AECOM

Operation, Maintenance and Monitoring Report
December 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

February 2013

February 15, 2013

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: "December" 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 **(November 28 – December 27, 2012)**.

With the exceptions noted below, if any, the P&T system was online and operational throughout the reporting period. Approximately 550,500 gallons of water were treated during the period. Discharge from the treatment system averaged approximately 18,983 gallons per day (gpd), compared to 18,421 gpd in the prior reporting period.

As of the last day of the reporting period, a total of 90,462,400 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 December 27. **Effluent limitations were not exceeded this reporting 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 on the stripper blower was operating at 55 Hz.

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

December 5 – AECOM was onsite to replace the 4" air stripper effluent pipe with a 2" pipe. The objective was to be able to lower the VFD speed from its maximum setting, 60 HZ, to a lower speed while still achieving the air flow and stripper pressure values required for adequate stripper performance. It was determined through the use of an air velocity meter and reading the air stripper pressure readings that adequate stripper performance requirements were met at 55 Hz. AECOM kept the system at 55 Hz to monitor its removal effectiveness for the upcoming sampling event.

December 27 – AECOM was onsite to complete quarterly water level measurements and monthly influent, effluent, and recovery well sampling.

The system efficiency and runtime was evaluated over the month. Except for the maintenance performed on December 5, the system operated without downtime for the 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: December 27, 2012
NOW Corporation Site
Town of Clinton, New York

Analytes/ Parameters	Total Influent	Effluent	Recovery Wells TW-1	Recovery Wells TW-2A	Recovery Wells TW-3	Effluent Limitations	(units)
Quantity treated, per day		18,983				Monitor	gallons
pH	6.8	6.9				6.5 to 8.5	standard units
Oil and Grease	<5	<5	NA	NA	NA	15	mg/L
Total Cyanide	<10	<10	NA	NA	NA	10	ug/L
TDS	**270**	**270**	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	**77 J**	**76 J**	NA	NA	NA	Monitor	ug/L
Chromium	<20	<20	NA	NA	NA	400	ug/L
Copper	**4.7 J**	<25	NA	NA	NA	24	ug/L
Iron	<200	<200	NA	NA	NA	600	ug/L
Mercury	**0.11 J**	**0.087 J**	NA	NA	NA	0.8	ug/L
Manganese	**180**	**110**	NA	NA	NA	Monitor	ug/L
Nickel	**2.2 J**	**1.2 J**	NA	NA	NA	200	ug/L
Zinc	**6.2 J**	<50	NA	NA	NA	150	ug/L
1,1,1-Trichloroethane	**280**	<0.5	**2.1**	**440**	**14**	10	ug/L
1,1,2-Trichloroethane	<10	<0.5	<2	<20	<0.5	1.2	ug/L
1,1-Dichloroethane	**140**	<0.5	**40**	**200**	**22**	10	ug/L
1,1-Dichloroethene	**19**	<0.5	**12**	**27**	**2**	0.5	ug/L
1,2-Dichloroethane	<10	<0.5	<2	<20	**14**	1.6	ug/L
Benzene	<10	<0.5	<2	<20	<0.5	1.4	ug/L
Chlorobenzene	<10	<0.5	<2	<20	<0.5	10	ug/L
Chloroethane	<10	<0.5	<2	<20	<0.5	10	ug/L
cis -1,2-Dichloroethene	**17**	<0.5	**3.8**	**21**	**0.53**	5	ug/L
Ethylbenzene	<10	<0.5	<2	<20	<0.5	10	ug/L
o-Xylene	<10	<0.5	<2	<20	<0.5	5	ug/L
m,p-Xylene	<10	<0.5	<2	<20	<0.5	10	ug/L
Tetrachloroethene	<10	<0.5	<2	<20	<0.5	1.4	ug/L
Toluene	<10	<0.5	<2	<20	<0.5	10	ug/L
trans -1,2-Dichloroethene	<10	<0.5	<2	<20	<0.5	5	ug/L
Trichloroethene	**310**	<0.5	**44**	**470**	**17**	6	ug/L
Vinyl Chloride	<10	<0.5	<2	<20	<0.5	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 December 2012 O&M Data

NOW Corporation Site
Town of Clinton, New York

Instrumentation/Readings:		**12/27/12**	**Units**
TW-1			
	Pumping Rate	1	GPM
	Water Level Above Transducer	23.48	feet
	Flow Meter Reading	6,392,200	gallons
	Pump Pressure	75	psi
TW-2A			
	Pumping Rate	~14	GPM
	Water Level Above Transducer	36.43	feet
	Flow Meter Reading	25,612,800	gallons
	Pump Pressure	80	psi
TW-3			
	Pumping Rate	3	GPM
	Water Level Above Transducer	25.35	feet
	Flow Meter Reading	10,053,800	gallons
	Pump Pressure	65	psi
Air Stripper			
	Stripper Blower Pressure	18.5	inches H_2O
	Air Temperature in Stripper	50	°F
Effluent Flow			
	Effluent Flow this period (calculated)	550,500	gallons
	Total Effluent Flow (calculated)	90,462,400	gallons

Table 3
Groundwater Levels

NOW Corporation Site
Town of Clinton, New York

Well ID	MP Elevation	12/27/12 Depth to Water (Ft below MP)	12/27/12 GW Elevation
MW-1	289.50	12.08	277.42
MW-2	332.51	25.15	307.36
MW-3	312.83	27.37	285.46
MW-3S	312.51	25.41	287.10
MW-4	298.29	22.12	276.17
MW-4D	298.16	21.94	276.22
MW-5	285.48	19.08	266.40
MW-6S	287.90	4.64	283.26
MW-6D	287.25	8.94	278.31
MW-7S	292.12	23.61	268.51
MW-7D	292.54	56.49	236.05
OW-1	307.75	50.89	256.86
OW-2	305.96	71.00	234.96
OW-6	294.81	4.97	289.84
IW-1	312.46	31.69	280.77
IW-2	304.56	39.57	264.99

Note: N/A indicates data are not available.
MP denotes measuring point.

Report Date:
16-Jan-13 14:52

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

- [x] Final Report
- [ ] Re-Issued Report
- [ ] Revised Report

Laboratory Report

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

Work Order: L2642
Project : NOW Corp. Site, 12/2012
Project #:

Attn: Stephen Choiniere

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
L2642-01	EFF 122712	Aqueous	27-Dec-12 13:25	28-Dec-12 11:40
L2642-02	INF 122712	Aqueous	27-Dec-12 13:37	28-Dec-12 11:40
L2642-03	TW-1 122712	Aqueous	27-Dec-12 13:43	28-Dec-12 11:40
L2642-04	TW-2A 122712	Aqueous	27-Dec-12 13:48	28-Dec-12 11:40
L2642-05	TW-3 122712	Aqueous	27-Dec-12 13:52	28-Dec-12 11:40
L2642-06	TB 122712	Aqueous	27-Dec-12 00:00	28-Dec-12 11:40

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 samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

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
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
DoD ELAP
Certificate # L2247 Testing

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, 12/2012

Laboratory Workorder / SDG #: L2642

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:

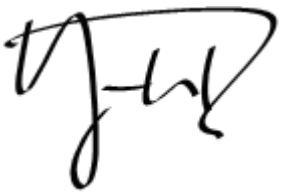
The following samples were analyzed at dilution:

INF 122712 (L2642-02A) : Dilution Factor: 20
TW-1 122712 (L2642-03A) : Dilution Factor: 4
TW-2A 122712 (L2642-04A) : 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.



Signed:_____ _____

Date:_____1/13/2013_____

REPORT NARRATIVE

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

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 12/2012

Laboratory Workorder / SDG #: L2642

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: SW3005A
Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used to perform analysis:

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:

All method blanks were within the acceptance criteria.

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):

Serial Dilution analyses were performed on sample: INF 122712 (L2642-02CSD).

Percent differences were within the QC limits.

G. Samples:

No other unusual occurrences were noted during sample analysis.

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Signed: 

Date: 01/16/13

REPORT NARRATIVE

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

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 12/2012

Laboratory Workorder / SDG #: L2642

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 analysis:

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

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 122712 (L2642-02EMS).

Percent recovery was within the QC limits.

D. Duplicate sample:

Duplicate analysis was performed on sample: INF 122712 (L2642-02EDUP).

Relative percent difference 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.

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Signed: 

Date: 01/16/13

REPORT NARRATIVE

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

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site, 12/2012

Laboratory Workorder / SDG #: L2642

EPA 1664A, Oil & Grease, HEM

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: EPA 1664A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3510

V. INSTRUMENTATION

The following instrumentation was used to perform Oil and Grease analysis.

Instrument Type: Analytical Balance
Manufacturer: Denver Instrument Company
Model: A-250

VI. ANALYSIS

A. Calibration:

Analytical balance was calibrated based on SOP/Method 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):

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

D. Duplicate sample:

No client-requested duplicate analyses were included in this SDG.

E. 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.

Signed: 

Date: 01/16/13

Client: AECOM Technical Services, Inc.
Client Sample ID: EFF 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-01 **Collection Date:** 12/27/12 13:25

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	01/07/2013 16:48	70022
Chloroethane	ND		0.50	ug/L	1	01/07/2013 16:48	70022
1,1-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Methyl tert-butyl ether	ND		0.50	ug/L	1	01/07/2013 16:48	70022
1,1-Dichloroethane	ND		0.50	ug/L	1	01/07/2013 16:48	70022
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
1,1,1-Trichloroethane	ND		0.50	ug/L	1	01/07/2013 16:48	70022
1,2-Dichloroethane	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Benzene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Trichloroethene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Toluene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
1,1,2-Trichloroethane	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Tetrachloroethene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Chlorobenzene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Ethylbenzene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
m,p-Xylene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
o-Xylene	ND		0.50	ug/L	1	01/07/2013 16:48	70022
Surrogate: Dibromofluoromethane	101		88-124	%REC	1	01/07/2013 16:48	70022
Surrogate: 1,2-Dichloroethane-d4	87.6		79-115	%REC	1	01/07/2013 16:48	70022
Surrogate: Toluene-d8	102		80-114	%REC	1	01/07/2013 16:48	70022
Surrogate: Bromofluorobenzene	101		60-123	%REC	1	01/07/2013 16:48	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: INF 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-02 **Collection Date:** 12/27/12 13:37

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		10	ug/L	20	01/07/2013 17:16	70022
Chloroethane	ND		10	ug/L	20	01/07/2013 17:16	70022
1,1-Dichloroethene	19		10	ug/L	20	01/07/2013 17:16	70022
trans-1,2-Dichloroethene	ND		10	ug/L	20	01/07/2013 17:16	70022
Methyl tert-butyl ether	ND		10	ug/L	20	01/07/2013 17:16	70022
1,1-Dichloroethane	140		10	ug/L	20	01/07/2013 17:16	70022
cis-1,2-Dichloroethene	17		10	ug/L	20	01/07/2013 17:16	70022
1,1,1-Trichloroethane	280		10	ug/L	20	01/07/2013 17:16	70022
1,2-Dichloroethane	ND		10	ug/L	20	01/07/2013 17:16	70022
Benzene	ND		10	ug/L	20	01/07/2013 17:16	70022
Trichloroethene	310		10	ug/L	20	01/07/2013 17:16	70022
Toluene	ND		10	ug/L	20	01/07/2013 17:16	70022
1,1,2-Trichloroethane	ND		10	ug/L	20	01/07/2013 17:16	70022
Tetrachloroethene	ND		10	ug/L	20	01/07/2013 17:16	70022
Chlorobenzene	ND		10	ug/L	20	01/07/2013 17:16	70022
Ethylbenzene	ND		10	ug/L	20	01/07/2013 17:16	70022
m,p-Xylene	ND		10	ug/L	20	01/07/2013 17:16	70022
o-Xylene	ND		10	ug/L	20	01/07/2013 17:16	70022
Surrogate: Dibromofluoromethane	100		88-124	%REC	20	01/07/2013 17:16	70022
Surrogate: 1,2-Dichloroethane-d4	89.7		79-115	%REC	20	01/07/2013 17:16	70022
Surrogate: Toluene-d8	103		80-114	%REC	20	01/07/2013 17:16	70022
Surrogate: Bromofluorobenzene	98.9		60-123	%REC	20	01/07/2013 17:16	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: TW-1 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-03 **Collection Date:** 12/27/12 13:43

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		2.0	ug/L	4	01/07/2013 17:43	70022
Chloroethane	ND		2.0	ug/L	4	01/07/2013 17:43	70022
1,1-Dichloroethene	12		2.0	ug/L	4	01/07/2013 17:43	70022
trans-1,2-Dichloroethene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Methyl tert-butyl ether	ND		2.0	ug/L	4	01/07/2013 17:43	70022
1,1-Dichloroethane	40		2.0	ug/L	4	01/07/2013 17:43	70022
cis-1,2-Dichloroethene	3.8		2.0	ug/L	4	01/07/2013 17:43	70022
1,1,1-Trichloroethane	2.1		2.0	ug/L	4	01/07/2013 17:43	70022
1,2-Dichloroethane	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Benzene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Trichloroethene	44		2.0	ug/L	4	01/07/2013 17:43	70022
Toluene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
1,1,2-Trichloroethane	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Tetrachloroethene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Chlorobenzene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Ethylbenzene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
m,p-Xylene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
o-Xylene	ND		2.0	ug/L	4	01/07/2013 17:43	70022
Surrogate: Dibromofluoromethane	98.7		88-124	%REC	4	01/07/2013 17:43	70022
Surrogate: 1,2-Dichloroethane-d4	86.0		79-115	%REC	4	01/07/2013 17:43	70022
Surrogate: Toluene-d8	102		80-114	%REC	4	01/07/2013 17:43	70022
Surrogate: Bromofluorobenzene	98.0		60-123	%REC	4	01/07/2013 17:43	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: TW-2A 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-04 **Collection Date:** 12/27/12 13:48

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	01/07/2013 18:11	70022
Chloroethane	ND		20	ug/L	40	01/07/2013 18:11	70022
1,1-Dichloroethene	27		20	ug/L	40	01/07/2013 18:11	70022
trans-1,2-Dichloroethene	ND		20	ug/L	40	01/07/2013 18:11	70022
Methyl tert-butyl ether	ND		20	ug/L	40	01/07/2013 18:11	70022
1,1-Dichloroethane	200		20	ug/L	40	01/07/2013 18:11	70022
cis-1,2-Dichloroethene	21		20	ug/L	40	01/07/2013 18:11	70022
1,1,1-Trichloroethane	440		20	ug/L	40	01/07/2013 18:11	70022
1,2-Dichloroethane	ND		20	ug/L	40	01/07/2013 18:11	70022
Benzene	ND		20	ug/L	40	01/07/2013 18:11	70022
Trichloroethene	470		20	ug/L	40	01/07/2013 18:11	70022
Toluene	ND		20	ug/L	40	01/07/2013 18:11	70022
1,1,2-Trichloroethane	ND		20	ug/L	40	01/07/2013 18:11	70022
Tetrachloroethene	ND		20	ug/L	40	01/07/2013 18:11	70022
Chlorobenzene	ND		20	ug/L	40	01/07/2013 18:11	70022
Ethylbenzene	ND		20	ug/L	40	01/07/2013 18:11	70022
m,p-Xylene	ND		20	ug/L	40	01/07/2013 18:11	70022
o-Xylene	ND		20	ug/L	40	01/07/2013 18:11	70022
Surrogate: Dibromofluoromethane	98.9		88-124	%REC	40	01/07/2013 18:11	70022
Surrogate: 1,2-Dichloroethane-d4	85.0		79-115	%REC	40	01/07/2013 18:11	70022
Surrogate: Toluene-d8	102		80-114	%REC	40	01/07/2013 18:11	70022
Surrogate: Bromofluorobenzene	99.9		60-123	%REC	40	01/07/2013 18:11	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: TW-3 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-05 **Collection Date:** 12/27/12 13:52

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	01/07/2013 18:38	70022
Chloroethane	ND		0.50	ug/L	1	01/07/2013 18:38	70022
1,1-Dichloroethene	2.0		0.50	ug/L	1	01/07/2013 18:38	70022
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Methyl tert-butyl ether	ND		0.50	ug/L	1	01/07/2013 18:38	70022
1,1-Dichloroethane	22		0.50	ug/L	1	01/07/2013 18:38	70022
cis-1,2-Dichloroethene	0.53		0.50	ug/L	1	01/07/2013 18:38	70022
1,1,1-Trichloroethane	14		0.50	ug/L	1	01/07/2013 18:38	70022
1,2-Dichloroethane	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Benzene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Trichloroethene	17		0.50	ug/L	1	01/07/2013 18:38	70022
Toluene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
1,1,2-Trichloroethane	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Tetrachloroethene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Chlorobenzene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Ethylbenzene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
m,p-Xylene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
o-Xylene	ND		0.50	ug/L	1	01/07/2013 18:38	70022
Surrogate: Dibromofluoromethane	97.1		88-124	%REC	1	01/07/2013 18:38	70022
Surrogate: 1,2-Dichloroethane-d4	89.3		79-115	%REC	1	01/07/2013 18:38	70022
Surrogate: Toluene-d8	103		80-114	%REC	1	01/07/2013 18:38	70022
Surrogate: Bromofluorobenzene	101		60-123	%REC	1	01/07/2013 18:38	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: TB 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-06 **Collection Date:** 12/27/12 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	01/07/2013 19:06	70022
Chloroethane	ND		0.50	ug/L	1	01/07/2013 19:06	70022
1,1-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Methyl tert-butyl ether	ND		0.50	ug/L	1	01/07/2013 19:06	70022
1,1-Dichloroethane	ND		0.50	ug/L	1	01/07/2013 19:06	70022
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
1,1,1-Trichloroethane	ND		0.50	ug/L	1	01/07/2013 19:06	70022
1,2-Dichloroethane	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Benzene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Trichloroethene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Toluene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
1,1,2-Trichloroethane	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Tetrachloroethene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Chlorobenzene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Ethylbenzene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
m,p-Xylene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
o-Xylene	ND		0.50	ug/L	1	01/07/2013 19:06	70022
Surrogate: Dibromofluoromethane	100		88-124	%REC	1	01/07/2013 19:06	70022
Surrogate: 1,2-Dichloroethane-d4	88.8		79-115	%REC	1	01/07/2013 19:06	70022
Surrogate: Toluene-d8	103		80-114	%REC	1	01/07/2013 19:06	70022
Surrogate: Bromofluorobenzene	99.2		60-123	%REC	1	01/07/2013 19:06	70022

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW8260_25_W

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

Sample ID: **MB-70022** SampType: **MBLK** TestCode: **SW8260_25_W** Prep Date: **01/07/13 9:22** Run ID: **V5_130107A**
Client ID: **MB-70022** Batch ID: **70022** Units: **ug/L** Analysis Date: **01/07/13 16:20** SeqNo: **1855545**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.15	0.50									
Chloroethane	ND	0.24	0.50									
1,1-Dichloroethene	ND	0.19	0.50									
trans-1,2-Dichloroethene	ND	0.14	0.50									
Methyl tert-butyl ether	ND	0.13	0.50									
1,1-Dichloroethane	ND	0.18	0.50									
cis-1,2-Dichloroethene	ND	0.19	0.50									
1,1,1-Trichloroethane	ND	0.11	0.50									
1,2-Dichloroethane	ND	0.16	0.50									
Benzene	ND	0.12	0.50									
Trichloroethene	ND	0.13	0.50									
Toluene	ND	0.14	0.50									
1,1,2-Trichloroethane	ND	0.20	0.50									
Tetrachloroethene	ND	0.17	0.50									
Chlorobenzene	ND	0.13	0.50									
Ethylbenzene	ND	0.13	0.50									
m,p-Xylene	ND	0.22	0.50									
o-Xylene	ND	0.17	0.50									
Surrogate: Dibromofluoromethane	9.897		0.50	10.00	0	99.0	88	124	0			
Surrogate: 1,2-Dichloroethane-d4	8.745		0.50	10.00	0	87.5	79	115	0			
Surrogate: Toluene-d8	10.27		0.50	10.00	0	103	80	114	0			
Surrogate: Bromofluorobenzene	10.17		0.50	10.00	0	102	60	123	0			

CLIENT: AECOM Technical Services, Inc.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW8260_25_W

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

Sample ID: **LCS-70022** SampType: **LCS** TestCode: **SW8260_25_W** Prep Date: **01/07/13 9:22** Run ID: **V5_130107A**
Client ID: **LCS-70022** Batch ID: **70022** Units: **ug/L** Analysis Date: **01/07/13 15:24** SeqNo: **1855543**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	10.40	0.15	0.50	10.00	0	104	77	120	0			
Chloroethane	9.891	0.24	0.50	10.00	0	98.9	75	135	0			
1,1-Dichloroethene	10.23	0.19	0.50	10.00	0	102	81	125	0			
trans-1,2-Dichloroethene	10.21	0.14	0.50	10.00	0	102	60	137	0			
Methyl tert-butyl ether	9.967	0.13	0.50	10.00	0	99.7	61	134	0			
1,1-Dichloroethane	10.58	0.18	0.50	10.00	0	106	82	120	0			
cis-1,2-Dichloroethene	10.72	0.19	0.50	10.00	0	107	84	116	0			
1,1,1-Trichloroethane	10.56	0.11	0.50	10.00	0	106	80	124	0			
1,2-Dichloroethane	10.41	0.16	0.50	10.00	0	104	86	117	0			
Benzene	10.37	0.12	0.50	10.00	0	104	81	121	0			
Trichloroethene	10.45	0.13	0.50	10.00	0	104	74	123	0			
Toluene	10.30	0.14	0.50	10.00	0	103	88	117	0			
1,1,2-Trichloroethane	10.16	0.20	0.50	10.00	0	102	83	121	0			
Tetrachloroethene	10.19	0.17	0.50	10.00	0	102	74	115	0			
Chlorobenzene	10.48	0.13	0.50	10.00	0	105	83	112	0			
Ethylbenzene	10.30	0.13	0.50	10.00	0	103	87	110	0			
m,p-Xylene	19.90	0.22	0.50	20.00	0	99.5	87	114	0			
o-Xylene	10.31	0.17	0.50	10.00	0	103	84	114	0			
Surrogate: Dibromofluoromethane	10.20		0.50	10.00	0	102	88	124	0			
Surrogate: 1,2-Dichloroethane-d4	9.309		0.50	10.00	0	93.1	79	115	0			
Surrogate: Toluene-d8	10.13		0.50	10.00	0	101	80	114	0			
Surrogate: Bromofluorobenzene	9.871		0.50	10.00	0	98.7	60	123	0			

CLIENT: AECOM Technical Services, Inc.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW8260_25_W

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

Sample ID: **LCSD-70022** SampType: **LCSD** TestCode: **SW8260_25_W** Prep Date: **01/07/13 9:22** Run ID: **V5_130107A**
Client ID: **LCSD-70022** Batch ID: **70022** Units: **ug/L** Analysis Date: **01/07/13 15:53** SeqNo: **1855544**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	10.55	0.15	0.50	10.00	0	105	77	120	10.40	1.38	40	
Chloroethane	10.00	0.24	0.50	10.00	0	100	75	135	9.891	1.13	40	
1,1-Dichloroethene	10.46	0.19	0.50	10.00	0	105	81	125	10.23	2.25	40	
trans-1,2-Dichloroethene	10.32	0.14	0.50	10.00	0	103	60	137	10.21	1.04	40	
Methyl tert-butyl ether	9.884	0.13	0.50	10.00	0	98.8	61	134	9.967	0.845	40	
1,1-Dichloroethane	10.65	0.18	0.50	10.00	0	107	82	120	10.58	0.665	40	
cis-1,2-Dichloroethene	10.22	0.19	0.50	10.00	0	102	84	116	10.72	4.8	40	
1,1,1-Trichloroethane	10.28	0.11	0.50	10.00	0	103	80	124	10.56	2.7	40	
1,2-Dichloroethane	10.46	0.16	0.50	10.00	0	105	86	117	10.41	0.408	40	
Benzene	10.45	0.12	0.50	10.00	0	104	81	121	10.37	0.754	40	
Trichloroethene	10.35	0.13	0.50	10.00	0	103	74	123	10.45	0.995	40	
Toluene	10.22	0.14	0.50	10.00	0	102	88	117	10.30	0.822	40	
1,1,2-Trichloroethane	9.980	0.20	0.50	10.00	0	99.8	83	121	10.16	1.75	40	
Tetrachloroethene	10.30	0.17	0.50	10.00	0	103	74	115	10.19	1.15	40	
Chlorobenzene	10.60	0.13	0.50	10.00	0	106	83	112	10.48	1.13	40	
Ethylbenzene	10.09	0.13	0.50	10.00	0	101	87	110	10.30	2.09	40	
m,p-Xylene	20.04	0.22	0.50	20.00	0	100	87	114	19.90	0.67	40	
o-Xylene	10.07	0.17	0.50	10.00	0	101	84	114	10.31	2.31	40	
Surrogate: Dibromofluoromethane	10.25		0.50	10.00	0	102	88	124	0			
Surrogate: 1,2-Dichloroethane-d4	9.553		0.50	10.00	0	95.5	79	115	0			
Surrogate: Toluene-d8	10.18		0.50	10.00	0	102	80	114	0			
Surrogate: Bromofluorobenzene	10.25		0.50	10.00	0	102	60	123	0			

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

01/16/2013

Client: AECOM Technical Services, Inc.
Client Sample ID: EFF 122712
Lab ID: L2642-01
Project: NOW Corp. Site, 12/2012
Collection Date: 12/27/12 13:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							**SW6010_W**
Aluminum	ND		200	ug/L	1	01/03/2013 8:24	69969
Arsenic	ND		20	ug/L	1	01/03/2013 8:24	69969
Barium	76	J	200	ug/L	1	01/03/2013 8:24	69969
Chromium	ND		20	ug/L	1	01/03/2013 8:24	69969
Copper	ND		25	ug/L	1	01/03/2013 8:24	69969
Iron	ND		200	ug/L	1	01/03/2013 8:24	69969
Manganese	110		50	ug/L	1	01/03/2013 8:24	69969
Nickel	1.2	J	50	ug/L	1	01/03/2013 8:24	69969
Zinc	ND		50	ug/L	1	01/03/2013 8:24	69969
SW846 7470A -- Mercury by FIA							**SW7470**
Mercury	0.087	J	0.20	µg/L	1	01/04/2013 14:19	70002

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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

01/16/2013

Client: AECOM Technical Services, Inc.
Client Sample ID: INF 122712
Lab ID: L2642-02
Project: NOW Corp. Site, 12/2012
Collection Date: 12/27/12 13:37

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							**SW6010_W**
Aluminum	ND		200	ug/L	1	01/03/2013 8:28	69969
Arsenic	ND		20	ug/L	1	01/03/2013 8:28	69969
Barium	77	J	200	ug/L	1	01/03/2013 8:28	69969
Chromium	ND		20	ug/L	1	01/03/2013 8:28	69969
Copper	4.7	J	25	ug/L	1	01/03/2013 8:28	69969
Iron	ND		200	ug/L	1	01/03/2013 8:28	69969
Manganese	180		50	ug/L	1	01/03/2013 8:28	69969
Nickel	2.2	J	50	ug/L	1	01/03/2013 8:28	69969
Zinc	6.2	J	50	ug/L	1	01/03/2013 8:28	69969
SW846 7470A -- Mercury by FIA							**SW7470**
Mercury	0.11	J	0.20	µg/L	1	01/04/2013 14:20	70002

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW6010_W

SW846 6010C -- Metals by ICP

Sample ID: **MB-69969** SampType: **MBLK** TestCode: **SW6010_W** Prep Date: **12/31/12 10:15** Run ID: **OPTIMA3_130103A**
Client ID: **MB-69969** Batch ID: **69969** Units: **ug/L** Analysis Date: **01/03/13 8:14** SeqNo: **1854487**

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	ND	31	200									
Manganese	ND	10	50									
Nickel	ND	0.85	50									
Zinc	ND	4.9	50									

Sample ID: **LCS-69969** SampType: **LCS** TestCode: **SW6010_W** Prep Date: **12/31/12 10:15** Run ID: **OPTIMA3_130103A**
Client ID: **LCS-69969** Batch ID: **69969** Units: **ug/L** Analysis Date: **01/03/13 8:17** SeqNo: **1854488**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	8748	66	200	9100	0	96.1	80	120	0			
Arsenic	442.4	4.3	20	455.0	0	97.2	80	120	0			
Barium	9046	1.1	200	9100	0	99.4	80	120	0			
Chromium	872.0	0.64	20	910.0	0	95.8	80	120	0			
Copper	1090	3.6	30	1130	0	96.4	80	120	0			
Iron	4321	31	200	4550	0	95.0	80	120	0			
Manganese	2248	10	50	2270	0	99.0	80	120	0			
Nickel	2220	0.85	50	2270	0	97.8	80	120	0			
Zinc	2207	4.9	50	2270	0	97.2	80	120	0			

CLIENT: AECOM Technical Services, Inc.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW6010_W

SW846 6010C -- Metals by ICP

Sample ID: **LCSD-69969** SampType: **LCSD** TestCode: **SW6010_W** Prep Date: **12/31/12 10:15** Run ID: **OPTIMA3_130103A**
Client ID: **LCSD-69969** Batch ID: **69969** Units: **ug/L** Analysis Date: **01/03/13 8:21** SeqNo: **1854489**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9141	66	200	9100	0	100	80	120	8748	4.39	20	
Arsenic	470.5	4.3	20	455.0	0	103	80	120	442.4	6.15	20	
Barium	9422	1.1	200	9100	0	104	80	120	9046	4.07	20	
Chromium	909.5	0.64	20	910.0	0	99.9	80	120	872.0	4.21	20	
Copper	1136	3.6	30	1130	0	101	80	120	1090	4.17	20	
Iron	4503	31	200	4550	0	99.0	80	120	4321	4.12	20	
Manganese	2342	10	50	2270	0	103	80	120	2248	4.06	20	
Nickel	2309	0.85	50	2270	0	102	80	120	2220	3.93	20	
Zinc	2297	4.9	50	2270	0	101	80	120	2207	3.99	20	

Sample ID: **L2642-02CSD** SampType: **SD** TestCode: **SW6010_W** Prep Date: **12/31/12 10:15** Run ID: **OPTIMA3_130103A**
Client ID: **INF 122712** Batch ID: **69969** Units: **ug/L** Analysis Date: **01/03/13 8:31** SeqNo: **1854492**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	330	1000	0	0	0	0	0	0	0	10	
Arsenic	ND	22	100	0	0	0	0	0	0	0	10	
Barium	81.44	5.5	1000	0	0	0	0	0	77.09	5.48	10	J
Chromium	ND	3.2	100	0	0	0	0	0	0	0	10	
Copper	ND	18	130	0	0	0	0	0	4.680	0	10	
Iron	ND	160	1000	0	0	0	0	0	0	0	10	
Manganese	187.1	50	250	0	0	0	0	0	177.5	5.26	10	J
Nickel	ND	4.3	250	0	0	0	0	0	2.187	0	10	
Zinc	ND	25	250	0	0	0	0	0	6.152	0	10	

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank
J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW7470

SW846 7470A -- Mercury by FIA

Sample ID: **MB-70002**	SampType: **MBLK**	TestCode: **SW7470**			Prep Date: **01/04/13 9:31**			Run ID: **FIMS2_130104B**				
Client ID: **MB-70002**	Batch ID: **70002**	Units: **µg/L**			Analysis Date: **01/04/13 14:14**			SeqNo: **1855163**				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.028	0.20									

Sample ID: **LCS-70002**	SampType: **LCS**	TestCode: **SW7470**			Prep Date: **01/04/13 9:31**			Run ID: **FIMS2_130104B**				
Client ID: **LCS-70002**	Batch ID: **70002**	Units: **µg/L**			Analysis Date: **01/04/13 14:15**			SeqNo: **1855164**				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.790	0.028	0.20	4.550	0	105	80	120	0			

Sample ID: **LCSD-70002**	SampType: **LCSD**	TestCode: **SW7470**			Prep Date: **01/04/13 9:31**			Run ID: **FIMS2_130104B**				
Client ID: **LCSD-70002**	Batch ID: **70002**	Units: **µg/L**			Analysis Date: **01/04/13 14:17**			SeqNo: **1855165**				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	4.858	0.028	0.20	4.550	0	107	80	120	4.790	1.41	20	

Qualifiers:
ND - Not Detected at the MDL
J - Analyte detected below quanititation 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

01/16/2013

Client: AECOM Technical Services, Inc.
Client Sample ID: EFF 122712
Lab ID: L2642-01
Project: NOW Corp. Site, 12/2012
Collection Date: 12/27/12 13:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							**SM2540_TDS**
Total Dissolved Solids	270		10	mg/L	1	01/03/2013 19:50	69991
SM 2540D -- TOTAL SUSPENDED SOLIDS							**SM2540_TSS**
Total Suspended Solids	ND		10	mg/L	1	01/03/2013 19:50	69992
SW846 9012B -- Total Cyanide							**SW9012_W**
Cyanide	ND		10	ug/L	1	01/10/2013 16:55	70028

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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.
Client Sample ID: INF 122712 **Project:** NOW Corp. Site, 12/2012
Lab ID: L2642-02 **Collection Date:** 12/27/12 13:37

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							**SM2540_TDS**
Total Dissolved Solids	270		10	mg/L	1	01/03/2013 23:00	69991
SM 2540D -- TOTAL SUSPENDED SOLIDS							**SM2540_TSS**
Total Suspended Solids	ND		10	mg/L	1	01/03/2013 23:00	69992
SW846 9012B -- Total Cyanide							**SW9012_W**
Cyanide	ND		10	ug/L	1	01/10/2013 16:56	70028

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SM2540_TDS
SM 2540C -- TOTAL DISSOLVED SOLIDS

Sample ID: **MB-69991** SampType: **MBLK** TestCode: **SM2540_TDS** Prep Date: **01/03/13 13:30** Run ID: **MANUAL_130103A**
Client ID: **MB-69991** Batch ID: **69991** Units: **mg/L** Analysis Date: **01/03/13 13:30** SeqNo: **1855508**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	10	10									

Sample ID: **LCS-69991** SampType: **LCS** TestCode: **SM2540_TDS** Prep Date: **01/03/13 13:30** Run ID: **MANUAL_130103A**
Client ID: **LCS-69991** Batch ID: **69991** Units: **mg/L** Analysis Date: **01/03/13 16:40** SeqNo: **1855509**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	151.0	10	10	159.0	0	95.0	80	120	0			

CLIENT: AECOM Technical Services, Inc.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SM2540_TSS

SM 2540D -- TOTAL SUSPENDED SOLIDS

Sample ID: **MB-69992** SampType: **MBLK** TestCode: **SM2540_TSS** Prep Date: **01/03/13 13:30** Run ID: **MANUAL_130103B**
Client ID: **MB-69992** Batch ID: **69992** Units: **mg/L** Analysis Date: **01/03/13 13:30** SeqNo: **1855514**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	ND	10	10									

Sample ID: **LCS-69992** SampType: **LCS** TestCode: **SM2540_TSS** Prep Date: **01/03/13 13:30** Run ID: **MANUAL_130103B**
Client ID: **LCS-69992** Batch ID: **69992** Units: **mg/L** Analysis Date: **01/03/13 16:40** SeqNo: **1855515**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	67.00	10	10	67.60	0	99.1	80	120	0			

Qualifiers:
ND - Not Detected at the MDL
J - Analyte detected below quanititation 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.
Work Order: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

SW9012_W

SW846 9012B -- Total Cyanide

Sample ID: **MB-70028**	SampType: **MBLK**	TestCode: **SW9012_W**	Prep Date: **01/07/13 10:00**	Run ID: **LACHAT1_130110A**
Client ID: **MB-70028**	Batch ID: **70028**	Units: **ug/L**	Analysis Date: **01/10/13 16:54**	SeqNo: **1856980**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	ND	7.5	20									

Sample ID: **LCS-70028**	SampType: **LCS**	TestCode: **SW9012_W**	Prep Date: **01/07/13 10:00**	Run ID: **LACHAT1_130110A**
Client ID: **LCS-70028**	Batch ID: **70028**	Units: **ug/L**	Analysis Date: **01/10/13 16:55**	SeqNo: **1856981**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	89.60	7.5	20	100.0	0	89.6	80	120	0			

Sample ID: **L2642-02EDUP**	SampType: **DUP**	TestCode: **SW9012_W**	Prep Date: **01/07/13 10:00**	Run ID: **LACHAT1_130110A**
Client ID: **INF 122712**	Batch ID: **70028**	Units: **ug/L**	Analysis Date: **01/10/13 16:57**	SeqNo: **1856984**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	ND	2.5	10	0	0	0	0	0	0	0	20	

Sample ID: **L2642-02EMS**	SampType: **MS**	TestCode: **SW9012_W**	Prep Date: **01/07/13 10:00**	Run ID: **LACHAT1_130110A**
Client ID: **INF 122712**	Batch ID: **70028**	Units: **ug/L**	Analysis Date: **01/10/13 16:57**	SeqNo: **1856985**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	89.40	2.5	10	100.0	0	89.4	75	125	0			

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank; J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

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

12/31/2012

Client: AECOM Technical Services, Inc.
Client Sample ID: EFF 122712
Lab ID: L2642-01

Project: NOW Corp. Site, 12/2012
Collection Date: 12/27/12 13:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
EPA 1664A -- Oil & Grease, HEM							**E1664**
Oil & Grease, Total Recoverable	ND		5.0	mg/L	1	12/31/2012 0:00	69962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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

12/31/2012

Client: AECOM Technical Services, Inc.
Client Sample ID: INF 122712
Lab ID: L2642-02

Project: NOW Corp. Site, 12/2012
Collection Date: 12/27/12 13:37

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
EPA 1664A -- Oil & Grease, HEM							**E1664**
Oil & Grease, Total Recoverable	ND		5.0	mg/L	1	12/31/2012 0:00	69962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation 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: L2642
Project: NOW Corp. Site, 12/2012

ANALYTICAL QC SUMMARY REPORT

E1664

EPA 1664A -- Oil & Grease, HEM

Sample ID: MB-69962	SampType: MBLK	TestCode: E1664			Prep Date: 12/29/12 13:25		Run ID: MANUAL_121231A				
Client ID: MB-69962	Batch ID: 69962	Units: mg/L			Analysis Date: 12/31/12 0:00		SeqNo: 1853354				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease, Total Recoverable	ND	1.2	5.0									

Sample ID: LCS-69962	SampType: LCS	TestCode: E1664			Prep Date: 12/29/12 13:25		Run ID: MANUAL_121231A				
Client ID: LCS-69962	Batch ID: 69962	Units: mg/L			Analysis Date: 12/31/12 0:00		SeqNo: 1853352				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease, Total Recoverable	39.20	1.2	5.0	40.00	0	98.0	78	114	0			

Sample ID: LCSD-69962	SampType: LCSD	TestCode: E1664			Prep Date: 12/29/12 13:25		Run ID: MANUAL_121231A				
Client ID: LCSD-69962	Batch ID: 69962	Units: mg/L			Analysis Date: 12/31/12 0:00		SeqNo: 1853353				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease, Total Recoverable	36.20	1.2	5.0	40.00	0	90.5	78	114	39.20	7.96	18	

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

WorkOrder: L2642

Client ID: EARTH_NY
Project: NOW Corp. Site
WO Name: NOW Corp. Site, 12/2012
Location: NOW_CORP,
Comments: N/A

Case:
SDG:
PO: 6027 6639 1

HC Due: 01/16/13
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
L2642-01A	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2642-01B	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	E1664	/					B1
L2642-01C	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SW6010_W	/ See SEL list				Y	M6
L2642-01C	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SW7470	/ See SEL list					M6
L2642-01D	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SM2540_TDS	/					B1
L2642-01D	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SM2540_TSS	/					B1
L2642-01E	EFF 122712	12/27/2012 13:25	12/28/2012	Aqueous	SW9012_W	/				Y	B1
L2642-02A	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2642-02B	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	E1664	/					B1
L2642-02C	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SW6010_W	/ See SEL list				Y	M6
L2642-02C	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SW7470	/ See SEL list					M6
L2642-02D	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SM2540_TDS	/					B1
L2642-02D	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SM2540_TSS	/					B1
L2642-02E	INF 122712	12/27/2012 13:37	12/28/2012	Aqueous	SW9012_W	/				Y	B1
L2642-03A	TW-1 122712	12/27/2012 13:43	12/28/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2642-04A	TW-2A 122712	12/27/2012 13:48	12/28/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2642-05A	TW-3 122712	12/27/2012 13:52	12/28/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2642-06A	TB 122712	12/27/2012 00:00	12/28/2012	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
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page _____ of _____

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

Project Mgr.: Stephen Choiniere

Invoice To: Same

P.O. No.: _____ RQN: _____

Project No.: 60276639
Site Name: Now Corp
Location: Stittsburgh State: NY
Sampler(s): SRG

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=None 10=_____ 11=_____

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2 4 9 2 5 — Analyses: 8260	Metals *	TSS/TDS	O+G	Cyanide
L2642 01	EFF 122712	12/27/12	13:25	G	GW	2	3		3	X	X	X	X	X
02	INF 122712		13:37				3		3		X	X	X	X
03	TW-1 122712		13:43											
04	TW-2A 122712		13:48											
05	TW-3 122712		13:52											
L2642 06	TB 122712	—	—											

Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State specific reporting standards:
_____

☐ E-mail to _____
EDD Format _____

Condition upon receipt: ☑ Iced ☐ Ambient ☐ °C 3

Relinquished by:	Received by:	Date:	Time:
Stan Gug	Fedex	12/27/12	16:20
Fedex		12/28/12	11:40

JR

175 Metro Center Boulevard • Warwick, RI 02886-1755 • 401-732-3400 • Fax 401-732-3499 • www.spectrum-analytical.com

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

Received By:	Page 01 of 00
Reviewed By: VSR	Log-in Date 12/28/2012
Work Order: L2642	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.

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 8014 0638 7648
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	3 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	12/28/2012
12. Time Received	11:40

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

IR Temp Gun ID:MT-1

CoolantCondition: ICE

Preservative Name/Lot No:

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
L2642-01	<2		<2	>12		H	
L2642-02	<2		<2	>12		H	
L2642-03						H	
L2642-04						H	
L2642-05						H	
L2642-06						H	

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