTAL
AMT DUE 2250.00

PLEASE RETURN REMITTANCE COPY WITH YOUR PAYMENT
PAST DUE INVOICES WILL BE CHARGED 2% MONTHLY

10/13/14

NYSDEC013281

MODERN LANDFILL, INC
HAROLD & PLETCHER ROADS
PO BOX 209
MODEL CITY , NY 14107

INVOICE

No. 042124

DATE: 02/28/87

BILL TO: HOLLYWOOD COMMERCIAL RENEWAL
359 DUFFY AVE

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
359 DUFFY AVE

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

DATE	DESCRIPTION		TICKET #	CONT ID	AMOUNT
02/02/87	20CY ASBESTOS		63222	.	300.00
02/02/87	20CY FIBERGLASS	HOLLYWOOD TRK	63222	.	100.00
02/09/87	20CY ASBESTOS		63376	.	300.00
02/09/87	20CY FIBERGLASS	HOLLYWOOD TRK	63376	.	100.00
02/16/87	20CY ASBESTOS		60966	.	300.00
02/16/87	20CY FIBERGLASS	HOLLYWOOD TRK	60966	.	100.00
02/23/87	20CY ASBESTOS		60460	.	300.00
02/23/87	20CY FIBERGLASS	HOLLYWOOD TRK	60460	.	100.00

E

SALES TAX .00
TOTAL
AMT DUE 1600.00

PLEASE INCLUDE REMITTANCE COPY WITH YOUR PAYMENT
PAST DUE INVOICES WILL BE CHARGED 2% MONTHLY

10.12.14

NYSDEC013282

N LANDFILL, INC
LD & PLETCHER ROADS
BOX 209
MODEL CITY , NY 14107

INVOICE

No. 340753

DATE: 01/31/87

L TO: HOLLYWOOD COMMERCIAL RENEWAL
359 DUFFY AVE

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
359 DUFFY AVE

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

DATE	DESCRIPTION		TICKET #	CONT ID	AMOUNT
01/05/87	20CY ASBESTOS		57957		300.00
01/05/87	20CY FIBERGLASS	HOLLYWOOD TRK	57957		100.00
01/08/87	20CY FIBERGLASS	HOLLYWOOD TRK	58139		100.00
01/08/87	20CY ASBESTOS		58139		300.00
01/12/87	20CY FIBERGLASS	HOLLYWOOD TRK	58359		100.00
01/12/87	20CY ASBESTOS		58359		300.00
01/19/87	20CY ASBESTOS		58656		300.00
01/19/87	10CY FIBERGLASS	HOLLYWOOD TRK	58656		100.00

SALES TAX .00
TOTAL
AMT DUE 1600.00

PAST DUE INVOICES WILL BE CHARGED 2% MONTHLY

DI - INVOICE
CP PAYMENT
DM - DEBIT MEMO

10:11:14

NYSDEC013283

MODERN LANDFILL, INC
HAROLD & FLETCHER ROADS
PO BOX 209
MODEL CITY , NY 14107

INVOICE

No. C37374

DATE: 11/30/86

BILL TO: HOLLYWOOD COMMERCIAL RENEWAL
70 BROADWAY

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
70 BROADWAY

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

10.10.14

DATE	DESCRIPTION	TICKET #	CONT ID	AMOUNT
11/20/86	30CY FIBERGLASS HOLLYWOOD TRK	55164	.	100.00
11/24/86	2 CY ASBESTOS	58504	.	30.00
11/24/86	18CY FIBERGLASS HOLLYWOOD TRK	58504	.	100.00

SALES TAX .00
TOTAL
AMT DUE 4880.00

HAPPY HOLIDAYS!!
PAST DUE INVOICES WILL BE CHARGED 2% MONTHLY

NYSDEC013284

MODERN LANDFILL, INC
HAROLD & PLETCHER ROADS
PO BOX 209
MODEL CITY , NY 14107

INVOICE

No. 037374

DATE: 11/30/86

BILL TO: HOLLYWOOD COMMERCIAL RENEWAL
70 BROADWAY

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
70 BROADWAY

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

DATE	DESCRIPTION	TICKET	CONT ID	AMOUNT
11/03/86	DUMP TRAILER		56113 .	200.00
11/07/86	10CY FIBERGLASS	HOLLYWOOD TRK	56361 .	100.00
11/07/86	10CY ASBESTOS		56361 .	150.00
11/10/86	10CY FIBERGLASS	HOLLYWOOD TRK	56459 .	100.00
11/10/86	10CY ASBESTOS		56459 .	150.00
11/10/86	DUMP TRAILER		56456 .	200.00
11/10/86	DUMP TRAILER		56462 .	200.00
11/10/86	DUMP TRAILER		56474 .	200.00
11/10/86	DUMP TRAILER		56461 .	200.00
11/10/86	DUMP TRAILER		56455 .	200.00
11/10/86	DUMP TRAILER		56454 .	200.00
11/10/86	DUMP TRAILER		56453 .	200.00
11/13/86	10CY ASBESTOS		54852 .	150.00
11/13/86	10CY FIBERGLASS	HOLLYWOOD TRK	54852 .	100.00
11/17/86	20CY ASBESTOS		54955 .	300.00

10.914

NYSDEC013285

CUSTOMER

MODERN LANDFILL, INC

INVOICE

MODERN LANDFILL, INC
HAROLD & FLETCHER ROADS
PO BOX 209
MODEL CITY , NY 14107

INVOICE

No. 037374

DATE: 11/30/86

BILL TO: HOLLYWOOD COMMERCIAL RENEWAL
70 BROADWAY

HICKSVILLE , NY 11801

SERVICE ADDRESS: 4172.000
HOLLYWOOD COMMERCIAL RENEWALML
70 BROADWAY

HICKSVILLE , NY 11801

P.O. # :

CUSTOMER NO. 4172.000

TERMS: NET 10

DATE	DESCRIPTION	TICKET #	CONT ID	AMOUNT
11/03/86	20CY ASBESTOS	56097	.	300.00
11/03/86	10CY ASBESTOS	56096	.	150.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56096	.	100.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56104	.	100.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56106	.	100.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56101	.	100.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56095	.	100.00
11/03/86	DUMP TRAILER	56094	.	200.00
11/03/86	10CY FIBERGLASS HOLLYWOOD TRK	56090	.	100.00
10/09/86	10CY FIBERGLASS HOLLYWOOD TRK	53186	.	100.00
10/09/86	10CY ASBESTOS	53186	.	150.00
10/09/86	10CY FIBERGLASS HOLLYWOOD TRK	53185	.	100.00
10/09/86	10CY ASBESTOS	53185	.	150.00
10/27/86	10CY FIBERGLASS HOLLYWOOD TRK	55794	.	100.00
10/27/86	10CY ASBESTOS	55794	.	150.00

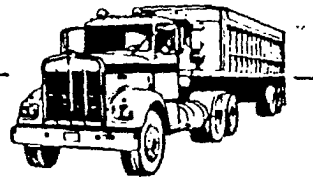
E

10.8.14

NYSDEC013286

CORP. (716) 773-1921

ENUE P.O. BOX 1038 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL

NO. 145837 PG: 1

Remit Within 7 Days

DATE: 11/18/86

CUSTOMER ORDER NUMBER

TO: HOLLYWOOD COMMERCIAL RE-
NEWALS ATTN: G. PRINZ
70 S. BROADWAY
HICKSVILLE NY11801

CONSIGNEE: MODERN LANDFILL INC.
PO BOX 209

MODEL CITY NY14107

SHIPPER: DEPEW MANUFACTURING
HICKSVILLE, NY

00000

10.6.14

FOR CHARGES ON ARTICLES TRANSPORTED

DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
11/10/86	182670	WASTE	56453	22.160	1365.00			1365.00
11/10/86	182670	LINER		0.000	35.00			35.00
		BILLED IN FLAT RATE.						

2/25
365✓

PAY THIS AMOUNT 1,400.00

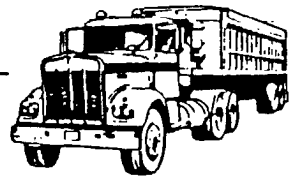
SHIPPER | CONSIGNEE | UNLADEN ON OFF

OFFICE USE

CASH OUT

NYSDEC013287

EL CORP. (716) 773-1921
ENUE P.O. BOX 1038 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL
NO. 145726 PG: 1
Remit Within 7 Days

DATE: 11/14/86

CUSTOMER ORDER NUMBER

TO: HOLLYWOOD COMMERCIAL RE-
NEWALS ATTN: G. PRINZ
70 S. BROADWAY
HICKSVILLE NY11801

CONSIGNEE: MODERN LANDFILL INC.
PO BOX 209

MODEL CITY NY14107

SHIPPER: DEPEW MANUFACTURING
HICKSVILLE, NY

00000

10.5.M

FOR CHARGES ON ARTICLES TRANSPORTED

DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
/10/86	188721	WASTE	56455	21.010	1365.00			1365.00
/10/86	188721	LINER		0.000	35.00			35.00
		BILLED IN FLAT RATE.						
							PAY THIS AMOUNT	1,400.00

SHIPPER

CONSIGNEE

UNLADEN ON OFF =

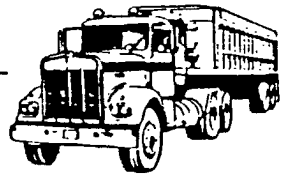
OFFICE USE

CASH OUT

NYSDEC013288

BUFFALO FUEL C (716) 773-1921

2445 ALLEN AVENUE P.O. BOX 1038 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL

NO. 145727 PG: 1

Remit Within 7 Days

DATE: 11/14/86

CUSTOMER ORDER NUMBER

TO: HOLLYWOOD COMMERCIAL RE-
NEWALS ATTN: G. PRINZ
70 S. BROADWAY
HICKSVILLE NY11801

PAID #3406 1/22/87

CONSIGNEE: MODERN LANDFILL INC.
PO BOX 209

MODEL CITY NY14107

SHIPPER: DEPEW MANUFACTURING
HICKSVILLE, NY

00000

FOR CHARGES ON ARTICLES TRANSPORTED

DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
11/03/86	176176	WASTE	56095	22.100	1165.00			1165.00
11/03/86	176176	LINER		0.000	35.00			35.00
		BILLED IN FLAT RATE.						

PAID 1/22/87 #3406

PAY THIS AMOUNT 1,200.00

SHIPPER

CONSIGNEE

SHIPPER

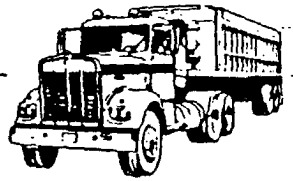
OFFICE USE

LADEN _____ — _____ = _____

CASH OUT _____

NYSDEC013289

DEL CORP. (716) 773-1921
AVENUE P.O. BOX 1038 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL
NO. 145564 PG: 1
Remit Within 7 Days

DATE: 11/12/86

CUSTOMER ORDER NUMBER

TO: HOLLYWOOD COMMERCIAL RE-
NEWALS ATTN: G. PRINZ
70 S. BROADWAY
HICKSVILLE NY11801

10.3.14

CONSIGNEE: MODERN LANDFILL INC.
PO BOX 209

MODEL CITY NY14107

SHIPPER: DEPEW MANUFACTURING
HICKSVILLE, NY

00000

FOR CHARGES ON ARTICLES TRANSPORTED

DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
11/10/86	131773	WASTE	56456	22.100	1365.00			1365.00
11/10/86	131773	LINER		0.000	35.00			35.00
11/10/86	180854	WASTE	56461	22.230	1365.00			1365.00
11/10/86	180854	LINER		0.000	35.00			35.00
11/10/86	182062	WASTE	56462	25.330	1365.00			1365.00
11/10/86	182062	LINER		0.000	35.00			35.00
11/10/86	187762	WASTE	56474	23.480	1365.00			1365.00
11/10/86	187762	LINER		0.000	35.00			35.00
		BILLED IN FLAT RATE.						

PAY THIS AMOUNT 5,600.00

UNLADEN ON OFF

OFFICE USE

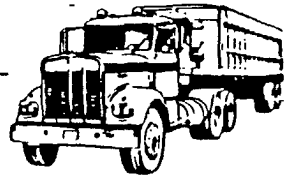
SHIPPER CONSIGNEE

CASH OUT

NYSDEC013290

773-1921

X 1038 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL

NO. 145390 PG: 1

Remit Within 7 Days

DATE: 11/10/86

CUSTOMER ORDER NUMBER

TO: HOLLYWOOD COMMERCIAL RE-
NEWALS ATTN: G. PRINZ
70 S. BROADWAY
HICKSVILLE NY11801

CONSIGNEE: MODERN LANDFILL INC.
PO BOX 209
MODEL CITY NY14107

SHIPPER: DEPEW MANUFACTURING
HICKSVILLE, NY

00000

FOR CHARGES ON ARTICLES TRANSPORTED

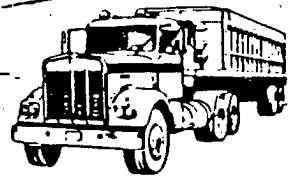
DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
11/03/86	185293	WASTE	56113	24.550	1365.00			1365.00
11/03/86	185293	LINER		0.000	35.00			35.00
		BILLED IN FLAT RATE.						

PAY THIS AMOUNT 1,400.00

10.2.14

NYSDEC013291

...1921
...38 NIAGARA FALLS, NEW YORK 14302



FREIGHT BILL
NO.
Remit Within 7 Days
DATE:
CUSTOMER ORDER NUMBER

TO: [illegible]

NYSDEC013292

CONSIGNEE: [illegible] LANDFILL INC.
[illegible]
MIDDLE CITY NY14107

SHIPPER: [illegible]

10.1.14

FOR CHARGES ON ARTICLES TRANSPORTED.

DATE	DELIVERY NO.	COMMODITY	SCALE TICKET NO.	WEIGHT - TONS	RATE	FREIGHT	OTHER	TOTAL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
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REFERENCE 36

15.1.1

In addition to the above comments, as a point of information, I made a site visit on January 28, 1988 in order to assess the waste removal status. As of that date there were no visible fiberglass wastes exterior to the building. Inside the building there were approximately forty 55 gallon drums of said wastes, most of which the owner indicated would be removed on January 29, 1988, plus approximately 150 cubic yards of said wastes piled directly on the floor of one of the rooms. I would estimate that this is approximately 25% of the total which was originally there.

If you have any questions you may contact me at 516 535-3314.

Very truly yours,

(NCDOH)

Marlena M. Hamann

Marlena M. Hamann
Enforcement Coordinator
Bureau of Land Resources Management

REFERENCE 37

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent: Depew Property
Address: 359 Duffy Ave Hicksville

Inspector: LSL

DATE	COMMENTS
	At the request of DEC, a meeting was held on 8/23/90 at 1pm on the DEPew property. The following people attended:
	T.S. Manickam - DEC - Albany
	Hayden Brewster - DEC - Albany
	John Conover - DEC - Stony Brook
	George Prinz - property owner
	Laurie Lutzker - NCDH
	The 2 Albany DEC personnel will be developing the work plan for the phase II remediation work. The meeting was scheduled to allow the Albany DEC personnel to become familiar with the site and to determine the placement of monitoring wells
	The following are observations from the tour of the property:
	1) The lagoon has no visible fiberglass waste. The lagoon is overgrown with many weeds. At one edge of the lagoon, there is a "drywell" that is covered. The drywell's purpose is to facilitate sampling of the lagoon
	2) There are 2 hugh resin slabs on site. The size of the slabs range from 2-3 feet high. The slabs consist of hardened fiberglass material.
	3) There are many vehicles stored on site. These trucks owned by Mr. Prinz and are used in his asbestos

NYSDEC013296

EH 109a 1/68
DH-1198. 9/71

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : Depew Property
Address:

Inspector LSL

DATE | COMMENTS

removal business - Hollywood Construction. The asbestos company occupies the building at 359 Duffy Ave, Hicksville.

4) Inside the building, the trenches were noted to be cemented over.

5) 20 of the original 40-55 gallon drums of fiberglass material excavated from the lagoon remain inside the building. Mr. Prinz explained that the landfill that was accepting the material had refused it at one point. The landfill is once again accepting the material but due to financial reasons he has not had the material removed. Mr. Prinz & business partner had split and because of this Mr. Prinz would have to assume the full financial expense in having the drums removed off site.

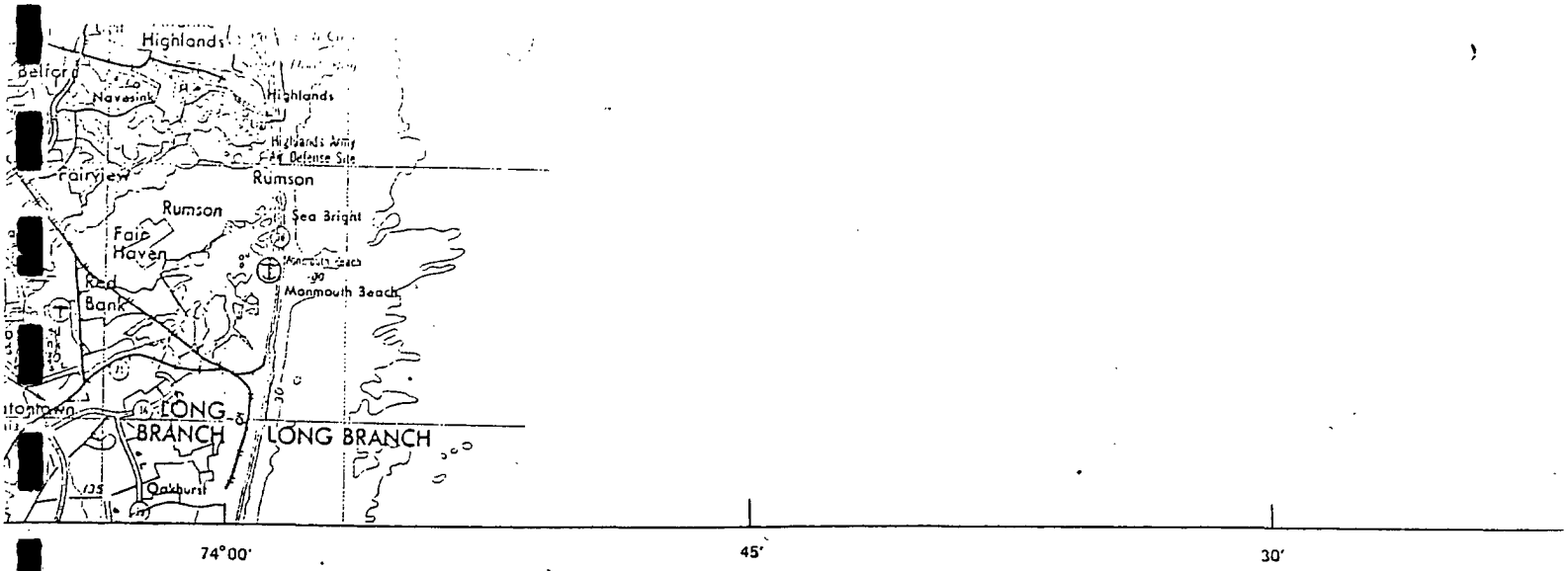
The analysis of the material inside the drums is attached to this report.

NYSDEC013297

Laurie Lubker

EH 109a 1/68
DH-1198 9/71

REFERENCE 38



SURFICIAL GEOLOGIC MAP OF NEW YORK

LOWER HUDSON SHEET

Compiled and Edited by Donald H. Cadwell

1989

NYSDEC013299

Scale 1:250,000

5 0 5 10 15 20

5 0 5 10 15 20 25 30 Kilometers

0 5 10 15 Nautical Miles

CONTOUR INTERVAL 100 FEET

1948 MAGNETIC DECLINATION FOR THIS SHEET VARIES FROM 10°45' WESTERLY FOR THE CENTER OF THE WEST EDGE TO 13°00' WESTERLY FOR THE CENTER OF THE EAST EDGE. MEAN ANNUAL CHANGE IS NEGLIGIBLE.

NYSDEC013300

NYSDEC013301

EXPLANATION

al

al — Recent deposits
Generally confined to floodplains within a valley,
oxidized, non-calcareous, fine sand to gravel,
in larger valleys may be overlain by silt,
subject to frequent flooding, thickness 1-10 meters.

alf

alf — Alluvial fan
Fan shaped accumulations,
poorly stratified silt, sand and boulders,
at the foot of steep slopes,
generally permeable.

b

b — Beach
Sand and gravel deposit at marine shoreline,
thickness variable.

bi

bi — Barrier island
Sand and gravel deposit as barrier island,
south shore of Long Island,
may have associated dunes,
thickness variable.

pm

pm — Swamp deposits
Peat-muck, organic silt and sand in poorly drained areas,
un-oxidized,
may be overlying marl and lake silts,
potential land instability,
thickness generally 2-20 meters.

ld

ld — Lacustrine delta
Coarse to fine gravel and sand,
stratified, generally well sorted,
deposited at a lake shoreline,
thickness variable (3-15 meters).

lsc

lsc — Lacustrine silt and clay
Generally laminated silt and clay,
deposited in proglacial lakes,
generally calcareous,
potential land instability,
thickness variable (up to 100 meters).

ls

ls — Lacustrine sand
Sand deposits associated with large bodies of water,
generally a near-shore deposit or near a sand source,
well sorted, stratified,
generally quartz sand,
thickness variable (2-20 meters).

og

og — Outwash sand and gravel
Coarse to fine gravel with sand,
proglacial fluvial deposition,
well rounded and stratified,
generally finer texture away from ice border,
thickness variable (2-20 meters).

fg

fg — Fluvial sand and gravel
Deposits of sand and gravel,
occasional laterally continuous lenses of silt,
deposition farther from glacier,
age uncertain.

k

k — Kame deposits
Includes kames, eskers, kame terraces, kame deltas,
coarse to fine gravel and/or sand,
deposition adjacent to ice,
lateral variability in sorting, coarseness and thickness,
locally firmly cemented with calcareous cement,
thickness variable (10-30 meters).

km

km — Kame moraine
Variable texture (size and sorting) from boulders to sand
deposition at an ice margin during deglaciation,
positive constructional relief,
locally cemented with calcareous cement,
thickness variable (10-30 meters).

tm

tm — Till moraine
More variably sorted than till,
generally more permeable than till,
deposition adjacent to ice,
more variably drained,
may include ablation till,
thickness variable (10-30 meters).

t

t — Till
Variable texture (e.g. clay, silt-clay, boulder clay),
usually poorly sorted diamict,
deposition beneath glacier ice,
relatively impermeable (loamy matrix),
variable clast content — ranging from abundant well-roun
diverse lithologies in valley tills to relatively
angular, more limited lithologies in upland tills,
tends to be sandy in areas underlain by gneiss or sand
potential land instability on steep slopes,
thickness variable (1-50 meters).

af — Artificial fill

r

r — Bedrock
Exposed or generally within 1 meter of surface.

Bedrock stipple overprint
Bedrock may be within 1-3 meters of surface,
may sporadically crop out,
variable mantle of rock debris and glacial till.

MAP SYMBOLS

Contact

.3 Dated radiocarbon locality

REFERENCE 39

Geology and Hydrology of Northeastern Nassau County Long Island, New York

By JOHN ISBISTER

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1825

Prepared in cooperation with the Nassau County Department of Public Works and the New York State Water Resources Commission

NYSDEC013303

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1966

TABLE 1.—*Summary of stratigraphy and water-bearing properties of the deposits underlying northeastern Nassau County, N.Y.*

System	Series	Geologic unit	Approximate thickness (feet)	Depth from land surface to top (feet)	Character of deposits	Water-bearing properties
Quaternary	Recent	Recent deposits: Artificial fill, salt-marsh deposits, stream alluvium, and shoreline deposits.	0-50	0	Sand, gravel, silt, and clay; organic mud, peat, loam, and shells. Colors are gray, green, black, and brown.	Generally permeable deposits near shoreline and stream-channel deposits may yield small quantities of fresh or brackish water at shallow depths. Clay and silt beneath Long Island Sound and its harbors retard salt-water encroachment and confine water in underlying aquifers.
	Pleistocene	Upper Pleistocene deposits: Harbor Hill drift	0-200	0-50	Glacial till, composed of unassorted clay, sand, and boulders. In Harbor Hill terminal moraine and ground moraine to north. Glacial outwash deposits of stratified brown sand and gravel.	Glacial till, generally low permeability. Causes perched water locally and impedes downward percolation of water to underlying beds. Highly permeable outwash deposits of sand and gravel forms upper part of principal aquifer. Wells screened in outwash deposits yield as much as 1,100 gpm and have specific capacities ranging from 1 to 68 gpm per foot of drawdown. Water is generally unconfined and is of good quality.
		Upper Pleistocene deposits: Ronkonkoma drift	0-200	0-200	Glacial till, composed of unassorted clay, sand, and boulders. In Ronkonkoma terminal moraine and buried till sheet. Glacial outwash deposits of stratified brown sand and gravel.	
		Unconformity				
		Gardiners Clay	0-320	100-390	Clay and silt, grayish-green and brown. Some lenses of sand and gravel. Contains scattered shells, Foraminifera, and lignite. Interglacial deposit.	Relatively low permeability. Confines water in underlying Jameco Gravel.
		Unconformity				
		Jameco Gravel	0-185	380-550	Sand, fine to coarse, brown and gravel. May contain boulders, and layers of clay and silt. Probably early glacial outwash deposit. Undifferentiated Pleistocene valley fill consists of sand, gravel, and clay. May be equivalent in part to Jameco Gravel.	Moderately to highly permeable. Wells yield as much as 1,500 gpm. Specific capacities range from 19 to 25 gpm per foot of drawdown. Water is under artesian pressure. Some wells flow. Water usually of good quality but may have high iron content. Forms part of deep confined aquifer.
		Unconformity				
Tertiary(?)	Pliocene(?)	Mannetto Gravel	0-220	0-120	Gravel, fine to coarse, white and brown. Lenses of medium to coarse yellow to brown sand are common.	Highly permeable. Occurs almost entirely above zone of saturation.
		Unconformity				
Cretaceous	Upper Cretaceous	Magothy(?) Formation	0-800	0-350	Sand, fine to medium, clayey, white, gray, pink, and yellow. Interbedded with lenses and layers of coarse sand and sandy and solid clay. Gravel common in basal 50 to 100 ft of formation. Lignite, pyrite, and iron concretions are common.	Contains relatively impermeable to highly permeable zones. Wells screened in basal zone yield as much as 1,400 gpm. Specific capacities of wells commonly range from 15 to 30 gpm per foot of drawdown but may be as low as 1 or as high as 83. Principal source for public supply. Water is generally of excellent quality. Degree of confinement increases with depth. Forms most of principal aquifer.
		Unconformity				
		Raritan Formation: Clay Member	0-220	70-900	Clay and silt, gray, red, white, and variegated. Contains few scattered lenses and layers of sand and gravel. Lignite and pyrite are common.	Low permeability. Retards but does not prevent movement of water between the Magothy(?) Formation and the Lloyd Sand Member.
		Raritan Formation: Lloyd Sand Member	0-270	200-1,000	Sand, fine to coarse, yellow, white, and gray, and gravel, commonly in clayey matrix. Contains lenses and layers of clay and silt.	Moderately permeable. Wells yield as much as 1,300 gpm. Specific capacities of wells range from 3 to 25 gpm per foot of drawdown. Water is confined under artesian pressure by overlying clay member. Some wells flow. Water is usually of excellent quality but may have high iron content locally. Forms most of deep confined aquifer.
		Unconformity				
Precambrian		Bedrock	?	400-1,300	Crystalline metamorphic and igneous rocks; muscovite-biotite schist, gneiss, and granite. Overlain by a weathered zone of undetermined thickness.	Low permeability. Contains some water in joints and fractures but is impractical to develop. Forms lower boundary of ground-water reservoir.

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rock. Two formations of Late Cretaceous age underlie the area. The oldest is the Raritan Formation. The overlying post-Raritan deposits of Cretaceous age have been assigned tentatively to the Magothy Formation but may include some younger formations which have not yet been differentiated in the report area (Perlmutter and Crandell, 1959, p. 1066). Deposits of Tertiary age are represented by the Mannetto Gravel, which the Geological Survey considers to be of Pliocene(?) age (Suter and others, 1949, p. 9). Pleistocene deposits of pre-Wisconsin age are represented by the Jameco Gravel and the Gardiners Clay. Two advances of the ice during the Wisconsin Glaciation account for the till and outwash deposits, which comprise the upper Pleistocene deposits.

Shoreline, marsh, and alluvial deposits of Recent age occur locally along the beaches and in some valleys.

Sections *AA'–CC'* (pl. 3) show the large variations in depth, thickness, and lithology of the geologic units in the report area.

The lithology and correlation of the formations penetrated by a deep well at Plainview are given in table 2. This well was drilled

TABLE 2.—*Log of well N3355 at Plainview, Nassau County*

[Adapted from Perlmutter and Luszczynski (1951)]

U.S. Geol. Survey, Round Swamp Road (map coordinates: 2E. 1.5N. 1.3W). Observation well drilled 1951 by C. W. Lauman and Co. Screen depth 1,070 to 1,090 ft. Altitude of land surface about 180 ft. Geologist's log based upon examination of core samples, electrical log, and driller's log.

	Thickness (feet)	Depth (feet)
Recent deposits:		
Topsoil, loam and gravel (from driller's log)	3	3
Upper Pleistocene deposits:		
Sand, medium to very coarse, brown, and gravel	70	73
Upper Pleistocene deposits and Mannetto Gravel. Pliocene(?):		
Sand, fine to coarse, light-brown, and small amount of gravel	45	118
Sand, medium to very coarse, brown, and gravel; trace of yellow clay at 135 ft	35	153
Magothy(?) Formation:		
Sand, medium to coarse, brown; traces of yellow clay and lignite	11	164
Sand, medium, gray; sandy clay and gray clay in thin layers and lignite particles	22	186
Sand, fine to very fine, clayey, gray and brown with thin layers of gray sandy and solid clay and lignite particles	18	204
Clay, fine to very fine, sandy, gray	21	225
Sand, fine to medium, clayey, gray to brown and some lignite	27	252
Clay, solid, gray	11	263
Sand, medium to coarse, clayey, gray to brown; some thin layers of clay and iron oxide concretions	16	279
Sand, medium, light brown and gray; some fine and coarse sand layers and a few thin sandy clay layers	71	350
Clay, solid, gray	12	362
Sand, medium to coarse, gray; some fine sand; thin layers of gray clay; clayey sand and lignite	51	413

NYSDEC013305

to a depth of 1,246 feet through deposits of Pleistocene, Tertiary, and Cretaceous ages and partly into weathered bedrock of Precambrian age.

BEDROCK

Bedrock of Precambrian age underlies the unconsolidated sediments. A map of the bedrock surface based chiefly on scattered records of wells is given in Suter, de Laguna, and Perlmutter (1949, pl. 8). Logs are available for wells N119 and N120 in Locust Valley, N3355 in Plainview, and N7152 in Bayville which penetrate bedrock in the report area.

The upper part of the bedrock is decomposed or chemically altered, except possibly in some of the buried valleys along the north shore where the weathered zone may have been completely eroded during Pliocene or Pleistocene time. The weathered zone ranges in thickness from 5 feet to more than 100 feet, and a gradual transition from decomposed to fresh rock has been observed in core samples from a few wells in Nassau County. Well N7152 at Bayville (pl. 1) penetrated 17 feet of weathered bedrock without entering fresh rock; well S21119T, at West Neck in northwestern Suffolk County, about 1 mile east of the study area, penetrated 51 feet of weathered rock. The rock at both wells is weathered biotite schist. The weathered bedrock is composed chiefly of angular quartz and weathered biotite, chlorite, feldspar, and fragments of partly decomposed rock in a clay matrix.

The altitude and configuration of the bedrock surface are shown on figure 4 by contours that are controlled partly by data at four wells in the report area and partly by extrapolation of data from adjoining areas. The highest altitude of the bedrock surface is about 400 feet below sea level at the north shore near Lattingtown and Bayville; the lowest is about 1,200 feet below sea level in the extreme southeastern part of the report area near Farmingdale. The bedrock surface dips about 80 feet per mile to the southeast.

The displacement in the −500-foot contour near Bayville represents a north-trending buried valley, the presence of which is inferred chiefly from data on buried channels in the overlying deposits. If the valley trends north as the data imply, then it must also deepen to the north. Because the bedrock surface rises to the northwest, it follows that the bedrock surface and the valley must at some place intersect. Similar valleys are eroded into the bedrock in northwestern Nassau County and in northwestern Suffolk County. Existing information is generally too scanty to delineate all the erosional features and minor irregularities which undoubtedly exist on the surface of the bedrock.

The bedrock is not a source of water but forms the virtually impermeable base of the ground-water reservoir. The porosity of the rock, including joints and fractures, is probably less than 1 percent.

UPPER CRETACEOUS SERIES

The Upper Cretaceous Series consists of unconsolidated interbedded sand, gravel, silt, and clay that rest unconformably upon the bedrock.

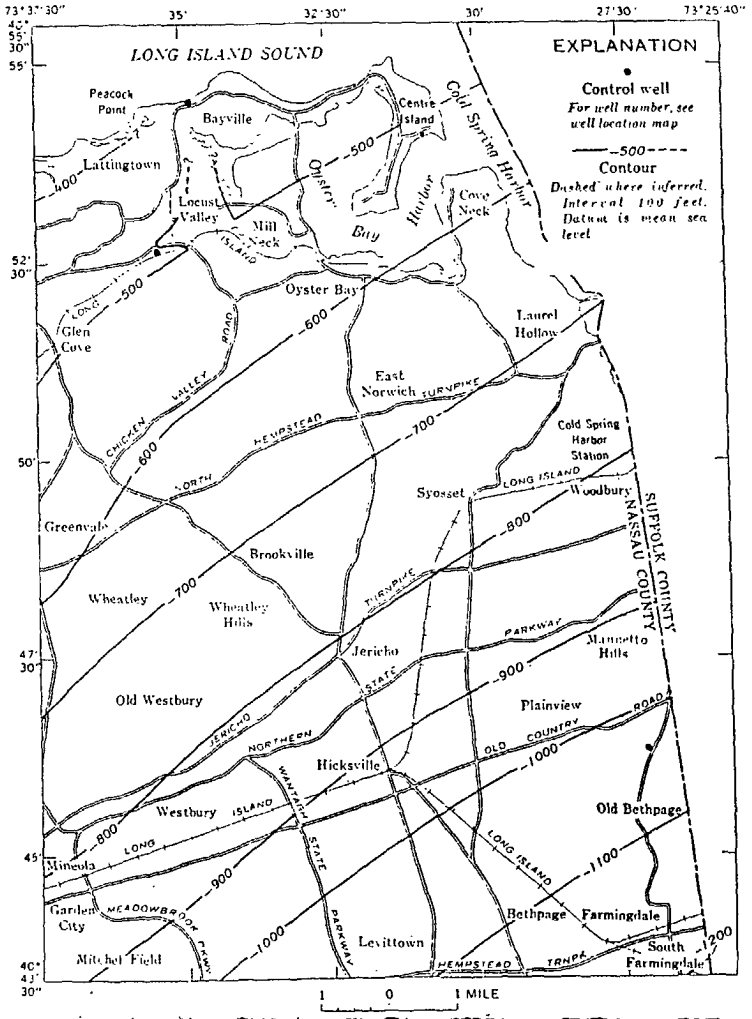


FIGURE [illegible] contours [illegible] the [illegible] surface [illegible]

NYSDEC013306

are common. The permeability of beds of clayey silt may be as low as 0.0002 gpd per sq ft (Wenzel, 1942, p. 11). Because of its extent and relatively low permeability, the clay member constitutes an effective confining unit for most of the Lloyd Sand Member.

MAGOTHY(?) FORMATION

The Magothy(?) Formation rests unconformably upon the Raritan Formation. The Magothy(?) underlies most of the area, but has been completely removed by erosion locally in the northern part (pls. 3–4). The formation is overlain by the Mannetto Gravel of Pliocene(?) age and deposits of Pleistocene age and is underlain by the clay member of the Raritan Formation.

The upper surface of the Magothy(?) ranges from about 100 feet below sea level to more than 200 feet above sea level. The highest altitudes occur on a northeast-trending buried ridge (pl. 4), which approximately underlies the Ronkonkoma terminal moraine. The formation crops out in a few places along the north shore, in scattered building excavations, highway and railroad cuts, and in the clay pits at Bethpage. The upper surface of the Magothy(?) has been extensively eroded and has as much as 300 feet of relief. Deep buried valleys are cut completely through the Magothy(?) Formation in the northern part of the area. Similar deep buried valleys were reported in northwestern Nassau County (Swarzenski, 1963) and in northwestern Suffolk County (Lubke, 1964). Probably a modified rectangular drainage pattern developed originally on the Magothy(?) surface. Subsequent streams eroded valleys parallel to the strike of the formation in less resistant beds, and the more resistant beds remained as ridges or cuestas. The present-day harbors of the north shore were probably cut largely by north-flowing streams and later were modified by glacial ice.

The Magothy(?) Formation in northeastern Nassau County ranges in thickness from 0 to 800 feet. The stratigraphic relations and variations in lithology and thickness of the Magothy(?) Formation are indicated on the geologic sections (pl. 3).

The lithology of the Magothy(?) is known almost entirely from well logs and samples of the formation collected during the drilling of wells inasmuch as the formation crops out only in a few places. The formation consists chiefly of interbedded gray, buff, and white fine sand and clayey sand and black, gray, white, buff, and some red clay. Gravelly zones are common near the bottom of the formation but are rare in the upper part. Angular to subangular quartz is the chief mineral in the sandy beds and is accompanied by varying amounts of clay minerals, chert, muscovite, and a small percentage of dark heavy minerals. Lignite and pyrite have been observed in

NYSDEC013307

many samples, and cemented concretionary layers of quartz and iron oxide are common.

The productive water-bearing zones in the Magothy(?) Formation consist of thin zones of sand and gravel, which occur at various depths as scattered, discontinuous lenses in the predominantly fine-grained material, and a thicker more extensive coarse-grained zone near the base of the formation. The basal coarse-grained zone is extensively distributed in the southern part of the area, but it is apparently not as extensive in the northern part. The basal zone is composed of coarse quartz sand and gravel, varying amounts of interstitial clay, and some layers of clay and sandy clay. The basal zone is usually less than 100 feet thick, and in some places it is very thin or entirely absent. Some wells, which tap the basal zone, yield as much as 1,400 gpm. Specific capacities of these wells generally range from about 15 to 45 gpm (gallons per minute) per foot of drawdown and in places are as high as 67 gpm per foot of drawdown.

Laboratory determinations of the porosity and permeability of six samples of sand from the Magothy(?) Formation obtained from wells drilled in the village of Hempstead, about 3 miles south of the project area, were made in 1938 by the hydrologic laboratory of the U.S. Geological Survey in Washington, D.C. The porosity ranged from 32 to 41 percent and averaged 38 percent; the permeability ranged from 500 to 1,450 gpd per sq ft and averaged 950 gpd per sq ft. The tests were made on disturbed, and in some cases washed samples, so these values are probably somewhat higher than those of the material in place. N. J. Lusczynski (written commun., 1962) reported permeabilities of 200 to 1,100 gpd per ft from pumping tests in wells screened in permeable zones of the Magothy(?) Formation in southern Nassau County and suggested that the permeability of some beds may be as high as 2,000 gpd per sq ft.

Field coefficients of permeability based on estimated thicknesses of water-bearing zones in the Magothy(?) Formation and computed from specific capacities of selected wells in the report area (table 4), type curves developed by A. F. Meyer (in Bentall, 1963, fig. 100), and an assumed coefficient of storage of 0.0005 range from about 600 to 1,200 gpd per sq ft and average about 1,000 gpd per sq ft. These values are considered low because field conditions depart from the ideal assumptions of Meyer's method. An average permeability value for the entire formation thickness would be considerably lower because the supply wells for which specific capacities are known are open only to the more permeable zones of the Magothy(?) Formation. The thicknesses of the water-bearing zones in table 4 were estimated from an appraisal of electric logs, drillers' logs, and logs based on core descriptions.

The top of the clay is normally 50 to 100 feet below sea level, but at one location (well N6675 pl. 1, 3) it is 230 feet below sea level. The Gardiners commonly ranges in thickness from 100 to 200 feet.

The Gardiners Clay is composed of brown to greenish-brown to gray clay and silt, interbedded with layers and lenses of sand and gravel. Quartz pebbles are dispersed in some clay beds; and peat, oyster and clam shells, Foraminifera, and diatoms are common.

Some water moves through the Gardiners Clay, but the formation generally acts as a confining unit for the underlying deposits and the rate of movement through it is probably low. Its effectiveness as a confining unit beneath Long Island Sound is unknown.

UPPER PLEISTOCENE DEPOSITS

The upper Pleistocene deposits include all the glacial deposits younger than the Gardiners Clay. Two bodies of drift, the Ronkonkoma and Harbor Hill, composed of till and related outwash deposits of Wisconsin age, were identified in northeastern Nassau County. Except on the Ronkonkoma terminal moraine, the Wheatley Hills, and possibly in an area southwest of the Mannetto Hills, the older Ronkonkoma Drift is either buried beneath the younger Harbor Hill Drift or else cannot be differentiated from it. Although the configuration of the underlying Cretaceous surface (pl. 4) exerts a strong influence in many places, the relief of the present land surface is mainly due to the deposits of the Harbor Hill Drift.

The wide range in the lithology of the upper Pleistocene deposits has considerable influence on the occurrence and movement of ground water in the report area. In areas underlain by till of relatively low permeability, the downward movement of water from precipitation is retarded; and perched and semiperched water occurs in many places. In areas underlain by permeable outwash, such as in Levittown, shallow wells, 80 to 125 feet deep, yield as much as 1,100 gpm and have specific capacities as high as 47 gpm per foot of drawdown. North of Glen Cove, deep wells screened in the upper Pleistocene deposits, yield as much as 1,100 gpm and have specific capacities as high as 44 gpm per foot of drawdown.

Laboratory analyses of several hundred samples of outwash from southern Long Island (Veatch and others, 1906, p. 354–360) indicate that the porosity of the glacial outwash probably ranges from 30 to 40 percent. Permeabilities of the outwash ranging from 1,000 to 1,600 gpd per sq ft and average 1,300 gpd per sq ft have been computed from pumping tests at Brookhaven National Laboratory in central Suffolk County (M. A. Warren and N. J. Lusczynski, written commun., 1955). The outwash in the report area south of the Ronkonkoma terminal moraine and in some of the buried valleys near Long Island Sound is lithologically similar to that of Suffolk County and probably has similar hydraulic characteristics. A pumping test (Lusczynski, 1949b) made in shallow wells in Hicksville, a short distance south of the report area, shows hydraulic interconnection between the outwash deposits and underlying permeable beds in the upper part of the Magothy(?) Formation. A coefficient of permeability of about 2,500 gpd per sq ft was computed from the test data on the basis of an assumed thickness of 100 feet for the zone tested. The average permeability of the outwash deposits in the report area is estimated to be 1,000 gpd per sq ft.

NYSDEC013308

The outwash deposits are a minor source of water in most of northeastern Nassau County. However, in the village of Oyster Bay, where the Cretaceous formations have been deeply eroded and the outwash deposits are thick, the deposits constitute the primary source of water.

RONKONKOMA DRIFT

The Ronkonkoma ice sheet deposited a mantle of glacial drift on the Cretaceous and early Pleistocene deposits. The drift ranges from unstratified till to stratified outwash (pl. 2) and mainly occurs in three topographic forms: a ground moraine, a terminal moraine, and an outwash plain.

The basal beds of the drift are composed of stratified outwash deposited chiefly by melt-water streams emanating from the ice front as it moved slowly southward. These advance outwash deposits are predominantly sand and gravel and range in thickness from a few feet to about 100 feet. The deposits do not crop out and are not differentiated on the geologic map or sections in this report.

The ice gradually overrode its advance outwash deposits and moved to a maximum southward position indicated by the Ronkonkoma terminal moraine. The terminal moraine is a discontinuous line of hills trending generally northeast from Old Westbury to Woodbury (pl. 2). The hills are subdued in the southwest, where the summits are as high as 180 feet above sea level, but to the northeast the hills are steeper and are as high as 300 feet. The terminal moraine is composed of a series of coalescing alluvial fans and kames of stratified sand and gravel with subordinate amounts of till. Exposures in roadcuts and building excavations reveal slumping and crossbedding characteristic of ice-contact deposition. The total thickness of the terminal moraine deposits is as much as 200 feet.

South of the Ronkonkoma terminal moraine is a relatively flat outwash plain, which extends beyond the south limit of the report area to the south shore of Long Island. The outwash plain is underlain by stratified sand and gravel deposits ranging from 80 to 100 feet i

thickness. These deposits are lithologically similar to the advance outwash and to some parts of the terminal moraine but generally cannot be differentiated from the younger Harbor Hill outwash. Hence, the outwash deposits shown on plate 2 south of the Ronkonkoma terminal moraine are designated as undifferentiated outwash deposits.

Fuller (1914, pl. 1) mapped one small area south and west of the Mannetto Hills as outwash from the Ronkonkoma ice sheet. His mapping may be correct as a few exposures in this area, observed in building excavations, indicated a much greater ratio of dark rock fragments to quartz pebbles than is commonly observed in the outwash elsewhere. Melt-water streams flowing from the Harbor Hill ice were possibly diverted from the area by the Mannetto Hills and a lobe of the Ronkonkoma terminal moraine. However, it is impossible to map the lateral limits of this deposit of Ronkonkoma outwash as the area is now extensively developed.

The Ronkonkoma ice sheet overrode its terminal moraine at least for a short distance and then retreated to the north, depositing a mantle of ground moraine in its wake. Till crops out on the summits of the terminal moraine and the Wheatley Hills but is covered by younger Harbor Hill outwash deposits everywhere else. The till is more deeply buried to the north and is identified in only a few well logs. The till ranges in thickness from about 5 to 20 feet and generally consists of the compact clayey or sandy-boulder type. Cobbles, and boulders as large as several feet in diameter, are commonly found in the till. The ground moraine contains small discontinuous lenses of clay and silty clay which indicate the bottoms of small temporary glacial lakes and kettles.

The sand and gravel deposits are predominantly quartz with a large percentage of fresh to weathered rock fragments and dark minerals. Biotite, hornblende, and augite are especially common. The quartz grains are subangular to subrounded and are frequently iron stained. The clayey parts of the till are generally brown to gray. The washed residue usually contains a large percentage of biotite and chlorite.

HARBOR HILL DRIFT

The Harbor Hill Drift comprises the uppermost beds almost everywhere beneath the land surface of northeastern Nassau County and is only overlain locally by Recent deposits. The drift consists of outwash and till.

Advance outwash deposits from the Harbor Hill ice sheet thinly mantle the Ronkonkoma ground moraine north of the Ronkonkoma terminal moraine. The deposits consist chiefly of sand and gravel and rarely exceed 50 feet in thickness.

NYSDEC013309

The Harbor Hill end moraine (pl. 2) is an irregular ridge of hills about ½ to ¾ mile north of, and generally parallel to, the Ronkonkoma terminal moraine. The Harbor Hill moraine was formed at the terminus of the ice sheet, but is classified as an end moraine because it does not mark the maximum advance of the ice sheet. The hills rise as high as 340 feet above sea level to the southwest, but descend eastward gradually until they scarcely rise above the surrounding thick outwash deposits near Cold Spring Harbor. The beds are steeply inclined in many places and consist of poorly stratified sand and gravel containing some boulders and patches of till. The end moraine is composed mainly of a series of coalescing kames. Its upper surface is irregular and is marked by numerous kettles and depressions. The end-moraine deposits have a maximum thickness of about 200 feet.

The outwash plain which extends south from the end moraine to the Ronkonkoma terminal moraine ranges in thickness from a few feet to about 100 feet. Its surface is irregular and includes numerous kettles, depressions, and small hills which are probably kames. This feature is termed a pitted outwash plain (pl. 2). South of the Ronkonkoma terminal moraine the outwash is generally indistinguishable from the older Ronkonkoma outwash deposits because the two outwash sequences are not separated by a layer of till, and the source of the detritus, mode of deposition, and character of the bedding are similar. Presumably, some outwash from the Harbor Hill ice was deposited, perhaps in fans or deltas, by streams which breached the Ronkonkoma terminal moraine, but this has not been positively determined either in the field or from well logs and samples.

The ground moraine comprises the surficial deposits nearly everywhere in the report area north of the terminal moraine. The deposits commonly range from about 5 to 20 feet in thickness and contain numerous cobbles and large boulders in a clayey or sandy, clayey matrix.

The sand and gravel beds consist mostly of quartz mixed with large amounts of metamorphic and igneous rock fragments. The individual grains are subangular to subrounded and are commonly iron stained. Dark minerals including biotite, hornblende, and augite are common.

Beds and lenses of clay are commonly brown, gray, and black and usually contain large quantities of biotite.

RECENT SERIES

The Recent Series consists of sand, gravel, silt, and clay deposited sporadically in valleys, swamps, marshes, beaches, and sandbars and beneath Long Island Sound and nearby bays (pl. 2). Locally, these beds are composed of reworked Cretaceous and Pleistocene deposits.

between depths of 12 to 16 feet below land surface, which suggests the presence of a harder and less permeable zone. Beneath the zone of hard driving, all the water ran out of the well into an unsaturated zone. Water entered the well again when the screen was at a depth of about 20 feet below the land surface. The water level eventually stabilized on March 19 at a depth of 21 feet below land surface or 76 feet above sea level, which was the altitude of the main water table at that time. Well N6666, 1 foot east of well N6665, was driven to a depth of 12.3 feet below the land surface and was terminated in the perched water body. The water level in this well ranged from 89 to 92 feet above mean sea level between March 1959 and January 1961.

Perched water bodies are not used for supply in the report area because the water is especially susceptible to surface contamination, and more reliable and adequate supplies are available at greater depth from the main ground-water reservoir. Dewatering of perched water bodies is commonly necessary during road building and the excavation of large foundations in many parts of the area.

PRINCIPAL AQUIFER

The principal aquifer includes beds of Late Cretaceous and Pleistocene age. The upper limit of the aquifer is the water table, and the clay member of the Raritan Formation forms the relatively impermeable lower boundary in most of the area. The Gardiners and other Pleistocene clays constitute the lower boundary in some deep buried valleys near the north shore. Water occurs in the aquifer both under confined (artesian) conditions and unconfined (water-table) conditions. The upper part of the aquifer contains water under unconfined conditions. The degree of confinement increases with depth and results from stratification and the presence of numerous discontinuous lenses of silt and clay primarily in the Magothy(?) Formation. Individually these lenses do not constitute distinct confining units, but their combined influence through a considerable thickness of formation significantly impedes the vertical movement of ground water.

Although individual wells are screened at nearly all depths in the principal aquifer, two zones are generally more productive than others because of their relatively high permeability. The upper zone is the saturated part of the upper Pleistocene deposits. It ranges in thickness from a few feet to about 200 feet in some of the buried valleys (pl. 3). Some wells screened in the upper Pleistocene deposits yield more than 1,000 gpm and have specific capacities up to 68 gpm per foot of drawdown. The lower zone is the basal 100 to 150 feet of the Magothy(?) Formation. Wells in the basal zone yield water at rates as high as 1,400 gpm, and have specific capacities of [redacted] to [redacted] gpm [redacted] foot [redacted] drawdown. [redacted]

NYSDEC013310

Wells screened in locally permeable zones in the upper part of the Magothy(?) Formation rarely yield more than 500 gpm, and specific capacities are generally less than 15 gpm per foot of drawdown.

RECHARGE

NATURAL RECHARGE BY PRECIPITATION

The principal aquifer is recharged by precipitation, which moves downward through the zone of aeration under the pull of gravity until it reaches the water table. Precipitation on the report area averages about 45 inches a year, but as shown in an earlier section about half of it is lost by evapotranspiration and direct runoff. The remaining half replenishes the ground-water reservoir at an average rate of about 1 mgd per sq mi. The effective area of infiltration in northeastern Nassau County is about 109 square miles, so the estimated total natural recharge to the shallow unconfined aquifer is about 109 mgd plus what may be added by influent streams.

Infiltration rates are relatively high in the area of the outwash plain where the loamy soil is underlain by permeable sand and gravel deposits. On and north of the Ronkonkoma terminal moraine infiltration is impeded by extensive deposits of clay and clayey till at and near land surface. The permeability of the till varies owing to differences in lithology. It may range from as low as 0.0002 gpd per sq ft where the till is chiefly clay and silt to as much as several hundred gallons per day per square foot where the till is sandier. These values are estimates based on values determined in the hydrologic laboratory of the U.S. Geological Survey (Wenzel and Fischel, 1942, p. 11).

Infiltration and recharge also vary considerably according to the season. Although precipitation is relatively evenly distributed throughout the year, net recharge is highest during the winter and early spring when plant activity is at a minimum. During the summer and fall, growing plants utilize most of the precipitation and little if any recharge occurs. Direct runoff is probably higher also during the winter in the relatively brief periods when the ground is frozen.

STORM-WATER RECHARGE BASINS

In densely populated and industrialized areas, disposal of storm water is a problem because the opportunity for natural infiltration is greatly reduced by the works of man. In 1936, as part of a long-range program for storm-water conservation and disposal, the Nassau County Board of Supervisors authorized a plan for the construction of recharge basins. These basins were designed to be 1 acre or more in size [redacted] and we[redacted]end[redacted]nce[redacted]th[redacted]arg[redacted]ater[redacted]nigh[redacted]er- [redacted]

direction. Slow vertical movement, however, is the only means of recharging the middle and basal parts of the principal aquifer and the deep confined aquifer.

The direction of movement in the principal aquifer can be approximated from the contour maps (pl. 4 and fig. 10) and the generalized section shown on figure 11.

The regional pattern of lateral movement in the principal aquifer is radially outward from a central high on the piezometric surface near Jericho and is normal to the contours on plate 4 and figure 10. Small mounds on the water table in Locust Valley, Greenvale, and East Norwich cause local departures from the regional pattern of movement.

Water in the middle and basal zones of the principal aquifer also moves radially outward from the central high on the piezometric surface (fig. 10). The contours suggest that most of the water in the aquifer moves northward to discharge areas at and near the shore, and southward and westward beyond the limits of the report area.

The vertical component of movement in the principal aquifer under natural conditions is shown by arrows on figure 11. The direction of flow is influenced chiefly by gravity, differences in permeability, and the distribution of heads in the aquifer. Water at the water table moves not only laterally, but also downward. Recharge to the pumped aquifer occurs everywhere and not only in the area of the highest water-table altitudes, although this is where the vertical component is greatest. Some water in the principal aquifer moves parallel to the upper surface of the clay member and then upward to discharge into Long Island Sound to the north, or else moves out of the report area, mostly to the south and west. Some water, however, moves downward through the clay member to recharge the underlying deep confined aquifer. North of the shore line in part of the report area (fig. 11), water moves upward from the deep confined aquifer to the principal aquifer.

The velocity of ground-water movement may be computed by the following equation based on Darcy's law:

$$v=\frac{PI}{7.48p}$$

where

v = velocity, in feet per day,
P = permeability of the deposits in the direction of flow, in gpd per sq ft,
I = hydraulic gradient, in feet per foot, and
p = porosity, which is dimensionless.

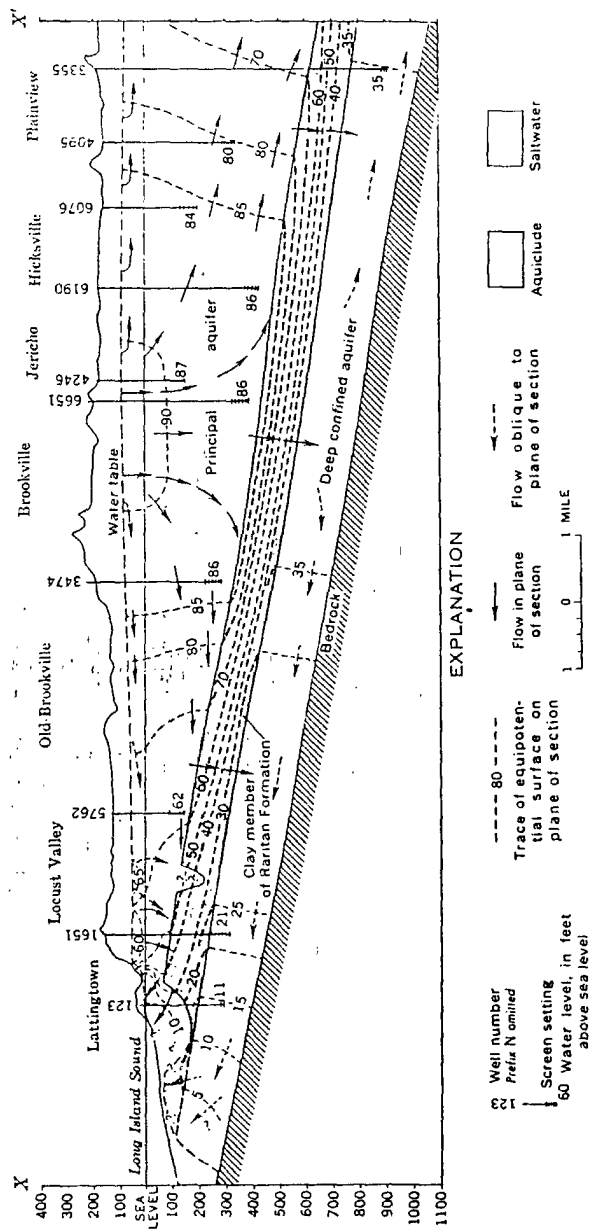


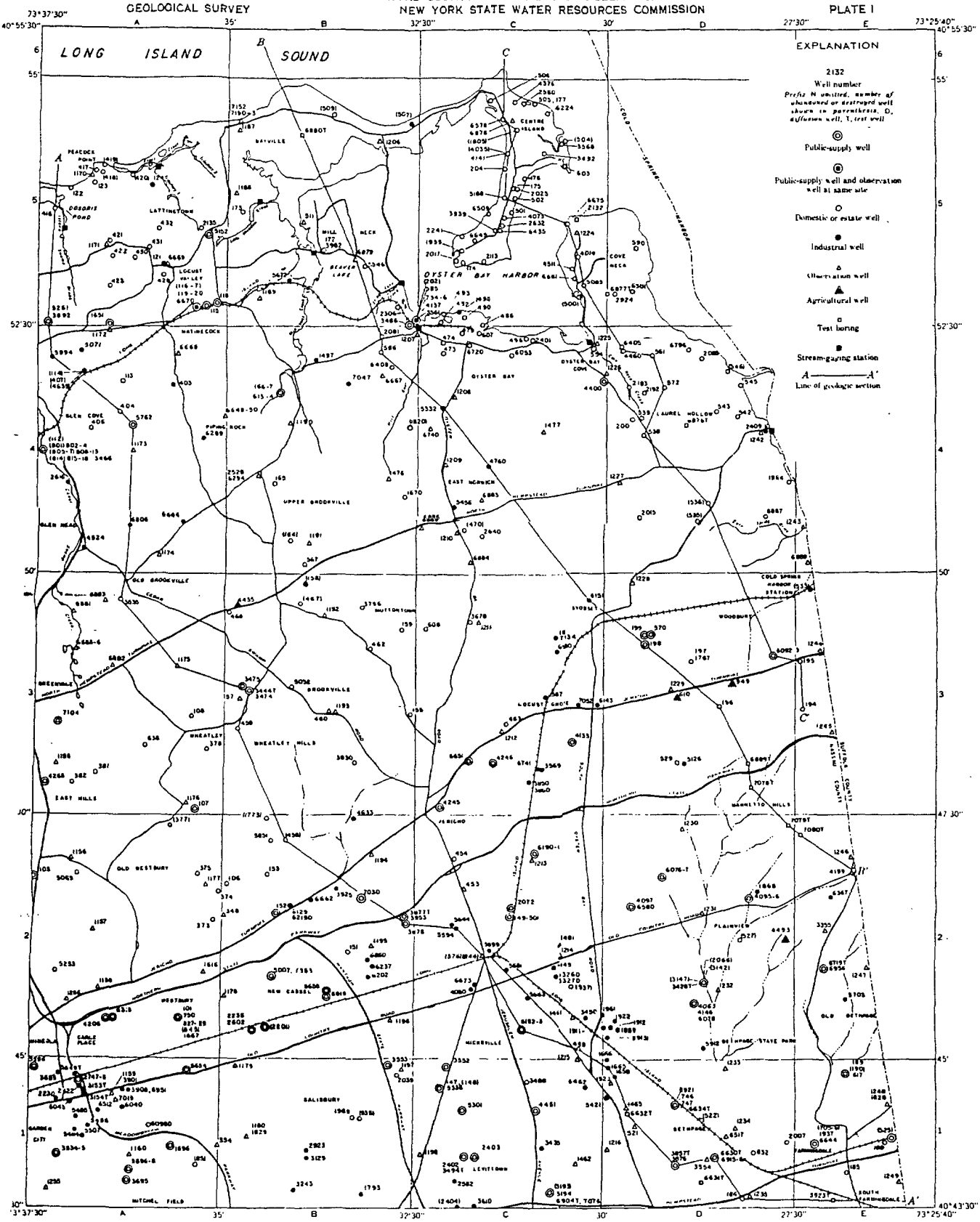
FIGURE 11.—Hydraulic section X–X' through the ground-water reservoir from Lattingtown to Plainview.

NYSDEC013311

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS AND THE
NEW YORK STATE WATER RESOURCES COMMISSION

WATER-SUPPLY PAPER 1825
PLATE I



Base from U.S. Geological Survey topographic quadrangles, 1954-55

MAP SHOWING LOCATION OF WELLS, TEST BORINGS, STREAM-GAGING STATIONS, AND LINES OF GEOLOGIC SECTIONS IN NORTHEASTERN NASSAU COUNTY, LONG ISLAND, NEW YORK

SCALE 1:48 000

1 MILES

1 KILOMETERS

NYSDEC013312

209-982 O - 66 (In pocket)

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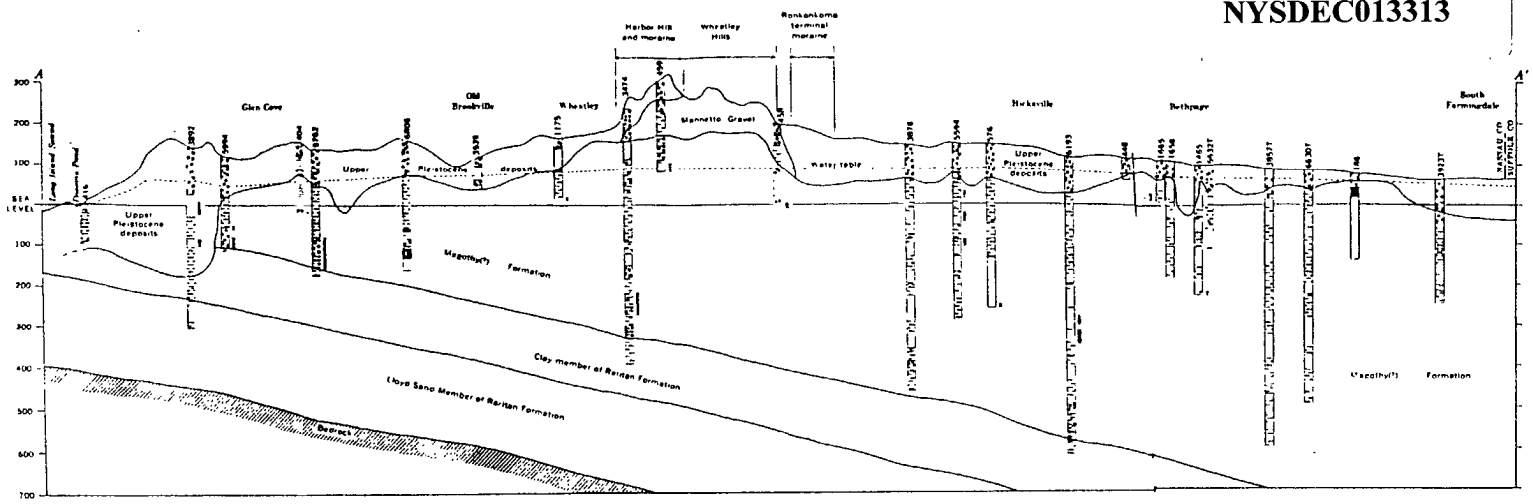
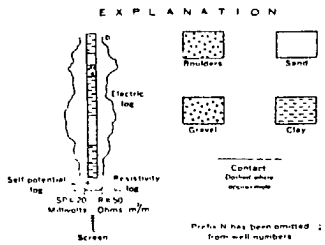
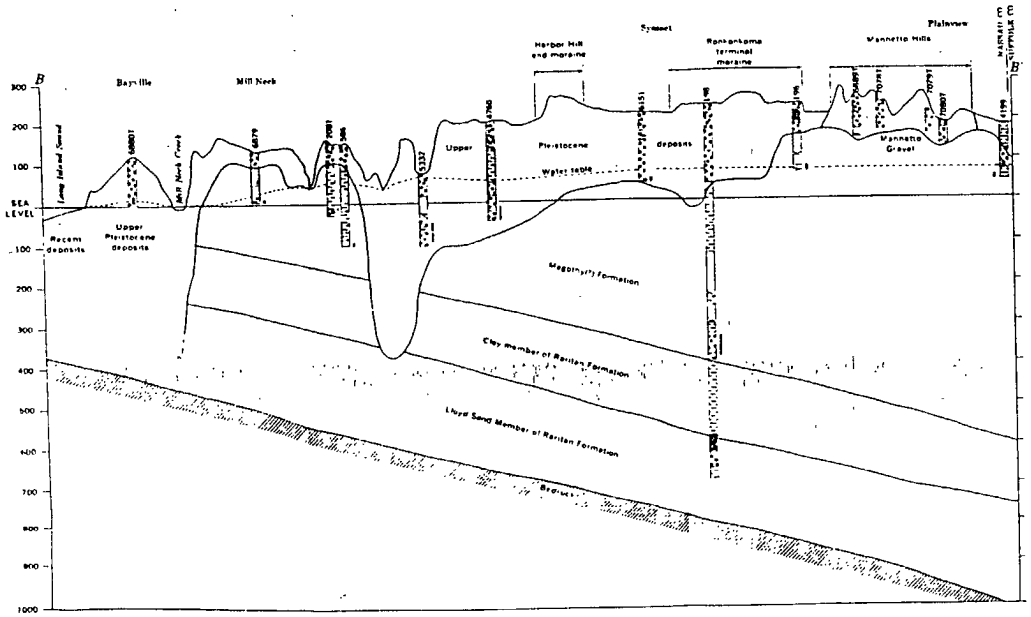
NEW YORK STATE WATER RESOURCES COMMISSION

NYSDEC013313

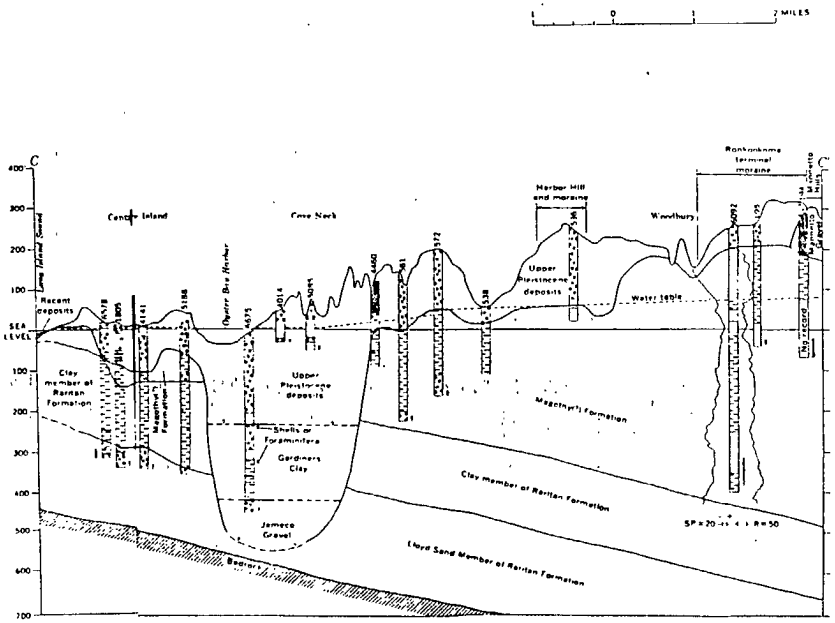


SECTION A-A', FROM LONG ISLAND SOUND NEAR DOSORIS POND TO NASSAU COUNTY LINE AT SOUTH FARMINGDALE





SECTION B-B', FROM LONG ISLAND SOUND NEAR BAYVILLE TO NASSAU COUNTY LINE AT PLAINVIEW

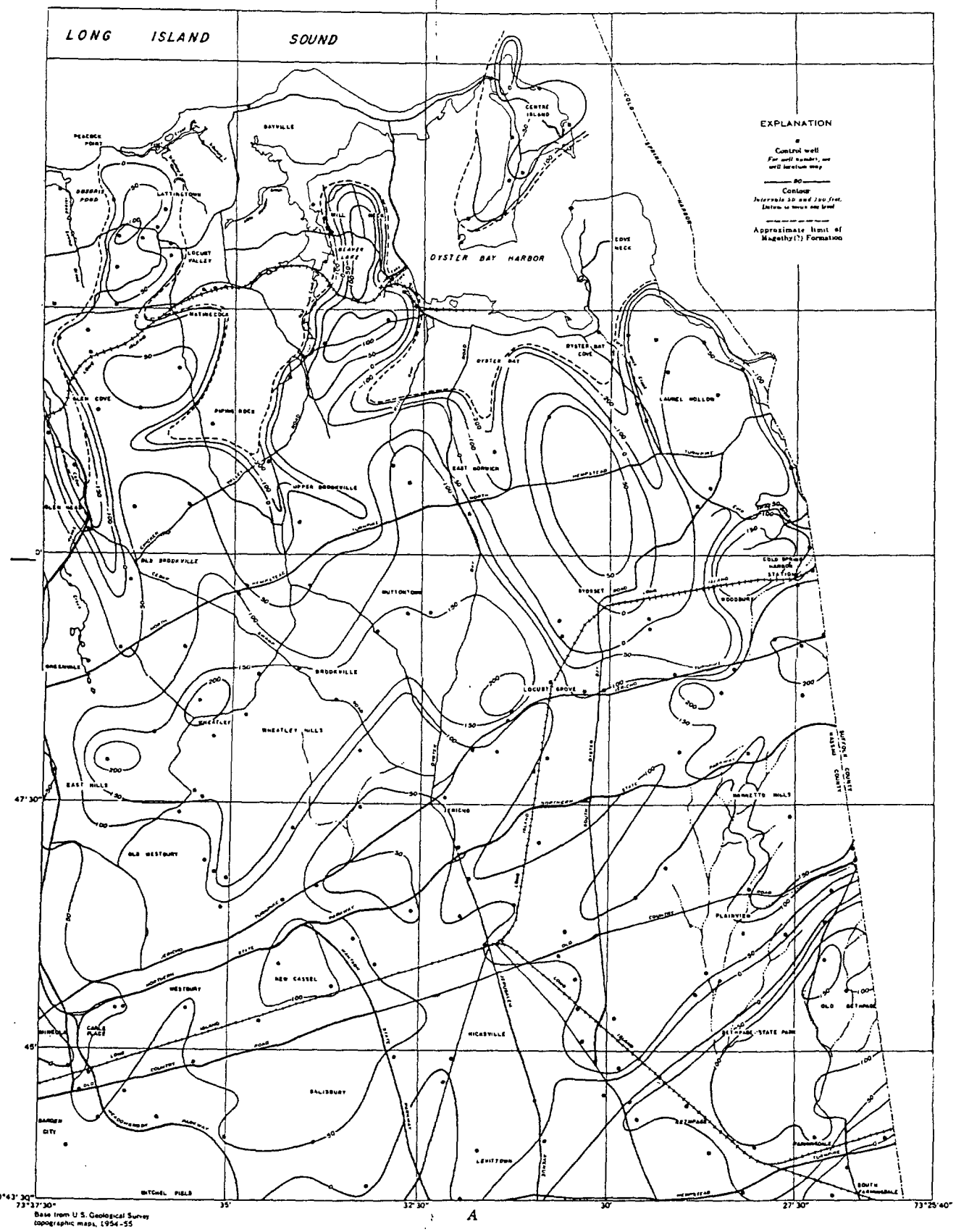


SECTION C-C', FROM LONG ISLAND SOUND NEAR CENTRE ISLAND TO MANNETTO HILLS AT WOODBURY

GEOLOGIC SECTIONS IN NORTHEASTERN NASSAU COUNTY, LONG ISLAND, NEW YORK

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NASSAU COUNTY DEPARTMENT OF PUBLIC
NEW YORK STATE WATER RESOURCES



Base from U.S. Geological Survey topographic maps, 1954-55

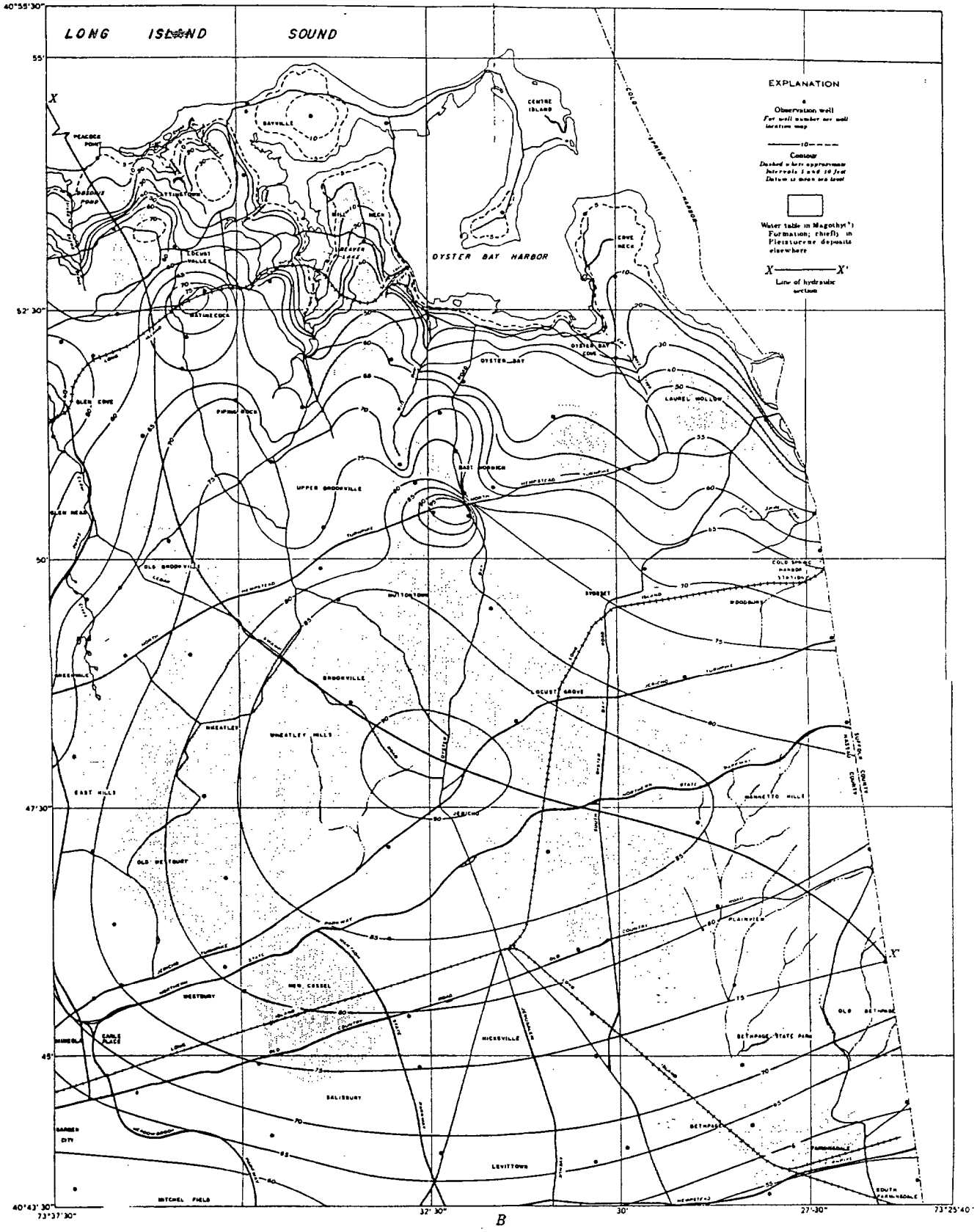
A

MAPS SHOWING (A) CONTOURS ON THE UPPER SURFACE OF THE MAGOTHY(?) FORMATION NORTHEASTERN NASSAU COUNTY, LONG ISLAND, NEW YORK

SCALE 1:48 000

MILES

NYSDEC013314



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(*B*) WATER-TABLE CONTOURS, APRIL, 1960
NORTHEASTERN NASSAU COUNTY,
LONG ISLAND, NEW YORK

SCALE 1:48 000

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

208-962 O - 64 (in pocket)

REFERENCE 40

HICKSVILLE

SCALE IN MILES

1 1/2 0 1

R-25se

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ANNOTATIONS
Notes & Administrative

NYSDEC013318

FREEPORT

S-25ne

$W(u)$ = well function of $u = 1.87\ r^2\ S/Tt$,
r = distance from the pumping well to the point of observation, in feet,
S = coefficient of storage, expressed as a decimal fraction, and
t = time since pumping started, in days.

The assumptions made in deriving this formula and the sensitivity of the various parameters to changes in the magnitude of other parameters are discussed at length by Bredehoeft (1963).

In this report, equation 4 was used in a modified form that was more amenable to the direct use of well data. By substituting $\overline{K}L$ for T and rearranging terms, then

$$\overline{K} = 114.6W(u)\frac{Q}{sL}, \tag{5}$$

where $\overline{K}$ = average hydraulic conductivity of the materials opposite the well screen, in gallons per day per square foot, and
L = length of well screen, in feet.

Implicit in this substitution is the assumption that the length of the well screen is equal to the thickness of aquifer material that contributes all the water to the well.

The factor Q/sL is the specific capacity of the well per foot of well screen. Because this factor takes into account the length of the well screen, its value for different wells commonly can be compared more meaningfully than can specific-capacity values, particularly where the lengths of well screens differ considerably.

Most aquifers are highly anisotropic to fluid flow, and the average hydraulic conductivity of an aquifer parallel to the bedding generally is many times greater than the average hydraulic conductivity perpendicular to the bedding. Therefore, in horizontally bedded deposits, such as those of the Long Island ground-water reservoir, most of the flow into a well commonly is derived from the materials directly opposite the well screen. Thus, the length of well screen, L, generally is a reasonable estimate of the thickness of aquifer that contributes most of the water to the well. However, because of some across-bed flow originating in beds above or below a well screen and because some wells are packed with gravel which forms a conduit for water from above and below the screen, equation 5 may give values of $\overline{K}$ that are somewhat greater than the average hydraulic conductivity of the materials opposite the well screen. In general, the error involved in using equation 5 decreases as the length of the well screen increases. Except for wells with very short screens (for example, less than 15 feet), the error in average hydraulic conductivity determination due to water entering the well from above and below the well screen is generally less than 25 percent.

To apply equation 5, a value for the factor $114.6W(u)$ must also be estimated. By inserting, for the variables in the expression $114.6W(u)$ in equation 4, the most extreme values for conditions that might occur in Long Island's aquifers, this expression was found to range from 1,500 to 2,500 and to average about 2,000. In other words,

$$\overline{K} = 2{,}000\ Q/sL \tag{6}$$

is a valid approximation. Equation 6, therefore, was used to estimate the average hydraulic conductivity of the materials opposite the screened interval of most wells analyzed for this report.

As outlined in the previous paragraphs, the method of pumping-test analysis used in this report differs from the approach of previous investigators, who assumed that the tested thickness of the aquifer comprised the interval between the first "well-defined" clay layers above and below the well screen. The approach by previous investigators was not adopted because only a fraction of the wells on Long Island have geophysical logs, core data, or sufficiently detailed lithologic logs to make such an approach generally feasible on an island-wide basis. In addition, the present method has the advantage that it is quick and requires no judgment regarding the nature and extent of "well-defined" clay layers.

In the simplest case, if the lithology of the entire screened interval of each well was the same and if many wells were screened throughout all the different lithologies in an aquifer, then a compilation of values calculated from equation 6 would give a good estimate of the average hydraulic conductivity for the aquifer. In many areas, however, the screened intervals commonly are comprised of several layers of different lithology and, therefore, of different hydraulic conductivity. Jenkins (1963) developed a technique using multiple-regression analysis to deal with the problem of multiple lithologies in the screened interval. In this investigation, as is described subsequently in the report, a sufficiently large number of screened intervals in each aquifer on Long Island are characterized by a single lithologic type, so that Jenkins' procedure was not used.

The lithologic descriptions of the screened intervals used in this study were derived mainly from drillers' lithologic logs. Therefore, the validity of the procedures described in the following section and the accuracy of the analysis are, at least partly, contingent upon the validity of the assumption that the drillers were consistent in their descriptions of the materials.

NYSDEC013319

TABLE 5.—*Assigned range of Q/sL numbers and calculated hydraulic conductivity values for selected lithologic classes in the upper glacial aquifer*

Lithologic class		Number of wells	Median Q/sL number of screened intervals (gpm per sq ft)	Assigned range of Q/sL numbers (gpm per sq ft)	Calculated range of hydraulic conductivity (gpd per sq ft)
No.	Description				
1	Gravel, sand and gravel, and coarse sand	924	1.5	1.0–1.5	2,000–3,000
2	Medium, fine, and very fine sand, and sand with silt or clay layers.	408	1.1	0.2–0.9	400–1,800
3	Clay, sandy clay, and silty clay			[1] 0	0

[1] Assumed; see text discussion.

logic class and the corresponding range of calculated hydraulic conductivity values for each class.

Lithologic logs from about 620 wells penetrating the upper glacial aquifer were analyzed to determine point values of average aquifer hydraulic conductivity. These wells were fairly well distributed in the subareas of Long Island (fig. 9). Although in Kings, Queens, and

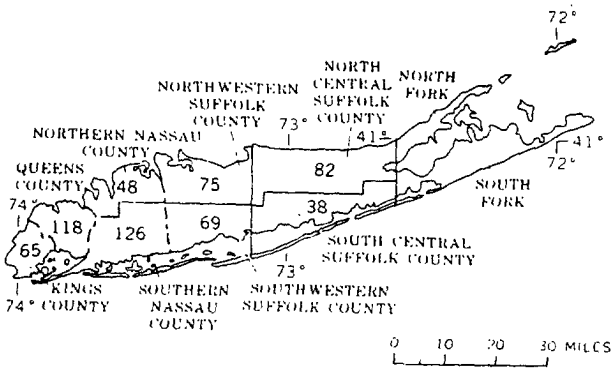


FIGURE 9.—Number of wells for which lithologic logs were available for the upper glacial aquifer in the indicated subareas in 1967.

Nassau Counties most wells that were analyzed completely penetrated the aquifer, progressively fewer wells penetrated the entire aquifer toward eastern Suffolk County.

A map showing thickness of the saturated upper glacial aquifer[1] (pl. 1*A*) was prepared from an unpublished map of the September 1965 water table, from well logs, and from maps and data contained in several reports (Isbister, 1966; Lubke, 1964; Perlmutter and Geraghty, 1963; Pluhowski and Kantrowitz, 1964; Swarzenski, 1963; Julian Soren, written commun., 1968). Maps showing lines of equal average hydraulic conductivity (pl. 1*B*) and equal transmissivity (pl. 1*C*) were constructed according to the procedures outlined previously.

Noteworthy features of the map showing thickness of the saturated upper glacial aquifer (pl. 1*A*) are (1) the areas near the north shore of the island in which the aquifer locally is more than 500 feet thick, and (2) the increasing thickness of the aquifer in eastern Suffolk County. The great thickness near the north shore reflects buried valleys in the underlying Cretaceous deposits. Buried valleys are not as pronounced near the south shore of Long Island.

The distribution of the lines of equal average hydraulic conductivity (pl. 1*B*) reflects to some extent the geologic origin of the glacial material on Long Island. Average hydraulic conductivities of 2,000 gpd per sq ft and higher occur through much of the outwash-plain deposits in southern Queens, Nassau, and Suffolk Counties. Beds of lower average hydraulic conductivity (about 1,000 gpd per sq ft) are found in north-central Nassau and Suffolk Counties, where the glacial deposits contain more silt and clay.

The trends of the lines of equal transmissivity in the upper glacial aquifer (pl. 1*C*) are similar to the trends of the lines of equal saturated thickness (pl. 1*A*). This similarity reflects the fact that the variation in thickness of the aquifer is generally greater than the variation in estimated average hydraulic conductivity (pl. 1*B*). The highest values of transmissivity in plate 1*C* are associated with the greatest aquifer thicknesses, which occur in the buried valleys along the north shore of the island and in central Suffolk County.

The average thickness, hydraulic conductivity, and transmissivity of the upper glacial aquifer in subareas of Long Island, as derived from plate 1*A*, *B*, and *C*, are listed in table 6.

[1] In numerous places on Long Island, deep channels were cut into the Cretaceous deposits and subsequently filled with Pleistocene deposits. Along the north shore, the basal deposits have been included in the Jameco Gravel by some workers (Isbister, 1966; Swarzenski, 1963) and in the upper glacial deposits by others (Lubke, 1964; Julian Soren, oral commun., 1968). In this report, all the deep buried-valley deposits along the north shore have been included in the upper glacial aquifer.

TABLE 6.—*Average thickness, hydraulic conductivity and transmissivity of the upper glacial aquifer in subareas of Long Island*

Subarea	Area (sq mi)	Average total thickness (feet)	Average hydraulic conductivity (gpd per sq ft)	Average transmissibity (gpd per ft)
Kings County	69	130	1,400	180,000
Queens County	97	80	1,600	120,000
Northern Nassau County	72	120	1,700	210,000
Southern Nassau County	138	50	1,900	95,000
Northwestern Suffolk County	135	160	1,400	230,000
Southwestern Suffolk County	110	100	1,900	190,000
North central Suffolk County	254	160	1,500	240,000
South central Suffolk County	141	120	1,900	230,000
Subareas studies	1,016	120	1,700	200,000

JAMECO AQUIFER

About 75 wells are screened in the Jameco aquifer. Q/sL numbers of wells screened in this aquifer range from less than 0.1 to more than 4.0 gpm per sq ft, and the median Q/sL number is about 1.0 gpm per sq ft (fig. 10). About one-third of the well screens in the

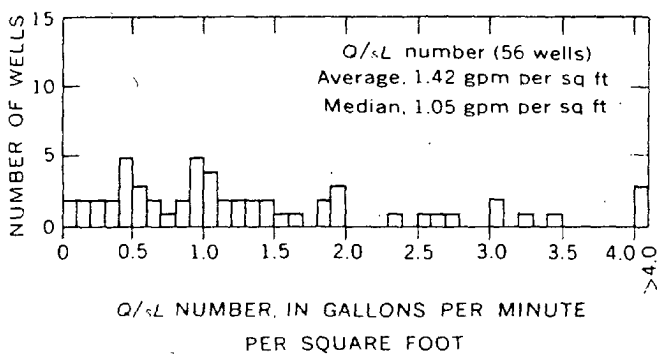


FIGURE 10.—Distribution of Q/sL numbers for wells screened in the Jameco aquifer. (Average hydraulic conductivity of screened intervals approximates 2,000 Q/sL; see text discussion.)

compilation (fig. 11) are short (15 feet or less), which suggests that vertical flow components probably contribute measurably to the discharge of such wells.

Lithologic descriptions of the screened interval were available for 56 of the wells for which test data were available. Generally the material in individual screened intervals belonged to a single lithologic class. The median Q/sL numbers determined for each lithologic class, the range in Q/sL numbers assigned to each class, and the corresponding range of calculated hydraulic conductivity values for each class are listed in table 7.

Lithologic logs describing the Jameco aquifer in 109 wells were analyzed to determine point values of average hydraulic conductivity. These wells were almost evenly distributed in the three counties in which the

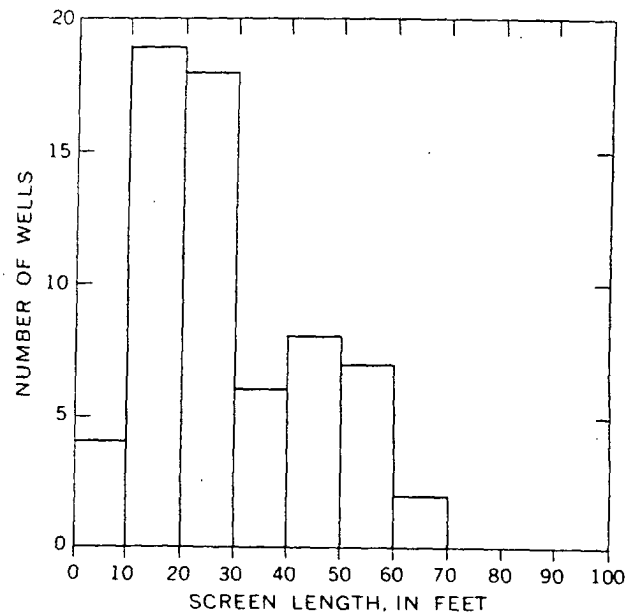


FIGURE 11.—Distribution of screen lengths of wells in the Jameco aquifer.

Jameco occurs and include more than 90 percent of the wells that completely or almost completely penetrate the aquifer. The distribution by subarea is shown in figure 12.

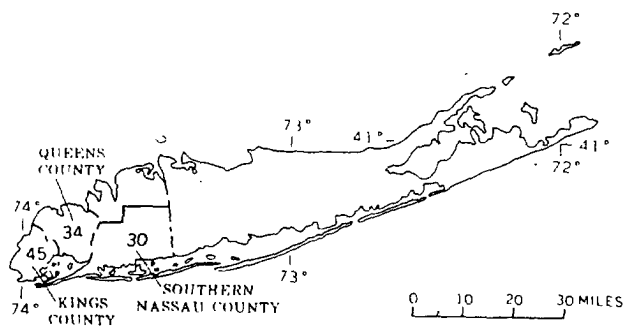


FIGURE 12.—Number of wells for which lithologic logs were available for the Jameco aquifer in the indicated subareas in 1967.

A map showing thickness of the Jameco aquifer (fig. 13) was prepared from well logs and maps and data contained in two reports (Perlmutter and Geraghty, 1963; Julian Soren, written commun., 1968). Maps showing lines of equal average hydraulic conductivity (fig. 14) and equal transmissivity (fig. 15) were constructed according to the procedures outlined previously.

The Jameco aquifer attains its maximum thickness of more than 300 feet in a buried valley cut into the underlying Cretaceous deposits in southwestern Queens County (fig. 13). Generally, the aquifer is thicker in

NYSDEC013321

REFERENCE 43

Liquid from lagoon

.2d NEW YORK STATE DEPARTMENT OF HEALTH
CENTER FOR LABORATORIES AND RESEARCH

P 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43059 SAMPLE RECEIVED:84/08/02/
PROGRAM: 525:DEC INDUSTRIAL WASTES NPDES
SOURCE ID: DRAINAGE BASIN:17 GAZETTEER CODE:2952
POLITICAL SUBDIVISION:OYSTER BAY COUNTY:NASSAU
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: DEPEW MANUFACTURING 359 DUFY AV HICKSVILLE 11801
DESCRIPTION:SETTLING PIT
REPORTING LAB: IOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: VOL2:EPA METHOD 503.1 & F.R.METHOD 601
SAMPLE TYPE: 590:OTHER TREATED LIQUID WASTES
TIME OF SAMPLING: 84/08/01 12:30 DATE PRINTED:84/09/21

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	2. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T41909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T41109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
*T34409	BENZENE	1. MCG/L
*T39209	TOLUENE	3. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T65209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

NYSDEC013323

COPIES SENT TO: CO(1), RO(1), LPHE(1), FED(0), INFO-P(0), INFO-L(0)

ASST. COMMR. FOR ENVIRONMENTAL HEALTH
NASSAU COUNTY HEALTH DEPT.
240 OLD COUNTRY RD.
MINEOLA, N.Y. 11501

SUBMITTED BY:SMITH

REFERENCE 44

Environmental Engineers & Scientists
HOLZMACHER, McLENDON and MURRELL, P.C.
575 BROAD HOLLOW ROAD, MELVILLE, NEW YORK 11747 (516) 694-3040

WATER RESOURCES • WATER SUPPLY & TREATMENT • SEWERAGE & TREATMENT • ECOLOGICAL & IMPACT STUDIES
MODEL STUDIES • PILOT PLANT STUDIES • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICES

LABORATORY REPORT

LAB NO. 464837
PROJECT NO. 2C-

CLIENT'S NAME AND ADDRESS

N.Y.S. DEPT. OF ENV. CONS.
50 WOLF ROAD
ALBANY, NY 12233

TYPE OF SAMPLE - SEWAGE + SLUDGE COLLECTED BY WD 99
DATE COLLECTED - 8/ 1/84 DATE RECEIVED - 8/ 1/84

PRIORITY POLLUTANT METALS & CYANIDE & PHENOLS
DEC I.D. #E-184-299-01
LIQUID SAMPLE

Depew Mfg
Sludge from Pond

PARAMETER	RESULT	PARAMETER	RESULT
ANTIMONY	<2.00	SELENIUM	475.#
ARSENIC	410.#	SILVER	0.90
BERYLLIUM	<0.20	THALLIUM	<2.00
CADMIUM	1.20	ZINC	5.40
CHROMIUM	6.60	PHENOLS	2.60
COPPER	3.50	CYANIDE	<0.01
LEAD	11.0		
MERCURY	15.0 #		
NICKEL	1.70		

NYSDEC013325

RECEIVED
MAR 21 1985
BUREAU OF WATER
DIVISION OF

RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
TOTAL COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
FECAL STREP (COUNTS/ML)
COND. (UMHOS) SETT.SOLIDS(ML/L)

DATE REPORTED 3/12/85

A M Alam

Sted from upper

ACHER, McLENDON and MURRELL, P.C • CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS
575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

CLIENT NAME AND ADDRESS

N.Y.S. DEC
50 Wolf Rd.
Albany, NY 12233

Lab No. 464834
Type: Misc.
Point: E-184-299-01
Date Sampled: 8/1/84
Collected By: WO 99

BASE NEUTRAL EXTRACTABLES - PRIORITY POLLUTANTS

Compound	mg/l	Compound	mg/l
1,3-Dichlorobenzene	ND	N-Nitrosodiphenylamine	ND
1,4-Dichlorobenzene	ND	Hexachlorobenzene	ND
Hexachloroethane	ND	4-Bromophenyl phenyl ether	ND
Bis(2-chloroethyl) ether	ND	Phenanthrene	ND
1,2-Dichlorobenzene	ND	Anthracene	ND
Bis(2-chlorisopropyl)ether	ND	Di-n-butyl phthalate	ND
N-nitroso-di-n-propyl amine	ND	Fluoranthene	ND
Nitrobenzene	ND	Pyrene	ND
Hexachlorobutadiene	ND	Benzidine	ND
1,2,4-Trichlorobenzene	ND	Butyl benzyl phthalate	ND
Isophorone	ND	2) Bis(2-ethylhexyl) phthalate	ND
Naphthalene	ND	Chrysene	ND
Bis(2-chloroethoxy) methane	ND	Benzo(a)anthracene	ND
Hexachlorocyclopentadiene	ND	3,3'-Dichlorobenzidine	ND
Chloronaphthalene	ND	Di-n-octyl phthalate	ND
Acenaphthylene	ND	Benzo(b)fluoranthene	ND
Acenaphthene	ND	Benzo(k)fluoranthene	ND
→ Dimethyl phthalate	450	Benzo(a)pyrene	ND
2,6-Dinitrotoluene	ND	1) Indeno(1,2,3-c,d)pyrene	ND
Fluorene	ND	1) Dibenzo(a,h)anthracene	ND
4-Chlorophenyl phenyl ether	ND	1) Benzo(g,h,i) perylene	ND
2,4-Dinitrotoluene	ND	n-nitrosodimethylamine	ND
1,2-Diphenyl hydrazine	ND		
Diethyl phthalate	ND		

Method limit of detection: lower than 3 mg/l. (unless otherwise indicated)
Quantification limit: 3 mg/l.
ND - Under detection limit.
1) Method limit of detection: lower than 8 mg/l.
2) Quantification limit in presence of interference: 110 mg/l.

Date Reported: 4/20/85

85 MAY 21 AM 8:59

RECEIVED BY
N.Y.S. DEC
DIV. FISCAL

****
* *
* g m S *
****

S.C. McLendon, P.E. - Lab Director

NYSDEC013326

Ref. 2

REFERENCE 45

WORKSHEET

EXAMINATION FOR TRACE ORGANIC
UENTS IN WATER, HAZARDOUS WASTES
D WASTES

of Laboratories and Research

County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 404275 31

D

Field No. UN244

N No. (Public Water Supply Only)

Information (Please Print)

Depew Mfg
359 Duffy Ave
Hicksville

on Point effluent from pipe
ran 1" bldg

Well No.

	Month	Day	Year
Date Collected	12	12	84
Date Received	12	12	84
Date Reported			8
Collection Time	11:00 am		
Collected By:	V. Nizzi		

's Comments:

- sample on ice
- sample cloudy

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS			NON-AQUEOUS	
Community Well	6	Surface Water	1	Soil
Non-Community Well	7	Waste Water	2	Sludge
Private Well	8	Industrial Effluent	3	Waste Solvent
Monitoring Well	9	Raw Supply Water	4	Oil
Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

Purgeable halogenated hydrocarbons		I	Phthalates
Purgeable halogenated hydrocarbons - gases		J	Herbicides
Purgeable nonhalogenated hydrocarbons		K	Nitrosamines
Halogenated pesticides		L	Benzidines
Polychlorinated biphenyls		M	Nitroaromatic hydrocarbons
Polycyclic aromatic hydrocarbons		N	Haloethers
Aldehydes + ketones		O	Chlorinated hydrocarbons
Phenols		P	Other (specify)

mi- Comments:

NYSDEC013328

LABORATORY REPORT
CHEMICAL EXAMINATION OF SOLID AND HAZARDOUS WASTES
Division of Laboratories and Research
New York State Department of Health

H

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 13533

Field No. VN244

Source Information (Please Print)

Premises: Degen Mfg.
Address: 359 Duffy Ave
Town: Hicksville
Collection Point: effluent pipe rear of building

	Month	Day	Year
Date Collected	12	12	84
Date Received			8
Date Reported			8

Collection Time: 10 : 00 am
Collected By: [illegible]

Sampler's Comments:

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☑ Water
B ☐ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Check	Metals		Result	Check	Non-Metals		Result
1	Aluminum	mg/l	22.5	15	Chloride	mg/l	
2	Arsenic	mg/l		16	Cyanide	mg/l	
3	Barium	mg/l		17	Fluoride	mg/l	
4	Cadmium	mg/l		18	MBAS	mg/l	
5	Chromium, Total	mg/l		19	pH		9.1
6	Copper	mg/l		20	Phenols	mg/l	
7	Iron, Total	mg/l		21	Solids, Suspended	mg/l	
8	Lead	mg/l		22	Solids, Total Diss.	mg/l	
9	Manganese	mg/l		23	Sulfate	mg/l	
10	Mercury	mg/l		24	Ammonia nitrogen	mg/l	
11	Nickel	mg/l		25	Kjeldahl nitrogen	mg/l	
12	Selenium	mg/l		26	Nitrite nitrogen	mg/l	
13	Silver	mg/l		27	Nitrate nitrogen	mg/l	
14	Zinc	mg/l	0.46	28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent		Result
29	Chromium hex.	mg/l	
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			

Examiner's Comments

NYSDEC013329

DEC 24 1984

Ref. 1

REFERENCE 46

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 404275
Source: DEPEW MFG., HICKSVILLE EFFLUENT FROM PIPE
Matrix: WATER
Date Sampled: 12/12
Date of Report: 1 / 3/85

VOLATILE HALOGENATED	MRC (ug/l)		RESULT (ug/l)
TRICHLOROFLUOROMETHANE	1	-------	< 1
METHYLENE CHLORIDE 1,1,2-TRICHLOROTRIFLUOROMETHANE 1,1-DICHLOROETHYLENE	10	-------	< 10
c & t-1,2-DICHLOROETHYLENE	15	-------	< 15
1,1-DICHLOROETHANE	15	-------	< 15
CHLOROFORM	1	-------	< 1
1,1,1-TRICHLOROETHANE	1	-------	< 1
CARBON TETRACHLORIDE	1	-------	< 1
TRICHLOROETHYLENE	1	-------	< 1
BROMODICHLOROMETHANE	1	-------	< 1
-1,3-DICHLOROPROPENE DIBROMOCHLOROMETHANE 1,1,2-TRICHLOROETHANE	2	-------	< 2
1,2-DIBROMOETHANE	6	-------	< 6
TETRACHLOROETHYLENE	1	-------	< 1
BROMOFORM	3	-------	< 3

VOLATILE AROMATICS	MRC (ug/l)		RESULT (ug/l)
BENZENE	3	------	< 3
TOLUENE	3	------	< 3
CHLOROBENZENE	3	------	< 3
ETHYLBENZENE	3	------	42 ✓
XYLENE (o,m,p)	3	------	NR
DICHLOROBENZENE (o,m,p)	5	------	< 5

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - ng/l WATER - ug/l SOIL - ng/g

DETECTED BY GC/MS
TH... BENZENE
HYDROCARBON
21 SUBSTITUTED BENZENE
TENTATIVE IDENTIFICATION OF STYRENE - APPROXIMATE CONCENTRATION - 2 PPM

NYSDEC013331

REFERENCE 47

BORATORY WORKSHEET

CHEMICAL EXAMINATION FOR TRACE ORGANIC NSTITUENTS IN WATER, HAZARDOUS WASTES D SOLID WASTES

of Laboratories and Research

nau County Department of Health

1 ☐ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

501126

Field No. UN-52

N No. (Public Water Supply Only)

urce Information (Please Print)

Premises: Depew Mfg

Address: 359 Duffy Ave

Town: Hicksville

Collection Point: Sump near of blds

Well No.

	Month	Day	Year
Date Collected	4	25	85
Date Received	4	25	85
Date Reported			8
Collection Time	1:20pm		
Collected By:	V. Nizuk		

Sampler's Comments:
- sample on ice
- sample - blue powder

Bureau
1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
4	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable halogenated hydrocarbons	I	Phthalates
B	Purgeable halogenated hydrocarbons - gases	J	Herbicides
(C)	Purgeable nonhalogenated hydrocarbons	K	Nitrosamines
D	Halogenated pesticides	L	Benzidines
E	Polychlorinated biphenyls	M	Nitroaromatic hydrocarbons
F	Polycyclic aromatic hydrocarbons	N	Haloethers
G	Aldehydes + ketones	O	Chlorinated hydrocarbons
H	Phenols	(P)	Other (specify) acetone / Styrene

Examiner's Comments:

NYSDEC013333

Ref. 3

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 501126
Source: DEPEW MFG. - HICKSVILLE; SUMP AT REAR OF BUILDING
Matrix: SOLID
Date Sampled: 04/25/85
Date of Report: 85/ 1/85

Near of building

VOLATILE HALOGENATED	MRC (ng/g)	RESULT (ng/g)
TRICHLOROFLUOROMETHANE	25	< 25
METHYLENE CHLORIDE		
1,1,2-TRICHLOROTRIFLUOROETHANE	300	< 300
1,1-DICHLOROETHYLENE		
c & t-1,2-DICHLOROETHYLENE	250	< 250
1,1-DICHLOROETHANE	250	NA
CHLOROFORM	25	< 25
1,1,1-TRICHLOROETHANE	25	< 25
CARBON TETRACHLORIDE	25	< 25
TRICHLOROETHYLENE	25	< 25
BROMODICHLOROMETHANE	25	< 25
c-1,3-DICHLOROPROPENE		
DIBROMOCHLOROMETHANE	25	< 25
1,1,2-TRICHLOROETHANE	50	< 50
1,2-DIBROMOETHANE	25	< 25
TETRACHLOROETHYLENE	25	< 25
BROMOFORM	25	< 25

VOLATILE AROMATICS	MRC (ng/g)	RESULT (ng/g)
BENZENE	75	95
TOLUENE	75	500
CHLOROBENZENE	75	< 75
ETHYLBENZENE	75	17000
XYLENE (o,m,p)	125	NR
DICHLOROBENZENE (o,m,p)	150	NR

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

STYRENE DETECTED AT APPROXIMATE CONCENTRATION OF 400,000 NG/G

NYSDEC013334

MAY 01 1985

REFERENCE 48

NYSDEC013335

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT
nytest environmental inc.

REPORT OF TESTS

#130038

Date: May 28, 1985

Lab No. 85-10727 (B)

Client	Depew Manufacturing Corporation
Material	Two (2) Solid Samples
Identification	See Below (Samples Received 4/25/85)
Client's Order No.	Pending
Submitted for	Chemical Analysis

Sample Identification:

Sump Behind Building

East Side of Building

Report prepared by:

Remo Gigante, Laboratory Director

To:

Depew Manufacturing Corp.
359 Duffy Avenue
Hicksville, N.Y. 11801
Att: Mayson Tucker

ef

We certify that this report is a true report of results obtained from our tests of this material.

Respectfully submitted,

Nytest Environmental Inc.

G. J. Horvitz, Chief Officer

NYSDEC013336

Report on sample(s) furnished by client applies to sample(s). Report on sample(s) obtained by us applies only to lot sampled. Information contained herein is not to be used for reproduction except by special permission. Sample(s) will be retained for thirty days maximum after date of report unless specifically requested otherwise by client. In the event that there are portions or parts of sample(s) remaining after Nytest has completed the required tests, Nytest shall have the option of returning such sample(s) to the client at the client's expense.

call box 1021 ▫ 75 urban avenue, westbury, n.y. 11590 ▫ (516) 334/7770, (718) 297/1449

VOLATILE COMPOUNDS:

Sample Number: Sump Behind Building

Sample Size: 10 µls

Internal Std. Concs. (total ngs.)	Bromochloromethane	50
	1,4-Difluorobenzene	50
	D_5-Chlorobenzene	49
Surrogate Std. Concs. (total ngs.)	D_4-1,2-Dichloroethane	49
	1-Bromo-4-Fluorobenzene	52
	d_8-Deuterotoluene	52

Parameter	Method No.	CAS No.	Method Detection Limit (ppm)*	Found (ppm)
Acrolein	624	107-02-8	100	ND
Acrylonitrile	624	107-13-1	100	ND
Benzene	624	71-43-2	10	ND
Bromodichloromethane	624	75-27-4	10	ND
Bromoform	624	75-25-2	10	ND
Bromomethane	624	74-83-9	10	ND
Carbon Tetrachloride	624	56-23-5	10	ND
Chlorobenzene	624	108-90-7	10	ND
Chlorodibromomethane	624	124-48-1	10	ND
Chloroethane	624	75-00-3	10	ND
2-Chloroethyl vinyl ether	624	110-75-8	10	ND
Chloroform	624	67-66-3	10	ND
Chloromethane	624	74-87-3	10	ND

ND = None Detected

NYSDEC013337

*EPA published method detection limit

VOLATILE COMPOUNDS - cont'd.

Sample Number: Sump Behind Building

Parameter	Method No.	CAS No.	Method Detection Limit (ppm)*	Found (ppm)
Dichlorodifluoromethane	624	75-71-8	10	ND
1,1-Dichloroethane	624	75-34-3	10	ND
1,2-Dichloroethane	624	107-06-2	10	ND
1,1-Dichloroethylene	624	75-35-4	10	ND
Trans-1,2-Dichloroethylene	624	156-60-5	10	ND
1,2-Dichloropropane	624	78-87-5	10	ND
1,3-Dichloropropene	624	10061-02-6	10	ND
Ethylbenzene	624	100-41-4	10	54
Methylene Chloride	624	75-09-2	10	< 10
1,1,2,2-Tetrachloroethane	624	79-34-5	10	ND
Tetrachloroethylene	624	127-18-4	10	ND
Toluene	624	108-88-3	10	ND
1,1,1-Trichloroethane	624	71-55-6	10	ND
1,1,2-Trichloroethane	624	79-00-5	10	ND
Trichloroethylene	624	79-01-6	10	ND
Trichlorofluoromethane	624	75-69-4	10	ND
Vinyl Chloride	624	75-01-4	10	ND
Styrene	624	-	-	110000
Total Xylene	624	-	10	26

ND = None Detected

< = Less than

*EPA published method detection limit

NYSDEC013338

VOLATILE COMPOUNDS:

Sample Number: East Side of Building

Sample Size: 10 µls

Internal Std. Concs. (total ngs.)	Bromochloromethane	50
	1,4-Difluorobenzene	50
	D_5-Chlorobenzene	49
Surrogate Std. Concs. (total ngs.)	D_4-1,2-Dichloroethane	49
	1-Bromo-4-Fluorobenzene	52
	d_8-Deuterotoluene	52

Parameter	Method No.	CAS No.	Method Detection Limit (ppm)*	Found (ppm)
Acrolein	624	107-02-8	100	ND
Acrylonitrile	624	107-13-1	100	ND
Benzene	624	71-43-2	10	ND
Bromodichloromethane	624	75-27-4	10	ND
Bromoform	624	75-25-2	10	ND
Bromomethane	624	74-83-9	10	ND
Carbon Tetrachloride	624	56-23-5	10	ND
Chlorobenzene	624	108-90-7	10	ND
Chlorodibromomethane	624	124-48-1	10	ND
Chloroethane	624	75-00-3	10	ND
2-Chloroethyl vinyl ether	624	110-75-8	10	ND
Chloroform	624	67-66-3	10	ND
Chloromethane	624	74-87-3	10	ND

ND = None Detected

NYSDEC013339

*EPA published method detection limit

VOLATILE COMPOUNDS - cont'd.

Sample Number: East Side of Building

Parameter	Method No.	CAS No.	Method Detection Limit (ppm)*	Found (ppm)
Dichlorodifluoromethane	624	75-71-8	10	ND
1,1-Dichloroethane	624	75-34-3	10	ND
1,2-Dichloroethane	624	107-06-2	10	ND
1,1-Dichloroethylene	624	75-35-4	10	ND
Trans-1,2-Dichloroethylene	624	156-60-5	10	ND
1,2-Dichloropropane	624	78-87-5	10	ND
1,3-Dichloropropene	624	10061-02-6	10	ND
Ethylbenzene	624	100-41-4	10	114
Methylene Chloride	624	75-09-2	10	< 10
1,1,2,2-Tetrachloroethane	624	79-34-5	10	ND
Tetrachloroethylene	624	127-18-4	10	ND
Toluene	624	108-88-3	10	< 10
1,1,1-Trichloroethane	624	71-55-6	10	ND
1,1,2-Trichloroethane	624	79-00-5	10	ND
Trichloroethylene	624	79-01-6	10	ND
Trichlorofluoromethane	624	75-69-4	10	ND
Vinyl Chloride	624	75-01-4	10	ND
Styrene	624	-	10	511
Total Xylene	624	-	10	10

ND = None Detected

< = Less than

*EPA published method detection limit

NYSDEC013340

NYSDEC013341

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental inc.

CHAIN OF CUSTODY RECORD

PROJECT NO.

PROJECT NAME

CLIENT NAME: Depew Mfg

LAB. # 85-10727

SAMPLE I.D. NO.	DATE	TIME	COMP	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	NITROGEN	OIL & GREASE	CYANIDE	PHENOL	VOLATILE	METALS	ORGANICS	BACTERIAL	TOC COD	OTHER	UNPRESERVED	REMARKS / ADDITIONAL REQUIREMENTS
	4/25	14:00			Pile @ East Side of Bldg	2					X					X	X	EPTOX - Organics

Shipped Via:

Relinquished by (Signature)	Date/Time	Agent of:	Rec'd. by (Signature)	Date/Time	Agent of:
Printed Name			Printed Name		
Relinquished by (Signature)	Date/Time	Agent of:	Rec'd. by (Signature)	Date/Time	Agent of:
Printed Name			Printed Name		
Relinquished by (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
Printed Name		Printed Name			
Samplers (Signature)		Samplers Name (Print)			

REFERENCE 49

SAMPLE IDENTIFICATION NO.: Soil #1 10'

SAMPLE MATRIX: Solid Waste

METALS AND PHYSICAL CHEMISTRY

Parameters	Method No.	CAS No.	Method Detection Limit (PPM)	Found (PPM)
Cyanide, Total	9010	57-12-5	0.02	-
Phenols, Total	420.1*	---	0.005	-
Antimony, Total	7040	7440-36-0	2.00	< 8.36
Arsenic	7060	7440-38-2	0.01	0.33
Beryllium	7090	7440-41-7	0.10	< 0.25
Cadmium	7130	7440-43-9	0.10	< 0.25
Chromium	7190	7440-47-3	0.50	< 0.83
Copper	7210	7550-50-8	0.20	< 0.83
Lead	7420	7439-92-1	1.00	< 2.09
Mercury	7471	7439-97-6	0.002	0.016
Nickel	7520	7440-02-0	0.40	1.16
Selenium	7740	7782-49-2	0.02	< 0.08
Silver	7760	7440-22-4	0.10	< 0.50
Thallium	7840	7440-28-0	2.00	< 4.1
Zinc	7950	7440-66-6	0.05	6.93

< = Less than

NYSDEC013343

New York Testing Group
call box 1021 a 75 urban avenue westbury ny 11590 a (516) 334 7270 (718) 297
516 6255500
681-2900

Lab No 85-10991

SAMPLE IDENTIFICATION NO.: Soil #2

SAMPLE MATRIX: Solid Waste

METALS AND PHYSICAL CHEMISTRY

Parameters	Method No.	CAS No.	Method Detection Limit (PPM)	Found (PPM)
Cyanide, Total	9010	57-12-5	0.02	-
Phenols, Total	420.1*	---	0.005	-
Antimony, Total	7040	7440-36-0	2.00	< 9.05
Arsenic	7060	7440-38-2	0.01	0.90
Beryllium	7090	7440-41-7	0.10	< 0.27
Cadmium	7130	7440-43-9	0.10	< 0.2
Chromium	7190	7440-47-3	0.50	< 0.[illegible]
Copper	7210	7550-50-8	0.20	< 0.[illegible]
Lead	7420	7439-92-1	1.00	< 2.[illegible]
Mercury	7471	7439-97-6	0.002	20.8
Nickel	7520	7440-02-0	0.40	< 1
Selenium	7740	7782-49-2	0.02	0.36
Silver	7760	7440-22-4	0.10	< 0.5
Thallium	7840	7440-28-0	2.00	< [illegible]
Zinc	7950	7440-66-6	0.05	8.1

< = Less than.

NYSDEC013344

681-2900

Lab No. 85-10991

SAMPLE IDENTIFICATION NO.: Soil #3 ground water

SAMPLE MATRIX: Solid Waste

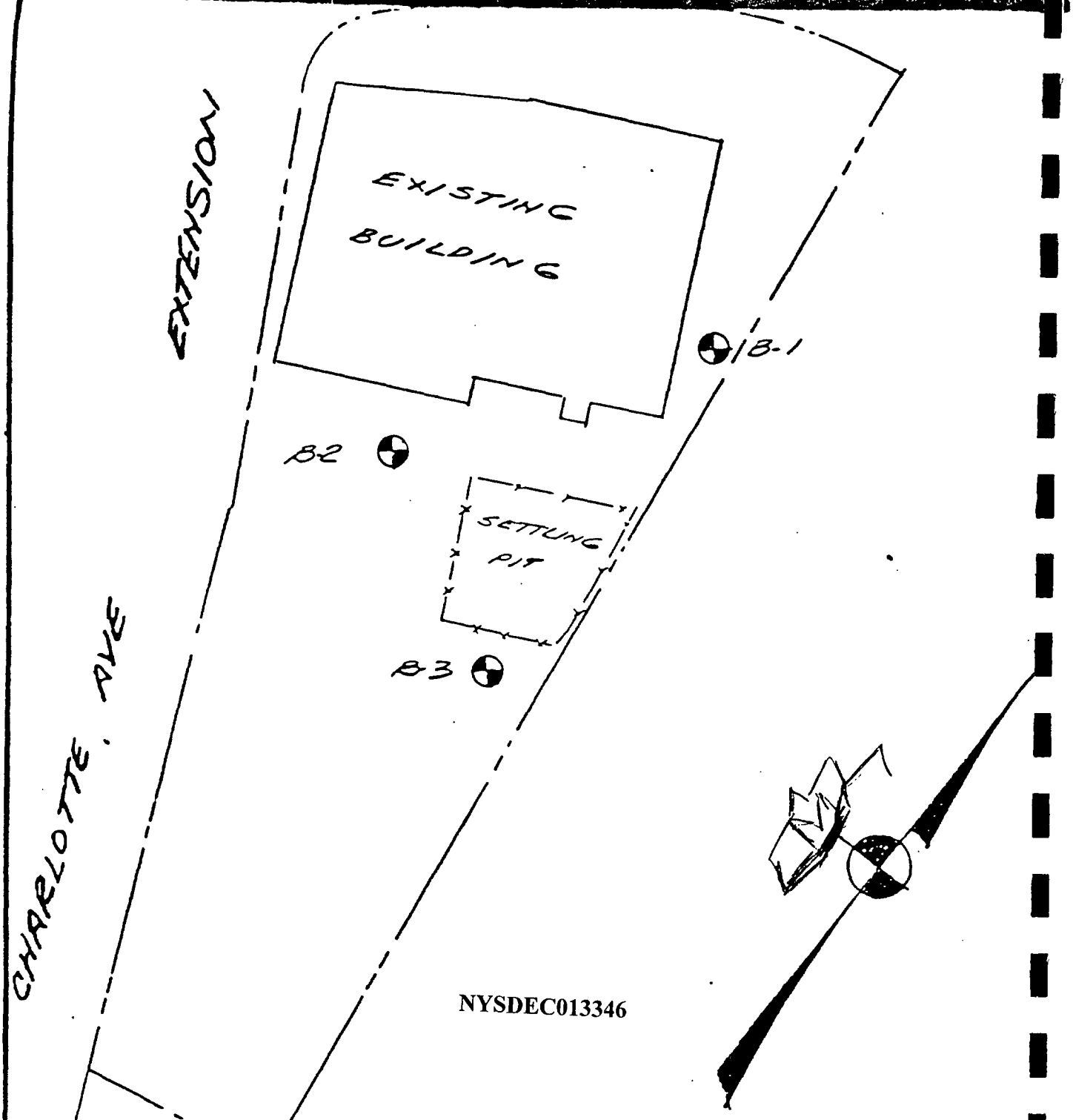
METALS AND PHYSICAL CHEMISTRY

Parameters	Method No.	CAS No.	Method Detection Limit (PPM)	Found (PPM)
Cyanide, Total	9010	57-12-5	0.02	-
Phenols, Total	420.1*	---	0.005	-
Antimony, Total	7040	7440-36-0	2.00	< 7.06
Arsenic	7060	7440-38-2	0.01	0.98
Beryllium	7090	7440-41-7	0.10	< 0.21
Cadmium	7130	7440-43-9	0.10	< 0.21
Chromium	7190	7440-47-3	0.50	8.19
Copper	7210	7550-50-8	0.20	< 0.70
Lead	7420	7439-92-1	1.00	< 1.76
Mercury	7471	7439-97-6	0.002	0.070
Nickel	7520	7440-02-0	0.40	< 1.41
Selenium	7740	7782-49-2	0.02	< 0.07
Silver	7760	7440-22-4	0.10	< 0.35
Thallium	7840	7440-28-0	2.00	< 3.5
Zinc 5.0	7950	7440-66-6	0.05	11.16

< = Less than

NYSDEC013345

call box 1021 o 75 urban avenue, wo
681-2900



NYSDEC013346

SOIL MECHANICS DRILLING CORP.
subsoil investigations
3770 MERRICK ROAD · SEAFORD, NEW YORK 11783 · 516 221-

BORING LOCATION PLAN
HICKSVILE N.Y.

VERTICAL BORING SCALE	DRAWING DATE	DRAWING NO.
DATES OF BORINGS	REVISED	85S356

REFERENCE 50

NYSDEC013347

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 601559
Source: DEPEW, 359 DUFFY AVE., HICKSVILLE
Matrix: SOIL
Site: INDOORS
Date Sampled: 10/08/86
Date of Report: 12/22/86

HALOGENATED PESTICIDES	MRC (ng/g)		RESULT (ng/g)
HEXACHLOROBENZENE	30	<	30
a-BHC	30	<	30
g-BHC	30	<	30
b-BHC	30	<	30
HEPTACHLOR	30	<	30
d-BHC	30	<	30
ALDRIN	30	<	30
HEPTACHLOR EPOXIDE	30	<	30
a-ENDOSULFAN	30	<	30
4,4'-DDE	30	<	30
DIELDRIN	30	<	30
ENDRIN	30	<	30
4,4'-DDD	30	<	30
b-ENDOSULFAN	30	<	30
4,4'-DDT	30	<	30
ENDRIN ALDEHYDE	30	<	30
ENDOSULFAN SULFATE	30	<	30
METHOXYCHLOR	30	<	30
CHLORDANE	20	<	20
TOXAPHENE	90	<	90

PHTHALATES	MRC (ng/g)		RESULT (ng/g)
DIMETHYL PHTHALATE	600		140000
DIETHYL PHTHALATE	60	<	60
DI-n-BUTYL PHTHALATE	600		4300
BUTYLBENZYL PHTHALATE	30	<	30
bis(2-ETHYLHEXYL) PHTHALATE	30		20000
DI-n-OCTYL PHTHALATE	30	<	30

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - ng/l WATER - ug/l SOIL - ng/g

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 601560
Source: DEPEW, 359 DUFFY AVE., HICKSVILLE
Matrix: SOIL
Site: OUTDOORS
Date Sampled: 10/08/86
Date of Report: 12/22/86

HALOGENATED PESTICIDES	MRC (ng/g)		RESULT (ng/g)
HEXACHLOROBENZENE	20	------ <	20
a-BHC	20	------ <	20
g-BHC	20	------ <	20
b-BHC	20	------ <	20
HEPTACHLOR	20	------ <	20
d-BHC	20	------ <	20
ALDRIN	20	------ <	20
HEPTACHLOR EPOXIDE	20	------ <	20
a-ENDOSULFAN	20	------ <	20
4,4'-DDE	20	------ <	20
DIELDRIN	20	------ <	20
ENDRIN	20	------ <	20
4,4'-DDD	20	------ <	20
b-ENDOSULFAN	20	------ <	20
4,4'-DDT	20	------ <	20
ENDRIN ALDEHYDE	20	------ <	20
ENDOSULFAN SULFATE	20	------ <	20
METHOXYCHLOR	20	------ <	20
CHLORDANE	20	------ <	20
TOXAPHENE	60	------ <	60

PHTHALATES	MRC (ng/g)		RESULT (ng/g)
DIMETHYL PHTHALATE	400	------	87000
DIETHYL PHTHALATE	40	------ <	40
DI-n-BUTYL PHTHALATE	40	------	13000
BUTYLBENZYL PHTHALATE	20	------	54000
bis(2-ETHYLHEXYL) PHTHALATE	20	------	1900
DI-n-OCTYL PHTHALATE	20	------ <	20

==========

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

REFERENCE 51

NYSDEC013350

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

AGE 1 RESULTS OF EXAMINATION FINAL REPORT

S PLE ID: 871009072 SAMPLE RECEIVED:87/06/25/11 CHARGE: 18.16
ROGRAM: 6301:DIV. SOLID & HAZARDOUS WASTE - DEC REGION 1
OURCE ID: DRAINAGE BASIN:17 GAZETTEER CODE:2952
POLITICAL SUBDIVISION:OYSTER BAY COUNTY:NASSAU
ATITUDE:40 45 33. LONGITUDE:73 32 55. Z DIRECTION:
OCATION: HICKSVILLE NY DEPEW MANUFACTURING CO.
DESCRIPTION:HOLLYWOOD COMMERCIAL 359 DUFFY AVE.LAGOON-PIT DS-1
EPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
EST PATTERN: 10-035:PRIORITY POLLUTANT METALS IN SOIL/SEDIMENTS
AMPLE TYPE: 600:SOIL, SAND
TIME OF SAMPLING: 87/06/23 13:33 TO 87/06/23 13:38 DATE PRINTED:87/08/03

DATA REPORTED WITH UNITS OF MG/L OR MCG/L ARE
ANALYTICAL VALUES OBTAINED ON THE EP-TOX LEACHATE.

PARAMETER	RESULT	
SOLIDS, DRY	STONES	NA
ANTIMONY IN DRY SOLIDS	< 0.5 MCG/G	
ARSENIC IN DRY SOLIDS	13. MCG/G	
BERYLLIUM IN DRY SOLIDS	< 0.2 MCG/G	
CADMIUM IN DRY SOLIDS	5.0 MCG/G	
CHROMIUM IN DRY SOLIDS	40. MCG/G	
COPPER IN DRY SOLIDS	52. MCG/G	
LEAD IN DRY SOLIDS	86. MCG/G	
MERCURY IN DRY SOLIDS	0.27 MCG/G	
NICKEL IN DRY SOLIDS	23. MCG/G	
SELENIUM IN DRY SOLIDS	< 0.5 MCG/G	
SILVER IN DRY SOLIDS	< 2. MCG/G	
THALLIUM IN DRY SOLIDS	< 1. MCG/G	
ZINC IN DRY SOLIDS	140. MCG/G	
DIGESTION OF SOLIDS FOR METALS	DONE	
DIGESTION OF SOLIDS FOR HG	DONE	

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

PARAMETER	RESULT	EP TOX mg/l
ARSENIC	< 10. MCG/L	5
SELENIUM	< 5. MCG/L	1
MERCURY	0.2 MCG/L	0.2
CADMIUM	< 0.02 MG/L	1
CHROMIUM	< 0.1 MG/L	5
LEAD	< 0.1 MG/L	5
BARIUM	< 0.5 MG/L	100
SILVER	< 0.02 MG/L	5
PREP OF SAMPLE FOR EP TOX	DONE	

NYSDEC013351

**** END OF REPORT ****

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N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
REGION 1 HEADQUARTERS
BUILDING 40,STATE UNIVERSITY OF N.Y. SUBMITTED BY:A CANDELLA
STONY BROOK,N.Y. 11790

REFERENCE 52

code of federal regulations

Protection of Environment

40

PARTS 190 to 399

Revised as of July 1, 1987

CONTAINING
A CODIFICATION OF DOCUMENTS
OF GENERAL APPLICABILITY
AND FUTURE EFFECT

AS OF JULY 1, 1987

With Ancillaries

Published by
the Office of the Federal Register
National Archives and Records
Administration

as a Special Edition of
the Federal Register

NYSDEC013353

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[50 FR 49203, Nov. 29, 1985, as amended at 51 FR 28682, Aug. 8, 1986; 51 FR 40637, Nov. 7, 1986; 52 FR 11821, Apr. 13, 1987]

§ 261.7 Residues of hazardous waste in empty containers.

(a)(1) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under Parts 261 through 265, or Part 268, 270 or 124 of this chapter or to the notification requirements of section 3010 of RCRA.

(2) Any hazardous waste in either (i) a container that is not empty or (ii) an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under Parts 261 through 265, and Parts 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§ 261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.*, pouring, pumping, and aspirating, *and*

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*

(iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§ 261.31, 261.32, or 261.33(e) is empty if:

(i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

[45 FR 78529, Nov. 25, 1980, as amended at 47 FR 36097, Aug. 18, 1982; 48 FR 14294, Apr. 1, 1983; 50 FR 1999, Jan. 14, 1985; 51 FR 40637, Nov. 7, 1986]

Subpart B—Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste

§ 261.10 Criteria for identifying the characteristics of hazardous waste.

(a) The Administrator shall identify and define a characteristic of hazardous waste in Subpart C only upon determining that:

(1) A solid waste that exhibits the characteristic may:

(i) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(ii) Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(2) The characteristic can be:

(i) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(ii) Reasonably detected by generators of solid waste through their knowledge of their waste.

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§ 261.11 Criteria for listing hazardous waste.

(a) The Administrator shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(1) It exhibits any of the characteristics of hazardous waste identified in Subpart C.

(2) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(3) It contains any of the toxic constituents listed in Appendix VIII unless, after considering any of the following factors, the Administrator concludes that the waste is not capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:

(i) The nature of the toxicity presented by the constituent.

(ii) The concentration of the constituent in the waste.

(iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.

(iv) The persistence of the constituent or any toxic degradation product of the constituent.

(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into nonharmful constituents and the rate of degradation.

(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

(vii) The plausible types of improper management to which the waste could be subjected.

(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.

(ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

(x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

(xi) Such other factors as may be appropriate.

Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

(Wastes listed in accordance with these criteria will be designated Toxic wastes.)

(b) The Administrator may list classes or types of solid waste as hazardous waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in section 1004(5) of the Act.

(c) The Administrator will use the criteria for listing specified in this section to establish the exclusion limits referred to in § 261.5(c).

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[*Comment*: § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart]

(b) A hazardous waste which is identified by a characteristic in this subpart, but is not listed as a hazardous

waste in Subp
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forth in the r
in this subpart
used in compl
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(c) For purpo
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[45 FR 33119, May
48 FR 14294, Apr. 1
7, 1986]

§ 261.21 Character

(a) A solid wast
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the following pro

(1) It is a liquid
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percent alcohol
flash point less t
determined by
Closed Cup Tes
method specified
D-93-79 or D-93-
reference, see § 26
Closed Cup Tes
method specified
D-3278-78 (incorp
see § 260.11), or a
equivalent test m
the Administrato
set forth in §§ 260.

(2) It is not a li
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absorption of mois
chemical changes
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(3) It is an ignit
as defined in 49 (
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93-135 O—87——13

lausible types of improper
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ministrator may list class-
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as reason to believe that
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§ 261.5(c).

—Characteristics of
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waste in Subpart D, is assigned the EPA Hazardous Waste Number set forth in the respective characteristic in this subpart. This number must be used in complying with the notification requirements of section 3010 of the Act and certain recordkeeping and reporting requirements under Parts 262 through 265, 268, and Part 270 of this chapter.

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in Appendix I to be a representative sample within the meaning of Part 260 of this chapter.

[*Comment:* Since the Appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 51 FR 40636, Nov. 7, 1986]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21. The EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11) or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21.

(b) A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

93-135 O—87——13

NYSDEC013356

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D003.

§ 261.24 Characteristic of EP toxicity.

(a) A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in Appendix II or equivalent methods approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table I at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

(b) A solid waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE I—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY

EPA hazardous waste number	Contaminant	Maximum concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimethano-naphthalene	0.02
D013	Lindane (1,2,3,4,5,6-hexa- chlorocyclohexane, gamma isomer.	0.4
D014	Methoxychlor (1,1,1-Trichloro-2,2-bis [p-methoxyphenyl]ethane).	10.0
D015	Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine).	0.5
D016	2,4-D, (2,4-Dichlorophenoxyacetic acid).	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid).	1.0

Subpart D—Lists of Hazardous Wastes

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§ 260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this Subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
EP Toxic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Appendix VII identifies the constituent which caused the Administrator to list the waste as an EP Toxic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32.

(c) Each hazardous waste listed in this subpart is assigned an EPA Haz

NYSDEC013357

REFERENCE 53

NYSDEC013358

DENSE CHLORINATED SOLVENTS

IN POROUS AND FRACTURED MEDIA

MODEL EXPERIMENTS

By Friedrich Schwille

With Assistance From
Wolfmar Bertsch, Renate Linke
Walter Reif, Sigmund Zauter

Translated By James F. Pankow

ENGLISH LANGUAGE EDITION

LEWIS PUBLISHERS

NYSDEC013359

REFERENCE 57

15 (12-75)

New York State Department of Environmental Conservation

HWR-92-4046
November 16, 1992

MEMORANDUM

O: Regional Haz. Waste Remediation Engineers, Bureau Dirs. & Section Chiefs
R M: Michael J. O'Toole, Jr., Director, Div. of Hazardous Waste Remediation
U ECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM: DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS

A T: NOV 16 1992

Michael J. O'Toole Jr.

The cleanup goal of the Department is to restore inactive hazardous waste sites to predisposal conditions, to the extent feasible and authorized by law. However, it is recognized that restoration to predisposal conditions will not always be feasible.

1. INTRODUCTION:

This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not possible or feasible.

The process starts with development of soil cleanup objectives by the Technology Section for the contaminants identified by the Project Managers. The Technology Section uses the procedure described in this TAGM to develop soil cleanup objectives. Attainment of these generic soil cleanup objectives will, at a minimum, eliminate all significant threats to human health and/or the environment posed by the inactive hazardous waste site. Project Managers should use these cleanup objectives in selecting alternatives in the Feasibility Study (FS). Based on the proposed selected remedial technology (outcome of FS), final site specific soil cleanup levels are established in the Record of Decision (ROD) for these sites.

It should be noted that even after soil cleanup levels are established in the ROD, these levels may prove to be unattainable when remedial construction begins. In that event, alternative remedial actions or institutional controls may be necessary to protect the environment.

2. BASIS FOR SOIL CLEANUP OBJECTIVES:

The following alternative bases are used to determine soil cleanup objectives:

(a) Human health based levels that correspond to excess lifetime cancer risks of one in a million for Class A[1] and B[2] carcinogens, or one in 100,000 for Class C[3] carcinogens. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;

ACTUAL HEAST VALUES? NEED TO CK NO FACTOR APPLIED AS PRIOR STD.

(b) Human health based levels for systemic toxicants, calculated from

NYSDEC013361

REFERENCE 58

Maximum Concentration of Contaminants for the Toxicity Characteristic

EPA HW Number[1]	Contaminant	CAS Number[2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	200.0
D024	m-Cresol	108-39-4	200.0
D025	p-Cresol	106-44-5	200.0
D026	Cresol		200.0
D016	2, 4-D	94-75-7	10.0
D027	1, 4-Dichlorobenzene	106-46-7	7.5
D028	1, 2-Dichloroethane	107-06-2	0.5
D029	1, 1-Dichloroethylene	75-35-4	0.7
D030	2, 4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its hydroxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2, 4, 5-Trichlorophenol	95-95-4	400.0
D042	2, 4, 6-Trichlorophenol	88-06-2	2.0
D017	2, 4, 5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

[1]Hazardous waste number.
[2]Chemical abstracts service number.

Sampling Requirements

Parameters	Matrix	Sample Size	Container	Preservative
Non-volatile extraction	Solid	200 g	Glass	Cool @ 4^0C
Zero Headspace extraction	Solid	200 g	Glass	Cool @ 4^0C
Inorganics	Liquid	1000 ml	Plastic	Cool @ 4^0C HNO_3 to ph < 2
Extractables	Liquid	3 @ 1000 ml	Glass	Cool @ 4^0C
Volatiles	Liquid	2 @ 40 ml	Glass	Cool @ 4^0C
Pesticides and Herbicides	Liquid	2 @ 1000 ml	Glass	Cool @ 4^0C

Maximum Sample Holding Time

[Days]

	From: Field collection To: TCLP extraction	From: TCLP extraction To: Preparative extraction	From: Preparative extraction To: Determinative analysis	Total Elapsed Time
Volatiles	14	NA	14	28
Semi-volatiles	7 14	7	40	54
Mercury	28	NA	28	56
Metals, except mercury	180	NA	180	360

NA = Not applicable.

NYSDEC013363

REFERENCE 59

Department of Environmental Conservation

LAWLER,

MA

Division of Hazardous Substances Regulation

6 NYCRR Part 371

Identification and Listing of Hazardous Wastes

January 31, 1992

NYSDEC013365

New York State Department of Environmental Conservation

MARIO M. CUOMO, *Governor* THOMAS C. JORLING, *Commissioner*

U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
SEE F027 ...	2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
SEE F027 ...	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U158	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U328	o-Toluidine
U353	p-Toluidine
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethene
U228	Trichloroethylene
U121	Trichloromonofluoromethane
SEE F027 ...	2,4,5-Trichlorophenol
Do.	2,4,6-Trichlorophenol
Do.	2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,5-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5-(bis(2-chloroethyl)amino)-
U237	Uracil mustard
U043	Vinyl chloride
U248	Warfarin, when present at concentrations of 0.3% or less
U239	Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-(3,4,5-trimethoxy-benzoyl)oxy)-, methyl ester
U249	Zinc phosphide, when present at concentrations of 10% or less

(e) Wastes containing polychlorinated biphenyls (PCB's).

(1) All solid wastes containing 50 parts per million (ppm) by weight (on a dry weight basis) or greater of polychlorinated biphenyls (PCB's) are

NYSDEC013366

listed hazardous wastes, excluding small capacitors as defined in paragraph (3) of this subdivision and PCB Articles drained in accordance with subparagraphs (2)(ii) and (iii) of this subdivision. PCB Articles that contain less than 50 ppm PCB's are not regulated as hazardous waste. Oils in or from electrical equipment whose PCB concentration is unknown, except circuit breakers, reclosers, and cable must be assumed to contain between 50 and 500 ppm PCB and are listed hazardous waste. "PCB" and "PCB's" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees. Any chemical waste, combination of waste, or environmental media that contains less than 50 ppm PCB's are listed hazardous wastes only as specifically provided in paragraph (2) of this subdivision. Wastes that may contain PCB's include dielectric fluids, contaminated solvents, waste oil, heat transfer fluids, hydraulic fluids, dredge spoils, and material contaminated as a result of spills. The Hazardous Code for these PCB wastes shall be Toxic Waste (T).

"Environmental media" means naturally occurring, non-living substances, including soil, sediment, rock, groundwater, surface water, surface runoff, air, and only such animal and vegetable matter as may be incidentally contained therein (e.g., soil and water bacteria, underground roots, skeletal remains, etc.).

These wastes shall have Hazardous Waste Numbers assigned as follows:

DEC Hazardous Waste Number	Waste
B001	PCB Oil (concentrated) from transformers, capacitors, etc.
B002	Petroleum oil or other liquid containing 50 ppm or greater of PCB's, but less than 500 ppm PCB's. This includes oil from electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers and cable.
B003	Petroleum oil or other liquid containing 500 ppm or greater of PCB's.
B004	PCB Articles containing 50 ppm or greater of PCB's, but less than 500 ppm PCB's, excluding small capacitors. This includes oil-filled electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers, and cable.
B005	PCB Articles, other than transformers, that contain 500 ppm or greater of PCB's, excluding small capacitors.

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B006	PCB Transformers. "PCB Transformers" means any transformer that contains 500 ppm PCB or greater.
B007	Other PCB Wastes including contaminated soil, solids, sludges, clothing, rags and dredge material.

(Note: PCB's are also regulated by 40 CFR Part 761. A person must comply with both this Part and 40 CFR Part 761 (see subdivision 370.1(e)).

(2) Drained PCB Articles

(i) Except as provided in subparagraphs (ii) and (iii) of this paragraph, drained PCB Articles containing at least 50 ppm PCB's are regulated as hazardous waste.

(ii) PCB Articles, except capacitors, that contain between 50 and 500 ppm PCB, are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the article. The drained liquid is a listed hazardous waste, as is any solvent used for flushing.

(iii) (a) Hydraulic machines containing less than 1000 ppm PCB are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the hydraulic machine. The drained liquid is a listed hazardous waste, as is any solvent used for flushing.

(b) Hydraulic machines containing 1000 ppm PCB or greater are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the hydraulic machine, and the drained hydraulic machine is flushed with a solvent in which PCB's are readily soluble. The solvent to be used for flushing must contain less than 50 ppm PCB. The drained liquid and the solvent used for flushing are listed hazardous wastes.

(3) Definitions

(i) "PCB Article" means any manufactured article, other than a PCB Container, that contains PCB's and whose surface(s) has been in direct contact with PCB's. "PCB Article" includes capacitors, transformers, electric motors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, cable, hydraulic machines, pumps, pipes, and any other manufactured item which is formed to a specific shape or design during manufacture, has end use function(s) dependent in whole or in part upon its shape or design during end use, and has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.

NYSDEC013368

(ii) "Small Capacitor" means a capacitor which contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lb.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.)

(4) Testing Procedures. The procedures in 40 CFR 761.60(g) (see subdivision 370.1(e) of this Part) will be used to determine the concentration of PCB's, unless a petition for equivalent testing or analytical methods is submitted and approved per section 370.3 of this Title.

REFERENCE 60

THE SOIL CHEMISTRY OF HAZARDOUS MATERIALS

James Dragun, Ph.D.

Hazardous Materials Control Research Institute
Silver Spring, Maryland

NYSDEC013371

REFERENCE 61

NYSDEC013372

federal register

Thursday
April 2, 1987

Part III

Environmental Protection Agency

40 CFR Part 761

Polychlorinated Biphenyls Spill Cleanup Policy; Final Rule

NYSDEC013373

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 761

[OPTS 62051; FRL 3179-1]

Polychlorinated Biphenyls Spill Cleanup Policy

AGENCY: Environmental Protection Agency (EPA).

ACTION: TSCA PCB spill cleanup policy rule.

SUMMARY: This rule presents the Toxic Substances Control Act (TSCA) policy for the cleanup of spilled polychlorinated biphenyls (PCBs). The TSCA policy establishes the measures which EPA considers to be adequate cleanup for the majority of situations where PCB contamination occurs during activities regulated under TSCA. While cleanup in accordance with this policy constitutes adequate cleanup of spills within the scope of this policy and creates a presumption against enforcement for penalties or further cleanup, EPA will not exercise enforcement abeyance for a disposal violation if the spill was the result of gross negligence or knowing violation.

Since this rule is a policy statement, it does not require notice and comment under the provisions of the Administrative Procedures Act. However, the Agency welcomes comment on and additional relevant information about the TSCA policy.

DATE: The TSCA policy shall be effective on May 4, 1987.

ADDRESSES: Information or comments for consideration by the Agency should be submitted in triplicate to: TSCA Public Information Office (TS-793), Office of Toxic Substances, Environmental Protection Agency, Rm. G004 NE Mall, 401 M St., SW., Washington, DC 20460.

Information and comments should include the docket number OPTS-62051. Information and comments received in connection with this document will be available for reviewing and copying from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays, in Rm. G004 NE Mall, Environmental Protection Agency, 401 M St., SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Edward A. Klein, Director, TSCA Assistance Office (TS-799), Office of Toxic Substances, Environmental Protection Agency, Rm. E-543, 401 M St., SW., Washington, DC 20460, (202-554-1404).

SUPPLEMENTARY INFORMATION:

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I. Background

EPA regulations controlling the disposal of PCBs, promulgated in the **Federal Register** of February 17, 1978 (43 FR 7150) and May 31, 1979 (44 FR 31514), broadly define the term "disposal" to encompass accidental as well as intentional releases of PCBs to the environment. Under these regulations, EPA considers intentional, as well as unintentional, spills, leaks and other uncontrolled discharges of PCBs at concentrations of 50 parts per million (ppm) or greater (defined by the concentration of PCBs in the material which spills) to be improper disposal of PCBs. For purposes of this discussion, and as defined in this policy under Unit III, the term "Spill" means spills, leaks, or other uncontrolled discharges of PCBs where the release results in any quantity of PCBs running off or about to run off the surface of the equipment or other PCB source, as well as the contamination resulting from those releases. When PCBs are improperly disposed of as a result of a spill of material containing 50 ppm or greater PCBs, EPA has the authority under section 17 of TSCA to compel persons to take actions to rectify damage or clean up contamination resulting from the spill.

Policies for the cleanup of PCB spills are currently established separately by each EPA regional office, and owners of spilled PCBs are required to meet these standards or face potential penalties under TSCA section 16 for improper disposal of PCBs. Once cleanup occurs to the standard set by the EPA regional offices, the material which has been cleaned, e.g., soil, metal, or equipment, may be processed, distributed in commerce and used (unless the regional office has placed restrictions on these other activities).

EPA standards for the cleanup of spilled PCBs have been established at the EPA regional office level since 1978. Each region sets PCB cleanup standards in the form of general guidelines and then applies the general guidelines on a case-by-case basis for specific spill situations. The general guidelines and their application to spills have differed among regions. For certain spill situations, regions have required cleanup to 50 ppm PCBs. In other spill situations, regions have required cleanup to preexisting background levels or the limit of detection of PCBs.

For PCB spill cleanup, EPA has already in place certain requirements for timely cleanup. In the final PCB Electrical Equipment Rule, published in the **Federal Register** of August 25, 1982 (47 FR 37342), EPA requires the initiation of PCB Transformer spill cleanup within 48 hours of spill discovery and defines disposal specifically to include leaks, spills, and other unintentional discharges of PCBs. However, the PCB Electrical Equipment Rule did not establish numerical criteria for PCB spill cleanup.

Most recently, the regions have applied the "lowest practicable level" guideline set up in the January 27, 1984, Administrative Law Judge decision on *General Electric* v. *U.S.E.P.A.* The Agency has, however, experienced several areas of difficulty in applying the "lowest practicable level" approach. First, the guideline is subject to, and has resulted in, disparate interpretations. Second, the term "lowest practicable level" cannot be easily applied by the regulated community without guidance from EPA. This can delay cleanup, and delays in cleanup can result in prolonged exposures to humans and more widespread environmental contamination. Finally, the owner of the PCBs may disagree with the EPA regional office's interpretation of the "lowest practicable level" standard. This may occur when the EPA regional office interpretation would require more stringent and costly measures than the owner believes are warranted. This too can delay complete cleanup, as the application of this guideline has, in fact, led to protracted Agency actions in some cases.

Although EPA did not finalize the proposed PCB spill cleanup policy in 1982, EPA has continued to evaluate available information on the risks posed by spilled PCBs and the costs associated with cleanup to various levels. EPA recognized that setting a nationwide TSCA PCB cleanup policy was a desirable goal and in the winter of 1984 EPA produced a draft TSCA Compliance Monitoring Program Policy covering PCB spill cleanup. Although the 1984 draft policy was never officially released, the members of the press and the public acquired and reviewed the draft policy. The Environmental Defense Fund (EDF), Natural Resources Defense Council (NRDC), Edison Electric Institute (EEI), Chemical Manufacturers Association (CMA), and National Electrical Manufacturers Association (NEMA), among others, were principal reviewers of the 1984 draft policy.

On May 17, 1985 EDF, NRDC, EEI, CMA, and NEMA submitted to EPA an alternative PCB spill cleanup policy for consideration by the Agency. EPA viewed the Consensus Agreement as a framework for completing its nationwide TSCA policy and evaluated the Consensus Agreement as a source of information in developing the Agency's own policy. The Agency and the Consensus Group shared two general principles about the appropriate framework for a nationwide PCB spills cleanup policy: That the policy should establish requirements designed to be effective in the large majority of spill situations; and that the risks posed by residual contamination (PCBs remaining after cleanup) vary depending upon the location of the spill and the potential for human exposures.

The requirements and standards in this policy are based upon the Agency's evaluation of the potential routes of exposure and potential risks associated with the more common types of PCB spills, as well as the costs associated with cleanup following these more common types of spills. Typical PCB spills involve the limited release of PCBs during the course of EPA-authorized activities such as: The use of electrical equipment (e.g., transformers and capacitors), the servicing of electrical equipment, and the storage for disposal of PCBs.

In establishing this cleanup policy for typical PCB spills, EPA recognizes that the risks posed by spills of PCBs vary, depending upon spill location and the amount of PCBs spilled. EPA recognized this earlier, in both the August 25, 1982 PCB Electrical Equipment Rule and the July 17, 1985 PCB Transformer Fires Rule. In these rules, EPA placed more stringent requirements on higher concentration PCBs located in areas where their release would pose greatest potential for significant human exposure.

This TSCA policy requires cleanup of PCBs to different levels depending upon spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of the PCBs initially spilled (i.e., PCBs spilled from PCB-contaminated equipment versus PCBs spilled from PCB equipment), and the nature and size of the population potentially at risk of exposure. Thus, this policy applies the most stringent requirements for PCB spill cleanup to areas where there is the greater potential for human exposures to spilled PCBs. The policy applies less stringent requirements for cleanup to PCB spills in areas where the type and degree of contact present lower potential exposures. Finally, even less stringent requirements apply to areas where there is little potential for any direct human exposures.

EPA firmly believes that by providing uniform, predictable requirements across the regions for the majority of spill situations, the nationwide policy will reduce the risks posed by spills of PCBs by encouraging rapid and effective cleanup and restoration of the site.

Unit VII of this document discusses available information and the rationale for the policy based upon that information. The policy reflects the Agency's best judgment in light of available information. However, the Agency welcomes comment on, and additional relevant information about, the TSCA policy as the Agency intends to continue to consider comments and evaluate information on the issue of PCB spills cleanup. Should the Agency's evaluation show that new information, or practical considerations associated with the implementation of the policy, warrant changes in, or modifications to, the policy, the policy will be revised accordingly by EPA headquarters. Thus, a public docket has been established to collect comments and information. The Agency believes that much of the data currently lacking can be developed only over a period of time and experience in implementing the policy. Therefore, EPA has not placed a time limit on the submission of comments.

Finally, the Agency intends to re-examine in 12 to 18 months the need to promulgate regulations requiring cleanup in accordance with Agency standards. The Agency's decision on the need to promulgate regulations will be based on two primary considerations. First, EPA will consider whether the issuance of the policy has in fact resulted in the application of consistent nationwide standards to PCB spill cleanup. Second, EPA will consider its experience in enforcing provisions of this policy with particular emphasis on the results of any litigation brought by the Agency for improper PCB disposal from leaks or spills.

II. Scope of the Policy

This policy establishes requirements for the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy applies to spills which occur after the effective date of this policy.

Existing spills (spills which occurred prior to the effective date of this policy) are excluded from the scope of this policy for two reasons: (1) For old spills which have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill in accordance with requirements imposed by EPA through its regional offices, nor is this policy intended to interfere with ongoing litigation of enforcement actions which bring into issue PCB spills cleanup; and (2) EPA recognizes that old spills which are discovered after the effective date of this policy will require site-by-site evaluation because of the likelihood that the site involves more pervasive PCB contamination than fresh spills and because old spills are generally more difficult to clean up than fresh spills (particularly on porous surfaces such as concrete). Therefore, spills which occurred before the effective date of this policy are to be decontaminated to requirements established at the discretion of EPA, usually through its regional offices.

EPA expects the large majority of PCB spills subject to the TSCA PCB regulations to conform to the typical spill situations considered in developing this policy. However, this policy does exclude from application of the final numerical cleanup standards certain spill situations: Spills directly into surface water, drinking water, sewers, grazing lands, and vegetable gardens. While these spills are subject to the notification requirements and to measures designed to minimize further environmental contamination (see Unit IV.A.), final cleanup standards for these types of spills are to be established at the discretion of the EPA regional offices.

For all other spills, EPA generally expects the final decontamination standards of this policy to apply. Occasionally, some small percentage of spills covered by this policy may

warrant different or more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those assumed in developing the final cleanup standards of this policy.

There may also be exceptional spill situations that require less stringent cleanup, or a different approach to cleanup, due to factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.

A. Excluded Spills

Although the following six spill situations are excluded from the automatic application of final numerical decontamination standards of Units IV.B and C, the general requirements under Unit IV.A do apply to these spills. In addition, all of these excluded situations require practicable, immediate actions to contain the area of contamination. While these situations may not always require more stringent cleanup measures, the Agency is excluding these situations because they will always involve significant factors that may not be adequately addressed by cleanup standards based upon typical spill characteristics.

For the following six spill situations, the responsible party shall decontaminate the spill in accordance with site-specific requirements established by the EPA regional offices:

1. Spills that result in the direct contamination of surface waters (surface waters include, but are not limited to, "waters of the United States" as defined in 40 CFR Part 122, ponds, lagoons, wetlands, and storage reservoirs).
2. Spills that result in the direct contamination of sewers or sewage treatment systems.
3. Spills that result in the direct contamination of any private or public drinking water sources or distribution systems.
4. Spills which migrate to and contaminate surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with this policy.
5. Spills that contaminate animal grazing lands.
6. Spills that contaminate vegetable gardens.

B. Spill Situations Within the Scope of the Policy That May Warrant More Stringent Cleanup Levels

For spills within the scope of this policy, EPA generally retains the authority to require additional cleanup upon finding that, despite good faith efforts by the responsible party, the numerical decontamination levels in the policy have not been met (see discussion in Unit VI). In addition, EPA foresees the possibility of exceptional spill situations in which site-specific risk factors may warrant additional cleanup to more stringent numerical decontamination levels than are required by the policy. In these situations, the Regional Administrator has the authority to require additional cleanup upon finding, based upon the specific facts of the spill, that further cleanup must occur to prevent unreasonable risk. Before making a final decision on additional cleanup, the Regional Administrator will notify the Director of the Office of Toxic Substances of his finding and the basis for the finding.

For example, site-specific characteristics such as short depth to ground water, type of soil, or the presence of a shallow well may pose exceptionally high potential for ground water contamination by PCBs remaining after cleanup to the standards specified in this policy. Spills that pose such a high degree of potential for ground water contamination have not been excluded from the policy under Unit II.A.1 because the presence of such potential may not be readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is in fact a significant concern.

C. EPA Flexibility To Allow Less Stringent or Alternative Requirements

EPA retains the flexibility to allow less stringent or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site, or that site-specific characteristics make the costs of cleanup prohibitive.

The Regional Administrator will notify the Director of OTS of any decision (and the basis for that decision) to all less stringent cleanup. The purpose of this notification is to enable the Director of OTS to ensure consistency in standards for spill cleanup under special circumstances across the regions.

D. The Relationship of This Policy to Other Statutes

This policy does not affect cleanup standards or requirements for the reporting of spills imposed, or to be imposed, under other Federal Statutory authorities, including but not limited to, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Where more than one requirement applies, the stricter standard must be met.

The Agency recognizes that the existence of this policy will inevitably result in attempts to apply the standards to situations within the scope of other statutory authorities. However, other statutes require the Agency to consider different or alternative factors in determining appropriate corrective actions. In addition, the types and magnitudes or exposures associated with sites requiring corrective action under other statutes often involve important differences from those expected of the typical, electrical equipment-type spills considered in developing this policy. Thus, cleanups under other statutes, such as RCRA corrective actions or remedial and emergency response actions under SARA, may result in different outcomes.

III. Definitions

For purposes of this policy, certain words and phrases are used to denote specific materials, procedures, or circumstances. The following definitions are provided for purposes of clarity and are not to be taken as exhaustive lists of situations and materials covered by the policy.

1. *PCBs.* The term means polychlorinated biphenyls as defined in 40 CFR 761.3. As specified in 40 CFR 761.1(b), no requirements may be avoided through dilution of the PCB concentration.

2. *Low-concentration PCBs.* The term means PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials which EPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid).

3. *High-concentration PCBs.* The term means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing.

4. *Spill.* The term as used in this policy means both intentional and

unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. This policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs, and is subject to the relevant requirements of this policy.

5. *Residential/commercial areas.* Residential/commercial areas are those areas where people live or reside, or where people work in other than manufacturing or farming industries. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers.

6. *Outdoor electrical substations.* Outdoor electrical substations are outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power. Outdoor electrical substations restrict public access by being fenced or walled off as defined at 40 CFR 761.30(1)(1)(ii). For purposes of this TSCA Policy, outdoor electrical substations are defined as being located at least 0.1 kilometer (km) from a residential/commercial area. Outdoor fenced-off and restricted access areas used in the transmission and/or distribution of electrical power which are located less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.

7. *Other restricted access (nonsubstation) locations.* Other restricted access (nonsubstation) locations are areas other than electrical substations that are at least 0.1 km from a residential/commercial area and limited by man-made barriers (e.g., fences and walls) or substantially limited by naturally occurring barriers such as mountains, cliffs, or rough terrain. These areas generally include industrial facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.)

8. *Nonrestricted access areas.* A nonrestricted access area is any area other than restricted access, outdoor electrical substations, and other restricted access locations, as defined in paragraphs 5 and 6 of this unit. In addition to residential/commercial areas, these areas include unrestricted access rural areas (areas of low-density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs).

9. *High-contact residential/commercial surface.* A high-contact residential/commercial surface is a surface in a residential/commercial area which is repeatedly touched, often for relatively long periods of time. Doors, wall areas below 6 feet in height, uncovered flooring, windowsills, fencing, banisters, stairs, automobiles, and children's play areas, such as outdoor patios and sidewalks, are examples of high-contact residential/commercial surfaces. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above 6 feet in height, roofs, asphalt roadways, concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

10. *High-contact industrial surface.* A high-contact industrial surface is a surface in an industrial setting which is repeatedly touched, often for relatively long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. High-contact industrial surfaces are generally of impervious solid material. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways and sidewalks in the industrial area, utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components, indoor vaults, and pipes.

11. *Soil.* The term means all vegetation, soils and other ground media, including but not limited to sand, grass, gravel, and oyster shells. It does not include concrete and asphalt.

12. *Impervious solid surfaces.* The term means solid surfaces which are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces.

13. *Nonimpervious solid surfaces.* The term means solid surfaces which are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Nonimpervious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.

14. *Double wash/rinse.* The double wash/rinse procedural performance standard applied in this policy means a minimum requirement to cleanse solid surfaces (both impervious and non-impervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.

15. *Standard wipe test.* For spills of high concentration PCBs on solid surfaces, this policy requires cleanup to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 centimeters (cm) X 10 cm) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. EPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test. Further, EPA requires the collection and testing of field blanks and replicates.

16. *Requirements and standards.* The term "requirements," as used in this policy means both the procedural responses and numerical decontamination levels set forth in this policy as constituting adequate cleanup of PCBs. The term "standards" means the numerical decontamination levels set forth in this policy.

17. *Spill area.* The term means the area of soil on which visible traces of the spill can be observed plus a buffer

zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area, or on which visible traces of the spilled material are observed, is included in the spill area. This area represents the minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area which must be cleaned.

18. *Spill boundaries.* The term means the actual area of contamination as determined by postcleanup verification sampling, or by precleanup sampling to determine actual spill boundaries. EPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in this policy (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in paragraph 13 of this unit, did not encompass the actual boundaries of PCB contamination).

IV Requirements for PCB Spill Cleanup

A. General Requirements

Unless expressly limited, the reporting, disposal, and precleanup sampling requirements in this unit apply to all spills of PCBs at concentrations of 50 ppm or greater which are subject to decontamination requirements under TSCA, including those spills listed in Unit II.A.1 through 6 which are excluded from the final cleanup standards in Units IV. B and C.

1. *Reporting requirements.* The following reporting is required in addition to applicable reporting requirements under the CWA or CERCLA. For example, under the National Contingency Plan all spills involving 10 lbs or more of PCB material must currently be reported to the National Response Center (1-800-424-8802). The requirements below are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on the governments as well as the regulated community.

a. Where a spill directly contaminates surface water, sewers, or drinking water supplies (see discussion under Unit II.A), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

b. Where a spill directly contaminates grazing lands or vegetable gardens (see discussion under Unit II.A), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and proceed with the immediate requirements specified in Unit IV.B or C, depending of the source of the spill, in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

c. Where a spill exceeds 10 pounds of PCB material (generally 1 gallon of PCB dielectric fluid) and is not addressed in paragraph 1.a. or b. of this unit, the responsible party will notify the appropriate EPA regional office and proceed to decontaminate the spill area in accordance with this TSCA policy in the shortest possible time after discovery, but in no case later than 24 hours after discovery. For purposes of the notification requirement, the 10 pounds are measured by the weight of the PCB-containing material spilled rather than by the weight of only the PCBs spilled.

d. Spills of 10 pounds of less which are not addressed in paragraphs 1. a. or b. of this unit must cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of EPA is not required.

2. *Disposal of cleanup debris and materials.* All contaminated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under this policy shall be properly stored, labeled, and disposed of in accordance with the provisions of 40 CFR 761.60.

3. *Determination of spill boundaries in the absence of visible traces.* For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by using a statistically based sampling scheme.

B. Requirements for Cleanup of Low-Concentration Spills Which Involve Less Than 1 LB PCBs By Weight (Less Than 270 Gallons of Untested Mineral Oil)

1. *Decontamination requirements.* Spills of low-concentrations PCBs (as defined in Unit III) which involve less than 1 pound of PCBs by weight (i.e., less than 270 gallons of untested mineral oil containing less than 500 ppm PCBs) shall be cleaned in the following manner:

a. Solid surfaces must be double washed/rinsed (as defined in Unit III) except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters (100 $\mu g/cm^2$) by standard commercial wipe tests.

b. All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated and the ground be restored to its original configuration by back-filling with clean soil (i.e., containing less than 1 ppm PCBs).

c. Requirements in paragraphs 1. a. and b. of this unit must be completed within 48 hours after the owner of the equipment, facility, or other source of PCBs (the responsible party) was notified or became aware of the spill.

2. *Effect of emergency or adverse weather.* Completion of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to, civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergency, have left insufficient visible traces, the responsible party must use a statistically based sampling scheme to determine the spill boundaries as required in Unit IV.A.3.

3. *Records and certification.* At the completion of cleanup, the responsible party or appropriate agent shall document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certifiction shall consist of the following:

a. Indentification of the source of the spill, e.g., type of equipment.

b. Estimated or actual date and time of the spill occurrence.

c. The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

d. A brief description of the spill location.

e. Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.

f. A brief description of the solid surfaces cleaned and of the double wash/rinse method used.

g. Approximate depth of soil excavation and the amount of soil removed.

h. A certification statement signed by the responsible party or his/her designated agent (e.g., a facility manager or foreman) stating that the cleanup

requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

While not required for compliance with this policy, the following information would be useful if maintained in the records: (1) Additional pre- or postcleanup sampling: and (2) the estimated cost of the cleanup by man-hours, dollars, or both.

C. Requirements for Cleanup of High-Concentration Spills and Low-Concentration Spills Involving 1 LB or More PCBs By Weight (270 Gallons or More of Untested Mineral Oil)

Cleanup of low-concentration spills involving 1 lb or more PCBs by weight, and of all other spills of regulated materials shall be considered complete if all of the immediate requirements, cleanup standards, sampling, and recordkeeping requirements below are met.

1. *Immediate requirements.* The following four actions must be taken as quickly as possible and within no more than 24 hours (or within 48 hours for PCB Transformers) after the owner of the equipment or container from which the spill occurred, or other responsible representative of the owner such as a facility manager, was notified or became aware of the spill, except that actions described in paragraphs 1. b., c., and d. of this unit may be delayed beyond 24 hours if circumstances (e.g., civil emergency, hurricane, tornado, or other similar adverse weather conditions, lack of access due to physical impossibility, or emergency operating conditions) so require for the duration of the adverse conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Owners of spilled PCBs who have delayed cleanup because of these types of circumstances must keep records documenting the fact that circumstances precluded rapid response. The responsible party shall:

a. Notify the EPA regional office and the NRC as required by Unit IV.A.1 or by other applicable statutes.

b. Effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces plus a 3-foot buffer, and place clearly visible signs advising persons to avoid the area, to minimize the spread of contamination as well as the potential for human exposure.

c. Record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, the responsible party shall record this fact and contact the regional office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

d. Initiate cleanup of all visible traces of the fluid on hard surfaces and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

If there has been a delay in reaching the site and there are insufficient visible traces of PCBs remaining at the spill site, the owner of the PCBs must estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspect contamination. The owner must then utilize a statistically based sampling scheme to identify the boundaries of spill area as soon as practicable.

Although this policy requires certain immediate actions, as described above, EPA is not placing a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, the Agency expects that decontamination will be achieved promptly in all cases and will consider the promptness of completion in determining whether a responsible party made good faith efforts to clean up in accordance with this policy.

2. *Requirements for decontaminating spills in outdoor electrical substations.* Spills which occur in outdoor electrical substations (as defined in Unit III) shall be decontaminated in accordance with paragraphs a. and b. of this unit. Conformance to the cleanup standards in paragraphs a. and b. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the non-restricted access requirements in Unit IV.C.4.

a. Contaminated solid surfaces (both impervious and non-impervious) shall be cleaned to a PCB concentration of 100 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

b. At the option of the responsible party, soil contaminated by the spill will be cleaned: (1) To 25 ppm PCBs by weight, or (2) to 50 ppm PCBs by weight provided that a label or notice is visibly placed in the area. Upon demonstration by the responsible party that cleanup to 25 ppm or 50 ppm will jeopardize the integrity of the electrical equipment at the substation, the EPA regional office may establish an alternative cleanup method or level and place the responsible party on a reasonably timely schedule for completion of cleanup.

3. *Requirements for decontaminating spills in other restricted access areas.* Spills which occur in restricted access locations other than outdoor electrical substations (as defined in Unit III) shall be decontaminated in accordance with paragraphs 3.a through e. of this unit. Conformance to the cleanup standards in paragraphs a. through e. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as restricted access areas other than outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access area requirements under Unit IV.C.4.

a. High-contact solid surfaces (see definition of high-contact industrial surfaces in Unit III) shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

b. Low-contact, indoor, impervious solid surfaces will be decontaminated to 10 $\mu g/100\ cm^2$.

c. At the option of the responsible party, low-contact, indoor, nonimpervious surfaces will be cleaned either: (1) To 10 $\mu g/100\ cm^2$; or (2) to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if encapsulation failed at a particular site this failure would create an imminent hazard.

d. Low-contact, outdoor surfaces (both impervious and non-impervious) shall be cleaned to 100 $\mu g/100\ cm^2$.

e. Soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.

4. *Requirements for decontaminating spills in non-restricted access areas.* Spills which occur in nonrestricted access locations (as defined in Unit III) shall be decontaminated in accordance with paragraphs 4.a. through e. of this unit. Conformance to the cleanup standards in paragraphs 4.a. through e. of this unit shall be verified by postcleanup sampling as specified in Unit V. At such times as outdoor electrical substations and other restricted access areas are converted to another use, the spill site shall be cleaned up to the non-restricted access area requirements.

a. Furnishings, toys, and other easily replaceable household items shall be disposed of in accordance with the provisions of 40 CFR 761.60 and replaced by the responsible party.

b. Indoor solid surfaces and high-contact outdoor solid surfaces (see definition of high contact residential/

commercial surfaces in Unit III) shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

c. Indoor vault areas, and low-contact, outdoor, impervious solid surfaces shall be decontaminated to 10 $\mu g/100\ cm^2$.

d. At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces shall be either: (1) cleaned to 10 $\mu g/100\ cm^2$; or (2) cleaned to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

e. Soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight, provided that soil is excavated to a minimum depth of 10 inches. The excavated soil will be replaced with clean soil (i.e., containing less than 1 ppm PCBs), and the spill site will be restored (e.g., replacement of turf).

5. *Records.* The responsible party or appropriate agent shall document the cleanup with records of decontamination. The records must be maintained for a period of 5 years. The records and certification shall consist of the following:

a. Identification of the source of the spill (e.g., type of equipment.)

b. Estimated or actual date and time of the spill occurrence.

c. The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

d. A brief description of the spill location and the nature of the materials contaminated (this information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or in a nonrestricted access area).

e. Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of sampling methodology used to establish the spill boundaries.

f. A brief description of the solid surfaces cleaned.

g. Approximate depth of soil excavation and the amount of soil removed.

h. Postcleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

While not required for compliance with this policy, information on the estimated cost of cleanup (by man-hours, dollars, or both) would be useful if maintained in the records.

EPA will soon issue for publication in the **Federal Register** a proposed rule to require these recordkeeping measures to facilitate EPA's monitoring of PCB spill cleanups.

V. Sampling Requirements

Postcleanup sampling is required to verify the level of cleanup under Unit IV.C. 2 through 4. The responsible party, or designated agent, may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples), provided that the requirements of paragraphs 1. and 2. of this unit are satisfied.

1. The sampling area is the greater of (1) an area equal to the area cleaned plus an additional 1-foot boundary, or (2) an area 20 percent larger than the original area of contamination.

2. The sampling scheme must ensure 95 percent confidence against false positives.

3. The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.

4. The sampling scheme must include calculation for expected variability due to analytical error.

EPA recommends the use of the sampling scheme developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections: "Verification of PCB Spill Cleanup by Sampling and Analysis." Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup." Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office at the address and telephone number given under "FOR FURTHER INFORMATION CONTACT." The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

At its discretion, EPA may take samples from any spill site. If EPA's sampling indicates that the remaining concentration level exceeds the required level, EPA will require further cleanup. For this purpose, the numerical level of cleanup required for spills cleaned in accordance with Unit IV.B are deemed to be the equivalent of numerical cleanup requirements required for cleanups under Unit IV.C. 2 through 4. EPA may sample using its best engineering judgment, a statistically valid random or grid sampling technique, or both. When using engineering judgment or random "grab" samples, EPA will take into account that there are limits on the power of a grab sample to dispute statistically based sampling of the type required of the responsible party. EPA headquarters will provide guidance to the EPA regions on the degree of certainty associated with various grab sample results.

VI. EPA Enforcement and the Effect of Compliance With This Policy

Although a spill of material containing 50 ppm or greater PCBs is considered improper PCB disposal, this policy establishes requirements that EPA considers to be adequate cleanup of the spilled PCBs. Cleanup in accordance with this policy means compliance with the procedural as well as the numerical requirements of this policy. Compliance with this policy creates a presumption against both enforcement action for penalties and the need for further cleanup under TSCA. The Agency reserves the right, however, to initiate appropriate action to compel cleanup where, upon review of the records of cleanup, EPA finds that the decontamination levels in the policy have not been achieved. The Agency also reserves the right to seek penalties where the Agency believes that the responsible party has not made a good faith effort to comply with all provisions of this policy, such as prompt notification of EPA of a spill, recordkeeping, etc.

EPA's exercise of enforcement discretion does not preclude enforcement action under other provisions of TSCA or any other Federal statute. This includes, even in cases where the numerical decontamination levels set forth in this policy have been met, civil or criminal action for penalties where EPA believes the spill to have been the result of gross negligence or knowing violation.

The TSCA policy has been reviewed by the Office of Management and Budget.

This concludes EPA's TSCA policy. Unit VII, which follows, contains the rationale for the policy, the data on which the policy was based, and the

areas in which EPA lacks data. EPA solicits information to fill those gaps.

VII. Development of the TSCA Spill Cleanup Policy

As will become apparent in the discussion below, there are gaps in the information which was available to the Agency in developing the TSCA policy. The EPA designed the TSCA policy to enable the Agency and the regulated industry to gather data for filling the gaps. In all cases, through the cleanup levels established in the TSCA policy and by retaining authority to require additional cleanup where warranted, EPA has placed sufficient controls on the party responsible for cleanup to ensure that future PCB spills will be cleaned to levels that do not pose an unreasonable risk of injury to human health or the environment. The TSCA policy reflects the Agency's best judgment in light of available information. However, the Agency welcomes comment on, and additional relevant information about, the TSCA policy.

A. Risks Posed by Leaks and Spills of PCBs

1. *Frequency, amount, and nature of leaks and spills.* The TSCA policy establishes the measures which EPA considers to constitute adequate cleanup of PCB contamination resulting from activities regulated under TSCA. EPA expects that the TSCA policy will be most frequently applied to leaks and spills of PCBs which occur during the use of authorized equipment such as electrical transformers and capacitors. Thus, EPA's evaluation of the risks posed by spills of PCBs and the costs associated with cleanup following these spills focuses primarily on leaks and spills of PCBs from electrical transformers and capacitors.

EPA estimates that there are 121,000 (askarel) PCB Transformers currently in use, over 20 million mineral oil transformers contaminated with PCBs currently in use, and over 2.8 million large PCB Capacitors currently in use. Available data indicate that on an annual basis, about 3.3 percent of (askarel) PCB Transformers in use will leak or spill PCBs. The average PCB leak or spill from a PCB Transformer is 5.3 gallons, or about 66 pounds of PCBs. On an annual basis, EPA expects that about 264,000 pounds of PCBs are leaked or spilled into the environment from PCB Transformers.

EPA expects that about 17,000 of these PCB Transformers are located in electrical substations, where 37,000 pounds of spilled PCBs would be expected to be released each year. EPA expects that about 27,000 PCB Transformers are located in industrial facilities, where an estimated 59,000 pounds of PCBs are spilled each year. Finally, 77,000 PCB Transformers are located in other areas (most likely, in or near commercial buildings), where an estimated 168,000 pounds of PCBs are released each year.

EPA expects that of the over 20 million PCB-containing mineral oil transformers in use, 78 percent are located in residential neighborhoods and public areas (i.e., schools, shopping centers, etc.). The majority of these transformers contain less than 500 parts per million PCBs. Available data indicate that the average leak or spill of PCBs from mineral oil transformers contains less than one-tenth of a tablespoon of PCBs, or 0.08 ounce of PCBs. On an annual basis, EPA expects that 627 pounds of PCBs are spilled from mineral oil transformers in residential and public areas. The remaining mineral oil transformers are located in outdoor electrical substations, industrial facilities, and rural areas. EPA estimates that less than 200 pounds of PCBs are leaked from these transformers each year.

Based on available data, EPA estimates that there are over 2.8 million PCB Capacitors in use. Of these 2.8 million capacitors, EPA estimates that 1.6 million are in use in substations or generating facilities and 1.2 million are inside buildings and on utility poles throughout the distribution system. Of the 1.6 million PCB Capacitors in use in electrical substations, EPA expects that over 12,000 leak each year, releasing about 200,000 pounds of PCBs. Of the 1.2 million PCB Capacitors in use inside buildings and on utility poles, EPA expects that over 9,000 leak each year, releasing about 154,000 pounds of PCBs.

Electrical transformers generally contain 100 times the amount of PCBs contained within PCB Capacitors. PCB Transformers typically contain between 300 and 500 gallons of PCB dielectric fluid, while PCB Capacitors generally contain about 3 gallons of PCB dielectric fluid. Unlike PCB Transformer spills, the majority of PCB Capacitor spills involve the violent rupture of the capacitor and the spraying of PCBs. Thus, PCBs spilled from energized capacitors are generally more widely distributed in the spill area than PCBs spilled from transformers. Available data indicate that for over 80 percent of capacitor spills, PCBs are distributed as far as 11 feet from the center of the spill.

PCBs spilled from transformers are more likely to leak from gaskets and valves, and the area contaminated from these types of spills is more directly related to the amount of spilled material than is the case for explosive ruptures, such as occur from energized capacitors. EPA conducted a crude experiment in order to predict the maximum lateral spread of PCBs from other than explosive ruptures of electrical transformers; the maximum spread of water on low-porosity surfaces was tested and assumed to be equivalent to the maximum lateral spread of PCBs and PCB-contaminated oils on soil. EPA found that for every gallon of material spilled, one could expect a maximum area of contamination of about 3 square meters (m^2). Although with time one would see a slight increase in lateral spread (assuming no runoff), for the most part, a 1 gallon spill of PCB material from a transformer cleaned up within 2 weeks of the spill would not be expected to contaminate greater than a $3m^2$ area. This assumes of course that the material has not been tracked into other areas in the interim and that weather conditions have not caused further lateral spread. Spills of PCBs from deenergized capacitors, other authorized equipment, and containers of PCBs would be expected to behave in a similar manner to leaks and spills of PCBs from non-explosive transformer spills.

To summarize, the total amount of PCBs released from electrical transformers and capacitors each year from leaks and spills of PCBs is estimated at about 620,000 pounds (out of an estimated 163 million pounds of PCBs in use in this equipment). Of these PCBs, 38 percent are spilled in electrical substations and 62 percent of these PCBs are spilled in residential/commercial areas, rural areas, and industrial facilities. The majority of spilled PCBs are spilled from capacitors, and capacitor spills typically result from violent ruptures and lead to the distribution of PCBs at distances as far away as 11 feet from the center of the spill (total average spill area is about 380 square feet).

PCBs spilled from deenergized capacitors, transformers (excluding transformers involved in fires), other authorized equipment, and PCB Containers generally involve nonviolent ruptures and the maximum spread of the spilled material can be estimated by assuming $3m^2$ of contamination per gallon of spilled material.

2. *Toxicity and environmental persistence.* EPA has concluded that PCBs are both toxic and persistent. In earlier rulemakings and Agency PCB health effects review documents, EPA has determined that persons exposed to PCBs can develop chloracne (a

disfiguring skin illness), and that based on laboratory animal data, there is a potential for reproductive effects and developmental toxicity as well as oncogenicity in humans exposed to PCBs. EPA has also concluded that PCBs are resistant to degradation and that they bioaccumulate and bioconcentrate in the fatty tissue of organisms. PCBs are very stable compounds which can persist for years when released into the environment. A more detailed discussion of EPA's findings on the health effects of PCBs can be found in the July 10, 1986 **Federal Register** (51 FR 28172).

Recently, the Office of Health and Environmental Assessment (OHEA) at EPA developed draft health advisories for PCBs in soil for use by EPA's Office of Emergency and Remedial Response (OERR). These health advisory levels are to be used as guidelines for initiating removal action for sites contaminated with PCBs. The draft health advisories developed by OHEA address both the oncogenic risks and other than oncogenic risks posed to humans by exposures to PCBs in soils at various levels.

The cancer potency slope factor for PCBs has been estimated by EPA's Cancer Assessment Group (CAG) and the Office of Toxic Substances (OTS) to be 4.34 $(mg/kg/day)^{-1}$ and 3.57 $(mg/kg/day)^{-1}$, respectively. An average of these values (4.0 $(mg/kg/day)^{-1}$) was used in the OHEA draft health advisories as the PCB cancer potency factor. The OHEA calculation of the human dose associated with a 1×10^{-6} level of oncogenic risk is 0.0175 microgram/day. The Agency's assessment of risks associated with dermal and inhalation exposure to PCBs on solid surfaces was also based upon a cancer potency slope factor of 4.0 $(mg/kg/day)^{-1}$ for PCBs.

3. *Potential for exposure to spilled PCBs.* In evaluating potential routes of exposure to PCBs which are leaked and spilled, EPA looked at the potentional for exposure in nonrestricted access areas, restricted access areas, and restricted access, outdoor electrical substations. Further, since the TSCA policy is designed to apply to the large majority of spill situations, EPA focused on the routes of potential exposure associated with typical spill situations. Unique spill scenarios which present greater potential exposures or additional routes of exposure are excluded from application of the cleanup levels in the TSCA policy.

In developing the cleanup standards for PCB spills into soil and other ground media, EPA relied primarily on the exposure and risk analysis in the OHEA health advisories for PCBs in soil. Exposure estimates used to evaluate the risk associated with various cleanup standards for solid surfaces such as metals, wood, asphalt, and concrete were developed by the EPA's Office of Toxic Substances. Neither the OHEA assessment for PCBs in soil nor the OTS estimates of exposure to PCBs in soil assume PCB contamination of other potential exposure pathways such as surface water, drinking water supplies, sewer systems, vegetable gardens, or grazing lands.

EPA believes that the large majority of spills which occur after the effective date of the TSCA policy will not involve these additional routes of exposure. Those exceptional spill situations which would result in these additional routes of exposure are excluded from the TSCA policy and must be cleaned up to levels determined by the appropriate EPA regional office. EPA excluded these spill situations from the scope of the policy because such spills may have to be cleaned up to lower levels in recognition of the potential for additional human exposures. Whether or not more stringent cleanup standards are necessary for these exceptional spill situations, the additional routes of potential exposure require some degree of evaluation on a case-by-case basis before making a final decision on appropriate cleanup levels in such circumstances.

Further, spills of PCBs into sand, soil, gravel, and other similar materials in special areas within the residential/commercial setting (i.e., areas where people may come into repeated daily contact, such as children's sandboxes, spills which pose particular concerns about future ground water contamination, spills which involve the combustion of PCBs (and the possible formation of toxic combustion byproducts such as polychlorinated dibenzofurans (PCDFs) and polychlorinated dibenzodioxins (PCDDs)), and spills onto farmland may be required to be cleaned up to lower levels, in recognition of the increased potential for exposure. The EPA regional offices should be contacted for guidance on appropriate cleanup for these types of spills.

The OTS dermal exposure assessments for PCBs on solid surfaces such as metal, concrete, and asphalt assume that PCBs are transferred to the skin at a relatively high rate (50 percent or more). This assumption is based on the results of an EPA-sponsored study on the transfer of PCBs from glass and unpainted metal to skin (human skin and pig skin) upon contact. EPA currently lacks data on the rate of transfer of PCBs from rougher, porous surfaces such as concrete, asphalt or wood to human skin. Although EPA expects that the transfer rate may be significantly lower for rough, porous surfaces, in the absence of more extensive data, EPA has assumed that the transfer rate would be the same as for glass and unpainted steel.

a. *Exposures in nonrestricted access areas.* Areas which do not limit public access by man-made or naturally occurring barriers (i.e., residential, commercial, and unrestricted access rural areas) generally present the greatest potential for a high degree of human exposure to spilled PCBs. Spills of PCBs in residential/commercial areas may involve: (1) The contamination of soil, grass, sand, gravel, and other ground materials; (2) the contamination of outdoor solid surfaces such as metal, concrete, asphalt, and wood; (3) the contamination of indoor solid surfaces such as ceilings, walls, and floors; (4) the contamination of indoor vault areas; and (5) the contamination of household items such as clothing, toys, and patio furniture.

Spills of PCBs in unrestricted access rural areas may involve the contamination of materials like those listed under paragraphs (1) and (2) of this unit. Since human exposures to PCBs spilled in unrestricted access rural areas may at times approach levels of exposure in residential/commercial areas, EPA has included unrestricted access rural areas under the standards for residential/commercial spills. Typical exposures would, however, be expected to be lower in rural areas compared to typical exposures in the residential/commercial setting.

i. *Exposures from outdoor spills into soil, sand, gravel, and other similar materials.* The principal routes of exposure to PCBs spilled into soil in residential areas would be through inhalation and ingestion. Dermal exposures may also occur, although EPA expects that the PCBs will adsorb to the soil particles, reducing the rate of dermal absorption. OHEA has calculated the expected levels of human exposure to PCBs through inhalation and ingestion when PCBs are present at different levels in soil.

The OHEA assessment concludes that a PCB level of 1 to 6 ppm PCBs in soil in a residential/commercial area would be associated with a 1×10^{-5} level of oncogenic risk. OHEA assumed that the contaminated area is 0.5 acre (18,225 square feet), that 0.6 gram of soil is ingested per day at ages 0 to 6, and that the population is exposed for 50 percent of their lifetime. The placement of a 10-

inch cap of clean soil on top of soil containing 1 to 6 ppm PCBs reduces the expected level of oncogenic risk by an order of magnitude (to 1×10^{-6}).

ii. *Exposures to spills onto solid surfaces*—a. *Outdoor surfaces.* PCBs spilled onto outdoor solid surfaces such as metal, concrete, asphalt, or utility poles in residential areas would result in some inhalation exposures and infrequent dermal exposure. For solid surfaces to which people would be expected to have frequent contact, higher levels of dermal exposure would be expected.

Examples of low-contact outdoor solid surfaces include asphalt and concrete roadways, roof areas, unmanned machinery, concrete pads beneath electrical equipment, curbing, and external structural building components. The estimated level of oncogenic risk associated with exposures to low-contact outdoor surfaces in residential/commercial settings (using reasonable worst-case assumptions about exposures to surface levels of 10 $\mu g/100\ cm^2$) is between 1×10^{-5} and 1×10^{-6}.

Sidewalks and patios where children play, fences, and automobiles are examples of residential/commercial surfaces to which people may come into frequent daily contact. The estimated level of oncogenic risk associated with exposures to such higher contact outdoor surfaces in residential/commercial settings (using reasonable worst-case assumptions about exposures to surfaces levels of 0.5 to 1.0 $\mu g/100\ cm^2$) is between 1×10^{-5} and 1×10^{-6}.

b. *Indoor surfaces.* Spill onto indoor hard surfaces may occur when outdoor electrical equipment ruptures catastrophically and sprays PCBs into a room through an open window or door. Spills onto indoor hard surfaces may also occur when electrical equipment inside a building leaks or spills PCBs and the leaked or spilled PCBs are distributed outside the electrical equipment room into other areas of the building through ventilation equipment and ductwork or by tracking. Inhalation exposures and dermal exposures would be expected following a spill of PCBs onto an indoor hard surface. Based on EPA's assessment of the risks posed by spills of PCBs onto indoor hard surfaces, dermal exposures would be expected to be the exposure route of highest concern (inhalation exposures to residual indoor PCB levels of 10 $\mu g/100\ cm^2$ are associated with a 1×10^{-6} level of oncogenic risk, while dermal exposures to this same level of PCBs on a low-contact indoor surface are associated with a 1×10^{-5} level of oncogenic risk).

From a perspective of dermal exposure, there are two types of potentially contaminated surfaces: low-contact surfaces and high-contact surfaces. Low-contact surfaces are those which are infrequently touched. In a residential/commercial setting, ceilings and wall areas above 6 feet in height would be considered low-contact surfaces. High-contact surfaces are those which are repeatedly contacted, often for relatively long periods of time. High-contact surfaces in a residential/commercial area include uncovered flooring, wall areas below 6 feet in height, stairways, bannisters, and railings. The estimated level of oncogenic risk associated with dermal exposures to 1 $\mu g/100\ cm^2$ of PCBs on low-contact indoor hard surfaces is between 1×10^{-5} and 1×10^{-6}. The National Institute of Occupational Safety and Health (NIOSH) has reported that 0.5 $\mu g/100\ cm^2$ is background level of PCBs on indoor hard surfaces, and this level of residual contamination on a high-contact indoor hard surface would be associated with a level of oncogenic risk between 1×10^{-5} and 1×10^{-6}.

c. *Easily replaceable/high-contact items.* PCBs released from electrical transformers or capacitors in indoor residential/commercial areas may result in the contamination of nonstructural, easily replaceable materials to which people have repeated daily contact (i.e., clothing, household furnishings, paper, notepads, office supplies, patio furniture, toys, swingsets, etc.). Since PCBs are expected to be readily absorbed through the skin, dermal contact with PCBs spilled onto these types of high-contact materials could result in significant exposures. Materials such as paper, clothing, and toys would themselves absorb the PCBs and be difficult, if not impossible, to clean completely. These materials would, however, be expected to release the PCBs slowly, resulting in continued dermal exposures to low levels of PCBs over a prolonged period of time. Depending upon the extent of contamination, inhalation exposures from these types of contaminated high-contact materials could also be significant.

iii. *Spills in indoor vault areas*—a. *Transformer vault areas and electrical equipment rooms.* One of the more common areas of PCB contamination from leaks and spills of PCBs from inuse electrical equipment are indoor transformer vault areas and electrical equipment rooms. Exposures to PCBs may occur through both inhalation and dermal routes, although since many transformer vaults and electrical equipment rooms are well ventilated (reducing airborne PCB concentrations in the vaults), the route of exposure of highest concern in an electrical equipment room would be the dermal route. From the perspective of inhalation exposures alone, residual PCB levels of 10 $\mu g/100\ cm^2$ would be associated with oncogenic risks below 1×10^{-6}. Dermal exposures to PCBs on floors, ceilings, and walls in vault areas would be expected to be less than dermal exposures to PCBs on low-contact surfaces in residential/commercial areas because of less frequent contact with the contaminated surfaces. Residual PCB levels (on ceilings, floors, and walls) of 10 $\mu g/100\ cm^2$ in vault areas would be associated with a 1×10^{-5} to 1×10^{-6} level of oncogenic risk.

b. *Exposures in industrial and other restricted access (nonsubstation) locations.* PCB spills in the industrial setting may result in: (1) Outdoor contamination of soil, sand, gravel, and other similar materials; (2) contamination of both indoor and outdoor hard surfaces; and (3) indoor contamination of vault areas and electrical equipment rooms.

i. *Outdoor contamination of soil, sand, etc.* The principal route of human exposure to PCBs from a spill in soil is through the inhalation route. Soil ingestion and dermal contact with soil would not be expected to be significant routes of exposure at a restricted access site. PCB levels in soil of 25 ppm would present less than a 1×10^{-7} level of oncogenic risk to people on-site who work more than 0.1 km from the actual spill area (assuming that the spill area is less than 0.5 acre).

ii. *Contamination of hard surfaces.* Hard surfaces which may become contaminated in an industrial area include items such as lathes and other types of industrial equipment and machinery, in addition to surfaces such as asphalt, concrete, and wood. In industrial areas, outdoor hard surfaces such as concrete, asphalt, and structural building components would not be expected to result in as frequent exposures as may occur for these surfaces in a residential/commercial area. Thus, residual PCB levels on these outdoor industrial surfaces of 100 $\mu g/100\ cm^2$ (following cleanup of an "askarel" spill) would not be expected to result in significant exposures.

Indoor contamination of structural building components in industrial areas (e.g., ceilings, walls, and floors) and contamination of vaults or electrical equipment rooms would result in some inhalation exposures, but the principal route of exposure would be expected to be through dermal contact. Residual

PCB levels of 10 μg/100 cm² on indoor low-contact surfaces in industrial areas would not be expected to result in significant exposures.

The highest exposure to surface contamination in an industrial setting would be to industrial workers using machinery contaminated with PCBs. Such workers may experience repeated dermal exposures to PCBs, and others may also experience such exposures if this equipment is sold, transported and/or reused. Dermal contact with PCBs may also lead to oral exposures during meals and while smoking. Depending upon the level of contamination, inhalation may also be significant, since workers using machinery are expected to be in close proximity to the equipment during its use. Higher levels of inhalation exposure can be anticipated if the contaminated equipment is operated under conditions of elevated temperature, since this would increase the volatility of any PCBs present on the equipment. Residual PCB levels of 0.5 μg/100 cm² (reported by NIOSH as the background level for PCBs) on these types of high-contact surfaces would not result in significant exposures.

c. *Exposures in outdoor electrical substations.* PCBs released from transformers or capacitors in fenced-off electrical substations pose little risk of directly exposing members of the general population to PCBs. Electrical substations are typically located at distances greater than 0.1 kilometer from population areas and are generally fenced off to restrict access to authorized maintanance personnel only. Dermal and inhalation exposures by maintenance workers would, however, occur during servicing activities, an oral exposures may result from the transfer of PCBs from the hands to the mouth during meals or while smoking. Populations located at distances of greater than 0.1 kilometer from the site of the spill may incur inhalation exposures. However, the OHEA assessment document indicates that PCB levels in soil between 220 and 1,300 ppm present a 1×10^{-7} level of oncogenic risk to populations located at distances of 1 km or more from spill areas. Thus, PCB levels of 50 ppm in soil in an outdoor electrical substation would not be expected to result in significant exposures to the general population.

PCB spills onto hard surfaces in outdoor electrical substations may result in inhalation exposures and dermal exposures primarily to maintenance workers. The general population would not be expected to incur significant inhalation exposures, and dermal contact would be unlikely given the fact that these areas are fenced off and have restricted access. Residual PCB levels of 100 μg/100 cm² would not be expected to result in significant exposures to either the occasional maintenance worker or the general population.

4. *Conclusions about PCB leaks and spills.* Leaks and spills of PCBs from PCB Equipment in residential/commercial areas present the greatest potential for human exposure, when compared to other types and locations of PCB spills. The potential for exposure is high. Oral, dermal, and inhalation exposures to PCBs from spills in residential areas are likely, expecially among children. Human exposures to PCBs spilled in unrestricted access rural areas also may at times be comparable to exposures in the residential setting. Available data on leaks and spills of PCBs indicate that the majority of PCBs spilled from PCB Equipment are spilled from PCB Capacitors and that there are many of these capacitors in use in residential areas.

Potential exposure to spilled PCBs or residual PCBs after cleanup of a spill in a restricted-access area is generally limited to industrial workers. Some types of contamination in restricted-access industrial facilities pose worker exposures as great as residential/commercial exposures. For example, contamination of control panels or manually operated machinery can result in frequent, if not continuous, dermal exposure to industrial workers. Other than any high-contact, manned equipment which may be located outdoors, spills outdoors in an industrial setting will result in a lesser degree of inhalation exposure to workers and the general population than similar spills in residential/commercial settings.

Spills in outdoor electrical substations pose the lowest potential exposures. Outdoor electrical substation are generally fenced off to restrict access to authorized personnel only. There is some possibility of dermal and inhalation exposures to maintenance workers. However, exposure to maintenance workers is less likely to be of a continuous or frequent nature than exposures to industrial workers.

B. Costs of Cleanup

1. *Factors influencing the cost of cleanup.* The cleanup of spilled PCBs from transformers and capacitors typically consists of a number of different measures: (1) Securing the spill site, (2) formulating a spill cleanup plan based on the nature of the spill, (3) removing or repairing the leaking equipment, (4) removing contaminated material (e.g., soil), (5) cleaning contaminated surfaces and decontaminating or removing equipment contaminated during cleanup, (6) properly disposing of contaminated materials, (7) ensuring proper cleanup by sampling and chemical analysis, and (8) restoring the site.

The costs associated with phases (1), (2), (3), and (8) above are fairly fixed and will not vary significantly with more, less stringent cleanup requirements. The costs associated with cleanup phases (4), (5), (6), and (7) above are the more variable elements influencing the total cost of cleanup and are affected by several factors, including the concentration of PCBs spilled, the amount of PCB material spilled, the size or boundary of the spill area (often influenced by the time lapse between spill occurrence and cleanup), and the nature and stringency of cleanup requirements.

According to information gathered by OTS staff in telephone surveys and, in a few cases, written comments, the two most significant cost factors associated with various target cleanup levels are: (1) The number of times cleanup crews have to be sent to the site; and (2) whether or not postcleanup sampling is required. The imposition of sampling costs automatically has the effect of requiring that cleanup crews have to make at least two trips to the site (at least once to clean and at least once to restore the site after the sampling results have verified cleanup). The more stringent cleanup requirements are, the more likely that more than one attempt at cleanup will have to be made and that more than one set of samples will have to be taken.

Thus, the effect of stringent cleanup requirements coupled with requirements for postcleanup verification by sampling is to (1) mitigate exposures by ensuring a greater degree of cleanup; (2) exacerbate exposures by leaving the site open for a longer period of time; and (3) increase the costs of complying with the policy. EPA weighed these countervailing considerations in establishing the various cleanup requirements in the TSCA policy. The balance between the benefits associated with potential risk reductions on the one hand, and potential additional risks and costs imposed by more stringent requirements on the other, weigh out differently depending on the potential for exposure and the degree of certainty that less stringent requirements will result in adequate cleanup.

As is discussed below, EPA has limited data on the cost of cleanup, particularly in the area of cleaning solid

surfaces such as metal or concrete to various levels. Further, the data that are available cannot readily be analyzed to determine the impact of variables other than the degree of cleanup and the extent of sampling performed at the site (e.g., amount spilled, types of ground materials or surfaces contaminated, and time lapse between spill occurrence and cleanup). EPA has evaluated available data and estimated the ranges of incremental costs associated with cleanup to various levels.

a. *Cleanup of spills in soil, sand, gravel, etc.* Available information suggests that the cost of cleanup of soil to "background" levels of PCBs can be 3 to 15 times greater than the cost of cleanup to 50 ppm. Further, since PCBs are ubiquitous in the enviroment and are found at low concentrations throughout the world (in areas where PCBs have never been used), target levels for PCBs spill cleanup which are lower than background levels in certain areas can result in very high cleanup costs. Large volumes of soil may have to be excavated for the removal of what may ultimately be only 1 to 2 pounds of PCBs. For example, there are about 2 pounds of PCBs present in four truckloads of soil containing 25 ppm PCBs. After excavation, these 2 pounds of PCBs may, under the PCB disposal regulations, be transferred to a PCB landfill for disposal.

EPA estimated the costs associated with the cleanup of a PCB spill in soil using two sets of available data on the costs of cleanup. One set of data on the costs associated with the cleanup of a 0.5 acre site contaminated with PCBs and PCB Equipment suggests that cleanup to 50 ppm would cost on the order of $105,000; cleanup to 25 ppm would cost on the order of $214,000; and cleanup to "background" levels of PCBs would cost on the order of $279,000. Using these data to estimate cleanup costs for different target levels of soil cleanup for typical PCB Capacitor spills, EPA estimates that the cleanup of a typical PCB Capacitor spill to 50 ppm would cost on the order of $2,100; cleanup to 25 ppm PCBs would cost on the order of $4,280; and cleanup to "background" levels of PCBs would cost on the order of $5,580.

EPA also estimated the costs of cleanup to various target levels using data on the cost of cleanup in actual capacitor spill situations. These data indicate that while the costs of cleanup to level between 50 and 25 ppm do not vary significantly, cleanup to levels lower than 25 and 20 ppm result in dramatically higher costs of cleanup. Based on these actual capacitor spill cleanup data, the cleanup of a typical PCB Capacitor spill to 50 or 25 ppm would cost on the order of $4,000; cleanup to 10 ppm PCBs would cost on the order of $10,000; and cleanup to background levels could cost on the order of $60,000 to $140,000.

EPA estimates that the actual incremental costs of cleaning typical capacitor spills to various levels would fall in the range between the two sets of estimates. Assuming that there are about 20,000 PCB Capacitor spills each year, EPA's estimates of the total annual cost of cleanup of PCB Capacitor spills to 50 ppm, 25 ppm, and "background" levels is $42–80 million, $80–86 million, and $112 million to over $2 billion, respectively.

Alternatively, information indicates that for lower concentration spills (i.e., spills of material containing less than 500 ppm PCBs—generally from oil-filled electrical equipment), cleanup of visible traces plus a 1 foot boundary of spills onto soil and other ground media within a few days of the spills will sufficiently ensure that PCB concentrations in the soil will be cleaned to a few parts per million. Therefore, the additional costs associated with sampling may not be justified by any incremental risk reduction where the spill is of low-concentration spills.

b. *Cleanup of PCBs spilled on surfaces.* EPA lacks data on the practicality, feasibility, and incremental costs associated with the cleanup of PCBs on hard surfaces. Comments from utility representatives as well as EPA regional office personnel suggest that costs of cleaning solid surfaces are significantly influenced by the nature of the contaminated surface (i.e., whether it is a porous surface such as concrete or an inpervious surface such as metal). Thus, cleaning porous, hard surfaces to 1 $\mu g/10cm^2$ may be very difficult, if not impossible, to achieve through generally accepted methods of cleanup (i.e., scrubbing and cleansing of surfaces) because of the penetration of PCBs below the surface.

EPA has evaluated some data on the costs of cleaning PCB-contaminated surfaces to various levels. However, all of the available data are from historical PCB spill sites which are typically more difficult to clean than fresh spills. Further, EPA's experience suggests that the relative difficulty of cleaning porous surfaces versus impervious surfaces increases as the amount of time between spill occurrence and cleanup increases.

Surface cleanup standards which are not achievable would in effect require the breakup and removal of materials such as concrete. Data on the breakup, removal, and replacement of concrete materials at historical spill sites indicate that the costs of such remedial action may range from one to several million dollars. While historical sites generally involve more extensive areas of cleanup, both in terms of PCBs absorbed into the materials and the area of contamination, these data do suggest that there are significant costs associated with a removal requirement for solid surfaces. EPA, however, has no comparative cost data on the differences in cost between cleaning solid surfaces by conventional methods versus removing solid surfaces.

An EPA-sponsored Midwest Research Institute study of the removal of PCBs from surfaces such as painted and unpainted steel, asphalt, concrete block, wood, and poured concrete demonstrates fairly clearly that a time lapse of several days before initiation of cleanup can significantly impede the efficacy of surface cleanup methods. That study also suggests that the washing of rough, porous hard surfaces with solvent is not very effective in removing the spilled askarel PCBs. Cleanup by washing/wiping within a few days following low concentration spills, however, is expected to be effective in reducing surface concentrations of PCBs to levels which will not pose unreasonable risks. This is primarily because of the small amount of PCBs actually present in most mineral oil spills.

In lieu of potentially impracticable surface cleanup standards, or removal standards, EPA also considered the option of requiring cleanup to an achievable surface cleanup standard and encapsulation with an appropriate epoxy resin or other sealant. Anecdotal information suggests that encapsulation is likely to be less costly than removal of solid surfaces by 1 to 3 orders of magnitude. While EPA believes that encapsulation can significantly reduce both dermal and inhalation exposure to residual PCB concentrations on solid surfaces, the Agency is aware of no empirical data which verify the effectiveness of encapsulants in reducing exposures. Ancedotal information provided by EPA regions and members of the regulated community raises doubts as to the long-term effectiveness of encapsulation because of the tendency of many sealants to peel or chip off over time.

In the absence of adequate data on the costs of cleaning fresh PCB spills on solid surfaces, the standards which appear in the TSCA policy for the cleanup of hard surfaces primarily reflect concerns about the potential for

exposure to these levels of residual PCBs which remain after cleanup. The TSCA policy does allow for less stringent cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous surfaces outdoors (or on low-contact surfaces indoors in restricted-access facilities) because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for certain low-contact solid surfaces in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

2. *Conclusions about costs of cleanup.* The costs associated with the cleanup of spills of PCBs into soils and other similar materials are principally influenced by the area of contamination and the target levels set for cleanup. The lower the target level, the more testing, excavation, and removal, and the higher the cost. The cleanup of spilled PCBs in soil from PCB Transformers and Capacitors to "background" levels of PCBs costs three times as much to an order of magnitude more than cleanup to 50 ppm, and several times as much as cleanup to 25 ppm. On an annual basis, hundreds of millions of dollars are being spent for the cleanup of PCBs from transformer and capacitor spills.

EPA expects that the costs associated with the cleanup of contaminated surfaces will increase as cleanup levels or standards decrease and that at some point, excavation and removal may be the only choice to reduce PCB levels further. Data on the practicality, feasibility, and cost of cleanup to the levels discussed in this TSCA policy and data on the effectiveness and cost of encapsulation are necessary so that EPA can more accurately weigh the cost effectiveness of various surface cleanup requirements.

EPA is seeking data on the incremental costs associated with the cleanup of different types of surfaces to the levels discussed in this TSCA policy. In the absence of data to support a determination that these levels are not practically achievable at a reasonable cost (or data that support a determination that exposures will be significantly lower than those assumed by current Agency assessments), the policy includes the surface cleanup standards discussed in Unit IV.

EPA is also seeking data on the effectiveness (in terms of risk reduction), cost, and long-term durability of the use of sealants and encapsulating materials. If encapsulating materials and sealants can be demonstrated to be more cost effective than removal, EPA will retain the provisions allowing, for low-contact, porous surfaces, the use of such sealants in lieu of cleanup to more stringent standards.

C. Risk/Benefit Discussion of Cleanup Requirements

1. *Scope and general requirements of the policy.* The TSCA policy applies to spills which EPA can require to be cleaned under TSCA enforcement authority (spills of 50 ppm or greater PCBs which generally occur during EPA-regulated use, processing, distribution in commerce, or storage of PCBs) and which occur after the effective date of the policy. The policy is prospective because historical spills tend to involve more extensive areas of contamination and because many of the requirements of the policy are based on the assumption that the spill area will be cleaned or contained within 1 or 2 days of spill occurrence.

PCB is an oily material which leaves stains on soil and surfaces. While EPA recognizes that the visibility of PCBs on soils and surfaces is inversely related to the amount of time elapsed from release to discovery and that weather conditions may also influence spill visibility, EPA expects that for the majority of PCB spills, visible traces of PCBs will remain at the time of spill discovery. The exception to this rule is for spills which are undiscovered for an extended period of time and spills which are followed by adverse/severe weather conditions. In these cases, the TSCA policy requires the use of an appropriate statistical sampling scheme to define the boundaries of the spill area.

EPA believes that one of the principal ways of minimizing human and environmental exposures to spilled PCBs is to prevent the spread of spilled PCBs (e.g., by cordoning off the area) and to initiate cleanup actions as soon as practically possible. This minimizes the likelihood that materials will be spread beyond the spill area through tracking and runoff and reduces the probability of surface water and drinking water contamination. EPA believes that response time in initiating remedial action may be one of the most significant factors influencing the magnitude of risks following PCB spills, especially in residential areas.

2. *Spills of low concentrations PCBs involving less than one lb of PCBs.* Where the spilled material is relatively low in PCB concentration (i.e., containing 50 ppm or greater, but less than 500 ppm PCBs), the TSCA policy allows cleanup in accordance with procedural performance requirements (i.e., double wash/rinse for solid surfaces and removal of visible traces plus a 1-foot lateral boundary for soil and other ground media provided that the minimum depth of excavation is 10 inches) rather than requiring sampling to verify that numerical cleanup standards have been met.

The procedural requirements are based upon data indicating that for low-concentration spills, double washing/rinsing of surfaces and removal of visible traces plus a buffer on soil will successfully reduce the PCB concentration in the spill area to the numerical standards specified for the higher concentration spills. The essential difference is that for spills of low-concentration PCBs, sampling is not required to verify that numerical standards are achieved, provided that the responsible party or designated agent certifies that the cleanup has been performed in accordance with all of the requirements of the policy. The enforcement provisions of the policy specify that should the sampling data indicate that the numerical standards have not been met, or that the area cleaned does not encompass all areas of actual contamination (as determined by sampling or indicated by remaining visible traces), the regional office will require additional cleanup.

3. *Spills of 500 ppm or greater PCBs and spills of low-concentration PCBs of more than 1 lb PCBs by weight*—a. *Spills in nonrestricted access areas.* The most stringent requirements for the cleanup of spilled PCBs apply to PCB spills in residential/commercial/unrestricted access rural areas. The TSCA policy requires that materials such as household furnishings, toys, and swingsets be disposed of rather than decontaminated. Generally, these types of materials pose a high potential for exposure and are very difficult to clean. Indeed, the costs of cleanup of these types of materials to the limit of detection of PCBs (which would be required given the high potential for repeated daily exposures) would in many cases exceed replacement costs.

Soil and other similar materials in residential/commercial areas must be cleaned up to 10 ppm PCBs, and a cap of clean materials containing less than 1 ppm PCBs (the average background level for PCBs in soil) equal to a minimum of 10 inches must be placed on top of the excavated area. The OHEA risk assessment for PCBs in soil indicates that 1 to 6 ppm PCBs in 0.5 acre of residential soil is associated with a 1×10^{-5} level of oncogenic risk and that placing a 10-inch cap of clean soil reduces this level of oncogenic risk by an order of magnitude. PCB Capacitor

spills typically result in the contamination of significantly less than 0.5 acre.

For an average PCB Capacitor spill, the difference in costs associated with cleaning up PCBs to 10 ppm versus to below 1 ppm ("background" levels) in a residential area is estimated to be about $500. Assuming 9,000 PCB Capacitor spills each year in residential areas, the estimated incremental costs associated with cleanup of these spills to less than 1 ppm versus cleanup to 10 ppm is $4.5 million.

Thus, EPA believes that soil containing 10 ppm PCBs (covered by a cap containing PCBs below the practical limits of quantitation) in a residential/commercial area would not present unreasonable risks to public health or the environment.

The surface standards presented in the TSCA policy are based primarily on the potential for exposure to PCBs remaining on surfaces in residential/commercial areas and the estimated level of risk posed by these residual PCBs. EPA lacks data on the incremental costs associated with cleanup to different surface standards and is soliciting these data.

The TSCA policy does allow for less stringent surface cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous, low-contact surfaces outdoors because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for low-contact solid surfaces outdoors in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

b. *Industrial and other restricted access spills.* Spills of PCBs in industrial areas and other restricted access locations would present lower risks than spills in residential/commercial areas because access to these areas is controlled. Inhalation exposure is considered to be the principal route of exposure to PCBs in soil, sand, or gravel in an industrial area. Dermal exposures would, however, be likely when PCBs are spilled on manned machinery and equipment. EPA believes that the level of risk posed by 25 ppm PCB in soil at a restricted access facility would not present significant risks either to the typical worker or to the general public. EPA also believes that the surface standards of 100 $\mu g/100\ cm^2$ for low-contact outdoor surfaces and 10 $\mu g/100\ cm^2$ for indoor low-contact surfaces (and vaults) and high-contact surfaces in a restricted access industrial facility would not present significant risks to workers or to the general population.

Further, there are significant costs associated with the cleanup of soil, sand, gravel, and other similar materials in an industrial facility to background levels compared to cleanup to 25 ppm PCBs. Thus, EPA believes that cleanup of soil, sand, gravel, and other similar materials in an industrial facility to 25 ppm would not present unreasonable risks to public health or the environment.

The surface standards for industrial facilities and other restricted access locations which are presented in the TSCA policy are based on the expected level of exposure to residual PCBs left on industrial surfaces after cleanup. EPA lacks data on the incremental costs associated with cleanup to different standards and is soliciting these data. The TSCA policy does allow for less stringent cleanup options coupled with EPA-approved encapsulation measures where the spill occurs on porous, low-contact surfaces because of concerns about the achievability of more stringent cleanup levels on porous surfaces. The encapsulation option is allowed for certain low-contact solid surfaces in order to allow the development of data on the efficacy of encapsulation in mitigating exposures to residual PCBs on solid surfaces.

c. *Outdoor electrical substation spills.* The least stringent requirements for the cleanup of spilled PCBs apply to spills in outdoor electrical substations. This reflects the lower potential for exposures and fewer people potentially at risk of exposures to PCBs spilled in these areas. Spills of PCBs from PCB Equipment into solid materials such as soils in electrical substations must be cleaned up to 25 ppm PCBs or to 50 ppm PCBs, provided that a label is placed in the spill area indicating that a PCB spill has occurred. The OHEA risk assessment for PCBs in soil indicates that a PCB level of 50 ppm PCBs in soil located more than 1 kilometer from a population would present less than a 1×10^{-7} level of oncogenic risk. This risk assessment assumes only inhalation exposures at distances of 1.0 kilometer (or approximately 1,093 yards) from the spill site.

The surface standards which appear in the TSCA policy are primarily based on the expected exposures and risks posed by contact with the residual PCBs. EPA lacks data on the incremental costs associated with cleanup to higher or lower levels.

D. Scope of the Policy

EPA expects the large majority of PCB spills subject to decontamination under TSCA to conform to the typical spill scenarios considered in developing the TSCA policy. However, some small percentage of spills will warrant more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those associated with typical PCB spills. Further, there may be exceptional spill situations which require less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill which mitigate expected exposures and risks or which make cleanup to these requirements impracticable. Therefore, the policy (1) excludes certain situations from the scope of this policy; (2) discusses other spill situations which may warrant the use of EPA authority to require more stringent requirements and (3) retains EPA flexibility to allow alternative or less stringent decontamination measures when the responsible party demonstrates the presence of risk-mitigating factors or demonstrates the impracticability of applying this policy to a particular spill situation. For those exceptional spill situations which are excluded from the policy or in which EPA may exercise flexibility based on site-specific considerations, the EPA regions have the authority to determine cleanup requirements.

The TSCA policy excludes certain spill situations from the automatic applications of the numerical cleanup requirements in the policy (i.e. spills directly into water, sewers, vegetable gardens, and grazing areas, and spills which directly contaminate surface waters prior to cleanup) because those situations will always present routes of exposure to PCBs which are not associated with the typical spills considered in developing the TSCA policy. These exceptional spill situations may not always require more extensive cleanup. However, they will always require some level of site-specific analysis to determine appropriate cleanup measures.

Although EPA expects the majority of remaining spills to be subject to this policy, occasionally the site-specific characteristics (e.g., depth to ground water, type of soil, and the presence of a shallow well) may pose exceptionally high potential for ground water contamination by residual PCBs (i.e., those PCBs remaining after cleanup to the standards specified in this policy). Spills which pose a high degree of potential for ground water contamination are not automatically excluded from the policy as are spills into surface waters because the presence of such potential may not be

readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is a significant concern. The Agency will, however, require cleanup to more stringent decontamination standards upon making a determination that such additional cleanup is necessary because of ground water concerns associated with residual contamination based upon comparison of the site characteristics to ground water modeling and exposure assessments which have been developed by EPA in support of this policy.

Additionally, spill situations involving significantly larger areas of contamination than those assumed in developing this policy (e.g., <0.5 acre in soil and 550 ft^2 on indoor surfaces); spills in areas involving repeated daily contact such that the potential for dermal contact may be significantly higher than assumed in developing this policy (e.g., spills resulting from violent equipment rupture during which PCDFs and/or PCDDs were formed, and spills onto farmland on which root crops are grown) may require more stringent levels of cleanup. In such situations, the Regional Administrator may require cleanup in addition to that required by the policy. In those circumstances, the Regional Administrator must notify the Director, Office of Toxic Substances, of his finding and the basis for the finding.

The TSCA policy also retains EPA's flexibility to allow less stringent, or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, or that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site. For example, the responsible party may show that a dirt road need not be decontaminated to the levels in this policy because exposure to residual PCB concentrations on a dirt road will be significantly mitigated when the road is paved with concrete or asphalt in the immediate future. Alternatively, the responsible party may demonstrate that cleanup to the numerical standards in the policy may threaten the structural integrity of major equipment installations or buildings.

For purposes of delineating the scope of the TSCA policy, as well as to provide EPA regional offices and the regulated community with guidance on whether a particular spill may require more stringent standards for cleanup, EPA has performed some preliminary analyses of these potentially higher-risk spill situations. EPA evaluated the exposures and risks associated with these potential higher-risk situations using reasonable worst-case assumptions to identify cases where strict application of the standards in this policy may be inappropriate. In addition, EPA believes that some spill situations may require special action (e.g., additional immediate actions to prevent contamination of sewers where there is a real potential for such contamination).

1. *Spills into sewers.* EPA has not assessed the exposures associated with the release of PCBs into sewers because of the lack of information about the behavior of spilled PCBs in a system of sewer pipes. Being denser than water, PCBs may collect in depressions and irregularities in the sewer pipes, providing a long-term source of release of PCBs into the environment. On the other hand, the PCBs may be carried from place to place in the sewer system. Thus, there is no method for estimating which segments of the system are contaminated, what the concentration of PCBs is, or how long the PCBs will remain in the system. Because of the difficulty of evaluting the behavior of PCBs in sewer systems and because of the practical problems of decontaminating a sewer system, PCB spills into sewage are not covered by this policy. Each regional office will determine the requirements for adequate cleanup of sewer systems, treatment works, and sewage contaminated with PCBs on a case-by-case basis.

2. *Spills which may result in ingestion exposure through drinking water and fish.* To evaluate the potential for exposures through the ingestion of drinking water and/or fish contaminated with PCBs, EPA looked at four spill situations using reasonable worst-case assumptions: (1) PCBs are spilled into a pond and the sediment is cleaned to 10 ppm; (2) PCBs are spilled into a river and the sediment is cleaned to 10 ppm; (3) PCBs are spilled on the bank of a stream and the soil is cleaned to 25 ppm; and (4) PCBs are spilled on soil and cleaned to 25 ppm, assuming that the PCBs will enter ground water.

Preliminary results indicate that where PCBs enter surface water in a pond, the ingestion of fish and/or drinking water from the pond after the sediment has been cleaned to 10 ppm in accordance with the policy may result in significant human exposures. While rivers have higher flow rates than ponds, so that cleanup of river sediment to 10 ppm PCBs may not pose significant human exposures, PCB contamination in surface water poses important considerations in addition to the risks associated with residual PCB concentrations in sediment, in much the same way as sewer contamination. Thus, all spills directly into waterways and spills which contaminate waterways before cleanup are excluded from the TSCA policy.

Where PCBs are spilled near a waterway and the soil is cleaned to 25 ppm PCBs, PCBs can enter surface water through runoff from the contaminated bank. (EPA assumed that runoff into the stream occurs only after the spill area has been cleaned to 25 ppm.) Based on reasonable worst-case assumptions, the consumption of drinking water and/or fish from the stream for 70 years will not pose risks of concern and are therefore included in the scope of the policy. However, should the spill contaminate surface water cleanup, the spill must be cleaned to site-specific requirements. Therefore, the responsible party should take special measures to contain the spill area and prevent the spread of PCBs into the waterway.

In looking at the possible exposures associated with soil cleaned to 25 ppm through the ingestion of drinking water from contaminated ground water, the climate, soil and ground water configuration were assumed to be such as to maximize PCB concentrations in ground water. Significant risks may be posed by the ingestion of drinking water from very shallow wells (i.e., dug wells taking in water at the source of loading), in areas where soil characteristics and depth to aquifer maximize the potential for leaching into ground water. However, the ingestion of drinking water from a well located a horizontal distance of 50 meters from the spill site in these areas does not appear to pose significant risks. Thus, while the majority of spills will not result in unreasonable risks of human exposure due to ground water contamination, some unique spill scenarios will pose potential ingestion exposure through ground water contamination.

The TSCA policy specifically reserves EPA's authority to impose more stringent cleanup requirements in cases where site characteristics present special risks of ingestion of PCBs through ground water contamination. These spills are not automatically excluded from application of the policy because the potential for ground water contamination may not be readily apparent.

3. *Ingestion of milk from dairy cattle grazing on land contaminated with PCBs.* Using reasonable worst-case estimates, the Agency evaluated the potential risks to humans drinking milk from cattle which grazed on farmland where a PCB spill has been cleaned to 25 ppm. In the event of a spill on farmland, grazing dairy cattle can ingest the PCB-contaminated soil by consuming soil while grazing and from eating plants and roots from a PCB-contaminated site. The cattle can then accumulate unmetabolized residues of the PCBs in milk fat and excrete them through milk. Assuming that the contaminated milk is consumed by the farm residents, worst-case risk estimates indicate that reducing the PCB concentration in the soil to 10 or 25 ppm PCBs may not be adequate to prevent aganist unreasonable risks to human health.

4. *Ingestion of vegetables grown on contaminated home gardens and farmland.* EPA performed some preliminary analyses of the risks posed by the consumption of vegetables grown on a spill area cleaned to 25 ppm PCBs in the case of farmland and 10 ppm in the case of residential gardens. Assuming that vegetables grown on that garden or farm are used to provide the entire vegetable component of the diet of the site residents, cleaning soil to the levels in the policy may not be adequate. Vegetables are more likely to become contaminated through contact with contaminated dirt rather than through plant uptake. Thus, EPA believes that the potential for exposure to spilled PCBs through ingestion of crops grown on-site is greatest where the vegetables are root crop (e.g., carrots and potatoes).

5. *Exposure from larger spills.* In the above situations, the Agency focused on routes or ingestion exposure. The Agency has also evaluated situations which may significantly increase dermal or inhalation exposures. A principal factor in determining the magnitude of inhalation exposure is the size of the spill area. In estimating the risks associated with the cleanup levels in the policy for typical spills from electrical equipment, EPA relies on a risk assessment which assumes a contaminated area of 0.5 acre (see discussion in Unit VII.A.3.). Since the area of the typical spill addressed by this policy is expected to be 1/20 of the size assumed in the risk assessment, EPA believes that the cleanup standards in this policy sufficiently protect against unreasonable risks from inhalation exposure to PCBs remaining after the cleanup of a spill from electrical equipment. Cleanup standards for larger spills, that is, greater than 0.5 acre, would be established by the EPA regional office after a consideration of both the level of risk posed by cleanup to different levels and the incremental costs associated with such cleanup.

E. Issues

As is apparent in the discussion under Unit VII.A, there are gaps in the information which was available to the Agency in developing the TSCA policy, particularly in the area of cleanup costs. Given the limited data available to the Agency in developing a PCB Spills Cleanup Policy under the TSCA unreasonable risk standard, EPA has generally taken an environmentally conservative approach by establishing cleanup requirements based on risk and exposure considerations, and by excluding certain potentially higher-risk spill scenarios from the scope of the policy.

In a few areas where available data support the conclusion that less restrictive requirements will not compromise the protection of human health or the environment, the Agency has allowed less restrictive cleanup options (i.e., the exclusion of low-concentration spills from sampling requirements and the encapsulation option for spills on low-contact, porous surfaces). One purpose of allowing such options is to provide an opportunity for the development of additional information on the relative efficacy and costs of such options. EPA expects that the regulated industry will make good faith efforts to submit additional data gathered under the TSCA policy.

1. *Decontamination of surface.* The TSCA policy includes surface standards (in micrograms (μg) per 100 square centimeters (100 cm^2)) for cleanup of PCB spills on hard surfaces such as wood, concrete and asphalt, and impervious surfaces such as metal or glass. For spills of PCBs at concentrations of 50 ppm or greater but less than 500 ppm onto hard or impervious surfaces in other than residential/commercial areas, this policy allows cleanup by double rinsing with an appropriate solvent.

The consensus proposal submitted by EDF, NRDC, EEI, NEMA, and CMA in May 1985 proposed that surfaces in residential areas be cleaned to 100 μg/100 cm^2. The consensus further proposed that surfaces in all other areas be cleaned either to 100 μg/100 cm^2 or triple rinsed at the discretion of the responsible party. A revised consensus proposal submitted in October 1986 modified the proposed surface standards to 10 μg/100 cm^2 for impervious surfaces in areas other than outdoor electrical substations. The revised proposal maintained the 100 μg/100 cm^2 level for all porous surfaces, arguing the infeasibility of cleaning to lower levels on porous surfaces.

After reviewing the consensus proposal, the Agency contemplated requiring that potential high-contact surfaces be cleaned to 10 μg/100 cm^2 and that spills of 500 ppm or greater on low-contact surfaces be cleaned to 100 μg/100 cm^2. The Agency further contemplated allowing the triple-rinse option for spills of 500 ppm or greater in reduced access areas and for all spills onto surfaces in outdoor electrical substations.

Lacking adequate information with which to assess potential exposures to surfaces cleaned to those levels, the Agency initiated some studies to (1) evaluate the risks posed by the 10 μg/100 cm^2 and 100 μg/100 cm^2 and (2) test the efficacy of rinsing/washing as a cleanup measure. The results of these studies indicate (a) that high contact surfaces such as those in residential play areas or manually operated machinery may require surface standards more stringent than the 10 μg to 100 μg/100 cm^2 standards and (b) that while even one wash or rinse of a solid surface would be adequate for mineral oil spills (50 to 499 ppm PCBs), the wash/rinse procedural performance standard is relatively ineffective in removing higher concentration PCBs from porous surfaces such as concrete block, wood, and asphalt. Presented below is additional detail on these preliminary studies and requests for data and information pertaining to the cleanup of surfaces.

2. *Surface wiping as a cleanup method.* EPA began the study with the goal of evaluating the effectiveness of a triple-rinse performance standard for decontamination of various types of surfaces where spills of askarel or mineral oil contaminated with PCBs have occurred. The cleaning agents tested were a water-based industrial cleaner (Penetone Power Cleaner 155) and kerosene, which are both widely used. A set of six rinses were performed on steel, wood, concrete, and asphalt 1 day after spilling a known amount of PCBs on the surfaces. Another set of six rinses was performed on each surface 8 days after spilling a known amount of PCBs on the surface.

The rinses were relatively effective in cleaning askarel spills on steel and in cleaning mineral oil from all surfaces (because of the low initial concentration of PCBs in mineral oil). However, six rinses with the industrial cleaner did not

successfully remove askarel fluid from asphalt, wood, or concrete. Further, the PCBs and the solvent washed through the wood, concrete, and asphalt, and distributed the PCBs into the material. This has caused EPA to question the advisability of setting a surface concentration for nonimpervious materials. Absent information on whether or not the PCBs absorbed into the material later come back to the surface and become available for exposure, EPA must assume that the absorbed PCBs provide a continuing source of exposure until the total amount of PCBs in the material is depleted.

EPA also found that the Penetone Power Cleaner was significantly less effective than the organic solvent in reducing the concentration of PCBs. Anecdotal information, however, suggests that the detergent cleaner may be more effective on soiled surfaces because of the tendency of PCBs to bind to dirt.

These observations have led to some determinations and raised several issues. Any comments or data in these areas are welcome.

a. EPA has determined that a procedural performance specifying one to three washes/rinses on solid surfaces within a few days after the spill occurs will result in adequate decontamination of mineral oil (50 to 499-ppm PCBs) spills on hard surfaces (including wood, asphalt, and concrete).

b. EPA has determined that water-based solvents may not be effective in removing PCBs from hard surfaces. Seven days after the occurrence of a spill, the efficacy of water-based rinses appeared to decrease markedly even on steel (some of the reduced effectiveness of the water-based solvent after 7 days may be due to the loss of PCBs from the surface through volatilization). EPA is currently performing a second phase of the solvent-rinse study with an organic solvent used widely in industry.

c. EPA has determined that when a spill of PCBs occurs on nonimpervious hard surfaces, the PCBs are absorbed into the material and may later become available for exposure. In the absence of adequate information, the Agency must presume that these PCBs do provide a source of exposure. The Agency solicits any available data in this area.

d. Therefore, for PCB spills on nonimpervious surfaces, the Agency considered (1) requiring removal and decontamination to a ppm standard, or (2) some combination of a wipe standard and encapsulation. EPA solicits available information on the costs of removing hard sufaces and the efficacy of encapsulation in preventing future exposures to PCBs which have been absorbed into materials such as concrete, wood, or asphalt. In its spills cleanup policy the Agency has allowed an encapsulation option on low contact surfaces for iterative purposes. EPA may not retain such an option if no information on the relative cost, effectiveness, and durability of encapsulation becomes available.

3. *Cost of cleanup.* The cost estimates for decontamination of soil and other solid materials to various levels (as discussed under Unit VII.B) were derived from limited available information. While the Agency has received information on the costs of actual cleanups, it is difficult to extrapolate information from these data because very little is known about the cleanup methods used, the time lapse between the spill and the cleanup effort, the amount spilled, and the size of the spill area.

In order to develop a more sound data base for comparing the costs of cleanup to various levels in soil, the Agency modeled the vertical and lateral spread of spilled PCBs in soil over time, using assumptions which maximize the spread of PCBs. These data on the distribution of PCB concentrations in the soil are being used to solicit information from cleanup firms on the incremental cost of cleanup to various levels.

Any available data on the incremental costs of decontamination to various levels are welcome. Such data will be most helpful if accompanied by the following information: (1) The amount and concentration of PCBs spilled, (2) the area and depth of the original contamination and the area cleaned, (3) the amount of soil or other material removed or the type of cleanup performed on hard surfaces, (4) postcleanup sampling data, (5) the amount of time between spill occurrence and initiation of cleanup, and (6) some description of the cleanup procedures (e.g., initial efforts to contain the spill or methods used to prevent the spreading of contamination during cleanup efforts). EPA especially needs data on the costs associated with cleanup of hard surfaces (see discussion in previous unit).

4. *Cleanup standards for higher-risk situations.* The discussion under Unit VII.D details the Agency's rationale for limitations on the scope of the policy. The Agency believes that some small percentage of spills will warrant more stringent cleanup requirements than specified in the TSCA policy because of additional routes of exposure or significantly greater exposures than those associated with typical PCB spills.

Therefore, certain spill situations are excluded from the scope of this policy. The spill situations which the TSCA policy excludes from automatic application of the numerical cleanup requirements in the policy (i.e., spills directly into water, sewers, vegetable gardens, and grazing areas and spills which contaminate surface waters prior to cleanup) are those which will always present routes of exposure to PCBs which are not associated with the typical spills considered in developing the TSCA policy. The TSCA policy indicates exceptional spill situations may not always require more extensive cleanup. However, they will always require some level of site-specific analysis to determine appropriate cleanup measures.

In addition, the TSCA policy discusses other spill situations which may warrant the use of EPA authority to require more stringent requirements (e.g., where depth to ground water, type of soil, and the presence of a shallow well may pose exceptionally high potential for ground water contamination by residual PCBs; spill situations involving significantly larger areas of contamination than those assumed in developing this policy; spills resulting from violent equipment rupture during which PCDFs and/or PCDDs were formed; and spills onto farmland on which root crops are grown). The TSCA policy provides that in such situations the Regional Administrator may require cleanup in addition to that required by the TSCA policy.

EPA does not currently have sufficient information on the factors which must be considered in determining the type and degree of cleanup in such situations. Therefore, while EPA headquarters will provide guidance to the EPA regional offices to the extent possible on a case-by-case basis, the TSCA policy does not specify cleanup measures for these spill scenarios. EPA solicits available data on such spill situations in order to provide better guidance to the regions and to develop uniform guidance for such situations where appropriate.

This document was submitted for review to the Office of Management and Budget (OMB).

Other Statutory Requirements

Regulatory Flexibility Act

The TSCA policy will have an insignificant impact on small entities as described in the Regulatory Flexibility Act (5 U.S.C. 601 et seq.).

Paperwork Reduction Act

The TSCA policy reiterates certain recordkeeping requirements for the disposal of PCBs which were approved under OMB control number 2070-0008. Some additional recordkeeping and reporting will be added through the rulemaking process; these requirements will be submitted to OMB for clearance.

List of Subjects in 40 CFR Part 761

Hazardous substances, Labeling, Polychlorinated biphenyls, Recordkeeping and reporting requirements, Environmental protection.

Dated: March 20, 1987.

Lee M. Thomas,

Administrator.

PART 761—[AMENDED]

Therefore, 40 CFR Chapter I Part 761 is amended as follows:

1. The authority citation for Part 761 is revised to read as follows:

Authority: 15 U.S.C. 2605, 2607, and 2611; Subpart G is also issued under 15 U.S.C. 2614 and 2616.

2. Subpart G, consisting at this time of §§ 761.120, 761.123, 761.125, 761.130, and 761.135, is added to read as follows:

Subpart G—PCB Spill Cleanup Policy

Sec.
761.120 Scope.
761.123 Definitions.
761.125 Requirements for PCB spill cleanup.
761.130 Sampling requirements.
761.135 Effect of compliance with this policy and enforcement.

Subpart G—PCB Spill Cleanup Policy

§ 761.120 Scope.

(a) *General.* This policy establishes criteria EPA will use to determine the adequacy of the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater. The policy applies to spills which occur after May 4, 1987.

(1) Existing spills (spills which occurred prior to May 4, 1987, are excluded from the scope of this policy for two reasons:

(i) For old spills which have already been discovered, this policy is not intended to require additional cleanup where a party has already cleaned a spill in accordance with requirements imposed by EPA through its regional offices, nor is this policy intended to interfere with ongoing litigation of enforcement actions which bring into issue PCB spills cleanup.

(ii) EPA recognizes that old spills which are discovered after the effective date of this policy will require site-by-site evaluation because of the likelihood that the site involves more pervasive PCB contamination than fresh spills and because old spills are generally more difficult to clean up than fresh spills (particularly on porous surfaces such as concrete). Therefore, spills which occurred before the effective date of this policy are to be decontaminated to requirements established at the discretion of EPA, usually through its regional offices.

(2) EPA expects most PCB spills subject to the TSCA PCB regulations to conform to the typical spill situations considered in developing this policy. This policy does, however, exclude from application of the final numerical cleanup standards certain spill situations from its scope: Spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens. These types of spills are subject to final cleanup standards to be established at the discretion of the regional office. These spills are, however, subject to the immediate notification requirements and measures to minimize further environmental contamination.

(3) For all other spills, EPA generally expects the decontamination standards of this policy to apply. Occasionally, some small percentage of spills covered by this policy may warrant more stringent cleanup requirements because of additional routes of exposure or significantly greater exposures than those assumed in developing the final cleanup standards of this policy. While the EPA regional offices have the authority to require additional cleanup in these circumstances, the Regional Administrator must first make a finding based on the specific facts of a spill that additional cleanup must occur to prevent unreasonable risk. In addition, before a final decision is made to require additional cleanup, the Regional Administrator must notify the Director, Office of Toxic Substances at Headquarters of his/her finding and the basis for the finding.

(4) There may also be exceptional spill situations that requires less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable.

(b) *Spills that may require more stringent cleanup levels.* For spills within the scope of this policy, EPA generally retains, under § 761.135, the authority to require additional cleanup upon finding that, despite good faith efforts by the responsible party, the numerical decontamination levels in the policy have not been met. In addition, EPA foresees the possibility of exceptional spill situations in which site-specific risk factors may warrant additional cleanup to more stringent numerical decontamination levels than are required by the policy. In these situations, the Regional Administrator has the authority to require cleanup to levels lower than those included in this policy upon finding that further cleanup must occur to prevent unreasonable risk. The Regional Administrator will consult with the Director, Office of Toxic Substances, prior to making such a finding.

(1) For example, site-specific characteristics, such as short depth to ground water, type of soil, or the presence of a shallow well, may pose exceptionally high potential for ground water contamination by PCBs remaining after cleanup to the standards specified in this policy. Spills that pose such a high degree of potential for ground water contamination have not been excluded from the policy under paragraph (d) of this section because the presence of such potential may not be readily apparent. EPA feels that automatically excluding such spills from the scope of the policy could result in the delay of cleanup—a particularly undesirable outcome if potential ground water contamination is, in fact, a significant concern.

(2) In those situations, the Regional Administrator may require cleanup in addition to that required under § 761.125 (b) and (c). However, the Regional Administrator must first make a finding, based on the specific facts of a spill, that additional cleanup is necessary to prevent unreasonable risk. In addition, before making a final decision on additional cleanup, the Regional Administrator must notify the Director of the Office of Toxic Substances of his finding and the basis for the finding.

(c) *Flexibility to allow less stringent or alternative requirements.* EPA retains the flexibility to allow less stringent or alternative decontamination measures based upon site-specific considerations. EPA will exercise this flexibility if the responsible party demonstrates that cleanup to the numerical decontamination levels is clearly unwarranted because of risk-mitigating factors, that compliance with the procedural requirements or numerical standards in the policy is impracticable at a particular site, or that site-specific characteristics make the costs of cleanup prohibitive. The Regional Administrator will notify the Director of OTS of any decision and the basis for the decision to allow less stringent cleanup. The purpose of this notification

is to enable the Director of OTS to ensure consistency of spill cleanup standards under special circumstances across the regions.

(d) *Excluded spills.* (1) Although the spill situations in paragraphs (d)(2) (i) through (vi) of this section are excluded from the automatic application of final decontamination standards under § 761.125 (b) and (c), the general requirements under § 761.125(a) do apply to these spills. In addition, all of these excluded situations require practicable, immediate actions to contain the area of contamination. While these situations may not always require more stringent cleanup measures, the Agency is excluding these scenarios because they will always involve significant factors that may not be adequately addressed by cleanup standards based upon typical spill characteristics.

(2) For the spill situations in paragraphs (d)(2)(i) through (vi) of this section, the responsible party shall decontaminate the spill in accordance with site-specific requirements established by the EPA regional offices.

(i) Spills that result in the direct contamination of surface waters. (surface waters include, but are not limited to, "waters of the United States" as defined in Part 122 of this chapter, ponds, lagoons, wetlands, and storage reservoirs).

(ii) Spills that result in the direct contamination of sewers or sewage treatment systems.

(iii) Spills that result in the direct contamination of any private or public drinking water sources or distribution systems.

(iv) Spills which migrate to and contaminate surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with this policy.

(v) Spills that contaminate animal grazing lands.

(vi) Spills that contaminate vegetable gradens.

(e) *Relationship of policy to other statutes.* (1) This policy does not affect cleanup standards or requirements for the reporting of spills imposed, or to be imposed, under other Federal statutory authorities, including but not limited to, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Where more than one requirement applies, the stricter standard must be met.

(2) The Agency recognizes that the existence of this policy will inevitably result in attempts to apply the standards to situations within the scope of other statutory authorities. However, other statutes require the Agency to consider different or alternative factors in determining appropriate corrective actions. In addition, the types and magnitudes of exposures associated with sites requiring corrective action under other statutes often involve important differences from those expected of the typical, electrical equipment-type spills considered in developing this policy. Thus, cleanups under other statutes, such as RCRA corrective actions or remedial and response actions under SARA may result in different outcomes.

§ 761.123 Definitions.

For purposes of this policy, certain words and phrases are used to denote specific materials, procedures, or circumstances. The following definitions are provided for purposes of clarity and are not to be taken as exhaustive lists of situations and materials covered by the policy.

"Double wash/rinse" means a minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.

"High-concentration PCBs" means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing.

"High-contact industrial surface" means a surface in an industrial setting which is repeatedly touched, often for relatively long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. High-contact industrial surfaces are generally of impervious solid material. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways and sidewalks in the industrial area, utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components, indoor vaults, and pipes.

"High-contact residential/commercial surface" means a surface in a residential/commercial area which is repeatedly touched, often for relatively long periods of time. Doors, wall areas below 6 feet in height, uncovered flooring, windowsills, fencing, bannisters, stairs, automobiles, and children's play areas such as outdoor patios and sidewalks are examples of high-contact residential/commercial surfaces. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above 6 feet in height, roofs, asphalt roadways, concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

"Impervious solid surfaces" means solid surfaces which are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces.

"Low-concentration PCBs" means PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials which EPA requires to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid).

"Nonimpervious solid surfaces" means solid surfaces which are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Nonimpervious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.

"Nonrestricted access areas" means any area other than restricted access, outdoor electrical substations, and other restricted access locations, as defined in this section. In addition to residential/commercial areas, these areas include unrestricted access rural areas (areas of low density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs).

"Other restricted access (nonsubstation) locations" means areas other than electrical substations that are at least 0.1 kilometer (km) from a residential/commercial area and limited by man-made barriers (e.g., fences and walls) to substantially limited by naturally occurring barriers such as mountains, cliffs, or rough terrain. These areas generally include industrial

facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.)

"Outdoor electrical substations" means outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power Outdoor electrical substations restrict public access by being fenced or walled off as defined under § 761.30(1)(1)(ii). For purposes of this TSCA policy, outdoor electrical substations are defined as being located at least 0.1 km from a residential/commercial area. Outdoor fenced-off and restricted access areas used in the transmission and/or distribution of electrical power which are located less than 0.1. km from a residential/commercial area are considered to be residential/commercial areas.

"PCBs" means polychlorinated biphenyls as defined under § 761.3. As specified under § 761.1(b), no requirements may be avoided through dilution of the PCB concentration.

"Requirements and standards" means:

(1) "Requirements" as used in this policy refers to both the procedural responses and numerical decontamination levels set forth in this policy as constituting adequate cleanup of PCBs.

(2) "Standards" refers to the numerical decontamination levels set forth in this policy.

"Residential/commercial areas" means those areas where people live or reside, or where people work in other than manufacturing or farming industries. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks, and other similar areas within a residential community. Commercial areas are typically accessible to both members of the general public and employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers.

"Responsible party means the owner of the PCB equipment, facility, or other source of PCBs or his/her designated agent (e.g., a facility manager or foreman).

"Soil" means all vegetation, soils and other ground media, including but not limited to, sand, grass , gravel, and oyster shells. It does not include concrete and asphalt.

"Spill" means both intentional and unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. This policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs and is subject to the relevant requirements of this policy.

"Spill area" means the area of soil on which visible traces of the spill can be observed plus a buffer zone of 1 foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area or on which visible traces of the spilled material are observed is included in the spill area. This area represents the minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area which must be cleaned.

"Spill boundaries" means the actual area of contamination as determined by postcleanup verification sampling or by precleanup sampling to determine actual spill boundaries. EPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in this policy (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in this section, did not encompass the actual boundaries of PCB concentration).

"Standard wipe test" means, for spills of high-concentration PCBs on solid surfaces, a cleanup to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 centimeters (cm) x 10 cm) will be used to delineate the area of cleanup: the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. EPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test. Further, EPA requires the collection and testing of field blanks and replicates.

§ 761.125 Requirements for PCB spill cleanup.

(a) *General.* Unless expressly limited, the reporting, disposal, and precleanup sampling requirements in paragraphs (a)(1) through (3) of this section apply to all spills of PCBs at concentrations of 50 ppm or greater which are subject to decontamination requirements under TSCA, including those spills listed under § 761.120(b) which are excluded from the cleanup standards at paragraphs (b) and (c) of this section.

(1) *Reporting requirements.* The reporting in paragraph (a)(1) (i) through (iv) of this section is required in addition to applicable reporting requirements under the Clean Water Act (CWA) or the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). For example, under the National Contingency Plan all spills involving 10 pounds or more of PCB material must currently be reported to the National Response Center (1-800-424-8802). The requirements in paragraphs (a)(1) (i) through (iv) of this section are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on governments as well as the regulated community.

(i) Where a spill directly contaminates surface water, sewers, or drinking water supplies, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(ii) Where a spill directly contaminates grazing lands or vegetable gardens, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and proceed with the immediate requirements specified under paragraph (b) or (c) of this section, depending on the source of the spill, in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(iii) Where a spill exceeds 10 pounds of PCB material (generally 1 gallon of PCB dielectric fluid) and is not addressed in paragraph (a)(1) (i) or (ii) of this section, the responsible party will notify the appropriate EPA regional office and proceed to decontaminate the spill area in accordance with this TSCA policy in the shortest possible time after

discovery, but in no case later than 24 hours after discovery. For purposes of the notification requirement, the 10 pounds are measured by the weight of the PCB-containing material spilled rather than by the weight of only the PCBs spilled.

(iv) Spills of 10 pounds or less, which are not addressed in paragraph (a)(1) (i) or (ii) of this section, must be cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of EPA is not required.

(2) *Disposal of cleanup debris and materials.* All concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under this policy shall be properly stored, labeled, and disposed of in accordance with the provisions of § 761.60.

(3) *Determination of spill boundaries in the absence of visible traces.* For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by using a statistically based sampling scheme.

(b) *Requirements for cleanup of low-concentration spills which involve less than 1 pound of PCBs by weight (less than 270 gallons of untested mineral oil)*—(1) *Decontamination requirements.* Spills of less than 270 gallons of untested mineral oil, low-concentration PCBs, as defined under § 761.123, which involve less than 1 pound of PCBs by weight (e.g., less than 270 gallons of untested mineral oil containing less than 500 ppm PCBs) shall be cleaned in the following manner:

(i) Solid surfaces must be double washed/rinsed (as defined under § 761.123); except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters (10 $\mu g/100\ cm^2$) by standard commercial wipe tests.

(ii) All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated, and the ground be restored to its original configuration by back-filling with clean soil (i.e., containing less than 1 ppm PCBs).

(iii) Requirements of paragraph (b)(1) (i) and (ii) of this section must be completed within 48 hours after the responsible party was notified or became aware of the spill.

(2) *Effect of emergency or adverse weather.* Completion of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to, civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergency, has left insufficient visible traces, the responsible party must use a statistically based sampling scheme to determine the spill boundaries as required under paragraph (a)(3) of this section.

(3) *Records and certification.* At the completion of cleanup, the responsible party shall document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill (e.g., type of equipment).

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned and of the double wash/rinse method used.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) A certification statement signed by the responsible party stating that the cleanup requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

(ix) While not required for compliance with this policy, the following information would be useful if maintained in the records:

(A) Additional pre- or post-cleanup sampling.

(B) The estimated cost of the cleanup by man-hours, dollars, or both.

(C) *Requirements for cleanup of high-concentration spills and low-concentration spills involving 1 pound or more PCBs by weight (270 gallons or more of untested mineral oil).* Cleanup of low-concentration spills involving 1 lb or more PCBs by weight and of all spills of materials other than low-concentration materials shall be considered complete if all of the immediate requirements, cleanup standards, sampling, and recordkeeping requirements of paragraphs (c) (1) through (5) of this section are met.

(1) *Immediate requirements.* The four actions in paragraphs (c)(1) (i) through (iv) of this section must be taken as quickly as possible and within no more than 24 hours (or within 48 hours for PCB Transformers) after the responsible party was notified or became aware of the spill, except that actions described in paragraphs (c)(1) (ii) through (iv) of this section can be delayed beyond 24 hours if circumstances (e.g., civil emergency, hurricane, tornado, or other similar adverse weather conditions, lack of access due to physical impossibility, or emergency operating conditions) so require for the duration of the adverse conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Owners of spilled PCBs who have delayed cleanup because of these types of circumstances must keep records documenting the fact that circumstances precluded rapid response.

(i) The responsible party shall notify the EPA regional office and the NRC as required by § 761.125(a)(1) or by other applicable statutes.

(ii) The responsible party shall effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces plus a 3-foot buffer and place clearly visible signs advising persons to avoid the area to minimize the spread of contamination as well as the potential for human exposure.

(iii) The responsible party shall record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, the responsible party shall record this fact and contact the regional office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

(iv) The responsible party shall initiate cleanup of all visible traces of the fluid on hard surfaces and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

(v) If there has been a delay in reaching the site and there are insufficient visible traces of PCBs remaining at the spill site, the responsible party must estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspect contaimination. The responsible party must then utilize a statistically based sampling scheme to identify the boundaries of the spill area as soon as practicable.

(vi) Although this policy requires certain immediate actions, as described in paragraphs (c)(1)(i) through (iv) of this section, EPA is not placing a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, EPA expects that decontamination will be achieved promptly in all cases and will consider promptness of completion in determining whether the responsible party made good faith efforts to clean up in accordance with this policy.

(2) *Requirements for decontaminating spills in outdoor electrical substations.* Spills which occur in outdoor electrical substations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(2)(i) and (ii) of this section. Conformance to the cleanup standards under paragraphs (c)(2)(i) and (ii) of this section shall be verified by post-cleanup sampling as specified under § 761.130. At such times as outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access requirements under paragraph (c)(4) of this section.

(i) Contaminated solid surfaces (both impervious and non-impervious) shall be cleaned to a PCB concentration of 100 micrograms (μg)/100 square centimeters (cm^2) (as measured by standard wipe tests).

(ii) At the option of the responsible party, soil contaminated by the spill will be cleaned either to 25 ppm PCBs by weight, or to 50 ppm PCBs by weight provided that a label or notice is visibly placed in the area. Upon demonstration by the responsible party that cleanup to 25 ppm or 50 ppm will jeopardize the integrity of the electrical equipment at the substation, the EPA regional office may establish an alternative cleanup method or level and place the responsible party on a reasonably timely schedule for completion of cleanup.

(3) *Requirements for decontaminating spills in other restricted access areas.* Spills which occur in restricted access locations other than outdoor electrical substations, as defined under § 761.123, shall be decontaminated in accordance with paragraph (c)(3)(i) through (v) of this section. Conformance to the cleanup standards in paragraph (c)(3)(i) through (v) of this section shall be verified by postcleanup sampling as specified under § 761.130. At such times as restricted access areas other than outdoor electrical substations are converted to another use, the spill site shall be cleaned up to the nonrestricted access area requirements of paragraph (c)(4) of this section.

(i) High-contact solid surfaces, as defined under § 761.163 shall be cleaned to 10 μg/100 cm^2 (as measured by standard wipe tests).

(ii) Low-contact, indoor, impervious solid surfaces will be decontaminated to 10 μg/100 cm^2.

(iii) At the option of the responsible party, low-contact, indoor, nonimpervious surfaces will be cleaned either to 10 μg/100 cm^2 or to 100 μg/100 cm^2 and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(iv) Low-contact, outdoor surfaces (both impervious and nonimpervious) shall be cleaned to 100 μg/100 cm^2.

(v) Soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.

(4) *Requirements for decontaminating spills in nonrestricted access areas.* Spills which occur in nonrestricted access locations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(4)(i) through (v) of this section. Conformance to the cleanup standards at paragraphs (c)(4)(i) through (v) of this section shall be verified by postcleanup sampling as specified under § 761.130.

(i) Furnishings, toys, and other easily replaceable household items shall be disposed of in accordance with the provisions of § 761.60 and replaced by the responsible party.

(ii) Indoor solid surfaces and high-contact outdoor solid surfaces, defined as high contact residential/commercial surfaces under § 761.123, shall be cleaned to 10 μg/100 cm^2 (as measured by standard wipe tests).

(iii) Indoor vault areas and low-contact, outdoor, impervious solid surfaces shall be decontaminated to 10 μg/100 cm^2.

(iv) At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces shall be either cleaned to 10 μg/100 cm^2 or cleaned to 100 μg/100 cm^2 and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(v) Soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight provided that soil is excavated to a minimum depth of 10 inches. The excavated soil will be replaced with clean soil, i.e., containing less than 1 ppm PCBs, and the spill site will be restored (e.g., replacement of turf).

(5) *Records.* The responsible party shall document the cleanup with records of decontamination. The records must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill, e.g., type of equipment.

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location and the nature of the materials contaminated. This information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or in a nonrestricted access area.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) Postcleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

(ix) While not required for compliance with this policy, information on the estimated cost of cleanup (by man-hours, dollars, or both) would be useful if maintained in the records.

§ 761.130 Sampling requirements.

Postcleanup sampling is required to verify the level of cleanup under § 761.125(c) (2) through (4). The responsible party may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples) provided that the requirements of paragraphs (a) and (b) of this section are satisfied.

(a) The sampling area is the greater of (1) an area equal to the area cleaned

plus an additional 1-foot boundary, or (2) an area 20 percent larger than the original area of contamination.

(b) The sampling scheme must ensure 95 percent confidence against false positives.

(c) The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.

(d) The sampling scheme must include calculation for expected variability due to analytical error.

(e) EPA recommends the use of a sampling scheme developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections: "Verification of PCB Spill Cleanup by Sampling and Analysis." Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup." Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office, Environmental Protection Agency, Rm. E-543, 401 M St. SW., Washington, DC 20460 (202-554-1404). The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

(f) EPA may, at its discretion, take samples from any spill site. If EPA's sampling indicates that the remaining concentration level exceeds the required level, EPA will require further cleanup. For this purpose, the numerical level of cleanup required for spills cleaned in accordance with § 761.125(b) is deemed to be the equivalent of numerical cleanup requirements required for cleanups under § 761.125(c)(2) through (4). Using its best engineering judgment, EPA may sample a statistically valid random or grid sampling technique, or both. When using engineering judgment or random "grab" samples, EPA will take into account that there are limits on the power of a grab sample to dispute statistically based sampling of the type required of the responsible party. EPA headquarters will provide guidance to the EPA regions on the degree of certainty associated with various grab sample results.

§ 761.135 Effect of compliance with this policy and enforcement.

(a) Although a spill of material containing 50 ppm or greater PCBs is considered improper PCB disposal, this policy establishes requirements that EPA considers to be adequate cleanup of the spilled PCBs. Cleanup in accordance with this policy means compliance with the procedural as well as the numerical requirements of this policy. Compliance with this policy creates a presumption against both enforcement action for penalties and the need for further cleanup under TSCA. The Agency reserves the right, however, to initiate appropriate action to compel cleanup where, upon review of the records of cleanup or EPA sampling following cleanup, EPA finds that the decontamination levels in the policy have not been achieved. The Agency also reserves the right to seek penalties where the Agency believes that the responsible party has not made a good faith effort to comply with all provisions of this policy, such as prompt notification of EPA of a spill, recordkeeping, etc.

(b) EPA's exercise of enforcement discretion does not preclude enforcement action under other provisions of TSCA or any other Federal statute. This includes, even in cases where the numerical decontamination levels set forth in this policy have been met, civil or criminal action for penalties where EPA believes the spill to have been the result of gross negligence or knowing violation.

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BILLING CODE 6560-50-M

PART II

SUBCONTRACTOR OR SUBCONSULTANT REPORTS

NYSDEC013397

PART II.i

GEOPHYSICS SURVEY

NYSDEC013398

TABLE D-1

MAGNETOMETRY SURVEY

TOTAL FIELD INTENSITY MEASUREMENTS AT GRID NODES

NODE NUMBER	FIELD STRENGTH (GAMMAS)
DMMW-3	
16	58,539
17	58,705
18	58,616
19	58,635
20	58,637
21	58,574
22	58,544
23	53,662
24	58,570
DMMW-2	
25	58,568
26	52,024
27	58,430
28	52,190
29	51,871
30	52,214
31	52,265
32	58,745
33	52,095
34	58,579
DMMW-1	
35	58,592
36	51,572
37	53,453
38	53,472
39	58,359
40	54,245
41	53,655
42	53,708
43	53,420
44	52,875
45	53,157
46	53,528
47	53,712
48	53,653
49	53,408
50	53,309
51	53,180
52	53,104
53	53,221
54	53,213

NYSDEC013399

PART II.ii

SOIL GAS SURVEY

NYSDEC013400

TETRA·K TESTING

REPORT TO: LMS ENGINEERING
ONE BLUE HILL PLAZA
PEARL RIVER, NY 10965

ATTN: ED MAIKISH

WORK ID: NYSDEC/DEPEW MANUFACTURING

WORK ORDER: 92-03-270

Authorized Signature:

5/11/92

Stephen L. Knollmeyer
Mobile Laboratory Supervisor

NYSDEC013401

WESTFIELD EXECUTIVE PARK
53 SOUTHAMPTON ROAD
WESTFIELD, MA 01085
TEL. 413-562-9193
FAX. 413-562-5317

Received: 03/17/92 05/18/92 15:57:52

REPORT TO: LMS ENGINEERING
ONE BLUE HILL PLAZA
PEARL RIVER, NY 10965

ATTEN: ED MAIKISH

CLIENT: LMS 051 SAMPLES: 11
COMPANY: LMS ENGINEERING
FACILITY: PEARL RIVER NY 051

WORK ID: NYSDEC/DEPEW MANUFACTURING
TAKEN: 3/12/92
TRANS: SLK
TYPE: AIR
P.O. #:
INVOICE: under separate cover

PREPARED BY: Tighe & Bond, Inc.
53 Southampton Road
Westfield, MA 01085

ATTEN: Peter A. Law
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SLK 5/19/92
CERTIFIED BY

CONTACT: SLK TJS

SAMPLE IDENTIFICATION

01 DMSG-1
02 DMSG-2
03 DMSG-3
04 DMSG-4
05 DMSG-5
06 DMSG-6
07 DMSG-7
08 DMSG-8
09 DMSG-9
10 DMSG-10
11 DMSG-11

TEST CODES and NAMES used on this workorder

SOILGS SOIL GAS BY GC - TETRA K

NYSDEC013402

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-1 FRACTION 01A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/13/92 10:14:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 31292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013403

Trichlorofluoromethane was detected at 88 ug/m3.

TETRA·K TESTING

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-2 FRACTION 02A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/12/92 10:48:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013404

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-3 FRACTION 03A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 11:24:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013405

Trichlorofluoromethane was detected at 550 ug/m3.

TETRA·K TESTING

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-4 FRACTION 04A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 12:00:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013406

Trichlorofluoromethane was detected at 140 ug/m3.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-5 FRACTION 05A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 12:36:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	1400	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	220000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	100	10
108-88-3	Toluene	8300	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	150	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	17000	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013407

Other hydrocarbons were detected.

TETRA·K TESTING

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-6 FRACTION 06A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/12/92 13:22:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	BQL	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	1300	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013408

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-7 FRACTION 07A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 14:01:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013409

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-8 FRACTION 08A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/12/92 14:35:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013410

Received: 03/17/92

Results by Sample

SAMPLE ID DMSG-9 FRACTION 09A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 15:07:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	89	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013411

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

Trichlorofluoromethane was detected at 35 ug/m3.

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-10 FRACTION 10A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/12/92 15:42:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013412

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-11 FRACTION 11A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/12/92 16:16:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/12/92 FILE # 031292 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013413

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

NYSDEC013414

TETRA · K TESTING

REPORT TO: LMS ENGINEERING
ONE BLUE HILL PLAZA
PEARL RIVER, NY 10965

ATTN: ED MAIKISH

WORK ID: NYSDEC/DEPEW MANUFACTURING

WORK ORDER: 92-03-271

Authorized Signature:

5/14/92

Stephen L. Knollmeyer
Mobile Laboratory Supervisor

NYSDEC013415

WESTFIELD EXECUTIVE PARK
53 SOUTHAMPTON ROAD
WESTFIELD, MA 01085
TEL. 413-562-9193
FAX. 413-562-5317

Received: 03/17/92 05/18/92 16:00:03

REPORT TO: LMS ENGINEERING
ONE BLUE HILL PLAZA
PEARL RIVER, NY 10965

ATTEN: ED MAIKISH

CLIENT: LMS 051 SAMPLES: 10
COMPANY: LMS ENGINEERING
FACILITY:
PEARL RIVER NY 051

WORK ID: NYSDEC/DEPEW MANUFACTURING
TAKEN: 3/13/92
TRANS: SLK
TYPE: AIR
P.O. #:
INVOICE: under separate cover

PREPARED BY: Tighe & Bond, Inc.
53 Southampton Road
Westfield, MA 01085

ATTEN: Peter A. Law
PHONE: (413) 572-3200

SLK 5/19/92
CERTIFIED BY

CONTACT: SLK TJS

SAMPLE IDENTIFICATION

01 DMSG-12
02 DMSG-17
03 DMSG-13
04 DMSG-14
05 DMSG-15
06 DMSG-16
07 DMSG-18
08 DMSG-19
09 DMSG-20
10 DMSG-21

TEST CODES and NAMES used on this workorder

SOILGS SOIL GAS BY GC - TETRA K

NYSDEC013416

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-12 FRACTION 01A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/13/92 08:36:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	1100	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	13000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	500	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	3300	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013417

OTHER HYDROCARBONS WERE DETECTED.

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-13 FRACTION 03A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 09:51:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	1600	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	18000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	970	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	11000	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013418

ND = Not detected
NA = Not analyzed
BOL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

OTHER HYDROCARBONS WERE DETECTED.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-14 FRACTION 04A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 10:27:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	850	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	38000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	19	10
108-88-3	Toluene	580	200
71-55-6	1,1,1-Trichloroethane	96	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	56	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	2000	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013419

ND = Not detected
NA = Not analyzed
BOL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

OTHER HYDROCARBONS WERE DETECTED.

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-15 FRACTION 05A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 11:08:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	2800	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	55000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	39	10
108-88-3	Toluene	3500	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	140	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	8700	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013420

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

OTHER HYDROCARBONS WERE DETECTED.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-16 FRACTION 06A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 12:19:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013421

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-17 FRACTION 02A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 09:17:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013422

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-18 FRACTION 07A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/13/92 12:55:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	3100	200
71-43-2	Benzene	4000	200
78-93-3	2-Butanone	4100	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	56000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	31	10
108-88-3	Toluene	3300	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	150	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	7600	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013423

OTHER HYDROCARBONS WERE DETECTED.

TETRA·K TESTING
A DIVISION OF TIGHE & BOND, INC.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-19 FRACTION 08A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 13:33:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	1600	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	56000	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	2000	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	130	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	6400	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013424

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

OTHER HYDROCARBONS WERE DETECTED.

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-20 FRACTION 09A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

Date & Time Collected 03/13/92 14:12:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF

INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS

Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	1300	200
71-43-2	Benzene	360	200
78-93-3	2-Butanone	1400	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	38	10
108-88-3	Toluene	22000	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

NYSDEC013425

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

Received: 03/17/92 Results by Sample

SAMPLE ID DMSG-21 FRACTION 10A TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K
Date & Time Collected 03/13/92 14:47:00 Category AIR

TETRA K DIVISION

ANALYST SLK DATE ANALYZED 03/13/92 FILE # 031392 VERIFIED BY TCF
INSTRUMENT MOBILE LABORATORY INJ VOL 5

SOIL GAS
Gas Chromatography for Volatile Organics

CAS #	COMPOUND	RESULT	DETECTION LIMIT
67-64-1	Acetone	ND	200
71-43-2	Benzene	ND	200
78-93-3	2-Butanone	ND	200
56-23-5	Carbon tetrachloride	ND	10
108-90-7	Chlorobenzene	ND	200
67-66-3	Chloroform	ND	10
75-34-3	1,1-Dichloroethane	ND	50
107-06-2	1,2-Dichloroethane	ND	50
75-35-4	1,1-Dichloroethene	ND	50
	1,2-Dichloroethene c/t	ND	50
100-41-4	Ethylbenzene	ND	200
591-78-6	2-Hexanone	ND	200
75-09-2	Methylene chloride	ND	50
108-10-1	4-Methyl-2-pentanone	ND	200
79-34-5	1,1,2,2-Tetrachloroethane	ND	50
127-18-4	Tetrachloroethene	ND	10
108-88-3	Toluene	ND	200
71-55-6	1,1,1-Trichloroethane	ND	10
79-00-5	1,1,2-Trichloroethane	ND	10
79-01-6	Trichloroethene	ND	10
75-01-4	Vinyl Chloride	ND	50
1330-20-7	Total Xylenes	ND	200

All results reported in micrograms per cubic meter (ug/m3).

NOTES AND DEFINITIONS FOR THIS REPORT

Analyses were conducted in a mobile laboratory using an HNU Model 421 Gas Chromatograph with FID, PID and ECD detectors. Soil gas samples collected in the field were injected into the GC using a gas-tight syringe. The results were calculated using the external standard method.

ND = Not detected
NA = Not analyzed
BQL = Compound detected below minimum quantitation limit
B = Analyte detected in the laboratory blank
* = o-Xylene, m-Xylene, and p-Xylene are reported as total Xylenes

NYSDEC013426

Received: 03/17/92 Test Methodology

TEST CODE SOILGS NAME SOIL GAS BY GC - TETRA K

NYSDEC013427

NYSDEC013428

LAWLER, MATUSKY & SKELLY ENGINEERS
CREW CHIEF REPORT

Crew Chief: JMGuzewicz / Joe Mastroianni	Job No./Project: 576-047 / Depew Manuf
Crew Member(s): –	Survey: Soil Gas
Vehicle(s)/Boat(s) Used: Bl. Van / —	Project Manager: Ed Markish

Crew Chief Report (complete after survey):

Survey Start/End Date: 3.12.92 / 3.13.92	Survey Start/End Time: ~0600 / ~1800

Describe Details Below:

	Y	N		Y	N
Sampling gear working properly	Y		Field meters calibrated:		
Field calibration must be attached to original CC report and sent to QA/QC			• Air Monitoring (HNu, OVA, CGI) Joe M. has calib data	Y	
• Was downtime incurred (no. hrs____)		N	• Water Quality	—	—
• Any incidents, accidents or pertinent observations		N	Were the following reports completed and submitted:		
Boat usage –	TO		• Weather conditions listed on field data sheets		
• Engine hours			• Radio logs	—	—
• Radio logs			• Equipment usage	Y	
• Boat location			• ~~Boat~~/Vehicle logs	Y	
Chain-of-custody completed	Y		Samples signed over	—	—

Comments/Observations Survey went very well. Joe + I drove down to site + arrived @ 0715. We met Steve Knollmeyer @ ~0800. One of the owners, George Prinz arrived shortly. He did not have keys to the building but said the renters would let us in if we needed to. Steve decided to use his generator for power instead of trying to use power from building (outside plug available is not grounded). We started the soil points upgradient + worked south. The other owner, Joan Dvoskin arrived for a short time to meet us. At 1000 John Conover of DEC arrived to look over the site. He seemed concerned that the lagoon area was filled in with what looks like C+D/fill mix. He left after ~1 hour on site. We installed the points to a depth of 3.5-3.7' deep. After the point was installed we poured some "0" sand in bottom where point is + then used powdered bentonite (+ water) to seal up the rest of the annulus. The top (+ end of tubing) was plugged with modeling clay. The first day we installed 12 points + Steve sampled 11 of them. The next day we began where we left off. John Conover of DEC and assistant, Ray arrived @ 1000 + took some pictures of the fill used to fill in the lagoon. While they went inside to speak w/ renters I dug up an upside down bucket we found buried near the east corner of the building. We noticed it yesterday, the bottom was broken + we could see a void underneath it. It was covering an uncapped fill port to an underground storage tank. The tank is almost full. We pulled a sample out of it. It has a thinner-like smell + a orange, amber, yellow color. We filled a VOA vial w/ this liquid. At this point we cannot tell if the tank is full of this liquid or if there is water underneath it. Steve seemed to be seeing higher #s from points in the vicinity of the resin slabs so we dropped one of points along west side of property + placed it south of the resin slabs

* George asked why we were going to start the drilling over. He left after ~1 hr on site

NOTE: Send original Crew Chief Report to QA/QC within 5 days of survey completion; send yellow copy to warehouse; retain pink copy for C.C. file

Crew Chief Signature: John M Guzewicz	Date: 3.16.92

*We called in to office + informed EAM of the underground storage tank and got permission to install an additional SG point near the tank. George arrived in afternoon + told us

Use Additional Sheets if Necessary

PART II.iii

DATA VALIDATION REPORT

NYSDEC013429

PART II.iii

DATA VALIDATION REPORT

The following data validation report details the analyses conducted on samples collected from the Depew Manufacturing site (NYSDEC I.D. No. 130038). It also contains the case narratives submitted with the data packages prepared by Aquatec Inc. for full target compound list (TCL) analyses on all the samples and full EP toxicity and toxicity characteristic leaching procedure (TCLP) volatile organic compound (VOC) analyses performed on soil samples. The case narratives discuss sample handling, any analytical problems that were encountered, and corrective actions that were taken.

Data Validation Services determined that, for several reasons documented in the data validator's report, the base neutral/acid extractable (BNA) and pesticide/PCB analyses conducted by Aquatec were not in compliance with 1991 NYSDEC Analytical Services Protocol (ASP). LMS concluded that the noncompliant data were usable with the following exceptions: the BNA and pesticide/PCB data for background soil sample DMMW-1 (1-2 ft) were unusable because of a five-day violation in extraction holding time. As most of the TCL compounds for these fractions were reported as "nondetected," there is no certainly that the holding time violation did not compromise the reported results in the background sample. The background sample is vital in determining the number and extent of contaminants that exceed the normal (background) condition at the site. It was LMS' opinion that background soil sample DMMW-1 (1-2 ft) should be resampled and reanalyzed for BNAs and pesticides/PCBs.

NYSDEC013430

Data Validation Services subsequently determined that the BNA fraction of the resampled background soil, DMMW-1A (1-2 ft), was noncompliant due to very low acid surrogate recoveries (3%) below the required 19%. The reextracted sample was also noncompliant due to holding time violations and low acid surrogate recoveries. LMS reviewed the validator's report and case narratives and determined that the initial analysis was usable with the qualifications discussed in the Data Usability Summary (Appendix B). The reextracted data were not usable and were rejected for several reasons cited in the validator's report and

discussed in full in the usability summary. The resampled pesticide data were in compliance and are usable as reported.

NYSDEC013431

Data Validation Services

Cobble Creek Road P. O. Box 208
North Creek, N. Y. 12853
Phone 518-251-4429

RECEIVED
JUL 16 1992
LMS ENGINEERS

TO: Lawler, Matusky & Skelly, Engineers

FROM: Judy Harry, Data Validation Services J. Harry

DATE: July 15, 1992

RE: Validation Report for Depew Manufacturing Site
LMS Job No. 576-047 NYSDEC ID No. 130038
Aquatec SDG Nos. 31153 and 31306

Review has been completed for the data generated at the Depew Manufacturing Site, and processed by Aquatec, Inc. Four groundwater samples were analysed for CLP TCL/TAL. Six soil samples were analysed for CLP TCL/TAL, Eptox metals and pesticides/herbicides, and TCLP-VOA. One additional soil was analysed for CLP TCL/TAL. Field and trip blanks were run, and matrix spikes/duplicates were performed for each matrix. The methodologies utilized were from the 1991 updates of the NYSDEC Analytical Services Protocol.

In summary, analyses were performed in compliance with protocol, with exceptions as noted in the sections below, and on the attached compliancy chart. The laboratory case narratives are quite comprehensive in their discussion of analytical concerns, and are included as part of this report. Data package deliverables were complete with summary and raw data requirements. However, omissions include laboratory internal chain-of-custody documentation, organic Method Detection Limit data, and the Sample Preparation and Analysis Summary Forms for SDG 31153. Inspection of submitted laboratory login/sample preparation/analysis logbook pages, and of the documented instrumental sensitivity indicate proper custody and MDLs for this project, but these submissions will be requested for all future data packages to ensure compliance with required deliverables.

Quality concerns which result in recommended qualification/editing of reported data are as follows:

1. The extraction for the BNA and Pesticide/PCB fractions of sample MW-1 (1-2') was performed 10 days following VTSR, beyond the allowable limit of 5 days. The extended holding time may result in losses of the more volatile or labile components in the soil sample, and reported values and detection limits for the semivolatile and pesticide/PCB components may be considered estimated. The pesticide/PCB analysis for this sample was performed one day beyond the allowable time of 40 days from the (delayed) start of the extraction.

2. Due to the inconsistent recovery of ethylbenzene in the two analyses (see case narrative) of DMTB-5 (30-32), and the implied sample nonhomogeneity, the reported values of ethylbenzene in the sample should be considered estimated. Due to elevated recovery of surrogate standard BFB in both analyses (outlined below), xylene reported levels in this sample should also be considered estimated.

Method blanks and instrumental tunes met all required criteria. All internal standard areas and retention times were within required ranges. Tentatively identified compounds were comprehensively evaluated.

As discussed in the case narrative, the 2-butanone recovery in the initial calibration associated only with the field blank analysis produced poor response in the lower concentrations. The laboratory accordingly elevated the reported detection limit for that component in the field blank. Analysis of the field blank was also performed by EPA-8240, with acceptable 2-butanone results, and documentation is provided in the package.

Aqueous matrix spike blank results should be summarized on a Form 3.

SEMIVOLATILE ANALYSES

The holding time for DMMW-1(1-2) was exceeded, as discussed above. The holding time to extraction for aqueous sample DMMW-1 was exceeded by one day. As the samples were received by the laboratory within one day of sampling, this extension on the holding time may not necessitate qualification of data.

Sample surrogate recoveries were within acceptable range for undiluted extracts. Those samples requiring further dilution produced outlying values for some surrogates due to the dilution of the surrogate response. As indicated in the case narrative, the matrix spike duplicate of TB-1 (6-10) produced poor surrogate and matrix spike recoveries due to assumed sample loss, as well as extract dilution. Soil matrix spikes on sample TB-1(6-10) were diluted beyond response. Matrix spike blanks were not performed in association with the soil or aqueous matrix spikes, as outlined in the case narrative. Data is provided for matrix spike blanks performed in a similar timeframe with the same spike solution. Aqueous matrix spikes of DMMW-1 produced acceptable recoveries. Values for 4-nitrophenol and pentachlorophenol were elevated above the recommended limits (values up to 112%; limits are 80% and 103%), but are reasonable for the continuous extractor methodology.

Method blanks, instrumental tunes, and standard calibrations met within required criteria. All internal standard areas and retention times were within required ranges. Tentatively identified compounds were comprehensively evaluated. The fragmentation results for m/z = 441 reported on the Forms V are actually abundances relative to m/z = 443, rather than to m/z = 198 (which is what is outlined in the protocol).

PESTICIDE/PCB ANALYSES

The holding time for extraction and analysis of DMMW-1 (1-2) occurred beyond the allowable holding time, as discussed above. Samples DMTB-2 (4-6) and DMTB-4 (6-8) were reanalysed for Pesticide/PCB at dilution necessary to bring target compounds into calibration range. The reanalysis ocurred 3 days beyond the allowable holding time for the extract. Due to the persistence of the Aroclor components, sample reported results are unlikely to be affected.

The TCX surrogate recovery for the aqueous method blank on the confirmation column was one percentage point below the recommended lower limit of 60%. Aqueous samples DMMW-2 and DMMW-4 produced outlying values for surrogate DCB of 57% and 44%, respectively, on the confirmation column, and DMMW-4 also had a low value for DCB on the primary analysis, at 48% (limit is 60%). The surrogate recovery limits are advisory and no corrective action is required. The undiluted analyses of all soil samples produced acceptable surrogate recoveries, with the exception of DCB on the confirmation column for sample DMTB-5 (30-32), with an elevated recovery of 167% (limit of 150%). Additional dilutions were required in several samples, and surrogate recoveries were diluted out in some of these.

As with the semivolatiles, no matrix spike blanks were performed in accordance with the matrix spike extractions. The aqueous matrix spikes (sample DMMW-1) produced all values within recommended limits. The soil matrix spike duplicate of sample DMTB-1 (6-10) produced low recovery of gamma-BHC (39%; below the recommended limit of 46%), and elevated recovery values for aldrin and dieldrin, due to interference from PCB components.

COMPLIANCY CHART

Project: Depew Manufacturing

SDG Nos: Aquatec SDGs 31153 and 31306

Protocol: 1991 NYSDEC ASP

NYSDEC013434

RecDate	Spl ID	Matrix	VOA	BNA	Pest/PCB	Metals/CN	TCLP-VOA	EPTOX	Noncompl
04-28-92	DMMW-1	Aqueous	OK	NO	NO	OK	NR	NR	1,2,3
04-29-92	DMMW-2	Aqueous	OK	NO	NO	OK	NR	NR	1,2
04-29-92	DMMW-3	Aqueous	OK	NO	NO	OK*	NR	NR	1,2
04-29-92	DMMW-4	Aqueous	OK	NO	NO	OK	NR	NR	1,2
04-15-92	DMMW-1 (1-2')	Soil	OK	NO	NO	OK	OK	OK	1,2,4,5
04-21-92	DMTB-1 (2-4')	Soil	OK	NO	NO	OK	OK	OK	1,2,4
04-21-92	DMTB-1 (6-8')	Soil	OK	NR	NR	NR	NR	NR	
04-21-92	DMTB-1 (6-10')	Soil	NR	NO	NO	OK	NR	NR	1,2,4
04-21-92	DMTB-2 (4-6')	Soil	OK	NO	NO	OK	OK	OK	1,2,4,6
04-21-92	DMTB-3 (2-4')	Soil	OK	NO	NO	OK	OK	OK	1,2,4
04-21-92	DMTB-4 (6-8')	Soil	OK	NO	NO	OK	OK	OK	1,2,4,6
04-21-92	DMTB-5 (30-32')	Soil	OK	NO	NO	OK	OK	OK	1,2,4

* Run for filtered and unfiltered metals.

1. No BNA matrix spike blank was processed with these samples (1991 NYSDEC ASP pg. E-83). Sample reported results are unaffected.
2. No PCB/Pest matrix spike blank was processed with these samples (pg. E-107). Sample reported results are unaffected.
3. BNA extraction holding time exceeded (pg. D-III-8).
4. GPC calibration check produces outlying recovery value for dieldrin (pg. D-IV-28). Determinined not to affect sample reported results.
5. BNA extraction holding time, and Pesticide/PCB extraction and analysis holding times exceeded (pgs. D-III-8 and D-IV-8).
6. Pesticide/PCB analysis of dilutions of this sample exceeds allowable holding time (pg. D-IV-8).

ETR No. 31220 (cont.)

LMS Sample ID	Aquatec Lab No.	Sample Matrix
DMTB-2:4-6'	158015	Soil
DMTB-2:4-6'MS	158015MS	Soil
DMTB-2:4-6'MSD	158015MD	Soil
DMTB-2:4-6'	158016	TCLP ZHE
DMTB-2:4-6'	158017	EPTOX Ext.
DMTB-3:2-4'	158018	Soil
DMTB-3:2-4'	158019	TCLP ZHE
DMTB-3:2-4'	158020	EPTOX Ext.
DMTB-4:6-8'	158021	Soil
DMTB-4:6-8'	158022	TCLP ZHE
DMTB-4:6-8'	158023	EPTOX Ext.
DMTB-5:30-32'	158024	Soil
DMTB-5:30-32'	158025	TCLP ZHE
DMTB-5:30-32'	158026	EPTOX Ext.
MSB	158029	Solid

MS-matrix spike MD-matrix spike duplicate
DP-duplicate MSB-matrix spike blank
TCLP ZHE - TCLP Zero Headspace Extract

Due to space limitations on organic and inorganic reporting forms, the following laboratory sample identifiers have been truncated as follows:

Volatile Organics
by OLM01

LMS Sample ID	Truncated Sample ID
MW-1 1'-2'	MW-1 1-2
DMTB-1:2-4'	DMTB-1 2-4
DMTB-1:6-8'	DMTB-1 6-8
DMTB-1:6-8'MS	DMTB-1 6-8MS
DMTB-1:6-8'MSD	DMTB-1 6-8MD
DMTB-2:4-6'	DMTB-2 4-6
DMTB-3:2-4'	DMTB-3 2-4
DMTB-4:6-8'	DMTB-4 6-8
DMTB-5:30-32'	DMTB-5 30-32
DMTB-5:30-32'DL	DMTB-5 3032DL
DMTB-2:4-6'MS	DMTB-2 4-6MS
DMTB-2:4-6'MSD	DMTB-2 4-6MD
DMTB-1:6-8'DL	DMTB-1 6-8DL

NYSDEC013435

TCLP Volatiles

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'MS	DMTB-1:2-4MS
DMTB-5:30-32'	DMTB-5:30-32
DMTB-3:2-4'DL	DMTB-3:2-4DL

000002

the Contract Required Quantitation Limit (CRQL) (10ug/l). The results of both analyses are included in this submittal. Please note that the results of the volatile organics analysis performed by Method 8240 are presented on an EPA CLP 2/88 SOW Form I.

Several forms required hand editing as a result of the trap related problem associated with 2-butanone. Hand editing was required because OLM01 Formaster software does not accommodate deviations to the method. Those edited pages include Form 1A for the sample labeled FB, Form 1A for the method blank labeled VBLKF1, and Form 7A for the continuing calibration standard (File Name: CYD050HI2V).

The results of a volatile organics analysis (2.6 grams) performed on sample DMTB-5:30-32' (Lab No. 158024) showed ethylbenzene to be present at a concentration of 414 ug/l at the instrument level (830 ug/kg dry in the sample). A one gram portion of the sample was reanalyzed and exhibited an ethylbenzene concentration of only 6 ug/l at the instrument level. The difference observed is likely due to non-homogenity of the sample. The results of both analyses are included within.

A volatile organics analysis performed on a one gram portion of sample DMTB-1:6-8' (Lab No. 158013) exhibited ethylbenzene saturation at the detector. A medium level extraction/analysis was performed in order to quantify ethylbenzene within the calibration range. The results of both analyses are included in this submittal as requested by you on May 15, 1992.

Dilutions were required for some samples prior to volatile organics analysis due to the presence of high concentrations of TCL compounds. In some cases, dilutions were determined based on screen results. In cases where both an initial analysis and a subsequent dilution analysis is reported, the dilution analysis results are identified with a "DL" suffix affixed to the sample number.

Interference with the surrogate bromofluorobenzene, from a tentatively identified compound, was observed in several samples analyzed for volatile organics. Secondary ion quantitation using mass 174 was used to calculate the recoveries. The samples and recoveries are as follows:

LMS Sample ID	Aquatec Lab No.	% Recovery
DMTB-1:6-8'	158013	84
DMTB-3:2-4'	158018	105
DMTB-5:30-32'	158024	104
DMTB-5:30-32'DL	158024DL	107

An additional qualifier has been used in reporting pesticide/PCB results. This is listed and defined as follows:

Y = The reported result was derived from instrument response outside the calibration range.

Difficulties were encountered in quantifying some matrix spike compounds in the analysis of samples (Lab Nos.) 158014MS and 158014MD. The high concentration of Aroclor 1254 present in the sample itself, precluded an accurate quantitation of matrix spike compounds as evident by the number of compounds outside of the quality control limits established for matrix spike recovery and relative percent difference.

A gas chromatographic analysis of the matrix spike standard analyzed for GPC calibration, revealed a chromatographic peak which interfered with dieldrin in the individual mix A (INDA) 50% standard. This interference caused the calibration factor to be elevated. As such, the recovery of dieldrin in the GPC matrix standard calculated low. An INDA 50% standard analyzed on another day has been included to illustrate the proper peak height ratios of analytes in an INDA 50% standard.

Peak height was used in quantifying all pesticide/PCB target analytes with the exception of the following where peak area was used:

alpha-BHC quantified on an RTX-1701 column on 06/04/92.
alpha-BHC and delta-BHC quantified on a DB-1701 column on 06/07/92.

An additional 100 fold dilution analysis was performed on samples (Lab No.) 158014 and 158018 in order to quantify Aroclor 1254 within the calibration range. Since the surrogate dibutylchlorendate was diluted out, the percent surrogate recovery could not be calculated. The results of both original and dilution analyses are included in this submittal. The dilution analyses are identified with a "DL" suffix affixed to the sample number.

PCB's tentatively identified as Aroclor 1254, were found in sufficient concentration in several samples so as to warrant confirmation by GC/MS. The matter was communicated to you via facsimile on June 12, 1992. Presented in the fax were estimated concentrations of PCB for each sample. It was decided, following your phone conversation with Mr. Richard Gomez, that only samples (Lab Nos.) 158010, 158018, 158014, 158015, and 158021 should be analyzed for PCB's by GC/MS. PCB's were subsequently confirmed by GC/MS. The results of PCB confirmation can be found in the Pesticide Supportive Documentation section of this submittal.

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

June 19, 1992

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

NYSDEC013438

Re: Aquatec Project 92039
ETR Nos.: 31306 & 31331
Case: 31306; SDG 158489

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew Site water samples received from Lawler, Matusky and Skelly Engineers.

The samples were received intact by Aquatec on April 28 and 29, 1992.

Laboratory numbers were assigned to the field samples and associated laboratory quality control samples. They were designated as follows:

LMS Sample ID	Aquatec Lab No.	Sample Matrix
Samples Received April 28, 1992 ETR No. 31306		
DMMW-1	158489	Aqueous
DMMW-1MS	158489MS	Aqueous
DMMW-1MSD	158489MD	Aqueous
DMMW-1REP	158489DP	Aqueous
MSB	158490	Aqueous
Samples Received April 29, 1992 ETR No. 31331		
Trip Blank	158644	Aqueous
DMMW-2	158645	Aqueous
DMMW-3	158646	Aqueous
DMMW-3	158647	Filtrate
DMMW-4	158648	Aqueous

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To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements*					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
Dmmw-1	158489	✓	✓		✓	✓	
Dmmw-1	158489MS	✓	✓		✓	✓	
Dmmw-1	158489MD	✓	✓		✓		
Dmmw-1	158489DP					✓	
MSB	158490	✓					
Trip Blank	158644	✓					
Dmmw-2	158645	✓	✓		✓	✓	
Dmmw-3	158646	✓	✓		✓	✓	✓
Dmmw-3	158647					✓	
Dmmw-4	158648	✓	✓		✓	✓	✓

*Check Appropriate Boxes

(* CLP) Non-CLP (Please indicate year of protocol)
* HSL, Priority Pollutant

Other: ✓= TDS, TSS, COD

NYSDEC013439

000007A

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOA
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd At Lab	Low Level Med. Level	Date Analyzed
158489	Water	4/27/92	4/28/92	Low	5/5/92
158489MS	"	"	"	"	"
158489MD	"	"	"	"	"
158490	Liquid	—	—	"	"
158644	"	—	4/29/92	Low	5/6/92
158645	Water	4/28/92	"	Low	"
158646	"	"	"	"	"
158648	"	"	"	"	"

NYSDEC013440

000000-C

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS FORM

B/N-A ORGANIC ANALYSES

Sample ID	Matrix	Analytical Protocol	Extraction Method	Auxilary Clean Up	Dil/Conc Factor
158489	Water	OLM01	Liq-Liq	No	1.0
158489MS	"	"	"	No	1.0
158489MD	"	"	"	No	1.0
158645	"	"	"	No	1.0
158646	"	"	"	No	1.0
158648	"	"	"	No	1.0

NYSDEC013441

000000E

Data Validation Services

Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

RECEIVED
JUL 16 1992
LMS ENGINEERS

7-15-92

Attn: Chris O' Gorman

LMS

Report for Dupont Manufacturing

Invoice " " "

NYSDEC013442

Judy Hay

Data Validation Services

Cobble Creek Road P. O. Box 208
North Creek, N. Y. 12853
Phone 518-251-4429

RECEIVED
SEP 14 1992
LMS ENGINEERS

TO: Lawler, Matusky & Skelly Engineers

FROM: Judy Harry, Data Validation Services Judy Harry

DATE: 9-9-92

NYSDEC013443

RE: Validation report for Depew Site resample
LMS Project No. 576-047
Aquatec, Inc. Case No. 32592 SDG No. 164623

Review has been completed for the Depew Site soil sample DMMW-1A(1-2) reprocessed for semivolatiles and pesticide/PCBs by Aquatec, Inc. The sample was analysed according to the most recent NYSDEC ASP CLP methodologies; no matrix spike/duplicates were processed for the sample.

In summary, the sample was processed in compliance with the protocol, with exceptions noted below. No specific internal chain-of-custody documentation was available for this project. The sample handling and preparation sections of the data package are very complete with all associated processing documentation. Technician/analyst/reviewer signatures or initials are present for all levels of handling. No resubmissions to the data package were required.

Recommended qualification of sample reported results is as follows:

The initial BNA analysis of DMMW-A(1-2) produced one outlying system monitoring compound (SMC) recovery, 2,4,6-tribromophenol (TBP), which recovered below the allowable limit of 10%. Reextraction/reanalysis of this sample also produced a poor recovery, (18%, below the limit of 19%), confirming a contributing matrix effect.. A single outlying SMC recovery is acceptable as long as the recovery is greater than 10%. However, the reextraction of this sample occured at fifteen days, five days beyond the allowable holding time of ten days for a reextraction.

The base/neutral results from the initial extraction can be used without qualification. The acid results from the second analysis, even though performed beyond holding time, are more reliable due to a significantly improved (although still outlying) SMC recovery. No acidic components were detected in either analysis. The reported detection limit for the acidic compounds should be qualified as estimated.

All protocol criteria for semivolatile and pesticide/PCB sample preparation and analysis were reviewed for compliancy. Reported results were reviewed for accuracy and data acceptability. With the exceptions of those issues noted above, all reported results are substantiated by the raw data and performed in compliance with the protocol.

aquatec INC.
A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

August 27, 1992

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Re: Aquatec Project 92039
ETR No.: 32592
Case No.: 32592; SDG No.: 164623

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew site a soil sample received from Lawler, Matusky and Skelly Engineers.

The samples were received intact at Aquatec on July 29, 1992.

For the sample received, a laboratory number was assigned and designated as follows:

IMS Sample ID	Aquatec Lab No.	Sample Matrix
DMMW-1A 1-2'	164623	Soil

External quality control (sample) analyses were not performed on this sample as requested by Mr. Chris O'Gorman on July 29, 1992.

Please note that the sample description DMMW-1A 1-2' has been truncated to DMMW-1A to accommodate some form space limitations.

The results of a semivolatile organics analysis performed on this sample indicated that the surrogate recovery for 2,4,6-tribromophenol was 3%, well below the lower acceptable QC limit of 19%. The sample was re-extracted 10 days outside of the prescribed holding time and subsequently analyzed. The surrogate

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements*					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
DMMW-1A 1-2'	164623		✓		✓		

*Check Appropriate Boxes

* CLP, Non-CLP (Please indicate year of protocol)
* HSL, Priority Pollutant

NYSDEC013445

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS FORM

B/N-A ORGANIC ANALYSES

Sample ID	Matrix	Analytical Protocol	Extraction Method	Auxilary Clean Up	Dil/Conc Factor
164623	Soil	OLMØ1	SONC	GPC	1.0
164623RI	"	"	"	"	"

NYSDEC013446

000005

PART II.iv

ANALYTICAL DATA PACKAGE

NYSDEC013447

RECEIVED
AUG 3 1 1992
LMS ENGINEERS

Sample Data Summary Package

DH - resample [illegible] MW-1

Lab Code: AQUAI

Case #: 32592

SDG #: 164623

Contract #: 92039 - LMS

NYSDEC013448

aquatec INC.
A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

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A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

August 27, 1992

RECEIVED
AUG 31 1992
LMS ENGINEERS

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Re: Aquatec Project 92039
ETR No.: 32592
Case No.: 32592; SDG No.: 164623

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew site a soil sample received from Lawler, Matusky and Skelly Engineers.

The samples were received intact at Aquatec on July 29, 1992.

For the sample received, a laboratory number was assigned and designated as follows:

LMS Sample ID	Aquatec Lab No.	Sample Matrix
DMMW-1A 1-2'	164623	Soil

External quality control (sample) analyses were not performed on this sample as requested by Mr. Chris O'Gorman on July 29, 1992.

Please note that the sample description DMMW-1A 1-2' has been truncated to DMMW-1A to accommodate some form space limitations.

The results of a semivolatile organics analysis performed on this sample indicated that the surrogate recovery for 2,4,6-tribromophenol was 3%, well below the lower acceptable QC limit of 19%. The sample was re-extracted 10 days outside of the prescribed holding time and subsequently analyzed. The surrogate

recovery for 2,4,6-tribromophenol was 18% for this analysis, still below the minimum acceptable QC limit. In addition to confirming the low surrogate outage initially observed, the analytical results compared favorably. At your request, the results of both analyses have been included in this submittal. The results of the reanalysis has been designated with an "RE" suffix affixed to the sample number.

Sincerely,

Neal E. Van Wyck

Neal E. Van Wyck
Laboratory Director

NEV/sch

Enclosure

92039B06AUG92

RECEIVED
AUG 31 1992
LMS ENGINEERS

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	280	J
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	360	U

NYSDEC013451

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAT Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	60	J
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	32	J
206-44-0	Fluoranthene	130	J
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	48	J
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)Anthracene	100	J
218-01-9	Chrysene	82	J
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	150	J
207-08-9	Benzo(k)Fluoranthene	95	J
50-32-8	Benzo(a)Pyrene	93	J
193-39-5	Indeno(1,2,3-cd)Pyrene	81	J
53-70-3	Dibenz(a,h)Anthracene	51	J
191-24-2	Benzo(g,h,i)Perylene	68	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	8.42	4800	BJNXA
2.		UNKNOWN	8.62	290	JX
3.		UNKNOWN	14.73	250	JXB
4.	57-10-3	HEXADECANOIC ACID	32.10	230	BJNX
5.		UNKNOWN DECANEDIOATE	41.73	1100	JXB
6.		UNKNOWN	41.98	510	JX
7.		UNKNOWN ALKANE	42.43	650	JX
8.		UNKNOWN ALIPHATIC COMPOUND	42.58	440	JX
9.		UNKNOWN	43.42	140	JX
10.	192-97-2	BENZO[E]PYRENE	43.60	130	JXN
11.		UNKNOWN ALKANE	44.52	830	JX
12.		UNKNOWN PHTHALATE	45.33	190	JX
13.		UNKNOWN PHTHALATE	45.45	330	JX
14.		UNKNOWN PHTHALATE	45.77	330	JX
15.		UNKNOWN	48.58	1300	JX

NYSDEC013453

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	280	J
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	360	U

NYSDEC013454

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	110	BJ
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	34	J
206-44-0	Fluoranthene	210	BJ
129-00-0	Pyrene	160	BJ
85-68-7	Butylbenzylphthalate	62	J
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)Anthracene	110	BJ
218-01-9	Chrysene	110	BJ
117-81-7	bis(2-Ethylhexyl)Phthalate	56	J
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	130	BJ
207-08-9	Benzo(k)Fluoranthene	83	BJ
50-32-8	Benzo(a)Pyrene	88	BJ
193-39-5	Indeno(1,2,3-cd)Pyrene	79	BJ
53-70-3	Dibenz(a,h)Anthracene	26	J
191-24-2	Benzo(g,h,i)Perylene	78	BJ

(1) - Cannot be separated from Diphenylamine

NYSDEC013455

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	6.85	2400	BJNXA
2.	UNKNOWN	7.03	190	JX
3.	UNKNOWN ALIPHATIC COMPOUND	37.63	180	JX
4.	UNKNOWN	41.13	230	JX
5.	UNKNOWN ALKANE	41.60	460	JX
6.	UNKNOWN	42.28	77	JX
7. 192-97-2	BENZO[E]PYRENE	42.52	330	JNX
8.	UNKNOWN PNA HYDROCARBON	42.92	91	JX
9.	UNKNOWN ALKANE	43.50	740	JX
10.	UNKNOWN PHTHALATE	43.98	210	JX
11.	UNKNOWN PHTHALATE	44.12	190	JX
12.	UNKNOWN PHTHALATE	44.23	360	JX
13.	UNKNOWN PHTHALATE	44.48	250	JX
14.	UNKNOWN AROMATIC HYDROCARBON	46.88	1600	JX
15.	UNKNOWN	47.30	150	JX

NYSDEC013456

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	DMMW-1A	78	71	86	60	32	3 *	41	68	1
02	DMMW-1ARE	58	61	53	56	43	18 *	48	55	1
03	SBLKD6	79	72	59	77	73	49	70	72	0
04	SBLKH4	71	72	62	68	66	48	66	66	0

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

NYSDEC013457

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID: BB0730D6S Lab Sample ID: SBLKD6

Instrument ID: 5100B Date Extracted: 07/30/92

Matrix: (soil/water) SOIL Date Analyzed: 08/11/92

Level:(low/med) LOW Time Analyzed: 1552

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	DMMW-1A	164623	B164623S	08/11/92

COMMENTS: BLANK SMO#SBLKD6 ETR#32692
GC/MS 5100B

NYSDEC013458

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID: AB0813H4S Lab Sample ID: SBLKH4

Instrument ID: 5100A Date Extracted: 08/13/92

Matrix: (soil/water) SOIL Date Analyzed: 08/20/92

Level:(low/med) LOW Time Analyzed: 1350

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	DMMW-1ARE	164623R1	A164623R1S	08/20/92

COMMENTS: BLANK SMO#SBLKH4 ETR#32592
GC/MS 5100A

NYSDEC013459

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

NYSDEC013460

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013461

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

NYSDEC013462

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	24	J
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	30	J
129-00-0	Pyrene	23	J
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	20	J
218-01-9	Chrysene	28	J
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	23	J
207-08-9	Benzo(k)Fluoranthene	22	J
50-32-8	Benzo(a)Pyrene	22	J
193-39-5	Indeno(1,2,3-cd)Pyrene	19	J
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	18	J

(1) - Cannot be separated from Diphenylamine

NYSDEC013463

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.63	230	JX
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	8.33	4400	JNXA
3.	UNKNOWN	11.50	130	JX
4. 98-82-8	BENZENE, (1-METHYLETHYL-)	11.85	220	JNX
5. 100-52-7	BENZALDEHYDE	13.23	160	JNX
6.	UNKNOWN	14.72	310	JX
7.	UNKNOWN BROMOCOMPOUND	18.23	93	JX
8. 57-10-3	HEXADECANOIC ACID	32.10	7	JNX
9.	UNKNOWN DECANEDIOATE	41.72	460	JX

NYSDEC013464

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	6.88	2300	JNXA
2.	UNKNOWN	41.13	93	JX

NYSDEC013465

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): AQU050NBS Date Analyzed: 08/20/92

Instrument ID: 5100A Time Analyzed: 1057

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	8972	13.87	40070	18.50	21351	24.52
	UPPER LIMIT	17944	14.37	80140	19.00	42702	25.02
	LOWER LIMIT	4486	13.37	20035	18.00	10676	24.02
	EPA SAMPLE NO.						
01	DMMW-1ARE	10259	13.82	43412	18.45	22366	24.49
02	SBLKH4	10358	13.84	43655	18.47	22355	24.49

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

NYSDEC013466

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): AQU050NBS Date Analyzed: 08/20/92

Instrument ID: 5100A Time Analyzed: 1057

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	30944	29.42	19844	38.34	9361	42.88
	UPPER LIMIT	61888	29.92	39688	38.84	18722	43.38
	LOWER LIMIT	15472	28.92	9922	37.84	4680	42.38
	EPA SAMPLE NO.						
01	DMMW-1ARE	29498	29.39	20867	38.31	10416	42.84
02	SBLKH4	30935	29.39	22503	38.31	11962	42.84

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

NYSDEC013467

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): BPS050FBS Date Analyzed: 08/11/92

Instrument ID: 5100B Time Analyzed: 1207

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	11117	14.82	40021	19.39	18376	25.42
	UPPER LIMIT	22234	15.32	80042	19.89	36752	25.92
	LOWER LIMIT	5558	14.32	20010	18.89	9188	24.92
	EPA SAMPLE NO.						
01	DMMW-1A	13996	14.84	49909	19.40	22759	25.46
02	SBLKD6	13033	14.82	47600	19.40	22244	25.46

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

NYSDEC013468

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): BPS050FBS Date Analyzed: 08/11/92

Instrument ID: 5100B Time Analyzed: 1207

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	32455	30.36	21143	39.29	8659	43.94
	UPPER LIMIT	64910	30.86	42286	39.79	17318	44.44
	LOWER LIMIT	16228	29.86	10572	38.79	4330	43.44
	EPA SAMPLE NO.						
01	DMMW-1A	37639	30.39	21029	39.32	8626	43.99
02	SBLKD6	37182	30.39	30440	39.32	12636	43.98

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

NYSDEC013469

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 07/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/18/92

Injection Volume: 1.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.3	U
319-85-7	beta-BHC	9.3	U
319-86-8	delta-BHC	9.3	U
58-89-9	gamma-BHC (Lindane)	9.3	U
76-44-8	Heptachlor	9.3	U
309-00-2	Aldrin	9.3	U
1024-57-3	Heptachlor epoxide	9.3	U
959-98-8	Endosulfan I	9.3	U
60-57-1	Dieldrin	12	J
72-55-9	4,4'-DDE	56	
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	53	
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	84	
72-43-5	Methoxychlor	93	U
53494-70-5	Endrin ketone	18	U
7421-36-3	Endrin aldehyde	18	U
5103-71-9	alpha-Chlordane	34	P
5103-74-2	gamma-Chlordane	34	
8001-35-2	Toxaphene	930	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	370	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

NYSDEC013470

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

GC Column(1): RTX-35 ID: 0.53(mm) GC Column(2): DB-1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKE5	80	74	104	95			0
02	DMMW-1A	88D	72D	139D	110D			0

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

NYSDEC013471

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKE5

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Lab Sample ID: PBLKE5 Lab File ID: _____

Matrix:(soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 07/30/92

Date Analyzed (1): 08/18/92 Date Analyzed (2): 08/18/92

Time Analyzed (1): 1809 Time Analyzed (2): 1809

Instrument ID (1): 2620-1 Instrument ID (2): 2620-2

GC Column (1): RTX-35 ID: 0.53 (mm) GC Column (2): DB-1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	DMMW-1A	164623	08/18/92	08/18/92

COMMENTS:

NYSDEC013472

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKE5

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: PBLKE5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/18/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-36-3	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

NYSDEC013473

RECEIVED
JUN 2 2 1992
LMS ENGINEERS

Sample Data Summary Package

Lab Code: ACAF

Case #: 31153

SDG #: 157436

Contract #: 91268 Lockhart

NYSDEC013474

aquatec INC.
A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

RECEIVED
JUN 22 1992
LMS ENGINEERS

Semivolatile Organics
by OLM01

LMS Sample ID	Truncated Sample ID
DMTB-1:6-10'	DMTB16-10
DMTB-1:6-10'MS	DMTB16-10MS
DMTB-1:6-10'MSD	DMTB16-10MSD

Pesticide/PCB's
by OLM01

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'	DMTB-1 2-4
DMTB-1:6-10'	DMTB16-10
DMTB-1:6-10'MS	DMTB16-10MS
DMTB-1:6-10'MSD	DMTB16-10MSD
DMTB-2:4-6'	DMTB-2 4-6
DMTB-3:2-4'	DMTB-3 2-4
DMTB-4:6-8'	DMTB-4 6-8
DMTB-5:30-32'	DMTB-5 30-32
MW-1 1'-2'	MW-1 1-2
DMTB-1:2-4'DL	DMTB-1 2-4DL
DMTB-3:2-4'DL	DMTB-3 2-4DL
DMTB-1:6-10'DL	DMTB16-10DL

Inorganics

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'	DM124
DMTB-2:4-6'	DM246
DMTB-3:2-4'	DM324
DMTB-4:6-8'	DM468
DMTB-5:30-32'	DM5302
DMTB-1:6-10'	DM1610
DMTB-1:6-10'MS	DM160S → DM1610S
DMTB-1:6-10'DP	DM160D → DM1610D

NYSDEC013475

Due to the trap related problems, 2-butanone was not detected in the 10,20, or 50 ppb volatile organics calibration standards analyzed on April 22, 1992. Only the sample labeled FB (Lab No. 157436) was analyzed for volatile organics by OLM0.1 under these conditions. The detection limit for 2-butanone was raised (100ug/l) for this sample analysis to reflect the calibration condition. The sample was not reanalyzed following replacement of the trap due to insufficient sample remaining. However, the sample had previously been analyzed by EPA Method 8240. The analytical result for 2-butanone in this analysis was less than

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

June 19, 1992

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

RECEIVED
JUN 22 1992
LMS ENGINEERS

Re: Aquatec Project 92039
Case 31153, SDG 157436

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew site soil and water samples received from Lawler, Matusky and Skelly Engineers.

The samples were received intact by Aquatec on April 15 and 21, 1992.

Laboratory numbers were assigned to the field and associated quality control samples. They were designated as follows:

LMS Sample ID	Aquatec Lab No.	Sample Matrix
Samples received on April 15, 1992 ETR No. 31153		
FB	157436	Liquid
MW-1 1'-2'	157437	Solid
MW-1 1'-2'	157438	EPTOX Ext.
MW-1 1'-2'	157439	TCLP ZHE
Samples received on April 21, 1992 ETR No. 31220		
DMTB-1:2-4'	158010	Soil
DMTB-1:2-4'	158011	TCLP ZHE
DMTB-1:2-4'	158011MS	TCLP ZHE
DMTB-1:2-4'	158012	EPTOX Ext.
DMTB-1:6-8'	158013	Soil
DMTB-1:6-8'	158013MS	Soil
DMTB-1:6-8'	158013MD	Soil
DMTB-1:6-10'	158014	Soil
DMTB-1:6-10'	158014MS	Soil
DMTB-1:6-10'	158014MD	Soil
DMTB-1:6-10'	158014DP	Soil

NYSDEC013476

LMS Sample ID	Aquatec Lab No.	Sample Matrix
	ETR No. 31220 (cont.)	
DMTB-2:4-6'	158015	Soil
DMTB-2:4-6'MS	158015MS	Soil
DMTB-2:4-6'MSD	158015MD	Soil
DMTB-2:4-6'	158016	TCLP ZHE
DMTB-2:4-6'	158017	EPTOX Ext.
DMTB-3:2-4'	158018	Soil
DMTB-3:2-4'	158019	TCLP ZHE
DMTB-3:2-4'	158020	EPTOX Ext.
DMTB-4:6-8'	158021	Soil
DMTB-4:6-8'	158022	TCLP ZHE
DMTB-4:6-8'	158023	EPTOX Ext.
DMTB-5:30-32'	158024	Soil
DMTB-5:30-32'	158025	TCLP ZHE
DMTB-5:30-32'	158026	EPTOX Ext.
MSB	158029	Solid

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MS-matrix spike MD-matrix spike duplicate
DP-duplicate MSB-matrix spike blank
TCLP ZHE - TCLP Zero Headspace Extract

Due to space limitations on organic and inorganic reporting forms, the following laboratory sample identifiers have been truncated as follows:

Volatile Organics
by OLM01

LMS Sample ID	Truncated Sample ID
MW-1 1'-2'	MW-1 1-2
DMTB-1:2-4'	DMTB-1 2-4
DMTB-1:6-8'	DMTB-1 6-8
DMTB-1:6-8'MS	DMTB-1 6-8MS
DMTB-1:6-8'MSD	DMTB-1 6-8MD
DMTB-2:4-6'	DMTB-2 4-6
DMTB-3:2-4'	DMTB-3 2-4
DMTB-4:6-8'	DMTB-4 6-8
DMTB-5:30-32'	DMTB-5 30-32
DMTB-5:30-32'DL	DMTB-5 3032DL
DMTB-2:4-6'MS	DMTB-2 4-6MS
DMTB-2:4-6'MSD	DMTB-2 4-6MD
DMTB-1:6-8'DL	DMTB-1 6-8DL

NYSDEC013477

TCLP Volatiles

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'MS	DMTB-1:2-4MS
DMTB-5:30-32'	DMTB-5:30-32
DMTB-3:2-4'DL	DMTB-3:2-4DL

000060

Semivolatile Organics
by OLM01

LMS Sample ID	Truncated Sample ID
DMTB-1:6-10'	DMTB16-10
DMTB-1:6-10'MS	DMTB16-10MS
DMTB-1:6-10'MSD	DMTB16-10MSD

Pesticide/PCB's
by OLM01

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'	DMTB-1 2-4
DMTB-1:6-10'	DMTB16-10
DMTB-1:6-10'MS	DMTB16-10MS
DMTB-1:6-10'MSD	DMTB16-10MSD
DMTB-2:4-6'	DMTB-2 4-6
DMTB-3:2-4'	DMTB-3 2-4
DMTB-4:6-8'	DMTB-4 6-8
DMTB-5:30-32'	DMTB-5 30-32
MW-1 1'-2'	MW-1 1-2
DMTB-1:2-4'DL	DMTB-1 2-4DL
DMTB-3:2-4'DL	DMTB-3 2-4DL
DMTB-1:6-10'DL	DMTB16-10DL

Inorganics

LMS Sample ID	Truncated Sample ID
DMTB-1:2-4'	DM124
DMTB-2:4-6'	DM246
DMTB-3:2-4'	DM324
DMTB-4:6-8'	DM468
DMTB-5:30-32'	DM5302
DMTB-1:6-10'	DM1610
DMTB-1:6-10'MS	DM160S
DMTB-1:6-10'DP	DM160D

NYSDEC013478

Due to the trap related problems, 2-butanone was not detected in the 10,20, or 50 ppb volatile organics calibration standards analyzed on April 22, 1992. Only the sample labeled FB (Lab No. 157436) was analyzed for volatile organics by OLM0.1 under these conditions. The detection limit for 2-butanone was raised (100ug/l) for this sample analysis to reflect the calibration condition. The sample was not reanalyzed following replacement of the trap due to insufficient sample remaining. However, the sample had previously been analyzed by EPA Method 8240. The analytical result for 2-butanone in this analysis was less than

the Contract Required Quantitation Limit (CRQL) (10ug/l). The results of both analyses are included in this submittal. Please note that the results of the volatile organics analysis performed by Method 8240 are presented on an EPA CLP 2/88 SOW Form I.

Several forms required hand editing as a result of the trap related problem associated with 2-butanone. Hand editing was required because OLM01 Formaster software does not accommodate deviations to the method. Those edited pages include Form 1A for the sample labeled FB, Form 1A for the method blank labeled VBLKF1, and Form 7A for the continuing calibration standard (File Name: CYD050HI2V).

The results of a volatile organics analysis (2.6 grams) performed on sample DMTB-5:30-32' (Lab No. 158024) showed ethylbenzene to be present at a concentration of 414 ug/l at the instrument level (830 ug/kg dry in the sample). A one gram portion of the sample was reanalyzed and exhibited an ethylbenzene concentration of only 6 ug/l at the instrument level. The difference observed is likely due to non-homogenity of the sample. The results of both analyses are included within.

A volatile organics analysis performed on a one gram portion of sample DMTB-1:6-8' (Lab No. 158013) exhibited ethylbenzene saturation at the detector. A medium level extraction/analysis was performed in order to quantify ethylbenzene within the calibration range. The results of both analyses are included in this submittal as requested by you on May 15, 1992.

Dilutions were required for some samples prior to volatile organics analysis due to the presence of high concentrations of TCL compounds. In some cases, dilutions were determined based on screen results. In cases where both an initial analysis and a subsequent dilution analysis is reported, the dilution analysis results are identified with a "DL" suffix affixed to the sample number.

Interference with the surrogate bromofluorobenzene, from a tentatively identified compound, was observed in several samples analyzed for volatile organics. Secondary ion quantitation using mass 174 was used to calculate the recoveries. The samples and recoveries are as follows:

LMS Sample ID	Aquatec Lab No.	% Recovery
DMTB-1:6-8'	158013	84
DMTB-3:2-4'	158018	105
DMTB-5:30-32'	158024	104
DMTB-5:30-32'DL	158024DL	107

The raw data has been adjusted to reflect these calculations however the forms have not. This is due to limitations with the software used.

A medium level matrix spike blank analysis for volatile organics was not perform with the medium level MS/MSD analysis of sample DMTB-1:6-8'.

The results of a volatile organics analysis performed on the TCLP Zero Headspace Extract (ZHE) of sample DMTB-3:2-4' (Lab No. 158019) exhibited high concentrations of non-TCLP analytes which required a dilution analysis. The surrogate recovery for bromofluorobenzene was outside of the upper control limit at 117%. The sample was reanalyzed at a dilution factor of 3.125. The analytical result for benzene of 4 ug/l matched the previous benzene result observed. The BFB recovery was observed within the prescribed control limits.

An additional qualifier has been used in reporting the results of semivolatile organics analyses. This "X" qualifier is used to denote those tentatively identified compounds (TIC) which are not necessarily sample related.

A forty fold dilution analysis was performed on samples DMTB-1:6-10' and associated QC samples (Lab Nos. 158014, 158014MS, and 158014MD) due to the presence of high concentrations of non-TCL, tentatively identified compounds. A careful evaluation of the surrogate recoveries of the samples DMTB-1:6-10', DMTB-1:6-10'MS and DMTB-1:6-10'MSD and a comparison of the peak heights in their chromatograms indicated that the MSD extract may have suffered loss of contents during the sample preparation, possibly at the GPC clean-up stage. The loss was observed too late to initiate sample re-extraction and reanalysis.

A soil sample labeled MW-1,1-2' (Lab No. 157437) was inadvertently extracted for semivolatile organics outside of the 5 day prescribed holding time. The sample was however, extracted within the 10 holding time (from VTSR) specified in EPA's (CLP) OLM01 semivolatile organics and pesticide/PCB methodologies. The matter was communicated to Mr. Chris O'Gorman/LMS on April 23, 1992 when it was decided that the laboratory should continue to analyze the sample in-house and that resampling would not be necessary.

A matrix spike blank analysis was not performed for semivolatile organics and pesticide/PCB's through oversight. The matter was communicated to you on May 28, 1992 when it was decided that we could provide matrix spike blank data from another case where the same matrix spiking solution was used. This additional information can be found in the Sample Preparation section of this case.

An additional qualifier has been used in reporting pesticide/PCB results. This is listed and defined as follows:

Y = The reported result was derived from instrument response outside the calibration range.

Difficulties were encountered in quantifying some matrix spike compounds in the analysis of samples (Lab Nos.) 158014MS and 158014MD. The high concentration of Aroclor 1254 present in the sample itself, precluded an accurate quantitation of matrix spike compounds as evident by the number of compounds outside of the quality control limits established for matrix spike recovery and relative percent difference.

A gas chromatographic analysis of the matrix spike standard analyzed for GPC calibration, revealed a chromatographic peak which interfered with dieldrin in the individual mix A (INDA) 50% standard. This interference caused the calibration factor to be elevated. As such, the recovery of dieldrin in the GPC matrix standard calculated low. An INDA 50% standard analyzed on another day has been included to illustrate the proper peak height ratios of analytes in an INDA 50% standard.

Peak height was used in quantifying all pesticide/PCB target analytes with the exception of the following where peak area was used:

alpha-BHC quantified on an RTX-1701 column on 06/04/92.
alpha-BHC and delta-BHC quantified on a DB-1701 column on 06/07/92.

An additional 100 fold dilution analysis was performed on samples (Lab No.) 158014 and 158018 in order to quantify Aroclor 1254 within the calibration range. Since the surrogate dibutylchlorendate was diluted out, the percent surrogate recovery could not be calculated. The results of both original and dilution analyses are included in this submittal. The dilution analyses are identified with a "DL" suffix affixed to the sample number.

PCB's tentatively identified as Aroclor 1254, were found in sufficient concentration in several samples so as to warrant confirmation by GC/MS. The matter was communicated to you via facsimile on June 12, 1992. Presented in the fax were estimated concentrations of PCB for each sample. It was decided, following your phone conversation with Mr. Richard Gomez, that only samples (Lab Nos.) 158010, 158018, 158014, 158015, and 158021 should be analyzed for PCB's by GC/MS. PCB's were subsequently confirmed by GC/MS. The results of PCB confirmation can be found in the Pesticide Supportive Documentation section of this submittal.

The matrix spike recoveries for antimony, chromium and zinc were outside the specified tolerances in the matrix spike analysis of sample DM1610 (Lab No. 158014MS). In addition, the results for aluminum, iron, magnesium, and manganese did not correspond well in the replicate analysis of this sample (Lab No. 158014DP). The analytical results have been qualified accordingly.

Sincerely,

Neal E. Van Wyck
Laboratory Director

NEV/amg

Enclosure

92039B15JUN92

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.:157436

SOW No.: 3/90

EPA Sample No.	Lab Sample ID
DM124	158010
DM1610	158014
DM1610D	158014DP
DM1610S	158014MS
DM246	158015
DM324	158018
DM468	158021
DM5302	158024
FB	157436
MW112	157437

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Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:

Date: Title:

NYSDEC013483

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~BM~~ 24

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 158010

Level (low/med): LOW Date Received: 04/21/92

% Solids: 85.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13300		*	P
7440-36-0	Antimony	5.0	U	N	P
7440-38-2	Arsenic	4.7			F
7440-39-3	Barium	45.9			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	3.8			P
7440-70-2	Calcium	18000			P
7440-47-3	Chromium	37.4		N	P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	22.5			P
7439-89-6	Iron	6460		*	P
7439-92-1	Lead	23.7			F
7439-95-4	Magnesium	2270		*	P
7439-96-5	Manganese	72.7		*	P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	23.5			P
7440-09-7	Potassium	207	U		P
7782-49-2	Selenium	0.29	U		F
7440-22-4	Silver	0.69	U		P
7440-23-5	Sodium	433	B		P
7440-28-0	Thallium	0.42	U		F
7440-62-2	Vanadium	14.5			P
7440-66-6	Zinc	67.1		N	P
	Cyanide	0.65	U		C

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~FM~~246

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 158015

Level (low/med): LOW Date Received: 04/21/92

% Solids: 97.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2660		*	P
7440-36-0	Antimony	3.7	U	N	P
7440-38-2	Arsenic	1.4	B		F
7440-39-3	Barium	10.0	B		P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.18	U		P
7440-70-2	Calcium	1670			P
7440-47-3	Chromium	7.5		N	P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	4.4			P
7439-89-6	Iron	4760		*	P
7439-92-1	Lead	5.9			F
7439-95-4	Magnesium	588	B	*	P
7439-96-5	Manganese	55.1		*	P
7439-97-6	Mercury	0.03	U		CV
7440-02-0	Nickel	2.9	B		P
7440-09-7	Potassium	156	U		P
7782-49-2	Selenium	0.23	U		F
7440-22-4	Silver	0.52	U		P
7440-23-5	Sodium	53.1	B		P
7440-28-0	Thallium	0.33	U		F
7440-62-2	Vanadium	4.8	B		P
7440-66-6	Zinc	9.9		N	P
	Cyanide	0.47	U		C

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

M324

Lab Name: AQUATEC Contract: 92059

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 158018

Level (low/med): LOW Date Received: 04/21/92

% Solids: 87.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900		*	P
7440-36-0	Antimony	5.2	U	N	P
7440-38-2	Arsenic	3.3			F
7440-39-3	Barium	61.0			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	5.4			P
7440-70-2	Calcium	45000			P
7440-47-3	Chromium	41.9		N	P
7440-48-4	Cobalt	3.4	B		P
7440-50-8	Copper	60.0			P
7439-89-6	Iron	5070		*	P
7439-92-1	Lead	63.8			F
7439-95-4	Magnesium	7280		*	P
7439-96-5	Manganese	59.6		*	P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	19.4			P
7440-09-7	Potassium	215	U		P
7782-49-2	Selenium	0.34	U		F
7440-22-4	Silver	0.72	U		P
7440-23-5	Sodium	860	B		P
7440-28-0	Thallium	0.50	U		F
7440-62-2	Vanadium	22.3			P
7440-66-6	Zinc	194		N	P
	Cyanide	0.61	U		C

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~PM~~468

ab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

atrix (soil/water): SOIL Lab Sample ID: 158021

Level (low/med): LOW Date Received: 04/21/92

Solids: 90.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8070		*	P
7440-36-0	Antimony	4.8	U	N	P
7440-38-2	Arsenic	6.3			F
7440-39-3	Barium	48.9			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.32	B		P
7440-70-2	Calcium	6360			P
7440-47-3	Chromium	14.4		N	P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	23.6			P
7439-89-6	Iron	13100		*	P
7439-92-1	Lead	81.0			F
7439-95-4	Magnesium	2450		*	P
7439-96-5	Manganese	153		*	P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	8.8			P
7440-09-7	Potassium	202	U		P
7782-49-2	Selenium	0.31	U		F
7440-22-4	Silver	0.67	U		P
7440-23-5	Sodium	173	B		P
7440-28-0	Thallium	0.45	U	W	F
7440-62-2	Vanadium	19.2			P
7440-66-6	Zinc	97.5		N	P
	Cyanide	0.63	U		C

olor Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

omments:

FORM I - IN

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NYSDEC013487

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DY5302

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 158024

Level (low/med): LOW Date Received: 04/21/92

% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1200		*	P
7440-36-0	Antimony	4.3	U	N	P
7440-38-2	Arsenic	0.45	B		F
7440-39-3	Barium	4.0	B		P
7440-41-7	Beryllium	0.10	B		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	70.1	B		P
7440-47-3	Chromium	2.5		N	P
7440-48-4	Cobalt	0.39	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	1160		*	P
7439-92-1	Lead	0.80			F
7439-95-4	Magnesium	113	B	*	P
7439-96-5	Manganese	5.0		*	P
7439-97-6	Mercury	0.03	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	182	U		P
7782-49-2	Selenium	0.31	U		F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	17.0	U		P
7440-28-0	Thallium	0.46	U		F
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	4.0		N	P
	Cyanide	0.60	U		C

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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NYSDEC013488

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~MW1~~12

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 157437

Level (low/med): LOW Date Received: 04/15/92

% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4680		*	P
7440-36-0	Antimony	2.6	U	N	P
7440-38-2	Arsenic	1.7			F
7440-39-3	Barium	11.2	B		P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.13	U		P
7440-70-2	Calcium	167	B		P
7440-47-3	Chromium	5.4		N	P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	3.2			P
7439-89-6	Iron	6140		*	P
7439-92-1	Lead	2.8			F
7439-95-4	Magnesium	805		*	P
7439-96-5	Manganese	85.4		*	P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	4.1	B		P
7440-09-7	Potassium	175	B		P
7782-49-2	Selenium	0.16	U		F
7440-22-4	Silver	0.37	U		P
7440-23-5	Sodium	14.8	B		P
7440-28-0	Thallium	0.24	U		F
7440-62-2	Vanadium	8.2			P
7440-66-6	Zinc	8.1		N	P
	Cyanide	0.56	U		C

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN ILMO2.1

NYSDEC013489

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DW1610

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Lab Sample ID: 158014

Level (low/med): LOW Date Received: 04/21/92

% Solids: 84.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11100		*	P
7440-36-0	Antimony	4.4	U	N	P
7440-38-2	Arsenic	4.0			F
7440-39-3	Barium	40.6			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	3.8			P
7440-70-2	Calcium	12700			P
7440-47-3	Chromium	42.3		N	P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	21.2			P
7439-89-6	Iron	6670		*	P
7439-92-1	Lead	26.8			F
7439-95-4	Magnesium	1710		*	P
7439-96-5	Manganese	69.9		*	P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	23.4			P
7440-09-7	Potassium	185	U		P
7782-49-2	Selenium	0.32	U		F
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	336	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	12.6			P
7440-66-6	Zinc	60.0		N	P
	Cyanide	0.99			C

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:
STICKS WERE PRESENT.

FORM I - IN

ILMO2.1

NYSDEC013490

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

DM1610D

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 84.5 % Solids for Duplicate: 85.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		11124.2604		14354.0870		25.4	*	P
Antimony		4.4335	U	5.2574	U			P
Arsenic	2.1	4.0429		4.8233		17.6		F
Barium	35.3	40.6253		41.3049	B	1.7		P
Beryllium		0.2254	B	0.2356	B	4.4		P
Cadmium	0.9	3.7711		4.0320		6.7		P
Calcium		12710.4124		14653.6105		14.2		P
Chromium		42.3033		37.4300		12.2		P
Cobalt		4.6878	B	4.9830	B	6.1		P
Copper	4.4	21.2311		20.1812		5.1		P
Iron		6674.9095		10474.9437		44.3	*	P
Lead		26.8458		31.5582		16.1		F
Magnesium	883.2	1713.5035		3076.9231		56.9	*	P
Manganese		69.9461		139.6450		66.5	*	P
Mercury		0.0828	B	0.0748	B	10.2		CV
Nickel	7.1	23.3507		23.3335		0.1		P
Potassium		185.4632	U	219.9298	U			P
Selenium		0.3198	U	0.3198	U			F
Silver		0.6182	U	0.7331	U			P
Sodium		335.7767	B	367.5970	B	9.0		P
Thallium		0.4691	U	0.4691	U			F
Vanadium	8.8	12.5974		15.3469		19.7		P
Zinc		59.9664		65.8114		9.3		P
Cyanide	0.7	0.9855		0.6948	U	200.0		C

NYSDEC013491

aquatec INC.
An Inchcape Company

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31153
Project No.: 92039
No. Samples: 5
Arrived : 04/15/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
157437	MW-1 1'-2':04/14/92 @1440(Solid)	
IN623	Solids, Total	95.5 c
QSIA	Corrosivity by pH	6.75 j
IN703	Reactivity Description	Note 1
IN703	Reactive Cyanide	<35 e
IN703	Reactive Sulfide	<48 e
157438	MW-1 1'-2':(EPToxExt)	
6010	Arsenic, Total	<1000 a
6010	Barium, Total	<10000 a
6010	Cadmium, Total	<100 a
6010	Chromium, Total	<1000 a
6010	Lead, Total	<1000 a
7470	Mercury, Total	<40.0 a
7740	Selenium, Total	<100 a
6010	Silver, Total	<1000 a

Comments/Notes NYSDEC013492

c = %W/W as received
j = pH measured on the slurry of 1 part sample to 1 part DI water.
e = mg/Kg as received
a = ug/l
Note 1. The sample does not explode when percussed.

< Last Page > Submitted By : Aquatec Inc.

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55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

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SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31220
Project No.: 92039
No. Samples: 24
Arrived : 04/21/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
158010	DMTB-1:2-4':04/20/92 @1024(Soil)	
1010	Ignitability (F)	>150
QSIA	Corr by pH	7.44 j
IN703	Reactivity Description	Note 1
IN703	Reactive Cyanide	<35 e
IN703	Reactive Sulfide	<48 e
IN623	Solids, Total	85.1 c
158012	DMTB-1:2-4':(EPToxExt)	
6010	Arsenic, Total	<1000 a
6010	Barium, Total	<10000 a
6010	Cadmium, Total	<100 a
6010	Chromium, Total	<1000 a
6010	Lead, Total	<1000 a
7470	Mercury, Total	<40.0 a
7740	Selenium, Total	<100 a
6010	Silver, Total	<1000 a
158014	DMTB-1:6-10':04/20/92 @1040(Soil)	
IN623	Solids, Total	84.5 c

NYSDEC013493

Comments/Notes

j = pH measured on the slurry of 1 part sample to 1 part DI water.
e = mg/Kg as received
c = %W/W as received
a = ug/l

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aquatec INC.
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55 SOUTH PARK DRIVE
COLCHESTER VT 05446

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

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SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31220
Project No.: 92039
No. Samples: 24
Arrived : 04/21/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
158014MS	DMTB-1:6-10':[MS]04/20/92 @1040(Soil)	
IN623	Solids, Total	85.0 c
158014MD	DMTB-1:6-10':[MSD]04/20/92 @1040(Soil)	
IN623	Solids, Total	81.5 c
158014DP	DMTB-1:6-10':[REP]04/20/92 @1040(Soil)	
IN623	Solids, Total	85.8 c
158015	DMTB-2:4-6':04/20/92 @0900(Soil)	
1010	Ignitability (F)	>150
QSIA	Corr by pH	8.13 j
IN703	Reactivity Description	Note 1
IN703	Reactive Cyanide	<35 e
IN703	Reactive Sulfide	<48 e
IN623	Solids, Total	97.6 c
158017	DMTB-2:4-6':(EPToxExt)	
6010	Arsenic, Total	<1000 a
6010	Barium, Total	<10000 a
6010	Cadmium, Total	<100 a
6010	Chromium, Total	<1000 a
6010	Lead, Total	<1000 a

Comments/Notes

c = %W/W as received
j = pH measured on the slurry of 1 part sample to 1 part DI water.
e = mg/Kg as received
a = ug/l

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NYSDEC013494

aquatec INC.
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55 SOUTH PARK DRIVE
COLCHESTER VT 05446

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COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31220
Project No.: 92039
No. Samples: 24
Arrived : 04/21/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter		Result
158017	DMTB-2:4-6':(EPToxExt)		
	7470	Mercury, Total	<40.0 a
	7740	Selenium, Total	<100 a
	6010	Silver, Total	<1000 a
158018	DMTB-3:2-4':04/20/92 @1118(Soil)		
	1010	Ignitability (F)	>150
	QSIA	Corr by pH	7.64 j
	IN703	Reactivity Description	Note 1
	IN703	Reactive Cyanide	<35 e
	IN703	Reactive Sulfide	<48 e
	IN623	Solids, Total	87.8 c
158020	DMTB-3:2-4':(EPToxExt)		
	6010	Arsenic, Total	<1000 a
	6010	Barium, Total	<10000 a
	6010	Cadmium, Total	<100 a
	6010	Chromium, Total	<1000 a
	6010	Lead, Total	<1000 a
	7470	Mercury, Total	<40.0 a
	7740	Selenium, Total	<100 a
	6010	Silver, Total	<1000 a

Comments/Notes

a = ug/l
j = pH measured on the slurry of 1 part sample to 1 part DI water.
e = mg/Kg as received
c = %W/W as received

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NYSDEC013495

aquatec INC.
An Inchcape Company

55 SOUTH PARK DRIVE
COLCHESTER VT 05446

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COLCHESTER VT 05446

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SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31220
Project No.: 92039
No. Samples: 24
Arrived : 04/21/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
158021	DMTB-4:6-8':04/20/92 @1215(Soil)	
1010	Ignitability (F)	>150
QSIA	Corr by pH	8.59 j
IN703	Reactivity Description	Note 1
IN703	Reactive Cyanide	<35 e
IN703	Reactive Sulfide	<48 e
IN623	Solids, Total	90.6 c
158023	DMTB-4:6-8':(EPToxExt)	
6010	Arsenic, Total	<1000 a
6010	Barium, Total	<10000 a
6010	Cadmium, Total	<100 a
6010	Chromium, Total	<1000 a
6010	Lead, Total	<1000 a
7470	Mercury, Total	<40.0 a
7740	Selenium, Total	<100 a
6010	Silver, Total	<1000 a
158024	DMTB-5:30-32':04/20/92 @1337(Soil)	
1010	Ignitability (F)	>150
QSIA	Corr by pH	8.18 j
IN703	Reactivity Description	Note 1

Comments/Notes

j = pH measured on the slurry of 1 part sample to 1 part DI water.
e = mg/Kg as received
c = %W/W as received
a = ug/l
Note 1. The sample does not explode when percussed.

< Cont. Next Page >

NYSDEC013496

aquatec INC.
An Inchcape Company

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Lawler, Matusky and
Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Attention : Bill Ahlert

Date : 05/29/92
ETR Number : 31220
Project No.: 92039
No. Samples: 24
Arrived : 04/21/92
P.O. Number: *

Case:31153 SDG:157436

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter		Result
158024	DMTB-5:30-32':04/20/92 @1337(Soil)		
	IN703	Reactive Cyanide	<35 e
	IN703	Reactive Sulfide	<48 e
	IN623	Solids, Total	95.5 c
158026	DMTB-5:30-32':(EPToxExt)		
	6010	Arsenic, Total	<1000 a
	6010	Barium, Total	<10000 a
	6010	Cadmium, Total	<100 a
	6010	Chromium, Total	<1000 a
	6010	Lead, Total	<1000 a
	7470	Mercury, Total	<40.0 a
	7740	Selenium, Total	<100 a
	6010	Silver, Total	<1000 a

Comments/Notes

NYSDEC013497

e = mg/Kg as received
c = %W/W as received
a = ug/l

< Last Page > Submitted By : Aquatec Inc.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.

MW-1 1-2'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 157439
Lab File ID: D157439V
Date Received: 04/15/92
Date TCLP Extracted: 04/20/92
Date Analyzed: 04/24/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	3	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	1	JB
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	102
Toluene-d8	109
Bromofluorobenzene	105

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

NYSDEC013498

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-1:2-4'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158011
Lab File ID: D158011V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	2	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	107
Toluene-d8	99
Bromofluorobenzene	110

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-2:4-6'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158016
Lab File ID: D158016V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	2	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	104
Toluene-d8	99
Bromofluorobenzene	102

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-3:2-4'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158019
Lab File ID: D158019V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	4	J
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	109
Toluene-d8	100
Bromofluorobenzene	117*

NYSDEC013501

*The value is outside QC limits.
The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.

DMTB-3:2-4'DL

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 3.125

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158019D1
Lab File ID: D158019DV
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/05/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	31	U
75-35-4	1,1-Dichloroethene	31	U
67-66-3	Chloroform	31	U
107-06-2	1,2-Dichloroethane	31	U
78-93-3	2-Butanone	31	U
56-23-5	Carbon tetrachloride	31	U
79-01-6	Trichloroethene	31	U
71-43-2	Benzene	4	JD
127-18-4	Tetrachloroethene	31	U
108-90-7	Chlorobenzene	31	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	107
Toluene-d8	102
Bromofluorobenzene	109

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-4:6-8'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158022
Lab File ID: D158022V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	2	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	107
Toluene-d8	99
Bromofluorobenzene	104

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

NYSDEC013503

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-5:30-32'

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158025
Lab File ID: D158025V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	10	U
75-35-4	1,1-Dichloroethene	10	U
67-66-3	Chloroform	2	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
56-23-5	Carbon tetrachloride	10	U
79-01-6	Trichloroethene	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U

% Surrogate Recovery	
1,2-Dichloroethane-d4	108
Toluene-d8	98
Bromofluorobenzene	104

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

TCLP VOLATILE ORGANICS ANALYSIS
DATA SHEET

SAMPLE NO.
DMTB-1:2-4'MS

Lab Name: AQUATEC, INC.
Lab Code: AQUAI Case No.: 31153
Matrix: TCLP EXTRACT
Sample Vol (mL): 5.0
Dilution Factor: 1.0

Contract: 92039
SAS No.: SDG No.: 157436
Lab Sample ID: 158011MS
Lab File ID: D158011MS2V
Date Received: 04/21/92
Date TCLP Extracted: 04/27/92
Date Analyzed: 05/04/92

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L)	Q
75-01-4	Vinyl chloride	49	
75-35-4	1,1-Dichloroethene	50	
67-66-3	Chloroform	53	B
107-06-2	1,2-Dichloroethane	52	
78-93-3	2-Butanone	61	B
56-23-5	Carbon tetrachloride	50	
79-01-6	Trichloroethene	50	
71-43-2	Benzene	49	
127-18-4	Tetrachloroethene	51	
108-90-7	Chlorobenzene	48	

% Surrogate Recovery	
1,2-Dichloroethane-d4	107
Toluene-d8	100
Bromofluorobenzene	102

The reported sample results have not been adjusted to reflect either surrogate recoveries or the results of matrix spike analysis.

NYSDEC013505

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158010DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3900	U
111-44-4	bis(2-Chloroethyl)Ether	3900	U
95-57-8	2-Chlorophenol	3900	U
541-73-1	1,3-Dichlorobenzene	3900	U
106-46-7	1,4-Dichlorobenzene	3900	U
95-50-1	1,2-Dichlorobenzene	3900	U
95-48-7	2-Methylphenol	3900	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3900	U
106-44-5	4-Methylphenol	3900	U
621-64-7	N-Nitroso-Di-n-Propylamine	3900	U
67-72-1	Hexachloroethane	3900	U
98-95-3	Nitrobenzene	3900	U
78-59-1	Isophorone	3900	U
88-75-5	2-Nitrophenol	3900	U
105-67-9	2,4-Dimethylphenol	3900	U
111-91-1	bis(2-Chloroethoxy)Methane	3900	U
120-83-2	2,4-Dichlorophenol	3900	U
120-82-1	1,2,4-Trichlorobenzene	3900	U
91-20-3	Naphthalene	1000	J
106-47-8	4-Chloroaniline	3900	U
87-68-3	Hexachlorobutadiene	3900	U
59-50-7	4-Chloro-3-Methylphenol	3900	U
91-57-6	2-Methylnaphthalene	1600	J
77-47-4	Hexachlorocyclopentadiene	3900	U
88-06-2	2,4,6-Trichlorophenol	3900	U
95-95-4	2,4,5-Trichlorophenol	9400	U
91-58-7	2-Chloronaphthalene	3900	U
88-74-4	2-Nitroaniline	9400	U
131-11-3	Dimethylphthalate	11000	
208-96-8	Acenaphthylene	3900	U
606-20-2	2,6-Dinitrotoluene	3900	U
99-09-2	3-Nitroaniline	9400	U
83-32-9	Acenaphthene	3900	U

NYSDEC013506

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158010DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	9400	U
100-02-7	4-Nitrophenol	9400	U
132-64-9	Dibenzofuran	3900	U
121-14-2	2,4-Dinitrotoluene	3900	U
84-66-2	Diethylphthalate	3900	U
7005-72-3	4-Chlorophenyl-phenylether	3900	U
86-73-7	Fluorene	3900	U
100-01-6	4-Nitroaniline	9400	U
534-52-1	4,6-Dinitro-2-methylphenol	9400	U
86-30-6	N-Nitrosodiphenylamine (1)	3900	U
101-55-3	4-Bromophenyl-phenylether	3900	U
118-74-1	Hexachlorobenzene	3900	U
87-86-5	Pentachlorophenol	9400	U
85-01-8	Phenanthrene	480	J
120-12-7	Anthracene	3900	U
86-74-8	Carbazole	3900	U
84-74-2	Di-n-Butylphthalate	870	J
206-44-0	Fluoranthene	3900	U
129-00-0	Pyrene	3900	U
85-68-7	Butylbenzylphthalate	3900	U
91-94-1	3,3'-Dichlorobenzidine	3900	U
56-55-3	Benzo(a)Anthracene	3900	U
218-01-9	Chrysene	3900	U
117-81-7	bis(2-Ethylhexyl)Phthalate	3900	U
117-84-0	Di-n-Octyl Phthalate	3900	U
205-99-2	Benzo(b)Fluoranthene	3900	U
207-08-9	Benzo(k)Fluoranthene	3900	U
50-32-8	Benzo(a)Pyrene	3900	U
193-39-5	Indeno(1,2,3-cd)Pyrene	3900	U
53-70-3	Dibenz(a,h)Anthracene	3900	U
191-24-2	Benzo(g,h,i)Perylene	3900	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158010DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	13.00	3600	JN
2. 622-96-8	BENZENE, 1-ETHYL-4-METHYL-	13.05	3400	JN
3.	UNKNOWN C3-ALKENYLBENZENE	14.10	2600	J
4.	UNKNOWN C13-ALKANE	19.48	6400	J
5.	UNKNOWN C14-ALKANE	20.70	9000	J
6. 90-12-0	NAPHTHALENE, 1-METHYL-	22.00	2100	JN
7. 85-44-9	PHTHALIC ANHYDRIDE	22.08	4000	JN
8.	UNKNOWN ALKYLCYCLOHEXANE	22.27	2400	J
9.	UNKNOWN C15-ALKANE	22.72	10000	J
10. 581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	23.77	3000	JN
11. 575-43-9	NAPHTHALENE, 1,3-DIMETHYL-	24.07	3100	JN
12.	UNKNOWN ALKANE	24.25	9200	J
13.	UNKNOWN ALKANE	27.34	3800	J
14. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.21	8100	JN
15. 638-36-8	HEXADECANE, 2,6,10,14-TETRAM	29.76	9000	JN
16.	UNKNOWN BENZENE DERIVATIVE	38.48	6000	J
17.	UNKNOWN PHTHALATE	44.88	6500	J
18.	UNKNOWN PHTHALATE	45.03	5300	J
19.	UNKNOWN PHTHALATE	45.18	13000	J
20.	UNKNOWN PHTHALATE	45.46	11000	J

NYSDEC013508

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158015D2S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 3.3

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)Ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-Di-n-Propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)Methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-Methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	2700	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	2700	U
131-11-3	Dimethylphthalate	6800	
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	2700	U
83-32-9	Acenaphthene	1100	U

NYSDEC013509

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158015D2S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 3.3

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2700	U
100-02-7	4-Nitrophenol	2700	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	2700	U
534-52-1	4,6-Dinitro-2-methylphenol	2700	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	2700	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
86-74-8	Carbazole	1100	U
84-74-2	Di-n-Butylphthalate	1200	
206-44-0	Fluoranthene	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	980	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)Anthracene	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	J
117-84-0	Di-n-Octyl Phthalate	1100	U
205-99-2	Benzo(b)Fluoranthene	1100	U
207-08-9	Benzo(k)Fluoranthene	1100	U
50-32-8	Benzo(a)Pyrene	1100	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1100	U
53-70-3	Dibenz(a,h)Anthracene	1100	U
191-24-2	Benzo(g,h,i)Perylene	1100	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158015D2S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 2 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 3.3

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	85-44-9	PHTHALIC ANHYDRIDE	22.10	950	JN
2.		UNKNOWN	25.03	750	J
3.		UNKNOWN	31.26	410	J
4.		UNKNOWN PHTHALATE	31.68	1700	J
5.		UNKNOWN	32.46	260	J
6.		UNKNOWN PHTHALATE	34.13	460	J
7.		UNKNOWN PHTHALATE	34.31	410	J
8.	115-86-6	PHOSPHORIC ACID, TRIPHENYL E	37.93	590	JN
9.		UNKNOWN BENZENE DERIVATIVE	38.49	2100	J
10.		UNKNOWN TRIS(TOLYL)PHOSPHATE	40.49	460	J
11.		UNKNOWN TRIS(TOLYL)PHOSPHATE	40.79	770	J
12.		UNKNOWN TRIS(TOLYL)PHOSPHATE	41.11	360	J
13.		UNKNOWN	41.18	710	J
14.		UNKNOWN	41.24	290	J
15.		UNKNOWN	41.56	510	J
16.		UNKNOWN PHTHALATE	44.89	3100	J
17.		UNKNOWN PHTHALATE	45.04	2600	J
18.		UNKNOWN PHTHALATE	45.19	5600	J
19.		UNKNOWN PHTHALATE	45.49	4400	J
20.		UNKNOWN	49.99	860	J

NYSDEC013511

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158018D2S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	7500	U
111-44-4	bis(2-Chloroethyl)Ether	7500	U
95-57-8	2-Chlorophenol	7500	U
541-73-1	1,3-Dichlorobenzene	7500	U
106-46-7	1,4-Dichlorobenzene	7500	U
95-50-1	1,2-Dichlorobenzene	7500	U
95-48-7	2-Methylphenol	7500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	7500	U
106-44-5	4-Methylphenol	7500	U
621-64-7	N-Nitroso-Di-n-Propylamine	7500	U
67-72-1	Hexachloroethane	7500	U
98-95-3	Nitrobenzene	7500	U
78-59-1	Isophorone	7500	U
88-75-5	2-Nitrophenol	7500	U
105-67-9	2,4-Dimethylphenol	7500	U
111-91-1	bis(2-Chloroethoxy)Methane	7500	U
120-83-2	2,4-Dichlorophenol	7500	U
120-82-1	1,2,4-Trichlorobenzene	7500	U
91-20-3	Naphthalene	5200	J
106-47-8	4-Chloroaniline	7500	U
87-68-3	Hexachlorobutadiene	7500	U
59-50-7	4-Chloro-3-Methylphenol	7500	U
91-57-6	2-Methylnaphthalene	13000	
77-47-4	Hexachlorocyclopentadiene	7500	U
88-06-2	2,4,6-Trichlorophenol	7500	U
95-95-4	2,4,5-Trichlorophenol	18000	U
91-58-7	2-Chloronaphthalene	7500	U
88-74-4	2-Nitroaniline	18000	U
131-11-3	Dimethylphthalate	27000	
208-96-8	Acenaphthylene	7500	U
606-20-2	2,6-Dinitrotoluene	7500	U
99-09-2	3-Nitroaniline	18000	U
83-32-9	Acenaphthene	7500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3_2-4

o Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

trix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158018D2S

evel: (low/med) LOW Date Received: 04/21/92

Moisture: 12 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

jection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	18000	U
100-02-7	4-Nitrophenol	18000	U
132-64-9	Dibenzofuran	7500	U
121-14-2	2,4-Dinitrotoluene	7500	U
84-66-2	Diethylphthalate	7500	U
7005-72-3	4-Chlorophenyl-phenylether	7500	U
86-73-7	Fluorene	1500	J
100-01-6	4-Nitroaniline	18000	U
534-52-1	4,6-Dinitro-2-methylphenol	18000	U
86-30-6	N-Nitrosodiphenylamine (1)	7500	U
101-55-3	4-Bromophenyl-phenylether	7500	U
118-74-1	Hexachlorobenzene	7500	U
87-86-5	Pentachlorophenol	18000	U
85-01-8	Phenanthrene	1600	J
120-12-7	Anthracene	7500	U
86-74-8	Carbazole	7500	U
84-74-2	Di-n-Butylphthalate	3200	J
206-44-0	Fluoranthene	7500	U
129-00-0	Pyrene	7500	U
85-68-7	Butylbenzylphthalate	7500	U
91-94-1	3,3'-Dichlorobenzidine	7500	U
56-55-3	Benzo(a)Anthracene	7500	U
218-01-9	Chrysene	7500	U
117-81-7	bis(2-Ethylhexyl)Phthalate	7500	U
117-84-0	Di-n-Octyl Phthalate	7500	U
205-99-2	Benzo(b)Fluoranthene	7500	U
207-08-9	Benzo(k)Fluoranthene	7500	U
50-32-8	Benzo(a)Pyrene	7500	U
193-39-5	Indeno(1,2,3-cd)Pyrene	7500	U
53-70-3	Dibenz(a,h)Anthracene	7500	U
191-24-2	Benzo(g,h,i)Perylene	7500	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013513

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-3_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158018D2S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 12 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	13.03	32000	JN
2. 622-96-8	BENZENE, 1-ETHYL-4-METHYL-	13.07	27000	JN
3.	UNKNOWN C11-ALKANE	14.80	16000	J
4.	UNKNOWN C12-ALKANE	18.20	13000	J
5.	UNKNOWN C13-ALKANE	19.52	52000	J
6.	UNKNOWN C14-ALKANE	20.73	52000	J
7. 85-44-9	PHTHALIC ANHYDRIDE	22.12	19000	JN
8.	UNKNOWN ALKYLCYCLOHEXANE	22.30	22000	J
9.	UNKNOWN C15-ALKANE	22.77	46000	J
10.	UNKNOWN ALKANE	23.25	14000	J
11. 581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	23.80	18000	JN
12. 575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	24.10	17000	JN
13.	UNKNOWN ALKANE	24.28	38000	J
14.	UNKNOWN ALKANE	27.38	21000	J
15. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.26	34000	JN
16. 638-36-8	HEXADECANE, 2,6,10,14-TETRAM	29.79	32000	JN
17.	UNKNOWN PHTHALATE	44.93	18000	J
18.	UNKNOWN PHTHALATE	45.08	14000	J
19.	UNKNOWN PHTHALATE	45.23	31000	J
20.	UNKNOWN PHTHALATE	45.51	30000	J

NYSDEC013514

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 30.8 (g/mL) G Lab File ID: B158021S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/08/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	73	J
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	180	J
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethylphthalate	2100	
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	57	J

NYSDEC013515

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 30.8 (g/mL) G Lab File ID: B158021S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/08/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	73	J
100-01-6	4-Nitroaniline	860	U
534-52-1	4,6-Dinitro-2-methylphenol	860	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	450	
120-12-7	Anthracene	67	J
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	450	
206-44-0	Fluoranthene	760	
129-00-0	Pyrene	370	
85-68-7	Butylbenzylphthalate	57	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	340	J
218-01-9	Chrysene	300	J
117-81-7	bis(2-Ethylhexyl)Phthalate	96	J
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	490	
207-08-9	Benzo(k)Fluoranthene	270	J
50-32-8	Benzo(a)Pyrene	300	J
193-39-5	Indeno(1,2,3-cd)Pyrene	120	J
53-70-3	Dibenz(a,h)Anthracene	61	J
191-24-2	Benzo(g,h,i)Perylene	110	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 30.8 (g/mL) G Lab File ID: B158021S

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/08/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.02	590	J
2.		UNKNOWN	8.40	350	J
3.		UNKNOWN C3-ALKENYLBENZENE	14.13	260	J
4.		UNKNOWN C6-ALKENYLBENZENE	19.93	340	J
5.		UNKNOWN ALKANE	22.73	330	J
6.	575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	24.07	260	JN
7.		UNKNOWN ALKANE	24.27	280	J
8.		UNKNOWN ALIPHATIC ALCOHOL	25.03	280	J
9.	1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.23	430	JN
10.	638-36-8	HEXADECANE, 2,6,10,14-TETRAM	29.78	450	JN
11.		UNKNOWN BENZENE DERIVATIVE	38.49	770	J
12.		UNKNOWN	41.56	560	J
13.	630-03-5	NONACOSANE	42.23	340	JN
14.	192-97-2	BENZO[E]PYRENE	43.39	400	JN
15.		UNKNOWN C31-ALKANE	44.26	380	J
16.		UNKNOWN PHTHALATE	44.91	1100	J
17.		UNKNOWN PHTHALATE	45.06	920	J
18.		UNKNOWN PHTHALATE	45.21	2000	J
19.		UNKNOWN PHTHALATE	45.49	1900	J
20.		UNKNOWN POLYTERPENE DERIVATI	48.18	650	J

NYSDEC013517

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 30.9 (g/mL) G Lab File ID: B158024DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/02/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1300	U
111-44-4	bis(2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1,3-Dichlorobenzene	1300	U
106-46-7	1,4-Dichlorobenzene	1300	U
95-50-1	1,2-Dichlorobenzene	1300	U
95-48-7	2-Methylphenol	1300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-Di-n-Propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
111-91-1	bis(2-Chloroethoxy)Methane	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
120-82-1	1,2,4-Trichlorobenzene	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	460	J
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	1300	U
95-95-4	2,4,5-Trichlorophenol	3300	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	3300	U
131-11-3	Dimethylphthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	3300	U
83-32-9	Acenaphthene	1300	U

NYSDEC013518

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 30.9 (g/mL) G Lab File ID: B158024DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/02/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3300	U
100-02-7	4-Nitrophenol	3300	U
132-64-9	Dibenzofuran	1300	U
121-14-2	2,4-Dinitrotoluene	1300	U
84-66-2	Diethylphthalate	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
86-73-7	Fluorene	1300	U
100-01-6	4-Nitroaniline	3300	U
534-52-1	4,6-Dinitro-2-methylphenol	3300	U
86-30-6	N-Nitrosodiphenylamine (1)	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	1300	U
87-86-5	Pentachlorophenol	3300	U
85-01-8	Phenanthrene	1300	U
120-12-7	Anthracene	1300	U
86-74-8	Carbazole	1300	U
84-74-2	Di-n-Butylphthalate	1300	U
206-44-0	Fluoranthene	1300	U
129-00-0	Pyrene	1300	U
85-68-7	Butylbenzylphthalate	1300	U
91-94-1	3,3'-Dichlorobenzidine	1300	U
56-55-3	Benzo(a)Anthracene	1300	U
218-01-9	Chrysene	1300	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1300	U
117-84-0	Di-n-Octyl Phthalate	1300	U
205-99-2	Benzo(b)Fluoranthene	1300	U
207-08-9	Benzo(k)Fluoranthene	1300	U
50-32-8	Benzo(a)Pyrene	1300	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1300	U
53-70-3	Dibenz(a,h)Anthracene	1300	U
191-24-2	Benzo(g,h,i)Perylene	1300	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 30.9 (g/mL) G Lab File ID: B158024DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/02/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 1120-21-4	UNDECANE	16.53	8500	JN
2.	UNKNOWN C12-ALKANE	18.05	2200	J
3.	UNKNOWN ALKANE	18.22	1500	J
4. 112-40-3	DODECANE	18.88	9800	JN
5.	UNKNOWN C13-ALKANE	19.17	5000	J
6. 4292-75-5	CYCLOHEXANE, HEXYL-	19.85	2000	JN
7.	UNKNOWN ALKANE	20.20	2300	J
8.	UNKNOWN ALKANE	20.38	5600	J
9. 629-50-5	TRIDECANE	20.95	13000	JN
10.	UNKNOWN C14-ALKANE	21.30	1800	J
11.	UNKNOWN ALKYLCYCLOHEXANE	21.93	1800	J
12.	UNKNOWN C14-ALKANE	22.15	1700	J
13.	UNKNOWN C15-ALKANE	22.40	4100	J
14. 629-59-4	TETRADECANE	22.83	9100	JN
15.	UNKNOWN C16-ALKANE	23.93	3400	J
16. 629-62-9	PENTADECANE	24.60	5300	JN
17. 544-76-3	HEXADECANE	26.24	2200	JN
18.	UNKNOWN ALKANE	27.01	1400	J
19. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	27.89	3200	JN
20. 638-36-8	HEXADECANE, 2,6,10,14-TETRAM	29.43	4700	JN

NYSDEC013520

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1_1-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 157437

Sample wt/vol: 30.1 (g/mL) G Lab File ID: A157437S

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	840	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	840	U
83-32-9	Acenaphthene	350	U

NYSDEC013521

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1_1-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 157437

Sample wt/vol: 30.1 (g/mL) G Lab File ID: A157437S

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: 5 decanted: (Y/N) N Date Extracted: 04/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	840	U
100-02-7	4-Nitrophenol	840	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-methylphenol	840	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013522

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158014DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	16000	U
111-44-4	bis(2-Chloroethyl)Ether	16000	U
95-57-8	2-Chlorophenol	16000	U
541-73-1	1,3-Dichlorobenzene	16000	U
106-46-7	1,4-Dichlorobenzene	16000	U
95-50-1	1,2-Dichlorobenzene	16000	U
95-48-7	2-Methylphenol	16000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	16000	U
106-44-5	4-Methylphenol	16000	U
621-64-7	N-Nitroso-Di-n-Propylamine	16000	U
67-72-1	Hexachloroethane	16000	U
98-95-3	Nitrobenzene	16000	U
78-59-1	Isophorone	16000	U
88-75-5	2-Nitrophenol	16000	U
105-67-9	2,4-Dimethylphenol	16000	U
111-91-1	bis(2-Chloroethoxy)Methane	16000	U
120-83-2	2,4-Dichlorophenol	16000	U
120-82-1	1,2,4-Trichlorobenzene	16000	U
91-20-3	Naphthalene	3600	J
106-47-8	4-Chloroaniline	16000	U
87-68-3	Hexachlorobutadiene	16000	U
59-50-7	4-Chloro-3-Methylphenol	16000	U
91-57-6	2-Methylnaphthalene	9300	J
77-47-4	Hexachlorocyclopentadiene	16000	U
88-06-2	2,4,6-Trichlorophenol	16000	U
95-95-4	2,4,5-Trichlorophenol	38000	U
91-58-7	2-Chloronaphthalene	16000	U
88-74-4	2-Nitroaniline	38000	U
131-11-3	Dimethylphthalate	50000	
208-96-8	Acenaphthylene	16000	U
606-20-2	2,6-Dinitrotoluene	16000	U
99-09-2	3-Nitroaniline	38000	U
83-32-9	Acenaphthene	16000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158014DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	38000	U
100-02-7	4-Nitrophenol	38000	U
132-64-9	Dibenzofuran	16000	U
121-14-2	2,4-Dinitrotoluene	16000	U
84-66-2	Diethylphthalate	16000	U
7005-72-3	4-Chlorophenyl-phenylether	16000	U
86-73-7	Fluorene	16000	U
100-01-6	4-Nitroaniline	38000	U
534-52-1	4,6-Dinitro-2-methylphenol	38000	U
86-30-6	N-Nitrosodiphenylamine (1)	16000	U
101-55-3	4-Bromophenyl-phenylether	16000	U
118-74-1	Hexachlorobenzene	16000	U
87-86-5	Pentachlorophenol	38000	U
85-01-8	Phenanthrene	1400	J
120-12-7	Anthracene	16000	U
86-74-8	Carbazole	16000	U
84-74-2	Di-n-Butylphthalate	6100	J
206-44-0	Fluoranthene	16000	U
129-00-0	Pyrene	16000	U
85-68-7	Butylbenzylphthalate	16000	U
91-94-1	3,3'-Dichlorobenzidine	16000	U
56-55-3	Benzo(a)Anthracene	16000	U
218-01-9	Chrysene	16000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	16000	U
117-84-0	Di-n-Octyl Phthalate	16000	U
205-99-2	Benzo(b)Fluoranthene	16000	U
207-08-9	Benzo(k)Fluoranthene	16000	U
50-32-8	Benzo(a)Pyrene	16000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	16000	U
53-70-3	Dibenz(a,h)Anthracene	16000	U
191-24-2	Benzo(g,h,i)Perylene	16000	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013524

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB16-10

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B158014DS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/07/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 620-14-4	BENZENE, 1-ETHYL-3-METHYL-	13.05	18000	JN
2. 622-96-8	BENZENE, 1-ETHYL-4-METHYL-	13.10	16000	JN
3.	UNKNOWN C3-ALKENYLBENZENE	14.15	14000	J
4.	UNKNOWN C13-ALKANE	19.53	32000	J
5. 4292-75-5	CYCLOHEXANE, HEXYL-	20.23	9500	JN
6.	UNKNOWN C14-ALKANE	20.75	37000	J
7. 85-44-9	PHTHALIC ANHYDRIDE	22.13	17000	JN
8.	UNKNOWN ALKYLCYCLOHEXANE	22.32	12000	J
9.	UNKNOWN C15-ALKANE	22.77	38000	J
10. 581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	23.82	9900	JN
11. 575-43-9	NAPHTHALENE, 1,3-DIMETHYL-	24.12	9400	JN
12.	UNKNOWN ALKANE	24.30	32000	J
13.	UNKNOWN ALKANE	27.39	14000	J
14. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.28	33000	JN
15. 638-36-8	HEXADECANE, 2,6,10,14-TETRAM	29.83	31000	JN
16.	UNKNOWN BENZENE DERIVATIVE	38.53	13000	J
17.	UNKNOWN PHTHALATE	44.93	26000	J
18.	UNKNOWN PHTHALATE	45.08	21000	J
19.	UNKNOWN PHTHALATE	45.23	53000	J
20.	UNKNOWN PHTHALATE	45.51	44000	J

NYSDEC013525

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MS

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158014DMS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	15000	U
111-44-4	bis(2-Chloroethyl)Ether	15000	U
95-57-8	2-Chlorophenol	15000	U
541-73-1	1,3-Dichlorobenzene	15000	U
106-46-7	1,4-Dichlorobenzene	15000	U
95-50-1	1,2-Dichlorobenzene	15000	U
95-48-7	2-Methylphenol	15000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	15000	U
106-44-5	4-Methylphenol	15000	U
621-64-7	N-Nitroso-Di-n-Propylamine	2700	J
67-72-1	Hexachloroethane	15000	U
98-95-3	Nitrobenzene	15000	U
78-59-1	Isophorone	15000	U
88-75-5	2-Nitrophenol	15000	U
105-67-9	2,4-Dimethylphenol	15000	U
111-91-1	bis(2-Chloroethoxy)Methane	15000	U
120-83-2	2,4-Dichlorophenol	15000	U
120-82-1	1,2,4-Trichlorobenzene	15000	U
91-20-3	Naphthalene	3100	J
106-47-8	4-Chloroaniline	15000	U
87-68-3	Hexachlorobutadiene	15000	U
59-50-7	4-Chloro-3-Methylphenol	2300	J
91-57-6	2-Methylnaphthalene	9000	J
77-47-4	Hexachlorocyclopentadiene	15000	U
88-06-2	2,4,6-Trichlorophenol	15000	U
95-95-4	2,4,5-Trichlorophenol	38000	U
91-58-7	2-Chloronaphthalene	15000	U
88-74-4	2-Nitroaniline	38000	U
131-11-3	Dimethylphthalate	53000	
208-96-8	Acenaphthylene	15000	U
606-20-2	2,6-Dinitrotoluene	15000	U
99-09-2	3-Nitroaniline	38000	U
83-32-9	Acenaphthene	1700	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MS

Sample wt/vol: 30.1 (g/mL) G Lab File ID: B158014DMS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	38000	U
100-02-7	4-Nitrophenol	38000	U
132-64-9	Dibenzofuran	15000	U
121-14-2	2,4-Dinitrotoluene	15000	U
84-66-2	Diethylphthalate	15000	U
7005-72-3	4-Chlorophenyl-phenylether	15000	U
86-73-7	Fluorene	15000	U
100-01-6	4-Nitroaniline	38000	U
534-52-1	4,6-Dinitro-2-methylphenol	38000	U
86-30-6	N-Nitrosodiphenylamine (1)	15000	U
101-55-3	4-Bromophenyl-phenylether	15000	U
118-74-1	Hexachlorobenzene	15000	U
87-86-5	Pentachlorophenol	38000	U
85-01-8	Phenanthrene	1900	J
120-12-7	Anthracene	15000	U
86-74-8	Carbazole	15000	U
84-74-2	Di-n-Butylphthalate	11000	J
206-44-0	Fluoranthene	15000	U
129-00-0	Pyrene	1800	J
85-68-7	Butylbenzylphthalate	15000	U
91-94-1	3,3'-Dichlorobenzidine	15000	U
56-55-3	Benzo(a)Anthracene	15000	U
218-01-9	Chrysene	15000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	8600	J
117-84-0	Di-n-Octyl Phthalate	15000	U
205-99-2	Benzo(b)Fluoranthene	15000	U
207-08-9	Benzo(k)Fluoranthene	15000	U
50-32-8	Benzo(a)Pyrene	15000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	15000	U
53-70-3	Dibenz(a,h)Anthracene	15000	U
191-24-2	Benzo(g,h,i)Perylene	15000	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013527

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MD

Sample wt/vol: 30.7 (g/mL) G Lab File ID: B158014DMDS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	15000	U
111-44-4	bis(2-Chloroethyl)Ether	15000	U
95-57-8	2-Chlorophenol	15000	U
541-73-1	1,3-Dichlorobenzene	15000	U
106-46-7	1,4-Dichlorobenzene	15000	U
95-50-1	1,2-Dichlorobenzene	15000	U
95-48-7	2-Methylphenol	15000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	15000	U
106-44-5	4-Methylphenol	15000	U
621-64-7	N-Nitroso-Di-n-Propylamine	15000	U
67-72-1	Hexachloroethane	15000	U
98-95-3	Nitrobenzene	15000	U
78-59-1	Isophorone	15000	U
88-75-5	2-Nitrophenol	15000	U
105-67-9	2,4-Dimethylphenol	15000	U
111-91-1	bis(2-Chloroethoxy)Methane	15000	U
120-83-2	2,4-Dichlorophenol	15000	U
120-82-1	1,2,4-Trichlorobenzene	15000	U
91-20-3	Naphthalene	15000	U
106-47-8	4-Chloroaniline	15000	U
87-68-3	Hexachlorobutadiene	15000	U
59-50-7	4-Chloro-3-Methylphenol	15000	U
91-57-6	2-Methylnaphthalene	1900	J
77-47-4	Hexachlorocyclopentadiene	15000	U
88-06-2	2,4,6-Trichlorophenol	15000	U
95-95-4	2,4,5-Trichlorophenol	37000	U
91-58-7	2-Chloronaphthalene	15000	U
88-74-4	2-Nitroaniline	37000	U
131-11-3	Dimethylphthalate	14000	J
208-96-8	Acenaphthylene	15000	U
606-20-2	2,6-Dinitrotoluene	15000	U
99-09-2	3-Nitroaniline	37000	U
83-32-9	Acenaphthene	15000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MD

Sample wt/vol: 30.7 (g/mL) G Lab File ID: B158014DMDS

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 04/26/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 05/10/92

Injection Volume: 2.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	37000	U
100-02-7	4-Nitrophenol	37000	U
132-64-9	Dibenzofuran	15000	U
121-14-2	2,4-Dinitrotoluene	15000	U
84-66-2	Diethylphthalate	15000	U
7005-72-3	4-Chlorophenyl-phenylether	15000	U
86-73-7	Fluorene	15000	U
100-01-6	4-Nitroaniline	37000	U
534-52-1	4,6-Dinitro-2-methylphenol	37000	U
86-30-6	N-Nitrosodiphenylamine (1)	15000	U
101-55-3	4-Bromophenyl-phenylether	15000	U
118-74-1	Hexachlorobenzene	15000	U
87-86-5	Pentachlorophenol	37000	U
85-01-8	Phenanthrene	15000	U
120-12-7	Anthracene	15000	U
86-74-8	Carbazole	15000	U
84-74-2	Di-n-Butylphthalate	2800	J
206-44-0	Fluoranthene	15000	U
129-00-0	Pyrene	15000	U
85-68-7	Butylbenzylphthalate	15000	U
91-94-1	3,3'-Dichlorobenzidine	15000	U
56-55-3	Benzo(a)Anthracene	15000	U
218-01-9	Chrysene	15000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5000	J
117-84-0	Di-n-Octyl Phthalate	15000	U
205-99-2	Benzo(b)Fluoranthene	15000	U
207-08-9	Benzo(k)Fluoranthene	15000	U
50-32-8	Benzo(a)Pyrene	15000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	15000	U
53-70-3	Dibenz(a,h)Anthracene	15000	U
191-24-2	Benzo(g,h,i)Perylene	15000	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013529

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Q158010DS

% Moisture: 15 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	JP
319-85-7	beta-BHC	3.9	U
319-86-8	delta-BHC	3.7	JP
58-89-9	gamma-BHC (Lindane)	3.9	U
76-44-8	Heptachlor	3.9	U
309-00-2	Aldrin	3.9	U
1024-57-3	Heptachlor epoxide	3.9	U
959-98-8	Endosulfan I	3.9	U
60-57-1	Dieldrin	7.6	U
72-55-9	4,4'-DDE	7.6	U
72-20-8	Endrin	7.6	U
33213-65-9	Endosulfan II	7.6	U
72-54-8	4,4'-DDD	7.6	U
1031-07-8	Endosulfan sulfate	7.6	U
50-29-3	4,4'-DDT	7.6	U
72-43-5	Methoxychlor	39	U
53494-70-5	Endrin ketone	7.6	U
7421-93-4	Endrin aldehyde	7.6	U
5103-71-9	alpha-Chlordane	3.9	U
5103-74-2	gamma-Chlordane	3.9	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	76	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	76	U
53469-21-9	Aroclor-1242	76	U
12672-29-6	Aroclor-1248	76	U
11097-69-1	Aroclor-1254	7400	YC
11096-82-5	Aroclor-1260	76	U

NYSDEC013530

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_2-4DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010D1

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Q158010DS

% Moisture: 15 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	39	U
319-85-7	beta-BHC	39	U
319-86-8	delta-BHC	39	U
58-89-9	gamma-BHC (Lindane)	39	U
76-44-8	Heptachlor	39	U
309-00-2	Aldrin	39	U
1024-57-3	Heptachlor epoxide	39	U
959-98-8	Endosulfan I	39	U
60-57-1	Dieldrin	76	U
72-55-9	4,4'-DDE	76	U
72-20-8	Endrin	76	U
33213-65-9	Endosulfan II	76	U
72-54-8	4,4'-DDD	76	U
1031-07-8	Endosulfan sulfate	76	U
50-29-3	4,4'-DDT	76	U
72-43-5	Methoxychlor	390	U
53494-70-5	Endrin ketone	76	U
7421-93-4	Endrin aldehyde	76	U
5103-71-9	alpha-Chlordane	39	U
5103-74-2	gamma-Chlordane	39	U
8001-35-2	Toxaphene	3900	U
12674-11-2	Aroclor-1016	760	U
11104-28-2	Aroclor-1221	1500	U
11141-16-5	Aroclor-1232	760	U
53469-21-9	Aroclor-1242	760	U
12672-29-6	Aroclor-1248	760	U
11097-69-1	Aroclor-1254	8000	CD
11096-82-5	Aroclor-1260	760	U

NYSDEC013531

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Q158015S

% Moisture: 2 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/08/92

Injection Volume: 1.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	17	U
319-85-7	beta-BHC	17	U
319-86-8	delta-BHC	17	U
58-89-9	gamma-BHC (Lindane)	17	U
76-44-8	Heptachlor	17	U
309-00-2	Aldrin	17	U
1024-57-3	Heptachlor epoxide	17	U
959-98-8	Endosulfan I	17	U
60-57-1	Dieldrin	33	U
72-55-9	4,4'-DDE	33	U
72-20-8	Endrin	33	U
33213-65-9	Endosulfan II	33	U
72-54-8	4,4'-DDD	33	U
1031-07-8	Endosulfan sulfate	33	U
50-29-3	4,4'-DDT	33	U
72-43-5	Methoxychlor	170	U
53494-70-5	Endrin ketone	33	U
7421-93-4	Endrin aldehyde	33	U
5103-71-9	alpha-Chlordane	17	U
5103-74-2	gamma-Chlordane	17	U
8001-35-2	Toxaphene	1700	U
12674-11-2	Aroclor-1016	330	U
11104-28-2	Aroclor-1221	670	U
11141-16-5	Aroclor-1232	330	U
53469-21-9	Aroclor-1242	330	U
12672-29-6	Aroclor-1248	330	U
11097-69-1	Aroclor-1254	880	C
11096-82-5	Aroclor-1260	330	U

NYSDEC013532

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Q158018DS

% Moisture: 12 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	37	U
7421-93-4	Endrin aldehyde	37	U
5103-71-9	alpha-Chlordane	19	U
5103-74-2	gamma-Chlordane	19	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	370	U
11104-28-2	Aroclor-1221	750	U
11141-16-5	Aroclor-1232	370	U
53469-21-9	Aroclor-1242	370	U
12672-29-6	Aroclor-1248	370	U
11097-69-1	Aroclor-1254	5800	YC
11096-82-5	Aroclor-1260	370	U

NYSDEC013533

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3_2-4DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018D1

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Q158018DS

% Moisture: 12 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/08/92

Injection Volume: 1.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	190	U
319-85-7	beta-BHC	190	U
319-86-8	delta-BHC	190	U
58-89-9	gamma-BHC (Lindane)	190	U
76-44-8	Heptachlor	190	U
309-00-2	Aldrin	190	U
1024-57-3	Heptachlor epoxide	190	U
959-98-8	Endosulfan I	190	U
60-57-1	Dieldrin	370	U
72-55-9	4,4'-DDE	370	U
72-20-8	Endrin	370	U
33213-65-9	Endosulfan II	370	U
72-54-8	4,4'-DDD	370	U
1031-07-8	Endosulfan sulfate	370	U
50-29-3	4,4'-DDT	370	U
72-43-5	Methoxychlor	1900	U
53494-70-5	Endrin ketone	370	U
7421-93-4	Endrin aldehyde	370	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	19000	U
12674-11-2	Aroclor-1016	3700	U
11104-28-2	Aroclor-1221	7500	U
11141-16-5	Aroclor-1232	3700	U
53469-21-9	Aroclor-1242	3700	U
12672-29-6	Aroclor-1248	3700	U
11097-69-1	Aroclor-1254	6600	CD
11096-82-5	Aroclor-1260	3700	U

NYSDEC013534

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Q158021DS

% Moisture: 9 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/08/92

Injection Volume: 1.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	36	U
72-55-9	4,4'-DDE	36	U
72-20-8	Endrin	36	U
33213-65-9	Endosulfan II	36	U
72-54-8	4,4'-DDD	36	U
1031-07-8	Endosulfan sulfate	36	U
50-29-3	4,4'-DDT	36	U
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	36	U
7421-93-4	Endrin aldehyde	36	U
5103-71-9	alpha-Chlordane	46	
5103-74-2	gamma-Chlordane	38	P
8001-35-2	Toxaphene	1800	U
12674-11-2	Aroclor-1016	360	U
11104-28-2	Aroclor-1221	730	U
11141-16-5	Aroclor-1232	360	U
53469-21-9	Aroclor-1242	360	U
12672-29-6	Aroclor-1248	360	U
11097-69-1	Aroclor-1254	760	C
11096-82-5	Aroclor-1260	360	U

NYSDEC013535

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 4 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	98	
11096-82-5	Aroclor-1260	34	U

NYSDEC013536

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Q158014DS

% Moisture: 16 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.9	U
319-85-7	beta-BHC	3.6	JP
319-86-8	delta-BHC	2.8	JP
58-89-9	gamma-BHC (Lindane)	3.9	U
76-44-8	Heptachlor	3.9	U
309-00-2	Aldrin	3.9	U
1024-57-3	Heptachlor epoxide	3.9	U
959-98-8	Endosulfan I	3.9	U
60-57-1	Dieldrin	7.7	U
72-55-9	4,4'-DDE	7.7	U
72-20-8	Endrin	7.7	U
33213-65-9	Endosulfan II	7.7	U
72-54-8	4,4'-DDD	7.7	U
1031-07-8	Endosulfan sulfate	7.7	U
50-29-3	4,4'-DDT	7.7	U
72-43-5	Methoxychlor	39	U
53494-70-5	Endrin ketone	7.7	U
7421-93-4	Endrin aldehyde	7.7	U
5103-71-9	alpha-Chlordane	3.9	U
5103-74-2	gamma-Chlordane	3.9	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	77	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	77	U
53469-21-9	Aroclor-1242	77	U
12672-29-6	Aroclor-1248	77	U
11097-69-1	Aroclor-1254	14000	YC
11096-82-5	Aroclor-1260	77	U

NYSDEC013537

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014D1

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Q158014DS

% Moisture: 16 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/08/92

Injection Volume: 1.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	U
319-85-7	beta-BHC	200	U
319-86-8	delta-BHC	200	U
58-89-9	gamma-BHC (Lindane)	200	U
76-44-8	Heptachlor	200	U
309-00-2	Aldrin	200	U
1024-57-3	Heptachlor epoxide	200	U
959-98-8	Endosulfan I	200	U
60-57-1	Dieldrin	380	U
72-55-9	4,4'-DDE	380	U
72-20-8	Endrin	380	U
33213-65-9	Endosulfan II	380	U
72-54-8	4,4'-DDD	380	U
1031-07-8	Endosulfan sulfate	380	U
50-29-3	4,4'-DDT	380	U
72-43-5	Methoxychlor	2000	U
53494-70-5	Endrin ketone	380	U
7421-93-4	Endrin aldehyde	380	U
5103-71-9	alpha-Chlordane	200	U
5103-74-2	gamma-Chlordane	200	U
8001-35-2	Toxaphene	20000	U
12674-11-2	Aroclor-1016	3800	U
11104-28-2	Aroclor-1221	7800	U
11141-16-5	Aroclor-1232	3800	U
53469-21-9	Aroclor-1242	3800	U
12672-29-6	Aroclor-1248	3800	U
11097-69-1	Aroclor-1254	18000	CD
11096-82-5	Aroclor-1260	3800	U

NYSDEC013538

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1_1-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 157437

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 4 decanted: (Y/N) N Date Received: 04/15/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/25/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	3.4	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	3.4	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	69	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	22	J
11096-82-5	Aroclor-1260	34	U

NYSDEC013539

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MS

Sample wt/vol: 30.6 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	3.2	JP
319-86-8	delta-BHC	2.6	JP
58-89-9	gamma-BHC (Lindane)	9.3	
76-44-8	Heptachlor	19	
309-00-2	Aldrin	49	P
1024-57-3	Heptachlor epoxide	4.0	U
959-98-8	Endosulfan I	4.0	U
60-57-1	Dieldrin	430	P
72-55-9	4,4'-DDE	7.7	U
72-20-8	Endrin	27	P
33213-65-9	Endosulfan II	7.7	U
72-54-8	4,4'-DDD	7.7	U
1031-07-8	Endosulfan sulfate	7.7	U
50-29-3	4,4'-DDT	38	P
72-43-5	Methoxychlor	40	U
53494-70-5	Endrin ketone	7.7	U
7421-93-4	Endrin aldehyde	7.7	U
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	4.0	U
8001-35-2	Toxaphene	400	U
12674-11-2	Aroclor-1016	77	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	77	U
53469-21-9	Aroclor-1242	77	U
12672-29-6	Aroclor-1248	77	U
11097-69-1	Aroclor-1254	13000	Y
11096-82-5	Aroclor-1260	77	U

NYSDEC013540

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB16-10MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158014MD

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 16 decanted: (Y/N) N Date Received: 04/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/26/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 2.00

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	2.2	JP
319-86-8	delta-BHC	2.0	JP
58-89-9	gamma-BHC (Lindane)	7.6	
76-44-8	Heptachlor	18	P
309-00-2	Aldrin	300	
1024-57-3	Heptachlor epoxide	4.0	U
959-98-8	Endosulfan I	4.0	U
60-57-1	Dieldrin	440	P
72-55-9	4,4'-DDE	7.8	U
72-20-8	Endrin	27	P
33213-65-9	Endosulfan II	7.8	U
72-54-8	4,4'-DDD	7.8	U
1031-07-8	Endosulfan sulfate	7.8	U
50-29-3	4,4'-DDT	35	P
72-43-5	Methoxychlor	40	U
53494-70-5	Endrin ketone	7.8	U
7421-93-4	Endrin aldehyde	7.8	U
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	4.0	U
8001-35-2	Toxaphene	400	U
12674-11-2	Aroclor-1016	78	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	78	U
53469-21-9	Aroclor-1242	78	U
12672-29-6	Aroclor-1248	78	U
11097-69-1	Aroclor-1254	14000	Y
11096-82-5	Aroclor-1260	78	U

NYSDEC013541

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158010E2V

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 16 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 3.8

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	5500	U
74-83-9	Bromomethane	5500	U
75-01-4	Vinyl Chloride	5500	U
75-00-3	Chloroethane	5500	U
75-09-2	Methylene Chloride	4300	BJ
67-64-1	Acetone	3200	BJ
75-15-0	Carbon Disulfide	5500	U
75-35-4	1,1-Dichloroethene	5500	U
75-34-3	1,1-Dichloroethane	5500	U
540-59-0	1,2-Dichloroethene (total)	5500	U
67-66-3	Chloroform	5500	U
107-06-2	1,2-Dichloroethane	5500	U
78-93-3	2-Butanone	5500	U
71-55-6	1,1,1-Trichloroethane	5500	U
56-23-5	Carbon Tetrachloride	5500	U
75-27-4	Bromodichloromethane	5500	U
78-87-5	1,2-Dichloropropane	5500	U
10061-01-5	cis-1,3-Dichloropropene	5500	U
79-01-6	Trichloroethene	5500	U
124-48-1	Dibromochloromethane	5500	U
79-00-5	1,1,2-Trichloroethane	5500	U
71-43-2	Benzene	5500	U
10061-02-6	trans-1,3-Dichloropropene	5500	U
75-25-2	Bromoform	5500	U
108-10-1	4-Methyl-2-Pentanone	5500	U
591-78-6	2-Hexanone	5500	U
127-18-4	Tetrachloroethene	5500	U
79-34-5	1,1,2,2-Tetrachloroethane	5500	U
108-88-3	Toluene	600	J
108-90-7	Chlorobenzene	5500	U
100-41-4	Ethylbenzene	86000	
100-42-5	Styrene	5500	U
1330-20-7	Xylene (total)	16000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-1_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158010

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158010E2V

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 16 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 3.8

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ETHYLMETHYLBENZENE	28.36	6400	J
2.	UNKNOWN DIMETHYLCYCLOOCTANE	31.31	6900	J

NYSDEC013543

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013

Sample wt/vol: 1.0 (g/mL) G Lab File ID: E158013V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/25/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	59	U
74-83-9	Bromomethane	59	U
75-01-4	Vinyl Chloride	59	U
75-00-3	Chloroethane	59	U
75-09-2	Methylene Chloride	38	BJ
67-64-1	Acetone	100	B
75-15-0	Carbon Disulfide	10	J
75-35-4	1,1-Dichloroethene	59	U
75-34-3	1,1-Dichloroethane	59	U
540-59-0	1,2-Dichloroethene (total)	20	J
67-66-3	Chloroform	59	U
107-06-2	1,2-Dichloroethane	59	U
78-93-3	2-Butanone	19	J
71-55-6	1,1,1-Trichloroethane	59	U
56-23-5	Carbon Tetrachloride	59	U
75-27-4	Bromodichloromethane	59	U
78-87-5	1,2-Dichloropropane	59	U
10061-01-5	cis-1,3-Dichloropropene	59	U
79-01-6	Trichloroethene	59	U
124-48-1	Dibromochloromethane	59	U
79-00-5	1,1,2-Trichloroethane	59	U
71-43-2	Benzene	45	J
10061-02-6	trans-1,3-Dichloropropene	59	U
75-25-2	Bromoform	59	U
108-10-1	4-Methyl-2-Pentanone	59	U
591-78-6	2-Hexanone	59	U
127-18-4	Tetrachloroethene	59	U
79-34-5	1,1,2,2-Tetrachloroethane	59	U
108-88-3	Toluene	230	
108-90-7	Chlorobenzene	25	J
100-41-4	Ethylbenzene	14000	E
100-42-5	Styrene	59	U
1330-20-7	Xylene (total)	5300	E

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-1_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013

Sample wt/vol: 1.0 (g/mL) G Lab File ID: E158013V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/25/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 694-72-4	PENTALENE, OCTAHYDRO-	21.05	67	JN
2. 281-23-2	TRICYCLO [3.3.1.13,7] DECANE	24.25	330	JN
3.	UNKNOWN CYCLOHEXANE	24.25	380	J
4.	UNKNOWN CYCLOALKANE	25.91	920	J
5.	UNKNOWN CYCLOHEXANES	27.26	640	J
6.	UNKNOWN CYCLIC HYDROCARBONS	28.36	560	J
7.	UNKNOWN CYCLOALKANE	29.06	500	J
8.	UNKNOWN DIMETHYLCYCLOOCTANE	31.36	2400	J
9.	UNKNOWN	32.71	320	J
10.	UNKNOWN DIETHYLMETHYLCYCLOHE	33.31	160	J

NYSDEC013545

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_6-8DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013D1

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158013E2V

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 4.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	5600	U
74-83-9	Bromomethane	5600	U
75-01-4	Vinyl Chloride	5600	U
75-00-3	Chloroethane	5600	U
75-09-2	Methylene Chloride	4300	BDJ
67-64-1	Acetone	4000	BDJ
75-15-0	Carbon Disulfide	5600	U
75-35-4	1,1-Dichloroethene	5600	U
75-34-3	1,1-Dichloroethane	5600	U
540-59-0	1,2-Dichloroethene (total)	5600	U
67-66-3	Chloroform	5600	U
107-06-2	1,2-Dichloroethane	5600	U
78-93-3	2-Butanone	5600	U
71-55-6	1,1,1-Trichloroethane	5600	U
56-23-5	Carbon Tetrachloride	5600	U
75-27-4	Bromodichloromethane	5600	U
78-87-5	1,2-Dichloropropane	5600	U
10061-01-5	cis-1,3-Dichloropropene	5600	U
79-01-6	Trichloroethene	5600	U
124-48-1	Dibromochloromethane	5600	U
79-00-5	1,1,2-Trichloroethane	5600	U
71-43-2	Benzene	5600	U
10061-02-6	trans-1,3-Dichloropropene	5600	U
75-25-2	Bromoform	5600	U
108-10-1	4-Methyl-2-Pentanone	5600	U
591-78-6	2-Hexanone	5600	U
127-18-4	Tetrachloroethene	5600	U
79-34-5	1,1,2,2-Tetrachloroethane	5600	U
108-88-3	Toluene	850	DJ
108-90-7	Chlorobenzene	5600	U
100-41-4	Ethylbenzene	100000	D
100-42-5	Styrene	5600	U
1330-20-7	Xylene (total)	21000	D

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-1_6-8DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013D1

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158013E2V

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 4.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN CYCLOALKANE	25.96	3100	JD
2.	UNKNOWN ETHYLMETHYLBENZENE	28.46	5600	JD
3.	UNKNOWN DIMETHYLCYCLOOCTANE	31.46	7800	JD

NYSDEC013547

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 5.0 (g/mL) G Lab File ID: E158015I3V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 2 Date Analyzed: 04/27/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013548

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-2_4-6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015

Sample wt/vol: 5.0 (g/mL) G Lab File ID: E158015I3V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 2 Date Analyzed: 04/27/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013549

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 4.1 (g/mL) G Lab File ID: E158018EV

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 20 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 17.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24000	U
74-83-9	Bromomethane	24000	U
75-01-4	Vinyl Chloride	24000	U
75-00-3	Chloroethane	24000	U
75-09-2	Methylene Chloride	14000	BJ
67-64-1	Acetone	13000	BJ
75-15-0	Carbon Disulfide	24000	U
75-35-4	1,1-Dichloroethene	24000	U
75-34-3	1,1-Dichloroethane	24000	U
540-59-0	1,2-Dichloroethene (total)	24000	U
67-66-3	Chloroform	24000	U
107-06-2	1,2-Dichloroethane	24000	U
78-93-3	2-Butanone	24000	U
71-55-6	1,1,1-Trichloroethane	24000	U
56-23-5	Carbon Tetrachloride	24000	U
75-27-4	Bromodichloromethane	24000	U
78-87-5	1,2-Dichloropropane	24000	U
10061-01-5	cis-1,3-Dichloropropene	24000	U
79-01-6	Trichloroethene	24000	U
124-48-1	Dibromochloromethane	24000	U
79-00-5	1,1,2-Trichloroethane	24000	U
71-43-2	Benzene	24000	U
10061-02-6	trans-1,3-Dichloropropene	24000	U
75-25-2	Bromoform	24000	U
108-10-1	4-Methyl-2-Pentanone	24000	U
591-78-6	2-Hexanone	24000	U
127-18-4	Tetrachloroethene	24000	U
79-34-5	1,1,2,2-Tetrachloroethane	24000	U
108-88-3	Toluene	3100	J
108-90-7	Chlorobenzene	24000	U
100-41-4	Ethylbenzene	400000	
100-42-5	Styrene	24000	U
1330-20-7	Xylene (total)	85000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-3_2-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158018

Sample wt/vol: 4.1 (g/mL) G Lab File ID: E158018EV

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 20 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 17.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ETHYLMETHYLBENZENE	28.41	44000	J
2.	UNKNOWN DIMETHYLCYCLOOCTANE	31.41	28000	J

NYSDEC013551

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 5.1 (g/mL) G Lab File ID: E158021V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 10 Date Analyzed: 04/24/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	2	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	60	
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-4_6-8

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158021

Sample wt/vol: 5.1 (g/mL) G Lab File ID: E158021V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 10 Date Analyzed: 04/24/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013553

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 2.6 (g/mL) G Lab File ID: E158024V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 4 Date Analyzed: 04/24/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	11	BJ
67-64-1	Acetone	11	BJ
75-15-0	Carbon Disulfide	20	U
75-35-4	1,1-Dichloroethene	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	20	U
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	830	E
100-42-5	Styrene	20	U
1330-20-7	Xylene (total)	170	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-5_30-32

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024

Sample wt/vol: 2.6 (g/mL) G Lab File ID: E158024V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 4 Date Analyzed: 04/24/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBONS	24.25	73	J
2.	UNKNOWN CYCLIC HYDROCARBONS	25.86	79	J
3.	UNKNOWN POLYCYCLIC HYDROCARB	26.16	27	J
4.	UNKNOWN CYCLOHEXANES	27.21	61	J
5.	UNKNOWN CYCLIC HYDROCARBONS	28.36	67	J
6.	UNKNOWN CYCLOHEXANES	29.81	120	J
7.	UNKNOWN	30.51	46	J
8.	UNKNOWN DIMETHYLCYCLOOCTANE	31.31	220	J
9.	UNKNOWN ALKANE	32.56	13	J
10.	UNKNOWN METHYLPROPYLBENZENE	32.76	15	J

NYSDEC013555

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-53032DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024D1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: E158024I2V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 4 Date Analyzed: 04/25/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	52	U
74-83-9	Bromomethane	52	U
75-01-4	Vinyl Chloride	52	U
75-00-3	Chloroethane	52	U
75-09-2	Methylene Chloride	26	BDJ
67-64-1	Acetone	17	BDJ
75-15-0	Carbon Disulfide	52	U
75-35-4	1,1-Dichloroethene	52	U
75-34-3	1,1-Dichloroethane	52	U
540-59-0	1,2-Dichloroethene (total)	52	U
67-66-3	Chloroform	52	U
107-06-2	1,2-Dichloroethane	52	U
78-93-3	2-Butanone	52	U
71-55-6	1,1,1-Trichloroethane	52	U
56-23-5	Carbon Tetrachloride	52	U
75-27-4	Bromodichloromethane	52	U
78-87-5	1,2-Dichloropropane	52	U
10061-01-5	cis-1,3-Dichloropropene	52	U
79-01-6	Trichloroethene	52	U
124-48-1	Dibromochloromethane	52	U
79-00-5	1,1,2-Trichloroethane	52	U
71-43-2	Benzene	52	U
10061-02-6	trans-1,3-Dichloropropene	52	U
75-25-2	Bromoform	52	U
108-10-1	4-Methyl-2-Pentanone	52	U
591-78-6	2-Hexanone	52	U
127-18-4	Tetrachloroethene	52	U
79-34-5	1,1,2,2-Tetrachloroethane	52	U
108-88-3	Toluene	52	U
108-90-7	Chlorobenzene	52	U
100-41-4	Ethylbenzene	33	DJ
100-42-5	Styrene	52	U
1330-20-7	Xylene (total)	110	D

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMTB-53032DL

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158024D1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: E158024I2V

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 4 Date Analyzed: 04/25/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBONS	24.30	100	JD
2.	UNKNOWN CYCLIC HYDROCARBONS	25.96	98	JD
3.	UNKNOWN POLYCYCLIC HYDROCARB	26.26	40	JD
4.	UNKNOWN CYCLOHEXANES	27.31	79	JD
5.	UNKNOWN TRICYCLODECANE	28.46	59	JD
6.	UNKNOWN CYCLOHEXANES	29.91	140	JD
7.	UNKNOWN	30.71	52	JD
8.	UNKNOWN DIMETHYLCYCLOOCTANE	31.41	270	JD

NYSDEC013557

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1_1-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 157437

Sample wt/vol: 5.0 (g/mL) G Lab File ID: E157437V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec. 5 Date Analyzed: 04/21/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-1_1-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 157437

Sample wt/vol: 5.0 (g/mL) G Lab File ID: E157437V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec. 5 Date Analyzed: 04/21/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013559

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_6-8MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013MS

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158013MSEV

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 4.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	5600	U
74-83-9	Bromomethane	5600	U
75-01-4	Vinyl Chloride	5600	U
75-00-3	Chloroethane	5600	U
75-09-2	Methylene Chloride	4500	BJ
67-64-1	Acetone	2500	BJ
75-15-0	Carbon Disulfide	5600	U
75-35-4	1,1-Dichloroethene	6100	
75-34-3	1,1-Dichloroethane	5600	U
540-59-0	1,2-Dichloroethene (total)	5600	U
67-66-3	Chloroform	5600	U
107-06-2	1,2-Dichloroethane	5600	U
78-93-3	2-Butanone	5600	U
71-55-6	1,1,1-Trichloroethane	5600	U
56-23-5	Carbon Tetrachloride	5600	U
75-27-4	Bromodichloromethane	5600	U
78-87-5	1,2-Dichloropropane	5600	U
10061-01-5	cis-1,3-Dichloropropene	5600	U
79-01-6	Trichloroethene	5700	
124-48-1	Dibromochloromethane	5600	U
79-00-5	1,1,2-Trichloroethane	5600	U
71-43-2	Benzene	5800	
10061-02-6	trans-1,3-Dichloropropene	5600	U
75-25-2	Bromoform	5600	U
108-10-1	4-Methyl-2-Pentanone	5600	U
591-78-6	2-Hexanone	5600	U
127-18-4	Tetrachloroethene	5600	U
79-34-5	1,1,2,2-Tetrachloroethane	5600	U
108-88-3	Toluene	7000	
108-90-7	Chlorobenzene	6900	
100-41-4	Ethylbenzene	85000	
100-42-5	Styrene	5600	U
1330-20-7	Xylene (total)	17000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1_6-8MD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158013MD

Sample wt/vol: 4.0 (g/mL) G Lab File ID: E158013MDEV

Level: (low/med) MED Date Received: 04/21/92

% Moisture: not dec. 15 Date Analyzed: 04/28/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 4.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	5600	U
74-83-9	Bromomethane	5600	U
75-01-4	Vinyl Chloride	5600	U
75-00-3	Chloroethane	5600	U
75-09-2	Methylene Chloride	4500	BJ
67-64-1	Acetone	4600	BJ
75-15-0	Carbon Disulfide	5600	U
75-35-4	1,1-Dichloroethene	5600	J
75-34-3	1,1-Dichloroethane	5600	U
540-59-0	1,2-Dichloroethene (total)	5600	U
67-66-3	Chloroform	5600	U
107-06-2	1,2-Dichloroethane	5600	U
78-93-3	2-Butanone	5600	U
71-55-6	1,1,1-Trichloroethane	5600	U
56-23-5	Carbon Tetrachloride	5600	U
75-27-4	Bromodichloromethane	5600	U
78-87-5	1,2-Dichloropropane	5600	U
10061-01-5	cis-1,3-Dichloropropene	5600	U
79-01-6	Trichloroethene	5600	J
124-48-1	Dibromochloromethane	5600	U
79-00-5	1,1,2-Trichloroethane	5600	U
71-43-2	Benzene	5600	J
10061-02-6	trans-1,3-Dichloropropene	5600	U
75-25-2	Bromoform	5600	U
108-10-1	4-Methyl-2-Pentanone	5600	U
591-78-6	2-Hexanone	5600	U
127-18-4	Tetrachloroethene	5600	U
79-34-5	1,1,2,2-Tetrachloroethane	5600	U
108-88-3	Toluene	6900	
108-90-7	Chlorobenzene	7000	
100-41-4	Ethylbenzene	82000	
100-42-5	Styrene	5600	U
1330-20-7	Xylene (total)	16000	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015MS

Sample wt/vol: 5.0 (g/mL) G Lab File ID: E158015MSV

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 2 Date Analyzed: 04/27/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	BJ
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	47	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	48	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	48	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	52	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	3	J
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013562

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2_4-6MD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) SOIL Lab Sample ID: 158015MD

Sample wt/vol: 5.1 (g/mL) G Lab File ID: E158015MDV

Level: (low/med) LOW Date Received: 04/21/92

% Moisture: not dec. 2 Date Analyzed: 04/27/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	BJ
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	47	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	47	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	46	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	50	
108-90-7	Chlorobenzene	51	
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1D
EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1:2-4'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158012

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/05/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013564

FORM I PEST

1D
EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2:4-6'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158017

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/06/92

GPC Cleanup: (Y/N) N/A pH: N/A

CONCENTRATION UNITS:

CAS NO.	COMPOUND	ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013565

FORM I PEST

1D
EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3:2-4'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158020

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/06/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013566

FORM I PEST

1D
EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4:6-8'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158023

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/06/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013567

FORM I PEST

1D
EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5:30-32'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158026

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/06/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013568

FORM I PEST

1D

EPTOX PESTICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1 1'-2'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 157438

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/15/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/25/92

Extraction: (SepF/Cont/Sonc) SEPF Date Pesticide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/05/92

GPC Cleanup: (Y/N) N/A pH: N/A

CONCENTRATION UNITS:

CAS NO.	COMPOUND	ug/L	Q
58-89-9	gamma-BHC (Lindane)	100	U
72-20-8	Endrin	5.0	U
72-43-5	Methoxychlor	1000	U
8001-35-2	Toxaphene	100	U

NYSDEC013569

FORM I PEST

1D
EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-1:2-4'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158012

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013570

1D
EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-2:4-6'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158017

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013571

1D
EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-3:2-4'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158020

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CONCENTRATION UNITS:

CAS NO.	COMPOUND	ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013572

1D

EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-4:6-8'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158023

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013573

1D
EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMTB-5:30-32'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 158026

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/21/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013574

1D
EPTOX HERBICIDE ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1 1'-2'

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: EPTOX EXTRACT Lab Sample ID: 157438

Sample Wt/Vol: 20 (g/mL) ML Lab File ID: _____

Level: (Low/Med) N/A Date Received: 04/15/92

% Moisture: Not Dec. N/A Dec. N/A Date EPTOX Extracted: 04/25/92

Extraction: (SepF/Cont/Sonc) SEPF Date Herbicide Extracted: 04/30/92

Dilution Factor: 1.0 Date Analyzed: 05/02/92

GPC Cleanup: (Y/N) N/A pH: N/A

CONCENTRATION UNITS:

CAS NO.	COMPOUND	ug/L	Q
94-75-7	2,4-D	1000	U
93-72-1	2,4,5-TP (Silvex)	100	U

NYSDEC013575

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix Spike - EPA Sample No.: DMTB-1_6-8DL Level:(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	7350	0	6059	82	59-172
Trichloroethene	7350	0	5706	78	62-137
Benzene	7350	0	5818	79	66-142
Toluene	7350	852.9	7000	84	59-139
Chlorobenzene	7350	0	6941	94	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	7350	5565	76	8	22	59-172
Trichloroethene	7350	5600	76	3	24	62-137
Benzene	7350	5635	77	3	21	66-142
Toluene	7350	6882	82	2	21	59-139
Chlorobenzene	7350	7000	95	1	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: L#158013D1 CLI#DMTB-1:6-8'DL ETR#31220 4.04G/10ML->25UL/5ML GC/MS OWAE

NYSDEC013576

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix Spike - EPA Sample No.: DMTB-2_4-6 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	51.00	0	47.14	92	59-172
Trichloroethene	51.00	0	47.96	94	62-137
Benzene	51.00	0	48.06	94	66-142
Toluene	51.00	0	51.63	101	59-139
Chlorobenzene	51.00	0	51.63	101	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.00	46.80	94	2	22	59-172
Trichloroethene	50.00	46.60	93	1	24	62-137
Benzene	50.00	46.50	93	1	21	66-142
Toluene	50.00	50.50	101	0	21	59-139
Chlorobenzene	50.00	50.60	101	0	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: L#158015 CLI#DMTB-2:4-6' ETR#31220 5.03G
GC/MS OWAE

NYSDEC013577

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix Spike - EPA Sample No.: DMTB16-10

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	19.500	0	9.32	48	46-127
Heptachlor	19.500	0	19.1	98	35-130
Aldrin	19.500	0	48.6	249 *	34-132
Dieldrin	38.900	0	428	1100 *	31-134
Endrin	38.900	0	27.1	70	42-139
4,4'-DDT	38.900	0	38.0	98	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	19.600	7.64	39 *	21	50	46-127
Heptachlor	19.600	18.0	92	6	31	35-130
Aldrin	19.600	300	1531 *	-144 *	43	34-132
Dieldrin	39.200	439	1120 *	-2	38	31-134
Endrin	39.200	27.4	70	0	45	42-139
4,4'-DDT	39.200	35.3	90	9	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 5 out of 12 outside limits

COMMENTS:

NYSDEC013578

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix Spike - EPA Sample No.: DMTB16-10 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	2930	0	0	0 *	26- 90
2-Chlorophenol	2930	0	0	0 *	25-102
1,4-Dichlorobenzene	1960	0	0	0 *	28-104
N-Nitroso-di-n-prop.(1)	1960	0	2707	138 *	41-126
1,2,4-Trichlorobenzene	1960	0	0	0 *	38-107
4-Chloro-3-methylphenol	2930	0	2300	78	26-103
Acenaphthene	1960	0	1706	87	31-137
4-Nitrophenol	2930	0	0	0 *	11-114
2,4-Dinitrotoluene	1960	0	0	0 *	28- 89
Pentachlorophenol	2930	0	0	0 *	17-109
Pyrene	1960	0	1768	90	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	2870	0	0 *	0	35	26- 90
2-Chlorophenol	2870	0	0 *	0	50	25-102
1,4-Dichlorobenzene	1910	0	0 *	0	27	28-104
N-Nitroso-di-n-prop.(1)	1910	0	0 *	200 *	38	41-126
1,2,4-Trichlorobenzene	1910	0	0 *	0	23	38-107
4-Chloro-3-methylphenol	2870	0	0 *	200 *	33	26-103
Acenaphthene	1910	0	0 *	200 *	19	31-137
4-Nitrophenol	2870	0	0 *	0	50	11-114
2,4-Dinitrotoluene	1910	0	0 *	0	47	28- 89
Pentachlorophenol	2870	0	0 *	0	47	17-109
Pyrene	1910	0	0 *	200 *	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 4 out of 11 outside limits
Spike Recovery: 19 out of 22 outside limits

NYSDEC013579

COMMENTS: L#158014 CLI#DMTB-1:6-10' ETR#31220 2.5%
GC/MS 5100B

Sample Data Summary Package

Lab Code: AQUA

Case #: 31306

SDG #: 12545

Contract #: 72039 2115

NYSDEC013580

aquatec INC.

A Member of the Inchcape Environmental Group

55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446

(802) 655-1203, FAX (802) 655-1248

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

June 19, 1992

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Re: Aquatec Project 92039
ETR Nos.: 31306 & 31331
Case: 31306; SDG 158489

NYSDEC013581

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew Site water samples received from Lawler, Matusky and Skelly Engineers.

The samples were received intact by Aquatec on April 28 and 29, 1992.

Laboratory numbers were assigned to the field samples and associated laboratory quality control samples. They were designated as follows:

LMS Sample ID	Aquatec Lab No.	Sample Matrix
Samples Received April 28, 1992 ETR No. 31306		
DMMW-1	158489	Aqueous
DMMW-1MS	158489MS	Aqueous
DMMW-1MSD	158489MD	Aqueous
DMMW-1REP	158489DP	Aqueous
MSB	158490	Aqueous
Samples Received April 29, 1992 ETR No. 31331		
Trip Blank	158644	Aqueous
DMMW-2	158645	Aqueous
DMMW-3	158646	Aqueous
DMMW-3	158647	Filtrate
DMMW-4	158648	Aqueous

000001

A matrix spike blank analysis was not performed for semivolatile organics and pesticide/PCB's through oversight. The matter was communicated to you on May 28, 1992 when it was decided that we could provide matrix spike blank data from another case where the same matrix spiking solution was used. This additional information can be found in the Sample Preparation section of LMS Case 31153 (SDG No. 157436). The same matrix spiking solutions were used for Case 31153 and this case.

Samples (Lab No.) 158489, 158489MS, and 158489MD were extracted for semivolatile organics analysis, one day outside of the prescribed holding time.

The result of pesticide/PCB analysis performed on sample (Lab No.) 158645 exhibited a surrogate recovery for decachlorobiphenyl (DCB) that was slightly below (57% recovery; DB-1701 GC column) the established quality control recovery limits of 60-150%. The surrogate recovery for tetrachloro-m-xylene (TCX) in the method blank was also somewhat low at 59%.

Likewise, the recovery for decachlorobiphenyl was outside of the specified control limits (48% recovery using a RTX-35 column; 44% recovery using a DB-1701 column) in the pesticide/PCB analysis of sample (Lab No.) 158648. The data has been qualified accordingly.

It was determined that sample (Lab. No.) 158647 had been double spiked with those elements requiring furnace atomic absorption analysis. Consequently a new matrix spiked sample was digested and analyzed.

Please note that the results of analyses performed on the filtrate of sample (Lab No.) 158647 have been identified with a sample identifier labeled DMMW-3F.

Sincerely,

Neal E. Van Wyck

Neal E. Van Wyck
Laboratory Director

NYSDEC013582

NEV/amg

Enclosure

92039B16JUN92

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.:158489

SOW No.: 3/90

EPA Sample No.	Lab Sample ID
DMMW-1	158489
DMMW-1D	158489DP
DMMW-1S	158489MS
DMMW-2	158645
DMMW-3	158646
DMMW-3F	158647
DMMW-4	158648

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:

Date: Title:

NYSDEC013583

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Lab Sample ID: 158489

Level (low/med): LOW Date Received: 04/28/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2420			P
7440-36-0	Antimony	ND 24.8	U		P
7440-38-2	Arsenic	2.1	B	W	F
7440-39-3	Barium	164	B		P
7440-41-7	Beryllium	0.34	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	47900			P
7440-47-3	Chromium	110		E	P
7440-48-4	Cobalt	2.2	U		P
7440-50-8	Copper	4.0	B		P
7439-89-6	Iron	3270			P
7439-92-1	Lead	3.0			F
7439-95-4	Magnesium	13400			P
7439-96-5	Manganese	246			P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	3.2	U		P
7440-09-7	Potassium	19900			P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	79400			P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	5.3	B		P
7440-66-6	Zinc	43.2			P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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NYSDEC013584

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Lab Sample ID: 158645

Level (low/med): LOW Date Received: 04/29/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1120			P
7440-36-0	Antimony	25.1	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	77.0	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	15200			P
7440-47-3	Chromium	2.4	U	E	P
7440-48-4	Cobalt	2.4	U		P
7440-50-8	Copper	3.5	B		P
7439-89-6	Iron	2720			P
7439-92-1	Lead	1.1	B		F
7439-95-4	Magnesium	3050	B		P
7439-96-5	Manganese	188			P
7439-97-6	Mercury	0.06	B		CV
7440-02-0	Nickel	3.2	U		P
7440-09-7	Potassium	2130	B		P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	45300			P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	3.1	U		P
7440-66-6	Zinc	19.5	B		P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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NYSDEC013585

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Lab Sample ID: 158646

Level (low/med): LOW Date Received: 04/29/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7550			P
7440-36-0	Antimony	25.1	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	101	B		P
7440-41-7	Beryllium	0.65	B		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	15500			P
7440-47-3	Chromium	20.7		E	P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	13.5	B		P
7439-89-6	Iron	21800			P
7439-92-1	Lead	6.9			F
7439-95-4	Magnesium	2850	B		P
7439-96-5	Manganese	824			P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	7.9	B		P
7440-09-7	Potassium	3320	B		P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	22400			P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	30.7	B		P
7440-66-6	Zinc	40.2			P
	Cyanide	10.0	U		C

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DMMW-3F

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Lab Sample ID: 158647

Level (low/med): LOW Date Received: 04/29/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.7	U		P
7440-36-0	Antimony	24.9	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	45.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	14700			P
7440-47-3	Chromium	2.4	U	E	P
7440-48-4	Cobalt	3.7	U		P
7440-50-8	Copper	2.4	U		P
7439-89-6	Iron	4340			P
7439-92-1	Lead	0.90	U		F
7439-95-4	Magnesium	2310	B		P
7439-96-5	Manganese	720			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	3.2	U		P
7440-09-7	Potassium	3230	B		P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	21500			P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	2.7	U		P
7440-66-6	Zinc	28.2			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

THE "F" IN THE EPA SAMPLE NAME INDICATES FILTRATE OF DMMW-3

FORM I - IN

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NYSDEC013587

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Lab Sample ID: 158648

Level (low/med): LOW Date Received: 04/29/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1440			P
7440-36-0	Antimony	25.0	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	77.3	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	15300			P
7440-47-3	Chromium	2.4	U	E	P
7440-48-4	Cobalt	4.2	U		P
7440-50-8	Copper	2.4	U		P
7439-89-6	Iron	3110			P
7439-92-1	Lead	1.2	B		F
7439-95-4	Magnesium	3090	B		P
7439-96-5	Manganese	194			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	3.2	U		P
7440-09-7	Potassium	2340	B		P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	45400			P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	2.7	U		P
7440-66-6	Zinc	25.8			P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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NYSDEC013588

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

DMMW-1D

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Dmmw-1

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2417.5390		2512.3153		3.8		P
Antimony		24.7877	U	24.7291	U			P
Arsenic		2.1308	B	1.9992	U	200.0		F
Barium		163.5394	B	162.0690	B	0.9		P
Beryllium		0.3377	U	0.2956	U	200.0		P
Cadmium		1.1851	U	1.1823	U			P
Calcium		47906.3796		47211.8227		1.5		P
Chromium		109.6188		108.9655		0.6		P
Cobalt		2.1726	U	2.9103	U	200.0		P
Copper		4.0292	B	5.3596	B	28.3		P
Iron		3270.7881		3310.3448		1.2		P
Lead	3.0	3.0258		2.9578	B	2.3		F
Magnesium	4937.8	13371.5189		13192.1182		1.4		P
Manganese		245.7041		243.7438		0.8		P
Mercury		0.0840	B	0.0720	B	15.4		CV
Nickel		3.1602	U	3.1527	U			P
Potassium	4937.8	19938.7715		19527.0936		2.1		P
Selenium		1.4866	U	1.4994	U			F
Silver		3.4564	U	3.4483	U			P
Sodium		79429.1922		78463.0542		1.2		P
Thallium		2.1804	U	2.1991	U			F
Vanadium		5.2696	B	6.0818	B	14.3		P
Zinc	19.8	43.2155		39.8030		8.2		P
Cyanide		10.0000	U	10.0000	U			C

NYSDEC013589

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

~~FB~~

Lab Name: AQUATEC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix (soil/water): WATER Lab Sample ID: 157436

Level (low/med): LOW Date Received: 04/15/92

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.5	U		P
7440-36-0	Antimony	24.9	U		P
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	1.1	U		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium	1.2	U		P
7440-70-2	Calcium	207	B		P
7440-47-3	Chromium	2.4	U		P
7440-48-4	Cobalt	2.2	U		P
7440-50-8	Copper	2.4	U		P
7439-89-6	Iron	61.6	B		P
7439-92-1	Lead	0.90	U		F
7439-95-4	Magnesium	71.0	U		P
7439-96-5	Manganese	1.0	B		P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	3.2	U		P
7440-09-7	Potassium	1040	U		P
7782-49-2	Selenium	1.5	U		F
7440-22-4	Silver	3.5	U		P
7440-23-5	Sodium	165	B		P
7440-28-0	Thallium	2.2	U		F
7440-62-2	Vanadium	2.7	U		P
7440-66-6	Zinc	15.2	B		P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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NYSDEC013590

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G157489V

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: not dec. Date Analyzed: 05/05/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	4	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	J
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	2	J
1330-20-7	Xylene (total)	10	U

NYSDEC013591

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G157489V

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: not dec. Date Analyzed: 05/05/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 23010-07-3	BUTANE, 1,3-DICHLORO-2-METHY	24.60	5	JN

NYSDEC013592

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158645V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013593

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158645V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013594

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158646V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013595

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158646V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013596

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158648V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013597

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158648V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP_BLANK

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158644

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158644V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013599

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP_BLANK

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158644

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G158644V

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: not dec. Date Analyzed: 05/06/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013600

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 15743

Matrix: (soil/water) WATER Lab Sample ID: 147436

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D157436V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec._____ Date Analyzed: 04/21/92

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	BJ
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	3	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB

Lab Name: AQUATEC, INC. Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 15743

Matrix: (soil/water) WATER Lab Sample ID: 147436

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D157436V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec._____ Date Analyzed: 04/21/92

Column: (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-07-0	ACETALDEHYDE	1.55	10	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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17.				
18.				
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24.				
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26.				
27.				
28.				
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30.				

NYSDEC013602

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) WATER Lab Sample ID: 157436

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C157436V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec. Date Analyzed: 04/22/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	100 ~~10~~	U LTA 6/9/92
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) WATER Lab Sample ID: 157436

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C157436V

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: not dec. Date Analyzed: 04/22/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013604

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MS

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G157489MSV

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: not dec. Date Analyzed: 05/05/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	46	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	48	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	47	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	1	J
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	2	J
108-88-3	Toluene	50	
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	1	J
1330-20-7	Xylene (total)	10	U

NYSDEC013605

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MD

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: G157489MDV

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: not dec. Date Analyzed: 05/05/92

GC Column: PACK ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	44	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	44	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	45	
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	J
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	47	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

NYSDEC013606

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489I2S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489I2S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	3	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489I2S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124-07-2	OCTANOIC ACID	18.67	3	JN
2. 85-44-9	PHTHALIC ANHYDRIDE	21.95	5	JN
3. 334-48-5	DECANOIC ACID	22.48	3	JN
4. 143-07-7	DODECANOIC ACID	25.98	12	JN
5. 544-76-3	HEXADECANE	26.46	15	JN
6.	UNKNOWN ALKANE	27.23	5	J
7. 629-78-7	HEPTADECANE	28.03	30	JN
8. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.11	8	JN
9. 593-45-3	OCTADECANE	29.51	34	JN
10.	UNKNOWN ALKANE	29.66	9	J
11.	UNKNOWN ALKANE	30.11	3	J
12. 629-92-5	NONADECANE	30.93	35	JN
13.	UNKNOWN ALKANE	31.48	4	J
14. 112-95-8	EICOSANE	32.28	24	JN
15. 629-94-7	HENEICOSANE	33.56	9	JN
16.	UNKNOWN ALKANE	35.23	4	J
17.	UNKNOWN	36.43	6	J
18. 85-60-9	PHENOL, 4,4'-BUTYLIDENEBIS[2	40.74	9	JN
19.	UNKNOWN DODECANOIC ACID ESTE	45.16	6	J
20.	UNKNOWN	50.74	4	J

NYSDEC013609

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158645S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

NYSDEC013610

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158645S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013611

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158645S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.98	6	BJ
2. 143-07-7	DODECANOIC ACID	26.01	8	JN
3. 544-76-3	HEXADECANE	26.48	4	JN
4. 629-78-7	HEPTADECANE	28.06	7	JN
5. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	28.13	2	JN
6. 593-45-3	OCTADECANE	29.54	8	JN
7.	UNKNOWN ALKANE	29.68	2	J
8. 629-92-5	NONADECANE	30.94	8	JN
9. 112-95-8	EICOSANE	32.29	5	JN
10. 85-60-9	PHENOL, 4,4'-BUTYLIDENEBIS[2	40.76	3	JN
11.	UNKNOWN	44.89	3	J
12.	UNKNOWN	47.71	4	J

NYSDEC013612

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158646S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

NYSDEC013613

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158646S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013614

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158646S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.97	3	BJ
2.	UNKNOWN	41.69	3	BJ

NYSDEC013615

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158648I2S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158648I2S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013617

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158648I2S

Level: (low/med) LOW Date Received: 04/29/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124-07-2	OCTANOIC ACID	18.58	9	JN
2. 334-48-5	DECANOIC ACID	22.38	6	JN
3. 143-07-7	DODECANOIC ACID	25.86	17	JN
4. 544-76-3	HEXADECANE	26.34	22	JN
5.	UNKNOWN ALKANE	27.11	7	J
6. 629-78-7	HEPTADECANE	27.91	48	JN
7. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	27.99	13	JN
8.	UNKNOWN ALKANE	28.56	5	J
9. 593-45-3	OCTADECANE	29.39	48	JN
10.	UNKNOWN ALKANE	29.53	13	J
11. 629-92-5	NONADECANE	30.79	42	JN
12. 112-95-8	EICOSANE	32.14	26	JN
13. 629-94-7	HENEICOSANE	33.43	9	JN
14.	UNKNOWN ALKANE	35.09	6	J
15.	UNKNOWN	36.19	6	J
16. 85-60-9	PHENOL, 4,4'-BUTYLIDENEBIS[2	40.56	10	JN
17.	UNKNOWN	44.59	10	J
18.	UNKNOWN DODECANOIC ACID ESTE	44.88	10	J
19.	UNKNOWN	47.33	9	J
20.	UNKNOWN	54.81	13	J

NYSDEC013618

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: SDG No.: 157436

Matrix: (soil/water) WATER Lab Sample ID: 157436

Sample wt/vol: 1000 (g/mL) ML Lab File ID: A157436S

Level: (low/med) LOW Date Received: 04/15/92

% Moisture: decanted: (Y/N) Date Extracted: 04/20/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/01/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

NYSDEC013619

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix Spike - EPA Sample No.: DMMW-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	75.00	0	58.80	78	12-110
2-Chlorophenol	75.00	0	54.60	73	27-123
1,4-Dichlorobenzene	50.00	0	20.50	41	36- 97
N-Nitroso-di-n-prop.(1)	50.00	0	33.00	66	41-116
1,2,4-Trichlorobenzene	50.00	0	23.70	47	39- 98
4-Chloro-3-methylphenol	75.00	0	58.00	77	23- 97
Acenaphthene	50.00	0	34.80	70	46-118
4-Nitrophenol	75.00	0	79.40	106 *	10- 80
2,4-Dinitrotoluene	50.00	0	40.50	81	24- 96
Pentachlorophenol	75.00	0	83.90	112 *	9-103
Pyrene	50.00	0	38.90	78	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	75.00	64.20	86	10	42	12-110
2-Chlorophenol	75.00	62.30	83	13	40	27-123
1,4-Dichlorobenzene	50.00	26.40	53	26	28	36- 97
N-Nitroso-di-n-prop.(1)	50.00	36.00	72	9	38	41-116
1,2,4-Trichlorobenzene	50.00	29.90	60	24	28	39- 98
4-Chloro-3-methylphenol	75.00	65.10	87	12	42	23- 97
Acenaphthene	50.00	33.30	67	4	31	46-118
4-Nitrophenol	75.00	80.00	107 *	1	50	10- 80
2,4-Dinitrotoluene	50.00	38.80	78	4	38	24- 96
Pentachlorophenol	75.00	80.20	107 *	5	50	9-103
Pyrene	50.00	37.60	75	4	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 4 out of 22 outside limits

NYSDEC013620

COMMENTS: L#158489 CLI#DMMW-1 ETR#31306 100%
GC/MS 5100B

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489MI2S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	59	
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	55	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	20	
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	33	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	24	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	58	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	35	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489MI2S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	79	
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	40	
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	84	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	39	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	3	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013622

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489MD3S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	64	
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	62	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	26	
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	36	
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	30	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	65	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	33	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: B158489MD3S

Level: (low/med) LOW Date Received: 04/28/92

% Moisture: decanted: (Y/N) Date Extracted: 05/04/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	80	
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	39	
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	80	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	38	
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	8	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013624

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Moisture: _____ decanted: (Y/N) ___ Date Received: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/28/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013625

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-2

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158645

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/29/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/28/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013626

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-3

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158646

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/29/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/29/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013627

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158648

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/29/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/29/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013628

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

GC Column(1): RTX-35 ID: 0.53(mm) GC Column(2): DB1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKD6	62	59*	103	101			1
02	DMMW-1	83	83	91	93			0
03	DMMW-2	67	66	60	57*			1
04	DMMW-3	72	72	96	94			0
05	DMMW-4	62	62	48*	44*			2
06	DMMW-1MS	82	82	86	86			0
07	DMMW-1MSD	80	79	65	66			0

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

NYSDEC013629

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix Spike - EPA Sample No.: DMMW-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.500	0	0.469	94	56-123
Heptachlor	0.500	0	0.438	88	40-131
Aldrin	0.500	0	0.457	91	40-120
Dieldrin	0.999	0	1.07	107	52-126
Endrin	0.999	0	1.13	113	56-121
4,4'-DDT	0.999	0	1.02	102	38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.499	0.479	96	-2	15	56-123
Heptachlor	0.499	0.417	84	5	31	40-131
Aldrin	0.499	0.422	85	7	22	40-120
Dieldrin	0.998	1.03	103	4	18	52-126
Endrin	0.998	1.10	110	3	21	56-121
4,4'-DDT	0.998	0.917	92	10	27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

NYSDEC013630

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MS

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/28/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.47	
76-44-8	Heptachlor	0.44	
309-00-2	Aldrin	0.46	
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	1.1	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	1.1	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	1.0	
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013631

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1MSD

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31306 SAS No.: _____ SDG No.: 158489

Matrix: (soil/water) WATER Lab Sample ID: 158489MD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/28/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 05/01/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/28/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.48	
76-44-8	Heptachlor	0.42	
309-00-2	Aldrin	0.42	
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	1.0	
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	1.1	
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.92	
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013632

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 31153 SAS No.: _____ SDG No.: 157436

Matrix: (soil/water) WATER Lab Sample ID: 157436

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 04/15/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 04/19/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

NYSDEC013633

aquatec INC.
An Inchcape Company

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

RECEIVED
SEP 0 8 1992
LMS ENGINEERS

September 2, 1992

Mr. Chris O'Gorman
Lawler Matusky & Skelly Engineers
One Blue Hill Plaza
P.O. Box 1509
Pearl River, NY 10965

Re: Aquatec Project No. 92039
Case No. 32592; SDG No. 164623 - Depew Resample SMHW (1-2)
Clarification of Laboratory Qualifier Used
to Report Depew Site Semivolatile Results

Dear Chris,

The definition for the "X" qualifier used to report semivolatile organics TIC results is as follows:

X = The tentatively identified compound and result was manually entered into the Formaster software.

I apologize for any inconvenience this may have caused you.

Sincerely,

Richard T. Gomez
Project Director

RTG/jg

92039B2SEP92

CC. Ms.Judy Harry

NYSDEC013634

RECEIVED
AUG 3 1 1992
LMS ENGINEERS

Sample Data Summary Package

Lab Code: AQUAT

Case #:

SDG #:

Contract #:

NYSDEC013635

aquatec INC.
A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

aquatec INC.
A Member of the Inchcape Environmental Group
55 SOUTH PARK DRIVE, COLCHESTER, VERMONT 05446
(802) 655-1203, FAX (802) 655-1248

August 27, 1992

RECEIVED
AUG 31 1992
LMS ENGINEERS

Dr. William Ahlert
Lawler, Matusky and Skelly Engineers
One Blue Hill Plaza
Pearl River, NY 10965

Re: Aquatec Project 92039
ETR No.: 32592
Case No.: 32592; SDG No.: 164623

Dear Dr. Ahlert:

Enclosed are the results of analyses performed on Depew site a soil sample received from Lawler, Matusky and Skelly Engineers.

The samples were received intact at Aquatec on July 29, 1992.

For the sample received, a laboratory number was assigned and designated as follows:

LMS Sample ID	Aquatec Lab No.	Sample Matrix
DMMW-1A 1-2'	164623	Soil

External quality control (sample) analyses were not performed on this sample as requested by Mr. Chris O'Gorman on July 29, 1992.

Please note that the sample description DMMW-1A 1-2' has been truncated to DMMW-1A to accommodate some form space limitations.

The results of a semivolatile organics analysis performed on this sample indicated that the surrogate recovery for 2,4,6-tribromophenol was 3%, well below the lower acceptable QC limit of 19%. The sample was re-extracted 10 days outside of the prescribed holding time and subsequently analyzed. The surrogate

recovery for 2,4,6-tribromophenol was 18% for this analysis, still below the minimum acceptable QC limit. In addition to confirming the low surrogate outage initially observed, the analytical results compared favorably. At your request, the results of both analyses have been included in this submittal. The results of the reanalysis has been designated with an "RE" suffix affixed to the sample number.

Sincerely,

Neal E. Van Wyck

Neal E. Van Wyck
Laboratory Director

NEV/sch

Enclosure

92039B06AUG92

RECEIVED
AUG 31 1992
LMS ENGINEERS

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	280	J
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	360	U

NYSDEC013638

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	60	J
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	32	J
206-44-0	Fluoranthene	130	J
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	48	J
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)Anthracene	100	J
218-01-9	Chrysene	82	J
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	150	J
207-08-9	Benzo(k)Fluoranthene	95	J
50-32-8	Benzo(a)Pyrene	93	J
193-39-5	Indeno(1,2,3-cd)Pyrene	81	J
53-70-3	Dibenz(a,h)Anthracene	51	J
191-24-2	Benzo(g,h,i)Perylene	68	J

(1) - Cannot be separated from Diphenylamine

NYSDEC013639

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: B164623S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	8.42	4800	BJNXA
2.		UNKNOWN	8.62	290	JX
3.		UNKNOWN	14.73	250	JXB
4.	57-10-3	HEXADECANOIC ACID	32.10	230	BJNX
5.		UNKNOWN DECANEDIOATE	41.73	1100	JXB
6.		UNKNOWN	41.98	510	JX
7.		UNKNOWN ALKANE	42.43	650	JX
8.		UNKNOWN ALIPHATIC COMPOUND	42.58	440	JX
9.		UNKNOWN	43.42	140	JX
10.	192-97-2	BENZO[E]PYRENE	43.60	130	JXN
11.		UNKNOWN ALKANE	44.52	830	JX
12.		UNKNOWN PHTHALATE	45.33	190	JX
13.		UNKNOWN PHTHALATE	45.45	330	JX
14.		UNKNOWN PHTHALATE	45.77	330	JX
15.		UNKNOWN	48.58	1300	JX

NYSDEC013640

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	280	J
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	360	U

NYSDEC013641

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	110	BJ
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	34	J
206-44-0	Fluoranthene	210	BJ
129-00-0	Pyrene	160	BJ
85-68-7	Butylbenzylphthalate	62	J
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)Anthracene	110	BJ
218-01-9	Chrysene	110	BJ
117-81-7	bis(2-Ethylhexyl)Phthalate	56	J
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	130	BJ
207-08-9	Benzo(k)Fluoranthene	83	BJ
50-32-8	Benzo(a)Pyrene	88	BJ
193-39-5	Indeno(1,2,3-cd)Pyrene	79	BJ
53-70-3	Dibenz(a,h)Anthracene	26	J
191-24-2	Benzo(g,h,i)Perylene	78	BJ

NYSDEC013642

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DMMW-1ARE

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623R1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A164623R1S

Level: (low/med) LOW Date Received: 07/29/92

% Moisture: 9 decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	6.85	2400	BJNXA
2.	UNKNOWN	7.03	190	JX
3.	UNKNOWN ALIPHATIC COMPOUND	37.63	180	JX
4.	UNKNOWN	41.13	230	JX
5.	UNKNOWN ALKANE	41.60	460	JX
6.	UNKNOWN	42.28	77	JX
7. 192-97-2	BENZO[E]PYRENE	42.52	330	JNX
8.	UNKNOWN PNA HYDROCARBON	42.92	91	JX
9.	UNKNOWN ALKANE	43.50	740	JX
10.	UNKNOWN PHTHALATE	43.98	210	JX
11.	UNKNOWN PHTHALATE	44.12	190	JX
12.	UNKNOWN PHTHALATE	44.23	360	JX
13.	UNKNOWN PHTHALATE	44.48	250	JX
14.	UNKNOWN AROMATIC HYDROCARBON	46.88	1600	JX
15.	UNKNOWN	47.30	150	JX

NYSDEC013643

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	DMMW-1A	78	71	86	60	32	3 *	41	68	1
02	DMMW-1ARE	58	61	53	56	43	18 *	48	55	1
03	SBLKD6	79	72	59	77	73	49	70	72	0
04	SBLKH4	71	72	62	68	66	48	66	66	0

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

NYSDEC013644

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID: BB0730D6S Lab Sample ID: SBLKD6

Instrument ID: 5100B Date Extracted: 07/30/92

Matrix: (soil/water) SOIL Date Analyzed: 08/11/92

Level:(low/med) LOW Time Analyzed: 1552

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	DMMW-1A	164623	B164623S	08/11/92

COMMENTS: BLANK SMO#SBLKD6 ETR#32692
GC/MS 5100B

NYSDEC013645

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID: AB0813H4S Lab Sample ID: SBLKH4

Instrument ID: 5100A Date Extracted: 08/13/92

Matrix: (soil/water) SOIL Date Analyzed: 08/20/92

Level:(low/med) LOW Time Analyzed: 1350

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	DMMW-1ARE	164623R1	A164623R1S	08/20/92

COMMENTS: BLANK SMO#SBLKH4 ETR#32592
GC/MS 5100A

NYSDEC013646

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

NYSDEC013647

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

NYSDEC013648

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	800	U
83-32-9	Acenaphthene	330	U

NYSDEC013649

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	24	J
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	30	J
129-00-0	Pyrene	23	J
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	20	J
218-01-9	Chrysene	28	J
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	23	J
207-08-9	Benzo(k)Fluoranthene	22	J
50-32-8	Benzo(a)Pyrene	22	J
193-39-5	Indeno(1,2,3-cd)Pyrene	19	J
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	18	J

(1) - Cannot be separated from Diphenylamine

NYSDEC013650

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKD6

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKD6

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BB0730D6S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 07/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.63	230	JX
2. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	8.33	4400	JNXA
3.	UNKNOWN	11.50	130	JX
4. 98-82-8	BENZENE, (1-METHYLETHYL-)	11.85	220	JNX
5. 100-52-7	BENZALDEHYDE	13.23	160	JNX
6.	UNKNOWN	14.72	310	JX
7.	UNKNOWN BROMOCOMPOUND	18.23	93	JX
8. 57-10-3	HEXADECANOIC ACID	32.10	7	JNX
9.	UNKNOWN DECANEDIOATE	41.72	460	JX

NYSDEC013651

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKH4

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: SBLKH4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: AB0813H4S

Level: (low/med) LOW Date Received:

% Moisture: decanted: (Y/N) N Date Extracted: 08/13/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-PENTANONE, 4-HYDROXY-4-MET	6.88	2300	JNXA
2.	UNKNOWN	41.13	93	JX

NYSDEC013652

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): AQU050NBS Date Analyzed: 08/20/92

Instrument ID: 5100A Time Analyzed: 1057

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	8972	13.87	40070	18.50	21351	24.52
	UPPER LIMIT	17944	14.37	80140	19.00	42702	25.02
	LOWER LIMIT	4486	13.37	20035	18.00	10676	24.02
	EPA SAMPLE NO.						
01	DMMW-1ARE	10259	13.82	43412	18.45	22366	24.49
02	SBLKH4	10358	13.84	43655	18.47	22355	24.49

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

NYSDEC013653

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): AQU050NBS Date Analyzed: 08/20/92

Instrument ID: 5100A Time Analyzed: 1057

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	30944	29.42	19844	38.34	9361	42.88
	UPPER LIMIT	61888	29.92	39688	38.84	18722	43.38
	LOWER LIMIT	15472	28.92	9922	37.84	4680	42.38
	EPA SAMPLE NO.						
01	DMMW-1ARE	29498	29.39	20867	38.31	10416	42.84
02	SBLKH4	30935	29.39	22503	38.31	11962	42.84

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

NYSDEC013654

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): BPS050FBS Date Analyzed: 08/11/92

Instrument ID: 5100B Time Analyzed: 1207

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	11117	14.82	40021	19.39	18376	25.42
	UPPER LIMIT	22234	15.32	80042	19.89	36752	25.92
	LOWER LIMIT	5558	14.32	20010	18.89	9188	24.92
	EPA SAMPLE NO.						
01	DMMW-1A	13996	14.84	49909	19.40	22759	25.46
02	SBLKD6	13033	14.82	47600	19.40	22244	25.46

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

NYSDEC013655

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: SDG No.: 164623

Lab File ID (Standard): BPS050FBS Date Analyzed: 08/11/92

Instrument ID: 5100B Time Analyzed: 1207

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	32455	30.36	21143	39.29	8659	43.94
	UPPER LIMIT	64910	30.86	42286	39.79	17318	44.44
	LOWER LIMIT	16228	29.86	10572	38.79	4330	43.44
	EPA SAMPLE NO.						
01	DMMW-1A	37639	30.39	21029	39.32	8626	43.99
02	SBLKD6	37182	30.39	30440	39.32	12636	43.98

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

NYSDEC013656

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DMMW-1A

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: 164623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 07/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/18/92

Injection Volume: 1.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.3	U
319-85-7	beta-BHC	9.3	U
319-86-8	delta-BHC	9.3	U
58-89-9	gamma-BHC (Lindane)	9.3	U
76-44-8	Heptachlor	9.3	U
309-00-2	Aldrin	9.3	U
1024-57-3	Heptachlor epoxide	9.3	U
959-98-8	Endosulfan I	9.3	U
60-57-1	Dieldrin	12	J
72-55-9	4,4'-DDE	56	
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	53	
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	84	
72-43-5	Methoxychlor	93	U
53494-70-5	Endrin ketone	18	U
7421-36-3	Endrin aldehyde	18	U
5103-71-9	alpha-Chlordane	34	P
5103-74-2	gamma-Chlordane	34	
8001-35-2	Toxaphene	930	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	370	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

NYSDEC013657

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

GC Column(1): RTX-35 ID: 0.53(mm) GC Column(2): DB-1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKE5	80	74	104	95			0
02	DMMW-1A	88D	72D	139D	110D			0

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

NYSDEC013658

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKE5

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Lab Sample ID: PBLKE5 Lab File ID: _____

Matrix:(soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 07/30/92

Date Analyzed (1): 08/18/92 Date Analyzed (2): 08/18/92

Time Analyzed (1): 1809 Time Analyzed (2): 1809

Instrument ID (1): 2620-1 Instrument ID (2): 2620-2

GC Column (1): RTX-35 ID: 0.53 (mm) GC Column (2): DB-1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	DMMW-1A	164623	08/18/92	08/18/92

COMMENTS:

NYSDEC013659

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKE5

Lab Name: AQUATEC INC Contract: 92039

Lab Code: AQUAI Case No.: 32592 SAS No.: _____ SDG No.: 164623

Matrix: (soil/water) SOIL Lab Sample ID: PBLKE5

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/18/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-36-3	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

NYSDEC013660

PART II.v

GRAIN-SIZE ANALYSIS

NYSDEC013661

Huntingdon
Consulting Engineers Environmental Sciences

Empire Soils Investigations, Inc., Division
Corporate Offices
140 Telegraph Road
Box 297
Middleport, New York 14105
(716)735-3502
Fax (716)735-9027

GEOTECHNICAL TESTING REPORT
DEPEW MANUFACTURING SITE
NYSDEC SITE ID 13[illegible]0038

FOR:
LAWLER, MATUSKY & SKELLY ENGINEERS
PEARL RIVER, NEW YORK

NYSDEC013662

JOB NO. G026.006
AUGUST, 1992

Huntingdon

Empire Soils Investigations, Inc., Division
Corporate Offices
140 Telegraph Road
Box 297
Middleport New York 14105
(716)735-3502
Fax (716)735-9027

August 24, 1992

Mr. Joseph Mastromarchi
Lawler, Matusky & Skelly Engineers
One Blue Hill Plaza
Pearl River, New York 10965

Dear Mr. Mastromarchi:

SUBJECT: GEOTECHNICAL TESTING, DEPEW MANUFACTURING NYSDEC SITE ID 13[redacted]0038/LMS JOB NO. 576-047

Transmitted herewith are the results of geotechnical testing performed on two (2) soil samples received at our laboratory in Middleport, New York on August 4, 1992. The work was performed under the terms of our Subcontract Agreement for Geotechnical Testing Services for Inactive Hazardous Waste Sites in New York State.

As requested in your letter of July 29, 1992, we have performed Grain Size Distribution Analysis (ASTM D 422) on the two (2) samples. Individual Grain Size Distribution test reports are attached.

Should you have any questions, or in case we may be of further service, do not hesitate to contact the undersigned at 716-735-3400.

Respectfully submitted,

EMPIRE SOILS INVESTIGATIONS, INC.

Jørgen F. Christiansen

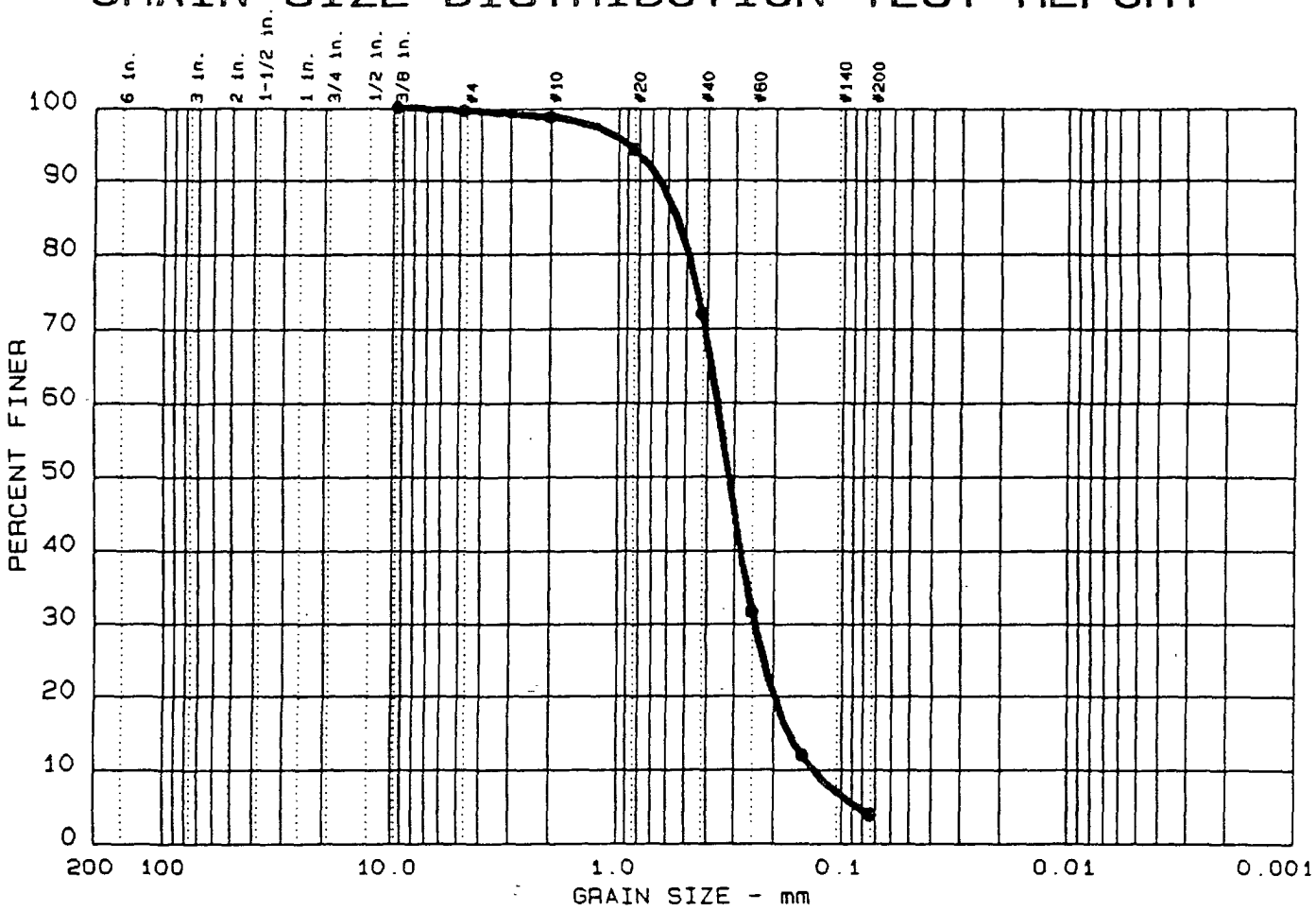
Jørgen F. Christiansen, PE
Senior Scientist, Geotechnical Testing

NYSDEC013663

JFC/srk

Enclosure

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.3	95.8	3.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.54	0.36	0.32	0.244	0.1700	0.1320	1.25	2.7

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SAND, trace fines & gravel		

NYSDEC013664

Project No.: G026.006
Project: DEPEW MANUFACTURING, NYSDEC SITE 13[redacted]0038
● Location: DMMW-3 / 60'- 62' 4-16-92 576-043

Date: AUGUST 14, 1992

Remarks:
CLIENT: LAWLER, MATUSKY & SKELLY ENG.

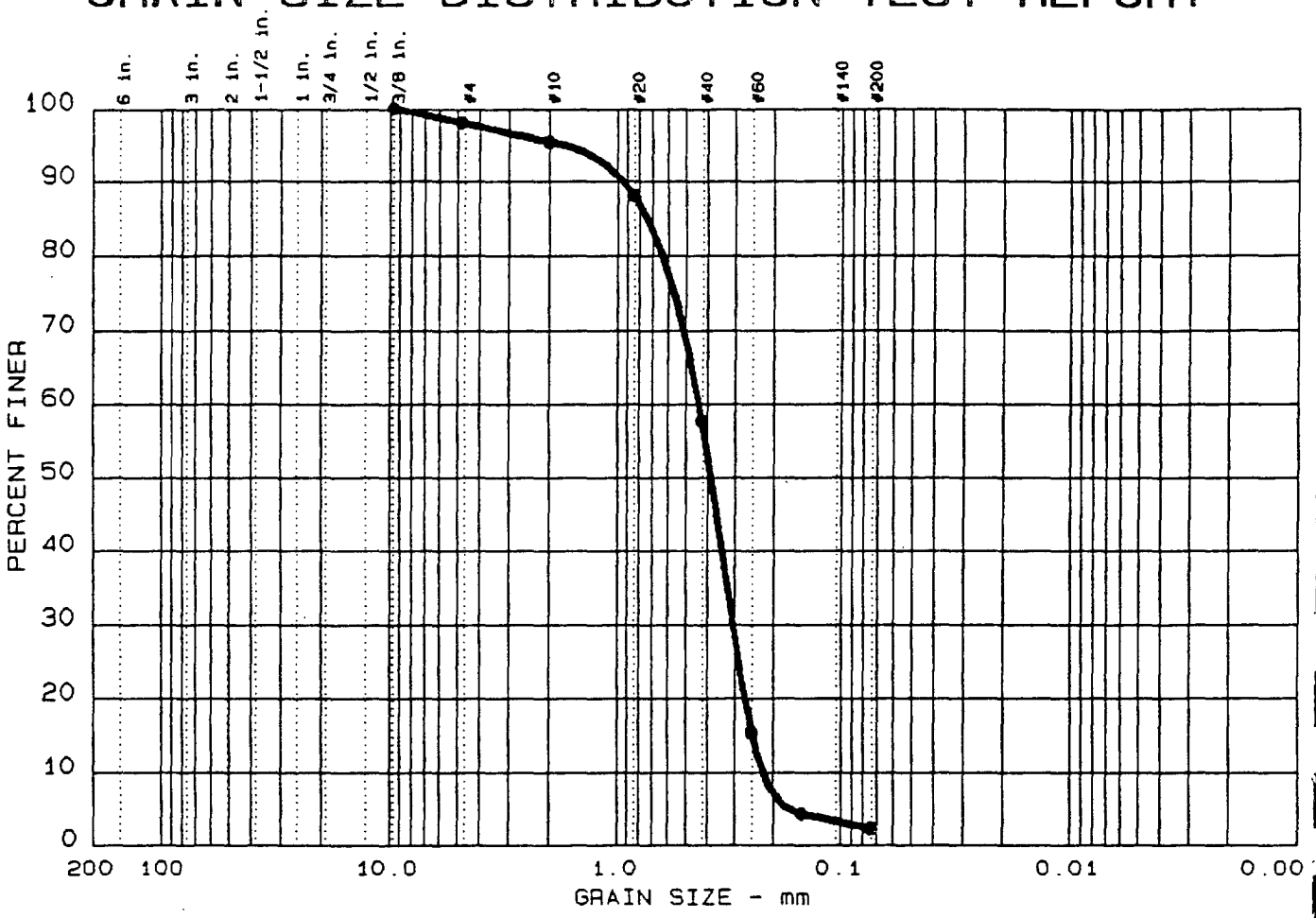
LAB NO. 1346.001

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	1.9	95.8	2.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.73	0.43	0.38	0.305	0.2483	0.2226	0.97	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SAND, trace fines & gravel		

NYSDEC013665

Project No.: G026.006
Project: DEPEW MANUFACTURING, NYSDEC SITE 13[illegible]0038
● Location: dMMW-3 / 54'- 56' 4-16-92 576-047

Date: AUGUST 14, 1992

Remarks:
CLIENT: LAWLER, MATUSKY & SKELLY ENG.

LAB NO. 1346.002

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

LABORATORY WORK ORDER

PROJECT: Olepew Manufacturing JOB NO.: 6026.006

CLIENT: Lawler, Matusky + Skelly Eng. SHEET: ____ OF ____

ISSUED BY: KJC DATE: 4-4-92 SAMPLED BY: ____ DATE: ____

SAMPLE TYPE & SOURCE:	OMMW-3 60'-62'	OMMW-3 54'-56'				
LABORATORY NO.	1346.001	1346.002				
Atterberg Limits						
Natural Water Content						
Hydrometer Analysis						
Sieve Analysis Sizes Required:	X	X				
Proctor Test: ___ ASTM D 698 (Standard) ___ ASTM D1557 (Modified)						
Permeability Test: ___ Undisturbed ___ Remolded ____ %						
Unconfined Compression						
Specific Gravity						
Sample Classifications						

Specifications: ___ Job (list) ___ NYSDOT ___ ASTM

REMARKS: 4-16-92 576-043 4-16-92 576-047

NYSDEC013666

Lawler, Matusky & Skelly Engineers

Environmental Science & Engineering Consultants

JOHN P. LAWLER, P. E.
FELIX E. MATUSKY, P. E.
MICHAEL J. SKELLY, P. E.
KARIM A. ABOOD, P. E.
PATRICK J. LAWLER, P. E.
FRANCIS M. McGOWAN, P. E.
THOMAS L. ENGLERT, P. E.
PETER M. McGROODY, P. E.
THOMAS E. PEASE, P. E.

ONE BLUE HILL PLAZA
P.O. BOX 1509
PEARL RIVER, NEW YORK 10965
(914) 735-8300
FACSIMILE (914) 735-7466

29 July 1992
File No. 576-047

Mr. Jorgen Christiansen
Huntingdon Analytical Services
P.O. Box 250
Middletown, New York 14105

Re: Grain size analyses

Dear Mr. Christiansen:

Please find enclosed two (2) soil samples, in jars. The samples were collected from discrete depths within the same borehole, labeled DMMW-3. I would like a grain-size analysis performed on each sample. The samples are from a site known as "Depew Manufacturing", NYSDEC Site I.D. 13[redacted]0038. The LMS job number for the site is 576-047.

Please send the results to me as soon as you can. Please include the information on each jar lid with the results. As always, your services are greatly appreciated.

Sincerely,

Joseph Mastromarchi
Project Geologist

NYSDEC013667

EMPIRE SOILS INV., INC.
MECHANICAL ANALYSIS

Lab No 1346.002

Dish No. 54
Pan No.
Curve No.

SITE: Depew Manufacturing

HOLE # DMMW-3 SAMPLE # 376.047 DEPTH 54'-56'

U.S. STD. SIEVES					
Mesh Opening	No. Mesh Per Inch	Weight Retained	Percent Retained	Percent Finer	Sieve Size
3"					3"
2"					2"
1 1/2"					1 1/2"
1"					1"
3/4"					3/4"
1/2"					1/2"
3/8"		—		100%	3/8"
1/4" or # 4					1/4" or #4
	Subsieve				
	TOTAL				
4.76 mm.	4	3.06		98.09	4
2.38 mm.	8				8
2.00 mm.	10	4.27		95.42	10
1.19 mm.	16				16
0.84 mm.	20	11.88		88.00	20
0.60 mm.	30				30
0.42 mm.	40	48.66		57.61	40
0.30 mm.	50				50
0.25 mm.	60	67.70		15.33	60
0.15 mm.	100	17.70		4.27	100
0.11 mm.	140				140
0.074 mm.	200	3.25		2.24	200
	Subsieve				
	TOTAL	160.11			

MINUS # 200 FRACTION

Pyc. No. =	Temp. °c	W_s $(W_2-W_1)\frac{G}{G-1}$	
Wt. W_2 =			
Wt. W_1 =		Dry Weight, W_s	gm.
W_2-W_1 =	(from chart)	Wt. Ret. in Pan	gm.
Sp. Gr., G =	Test Value Assumed	Tot. Wt. #200 Mat	gm.

NYSDEC013668

TECHNICIAN _____ DATE _____

Tan color

EMPIRE SOILS INV., INC.
MECHANICAL ANALYSIS

Lab No. 1346.001

Dish No. 9

Pan No.

Curve No.

SITE: Depew Manufacturing

HOLE # DMW-3 SAMPLE # 576.043 DEPTH 60'-62'

U.S. STD. SIEVES					
Mesh Opening	No. Mesh Per Inch	Weight Retained	Percent Retained	Percent Finer	Sieve Size
3"					3"
2"					2"
~~1 1/2"~~					1 1/2"
1"					1"
3/4"					3/4"
1/2"					1/2"
3/8"		—		100%	3/8"
1/4" or # 4					1/4" or #4
	Subsieve				
	TOTAL				
4.76 mm.	4	0.79		99.66	4
2.38 mm.	8				8
2.00 mm.	10	2.33		98.64	10
1.19 mm.	16				16
0.84 mm.	20	10.25		94.17	20
0.60 mm.	30				30
0.42 mm.	40	51.00		71.92	40
0.30 mm.	50				50
0.25 mm.	60	92.48		31.57	60
0.15 mm.	100	44.79		12.03	100
0.11 mm.	140				140
0.074 mm.	200	18.69		3.87	200
	Subsieve				
	TOTAL	229.21			

NYSDEC013669

light tan color

MINUS # 200 FRACTION

Pyc. No. =	Temp. °c	W_s $(W_2-W_1)\frac{G}{G-1}$	
Wt. W_2 =			
Wt. W_1 =		Dry Weight, W_s	gm.
W_2-W_1 =	(from chart)	Wt. Ret. in Pan	gm.
Sp. Gr., G =	Test Value Assumed	Tot. Wt. #200 Mat	gm.

PART III

HEALTH AND SAFETY PLAN

LAWLER, MATUSKY & SKELLY ENGINEERS

SITE-SPECIFIC

HEALTH AND SAFETY PLAN FORM

Site Name: Depew Manufacturing HASP Preparer: Christina Fern/JM

Address: 359 Duffy Ave City/State: Hicksville NY

Job No.: 576-047

APPROVALS

Project Manager: Ed Maikish

Safety Officer: Karen Wright

PROJECT PERSONNEL:

On-Site Coordinator: Joe Mastromarchi
On-Site Health and
Safety Officer: Joe Mastromarchi

Phone: (914) 735-8300

DATE OF PLAN PREPARATION: March 5 1992

HAZARDOUS/SUBSTANCES (known or suspected, contaminated media or in storage container, etc.):

In Discharge (ppm): Dimethyl Phthalate, 450;
Styrene 2; Phenols 2.6; Aluminum 350; Cadmium 1.2;
Lead 11; Copper 3.5; Zinc 5.9
In discharge (PPb) Benzene 46; Ethylbenzene 42;
Toluene 30

NYSDEC013671

TABLE 1

DEPEW - LMS JOB NO. 576-047

3/05/92

HAZARDOUS SUBSTANCES

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% @ deg. F)	UEL (%)	FLASHPOINT (F)	AUTOIG. TEMP. (F)	VP (mm)	VD	IP (eV)	SOLUBILITY (%)	ODOR THRESH. (ppm)	RESP. PROT.	TOXIC EFFECTS
Aluminum	JISC 3108; JISC 3110	10mg/m3	-	15mg/m3	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	Benzol; Cyclohexatriene; Coal tar Naphtha; Phenylhydride	10	0.1	1	carcinogen	1.3	7.1	12	928	75	2.8	9.25	400mg/l	4.68	no	Irrit eyes, nose, resp sys; giddy, head, nau, stagg gai ftg, anor, lass; derm; bone marrow depres; abd pain
Cadmium	-	0.05mg/m3	a	-	carcinogen	-	-	-	-	-	-	-	-	inadequano		Pulm edema, dysp, cough; tg chest, musc aches; nau, diarr; anos; emphysema; pro anemia
Copper	Anac 110; Bronze Powder; 1721 Gold; COA 101,102,110 and 122	1mg/m3	-	1mg/m3	NA	NA	NA	NA	-	0	-	-	insol.	-	yes	Irrit muc. memb, pharynx; n perf; eye irrit; metal tast derm
DIMETHYLPHTHALATE	DIMETHYL ESTER OF 1,2-BENZENEDICARBOXY-LIC ACID, DMP	5 mg/m3	5 mg/m3	5 mg/m3	9300 mg/m3	0.9	-	295	915	0.01	-	9.64	0.4	-	YES	IRRIT UPPER RESP SYS, STOMA PAIN

(-): Unknown

c: Ceiling limit.

NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

NYSDEC013672

TABLE 1

DEPEW - LMS JOB NO. 576-047

3/05/92

HAZARDOUS SUBSTANCES

COMPOUND	SYNONYMS	ACGIH TLV (ppm)	NIOSH REL (ppm)	OSHA PEL (ppm)	NIOSH IDLH (ppm)	LEL (% @ deg. F)	UEL (%)	FLASHPOINT (F)	AUTOIG. TEMP. (F)	VP (mm)	VD	IP (eV)	SOLUBILITY (%)	ODOR THRESH. (ppm)	RESP. PROT.	TOXIC EFFECTS
Ethylbenzene	Phenylethane; Ethylhexol	100	-	100	2000	1	6.7	59	810	7.1	3.7	8.76	0.015	0.25-200	yes	Irrit eyes, muc memb; head; derm, narco, coma
Phenol	Carbolic acid; Monohydroxy benzene	5	5.2	5	250	1.7	8.6	174	1319	0.36	3.2	8.5	8.4	0.047-5	yes	Irrit. eyes, nose throat; dark urine
STYRENE	ETHENYL BENZENE, PHENYLETHYTHENE, STYRENE MONOMER, STYROL, VINYL BENZENE	50	50	50	5000	1.1	7.0	88	914	5	3.6	8.40	SL	0.047-20	YES	IRRIT EYES, NOSE; DROW, WEA UNSTEADY GAIT; NARCO; DEFATTING DERM
Toluene	Toluol; Phenylmethane; Methyl benzene	100	100	200	2000	1.3	7.1	40	896	22	3.1	8.82	0.05	0.17-40	yes	Ftg, weak, conf, euph, dizz head; dil pup; ner; musc ft insom; pares; derm; photo
Zinc	Jasad; Merrillite; Pasco	10mg/m3	-	5mg/m3	NA	-	-	-	-	NA	-	-	insol	-	yes	Nau,vom; chill,fev; dry thr cough; sweet met tste; tght chst; dysp; lo pulm func; head;blur vis;lo back pain; ftg; rales

(-): Unknown

c: Ceiling limit.

NOTE: Under Respiratory Protection, yes/no indicates whether or not a respirator can be used.

NYSDEC013673

HAZARD ASSESSMENT (toxic effects, including TLVs, IDLHs, reactivity, stability, flammability, and operational hazards with sampling, decontaminating, etc):

See Table 1

SITE WORK ZONES: (designate exclusion zone, contamination reduction zone and support zone)

See Figure 1

SITE ACCESS: (describe procedures to control site access)

On site HSO will keep log book which everyone will have to sign in and out from including subcontractors and DEC personnel. Site is bounded by 6-ft Chain-Link Fence; Gate is locked at night

MONITORING PROCEDURES (If required by the Safety Officer)
Monitoring the site for identity and concentration of contamination in all media:

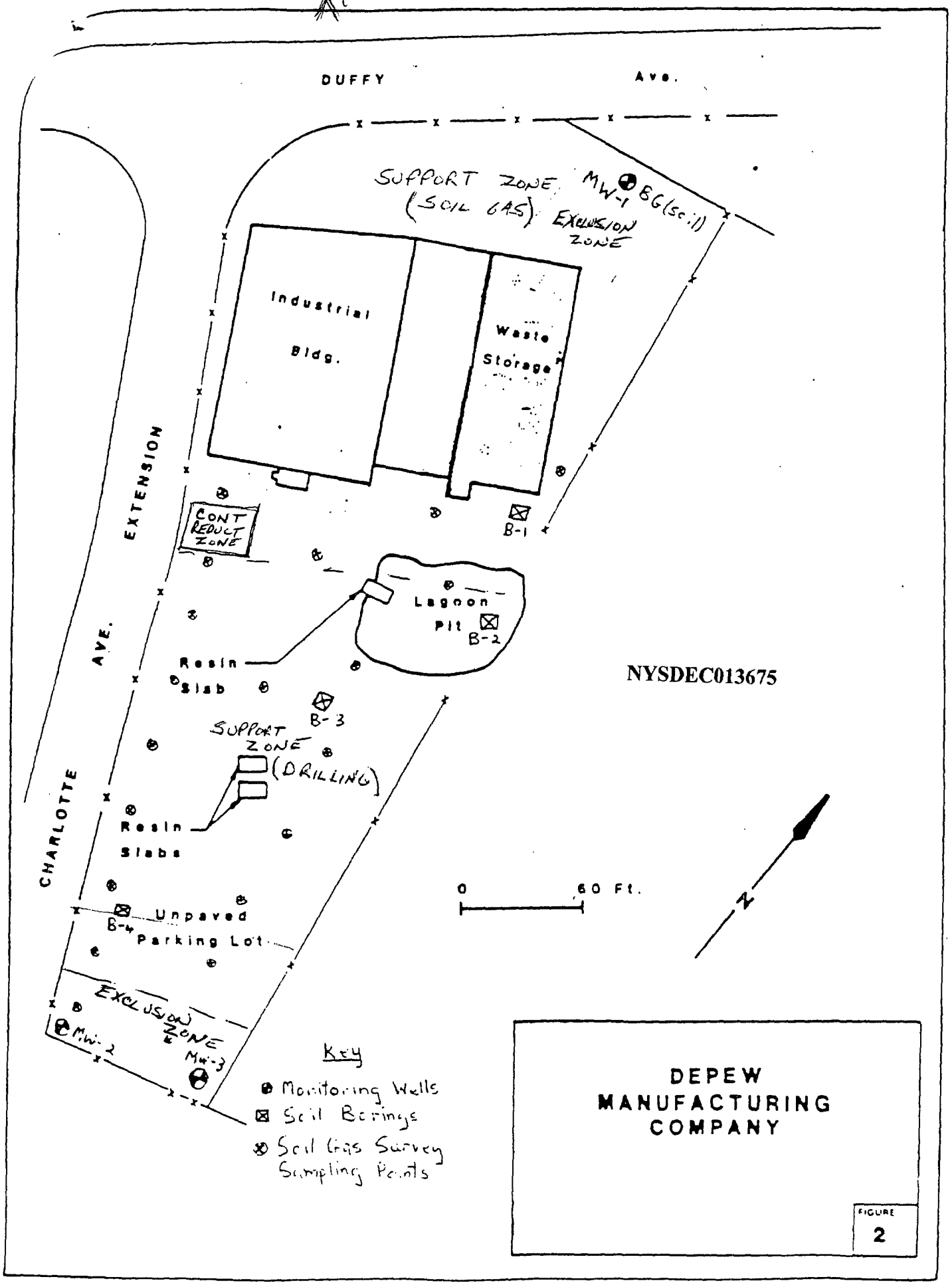
PID

Perform perimeter air monitoring with HNu and OVA at start of day. Monitor breathing zone throughout day, with HNu and OVA every 15-20 min or more frequently if noticeable odors are present.

PID

NYSDEC013674

X phone



NYSDEC013675

FIGURE 1

Medical monitoring procedures for evidence of personnel exposure, i.e., analyses specific to site not covered in general LMS physical:

N/A

Personnel monitoring procedures:

Not Applicable

DECONTAMINATION AND DISPOSAL

Decontamination Procedures (contaminated personnel, surfaces, materials, instruments, equipment, etc.):

Personnel must wash face and hands with soap and water before leaving site. Contaminated equipment must be scrubbed with soap and water and rinsed with water. Boots must be washed. All washing of equipment should be performed at Decon Pad.

Disposal Procedures (contaminated equipment, supplies, disposables, washwater):

Contaminated or used equipment (gloves, any soiled tyveks, disposable boots, paper towels, etc.) are to be placed in plastic bags and returned to Nyack for disposal.

NYSDEC013676

EMERGENCY PROCEDURES

In event of personnel exposure (skin contact, inhalation, ingestion, specific procedures for specific chemicals):

Skin Contact - Wash immediately with soap and water
Eye Contact - Rinse eyes with deionized water for 15 min.
Inhalation - Move to fresh airs, monitor breathing, circulation.

In event of personnel injury:

Administer First Aid - If a serious injury,
determine whether safe/advisable to move victim,
Transport to Nassau Co. Med Center or call ambulance
- Phone located inside building
or across street at "Ebbets Field Cafe"

In event of potential or actual fire or explosion:

If small fire - Put it out with fire extinguisher
If large fire - Move personnel to safe area, call F.D. (911)
If explosion - Move personnel to safe area,
follow instructions for fire

In event of potential or actual ionizing radiation exposure:

Actual: Move personnel to area where
dosimeter readings subside - evaluate
hazard potential to offsite localities
Potential: Don Air-Purifying respirator.

In event of environmental accident (spread of contamination outside sites):

Attempt to control spread of
contamination - call fire dept. (911)

NYSDEC013677

EMERGENCY SERVICES (complete here or have separate list available on-site)

Emergency Medical Facility (include map or written description of route to hospital)

Location	Telephone
Go south on Charlotte Ave Extension (a left if exiting site from the drilling support zone) to Old Country Rd. Turn left onto Old Country Rd. Proceed about 3/4 mile. Turn right onto Newbridge Rd. (Rte. 106). Proceed about 1½ miles. Turn right onto Hempstead Tpk (Rte 24). Hospital is ½ mile on right - See Attached Map, p. 7A	

Ambulance Service

Dial 911 or 0 for operator
Phone located inside site building or across Duffy Avenue at the "Ebbets Field Cafe" (Near Front Door).

Fire Department

Use phone inside building or across Duffy Ave at "Ebbets Field Cafe" (near front door)
Dial 911 or 0 for operator

Police Department

Use phone inside site building or across Duffy Ave located at Ebbets Field Cafe
Dial 911 or 0 for operator

Poison Control Center

Nassau Co. Medical Center
(516) 542-0128

NYSDEC013678

PERSONNEL POTENTIALLY EXPOSED TO HAZARDOUS SUBSTANCES (As Applicable)

Personnel Authorized to Enter Site (specific conditions of site would preclude most LMS trained persons from entering site and would allow only certain personnel, list here)

1. N/A
2.
3.
4.

ALTERNATIVE WORK PRACTICES

(Describe alternative work practices or instruments not specified in this form. Indicate work practices specified in the chapter for which proposed alternative work practices will serve as substitute).

Use potable water to control dust, if needed

TASK-SPECIFIC LEVEL OF PROTECTION AND ACTION LEVELS

(Attach table including specific description of protective gear and action levels or downgrade LOP.)

See Table 2

NYSDEC013679

SITE MAP

(Attach a site map. Map should be properly scaled and keyed to local landmarks.)

Attached - Page 7A

TABLE 2

TASK SPECIFIC LEVELS OF PROTECTION

TASK	LEVEL OF PROTECTION	DESCRIPTION
1. Soil Gas Survey	D	Hard Hat, Safety Glasses, Safety Shoes, Coveralls, Overboots if splash hazard, and Latex Gloves.
2. Test Boring and Monitoring Well Installation (Soil Sampling)	D	Hard hat, Safety Glasses, Safety shoes, Overboots if splash hazard, Overalls or Tyvek if contaminants are encountered, Latex gloves, nitrile gloves in case of contact with contaminants and during decon.
3. Groundwater Sampling	D	Hard Hat, Safety Glasses, Safety Shoes, Overboots, Tyvek and Latex Gloves

Action Levels

If OVA readings in breathing zone exceed 5 units for longer than a period of 5 minutes, workers must move to support zone until levels in breathing zone of work area subside to background. If, while drilling, CGI readings directly over borehole exceed 20% LEL, workers must move to support zone until readings subside to below 20% LEL.

If excessively dusty conditions prevail, an air purifying respirator with a particulate filter is advisable for site workers.

TRAINING

(Provide description of minimum training, reference OSHA Sections.)

Site Personnel shall have as a minimum 40 - Hour Training for Operations at Hazardous Materials Sites (29 CFR 1910.120 E(3)). At least one person with supervisor training (29 CFR 1910.120 E(4)) and American Red Cross Advanced First Aid and Emergency Care and Adult CPR shall be onsite at all time during operations.

AFFIDAVIT

All personnel who enter site must sign attached affidavit. LMS personnel must also read and comply with LMS' generic HASP.

NYSDEC013681

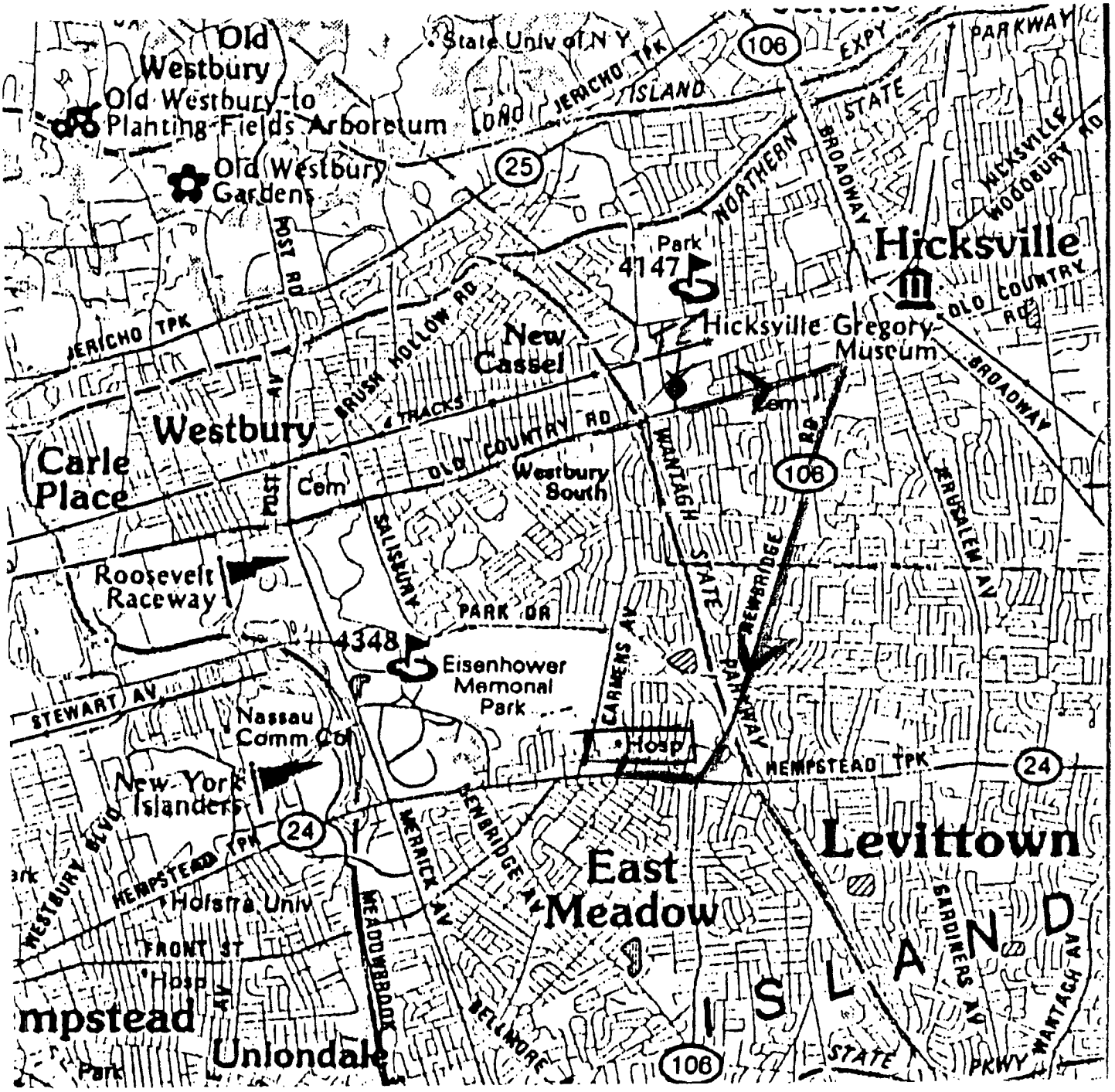
AFFIDAVIT

I, _____ , (name) of _____ (company name) have read the Health and Safety Plan (HASP) for the _____ (site description and project description). I have also read the LMS generic HASP. I agree to conduct all on-site work in conformity with the requirements of both HASPs. In addition, I acknowledge that failure to comply with the designated procedures in the Health and Safety Plans may lead to my removal from the site.

Signed _____

Date _____

NYSDEC013682



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NYSDEC013683

PART IV

SITE INSPECTION REPORT

NYSDEC013684

NYSDEC 1992 PHASE II SITE RECONNAISSANCE

NYSDEC Site Name: DEPEW MFG. NYSDEC I.D. No. 130038

LMS Job No.: 576-046 Reconnaissance Team: CHRIS F, JOE M.

I. WEATHER: Date/Time: 3.4.92 1000 Prevailing Wind: NE ≈ 5 mph SUNNY ≈ 50°F

II TYPE OF SITE: Active ✓ Inactive ____

1. Telephone availability NO — PHONE WILL BE CONNECTED IN ≈ 2 WEEKS
2. Can field personnel be contacted ____
3. If so, Site Contact: _____

Site Phone No.: _____

III. AIR MONITORING:

1. Upwind of Site: Breathing Zone

HNU: 1.0 LEL: 0 DOSIMETER 0.01 - 0.03 mr

OVA: 6.9 O_2: 20.3

H_2S: 0

2. Perimeter (downwind) & Drilling Sampling Locations:

Location	OVA ppm Bkgd	OVA ppm Readg	HNU ppm Bkgd	HNU ppm Readg	LEL %	O_2 %	H_2S ppm	Comments
1. EAST M SIDE of Building	~~0.0~~	6.0	~~0.0~~	0.8	0	20.3	0	.01 Dosimeter Bkgrd
2. BACK of Building ~~Bar~~ east corner B1		5.6		0.8	0	20.3	0	" Bkgrd
3. Resin SLAB ? circular concrete		5.2		0.8	0	20.3	0	

NYSDEC013685

Location	OVA ppm Bkgd	OVA ppm Readg	HNU ppm Bkgd	HNU ppm Readg	LEL %	O_2 %	H_2S ppm	Comments
4. B2 near fence East		5		0.8	0	20.4	0	0 Dosimeter
5. East side 1/2 inter building & walkout property 20 ft in from fence		4.8		0.8	0	20.5	0	0
6. MW 3		4.8		0.8	.01	20.5	0	0
7. MW2		5.0		0.8	.01	20.5	0	.01
8. Westside near fence 1/2 inter building & prop line		5.2		0.8	.01	20.4	0	.01
9. back of building westside 15' from fence		5.4		0.8	.01	20.3	0	.01
10 NW end of Lagoon		5.4		1.0	0.01	20.4	0	.01 scorted ground surface
11.								

NYSDEC013686

IV. SAMPLING LOCATIONS:

1. Accessibility: (consider drains, culverts, overhead power, telephone, cable, underground utilities, i.e, sewer, water, gas, UST terrain)

Location I.D.	Anticipated Problems:
1. MW-1	shouldn't be a problem - is a sewer line nearby, and electric underground x 20 ft away (west) clearance good overhead.
2.	GAS RUNS NEARBY.
3.	ALL ARE AVOIDABLE
4. MW-2	MIGHT NEED SOME PORTION OF PILES OF FILL MATERIAL MOVED -
5.	LESSEE INDICATES THAT HE NEEDS 4-5 DAYS NOTICE - (LESSEE OWNS FILL)
6. MW-3	DITTO - ALSO VARIOUS AND
7.	SUNDRY EQUIPMENT - SNOW PLOWS - SAW HORSES - MARKER BARRELS, PILED
8.	AGAINST FENCE - MAY NEED MOVING NO OVERHEAD PROBLEM.
9.	
10.	
11.	
12.	
13.	
14.	
15.	

NYSDEC013687

2. Geophysical Study:

Date: _____

Type: _____

Contractor: _____

Equip. Used: _____

Pattern: _____

V. EXISTING MONITORING SYSTEM: NONE

1. Monitor Wells: _____
2. Locations: _____
3. Condition: _____
4. SWL/NAPL _____
5. Other _____

VI. DRUM STORAGE:

NYSDEC013688

Material to be Drummed/ Drums Est. _____

Decon H_2O _____, Cuttings _____

Development Water _____, Purge H_2O _____

Access Problems: SITE IS FLAT AND OPEN

Storage Location(s) _____

Disp. Clothing _____

Decon Acetone _____

VII. DECONTAMINATION: IS AMPLE ROOM NEAR BACK OF BUILDING, AND ELSE WHERE ONSITE.

Location: _____

Accessibility: GOOD

Potable Water Source: INSIDE BUILDING - NEED KEY

Electricity: INSIDE BUILDING - NEED KEY

VIII. STORAGE OF EQUIPMENT:

Parking: AMPLE ROOM

Security: SITE GATE IS LOCKED AT NIGHT - 6-Ft CHAINLINK AROUND SITE

IX. BATHROOM/FACILITIES:

On-site ✓, Off-site _____

X. POTABLE WATER:

Locations: INSIDE BUILDING -

XI. CONTACTS: Name/Phone # _____

Client/owner: _____

DEC: _____

Town/County: _____

Utilities: _____

_____

_____

Railroad: _____

Driller: _____

Fire: _____

Police: _____

Hospital/Ambulance: _____

_____

NYSDEC013689

XII. ADDITIONAL COMMENTS OR PROBLEMS (such as public visibility/contact or crowd control):

NYSDEC013690

Facility: BLUE HILL
Date: 3-4-92
Calib. By: DEM
Calib. Gas: CH_4

LAWLER, MATUSKY & SKELLY ENGINEERS
LABORATORY QUALITY CONTROL DATA SHEET
OVA METER CALIBRATION

Job No: 576-046
Site: NEDEN
Crew: JM & F
Oper: SITE REC'N

DATE/TIME	METER No.	BATT. CHECK	EXPECTED ZERO	EXPECTED CALIB. GAS (ppm)	OBSERVED ZERO	OBSERVED CALIB. GAS (ppm)	SPAN ADJ. (from -- -- to)	COMMENTS
3/4/92 020	40053	✓		95	LO	110	7.8 to 7.2	adjust zero to 1.0

NYSDEC013691

Facility: BLUE HILL
Date: 3.4.92
Calib. By: JEE M
Calib. Gas: ISO BUT

LAWLER, MATUSKY & SKELLY ENGINEERS
H.NU METER FIELD CALIBRATION
DATA SHEET

Job No: 576-046
Site: DEPEW
Crew: JM SF
Oper: SITE REC

DATE/TIME	METER No.	BATT. CHECK	EXPECTED ZERO	EXPECTED CALIB. GAS (ppm)	OBSERVED ZERO	OBSERVED CALIB. GAS (ppm)	SPAN ADJ. (from -- to)	COMMENTS
3/4/92 1000	DEC 801446	✓		54	we cannot	52	9.8 to 9.2	NEEDLE FLUCTUATING BETWEEN 0.5 and 2 Ppm upon turning HNU on generally stabilizes around 0.7 - adjusted to 1.0.
								needle fluctuates a few units at first then stabilizes at 5

NYSDEC013692

On-Site Health & Safety Officer and/or Crew Chief:

(Signature): _____

(Date):

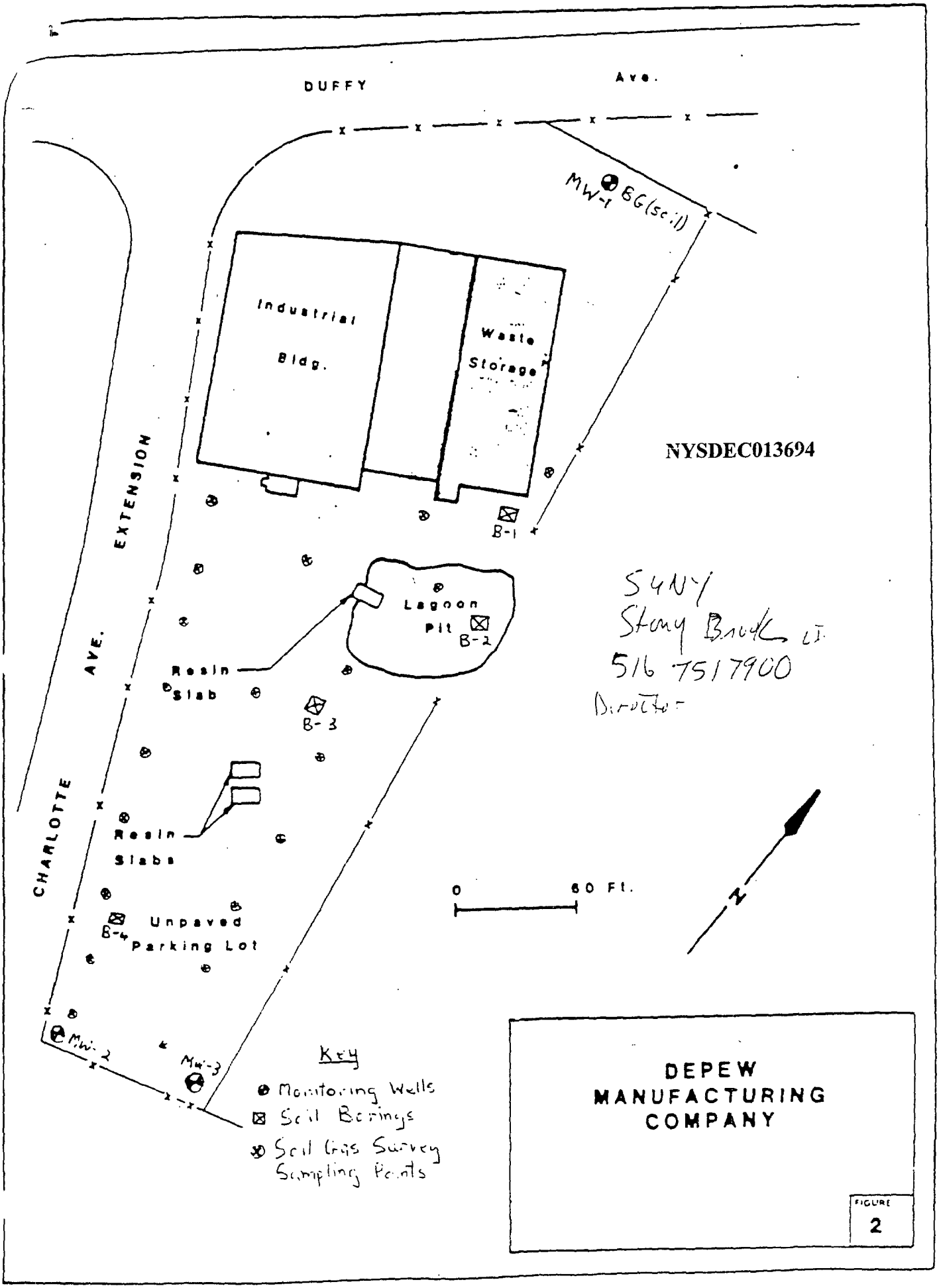
Facility: BLUE HILL
Date: 3-4-92
Calib. By: [illegible]
Calib. Gas:

LAWLER, MATUSKY & SKELLY ENGINEERS
LABORATORY QUALITY CONTROL DATA SHEET
EXPLOSIMETER CALIBRATION

Job No: 576046
Site: DEPEW
Crew: CF, JM
Oper: SITE REC[illegible]

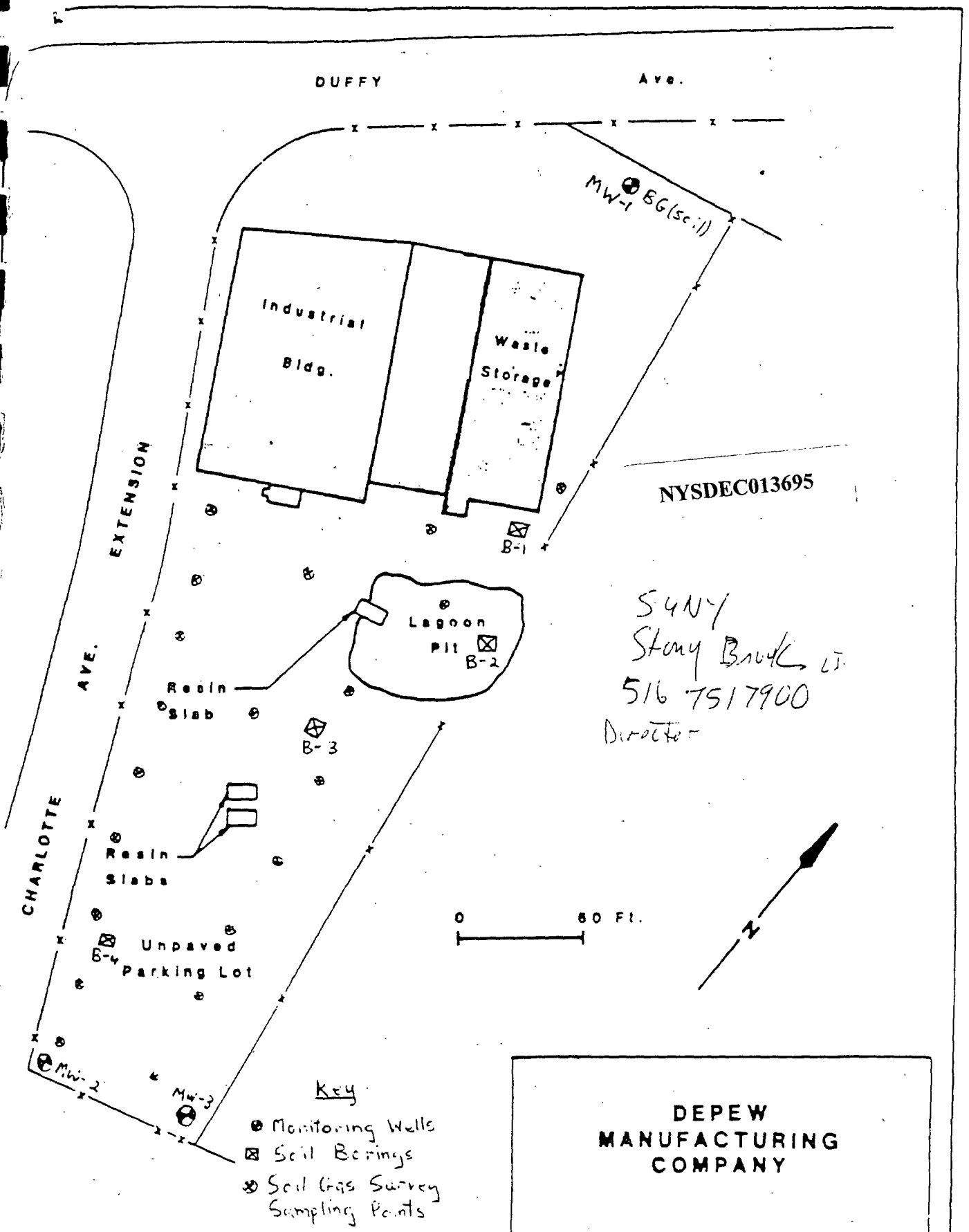
DATE/TIME	METER No.	BATT. CHECK	EXPECTED ZERO	EXPECTED CALIB. GAS (ppm)	OBSERVED ZERO	OBSERVED CALIB. GAS (ppm)	ADJ. COMB.	ADJ. 02	COMMENTS AND/OR MAINTENANCE
3/4/1032	1143	✓	0	LEL 50	01	LEL 50	LEL NO ADJ		
				OXY 20.9	adjust to 00	20.6			
				INT. 15.0	(LEL) O_2	16.1	O_2 16.1 to 15.0		after O_2 adjust meter only recovers to 19.3 adj to 20.3
				H_2S 60		H_2S 39-40			

NYSDEC013693



NYSDEC013694

SUNY
Stony Brook LI
516 7517900
Director



DEPEW
MANUFACTURING
COMPANY

FIGURE
2

NYSDEC013696

PART V

SAMPLING REPORT

NYSDEC013697

WELL SAMPLING LOG

Date: 4.27.92

Crew: JMG, SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Dopew Manuf.

Well ID No: DMMW-1 MS/MSD

Well Condition: Good

Well Depth/Diameter: 69.79'/4"

Well Casing Type: PVC

Screened Interval: Bottom 20'

Casing Ht/Lock No: Curb Box (PVC is 0.26' below curb box inside lip) / #2246

Reference Pt: Top of PVC Riser (mark)

Depth to Water (DTW): 51.34' (0939)

Water Column; Ht/Vol: 18.45'/12.36 gal

Purge Est: 18.45 x 2.6 = 48 gal (Assume 8" hole)
3 x 48 = 144 gal

Purge Date/Time(s): 4.27.92/1101-1145

Purge Method: Sub Pump w/ Dedicated Polyethylene Tubing

Purge Depth(s): Bottom → Mid → Surface

Purge Rates (gpm): 10 gpm

Purged Volume: 430 gal

DTW After Purging: 51.80' (At end of purge ... still pumping)

Yield Rate: L-M-H

Purge Observations: Slightly turbid (tan). More turbid when pump surged up + down. Cleared up as we purged. No noticeable odor

PURGE CHEMISTRIES

	VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
Bottom	50 gal	15.9°	6.6	698	>200
Mid	120 gal	15.6°	6.6	684	>200
↓	190 gal	16.0°	6.6	691	40
Surface	250 gal	16.0°	6.6	696	>200
	300 gal	15.8°	6.5	692	16
	350 gal	15.9°	6.6	687	4.5
↓	420 gal	15.9°	6.6	684	4.0

Comments:

No HNU or OVA readings above bkgd over purge water +/or well

METERS USED

Temp: 849 / 835

pH: DEC # Orion 4776 / DEC Hydac # D8974909

Cond: DEC TCC #560 / "

Turb: DEC DRT-15C # 19834

NYSDEC013698

DTW Before Sampling: 51.27'

Sample Date/Time(s): 4.27.92/1230-1345

Sampling Method: Teflon Bailer (#20)

Sampling Depth(s): Mid Water Column

DTW After Sampling: —

Sampling Observations: Rather Clear @ first then became more turb. as we sampled. No noticeable odor

Chain-of-Custody No(s): —

Analytical Lab(s): Aquatec

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start ~~Before~~	15.9°	6.6	692	30
End ~~After~~	15.6°/15.7°	6.3/6.3	724	140
			Unc. 588 / Unc. 622 @ 15.2°	

SAMPLE ANALYSES

Parameters	Inv. No	Pres. Meth.	Filt. (Y/N)	
VOAs TCL+10	02	4°	N	
BNAs TCL+20	01	↓	↓	
Pest/PCBs TCL	01	↓	↓	
Metals TAL	01	HNO_3	↓	70 NTUs
Cyanide	01	NaOH	↓	
COD	01	H_2SO_4	↓	
TSS, TDS	01	4°	↓	
MS: VOAs TCL	02	↓	↓	
MS: BNAs TCL	01	↓	↓	
MS: Pest/PCBs TCL	01	↓	↓	
MS: Metals TAL	01	HNO_3	↓	70 NTUs
MS: Cyanide	01	NaOH	↓	
MSD: VOAs TCL	02	4°	↓	
MSD: BNAs TCL	01	↓	↓	
MSD: Pest/PCBs TCL	01	↓	↓	
MSD: Metals TAL	01	HNO_3	↓	70 NTUs
MSD: Cyanide	01	NaOH	↓	

Air Temp: 60-65°F

Weather Conditions: Mostly Sunny, Lt Breeze

* Total Environmental had us fill the following bottles: 4-1l Amber jars (4°), 1-250ml plas (4°) * and ½l Plas. (NaOH)
(We filled Total Envir 1l bottles w/ our 2l jugs, their ½l ples w/ our CNs + their 250ml pl. w/ our metals)

We collected MS/MSD samples at this well.

Crew Chief Signature: John M Dugan

Date: 4.27.92

WELL SAMPLING LOG

Date: 4.28.92

Crew: JMG SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Depew Manufacturing

METERS USED

Temp: —

pH: —

Cond: —

Turb: —

Well ID No: Trip Blank

Well Condition: —

Well Depth/Diameter: —

Well Casing Type: —

Screened Interval: —

Casing Ht/Lock No: —

Reference Pt: —

Depth to Water (DTW): —

Water Column; Ht/Vol: —

Purge Est: —

Purge Date/Time(s): —

Purge Method: —

Purge Depth(s): —

Purge Rates (gpm): —

Purged Volume: —

DTW After Purging: —

Yield Rate: L-M-H —

Purge Observations: —

DTW Before Sampling: —

Sample Date/Time(s): 4.28.92

Sampling Method: —

Sampling Depth(s): —

DTW After Sampling: —

Sampling Observations: —

Chain-of-Custody No(s): —

Analytical Lab(s): Aquatec

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before	—			
After	—			

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
VOAs TCL+10	02	4°	N

* 1 vial has a bubble in it

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.

X

NYSDEC013699

Comments:

Cooler arrived c motel on 4.27.92
We received it when we checked into motel
in afternoon. I called Chris O'G on 4.28.92 to see if we
were supposed to get FB water but he said a FB was performed
on a split-spoon during soils collection

Air Temp: 60-70°F

Weather Conditions: Mostly clear
Lt haze, Lt breeze

Crew Chief Signature:

WELL SAMPLING LOG

Date: 4.28.92

Crew: JMG SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Depew Manuf.

METERS USED

Temp: See DMMW-2 Log

pH:

Cond:

Turb:

Well ID No: DMMW-4 (Blind Duplicate of DMMW-2)

Well Condition: See DMMW-2 Log

Well Depth/Diameter:

Well Casing Type:

Screened Interval:

Casing Ht/Lock No:

Reference Pt:

Depth to Water (DTW):

Water Column; Ht/Vol:

Purge Est:

Purge Date/Time(s):

Purge Method:

Purge Depth(s):

Purge Rates (gpm):

Purged Volume:

DTW After Purging:

Yield Rate: L-M-H

Purge Observations:

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.

DTW Before Sampling:

Sample Date/Time(s): 4.28.92 / "0810"

Sampling Method: See DMMW-2 Log

Sampling Depth(s):

DTW After Sampling:

Sampling Observations:

Chain-of-Custody No(s):

Analytical Lab(s):

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Before				
After				

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
VOA's	02	4°C	N
BN's	01		
PESTICIDES & TCL	01		
METALS TOTAL	01	HNO3	
CN	01	NaOH	
TSS/TDS	01	4°C	
COD	01	H_2SO_4	

NYSDEC013700

Comments:

This is a blind dup sample of DMMW-2
It was given a fictional time on labels + CofC
Bottles for the same parameters were filled together to ensure that both sets of samples are as homogeneous as possible

Air Temp:

Weather Conditions:

Crew Chief Signature: [signature]

Date: 4.28.92

WELL SAMPLING LOG

Date: 4.28.92

Crew: JMG SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Depew Manufac.

METERS USED

Temp: 849/835

pH: DEC Orion # 4776 / DEC Hydac D8974909

Cond: DEC TLC #560 / "

Turb: DEC DRT-15c # 19834

NYSDEC013701

Well ID No: DMMW-2

Well Condition: Good

Well Depth/Diameter: 70.92' / 4"

Well Casing Type: PVC

Screened Interval: Bottom 20'

Casing Ht/Lock No: steel 1.78' : PVC 1.09' / # 2246

Reference Pt: Top of PVC Riser

Depth to Water (DTW): 53.68' (0739)

Water Column; Ht/Vol: 17.24' / 11.55 gal

Purge Est: 17.24 x 2.6 = 44.8 gal
44.8 x 3 = 134 gal

Purge Date/Time(s): 4.28.92 / 0823-0920

Purge Method: Sub Pump w/ Dedicated Polyethylene Tubing

Purge Depth(s): Bottom → Mid → Surface

Purge Rates (gpm): 10 gpm

Purged Volume: 490 gal

DTW After Purging: 54.33' (@ end of purge ... still pumping)

Yield Rate: L-M-H

Purge Observations: Turbid (tan) @ first, more turbid when we surged pump, cleared as we purged. No noticeable odor.

PURGE CHEMISTRIES

VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
15 gal	14.7°	6.5	331	[illegible]
100 gal	[illegible]	6.7	[illegible]	17
[illegible]	[illegible]	6.3	37[illegible]	17
370 gal	14.8°	6.3/6.3	386	101
420 gal	14.6°	6.3	386	8
460 gal	14.6°/14.6°	3.4	389	4

Comments:

DTW Before Sampling: 53.65'

Sample Date/Time(s): 4.28.92 / 0950-1040

Sampling Method: Teflon Bailer (#21)

Sampling Depth(s): Mid Water Column

DTW After Sampling: —

Sampling Observations: Sl. turbid @ first, got a more turb as we sampled. Sl. musty odor

Chain-of-Custody No(s): —

Analytical Lab(s): Aquatec

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start ~~Before~~	15.1°	6.4	350	16
End ~~After~~	14.5°	6.4	336	64

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
VOAs TCL+10	02	4°	N
BNAs TCL+20	01	↓	↓
Pest/PCBs TCL	01	↓	↓
Metals TAL	01	HNO_3	↓
Cyanide	01	NaOH	↓
COD	01	H_2SO_4	↓
TSS, TDS	01	4°	↓

Bailer used @ this well & labeled DMMW-4. Bailers of same parameters mixed together to create homogeneous sample

Air Temp: 55-60° F

Weather Conditions: Clear lt haze, Lt breeze

Bckgd OVA + HNU readings over well + purge water

* When purging from surface we began to notice a musty-type odor

* Total Environmental was not here today to collect split samples *

Crew Chief Signature: [illegible]

Date: 4.28.92

WELL SAMPLING LOG

Date: 4.28.92

Crew: JMG SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Depew Manuf.

METERS USED

Temp: 849/835

pH: DEC Orion #4776 / DEC Hydac 08974909

Cond: DEC TLC #560 / "

Turb: DEC DRT-15c # 19834

NYSDEC013702

Well ID No: DMMW-3

Well Condition: Good

Well Depth/Diameter: 70.51'/4"

Well Casing Type: PVC

Screened Interval: Bottom 20'

Casing Ht/Lock No: steel: 1.45'; PVC 0.87' / #2246

Reference Pt: Top of PVC Riser

Depth to Water (DTW): 52.45'

Water Column; Ht/Vol: 18.06'/12.1 gal

Purge Est: 18.06' x 2.6 = 46.96 gal
47 x 3 = 141 gal

Purge Date/Time(s): 4.28.92/1106-1230

Purge Method: Sub Pump w/ Dedicated Polyethylene Tubing

Purge Depth(s): Bottom → Mid → Surface

Purge Rates (gpm): 10 gpm (1st 150 gal) / 5 gal

Purged Volume: 500 gal

DTW After Purging:

Yield Rate: L-M-H

Purge Observations: Turb at first, cleared up slowly
Became turb when we surged pump
Slight sulfur-type odor

DTW Before Sampling: 52.43'

Sample Date/Time(s): 4.28.92/1255-1340

Sampling Method: Teflon Bailer (#43)

Sampling Depth(s): Mid Water Column

DTW After Sampling: —

Sampling Observations: Rather turbid (tan)
Sl. sulfur-type odor

Chain-of-Custody No(s): —

Analytical Lab(s): Aquatec

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start	15.1°/15.1°	6.0/6.0	223 unc/192 unc/195	>200
End	[illegible]	6.1	c 15.9° 237	>200

PURGE CHEMISTRIES

	VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
	15 gal	15.1°	6.5	218	>200
	100 gal	15.1°	6.3	177 unc/198 unc	c 15.6° [illegible]
Mid	150 gal	15.7°	6.2	251	190
	22[illegible] gal	15.7°	[illegible]	251	[illegible]
Surface	[illegible]	15.7	[illegible]		157
	40[illegible]	15.6	[illegible]		159
	460 gal	[illegible]	6.1	[illegible]	92
	[illegible]	[illegible]	[illegible]	217	[illegible]

Comments: At 10 gpm we were drawing well down (~6.5' in 150 gal so we cut back to 5 gpm)

SAMPLE ANALYSES

Parameters	Inv. No.	Pres. Meth.	Filt. (Y/N)
VOAs TCL+10	02	4°	N
BNAs TCL+20	01	↓	↓
Pest/PCBs TCL	01	↓	↓
Metals TAL	01	HNO_3	>200 NT
Cyanide	01	NaOH	↓
COD	01	H_2SO_4	↓
TSS, TDS	01	4°	↓
Diss. Metals TAL	01	HNO_3	Y

* Total Environment was not here today to collect split samples *

Air Temp: 65°F

Weather Conditions: Mostly Clear, Lt haze
Lt breeze

No HNU or OVA reading above bckgd over purge water or well

Crew Chief Signature: [signature]

Date: 4.28.92

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD METER CALIBRATION AND/OR CHECK DATA SHEET

Crew: JG SE
Date: 4.27.92
Job No: 576-047

Site: Depew Mun.
Operation: Well Sampling
Calib. By: JMG/SE

METER No./ PROBE No.	TIME	THERM. No/ TEMP. (°C)		EXPECTED VALUE		OBSERVED VALUE		ADJ. TO[a]		% DIFF[b]	COMMENTS
Orion #4776	0925	13.2°	#849	7.00	4.00/10.00	7.12	3.87/9.77	7.00	4.00/		NYSDEC013703
pH	1416	16.1°	↓	7.00	4.00/10.00	6.99	4.07/9.74	7.00	4.00/-		
Hydac D8974909	0925	13.2°	#849	7.00	4.00/10.00	7.07	3.97/9.89	7.00	4.00/		
pH	1410	16.1°	↓	7.00	4.00/10.00	6.99	4.04/9.92	7.00	4.00/-		
DRT-15c #19834	0920			100	10/1	94	14/2	No Adj			
Turbidity	1415			100	10/1	98	11/2	NO ADJ			
HNu #801513	0930			54ppm		52 ppm		No Adj	Span @ 9.9		
(PID)				zero Air	Methane						
OVA # 40853	1000			0	95ppm	4*	100ppm	No Adj	Span @ 3.7		* Adj Zero to "01" before calib w/ 95 ppm Methane
(FID											

[a]For dissolved oxygen and pH meter calibrations, record adjustments (include % and ppm readings for dissolved oxygen meter calibration).

[b]Include % Diff. calculation for conductivity calibration checks: % Diff. = Exp. - Obs./Exp. X 100

LAWLER, MATUSKY & SKELLY ENGINEERS
FIELD METER CALIBRATION AND/OR CHECK DATA SHEET

Crew: JG SE
Date: 4/23/92
Job No: 576-047

Site: Dupont Plin.
Operation: well sampling
Calib. By: SE

METER No./ PROBE No.	TIME	THERM. No/	TEMP. (°C)	EXPECTED VALUE		OBSERVED VALUE		ADJ. TO[a]		% DIFF[b]	COMMENTS
Orion #4716	0725	039	10.6	7.00	4.00/10.00	7.07	3.94/9.68	7.00	4.00/-		
(pH)		035	13.6								
			16.9								
	1033	017	16.7	7.00	[illegible]	6.92	4.11/9.18	7.00	4.00/-		
Hydrion 03174144	0725	049	10.6°	7.00	4.00/10.00	6.99	3.86/9.70	7.00	4.00/-		NYSDEC013704
(pH)	1033	011	16.7	7.00	4.00/[illegible]	6.97	4.01/9.77	7.00	4.00/-		
ORT-150 # 9934	0720			100	10/1	98	10/2	no adj			
(turbidimeter)	1035			100	10/1	98	10/2	no adj			
				Isob.							
HNU 801513	0730			54ppm		50ppm		No Adj	Span @ 9.8		
(PID)				zero Air	methane						
OVA 40853	0745			0	95	4*	100+	1	95		* Adj "zero" to 1 w/ zero Air then calib w/ 95ppm methane Adj Span from 3.7 to 3.3 unt. meter read 95ppm
(FID)											

[a]For dissolved oxygen and pH meter calibrations, record adjustments (include % and ppm readings for dissolved oxygen meter calibration).

[b]Include % Diff. calculation for conductivity calibration checks: % Diff. = Exp. - Obs./Exp. X 100

1 of 3

ROUTE	

NYSDEC013705

LAWLER, MATUSKY & SKELLY ENGINEERS **INTEROFFICE MEMO**

TO	File	DATE 4.27.92	JOB NO 576-047
FROM	JMGuzewich	RE Field Sampling Notes / Depew Manuf.	

0915 We arrived on site. Darrin Monigault of Total Environmental was already @ the site
Stacey and I took a walk around site. The entrance around side of building to back lot is blocked by a backhoe sitting on a trailer + an empty trailer. The side gate was also locked

0925 We began to set up @ DMMW-1 and calibrate meters
I went into body shop to ask about locked Charlotte Ave gate and the backhoe blocking entrance around building to back lot
He said North Shore Contracting has only key to side gate (owner doesn't have one either) He said he doesn't know who owns the backhoe either

1030 Debra King of YEC arrived to look @ site for surveying access + survey locations. I called Joe Mastromarchi to see if he wanted any of the borings or soil gas points surveyed in. He said he only needs the wells surveyed
I gave Debra a set (2) of #2246 Keys to access the wells.

1100 We began purging DMMW-1. We started w/ pump @ bottom of well to remove accumulated fines + worked the pump (surging as we pulled it up) and finished purging w/ pump @ surface of water column
The turbidity cleared up quite well as we purged. We decided to collect MS+MSD samples from this well.

1145 We finished purging (430 gal.). We purged @ 10gpm and drew the water down ~ 0.5' in well. It recovered quickly
Darrin said he had to go back to office for a little bit and asked if we could fill his bottles for him when we sampled. He gave us 4-1l amber bottles, 1-250ml Plas. bottle (4°C) and 1 500ml plastic bottle (NaOH). I asked him what he was analyzing for + he said whatever parameters I listed for him last week. I gave

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS

INTEROFFICE MEMO

File	DATE 4/22/92	JOB NO 576-047
FROM JMG	RE Depew Manuf. Sampling Notes	

from the full list. I asked if he had any volatile vials + he said no, he only had the bottles he was given. He did not have any coolers /or ice (cardboard box w/ bottles in it).

1230 We began sampling DMMW-1. We filled all of the bottles of the same parameters together. We filled Total Environmental's 4-1l amber bottles with our BNA + Pest/PCB bottles. We filled their unpres plastic bottle w/ our metals bottle + their NaOH pres. bottle w/ our CN bottle.

1315 We completed sampling @ DMMW-1
Aquatec does not provide HNO_3 for metals pres. Aquatec did not provide any COD or TSS/TDS bottles. We used 300 series bottles from LMS/Nyack lab. We also used H_2SO_4 from Nyack for COD pres. Aquatec CN bottles do have NaOH in them.

1400 We checked in @ Body Shop office to see about the backhoe + side gate Body Shop owner said he called North Shore Contracting but was only able to leave mess. on ans. machine. I told Darrin that it looked like we were not going to do another well today. We
1430 Darrin left site and said he would be back tomorrow and would help us if we had to carry equip back to other 2 wells. We decided to walk back to DMMW-2 + DMMW-3 to measure SWL, depth, + stick-up

1507 DMMW-2 SWL 53.70'
Total Depth 70.92
Stick-up steel: 1.78', PVC: 1.09'

1523 DMMW-3 SWL 52.40'
Total Depth 70.51'
Stick-up steel: 1.45', PVC: 0.87'

* Prot. casing top was rusted on to prot. casing and to remove by

NYSDEC013706

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS **INTEROFFICE MEMO**

TO F.le	DATE 4.27.92	JOB NO 576-047
FROM JMG	RE Depew Manuf Sampling Notes	

I got phone # of North Shore Contractor from sign in yard (516 676 2772). I called the # from the body shop but was only able to leave a mess. on ans. machine.

1545 We left site + headed for motel. When we checked in there was a cooler from Aquatec. It had a set of bottles + TB vials in it. Chris O'G said I would get a set of TB vials, FB water + an empty set of bottles. He said they would probably arrive on Tues. 4.28 On way to Motel we noticed slight gas fumes in van. We checked gas can (in plastic bag) + it was fine. We checked generator and gas cap was not tightened all the way. No gas spilled out but we hit a few bumps + must have released some fumes. All of the coolers were closed + completed samples were iced down + packed in closed coolers. We left doors + windows open and fumes dissipated quickly.

1745 Sample cooler dropped off @ Fed-X (102 lbs) for delivery to Aquatec tomorrow

NYSDEC013707

- I was able to contact person from North Shore Contracting to ask when he would unlock Charlotte Ave gate. He said he could let us in @ 0645 but would lock gate when he left @ 0700. He said he usually returns to yard @ ~1700. He said he could not leave gate unlocked during day because people have been coming by and illegally dumping in the yard. I asked if we could use our own lock to secure gate so we could leave when we needed to. He reluctantly agreed to this

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS — INTER-OFFICE MEMO — 1 of 1

TO: File	DATE 4/27-28/92	JOB. NO. 576-047
FROM: JMG	RE: Depew Manuf. Field Sampling Notes	

General Notes:

- Total Environmental only took "splits" from DMMW-1 (upgradient well)
- Between wells the sub pump was deconned by pumping 5 gal of DI water through pump, rinsing pump + wire w/ DI water and wiping pump + wire w/ DI soaked paper towels before lowering in each well
- New polyethylene tubing was used for each well. * I spoke w/ Dan Eaton about tubing storage (He was @ MacKenzie Chemical when we went over to drop off meters) He said we do not have to keep tubing @ all and can discard after use. If we must resample we will use new tubing
- DMMW-2 has a very tight protective casing cover. It rusted to protective casing + we needed sledgehammer to loosen it
- No [illegible] weight either day

NYSDEC013708

ROUTE	

1 of 2

LAWLER, MATUSKY & SKELLY ENGINEERS INTER-OFFICE MEMO

TO: File	DATE 4.28.92	JOB. NO. 576-047
FROM: JMG	RE: Depew Field Sampling Notes	

0645 We arrived on site and waited for North Shore Construct. to arrive and unlock gate

0700 North Shore arrived + let us in gate. I locked gate w/ our lock when they left the yard. No one from Total Envir. has arrived yet We began to set up between DMMW-2 + 3

NYSDEC013709

0725 Meters calibrated + set up to purge DMMW-2

0823 We began to purge DMMW-2. We started w/ pump @ bottom to remove accumulated fines and gradually raised pump up through water column, surging the pump up + down as we raised it.
The purge water had a slight musty-type odor when ~~pump~~ purging from surface, No HNU or OVA readings over well or purged water. We pumped well @ 10gpm + it drew down ~ 0.5'

0920 We finished purging + set up to sample @ DMMW-2. We decided to collect the blind dup. @ this well and label it DMMW-4

0950 Began sampling the well from mid-water column. We filled bottles of the same parameters together to ensure that both sample sets are as homogeneous as possible. Total Environment still had not shown up so they did not get split samples at this well. Sampling completed @ DMMW-2. DMMW-4 sample set was given a f.tional time of "0810."

1040 We began to set up to purge DMMW-3.

1106 Began purging DMMW-3. We started w/ pump @ bottom of well + pumping @ 10 gpm. After 15 min we had drawn the well down ~ 6.5'. We decided to throttle back the flow to 5 gpm Water level began to come back up. We gradually raised pump to top

NYSDEC013710

ROUTE	

AWLER, MATUSKY & SKELLY ENGINEERS INTER-OFFICE MEMO 2 of 2

TO: File	DATE 4.30.92	JOB. NO. 576-047
FROM: JMG	RE: Depew Manuf. Field Sampling Notes	

of water column surging pump up + down as we raised it. The purge water had a slight sulfur-type odor. We observed no HNU or OVA readings over purge water or well. While well was being purge I ran to Econolodge to see if FB water had arrived. Nothing had arrived for me so I called Chris O'Gormon. He said that we are not performing a FB on groundwater samples because one had already been performed on split-spoon when soil samples were collected. When I returned the purge water was still a little turbid so we continued to purge. The surface 1/3 of screened area probably did not get developed fully because development was done @ 10gpm + due to draw down the top portion of sand pack did not get worked.

1230 We completed purge process ... Turbidity @ 32 NTUs

1255 We began to sample from mid-water column. The sample turbidity was high (over 200 NTUs) from the first bailer. After collecting a TAL Total Metals sample we collected an additional sample to filter for TAL Diss. Metals analysis. This sample was filtered through a .45 μm high volume filter capsule.

1340. We finished sampling DMMW-3. Total Environmental did not show up so they did not get a split sample from this well.

1400 We calibrated meters, packed coolers, completed CofC's + packed van

1520 We dropped 2 coolers off @ Fed-X for delivery to Aquatec. We drove over to Mackenzie Chemical site and dropped off water quality meters, so they can monitor development of wells

1640 We headed back to Nyack to deprep equipment

LAWLER, MATUSKY & SKELLY ENGINEERS
CREW CHIEF REPORT

Crew Chief: JM Guzewich	Job No./Project: 576-047 / Depew Manuf.
Crew Member(s): Stacey Efron	Survey: Well Sampling
Vehicle(s)/Boat(s) Used: Rental Van / —	Project Manager: Ed Maikish

Crew Chief Report (complete after survey):

Survey Start/End Date: 4.27.92 / 4.28.92	Survey Start/End Time: /

Describe Details Below:

	Y	N		Y	N
Sampling gear working properly		✓ SWL	Field meters calibrated:		
Field calibration must be attached to original CC report and sent to QA/QC		TLC	• Air Monitoring (HNu, OVA, CGI)	✓	
• Was downtime incurred (no. hrs____)		✓	• Water Quality	✓	
• Any incidents, accidents or pertinent observations		See field Notes	Were the following reports completed and submitted:		
Boat usage	TO		• Weather conditions listed on field data sheets	✓	
• Engine hours	—	—	• Radio logs	—	—
• Radio logs	—	—	• Equipment usage	✓	
• Boat location	—	—	• ~~Boat~~/Vehicle logs	✓	
Chain-of-custody completed	✓		Samples signed over	✓	

NYSDEC013711

Comments/Observations Survey went very well. See field notes for sampling details. The Sinco SWL meter we had did not work to well. After checking bottom depth of well @ first well the light/buzzer would not go off. Water must have gotten inside probe / connection. We used Roctest back-up. The sub pump we had worked fine, but the connection box cover kept falling off (prob. just needs to be taped).
The DEC TLC-300 Cond meter (#560) appears to have prob where cable connects to probe, if the wire is positioned a certain way it will not read anything. You have to move it/reposition it & then it will give reading (it QCed fairly well w/ Hydrac cond meter)

NOTE: Send original Crew Chief Report to QA/QC within 5 days of survey completion; send yellow copy to warehouse; retain pink copy for C.C. file

Crew Chief Signature: John M Guzewich	Date: 4.28.92

Use Additional Sheets if Necessary

SPEED LETTER

TO Chris O'Gorman

FROM JM Greenwich

SUBJECT Depew Manuf. Sampling 576-047 4/27-28/92

No. 9 & 10 FOLD

MESSAGE

DATE 5-3 1992

Enclosed is following Original Data

1. Field well logs (3 wells, 1 Dup, 1 TB)
2. Calib Sheet
3. Field logs
4. CC Report

* You have already received yellow copies of CofC's

SIGNED John M Greenwich

REPLY

DATE 19

No. 9 FOLD

No. 10 FOLD

SIGNED

GreyLine "SNAP-A-WAY" FORM 44-902 3 PARTS
WILSON JONES COMPANY © 1961 PRINTED IN U.S.A.

RETAIN WHITE COPY, RETURN PINK COPY

1272

NYSDEC013712

LAWLER, MATUSKY & SKELLY ENGINEERS
CREW CHIEF REPORT

Crew Chief: Jim Guzewich	Job No./Project: 576-047 / Depew Manuf.
Crew Member(s): Stacey Efron	Survey: Well Sampling
Vehicle(s)/Boat(s) Used: Rental Van / —	Project Manager: Ed Makish

Crew Chief Report (complete after survey):

Survey Start/End Date: 4.27.92 / 4.28.92	Survey Start/End Time: /

Describe Details Below:

	Y	N		Y	N
Sampling gear working properly		* ✓ SWL	Field meters calibrated:		
Field calibration must be attached to original CC report and sent to QA/QC		TLC	• Air Monitoring (HNu, OVA, CGI)	✓	
• Was downtime incurred (no. hrs____)		✓	• Water Quality	✓	
• Any incidents, accidents or pertinent observations		See field notes	Were the following reports completed and submitted:		
Boat usage	TO		• Weather conditions listed on field data sheets	✓	
• Engine hours	—	—	• Radio logs	—	—
• Radio logs	—	—	• Equipment usage	✓	
• Boat location	—	—	• ~~Boat~~/Vehicle logs	✓	
Chain-of-custody completed	✓		Samples signed over	✓	

Comments/Observations Survey went very well. See field notes for sampling details. The Sinco SWL meter we had did not work to well. After checking bottom depth of well @ first well the light/buzzer would not go off. Water must have gotten inside probe / connection. We used Rectest back-up. The sub pump we had worked fine, but the connection box cover kept falling off (prob. just needs to be taped).
The DEC TLC-300 Cond meter (#560) appears to have prob where cable connects to probe, if the wire is positioned a certain way it will not read anything. You have to move it/reposition it & then it will give reading (it QCed fairly well w/ Hydac cond meter)

NOTE: Send original Crew Chief Report to QA/QC within 5 days of survey completion; send yellow copy to warehouse; retain pink copy for C.C. file

Crew Chief Signature: John M Guzewich	Date: 4.28.92

Use Additional Sheets if Necessary

NYSDEC013714

1 of 3

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS

INTEROFFICE MEMO

TO	File	DATE	4.27.92	JOB NO	576-047
FROM	JMGuzewich	RE	Field Sampling Notes / Depew Manuf.		

0915 We arrived on site. Darrin Manigault of Total Environmental was already @ the site

Stacey and I took a walk around site. The entrance around side of building to back lot is blocked by a backhoe sitting on a trailer + an empty trailer. The side gate was also locked

0925 We began to set up @ DMMW-1 and calibrate meters

I went into body shop to ask about locked Cherlotte Ave gate and the backhoe blocking entrance around building to back lot He said North Shore Contracting has only key to side gate (owner doesn't have one either) He said he doesn't know who owns the backhoe either

1030 Debra King of YEC arrived to look @ site for surveying access + survey locations. I called Joe Mastromarchi to see if he wanted any of the borings or soil gas points surveyed in. He said he only needs the wells surveyed

I gave Debra a set (2) of #2246 Keys to access the wells.

1100 We began purging DMMW-1. We started w/ pump @ bottom of well to remove accumulated fines + worked the pump (surging as we pulled it up) and finished purging w/ pump @ surface of water column The turbidity cleared up quite well as we purged. We decided to collect MS + MSD samples from this well.

1145 We finished purging (430 gal.). We purged @ 10 gpm and drew the water down ~ 0.5' in well. It recovered quickly

Darrin said he had to go back to office for a little bit and asked if we could fill his bottles for him when we sampled. He gave us 4-1l amber bottles, 1-250ml Plas. bottle (4°C) and 1 500ml plastic bottle (NaOH). I asked him what he was analyzing for + he said whatever parameters I listed for him last week. I gave

NYSDEC013715

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS **INTEROFFICE MEMO**

TO	F.le	DATE	4.2.92	JOB NO	576-047
FROM	JMG	RE	Depew Manuf. Sampling Notes		

him the full list. I asked if he had any volatile vials + he said no, he only had the bottles he was given. He did not have any coolers +/or ice (cardboard box w/ bottles in it).

1230 We began sampling DMMW-1. We filled all of the bottles of the same parameters together. We filled Total Environmental's 4-1l amber bottles with our BNA + Pest/PCB bottles. We filled their unpres plastic bottle w/ our metals bottle + their NaOH pres. bottle w/ our CN bottle.

1345 We completed sampling @ DMMW-1
Aquatec does not provide HNO_3 for metals pres. Aquatec did not provide any COD or TSS/TDS bottles. We used 300 series bottles from LMS/Nyack lab. We also used H_2SO_4 from Nyack for COD pres. Aquatec CN bottles do have NaOH in them.

1400 We checked in @ Body Shop office to see about the backhoe + side gate Body Shop owner said he called North Shore Contracting but was only able to leave mess. on ans. machine. I told Darrin that it looked like we were not going to do another well today. We

1430 Darrin left site and said he would be back tomorrow and would help us if we had to carry equip back to other 2 wells. We decided to walk back to DMMW-2 + DMMW-3 to measure SWL, depth, + stick-up

1507 DMMW-2 SWL 53.70'
Total Depth 70.92
Stick-up Steel: 1.78', PVC: 1.09'

1523 DMMW-3 SWL 52.40'
Total Depth 70.51'
Stick-up Steel: 1.45', PVC: 0.87'

* Prot. casing top was rusted on
+ prot. casing had to remove by

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS **INTEROFFICE MEMO**

TO F.L	DATE 4.27.9c	JOB NO 576-047
FROM JMG	RE Depew Manuf Sampling Notes	

I got phone # of North Shore Contractor from sign in yard (516 676 2772) I called the # from the body shop but was only able to leave a mess. on ans. machine.

545 We left site + headed for motel. When we checked in there was a cooler from Aquatec. It had a set of bottles + TB vials in it. Chris O'G said I would get a set of TB vials, FB water + an empty set of bottles. He said they would probably arrive on Tues. 4.28 On way to Motel we noticed slight gas fumes in van. We checked gas can (in plastic bag) + it was fine. We checked generator and gas cap was not tightened all the way. No gas spilled out but we hit a few bumps + must have released some fumes. All of the coolers were closed + completed samples were iced down + packed in closed coolers. We left doors + windows open and fumes dissipated quickly.

745 Sample cooler dropped off @ Fed-X (102 lbs) for delivery to Aquatec tomorrow

- I was able to contact person from North Shore Contracting to ask when he would unlock Charlotte Ave gate. He said he could let us in @ 0645 but would lock gate when he left @ 0700. He said he usually returns to yard @ ~1700. He said he could not leave gate unlocked during day because people have been coming by and illegally dumping in the yard. I asked if we could use our own lock to secure gate so we could leave when we needed to. He reluctantly agreed to this

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS INTER-OFFICE MEMO

TO: File	DATE 4/27-28/92	JOB. NO. 576-047
FROM: JMG	RE: Depew Manuf. Field Sampling Notes	

General Notes:

- Total Environmental only took "splits" from DMMW-1 (upgradient well)
- Between wells the sub pump was deconned by pumping 5 gal of DI water through pump, rinsing pump + wire w/ DI water and wiping pump + wire w/ DI soaked paper towels before lowering in each well
- New polyethylene tubing was used for each well. * I spoke w/ Dan Eaton about tubing storage (He was @ MacKenzie Chemical when we went over to drop off meters) He said we do not have to keep tubing @ all and can discard after use. If we must resample we will use new tubing
- DMMW-2 has a very tight protective casing cover. It rusted to protective casing + we needed sledgehammer to loosen it
- No NYSDEC oversight either day

NYSDEC013717

WELL SAMPLING LOG

Date: 4.27.92

Crew: JMG SE

Job No: 576-047

Project: NYSDEC Phase II

Project Site: Depew Manuf.

METERS USED

Temp: 849 / 835

pH: DEC # Orion 4776 / DEC Hydac # D8974909

Cond: DEC TCC #560 / "

Turb: DEC DRT-15C # 19834

NYSDEC013718

Well ID No: DMMW-1 MS/MSD

Well Condition: Good

Well Depth/Diameter: 69.79' / 4"

Well Casing Type: PVC

Screened Interval: Bottom 20'

Casing Ht/Lock No: Curb Box (PVC is 0.26' below curb box inside lip) / #2246

Reference Pt: Top of PVC Riser (mark)

Depth to Water (DTW): 51.34' (0939)

Water Column; Ht/Vol: 18.45' / 12.36 gal

Purge Est: 18.45 x 2.6 = 48 gal (Assume 8" hole)
3 x 48 = 144 gal

Purge Date/Time(s): 4.27.92 / 1101-1145

Purge Method: Sub Pump w/ Dedicated Polyethylene Tubing

Purge Depth(s): Bottom → Mid → Surface

Purge Rates (gpm): 10 gpm

Purged Volume: 430 gal

DTW After Purging: 51.80' (At end of purge ... still pumping)

Yield Rate: L-M-(H)

Purge Observations: Slightly turbid (tan). More turbid when pump surged up + down. Cleared up as we purged. No noticeable odor

DTW Before Sampling: 51.27'

Sample Date/Time(s): 4.27.92 / 1230-1345

Sampling Method: Teflon Bailer (#20)

Sampling Depth(s): Mid Water Column

DTW After Sampling: —

Sampling Observations: Rather Clear @ first, then become more turb. as we sampled. No noticeable odor

Chain-of-Custody No(s): —

Analytical Lab(s): Aquatec

WET SAMPLE CHEMISTRIES

	Temp. (°C)	pH	Sp. Cond.	Turb.
Start ~~Before~~	15.9°	6.6	692	30
End ~~After~~	15.6° / 15.7°	6.3 / 6.3	724	140
			unc. 588 / unc 622 @ 15.2°	

PURGE CHEMISTRIES

	VOL.	TEMP. (°C)	pH	SP. COND.	TURB.
Bottom	50 gal	15.9°	6.6	698	>200
Mid	120 gal	15.6°	6.6	684	>200
↓	190 gal	16.0°	6.6	691	40
Surface	250 gal	16.0°	6.6	696	>200
↓	300 gal	15.8°	6.5	692	16
	350 gal	15.9°	6.6	687	4.5
	420 gal	15.9°	6.6	684	4.0

SAMPLE ANALYSES

	Parameters	Inv. No	Pres. Meth.	Filt. (Y/N)	
	VOAs TCL+10	02	4°	N	
	BNAs TCL+20	01	↓	↓	
	Pest/PCBs TCL	01			
	Metals TAL	01	HNO_3		70 NTUs
	Cyanide	01	NaOH		
	COD	01	H_2SO_4		
	TSS, TDS	01	4°		
MS	VOAs TCL	02	↓		
MS	BNAs TCL	01			
MS	Pest/PCBs TCL	01			
MS	Metals TAL	01	HNO_3		70 NTUs
MS	Cyanide	01	NaOH		
MSD	VOAs TCL	02	4°		
MSD	BNAs TCL	01	↓		
MSD	Pest/PCBs TCL	01			
MSD	Metals TAL	01	HNO_3		70 NTU
MSD	Cyanide	01	NaOH		

Air Temp: 60-65°F

Weather Conditions: Mostly Sunny, Lt Breeze

Comments:

No HNU or OVA readings above bckgd over purge water +/or well

* Total Environmental had us fill the following bottles: 4-1l Amber jars (4°), 1-250ml plas (4°) * and ½l Plas. (NaOH)
(We filled Total Envir 1l bottles w/ our 2l jugs, their ½l plas w/ our CNs + their 250ml pl. w/ our metals)

We collected MS/MSD samples at this well.

Crew Chief Signature: [illegible]

Date: 4/7/9	LAWLER, MATUSKY & SKELLY ENGINEERS	pH Meter: CP-1CP
Crew: JN DH	WELL DEVELOPMENT LOG	Cond. Meter: DEC 560
Job No: 526-047	WELL No. MW-1	Therm: 835
Site: Deffen	15 GPM	Turb. Meter: DEC 15C

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
1252	51.48						START
4.00		60	6.7	15.3	869	195	
12.00		180	6.6	15.3	801	99	
20.00		300	6.6	15.1	749	9	bottom of column
25.00							Surged - bottom
29.00		455	6.7	15.4	716	24	
34.00							SURGED - MIDDLE
36.00		540	6.6	15.0	668	67	
38.00							SURGED PUMP UP 2'
42.00		600	6.6	15.6	627	70	
45.00		645	6.4	15.5	620	11	
47.00							SURGED - BACK TO BOTTOM
[illegible]		780	6.5	15.6	580	8	UP TO MIDDLE
58.00		870	6.4	15.6	568	10	move to top
60.00		945	6.3	15.6	568	15	
65.00		975	6.3	15.6	558		END

Depth of Well: Start: [illegible] End: [illegible]

pumping water level: 52.2

NYSDEC013719

Date: 4.20.92	LAWLER, MATUSKY & SKELLY ENGINEERS	pH Meter: DEC Orion #4773
Crew: JM JMG	WELL DEVELOPMENT LOG	Cond. Meter: DEC TLC #560
Job No: 576-047	WELL No. MW-2	Therm: 849
Site: Depew Manuf.	10 gal/min	Turb. Meter: DEC DRT 15C

TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (µmhos/cm)	TURB. (NTUs)	COMMENTS
15:09	52.26						12 gal/min – pump on bottom
15:44		~300	6.54	14.3	253	180	
16:02							slowed to 10 gal/min
1609		550	6.54	14.6	253	95.5	
1615			6.58	14.4	252	20.5	
1620							surged
1622			6.64/6.83	14.8	250	+200	
1633			6.51	14.1/14.4	240	45.4	
1640							raised pump to middle and surged.
1644	58.25	900	6.69	14.9	254	>200	
1652			6.78	14.9/14.6	256/208*	61.0	* uncorr.
1656			6.67	14.9	253	36.5	* uncorr.
1700		1060	6.59	14.8	249/208*	>200	MOVE TO TOP & SURGE
1709	1722		6.6	14.7	250	32	17:33 - move to bottom
stop	1738		6.7	14.7	248	69	
7:11:30	1740						move to middle
	1750		6.7	15.0/14.5	251	84	
start	1800						move to top
	1806					72	
	1810		6.9	14.9	250	47.2	
	1813	57.95	~1600	6.8	14.8	246	28
	1816	Shut down pump					

Depth of Well: Start:_____ End:_____

NYSDEC013720

Date: 4-17-92	LAWLER, MATUSKY & SKELLY ENGINEERS	pH Meter: [illegible]
Crew: DK JM	WELL DEVELOPMENT LOG	Cond. Meter: DRC 560
Job No: 576-047	WELL No. MW3	Therm: 835-849
Site: DEPEW	15 gal/min	Turb. Meter: DRT 15T

MIP. TIME	SWL	GAL. PURGED	pH	TEMP. (°C)	SP. COND. (μmhos/cm)	TURB. (NTUs)	COMMENTS
START TIME 1440	53.62						START - PUMP
5.00		75	6.9	14.1	462	200	ON BOTTOM
10.00		150	6.7	14.9	455	155	
14.00							SURGED
20.00		315	6.7	14.2	[illegible]	165	
30.00		450	6.5	14.0	445	55	
35.00							PUMP UP 5' SURGED
40.00		6[illegible]	6.5	14.2	440	193	
50.00		750	6.5	[illegible]	439	45	
54.00							PUMP UP 4' SURGED
60.00		900	6.5	14.0	441	98	
65.00		960	6.5	[illegible]	442	49	
65.00							PUMP TO BOTTOM SURGED
70.00		1095	6.5	14.0	437	44	
74.00							PUMP UP 5' SURGED
80.00		1200	6.5	14.0	[illegible]	57	
85.00		1245	6.5	14.1	433	23	
84.00							PUMP UP 5' SURGED
90.00		1550	6.6	14.2	431	24	PUMP OFF
[illegible]							END

Depth of Well: Start: 53.62 End: [illegible]

NYSDEC013721

pumping water level: 54.46