PLUMLEY
ENGINEERING
Civil and Environmental Engineering

February 25, 2013

off site?
GM
Salina
734057

Ley Creek?
734074
John Grathwol

Mr. Kevin J. Kelly, P.E.
NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation, Region 7
615 Erie Boulevard West
Syracuse, New York 13204-2400

RE: Former National Plating
Town of Salina, Onondaga County, New York
DEC Site No. V00264
Project No. 2010150

Dear Mr. Kelly:

The additional investigation work outlined in the *Supplemental Investigation Work Plan.*[1] has been completed. This letter report is a supplement to our April 19, 2012 *Remedial Excavation Report*.

SCOPE OF WORK

On June 11, 2012, two additional groundwater monitoring wells (MW-5 and MW-6) were installed downgradient of the former sump area remedial excavation to investigate the groundwater quality.

A deep soil sample was collected from 6 to 8 feet below the ground surface at MW-5 and submitted to the laboratory for analysis of volatile organic compounds (VOCs) and metals.

[1] *Supplemental Investigation Work Plan*, prepared by Plumley Engineering, P.C., dated March 2011 and approved by the New York State Department of Environmental Conservation (DEC) on September 20, 2011.

☑ 8232 LOOP ROAD, BALDWINSVILLE, NY 13027
Telephone: (315) 638-8587 Fax: (315) 638-9740
☐ 200 NORTH GEORGE STREET, ROME, NY 13440
Telephone: (315) 281-1005 Fax: (315) 334-4394
Internet: www.plumleyeng.com

Replacement well MW-3A was installed following completion of the landfill remedial work. Since this well was replacing former well MW-3 and installed in clean backfill, only the auger cuttings were monitored for impacted soil. No impacted soil was observed during the installation of the well. Therefore, a soil sample was not collected from the soil boring (MW-3A).

Shallow soil borings SB-2 and SB-3 were completed and samples were collected from 0 to 2 feet below the ground surface. Samples were submitted for site contaminant list VOCs.

On June 22 and 25, 2012, Plumley Engineering collected groundwater samples from monitoring wells MW-1 through MW-6. All samples were submitted to Accutest Laboratories for analysis of Target Compound List (TCL) VOCs. The samples collected from MW-2 and MW-4 were also analyzed for TCL SVOCs, Target Analyte List (TAL) Metals and polychlorinated biphenyls (PCBs).

Refer to the attached *Figure 1 – Site Plan* for monitoring well and soil boring locations.

FINDINGS

Soil

The analytical results of the MW-5 soil sample indicated TCL VOCs were not present above the laboratory method detection limit (MDL) and all metals detected were below DEC unrestricted use soil cleanup objectives (SCOs).[2]

The analytical results from soil samples SB-2 and SB-3 showed no VOCs detected above the laboratory MDL.

Refer to the attached *Figure 1 – Site Plan, Table 1 – Summary of Soil Data* and *Laboratory Reports* for additional information.

---

[2]New York Codes, Rules and Regulations, Title 6 (6NYCRR), Part 375-6 for Unrestricted Use, dated December 2006.

Groundwater

No VOCs were detected above the laboratory MDL in the groundwater samples collected from monitoring wells MW-1 (upgradient) and MW-3A (cross-gradient). Two VOCs, cis-1,2-dichloroethane at 1.0 micrograms per liter (µg/L) and trichloroethene at 02.5 µg/L, were detected below State standards[3] in monitoring well MW-5 (downgradient). Two VOCs, chloroform at 1 µg/L and acetone at 28 µg/L, were detected below State standards in monitoring well MW-6.

Four VOCs, ranging from 1 to 13.7 µg/L, were detected in the groundwater sample from MW-2, located downgradient from the remedial excavation. Three of the four compounds detected were reported less than one order of magnitude above the State standards for benzene, trichloroethene and vinyl chloride. Cis-1,2-dichloroethene was detected at one order of magnitude above the State standard. Additional laboratory testing indicated no SVOCs or PCBs were detected above the laboratory MDL and five metals were reported above the State standards.

Total VOCs were reported at 146,000 µg/L in the remedial excavation well MW-4. One SVOC was detected well below the State standard. PCBs were not detected above the laboratory MDL and five metals were reported above the State standards.

Refer to the attached *Figure 1 – Site Plan*, *Table 2 – Summary of Groundwater Data* and *Laboratory Reports* for additional information.

Groundwater Flow Direction

Groundwater elevations were measured in all wells on February 11, 2013 and a groundwater contour map prepared. The general groundwater flow direction is to the south toward MW-2. Refer to the attached *Figure 1 – Site Plan* and *Table 3 – Groundwater Elevation Data* for additional information.

---

[3]DEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, *Ambient Water Quality Standards and Guidance Values*, dated June 1998 and April 2002 Addendum.

CONCLUSIONS

The groundwater elevation data indicates the monitoring wells are properly positioned to characterize groundwater conditions downgradient of the sump.

Subsurface soil sample MW-5 and surface soil samples SB-2 and SB-3 indicated VOC levels are not present and metals detected in the MW-5 soil sample were below SCOs.

Groundwater VOC concentrations show low or no impacts in the downgradient monitoring wells MW-2 and MW6. VOC concentrations have decreased in monitoring well MW-2 since the last sample was collected in 2004. Outlying wells MW-1, MW-3A and MW-5 indicated non-detectable VOC concentrations.

The sample from monitoring well MW-4, located in the remedial excavation of the former sump, showed several VOCs exceeding State standards.

Metals analysis indicated cadmium and chromium concentrations exceeded State standards in the sump well and downgradient wells MW-2 and MW-6. Iron, manganese and sodium also exceeded State standards in these three wells.

Although groundwater concentrations in the former sump area remain high, the relatively low impact downgradient suggests the residual source is relatively small. The source is likely associated with a small amount of impacted soil that could not be removed during the remediation excavation.

RECOMMENDATIONS

Plumley Engineering recommends implementing an Interim Remedial Measure (IRM) program consisting of injection of a chemical oxidant into the former sump location (MW-4). Three injection events are recommended to be completed in March, June and August 2013.

The next groundwater sampling event should be conducted in October 2013 and include MW-2, MW-4 and MW-6 to assess the effectiveness of the program.

Please review this information and contact us if you have any questions.

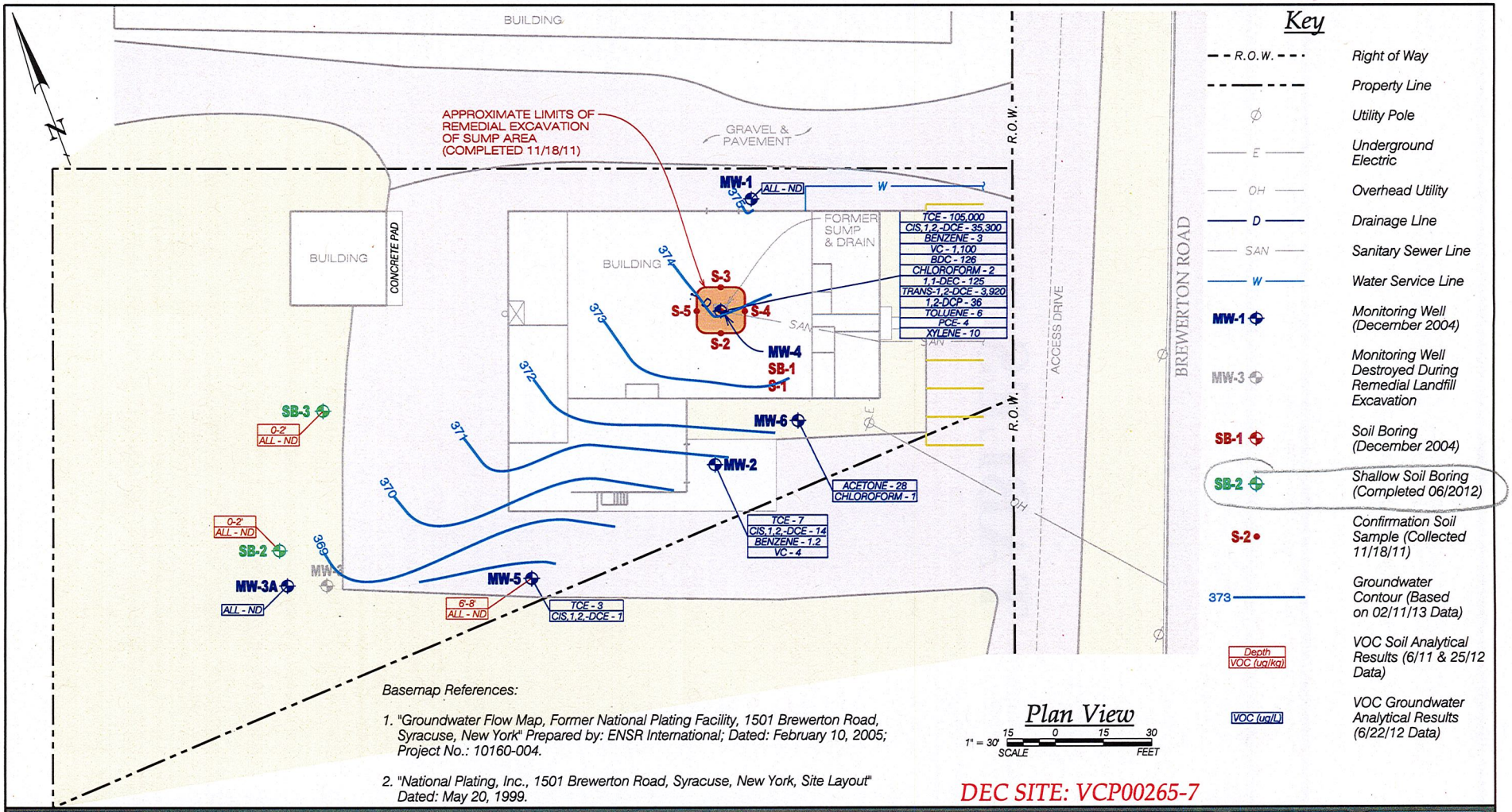
Sincerely,

PLUMLEY ENGINEERING, P.C.

Dale R. Vollmer, P.E.

DRV/DTH/cas
Attachments
cc: Mr. Dennis Hile (w/attachments)

FIGURE



Key

- R.O.W. — Right of Way
- Property Line
- Utility Pole
- E — Underground Electric
- OH — Overhead Utility
- D — Drainage Line
- SAN — Sanitary Sewer Line
- W — Water Service Line
- MW-1 — Monitoring Well (December 2004)
- MW-3 — Monitoring Well Destroyed During Remedial Landfill Excavation
- SB-1 — Soil Boring (December 2004)
- SB-2 — Shallow Soil Boring (Completed 06/2012)
- S-2 • — Confirmation Soil Sample (Collected 11/18/11)
- 373 — Groundwater Contour (Based on 02/11/13 Data)
- Depth / VOC (ug/kg) — VOC Soil Analytical Results (6/11 & 25/12 Data)
- VOC (ug/L) — VOC Groundwater Analytical Results (6/22/12 Data)

Basemap References:

1. *"Groundwater Flow Map, Former National Plating Facility, 1501 Brewerton Road, Syracuse, New York" Prepared by: ENSR International; Dated: February 10, 2005; Project No.: 10160-004.*
2. *"National Plating, Inc., 1501 Brewerton Road, Syracuse, New York, Site Layout" Dated: May 20, 1999.*

Plan View

1" = 30' SCALE — 15 0 15 30 FEET

DEC SITE: VCP00265-7

PLUMLEY ENGINEERING
Civil and Environmental Engineering
PLUMLEY ENGINEERING, P.C.
8232 LOOP ROAD
BALDWINSVILLE, NY 13027
TELEPHONE: (315) 638-8587
FAX: (315) 638-9740
WWW.PLUMLEYENG.COM

REVISIONS: DATE: BY:

PROJECT: FORMER NATIONAL PLATING
DWG. TITLE: SITE PLAN
CLIENT: D.H.J. REALTY CORP.
LOCATION: TOWN OF SALINA, ONONDAGA COUNTY, NEW YORK

PROJECT No.:	2010150
FILE NAME.:	GWC_02-11-13
SCALE:	AS NOTED
DATE:	FEB. 2013
ENG'D BY:	DTH
DRAWN BY:	JMD
CHECKED BY:	DRV

SHEET NO.: FIGURE 1

TABLES

FORMER NATIONAL PLATING FACILITY
Town of Salina, Onondaga County, New York
VCP Site No. V00264

TABLE 1 - SUMMARY OF SOIL DATA

Client Sample ID:	Units	DEC SCO Unrestricted Use[1]	MW-5 (SOIL 6'-8'BGS)	SB-2	SB-3
Date Sampled:			6/11/2012	6/25/2012	6/25/2012
GC/MS Volatiles (SW846 8260B)					
Acetone	mg/kg	0.050	ND	ND	ND
Benzene	mg/kg	0.060	ND	ND	ND
Bromodichloromethane	mg/kg	NS	ND	ND	ND
Bromoform	mg/kg	NS	ND	ND	ND
Bromomethane	mg/kg	NS	ND	ND	ND
2-Butanone (MEK)	mg/kg	0.120	ND	ND	ND
Carbon disulfide	mg/kg	NS	ND	ND	ND
Carbon tetrachloride	mg/kg	0.760	ND	ND	ND
Chlorobenzene	mg/kg	1.100	ND	ND	ND
Chloroethane	mg/kg	NS	ND	ND	ND
Chloroform	mg/kg	0.370	ND	ND	ND
Chloromethane	mg/kg	NS	ND	ND	ND
Dibromochloromethane	mg/kg	NS	ND	ND	ND
1,1-Dichloroethane	mg/kg	0.270	ND	ND	ND
1,2-Dichloroethane	mg/kg	0.020	ND	ND	ND
1,1-Dichloroethene	mg/kg	0.330	ND	ND	ND
cis-1,2-Dichloroethene	mg/kg	0.250	ND	ND	ND
trans-1,2-Dichloroethene	mg/kg	0.190	ND	ND	ND
1,2-Dichloropropane	mg/kg	NS	ND	ND	ND
cis-1,3-Dichloropropene	mg/kg	NS	ND	ND	ND
trans-1,3-Dichloropropene	mg/kg	NS	ND	ND	ND
Ethylbenzene	mg/kg	1.000	ND	ND	ND
2-Hexanone	mg/kg	NS	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	mg/kg	NS	ND	ND	ND
Methylene chloride	mg/kg	0.050	ND	ND	ND
Styrene	mg/kg	NS	ND	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	NS	ND	ND	ND
Tetrachloroethene	mg/kg	1.300	ND	ND	ND
Toluene	mg/kg	0.700	ND	ND	ND
1,1,1-Trichloroethane	mg/kg	0.680	ND	ND	ND
1,1,2-Trichloroethane	mg/kg	NS	ND	ND	ND
Trichloroethene	mg/kg	0.470	ND	ND	ND
Vinyl chloride	mg/kg	0.020	ND	ND	ND
Xylene (total)	mg/kg	0.260	ND	ND	ND
Metals Analysis					
Aluminum	mg/kg	NS	5,200	NA	NA
Antimony	mg/kg	NS	<0.90	NA	NA
Arsenic	mg/kg	13	3.2	NA	NA
Barium	mg/kg	350	54.6	NA	NA
Beryllium	mg/kg	7.2	<0.36	NA	NA
Cadmium	mg/kg	2.5	1.7	NA	NA
Calcium	mg/kg	NS	129,000	NA	NA
Chromium	mg/kg	NS	13.4	NA	NA
Cobalt	mg/kg	NS	<4.5	NA	NA
Copper	mg/kg	50	9.8	NA	NA
Iron	mg/kg	NS	9,520	NA	NA
Lead	mg/kg	63	6.5	NA	NA
Magnesium	mg/kg	NS	25,800	NA	NA
Manganese	mg/kg	1,600	194	NA	NA
Mercury	mg/kg	0.18	<0.034	NA	NA
Nickel	mg/kg	30	11.1	NA	NA
Potassium	mg/kg	NS	1010	NA	NA
Selenium	mg/kg	3.9	<0.90	NA	NA
Silver	mg/kg	2	0.5	NA	NA
Sodium	mg/kg	NS	<450	NA	NA
Thallium	mg/kg	NS	<0.90	NA	NA
Vanadium	mg/kg	NS	12.7	NA	NA
Zinc	mg/kg	109	27.8	NA	NA

Notes: **Legend:** Hit | **Exceed**

[1]New York Codes, Rules and Regulations, Title 6 (6NYCRR), Part 375-6 for Unrestricted Use, dated December 2006.

µg/kg micrograms per kilogram, equivalent to parts per billion (ppb)
mg/kg milligrams per kilogram, equivalent to parts per million (ppm)
ND Not detected less than NS No State standard NA Not Analyzed

FORMER NATIONAL PLATING FACILITY
Town of Salina, Onondaga County, New York
VCP Site No. V00264

"Sump"

TABLE 2 - SUMMARY OF GROUNDWATER DATA

Client Sample ID:	Units	State Standard[1]	MW-1		MW-2		MW-3	MW-3A	MW-4	MW-5	MW-6
Date Sampled:			12/21/04	6/22/2012	12/21/04	6/22/2012	12/21/04	6/22/2012	6/22/2012	6/22/2012	6/22/2012
GC/MS Volatiles (SW846 8260B)											
Acetone	µg/L	NS	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	28
Benzene	µg/L	0.7	ND (0.50)	ND (0.50)	ND (1.0)	**1.2**	ND (0.50)	ND (0.50)	**3**	ND (0.50)	ND (0.50)
Bromodichloromethane	µg/L	NS	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	4	ND (1.0)	126	ND (1.0)	ND (1.0)
Chlorobenzene	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)
Chloroform	µg/L	7	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	2	ND (1.0)	1
1,1-Dichloroethene	µg/L	5	ND (1.0)	ND (1.0)	0.58	ND (1.0)	ND (1.0)	ND (1.0)	**125**	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	µg/L	5	ND (1.0)	ND (1.0)	**200**	**14**	ND (1.0)	ND (1.0)	**35,300**	1	ND (1.0)
trans-1,2-Dichloroethene	µg/L	5	ND (1.0)	ND (1.0)	**10**	ND (1.0)	ND (1.0)	ND (1.0)	**3,920**	ND (1.0)	ND (1.0)
1,2-Dichloropropane	µg/L	1	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	**36**	ND (2.0)	ND (2.0)
Tetrachloroethene (PCE)	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	4	ND (1.0)	ND (1.0)
Toluene	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**6**	ND (1.0)	ND (1.0)
Trichloroethene (TCE)	µg/L	5	ND (1.0)	ND (1.0)	**170**	**7**	ND (1.0)	ND (1.0)	**105,000**	3	ND (1.0)
Vinyl chloride	µg/L	2	ND (1.0)	ND (1.0)	**30**	**4**	ND (1.0)	ND (1.0)	**1,100**	ND (1.0)	ND (1.0)
Xylene (Total)	µg/L	5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**10**	ND (1.0)	ND (1.0)
GC/MS Semi-Volatiles (SW846 8270C)											
Naphthalene	µg/L	10	NA	NA	NA	ND (1.9)	NA	NA	3	NA	NA
Metals Analysis											
Aluminum	µg/L	NS	1,000	NA	<200	15,400	NA	NA	1,540	NA	NA
Arsenic	µg/L	25	<10	NA	<10	5	NA	NA	<4.0	NA	NA
Barium	µg/L	1,000	201	NA	236	207	NA	NA	142	NA	NA
Cadmium	µg/L	5	<1	NA	**33**	**22**	NA	NA	**56**	NA	NA
Calcium	µg/L	NS	16,200	NA	177,000	118,000	NA	NA	114,000	NA	NA
Chromium	µg/L	50	<4	NA	**38**	**104**	NA	NA	**53**	NA	NA
Hexavalent Chromium (Total)	µg/L	50	<0.01	NA	0.028	<10	NA	NA	<10	NA	NA
Cobalt	µg/L	NS	<4	NA	4	<50	NA	NA	<50	NA	NA
Copper	µg/L	200	10	NA	<10	31	NA	NA	<25	NA	NA
Iron	µg/L	300	**1,050**	NA	97	**16,700**	NA	NA	**2,570**	NA	NA
Lead	µg/L	25	<5	NA	<5	10	NA	NA	8	NA	NA
Magnesium	µg/L	NS	35,900	NA	44,200	29,000	NA	NA	19,300	NA	NA
Manganese	µg/L	300	**6,880**	NA	**3,370**	**614**	NA	NA	**2,190**	NA	NA
Nickel	µg/L	100	10	NA	39	<40	NA	NA	77	NA	NA
Potassium	µg/L	NS	40,500	NA	14,600	13,000	NA	NA	13,100	NA	NA
Sodium	µg/L	20,000	**433,000**	NA	**326,000**	**76,300**	NA	NA	**323,000**	NA	NA
Vanadium	µg/L	NS	<5	NA	<5	25	NA	NA	<10	NA	NA
Zinc	µg/L	NS	<20	NA	<20	35	NA	NA	65	NA	NA

Notes:

[1]DEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, *Ambient Water Quality Standards and Guidance Values* , dated June 1998 and April 2002 Addendum.
Non-detected levels are denoted by ND(1.0), <10
µg/L micrograms per liter, equivalent to parts per billion (ppb)
NS No State standard
NA Not Analyzed
No PCBs were detected in the groundwater.

Legend: Hit | Exceed

FORMER NATIONAL PLATING FACILITY
Town of Salina, Onondaga County, New York
VCP Site No. V00264

TABLE 3 - GROUNDWATER ELEVATION DATA

Monitoring Well Construction Data	Monitoring Well					
	MW-1	MW-2	MW-3A	MW-4	MW-5	MW-6
Rim Elevation (feet)[1]	378.55	375.22	373.36	378.84	374.19	377.12
Ground Surface Elevation	378.92	375.59	373.65	379.12	374.79	377.75
Depth of Well (feet)	13.5	12.5	13.7	8.3	10.5	12.50
Bottom of Well Elevation (feet)	365.1	362.7	359.7	370.6	363.7	364.6
Well Diameter (inches)	2	2	2	4	2	2
Date	**Groundwater Elevation (feet)**					
	MW-1	MW-2	MW-3A	MW-4	MW-5	MW-6
06/18/2012	374.84	371.90	367.53	373.91	367.63	366.41
06/22/2012	374.80	372.32	367.50	373.89	367.54	366.32
06/25/2012	NM	372.07	NM	375.39	NM	NM
09/18/2006	376.13	371.70	369.47	375.11	368.60	373.51

Notes:

[1]Rim elevation data is based on rim elevation of MW-1 reported by ENSR in the February 2005 Site Investigation Report.
NM Well Not Measured