

Operation, Maintenance and Monitoring Report September 2012

**NOW Corporation
Site 3-14-008**

**Work Assignment No.
D007626-25**

Prepared for:

SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by:

AECOM Technical Services Northeast, Inc.
40 British American Boulevard
Latham, New York 12110

November 2012

November 15, 2012

Mr. Carl Hoffman, P.E.
NYSDEC Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013

**Re: NOW Corporation - Site #3-14-008
O&M Summary Report: "September" 2012**

Dear Mr. Hoffman:

This monthly summary report describes the operation, monitoring and maintenance (OM&M) of the remedial system at the NOW Corporation site in the Town of Clinton, New York, for a 29-day period (**August 22 – September 20, 2012**).

With the exceptions noted below, if any, the P&T system was online and operational throughout the reporting period. Approximately 720,500 gallons of water were treated during the period. Discharge from the treatment system averaged approximately 24,845 gallons per day (gpd), compared to 12,640 gpd in the prior reporting period.

As of the last day of the reporting period, a total of 88,699,600 gallons of groundwater had been recovered and treated by the system since it became operational in February 1998.

Table 1 summarizes influent and effluent analytical data for water samples collected on September 20. The total influent sample had uncharacteristically low concentrations of VOCs. We have no explanation for this; samples from individual recovery wells were within normal ranges. **Effluent limitations were not exceeded this sampling period.** A copy of the analytical laboratory report is attached. Table 2 and Table 3 summarize selected operational data and water levels as recorded on the sampling date. The effluent samples were collected while the VFD was operating at 60 Hz.

AECOM made 3 site visits during the period to conduct the required system inspection, perform scheduled and unscheduled maintenance, and to collect water samples. The August service visit was described in the previous report. Details for the current period follow:

September 17 – AECOM was onsite in response to an alarm condition for an effluent storage tank high level that occurred early September 13, 2012. Upon arrival, the system was down and the effluent pump electrical conduit box was inspected. The conduit box showed oil stains in and around the box. Technicians pulled the pump and verified that oil was traveling through the electrical lines and into the conduit box. Technicians replaced the effluent pump with a spare and reset the system. Technicians observed normal operation and tank drawdown. The damaged pump was later brought to Pump Service and Supply for inspection.

September 20 – AECOM was onsite to complete quarterly water level measurements and monthly influent, effluent, and recovery well sampling. No further problems were indicated with the spare effluent pump. At the client's request, technicians also evaluated power consumption at various VFD speeds by collecting amperage readings. The amperage reading was multiplied by the VFD voltage (230 V) to calculate power consumption; results of the evaluation are presented in the table below.

Table 4: VFD Calculated Power Consumption at Various Speeds

VFD Speed	Amperage	Power Consumption (watts)
60	11.9	4,740.6
55	9.6	3,824.4
50	8.3	3,306.5
45	7.2	2,868.3

The system efficiency and runtime was evaluated over the month. The system was down for approximately 4 days, as explained in the September 17 log above, but operated without incident for the remainder of the period. Downtime was approximately 15% of the reporting period.

Please feel free to contact me at (518) 951-2262 if you have any questions regarding this report or the operation of the treatment system.

Sincerely,
AECOM Technical Services Northeast, Inc.



Stephen R. Choiniere
Project Manager

Table 1
Summary of Influent and Effluent Data
Sampling Date: September 20, 2012
NOW Corporation Site
Town of Clinton, New York

Analytes/ Parameters	Total Influent	Effluent	Recovery Wells			Effluent Limitations	
			TW-1	TW-2A	TW-3		(units)
Quantity treated, per day		24,845				Monitor	gallons
pH	7.4	7.4				6.5 to 8.5	standard units
Oil and Grease	<1.0	<1.0	NA	NA	NA	15	mg/L
Total Cyanide	<10	<10	NA	NA	NA	10	ug/L
TDS	340	190	NA	NA	NA	1000	mg/L
TSS	<10	<10	NA	NA	NA	50	mg/L
Aluminum, Total	<200	<200	NA	NA	NA	Monitor	ug/L
Arsenic, Total	<20	<20	NA	NA	NA	100	ug/L
Barium, Total	67 J	87 J	NA	NA	NA	Monitor	ug/L
Chromium	<20	<20	NA	NA	NA	400	ug/L
Copper	<25	<25	NA	NA	NA	24	ug/L
Iron	<200	<200	NA	NA	NA	600	ug/L
Mercury	<0.20	<0.20	NA	NA	NA	0.8	ug/L
Manganese	12 J	80	NA	NA	NA	Monitor	ug/L
Nickel	<50	1.6 J	NA	NA	NA	200	ug/L
Zinc	<50	<50	NA	NA	NA	150	ug/L
1,1,1-Trichloroethane	19	<0.50	1.2	790	21	10	ug/L
1,1,2-Trichloroethane	<1.0	<0.50	<1.0	<20	<0.50	1.2	ug/L
1,1-Dichloroethane	46	<0.50	43	340	33	10	ug/L
1,1-Dichloroethene	<1.0	<0.50	<1.0	<20	<0.50	0.5	ug/L
1,2-Dichloroethane	<1.0	<0.50	<1.0	<20	<0.50	1.6	ug/L
Benzene	<1.0	<0.50	<1.0	<20	<0.50	1.4	ug/L
Chlorobenzene	<1.0	<0.50	<1.0	<20	<0.50	10	ug/L
Chloroethane	<1.0	<0.50	<1.0	<20	<0.50	10	ug/L
cis -1,2-Dichloroethene	2.4	<0.50	3.7	<20	0.66	5	ug/L
Ethylbenzene	<1.0	<0.50	<1.0	<20	<0.50	10	ug/L
o-Xylene	<1.0	<0.50	<1.0	<20	<0.50	5	ug/L
m,p-Xylene	<1.0	<0.50	<1.0	<20	<0.50	10	ug/L
Tetrachloroethene	<1.0	<0.50	<1.0	<20	<0.50	1.4	ug/L
Toluene	<1.0	<0.50	<1.0	<20	<0.50	10	ug/L
trans -1,2-Dichloroethene	<1.0	<0.50	<1.0	<20	<0.50	5	ug/L
Trichloroethene	53	<0.50	48	600	37	6	ug/L
Vinyl Chloride	<1.0	<0.50	<1.0	<20	<0.50	0.6	ug/L

Notes:

- 1) Detected concentrations are presented in **bold** typeface, and are expressed in the units shown in far right column.
- 2) Effluent concentration boxed in **bold** denotes exceedance of effluent limitations.
- 3) NA indicates not analyzed.
- 4) "J" indicates an estimated concentration below the reporting limit (RL).
- 5) "B" denotes metal detected in method blank at concentration below the RL, but above the method detection limit.

Table 2
Summary of September 2012 O&M Data

NOW Corporation Site
Town of Clinton, New York

Instrumentation/Readings:		9/20/12	Units
<i>TW-1</i>			
	Pumping Rate	1	GPM
	Water Level Above Transducer	47.77	feet
	Flow Meter Reading	6,320,200	gallons
	Pump Pressure	75	psi
<i>TW-2A</i>			
	Pumping Rate	~14	GPM
	Water Level Above Transducer	19.72	feet
	Flow Meter Reading	24,236,500	gallons
	Pump Pressure	80	psi
<i>TW-3</i>			
	Pumping Rate	2	GPM
	Water Level Above Transducer	46.74	feet
	Flow Meter Reading	9,739,300	gallons
	Pump Pressure	70	psi
<i>Air Stripper</i>			
	Stripper Blower Pressure	16.5	inches H ₂ O
	Air Temperature in Stripper	60	°F
<i>Effluent Flow</i>			
	Effluent Flow this period (calculated)	720,500	gallons
	Total Effluent Flow (calculated)	88,699,600	gallons

Table 3
Groundwater Levels

NOW Corporation Site
Town of Clinton, New York

Well ID	MP	9/20/12	GW Elevation
	Elevation	Depth to Water (Ft below MP)	
MW-1	289.50	7.21	282.29
MW-2	332.51	27.45	305.06
MW-3	312.83	22.80	290.03
MW-3S	312.51	NA	NA
MW-4	298.29	19.75	278.54
MW-4D	298.16	19.93	278.23
MW-5	285.48	16.43	269.05
MW-6S	287.90	3.30	284.60
MW-6D	287.25	5.75	281.50
MW-7S	292.12	6.96	285.16
MW-7D	292.54	5.95	286.59
OW-1	307.75	26.40	281.35
OW-2	305.96	20.34	285.62
OW-6	294.81	4.25	290.56
IW-1	312.46	24.23	288.23
IW-2	304.56	26.40	278.16

Note: N/A indicates data are not available.

MP denotes measuring point.

Report Date:
12-Oct-12 14:32



- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

AECOM Technical Services, Inc.
40 British American Boulevard
Latham, NY 12110

Work Order: L1976
Project : NOW Corp. Site, 9/12
Project #:

Attn: Stephen Choiniere

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
L1976-01	EFF-092012	Aqueous	20-Sep-12 10:40	21-Sep-12 08:40
L1976-02	INF-092012	Aqueous	20-Sep-12 10:51	21-Sep-12 08:40
L1976-03	TW-1-092012	Aqueous	20-Sep-12 11:02	21-Sep-12 08:40
L1976-04	TW-2A-092012	Aqueous	20-Sep-12 11:05	21-Sep-12 08:40
L1976-05	TW-3-092012	Aqueous	20-Sep-12 11:07	21-Sep-12 08:40
L1976-06	TB-092012	Aqueous	20-Sep-12 00:00	21-Sep-12 08:40

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the sample(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAP or USEPA CLP requirements have been met.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
North Carolina	581
Pennsylvania	68-00520
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033



Authorized by:

Yihai Ding
Laboratory Director

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 9/12

Laboratory Workorder / SDG #: L1976

SW846 8260C, VOC by GC-MS (25 mL Purge)

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V5
Instrument Type: GCMS-VOA
Description: HP6890 / HP6890
Manufacturer: Hewlett-Packard
Model: 6890 / 6890

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

INF-092012 (L1976-02A) : Dilution Factor: 2
TW-1-092012 (L1976-03A) : Dilution Factor: 2
TW-2A-092012 (L1976-04A) : Dilution Factor: 40

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'J. H. R.', is written over a horizontal line.

Signed: _____

Date: _____ 10/9/2012 _____

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 9/12

Laboratory Workorder / SDG #: L1976

SW846 6010C, SW846 7470A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 6010C, SW846 7470A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3005
Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: FIMS2
Instrument Type: CVAA
Description: FIMS
Manufacturer: Perkin-Elmer
Model: FIMS100

Instrument Code: OPTIMA3
Instrument Type: ICP
Description: Optima ICP-OES
Manufacturer: Perkin-Elmer
Model: 4300 DV

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

Method blanks were within the acceptance criteria except for the following:

MB-68437 in batch 68437: Iron > 200ug/L reporting limit at 210ug/L.
Since all associated samples had less than report limit, no corrective action was taken.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for laboratory control samples were within the QC limits.

2. Matrix spike (MS):

A matrix spike was not performed on any sample in this SDG.

D. Post Digestion Spike (PDS):

A post-digestion spike was not performed on any sample in this SDG.

E. Duplicate sample:

A duplicate analysis was not performed on any sample in this SDG.

F. Serial Dilution (SD):

A serial dilution was not performed on any sample in this SDG.

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum RI, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 10/12/12

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 9/12

Laboratory Workorder / SDG #: L1976

SM 2540C, SM 2540D, SW846 9012B

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SM 2540C, SM 2540D, SW846 9012B

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SM 2540C, SM 2540D, SW846 9012B

V. INSTRUMENTATION

The following instrumentation was used to perform

Instrument Code: LACHAT1
Instrument Type: WC
Description: Flow Injection Analyzer
Manufacturer: Zellweger Analytics
Model: Quik-Chem 8000

Instrument Code: MANUAL
Instrument Type: WC

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

Matrix spike was performed on sample: INF-092012 (L1976-02DMS) for Cyanide.

Percent recovery was within the QC limits.

D. Duplicate sample:

Duplicate analysis was performed on sample : INF-092012 (L1976-02DDUP) for Cyanide and INF-092012 (L1976-02CDUP) for Total Dissolved Solids and Total Suspended Solids.

Percent RPD was within the QC limits.

E. Dilutions:

No sample required dilution in this SDG.

F. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum RI, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 10/15/12

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF-092012

Lab ID: L1976-01

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Chloroethane	ND		0.50	ug/L	1	10/02/2012 23:23	68481
1,1-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Methyl tert-butyl ether	ND		0.50	ug/L	1	10/02/2012 23:23	68481
1,1-Dichloroethane	ND		0.50	ug/L	1	10/02/2012 23:23	68481
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
1,1,1-Trichloroethane	ND		0.50	ug/L	1	10/02/2012 23:23	68481
1,2-Dichloroethane	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Benzene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Trichloroethene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Toluene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
1,1,2-Trichloroethane	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Tetrachloroethene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Chlorobenzene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Ethylbenzene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
m,p-Xylene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
o-Xylene	ND		0.50	ug/L	1	10/02/2012 23:23	68481
Surrogate: Dibromofluoromethane	105		88-124	%REC	1	10/02/2012 23:23	68481
Surrogate: 1,2-Dichloroethane-d4	99.9		79-115	%REC	1	10/02/2012 23:23	68481
Surrogate: Toluene-d8	102		80-114	%REC	1	10/02/2012 23:23	68481
Surrogate: Bromofluorobenzene	94.6		60-123	%REC	1	10/02/2012 23:23	68481

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF-092012

Lab ID: L1976-02

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:51

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Chloroethane	ND		1.0	ug/L		2 10/03/2012 2:29	68481
1,1-Dichloroethene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
trans-1,2-Dichloroethene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Methyl tert-butyl ether	ND		1.0	ug/L		2 10/03/2012 2:29	68481
1,1-Dichloroethane	46		1.0	ug/L		2 10/03/2012 2:29	68481
cis-1,2-Dichloroethene	2.4		1.0	ug/L		2 10/03/2012 2:29	68481
1,1,1-Trichloroethane	19		1.0	ug/L		2 10/03/2012 2:29	68481
1,2-Dichloroethane	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Benzene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Trichloroethene	53		1.0	ug/L		2 10/03/2012 2:29	68481
Toluene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
1,1,2-Trichloroethane	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Tetrachloroethene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Chlorobenzene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Ethylbenzene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
m,p-Xylene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
o-Xylene	ND		1.0	ug/L		2 10/03/2012 2:29	68481
Surrogate: Dibromofluoromethane	96.5		88-124	%REC		2 10/03/2012 2:29	68481
Surrogate: 1,2-Dichloroethane-d4	91.8		79-115	%REC		2 10/03/2012 2:29	68481
Surrogate: Toluene-d8	102		80-114	%REC		2 10/03/2012 2:29	68481
Surrogate: Bromofluorobenzene	92.4		60-123	%REC		2 10/03/2012 2:29	68481

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-1-092012

Lab ID: L1976-03

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 11:02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Chloroethane	ND		1.0	ug/L	2	10/03/2012 0:17	68481
1,1-Dichloroethene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
trans-1,2-Dichloroethene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Methyl tert-butyl ether	ND		1.0	ug/L	2	10/03/2012 0:17	68481
1,1-Dichloroethane	43		1.0	ug/L	2	10/03/2012 0:17	68481
cis-1,2-Dichloroethene	3.7		1.0	ug/L	2	10/03/2012 0:17	68481
1,1,1-Trichloroethane	1.2		1.0	ug/L	2	10/03/2012 0:17	68481
1,2-Dichloroethane	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Benzene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Trichloroethene	48		1.0	ug/L	2	10/03/2012 0:17	68481
Toluene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
1,1,2-Trichloroethane	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Tetrachloroethene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Chlorobenzene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Ethylbenzene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
m,p-Xylene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
o-Xylene	ND		1.0	ug/L	2	10/03/2012 0:17	68481
Surrogate: Dibromofluoromethane	94.7		88-124	%REC	2	10/03/2012 0:17	68481
Surrogate: 1,2-Dichloroethane-d4	106		79-115	%REC	2	10/03/2012 0:17	68481
Surrogate: Toluene-d8	98.4		80-114	%REC	2	10/03/2012 0:17	68481
Surrogate: Bromofluorobenzene	91.3		60-123	%REC	2	10/03/2012 0:17	68481

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-2A-092012

Lab ID: L1976-04

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 11:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		20	ug/L	40	10/03/2012 0:44	68481
Chloroethane	ND		20	ug/L	40	10/03/2012 0:44	68481
1,1-Dichloroethene	ND		20	ug/L	40	10/03/2012 0:44	68481
trans-1,2-Dichloroethene	ND		20	ug/L	40	10/03/2012 0:44	68481
Methyl tert-butyl ether	ND		20	ug/L	40	10/03/2012 0:44	68481
1,1-Dichloroethane	340		20	ug/L	40	10/03/2012 0:44	68481
cis-1,2-Dichloroethene	ND		20	ug/L	40	10/03/2012 0:44	68481
1,1,1-Trichloroethane	790		20	ug/L	40	10/03/2012 0:44	68481
1,2-Dichloroethane	ND		20	ug/L	40	10/03/2012 0:44	68481
Benzene	ND		20	ug/L	40	10/03/2012 0:44	68481
Trichloroethene	600		20	ug/L	40	10/03/2012 0:44	68481
Toluene	ND		20	ug/L	40	10/03/2012 0:44	68481
1,1,2-Trichloroethane	ND		20	ug/L	40	10/03/2012 0:44	68481
Tetrachloroethene	ND		20	ug/L	40	10/03/2012 0:44	68481
Chlorobenzene	ND		20	ug/L	40	10/03/2012 0:44	68481
Ethylbenzene	ND		20	ug/L	40	10/03/2012 0:44	68481
m,p-Xylene	ND		20	ug/L	40	10/03/2012 0:44	68481
o-Xylene	ND		20	ug/L	40	10/03/2012 0:44	68481
Surrogate: Dibromofluoromethane	99.9		88-124	%REC	40	10/03/2012 0:44	68481
Surrogate: 1,2-Dichloroethane-d4	93.6		79-115	%REC	40	10/03/2012 0:44	68481
Surrogate: Toluene-d8	101		80-114	%REC	40	10/03/2012 0:44	68481
Surrogate: Bromofluorobenzene	96.1		60-123	%REC	40	10/03/2012 0:44	68481

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-3-092012

Lab ID: L1976-05

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 11:07

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Chloroethane	ND		0.50	ug/L	1	10/03/2012 1:11	68481
1,1-Dichloroethene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Methyl tert-butyl ether	ND		0.50	ug/L	1	10/03/2012 1:11	68481
1,1-Dichloroethane	33		0.50	ug/L	1	10/03/2012 1:11	68481
cis-1,2-Dichloroethene	0.66		0.50	ug/L	1	10/03/2012 1:11	68481
1,1,1-Trichloroethane	21		0.50	ug/L	1	10/03/2012 1:11	68481
1,2-Dichloroethane	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Benzene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Trichloroethene	37		0.50	ug/L	1	10/03/2012 1:11	68481
Toluene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
1,1,2-Trichloroethane	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Tetrachloroethene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Chlorobenzene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Ethylbenzene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
m,p-Xylene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
o-Xylene	ND		0.50	ug/L	1	10/03/2012 1:11	68481
Surrogate: Dibromofluoromethane	98.9		88-124	%REC	1	10/03/2012 1:11	68481
Surrogate: 1,2-Dichloroethane-d4	96.1		79-115	%REC	1	10/03/2012 1:11	68481
Surrogate: Toluene-d8	97.6		80-114	%REC	1	10/03/2012 1:11	68481
Surrogate: Bromofluorobenzene	89.6		60-123	%REC	1	10/03/2012 1:11	68481

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/09/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TB-092012

Lab ID: L1976-06

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 0:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Chloroethane	ND		0.50	ug/L	1	10/02/2012 22:56	68481
1,1-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Methyl tert-butyl ether	ND		0.50	ug/L	1	10/02/2012 22:56	68481
1,1-Dichloroethane	ND		0.50	ug/L	1	10/02/2012 22:56	68481
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
1,1,1-Trichloroethane	ND		0.50	ug/L	1	10/02/2012 22:56	68481
1,2-Dichloroethane	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Benzene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Trichloroethene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Toluene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
1,1,2-Trichloroethane	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Tetrachloroethene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Chlorobenzene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Ethylbenzene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
m,p-Xylene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
o-Xylene	ND		0.50	ug/L	1	10/02/2012 22:56	68481
Surrogate: Dibromofluoromethane	100		88-124	%REC	1	10/02/2012 22:56	68481
Surrogate: 1,2-Dichloroethane-d4	105		79-115	%REC	1	10/02/2012 22:56	68481
Surrogate: Toluene-d8	102		80-114	%REC	1	10/02/2012 22:56	68481
Surrogate: Bromofluorobenzene	98.0		60-123	%REC	1	10/02/2012 22:56	68481

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc. ANALYTICAL QC SUMMARY REPORT

Work Order: L1976

SW8260_25_W

Project: NOW Corp. Site, 9/12

SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: MB-68481	SampType: MBLK	TestCode: SW8260_25_W	Prep Date: 10/02/12 11:26	Run ID: V5_121002A							
Client ID: MB-68481	Batch ID: 68481	Units: ug/L	Analysis Date: 10/02/12 20:44	SeqNo: 1806449							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.15									
Chloroethane	ND	0.24									
1,1-Dichloroethene	ND	0.19									
trans-1,2-Dichloroethene	ND	0.14									
Methyl tert-butyl ether	ND	0.13									
1,1-Dichloroethane	ND	0.18									
cis-1,2-Dichloroethene	ND	0.19									
1,1,1-Trichloroethane	ND	0.11									
1,2-Dichloroethane	ND	0.16									
Benzene	ND	0.12									
Trichloroethene	ND	0.13									
Toluene	ND	0.14									
1,1,2-Trichloroethane	ND	0.20									
Tetrachloroethene	ND	0.17									
Chlorobenzene	ND	0.13									
Ethylbenzene	ND	0.13									
m,p-Xylene	ND	0.22									
o-Xylene	ND	0.17									
Surrogate:	10.15		10.00	0	101	88	124	0			
Dibromofluoromethane											
Surrogate: 1,2-	9.525		10.00	0	95.2	79	115	0			
Dichloroethane-d4											
Surrogate: Toluene-d8	10.08		10.00	0	101	80	114	0			
Surrogate:	9.505		10.00	0	95.1	60	123	0			
Bromofluorobenzene											

CLIENT: AECOM Technical Services, Inc.

ANALYTICAL QC SUMMARY REPORT

Work Order: L1976

SW8260_25_W

Project: NOW Corp. Site, 9/12

SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: LCS-68481	SampType: LCS	TestCode: SW8260_25_W			Prep Date: 10/02/12 11:26	Run ID: V5_121002A						
Client ID: LCS-68481	Batch ID: 68481	Units: ug/L			Analysis Date: 10/02/12 19:23	SeqNo: 1806447						
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	9.238	0.15	0.50	10.00	0	92.4	77	120	0			
Chloroethane	9.791	0.24	0.50	10.00	0	97.9	75	135	0			
1,1-Dichloroethene	10.42	0.19	0.50	10.00	0	104	81	125	0			
trans-1,2-Dichloroethene	10.42	0.14	0.50	10.00	0	104	60	137	0			
Methyl tert-butyl ether	9.545	0.13	0.50	10.00	0	95.4	61	134	0			
1,1-Dichloroethane	9.660	0.18	0.50	10.00	0	96.6	82	120	0			
cis-1,2-Dichloroethene	9.869	0.19	0.50	10.00	0	98.7	84	116	0			
1,1,1-Trichloroethane	9.593	0.11	0.50	10.00	0	95.9	80	124	0			
1,2-Dichloroethane	10.02	0.16	0.50	10.00	0	100	86	117	0			
Benzene	9.837	0.12	0.50	10.00	0	98.4	81	121	0			
Trichloroethene	9.405	0.13	0.50	10.00	0	94.1	74	123	0			
Toluene	10.09	0.14	0.50	10.00	0	101	88	117	0			
1,1,2-Trichloroethane	10.07	0.20	0.50	10.00	0	101	83	121	0			
Tetrachloroethene	9.435	0.17	0.50	10.00	0	94.4	74	115	0			
Chlorobenzene	9.837	0.13	0.50	10.00	0	98.4	83	112	0			
Ethylbenzene	9.796	0.13	0.50	10.00	0	98.0	87	110	0			
m,p-Xylene	19.59	0.22	0.50	20.00	0	98.0	87	114	0			
o-Xylene	9.371	0.17	0.50	10.00	0	93.7	84	114	0			
Surrogate:	10.26		0.50	10.00	0	103	88	124	0			
Dibromofluoromethane												
Surrogate: 1,2-	10.85		0.50	10.00	0	108	79	115	0			
Dichloroethane-d4												
Surrogate: Toluene-d8	10.16		0.50	10.00	0	102	80	114	0			
Surrogate:	10.09		0.50	10.00	0	101	60	123	0			
Bromofluorobenzene												

Qualifiers:
mm1,12,11,A

ND - Not Detected at the MDL
J - Analyte detected below quantitation limits

S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

MDL - Method Detection Limit
RL - Reporting Limit

B - Analyte detected in the associated Method Blank

CLIENT: AECOM Technical Services, Inc.

ANALYTICAL QC SUMMARY REPORT

Work Order: L1976

SW8260_25_W

Project: NOW Corp. Site, 9/12

SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: LCSD-68481	SampType: LCSD	TestCode: SW8260_25_W		Prep Date: 10/02/12 11:26	Run ID: V5_121002A							
Client ID: LCSD-68481	Batch ID: 68481	Units: ug/L		Analysis Date: 10/02/12 19:50	SeqNo: 1806448							
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	9.218	0.15	0.50	10.00	0	92.2	77	120	9.238	0.217	40	
Chloroethane	9.753	0.24	0.50	10.00	0	97.5	75	135	9.791	0.388	40	
1,1-Dichloroethene	10.56	0.19	0.50	10.00	0	106	81	125	10.42	1.34	40	
trans-1,2-Dichloroethene	10.56	0.14	0.50	10.00	0	106	60	137	10.42	1.34	40	
Methyl tert-butyl ether	9.692	0.13	0.50	10.00	0	96.9	61	134	9.545	1.53	40	
1,1-Dichloroethane	9.892	0.18	0.50	10.00	0	98.9	82	120	9.660	2.37	40	
cis-1,2-Dichloroethene	9.708	0.19	0.50	10.00	0	97.1	84	116	9.869	1.65	40	
1,1,1-Trichloroethane	9.968	0.11	0.50	10.00	0	99.7	80	124	9.593	3.84	40	
1,2-Dichloroethane	10.23	0.16	0.50	10.00	0	102	86	117	10.02	2.07	40	
Benzene	10.10	0.12	0.50	10.00	0	101	81	121	9.837	2.6	40	
Trichloroethene	9.777	0.13	0.50	10.00	0	97.8	74	123	9.405	3.88	40	
Toluene	10.35	0.14	0.50	10.00	0	103	88	117	10.09	2.54	40	
1,1,2-Trichloroethane	10.12	0.20	0.50	10.00	0	101	83	121	10.07	0.449	40	
Tetrachloroethene	9.961	0.17	0.50	10.00	0	99.6	74	115	9.435	5.42	40	
Chlorobenzene	9.885	0.13	0.50	10.00	0	98.8	83	112	9.837	0.489	40	
Ethylbenzene	10.07	0.13	0.50	10.00	0	101	87	110	9.796	2.76	40	
m,p-Xylene	20.38	0.22	0.50	20.00	0	102	87	114	19.59	3.92	40	
o-Xylene	9.729	0.17	0.50	10.00	0	97.3	84	114	9.371	3.76	40	
Surrogate:	10.11		0.50	10.00	0	101	88	124	0			
Dibromofluoromethane												
Surrogate: 1,2-Dichloroethane-d4	11.26		0.50	10.00	0	113	79	115	0			
Surrogate: Toluene-d8	10.09		0.50	10.00	0	101	80	114	0			
Surrogate:	10.23		0.50	10.00	0	102	60	123	0			
Bromofluorobenzene												

Qualifiers:
mm1,12,11,A

ND - Not Detected at the MDL
J - Analyte detected below quantitation limits

S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

MDL - Method Detection Limit
RL - Reporting Limit

B - Analyte detected in the associated Method Blank

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/10/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF-092012

Lab ID: L1976-01

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							SW6010_W
Aluminum	ND		200	ug/L	1	10/01/2012 12:07	68437
Arsenic	ND		20	ug/L	1	10/01/2012 12:07	68437
Barium	87	J	200	ug/L	1	10/01/2012 12:07	68437
Chromium	ND		20	ug/L	1	10/01/2012 12:07	68437
Copper	ND		25	ug/L	1	10/01/2012 12:07	68437
Iron	ND		200	ug/L	1	10/01/2012 12:07	68437
Manganese	80		50	ug/L	1	10/01/2012 12:07	68437
Nickel	1.6	J	50	ug/L	1	10/01/2012 12:07	68437
Zinc	ND		50	ug/L	1	10/01/2012 12:07	68437
SW846 7470A -- Mercury by FIA							SW7470
Mercury	ND		0.20	µg/L	1	09/27/2012 14:09	68344

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/10/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF-092012

Lab ID: L1976-02

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:51

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							SW6010_W
Aluminum	ND		200	ug/L	1	10/01/2012 12:10	68437
Arsenic	ND		20	ug/L	1	10/01/2012 12:10	68437
Barium	67	J	200	ug/L	1	10/01/2012 12:10	68437
Chromium	ND		20	ug/L	1	10/01/2012 12:10	68437
Copper	ND		25	ug/L	1	10/01/2012 12:10	68437
Iron	ND		200	ug/L	1	10/01/2012 12:10	68437
Manganese	12	J	50	ug/L	1	10/01/2012 12:10	68437
Nickel	ND		50	ug/L	1	10/01/2012 12:10	68437
Zinc	ND		50	ug/L	1	10/01/2012 12:10	68437
SW846 7470A -- Mercury by FIA							SW7470
Mercury	ND		0.20	µg/L	1	09/27/2012 14:11	68344

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.

Work Order: L1976

Project: NOW Corp. Site, 9/12

ANALYTICAL QC SUMMARY REPORT

SW6010_W

SW846 6010C -- Metals by ICP

Sample ID: MB-68437	SampType: MBLK	TestCode: SW6010_W	Prep Date: 09/30/12 19:00	Run ID: OPTIMA3_121001A								
Client ID: MB-68437	Batch ID: 68437	Units: ug/L	Analysis Date: 10/01/12 11:34	SeqNo: 1804569								
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	66	200									
Arsenic	ND	4.3	20									
Barium	ND	1.1	200									
Chromium	ND	0.64	20									
Copper	ND	3.6	30									
Iron	207.3	31	200									
Manganese	ND	10	50									
Nickel	ND	0.85	50									
Zinc	ND	4.9	50									

Sample ID: LCS-68437	SampType: LCS	TestCode: SW6010_W	Prep Date: 09/30/12 19:00	Run ID: OPTIMA3_121001A								
Client ID: LCS-68437	Batch ID: 68437	Units: ug/L	Analysis Date: 10/01/12 11:08	SeqNo: 1804556								
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8994	66	200	9100	0	98.8	80	120	0			
Arsenic	459.1	4.3	20	455.0	0	101	80	120	0			
Barium	9165	1.1	200	9100	0	101	80	120	0			
Chromium	905.4	0.64	20	910.0	0	99.5	80	120	0			
Copper	1130	3.6	30	1130	0	100	80	120	0			
Iron	4578	31	200	4550	0	101	80	120	0			
Manganese	2251	10	50	2270	0	99.1	80	120	0			B
Nickel	2286	0.85	50	2270	0	101	80	120	0			
Zinc	2268	4.9	50	2270	0	99.9	80	120	0			

Sample ID: MB-68344	SampType: MBLK	TestCode: SW7470	Prep Date: 09/26/12 9:04	Run ID: FIMS2_120927B							
Client ID: MB-68344	Batch ID: 68344	Units: µg/L	Analysis Date: 09/27/12 13:36	SeqNo: 1801788							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.028	0.20								

Sample ID: LCS-68344	SampType: LCS	TestCode: SW7470	Prep Date: 09/26/12 9:04	Run ID: FIMS2_120927B								
Client ID: LCS-68344	Batch ID: 68344	Units: µg/L	Analysis Date: 09/27/12 13:41	SeqNo: 1801791								
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.952	0.028	0.20	4.550	0	109	80	120		0		

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/10/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF-092012

Lab ID: L1976-01

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							SM2540_TDS
Total Dissolved Solids	190		10	mg/L	1	09/25/2012 21:50	68368
SM 2540D -- TOTAL SUSPENDED SOLIDS							SM2540_TSS
Total Suspended Solids	ND		10	mg/L	1	09/26/2012 0:30	68369
SW846 9012B -- Total Cyanide							SW9012_W
Cyanide	ND		10	ug/L	1	09/25/2012 14:09	68303

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

10/10/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF-092012

Lab ID: L1976-02

Project: NOW Corp. Site, 9/12

Collection Date: 09/20/12 10:51

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							SM2540_TDS
Total Dissolved Solids	340		10	mg/L	1	09/26/2012 0:30	68368
SM 2540D -- TOTAL SUSPENDED SOLIDS							SM2540_TSS
Total Suspended Solids	ND		10	mg/L	1	09/26/2012 2:30	68369
SW846 9012B -- Total Cyanide							SW9012_W
Cyanide	ND		10	ug/L	1	09/25/2012 14:12	68303

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.

Work Order: L1976

Project: NOW Corp. Site, 9/12

ANALYTICAL QC SUMMARY REPORT

SM2540_TDS

SM 2540C -- TOTAL DISSOLVED SOLIDS

Sample ID: MB-68368	SampType: MBLK	TestCode: SM2540_TDS	Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925D						
Client ID: MB-68368	Batch ID: 68368	Units: mg/L	Analysis Date: 09/25/12 16:30	SeqNo: 1802050						
Analyte	Result	MDL	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		ND	10							

Sample ID: LCS-68368	SampType: LCS	TestCode: SM2540_TDS		Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925D							
Client ID: LCS-68368	Batch ID: 68368	Units: mg/L		Analysis Date: 09/25/12 19:10	SeqNo: 1802051							
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	429.0	10	10	418.0	0	103	80	120	0			

Sample ID: L1976-02CDUP	SampType: DUP	TestCode: SM2540_TDS	Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925D							
Client ID: INF-092012	Batch ID: 68368	Units: mg/L	Analysis Date: 09/26/12 3:10	SeqNo: 1802055							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	345.0	10	0	0	0	0	0	339.0	1.75	5.0	

CLIENT: AECOM Technical Services, Inc.
Work Order: L1976
Project: NOW Corp. Site, 9/12

ANALYTICAL QC SUMMARY REPORT
SM2540_TSS
SM 2540D -- TOTAL SUSPENDED SOLIDS

Sample ID: MB-68369	SampType: MBLK	TestCode: SM2540_TSS	Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925C
Client ID: MB-68369	Batch ID: 68369	Units: mg/L	Analysis Date: 09/25/12 16:30	SeqNo: 1802032
Analyte	Result	MDL	SPK value	SPK Ref Val
	ND	10	%REC LowLimit HighLimit	RPD Ref Val %RPD RPDLimit
Total Suspended Solids		10		Qual

Sample ID: LCS-68369	SampType: LCS	TestCode: SM2540_TSS	Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925C
Client ID: LCS-68369	Batch ID: 68369	Units: mg/L	Analysis Date: 09/25/12 18:30	SeqNo: 1802033
Analyte	Result	MDL	SPK value	SPK Ref Val
	49.00	10	49.30	RPD Ref Val %RPD RPDLimit
Total Suspended Solids		10	99.4	0

Sample ID: L1976-02CDUP	SampType: DUP	TestCode: SM2540_TSS	Prep Date: 09/25/12 16:30	Run ID: MANUAL_120925C
Client ID: INF-092012	Batch ID: 68369	Units: mg/L	Analysis Date: 09/26/12 4:30	SeqNo: 1802038
Analyte	Result	MDL	SPK value	SPK Ref Val
	ND	10	0	RPD Ref Val %RPD RPDLimit
Total Suspended Solids		10	0	0

5.0

CLIENT: AECOM Technical Services, Inc.
Work Order: L1976
Project: NOW Corp. Site, 9/12

ANALYTICAL QC SUMMARY REPORT
SW9012_W
SW846 9012B -- Total Cyanide

Sample ID: MB-68303	SampType: MBLK	TestCode: SW9012_W	Prep Date: 09/24/12 12:00	Run ID: LACHAT1_120925A
Client ID: MB-68303	Batch ID: 68303	Units: ug/L	Analysis Date: 09/25/12 13:54	SeqNo: 1799564
Analyte	Result	MDL	SPK Ref Val	%REC LowLimit HighLimit
Cyanide	ND	7.5	SPK value	RPD Ref Val %RPD RPDLimit Qual
			RL	
			20	

Sample ID: LCS-68303	SampType: LCS	TestCode: SW9012_W	Prep Date: 09/24/12 12:00	Run ID: LACHAT1_120925A
Client ID: LCS-68303	Batch ID: 68303	Units: ug/L	Analysis Date: 09/25/12 13:57	SeqNo: 1799565
Analyte	Result	MDL	SPK Ref Val	%REC LowLimit HighLimit
Cyanide	94.51	7.5	SPK value	RPD Ref Val %RPD RPDLimit Qual
			RL	
			20	
			100.0	
			94.5	
			80	
			120	
			0	

Sample ID: L1976-02DDUP	SampType: DUP	TestCode: SW9012_W	Prep Date: 09/24/12 12:00	Run ID: LACHAT1_120925A
Client ID: INF-092012	Batch ID: 68303	Units: ug/L	Analysis Date: 09/25/12 14:14	SeqNo: 1799572
Analyte	Result	MDL	SPK Ref Val	%REC LowLimit HighLimit
Cyanide	ND	2.5	SPK value	RPD Ref Val %RPD RPDLimit Qual
			RL	
			10	
			0	
			0	
			0	
			0	
			0	
			0	
			20	

Sample ID: L1976-02DMS	SampType: MS	TestCode: SW9012_W	Prep Date: 09/24/12 12:00	Run ID: LACHAT1_120925A
Client ID: INF-092012	Batch ID: 68303	Units: ug/L	Analysis Date: 09/25/12 14:17	SeqNo: 1799573
Analyte	Result	MDL	SPK Ref Val	%REC LowLimit HighLimit
Cyanide	96.94	2.5	SPK value	RPD Ref Val %RPD RPDLimit Qual
			RL	
			10	
			100.0	
			96.9	
			75	
			125	
			0	
			0	

Report Date:
03-Oct-12 10:51



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
175 Metro Center Boulevard
Warwick, RI 02886-1755
Attn: Edward Lawler

Project: See Chain of Custody
Project #: L1976

- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SB57030-01	EFF-092012	Aqueous	20-Sep-12 10:40	24-Sep-12 17:30
SB57030-02	INF-092012	Aqueous	20-Sep-12 10:51	24-Sep-12 17:30

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435



Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 6 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 3.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

<u>Sample Identification</u>				<u>Client Project #</u>			<u>Matrix</u>	<u>Collection Date/Time</u>			<u>Received</u>		
EFF-092012				L1976			Aqueous	20-Sep-12 10:40			24-Sep-12		
SB57030-01													
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
	Oil & Grease	< 1.00	OG	mg/l	1.00	0.619	1	EPA 1664A	27-Sep-12	28-Sep-12	JK	1223508	X

<u>Sample Identification</u>				<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>						
INF-092012				L1976	Aqueous	20-Sep-12 10:51	24-Sep-12						
SB57030-02													
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
	Oil & Grease	< 1.00	OG	mg/l	1.00	0.619	1	EPA 1664A	27-Sep-12	28-Sep-12	JK	1223508	X

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1223508 - SW846 3510C										
<u>Blank (1223508-BLK1)</u>								<u>Prepared: 27-Sep-12 Analyzed: 28-Sep-12</u>		
Oil & Grease	< 1.00		mg/l	1.00						
<u>LCS (1223508-BS1)</u>								<u>Prepared: 27-Sep-12 Analyzed: 28-Sep-12</u>		
Oil & Grease	48.2		mg/l		56.5		85	83-101		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
OG	The required Matrix Spike and Matrix Spike Duplicate (MS/MSD) for Oil & Grease method 1664A can only be analyzed when the client has submitted sufficient sample volume. An extra liter per MS/MSD is required to fulfill the method QC criteria. Please refer to Chain of Custody and QC Summary (MS/MSD) of the Laboratory Report to verify ample sample volume was submitted to fulfill the requirement.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Kimberly Wisk



CHAIN-OF-CUSTODY RECORD

SB57030 JB

Subcontractor:
Spectrum Analytical, Inc.

Agawam, Massachusetts 01001

Phone: (413) 789-9018

EquiSFacilityCode: N/A

WorkOrder : L1976
Report Type : LEVEL 2

Due Date : 10/10/2012

FAX Due Date :

Report To : Edward A Lawler

Purchase Order : L1976

EDD Type :

Requested Test

Client Sample ID	Collection Date	Matrix	DUP/MS/MSD	Mitkem Sample ID										
EFF-092012	57030-01	9/20/2012 10:40:00 AM	Aqueous	L1976-01E	X									
INF-092012	U 02	9/20/2012 10:51:00 AM	Aqueous	L1976-02E	X									

1) E1664, OIL GREASE, HEM

Use 'Client Sample ID' when reporting data. If needed, truncate 'Client Sample ID' to fit on reports. Use full 'Client Sample ID' when generating EDD.
Comments: PEL EDD is required for this sub-contracted work instead of the EDD listed above.

Relinquished by:		Date/Time	09/21/12 13:39
Received by:		Date/Time	9/24/12
Relinquished by:		Date/Time	9/24/12
Received by:		Date/Time	9-24-12 17:30

175 Metro Center Blvd * Warwick * RI * 02886-1755 * 401-732-3400 * 401-732-3499*
www.spectrum-analytical.com

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Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

WorkOrder: L1976

Client ID: EARTH_NY

Project: NOW Corp. Site

WO Name: NOW Corp. Site, 9/12

Location: NOW_CORP,

Comments: N/A

Case:

SDG:

PO: 6027 6639 I

HC Due: 10/10/12

Fax Due:

☐

Fax Report:

Report Level: LEVEL 2

Special Program:

EDD:

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
L1976-01A	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA
L1976-01B	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SW6010_W	/ See SEL list				Y	M1
L1976-01B	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SW7470	/ See SEL list					M1
L1976-01C	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SM2540_TDS	/					F4
L1976-01C	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SM2540_TSS	/					F4
L1976-01D	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	SW9012_W	/				Y	F4
L1976-01E	EFF-092012	09/20/2012 10:40	09/21/2012	Aqueous	E1664	/ SPECTRUMSPECTRUM					SUB
L1976-02A	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA
L1976-02B	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SW6010_W	/ See SEL list				Y	M1
L1976-02B	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SW7470	/ See SEL list					M1
L1976-02C	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SM2540_TDS	/					F4
L1976-02C	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SM2540_TSS	/					F4
L1976-02D	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	SW9012_W	/				Y	F4
L1976-02E	INF-092012	09/20/2012 10:51	09/21/2012	Aqueous	E1664	/ SPECTRUMSPECTRUM					SUB
L1976-03A	TW-1-092012	09/20/2012 11:02	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA
L1976-04A	TW-2A-092012	09/20/2012 11:05	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA
L1976-05A	TW-3-092012	09/20/2012 11:07	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA
L1976-06A	TB-092012	09/20/2012 00:00	09/21/2012	Aqueous	SW8260_25_W	/				Y	VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold



SPECTRUM ANALYTICAL, INC.
FACILITY
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

- TAT - Indicate Date Needed: _____
 • All TATs subject to laboratory approval.
 Min. 24-hour notification needed for rushes.
 • Samples disposed of after 30 days unless otherwise instructed.

Report To: AECOM
40 British American Blvd.
Latham NY 12110

Invoice To: Same

Project No.: 60276639 1
 Site Name: New Corp
 Location: Staatsburg State: NY
 Sampler(s): RG-TLK

Project Mgr.: Stephen Choiniere

P.O. No.: _____ RQN: _____

1=Na₂SO₃ 2=HCl 3=H₂SO₄ 4=HNO₃ 5=NaOH 6=Ascorbic Acid 7=CH₃OH
 8=NaHSO₄ 9=None 10= _____ 11= _____

List preservative code below:

2 4 9 2 5

Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
 O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
 X1= _____ X2= _____ X3= _____

Containers:

of VOA Vials
 # of Amber Glass
 # of Clear Glass
 # of Plastic

Analyses:

8260
 Metal*
 TDS/TSS
 O+G
 Cyanide

QA/QC Reporting Level

- ☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

Matrix

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:
01	EFF-092012	9/20/12	1040
02	INF-092012		1051
03	TW-1-092012		1102
04	TW-2A-092012		1105
05	TW-3-092012		1107
06	TB-092012		

☐ E-mail to _____

EDD Format _____

Condition upon receipt: ☒ Iced ☐ Ambient ☒ °C 5

Relinquished by:

Steve Diaz

Received by:

FedEx

Time:

9/20/12 15:10

9/21/12 8:40

Received By: <i>[Signature]</i>		Page 01 of 00	
Reviewed By: <i>[Signature]</i>		Log-in Date 09/21/2012	
Work Order: L1976		Client Name: AECOM Technical Services, Inc.	
Project Name/Event: NOW Corp. Site			
Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.			

Lab Sample ID	Preservation (pH)					VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
	HNO3	H2SO4	HCl	NaOH	H3PO4		
L1976-01	<2		<2	>12		H	
L1976-02	<2		<2	>12		H	
L1976-03						H	
L1976-04						H	
L1976-05						H	
L1976-06						H	

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	FedEx 8010 0348 9963
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed /
	Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	5 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	09/21/2012
12. Time Received	08:40
Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On
IR Temp Gun ID: MT-1	
Coolant Condition: ICE	
Preservative Name/Lot No:	

VOA Matrix Key:

US = Unpreserved Soil A = Air

UA = Unpreserved Aqueous H = HCl

M = MeOH E = Encore

N = NaHSO4 F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Last Page of Data Report