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DATE: August 14, 2008

TO: Jeff Catanzarita, U.S. EPA/ERT Work Assignment Manager

THROUGH: Dennis Miller, REAC Operations Section Leader

FROM: Scott Grossman, REAC Task Leader

SUBJECT: PREFERRED PLATING SITE
WORK ASSIGNMENT EAC00276 – **DRAFT FINAL TRIP REPORT**

PURPOSE

This trip report presents the results of an environmental investigation conducted at the Preferred Plating site from September 24 through 26, 2007 by Lockheed Martin Response Engineering and Analytical Contract (REAC) personnel in consultation with the Environmental Protection Agency (EPA) Environmental Response Team (ERT) Work Assignment Manager (WAM). The purpose of this investigation was to determine residual chromium and cadmium source areas of soil and groundwater contamination at a former plating facility in Farmingdale, New York (NY). The project was initiated under REAC Work Assignment (WA) No. 0-276.

SITE DESCRIPTION AND BACKGROUND

The Preferred Plating Corporation site was the location of plating operations from 1951 until 1976, when the company filed for bankruptcy. The primary activities at the site included chemically treating metal parts to increase their corrosion resistance and to provide them with a cohesive base for painting. The plating processes included degreasing, cleaning, and surface finishing of metal parts. These processes involved the use of various chemicals and resulted in the generation, storage and disposal of hazardous waste. Untreated wastewater, produced by rinsing the metal parts between each process, was discharged to four concrete leaching pits located directly behind the former building. The leaching pits were cracked, allowing wastewater to be leak into the groundwater. The property was subsequently sold and in 1982, the new owner backfilled the leaching pits and constructed a building over them. An automobile repair shop and other businesses now occupy the site.

In 1986 the site was placed on the National Priorities List (NPL). In 1994, as required by the Operable Unit 2 Record of Decision (OU2 ROD), 1,500 tons of contaminated soil were excavated and disposed at an off-site location. After the removal, an amendment to the Record of Decision ROD specified there

was no need for an active groundwater treatment system on the site and, instead, a long-term groundwater monitoring program was implemented to monitor the natural attenuation of the site contaminants.

Based upon implementation of the monitoring plan, VOCs are no longer considered a problem on the site. However, cadmium and chromium concentrations, initially decreased after the removal, but have recently been increasing. After the removal, cadmium was typically detected at concentrations between 30 and 50 parts per billion (ppb), but in the last three rounds of sampling, cadmium was detected at concentrations between 161 ppb and 350 ppb. The highest concentration was detected in the last round of sampling in January 2007.

ACTIVITIES

On September 24 through 26, 2007 REAC personnel used a Geoprobe Model 6620DT (5400) hydraulic direct-push device to install seven monitor wells (ERT-01 through ERT-07) and collect soil borings. Five locations (ERT-01 through ERT-05) were on the site near the former leaching pits (removal area) and two locations (ERT-06 and ERT-07) were down gradient of the site in a parking lot on the south side of Allen Boulevard across the street from the site.

All wells were constructed with 0.75-inch (outside diameter [O.D.]) schedule 40 polyvinyl chloride (PVC) pipe. The screen sections were constructed of 0.010-inch, slotted PVC surrounded with factory-packed ("pre-packed") sand enclosed in wire mesh. All wells, except ERT-07, were installed with 15 feet of screen (extending 2 to 5-feet above the water table) and with a well depth of 25 to 27 feet below ground surface (bgs). ERT-07 was installed as a deep well adjacent to ERT-06. ERT-07 had 10 feet of screen and a well depth of 40 feet bgs. The water table was encountered at approximately 15 to 17 feet bgs at the time the wells were installed.

The annular space was filled with coarse sand to approximately 2-feet above the top of the screen and then granular bentonite to about 1-foot below ground surface (bgs). About 6 to 10 inches of concrete was placed on top of the bentonite to secure the protective casings. All monitor wells, except ERT-05 were completed using a concrete flush mount casing. The inner casing on ERT-05 extended 2.8 feet above the ground surface and then a standard locking metal stick-up protective wellhead cover was installed over the inner casing. After the wells were completed, they were all developed using a peristaltic pump. During development, a minimum of 15 gallons of water was purged from each well. Well construction details are provided in Table 1. Monitor well locations are included in Figure 1.

The wells described above were installed after a cased borehole was advanced and soil borings were collected. All soil borings were assessed and soils that showed signs of contamination (staining or odor) were sampled by transferring a 1-foot section of the core using a decontaminated, or dedicated spoon or trowel to a labeled 8-ounce glass jar. All samples were collected in accordance with REAC SOP #2012, *Soil Sampling*. All soil samples were maintained in a sample cooler on wet ice under the task leader's custody. The soil samples were submitted to the ERT/REAC Laboratory in Edison, NJ for Target Analyte List (TAL) metal analyses. Based on total chromium results, splits of several soil samples were submitted to a contract laboratory for hexavalent chromium and sulfate analyses. At the request of the WAM, only cadmium and chromium data were validated.

Between February 19 and 21, 2008 the EPA Region II Division of Environmental Science and Assessment (DESA), Hazardous Waste Support Branch (HWSB), Superfund Support Team (SST) conducted a groundwater-sampling event at the site. A REAC scientist member traveled to the site on February 19, 2008 to meet with DESA personnel to go over ERT well locations and provide them with a well location map and well construction data.

The EPA Region II DESA sampling event encompassed all the wells on the site including the newly constructed ERT wells (EPA Region II 2008). All sampling was conducted in accordance with the EPA Region II, *Ground Water Sampling Procedure - Low Stress (Low Flow) Purging and Sampling*. The ERT wells were sampled using a peristaltic pump; water samples were submitted to the EPA Region II Laboratory for TAL metals and cyanide analyses.

RESULTS

Soil Borings

A total of eight soil boring samples were collected. All samples were submitted for TAL metals analyses and, based on these results, a subset was submitted for hexavalent chromium and sulfate analyses. Table 2 contains a summary of the analytical data for the soil boring samples. Complete analytical results are included in Appendix A, which contains the Final Analytical Report. Cadmium ranged from not detected above the reporting limit (ND) to 13.2 milligrams per kilogram (mg/kg), total chromium ranged from 4.40 to 84.5 mg/kg, and hexavalent chromium ranged from 1.36 to 2.68 mg/kg. The highest cadmium concentrations were found at location ERT-MW02 while the highest chromium concentrations were found at locations ERT-MW03 and ERT-MW04. For chromium, the highest concentrations at each respective location was found in the deeper of the two samples collected, while for cadmium, the highest concentration was found in the shallower of the two samples collected. Based on the limited data available, hexavalent chromium does not appear to correlate directly with total chromium concentrations and typically represented 2 to 4 percent of the total chromium in each sample.

Groundwater Analyses

EPA Region II DESA collected and analyzed groundwater samples for TAL metals and cyanide for all ERT wells between February 19 and 21, 2008 (EPA Region II, 2008). Table 2 contains a summary of the analytical data for the groundwater samples. A copy of the EPA Region II DESA Sampling Report is included in Appendix B.

Cadmium in the groundwater ranged up to 160 micrograms per liter (ug/L), chromium ranged up to 120 ug/L, and cyanide ranged up to 71 ug/L. The highest chromium, cadmium, and cyanide concentrations were detected at location ERT-02. In general, the cadmium and chromium concentrations in the five on-site wells were similar to the cadmium and chromium concentrations in the shallow down-gradient well (ERT-06), but neither cadmium, chromium, or cyanide was detected in concentrations above the reporting limit in the deep down gradient well (ERT-07). In addition to chromium, cadmium and cyanide, nine other TAL metals (aluminium, calcium, iron, magnesium, manganese, potassium, sodium, nickel and zinc) were detected at concentrations above the reporting limit in the groundwater samples.

REFERENCES

EPA Region II. 2008. Superfund Support Team, Sampling Report for the Preferred Plating Site in Farmingdale, Suffolk County, New York, February 19 – 21, 2008.

EPA Region II. 1996. *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells*. Region 3. Standard Operating Procedure #GW0001, Revision 2. July.

Puls, R.W. and M.J. Barcelona, 1996. A Low-Flow (Minimal Drawdown) Ground-water Sampling Procedures. U.S. EPA, Ground Water Issue, Publication Number EPA/540/S-95/504, April 1996.

Table 1
Monitor Well Construction Data
Preferred Plating
Farmingdale, NY
August 2008

Well	Well Depth*	Screen Length
ERT-1	25.2	15
ERT-2	25.8	15
ERT-3	25.8	15
ERT-4	25.4	15
ERT-5**	25.6	15
ERT-6	27.0	15
ERT-7	40.0	10

*Well depths reported in feet below ground surface.
**ERT-5 stick-up on inner casing is 2.83 feet above ground surface and stick-up on outter casing is 3.0 feet above ground surface.

Construction Notes:

- Wells were constructed of 0.75" PVC (prepack wells) installed using direct push methodology.
- All protective casings are flush mount except ERT-5
- Annular space was filled with coarse sand to approximately 2 feet above the top of the screen and granular bentonite to about 1 foot bgs. About 6 to 10 inches of concrete was placed on top of the bentonite to secure the protective casings.

Table 2
Cadmium, Chromium (Total and Hexavalent) and Sulfate Concentrations in Soil Boring Samples
Preferred Plating Site
Farmingdale, NY
August 2008

All Concentrations in milligrams/kilogram (mg/kg), dry weight

Sample Location	Sample Number	Cadmium	Total Chromium	Hexavalent Chromium*	Sulfate*
ERT-MW01-16 to 17	10261	ND	4.40	NA	NA
ERT-MW01-18 to 19	10262	0.699	4.44	NA	88.2
ERT-MW02-16 to 17	10263	13.2	26.5	NA	NA
ERT-MW02-19 to 20	10264	3.36	22.6	NA	125
ERT-MW03-16 to 17	10265	0.829	47.4	1.64	NA
ERT-MW03-19 to 20	10266	2.48	83.5	2.33	125
ERT-MW04-16 to 17	10267	0.729	65.7	2.68	NA
ERT-MW04-19 to 20	10268	1.14	84.5	1.36	247

ND = Not Detected above the Reporting Limit (0.351 mg/kg)
NA = Not Analyzed
*Data not validated at the request of the Work Assignment Manager.

Table 3
TAL Metal Concentrations in Groundwater Samples
Preferred Plating Site
Farmingdale, NY
August 2008

All concentrations in micrograms/liter (ug/L)

	ERT-01	ERT-02	ERT-03	ERT-04	ERT-05	ERT-06	ERT-07
Aluminum	120	110	250	ND	ND	ND	ND
Cadmium	24	160	11	3.2	54	54	ND
Calcium	17,000	27,000	22,000	19,000	15,000	15,000	16,000
Chromium	30	120	110	45	79	80	ND
Cyanide	55	71	57	24	ND	ND	ND
Iron	57	1300	540	ND	ND	ND	ND
Magnesium	3,000	4,500	2,600	1,900	1,900	1,800	3,200
Manganese	15	35	14	ND	ND	ND	ND
Potassium	890	2,700	1,800	1,700	2,600	2,600	1,700
Sodium	8,800	11,000	17,000	13,000	8,600	8,600	16,000
Nickel	ND	25	ND	ND	ND	ND	ND
Zinc	46	ND	33	ND	40	40	ND

ND = Not Detected above the Reporting Limit
Groundwater data from EPA Region II DESA (EPA Region 2, 2008)

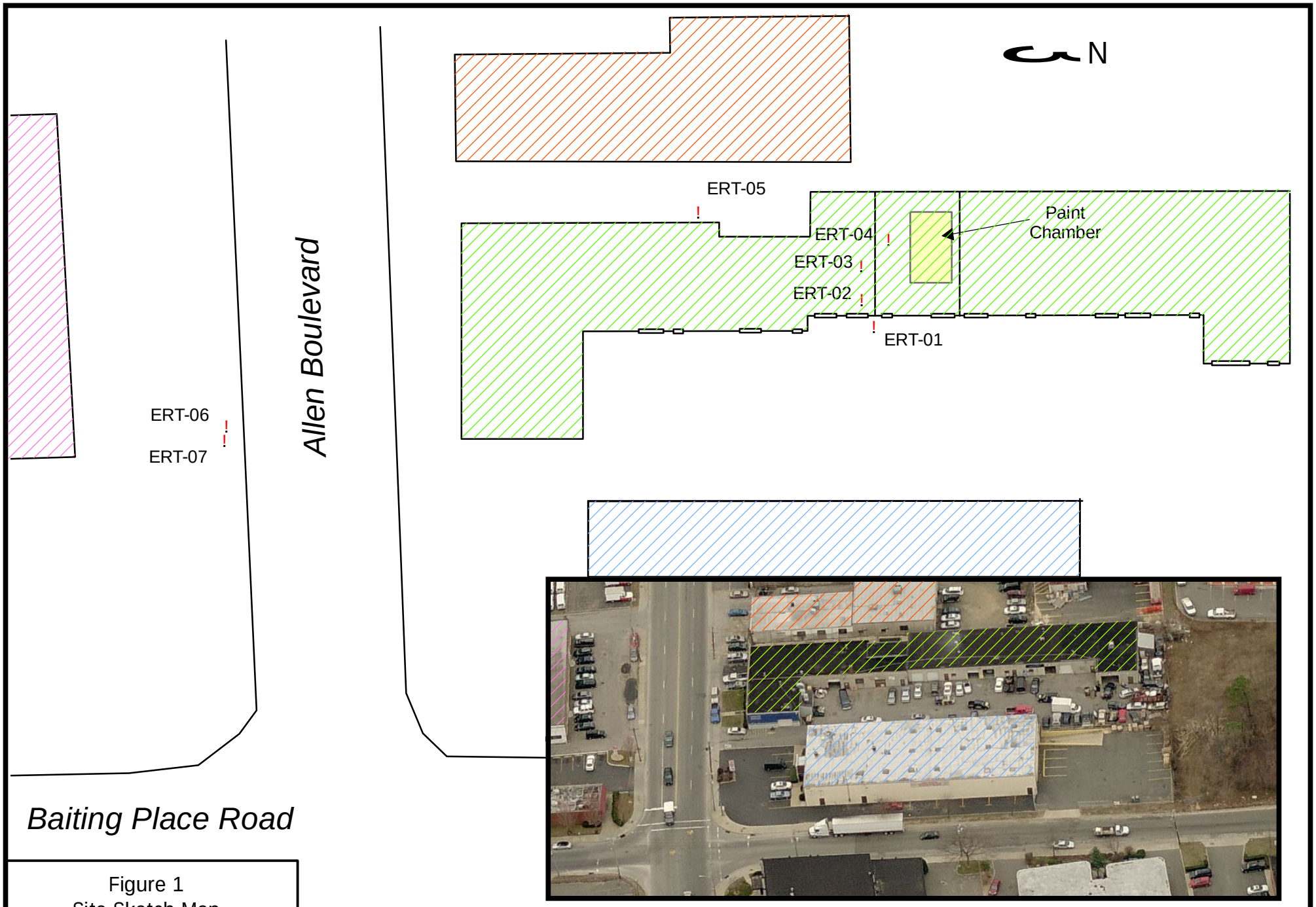

Figure 1
Site Sketch Map
ERT Well Locations
Preferred Plating Site
Farmingdale, New York

U.S. EPA Environmental Response Team
Response Engineering and Analytical Contract
EP-C-05-032
WA # 0-276

APPENDIX A
ANALYTICAL REPORT
Preferred Plating Site
East Farmingdale, New York
August 2008

Lockheed Martin Technology Services
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LOCKHEED MARTIN

DATE: December 10, 2007

TO: R. Singhvi, EPA/ERT Analytical Work Assignment Manager

FROM: V. Kansal, REAC Analytical Section Leader

SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 0-276

Attached please find the following document prepared under this work assignment:

Preferred Plating Site - Analytical Report

J Catanzarita	Work Assignment Manager (w/o attachment)
S. Grossman	Task Leader (w/o attachment)
J. Soroka	Data Validation and Report Writing Group Leader (w/o attachment)
Central File WA # 0-276	(w/attachment)

ANALYTICAL REPORT

Prepared by
LOCKHEED MARTIN, Inc.

Preferred Plating Site
Farmingdale, New York

December 2007

EPA Work Assignment No. 0-276
LOCKHEED MARTIN Work Order EAC00276
EPA Contract No. EP-C-04-032

Submitted to
J. Catanzarita
EPA-ERT

V. Kantal — 12/4/07
V. Kantal — Date
Analytical Section Leader

Analysis by:
REAC

D. Killeen — 12/3/07
D. Killeen — Date
Quality Assurance Officer

Prepared by:
Y. Mehra

D. Miller — 12/7/07
D. Miller — Date
Program Manager

Reviewed by:
J. Soroka

Table of Contents

Appendices will be furnished on request

Introduction

REAC, in response to WA#-276, provided analytical support for environmental samples collected from the Preferred Plating Site in Farmingdale, NY as described in the following table. The support also included QA/QC, data review and preparation of an analytical report containing analytical and QA/QC results.

The samples were treated with procedures consistent with those specified in REAC SOP #1008.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis/ Method	Laboratory	Data Package
40555	6	9/25/07	10/1/07	Soil	TAL Metals/REAC SOP 1811	REAC[1]	S 298
	2	9/26/07					
40554	3	9/25/07	9/26/07		Hexavalent Chromium /Method SM 3500D	ETL	S 357
	1	9/26/07					
	3	9/25/07			Sulfate/EPA Method 375.4		
	1	9/26/07					

[1] REAC is NELAP certified for TAL metals

Case Narrative

The laboratory reported the data to three significant figures. Any other representation of the data is the responsibility of the user. All data validation flags have been inserted into the results tables. At the request of the WAM, samples were analyzed for TAL metals and only validated for cadmium and chromium. No QC evaluation or validation was performed on the other metal results.

TAL Metals in Soil Package S 298

The data package was examined and found to be acceptable for the cadmium and chromium analyses.

Hexavalent Chromium and Sulfate in Soil Package S 357

As requested by the WAM, no data validation was done on this package.

Summary of Abbreviations

BFB	Bromofluorobenzene
C	Centigrade
CLP	Contract Laboratory Program
COC	Chain of Custody
conc	concentration
cont	continued
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
D	(Surrogate Table) value is from a diluted sample and was not calculated
Dioxin	denotes Polychlorinated dibenzo-p-dioxins (PCDD) and Polychlorinated dibenzofurans (PCDF)
DFTPP	Decafluorotriphenylphosphine
EMPC	Estimated maximum possible concentration
GC/MS	Gas Chromatography/ Mass Spectrometry
IS	Internal Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS (BS)	Matrix Spike (Blank Spike)
MSD (BSD)	Matrix Spike Duplicate (Blank Spike Duplicate)
MW	Molecular Weight
NA	Not Applicable or Not Available
NC	Not Calculated
NR	Not Requested
NS	Not Spiked
% D	Percent Difference
% REC	Percent Recovery
SOP	Standard Operating Procedure
ppbv	parts per billion volume
ppm	parts per million
pptv	parts per trillion volume
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
QL	Quantitation Limit
REAC	Response Engineering and Analytical Contract
RL	Reporting Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SIM	Selected Ion Monitoring
Sur	Surrogate
TAL	Target Analyte List
TIC	Tentatively Identified Compound
TCLP	Toxicity Characteristic Leaching Procedure
VOC	Volatile Organic Compounds
*	Value exceeds the acceptable QC limits.

m^3	cubic meter	g	gram	kg	kilogram	L	liter
µg	microgram	µL	microliter	mg	milligram	ml	milliliter
ng	nanogram	pg	picogram				

Data Validation Flags

J	Value or Reporting limit is estimated
J+	Value is estimated high (metals only)
J-	Value is estimated low (metals only)
R	Value is unusable
U	Not detected
UJ	Not detected and reporting limit estimated

Rev. 11/20/06

Table 1.1 Results of the Analysis for Metals in Soil
WA # 0-276 Preferred Plating Site
Results Based on Dry Weight
ONLY CADMIUM AND CHROMIUM RESULTS WERE VALIDATED
NO QC EVALUATION / VALIDATION HAS BEEN PERFORMED ON THE OTHER METALS

Method REAC SOP 1811

Sample No.	Method Blank-100107		10261		10262		10263		10264	
Location	Lab		ERT-MW01-16 TO 17		ERT-MW01-19 TO 20		ERT-MW02-16 TO 17		ERT-MW02-19 TO 20	
% Solids	100		87		81		93		86	
Analyte	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg
Aluminum	U	20.0	881	17.5	630	17.6	513	17.2	301	16.6
Antimony	U	1.40	U	1.23	U	1.23	U	1.20	U	1.16
Arsenic	U	1.50	U	1.32	U	1.32	U	1.29	U	1.25
Barium	U	0.400	2.17	0.351	2.07	0.353	2.92	0.344	3.41	0.332
Beryllium	U	0.300	U	0.263	U	0.265	U	0.258	U	0.249
Cadmium	U	0.400	U	0.351	0.699	0.353	13.2	0.344	3.36	0.332
Calcium	U	9.90	42.2	8.69	13.9	8.73	61.4	8.52	53.3	8.22
Chromium	U	0.500	4.40	0.439	4.44	0.441	26.5	0.430	22.6	0.415
Cobalt	U	0.400	0.571	0.351	U	0.353	U	0.344	U	0.332
Copper	U	0.400	3.51	0.351	5.06	0.353	16.5	0.344	8.61	0.332
Iron	U	15.0	1350	13.2	927	13.2	1480	12.9	969	12.5
Lead	U	1.00	U	0.877	0.899	0.882	10.7	0.860	17.5	0.831
Magnesium	U	20.0	401	17.5	103	17.6	192	17.2	87.1	16.6
Manganese	U	0.400	16.9	0.351	10.2	0.353	10.0	0.344	4.52	0.332
Nickel	U	0.600	1.89	0.526	1.77	0.529	4.70	0.516	1.07	0.498
Potassium	U	25.0	60.2	21.9	61.6	22.0	89.0	21.5	68.6	20.8
Selenium	U	1.30	U	1.14	U	1.15	U	1.12	U	1.08
Silver	U	0.500	U	0.439	U	0.441	U	0.430	U	0.415
Sodium	U	100	U	87.7	U	88.2	U	86.0	U	83.1
Thallium	U	1.70	U	1.49	U	1.50	U	1.46	U	1.41
Vanadium	U	0.400	2.57	0.351	1.37	0.353	2.18	0.344	1.87	0.332
Zinc	U	3.10	5.80	2.72	4.59	2.73	29.2	2.67	8.88	2.57

Method REAC SOP 1811

Sample No.	10265		10266		10267		10268	
Location	ERT-MW03-16 TO 17		ERT-MW03-19 TO 20		ERT-MW04-16 TO 17		ERT-MW04-19 TO 20	
% Solids	84		86		84		87	
Analyte	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg	Result mg/kg	RL mg/kg
Aluminum	385	18.7	491	17.8	698	18.6	556	17.0
Antimony	U	1.31	U	1.24	U	1.30	U	1.19
Arsenic	U	1.41	U	1.33	U	1.40	U	1.28
Barium	1.41	0.375	3.07	0.355	2.33	0.372	2.79	0.341
Beryllium	U	0.281	U	0.266	U	0.279	U	0.255
Cadmium	0.829	0.375	2.48	0.355	0.729	0.372	1.14	0.341
Calcium	25.8	9.28	42.2	8.79	32.2	9.21	39.1	8.43
Chromium	47.4	0.469	83.5	0.444	65.7	0.465	84.5	0.426
Cobalt	U	0.375	0.416	0.355	0.516	0.372	0.364	0.341
Copper	6.92	0.375	7.48	0.355	10.5	0.372	18.5	0.341
Iron	1220	14.1	1730	13.3	2140	14.0	1490	12.8
Lead	1.37	0.937	6.49	0.888	2.32	0.930	2.25	0.851
Magnesium	84.0	18.7	97.7	17.8	118	18.6	121	17.0
Manganese	8.51	0.375	22.6	0.355	26.3	0.372	16.5	0.341
Nickel	0.766	0.562	1.05	0.533	1.44	0.558	1.31	0.511
Potassium	58.3	23.4	83.0	22.2	70.3	23.3	69.2	21.3
Selenium	U	1.22	U	1.15	U	1.21	U	1.11
Silver	U	0.469	U	0.444	U	0.465	U	0.426
Sodium	U	93.7	U	88.8	U	93.0	U	85.1
Thallium	U	1.59	U	1.51	U	1.58	U	1.45
Vanadium	1.36	0.375	2.05	0.355	2.65	0.372	2.06	0.341
Zinc	4.08	2.91	6.26	2.75	4.46	2.88	5.09	2.64

Table 1.2 Results of the Analysis for Hexavalent Chromium and Sulfate in Soil
WA # 0-276 Preferred Plating Site
Results Based on Dry Weight
DATA NOT VALIDATED

Hexavalent Chromium: Method SM 3500D
Sulfate: Method EPA 375.4

Sample Number	10261	10262	10263	10264
Sample Location	ERT-MW01-16 TO 17	ERT-MW01-19 TO 20	ERT-MW02-16 TO 17	ERT-MW02-19 TO 20
Percent Solids	NR	81.5	NR	90.5
Analyte	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Hexavalent Chromium	NR	NR	NR	NR
Sulfate	NR	88.2	NR	125

Table 1.2 (cont) Results of the Analysis for Sulfate in Soil
WA # 0-276 Preferred Plating Site
Results Based on Dry Weight
DATA NOT VALIDATED

Hexavalent Chromium: Method SM 3500D
Sulfate: Method EPA 375.4

Sample Number	10265	10266	10267	10268
Sample Location	ERT-MW03 16 to 17	ERT-MW03 19 to 20	ERT-MW04 16 to 17	ERT-MW04 19 to 20
Percent Solids	84.7	87.6	86.6	87.8
Analyte	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Hexavalent Chromium	1.64	2.33	2.68	1.36
Sulfate	NR	125	NR	247

Table 2.1 Results of the MS/MSD Analysis for Metals in Soil
WA # 0-276 Preferred Plating Site
Results Based on Dry Weight

Sample No. 10267

Analyte	Sample Result mg/kg	MS Spike Added mg/kg	MS Result mg/kg	MS % Recovery	MSD Spike Added mg/kg	MSD Result mg/kg	MSD % Recovery	RPD		Recommended QC Limits RPD	%Recovery
Antimony	U	36.9	28.2	76	37.2	28.5	77	0		20	0-120
Arsenic	U	36.9	37.0	100	37.2	38.5	103	3		20	75-125
Barium	2.33	36.9	37.9	96	37.2	39.0	99	2		20	75-125
Beryllium	U	36.9	37.0	100	37.2	37.3	100	0		20	75-125
Cadmium	0.729	36.9	37.7	100	37.2	38.0	100	1		20	75-125
Chromium	65.7	36.9	102	98	37.2	111	122	8		20	75-125
Cobalt	0.516	36.9	36.8	98	37.2	37.4	99	1		20	75-125
Copper	10.5	36.9	45.4	95	37.2	46.5	97	2		20	75-125
Lead	2.32	36.9	39.3	100	37.2	40.0	101	1		20	75-125
Manganese	26.3	36.9	60.2	92	37.2	72.4	124	30	*	20	75-125
Nickel	1.44	36.9	37.8	99	37.2	38.4	99	1		20	75-125
Selenium	U	18.5	18.5	100	18.6	18.4	99	1		20	75-125
Silver	U	36.9	34.8	94	37.2	35.0	94	0		20	75-125
Thallium	U	18.5	16.0	86	18.6	15.9	85	1		20	75-125
Vanadium	2.65	36.9	38.4	97	37.2	38.9	97	1		20	75-125
Zinc	4.46	36.9	41.8	101	37.2	42.0	101	0		20	75-125

Table 2.2 Results of the LCS Analysis for Metals in Soil
WA # 0-276 Preferred Plating Site
Results Based on Dry Weight

LCS Standard: ERA Lot No. D056-540-100107
Date Analyzed: 10/02/2007

Analyte	Conc. Recovered mg/kg	Certified Value mg/kg	PALs mg/kg	% Recovery
Aluminum	9250	10400	6370 - 14400	89
Antimony	55.2	127	D.L - 267	43
Arsenic	257	280	226 - 333	92
Barium	463	520	430 - 609	89
Beryllium	48.0	51.0	42.4 - 59.6	94
Cadmium	169	182	149 - 215	93
Calcium	6490	7310	5900 - 8720	89
Chromium	130	142	115 - 170	92
Cobalt	103	110	90.4 - 130	94
Copper	120	132	110 - 155	91
Iron	13600	16600	9490 - 23700	82
Lead	65.9	72.2	59.1 - 85.4	91
Magnesium	2530	2800	2190 - 3410	90
Manganese	301	331	270 - 392	91
Nickel	145	155	128 - 182	94
Potassium	2340	2980	2190 - 3780	79
Selenium	156	165	128 - 203	95
Silver	116	126	83.7 - 169	92
Sodium	1090	1320	845 - 1800	83
Thallium	155	184	142 - 225	84
Vanadium	166	186	144 - 229	89
Zinc	322	346	273 - 418	93

PAL - Performance Acceptance Limits

(732) 321-4200
EPA CONTRAC _P-C-04-032

CHAIN OF CUSTODY RECORD

Project Name: 276 Hirad Pleting
Project Number: EAC00276
LM Contact: Grossman Phone: 321-4330

No: 40555
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

0276-DAR-10/07

Sample Identification

REAC0	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	TAL Metals +
IS101	10261	ERT-MW01-16 to 17	S	9/25/07	1	4oz glass jar /4°C	✓
IS102	10262	ERT-MW01-19 to 20					✓
IS103	10263	ERT-MW02-16 to 17					✓
IS104	10264	ERT-MW02-19 to 20					✓
IS105	10265	ERT-MW03-16 to 17					✓
IS106	10266	ERT-MW03-19 to 20					✓
IS107	10267	ERT-MW04-16 to 17		9/26/07			✓
IS108	10268	ERT-MW04-19 to 20					✓

Matrix:

A- Air	PW- Potable Water
AT-Animal Tissue	S- Soil
DL- Drum Liquids	SD- Sediment
DS- Drum Solids	SL- Sludge
GW- Groundwater	SW- Surface Water
O- Oil	TX-TCLP Extract
PR-Product	W- Water
PT-Plant Tissue	X- Other

Special Instructions:

(+) TAL Metals excluding Mercury

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #:

Received 4°C JM 10/1/07

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished by	Date	Received by	Date	Time
ALL/Analysis		9/26/07		10/1/07	8:10	All/Analysis		10/1/07		10/1/07	8:55
11/storage		10/23/07		10/23/07	16:10						

U. S. Government Printing Office 2005: 315-502

CHAIN OF CUSTODY RECORD

0709421

Rec'vd Date: 09/26/07 15:39

Project Name: 276
Project Number: EAC00276
LM Contact: John Johnson Phone: 732-321-4248

No: 40554
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

276-DAR-12100?

Sample Identification

Analyses Requested

REAC#	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	SULFATE	HEXAVALENT CHROMIUM (*)
	10261	ERT-MW01-16to17	S	9/25/07	1	4oz glass jar / 4°C		
	10262	ERT-MW01-19to20					✓	
	10263	ERT-MW02-16to17						
	10264	ERT-MW02-19to20					✓	
	10265	ERT-MW03-16to17						
	10266	ERT-MW03-19to20					✓	
	10267	ERT-MW04-16to17		9/26/07				
	10268	ERT-MW04-19to20					✓	

Matrix:

Air	PW- Potable Water
Animal Tissue	S- Soil
Drum Liquids	SD- Sediment
Drum Solids	SL- Sludge
Groundwater	SW- Surface Water
Oil	TX-TCLP Extract
Product	W- Water
Plant Tissue	X- Other

Special Instructions:

(*) Analyze 4 samples as per chain for sulfate. Hold remaining samples for hexavalent chromium analyses. Do not analyze any samples for hexavalent chromium until phone authorization from LM REAC.

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #:

Joseph Bar 7/26/07 16:39

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished by	Date	Received by	Date	Time
SL/ANALYSIS	Joseph Bar	9/26/07									

APPENDIX B
Superfund Support Team
EPA Region II DESA Sampling Report for the Preferred Plating Site
Preferred Plating Site
East Farmingdale, New York
August 2008

SUPERFUND SUPPORT TEAM

SAMPLING REPORT

for the

PREFERRED PLATING SITE

in

FARMINGDALE, SUFFOLK COUNTY, NEW YORK

February 19 – 21, 2008

Participating Personnel: United States Environmental Protection Agency
Robert C. Finke, Project Manager
Joseph Hudek, Superfund Support Team Leader
Pat Sheridan, Project Quality Assurance Officer

Report Prepared by: _____
Robert C. Finke, Chemist

Date Prepared: April 14, 2008

Approved for the Director by: _____

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APPENDIX E:	New York State Department of Environmental Conservation: 6 NYCRR Part 703 *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations*
APPENDIX F:	Preferred Plating Trip Report
APPENDIX G:	Well Data Sheets

1.0 BACKGROUND

The Preferred Plating Corporation (PPC) site is located on Allen Boulevard in East Farmingdale, Town of Bablyon, Suffolk County, New York. The Site Location Map is presented in Appendix A. The site covers approximately 0.5 acres and adjoins other light industrial properties.

Operations at the site were conducted from September 1951 through June 1976. The primary activity was the chemical treating of metal parts to increase corrosion resistance and provide a cohesive base for painting. There was also a plating process which included degreasing, cleaning and surface finishing of metal parts. The processes used various chemicals which resulted in the generation, storage and disposal of hazardous wastes. Untreated wastewater was discharged into four concrete leaching pits located directly behind the original building.

The Suffolk County Department of Health Services (SCDHS) discovered groundwater contaminated with heavy metals in June 1953. They also found that the leaching pits were severely cracked and leaking into the groundwater. From 1953 through 1976, SCDHS instituted numerous legal actions against PPC in an effort to stop the illegal dumping and to upgrade the on-site treatment facility. PPC chemically treated the wastewater in the pits and reportedly had the treated wastewater removed. In 1976, PPC declared bankruptcy and since then, several firms have occupied the site. In 1982, the original building used by PPC was enlarged, thus burying the concrete pits. Currently, almost the entire site is covered by the building, paved driveways and parking areas.

The site was added to the EPA National Priorities List (NPL) in June of 1986. Under EPA's direction, a Remedial Investigation (RI) was conducted in 1988. The results of the RI indicated no significant soil contamination. However, groundwater results indicated heavy metal contamination, predominantly cadmium, chromium, lead and nickel. Low levels of chlorinated organics and cyanide were also found in the groundwater. Up gradient groundwater samples showed high levels of heavy metals though lower than on-site levels.

In 1989, EPA selected remedies to address groundwater cleanup which included a pump and treat method. In 1997, a modification of the selected remedy was reassessed. This remedy included the elimination of the groundwater extraction and treatment system of the 1989 remedy and the implementation of annual groundwater monitoring program to ensure that the remedy remains protective of human health and the environment.

The Division of Environmental Science and Assessment (DESA), Hazardous Waste Support Branch (HWSB), Superfund Support Team (SST) was requested by the New York Remediation Branch (NYRB) to conduct a groundwater sampling event to monitor the levels of volatile organic compounds (VOCs) and heavy metals in the groundwater.

2.0 SAMPLING PROCEDURES

The sampling procedures were in accordance with the guidelines set forth in the Quality Assurance Project Plan (QAPP) which is located in Appendix B.

3.0 DESCRIPTION OF EVENTS

On February 19, 2008, a sampling team consisting of three (3) members from the U.S. EPA, DESA, HWSB, SST began the sampling event at the Preferred Plating site. The EPA initially collected a trip blank sample, TB-01, at 1015 by pouring analyte-free deionized water directly into bottles for target compound list (TCL) - VOC analysis. A Rinsate Blank sample RB-01 was collected by pumping analyte free water through a decontaminated pump to be used for groundwater sampling. The Rinsate Blank was collected at 1020 and was submitted for the analysis of VOCs, Target Analyte List (TAL) metals and Cyanide analyses. The field team began sampling the monitoring wells using the U.S. EPA Region 2, *Ground Water Sampling Procedure - Low Stress (Low Flow) Purging and Sampling* method. The locations of the wells sampled for this event are listed in Appendix A. The Remedial Project Manager (RPM) requested the team to collect samples from the following monitoring wells: MW 1SP, MW 2SP, MW 3SP, MW 5SP, MW 6SP, MW 6DP, MW 6SS, MW8DP for low level TCL - VOCs and metals and cyanide analyses. Newly installed Piezometer wells: ERT-1 through ERT-7 were also sampled and submitted for the analysis of TAL metals and cyanide only. The piezometers were sampled with a peristaltic pump due to their narrow 3/4 inch diameter. Monitoring Well MW-8DP was sampled with a bailer due to a bend on the well construction which does not allow a submersible pump to be lowered sufficiently beneath the water table for sampling. Therefore, the EPA personnel purged 3 well volumes out of the well using Teflon® coated bailers for a total of 27 gallons. A more detailed explanation of the sampling methodology can be found in the QAPP located in Appendix B. The following table summarizes the well sampling conducted:

Monitoring Well	Date	Time	Well Location
MW 1SP	02/20/08	1555	In shed behind building North side
MW 2SP	02/20/08	1440	West side of building – near paint booths
MW 3SP	02/20/08	1150	East side of building, in ally area
MW 5SP	02/19/08	1217	South of the site, in front (street) grassy area
MW 6SP	02/19/08	1625	South of the site, in front (street) garage area
MW 6SS	02/19/08	1505	South of the site, in front (street) garage area
MW 6DP	02/19/08	1500	South of the site, in front (street) garage area
MW 8DP (Matrix Spike)	02/21/08	1730	On the exit ramp of the Southern State Parkway
MW 88 (Dup. of 8DP)	02/21/08	1735	On the exit ramp of the Southern State Parkway

The following table summarizes the piezometer sampling conducted:

Piezometer	Date	Time	Location
ERT-1	02/21/08	1045	West side of building – near paint booths - outside
ERT-2	02/21/08	1235	Inside of building – Central
ERT-3	02/21/08	1125	Inside of building – Central
ERT-4	02/21/08	1410	Inside of building – Central
ERT-5 (Matrix Spike)	02/21/08	1515	West side of building – ally - outside
ERT-55 (Dup of ERT-5)	02/21/08	1520	West side of building – ally - outside
ERT-6	02/21/08	1605	Across street – Allen Boulevard
ERT-7	02/21/08	1600	Across street – Allen Boulevard

Monitoring well MW 1SP located in the shed at the rear of the property was not sampled in recent years. As explained above, the piezometers were recently installed and sampled for the first time. At monitoring well MW 5SP, a matrix spike matrix spike duplicate was collected which required double volume for the inorganic samples and triple volume for the organic samples. At piezometer ERT-5, a matrix spike sample was collected requiring double volume for the inorganic samples. The well data sheets demonstrating the sampling procedures at each well can be found in Appendix G. A rinsate blank was collected at 1020 on 02/19/08 by running analyte-free deionized water through a submersible pump and tubing into sample bottles for VOCs, total metals and cyanide analysis. Two blind field duplicate samples were collected at sample locations MW 8DP and ERT-5 and denoted MW 88 and ERT-55 respectively.

The well data sheets demonstrating the sampling procedures at each well can be found in Appendix G. All samples were hand delivered to the U.S. EPA Region 2 Laboratory on February 22, 2008. The trip report with shipment information can be found in Appendix F. A description of the sampling procedure can be found in the Quality Assurance Project Plan in Appendix B. All samples collected for TCL-VOC analysis were analyzed in accordance with the U.S. EPA Region 2 Laboratory standard operating procedure (SOP) *DW-1 Volatile Organics in Drinking Water by Purge and Trap GC/MS*, dated July 2005. The results can be found in Table 2 and in Appendix C. All samples collected for TAL - total metals and cyanide analyses were analyzed in accordance with U.S. EPA Region 2 Laboratory SOP *C-109: Trace Metals in Aqueous, Soil/Sediment/ Sludge–ICP/AES*, dated July 2005 and SOP *C-28: Total Cyanide*, dated January 2005. The inorganic results can also be found in Table 2 starting on page 7 and in Appendix D.

4.0 RESULTS

The rinsate blank and trip blank were collected to determine quality control (QC) and if outside contamination was introduced to the samples. Acetone was detected at a low level in the rinsate blank sample, and was likely introduced during decontamination of the sampling or laboratory equipment. According to the U.S. EPA Region 2 criteria, this did not adversely affect the sample results. Two blind field duplicate samples were collected for field quality control. The samples MW-88 and ERT-55 are duplicates of samples MW-8DP and ERT-5. As can be seen from Table 2, there is good correlation between the duplicate sample results. The Quality Assurance/Quality Control sample data can be found in Table 1 and the sample results can be found in Table 2.

The VOC results from the groundwater monitoring wells and piezometers were compared to the following state and federal applicable or relevant and appropriate requirements (ARARs): *National Primary Drinking Water Regulations* (Title 40 CFR - Part 141, 1997) which can be found as Appendix D and the NYSDEC *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations* (6 NYCRR Part 703) which can be found in Appendix E. Tetrachloroethene was found in sample MW 6SP; Carbon Disulfide was found in sample MW 8DP and its Duplicate MW 88, however, no samples were found to exceed either state or federal regulatory standards.

The inorganic results were also compared to *National Primary Drinking Water Regulations* (Title 40 CFR - Part 141, 1997) which can be found as Appendix D and the NYSDEC *Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations* (6 NYCRR Part 703) which can be found in Appendix E. Cadmium exceeded the state and federal standards in samples MW 6SP, MW 6SS, MW 5SP, ERT-1, ERT-2, ERT-3, ERT-4, ERT-5 and in field duplicates ERT-55, and ERT-6. Chromium exceeded the state standards in samples MW 6SS, ERT-5 and ERT-55, and exceeded the state and federal standards in samples ERT-2, ERT-3, MW 6SP. Iron exceeded the state's ARARs in samples MW 1SP, MW 2SP, MW 8DP, MW 6SS, MW6SP, MW 5SP, MW 3SP, ERT-2, ERT-3, and ERT-6. Manganese exceeded the state standards in sample MW 1SP. Sodium was found above the state criteria in the deep well samples, MW 8DP and MW 6DP. Lead was found at or above federal standards in samples MW 8DP and MW 1SP.

5.0 CONCLUSION

Seventeen (17) samples were collected from monitoring wells and piezometers located at or in the vicinity of the Preferred Plating site. Refer to Figures 2 and Appendix A for maps of the well locations. The samples were analyzed for volatile organic compounds according to SOP *DW-1 Volatile Organics in Drinking Water by Purge and Trap GC/MS*, dated July 2005 and for inorganic compounds according to EPA Laboratory SOP *C-109: Trace Metals in Aqueous, Soil/Sediment/ Sludge – ICP/AES*, dated July 2005 and SOP *C-28: Total Cyanide*, dated January 2005.

The organic contaminants of concern at this site are chlorinated organics. However, no

volatile organic compounds were found to exceed the state or federal regulations. The inorganic contaminants of concern are cadmium, chromium, lead and nickel. Cadmium was detected in ten samples above the state and federal regulations. Chromium and was also detected above the state ARAR in two samples and above the federal ARAR in three samples. Lead was also detected at or above the federal standard in two samples. Nickel was detected in one sample (ERT-2) at a level below the sate and federal ARARs.

TABLE 1
QA/QC SAMPLE DATA

TYPE OF SAMPLE	ANALYSIS	SAMPLE NUMBER
TRIP BLANK	Low Conc. Organic	TB-01
RINSATE BLANK	Low Conc. Organic	RB-01
	Inorganic	
BLIND DUPLICATE	Low Conc. Organic	MW-88 and ERT-55 are duplicates of MW-8DP and ERT-5, respectively.
	Inorganic	
MATRIX SPIKE/ MATRIX SPIKE DUPLICATE	Low Conc. Organic	MW 5SP
	Inorganic	

\

TABLE 2

SAMPLE SUMMARY						
Sample Location	**Analysis**	**Compounds & Concentrations (ug/L)**			**6 NYCRR Part 703 GWS (µg/L)[1]**	**Federal Standard (µg/L)[2]**
		Compounds	**Conc.**	**QC**		
TB-01 Trip Blank	Volatile Organic Compounds	Non-detected				
RB-01	Volatile Organic Compounds	Acetone	8.3			
	Total Metals	Aluminum Chromium Copper Iron Manganese Zinc	340 5.8 19 140 33 21		 50 200 300 300	 100 1,300
MW 1SP	Volatile Organic Compounds	NA				
	Total Metals	Aluminum Calcium Chromium Copper Iron Magnesium Manganese Potassium Sodium Lead Zinc	13,000 21,000 15 26 17,000 4,000 550 3,200 16,000 15 66		 50 200 300 300 20,000 25	 100 1,300 15
MW 2SP	Volatile Organic Compounds	Non-detected				
	Total Metals	Aluminum Cadmium Calcium Chromium Iron Magnesium Manganese Potassium Sodium	490 3.4 12,000 37 400 1800 29 2900 16,000		 5.0 50 300 300 20,000	 5.0 100

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded
NA – Not Analyzed

TABLE 2 - Continued
SAMPLE SUMMARY

Sample Location	Analysis	Compounds & Concentrations (ug/L)			6 NYCRR Part 703 GWS (µg/L)[1]	Federal Standard(µg/L)[2]
		Compounds	Conc.	QC		
MW 3SP	Volatile Organic Compounds	Acetone	7.9			
	Total Metals	Aluminum	210			
		Cadmium	3.3		5.0	5.0
		Calcium	4,600			
		Iron	900		300	
		Magnesium	1,100			
		Manganese	86		300	
		Sodium	2,700		20,000	
MW 5SP	Volatile Organic Compounds	Non-detected				
	Total Metals	Calcium	15,000			
		Cadmium	30		5.0	5.0
		Chromium	46		50	100
		Cyanide	7.1		200	200
		Iron	930		300	
		Magnesium	3,700			
		Manganese	170		300	
		Potassium	1,100			
		Sodium	13,000		20,000	
		Zinc	43			
MW 6SP	Volatile Organic Compounds	Tetrachloroethene	3.6		5	
	Total Metals	Aluminum	1,300			
		Cadmium	140		5.0	5.0
		Calcium	23,000			
		Chromium	67		50	100
		Copper	76		200	1,300
		Iron	5,300		300	
		Magnesium	3,600			
		Manganese	190		300	
		Potassium	3,500			
		Sodium	16,000		20,000	
		Zinc	170			

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded

TABLE 2 - Continued
SAMPLE SUMMARY

Sample Location	Analysis	Compounds & Concentrations (ug/L)			6 NYCRR Part 703 GWS (µg/L)[1]	Federal Standard (µg/L)[2]
		Compounds	Conc.	QC		
MW 6SS	Volatile Organic Compounds	Non-detected				
	Total Metals	Cadmium	21		5.0	5.0
		Calcium	29,000			
		Chromium	73		50	100
		Iron	680		300	
		Magnesium	4,400			
		Manganese	67		300	
		Potassium	1,900			
		Sodium	11,000		20,000	
		Zinc	26			
MW 6DP	Volatile Organic Compounds	Non-detected				
	Total Metals	Calcium	21,000			
		Chromium	43		50	100
		Cyanide	66		200	200
		Iron	100		300	
		Magnesium	3,400			
		Manganese	20		300	
		Potassium	2,300			
		Sodium	40,000		20,000	
MW 8DP Matrix Spike	Volatile Organic Compounds	Carbon Disulfide	5.6	L		
	Total Metals	Aluminum	1,900			
		Barium	150		1000	2,000
		Calcium	20,000			
		Iron	2,900		300	
		Magnesium	3,200			
		Manganese	50		300	
		Potassium	3,100			
		Sodium	110,000		20,000	
		Lead	29			1.5
		Zinc	170			

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
L – The identification of the analyte is acceptable; the reported value may be biased low
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded

TABLE 2 - Continued
SAMPLE SUMMARY

Sample Location	Analysis	Compounds & Concentrations (ug/L)			6 NYCRR Part 703 GWS (µg/L)[1]	Federal Standard (µg/L)[2]
		Compounds	Conc.	QC		
MW 88 (MW8 Duplicate)	Volatile Organic Compounds	Carbon Disulfide	1.8			
	Total Metals	NA				
ERT-1	Volatile Organic Compounds	NA				
	Total Metals	Aluminum	120			
		Cyanide	55		200	200
		Cadmium	24		5.0	5.0
		Calcium	17,000			
		Chromium	30		50	100
		Iron	57		300	
		Magnesium	3,000			
		Manganese	15		300	
		Potassium	890			
		Sodium	8,800		20,000	
		Zinc	46			
ERT-2	Volatile Organic Compounds	NA				
	Total Metals	Aluminum	110			
		Cadmium	160		5.0	5.0
		Calcium	27,000			
		Cyanide	71		200	200
		Chromium	120		50	100
		Iron	1,300		300	
		Magnesium	4,500			
		Manganese	35		300	
		Potassium	2,700			
		Sodium	11,000		20,000	
		Nickel	25			
		Zinc	250			

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
NA – Not Analyzed
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded

TABLE 2 - Continued
SAMPLE SUMMARY

Sample	Analysis	Compounds & Concentrations (ug/L)	6 NYCRR	Federal

Location		Compounds	Conc.	QC	Part 703 GWS (µg/L)[1]	Standard (µg/L)[2]
ERT-3	Volatile Organic Compounds	NA				
	Total Metals	Aluminum	250			
		Cyanide	57			200
		Cadmium	11		5.0	5.0
		Calcium	22,000			
		Chromium	110		50	100
		Iron	540		300	
		Magnesium	2,600			
		Manganese	14		300	
		Potassium	1,800			
		Sodium	17,000		20,000	
		Zinc	33			
ERT-4	Volatile Organic Compounds	NA				
	Total Metals	Cyanide	24			200
		Cadmium	3.2		5.0	5.0
		Calcium	19,000			
		Chromium	45		50	100
		Magnesium	1,900			
		Potassium	1,700			
		Sodium	13,000		20,000	
ERT-5	Volatile Organic Compounds	NA				
	Total Metals	Cadmium	54		5.0	5.0
		Calcium	15,000			
		Chromium	79		50	100
		Magnesium	1,900			
		Potassium	2,600			
		Sodium	8,600		20,000	
		Zinc	40			

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
NA – Not Analyzed.
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded

TABLE 2 - Continued

SAMPLE SUMMARY						
Sample Location	**Analysis**	**Compounds & Concentrations (ug/L)**			**6 NYCRR Part 703 GWS (µg/L)[1]**	**Federal Standard (µg/L)[2]**
		Compounds	**Conc.**	**QC**		
ERT-55	Volatile Organic Compounds	NA				
	Total Metals	Cadmium	54		5.0	5.0
		Calcium	15,000			
		Chromium	80		50	100
		Magnesium	1,800			
		Potassium	2,600			
		Sodium	8,600		20,000	
		Zinc	40			
ERT-6	Volatile Organic Compounds	NA				
	Total Metals	Aluminum	300			
		Cyanide	19			200
		Cadmium	11		5.0	5.0
		Calcium	19,000			
		Chromium	27		50	100
		Iron	480		300	
		Magnesium	4,300			
		Manganese	6.6		300	
		Potassium	2,300			
		Sodium	10,000		20,000	
ERT-7	Volatile Organic Compounds	NA				
	Total Metals	Calcium	16,000			
		Magnesium	3,200			
		Potassium	1,700			
		Sodium	16,000		20,000	

1 - NYSDEC, New York Division of Environmental Remediation - Rules and Regulations, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6 NYCRR Part 703)
2 - US. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 141: National Primary Drinking Water Regulations Edition
NA – Not Analyzed
Shaded Areas indicate State and/or Federal Groundwater criteria is exceeded

APPENDIX A

SITE MAPS

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

FOR THE

PREFERRED PLATING SITE

AMENDMENT

APPENDIX C

DATA PACKAGE

APPENDIX D

U.S. CODE OF FEDERAL REGULATIONS (CFR)
TITLE 40: PROTECTION OF ENVIRONMENT
Part 141: NATIONAL PRIMARY DRINKING WATER REGULATIONS

SUBPART G: NATIONAL REVISED PRIMARY DRINKING WATER REGULATIONS: MAXIMUM CONTAMINANT LEVELS

SECTION 61: ***MAXIMUM CONTAMINANT LEVELS FOR ORGANIC CONTAMINANTS***

AND

SECTION: 62: ***MAXIMUM CONTAMINANT LEVELS FOR INORGANIC CONTAMINANTS***

JULY 2002

APPENDIX E

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

6 NYCRR PART 703

SURFACE WATER AND GROUNDWATER QUALITY STANDARDS AND GROUNDWATER EFFLUENT LIMITATIONS

APPENDIX F

PREFERRED PLATING SITE
TRIP REPORT

APPENDIX G

WELL DATA SHEETS