

September 5, 2016

Mr. Douglas MacNeal
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support, 11th Floor
625 Broadway
Albany, NY 12233

**RE: Site Management Plan Annual Review – August 2016
West 42nd Street – River Place I
West 41st – West 42nd Streets
New York, New York 110036
NYSDEC BCP Site No. C231024
Langan Project No.: 170040901**

Dear Mr. MacNeal:

This letter documents ongoing compliance with the July 2006 Site Management Plan (SMP) that was prepared in accordance with the New York State Brownfield Cleanup Program (BCP) for the River Place I property (the Site). The Site is located between West 41st and West 42nd Streets and 11th and 12th Avenues on the west side of Manhattan, New York. The last review letter was submitted to you in September 2015 and accepted in October 2015.

The following is an update on the status of the requirements of the SMP for the Site including: 1) institutional control/engineering controls (IC/EC) and 2) groundwater monitoring. The last round of indoor air sampling was conducted on December 22, 2011. According to correspondence between Mr. MacNeal of the New York State Department of Environmental Conservation (NYSDEC) and Langan dated August 31, 2011, indoor air sampling was discontinued after the December 2011 sampling event.

Institutional Control/Engineering Controls (IC/EC) Inspection

Institutional and engineering controls at the site include a cover system and an environmental easement as described below. The signed and completed NYSDEC IC/EC Certification Form is provided as Attachment A.

Cover System – The site cover system includes the building foundation slabs, asphalt parking lots, concrete walkways, and top soil used in landscaped areas. The construction of the cover system is complete. The building slab and the park area were inspected by Langan on August 23, 2016 and were observed to be intact. Intrusive activities completed in 2016 as part of remediation of Spill No. 151032 and construction of a new entranceway canopy are summarized under Notable Activities.

Photographs of the site cover are provided as Attachment B.

Environmental Easement – Groundwater is not used for any purpose. Land use remains as multi-story residential.

Quarterly Groundwater Monitoring

Quarterly groundwater monitoring was required for the first two years following completion of the remedial construction, as specified in the SMP. On February 28 and March 7, 2009, two groundwater monitoring wells were installed in the park area at the site. Langan performed the fifth annual monitoring event on October 16, 2015. The sixth annual groundwater monitoring report is included as Attachment C. The next annual groundwater monitoring event is anticipated to occur in October 2016.

Annual Indoor Air Monitoring

The SMP required annual indoor air sampling in River Place I for three years. The final round of indoor air sampling was conducted by GCI Environmental Advisory, Inc. on December 22, 2011. The Ambient/Indoor Air Monitoring Assessment Survey report was provided as Attachment E in the June 2011 SMP Annual Review document. On August 31, 2011, NYSDEC agreed that no further indoor air sampling would be required after the December 2011 event.

Notable Activities

Spill No. 1510320 - Spill No. 1510320 was reported on January 19, 2016 after maintenance personnel observed a release of No. 2 fuel oil on the floor of the pump room located in the southeast portion of River Place I. The pump is connected to an active, 20,000 gallon aboveground storage tank (AST) located in an adjoining room. Impacts were also observed along a paving stone walkway southeast of the pump room and within the eastern adjoining playground. The leak was due to a failed vibration eliminator located on the discharge side of the pump. The vibration eliminator was replaced and oil absorbent (i.e. Oil-Dri ®) was placed on the floor of the pump room.

After the leaking pump was repaired by building maintenance personnel, the Owner contracted PAL Environmental Services (PAL) of Long Island City, New York to remediate the spill. On January 20 and 21, 2016, PAL excavated an about 25 feet (north to south) by 9 feet (east to west) area of the paving stone walkway outside of the pump room and a portion of the adjoining playground. Impacted material was removed to depths ranging from 6 to 12 inches below surface grade. Approximately 2,500 pounds of non-hazardous, petroleum-impacted material was removed for off-site disposal. Results of post-removal confirmation samples indicate that the actions described above remediated the spill impacts and the spill was subsequently closed on April 15, 2016. Langan was on-site to observe remediation, perform community air monitoring during excavation, and collect confirmation samples as summarized in the April 19, 2016 Spill Closure Report prepared by Langan.

Entranceway Canopy Construction - Intrusive activities were completed between March 29 and May 12, 2016 for construction of a new entrance way canopy at the Site. Langan notified NYSDEC on April 20, 2016 of proposed intrusive activities. Prior to intrusive activities, Langan collected a soil sample from the excavation area for waste characterization purposes on March 29, 2016. Waste characterization samples results

were summarized in the April 20, 2016 Waste Characterization Report prepared by Langan.

From April 21, 2016 to May 12, 2016, Structural Contracting Services, Inc. (SCS) completed limited demolition of the concrete slab and soil excavation for the new canopy footings. Langan was on site to observe and document intrusive activities as summarized in the Completion of Intrusive Activities Notification dated September 1, 2016. Intrusive activities were conducted in accordance with the SMP.

Closing

The SMP is being implemented in accordance with the schedules discussed above. All institutional and engineering controls are in place, have not been altered and are still effective. Should you have any questions, please contact me at 212-479-5404.

Kindest Regards,
Langan Engineering & Environmental Services, P.C.



Ryan Manderbach, CHMM
Senior Project Manager

Enclosures:

Attachment A	NYSDEC Institutional and Engineering Controls Certification Form
Attachment B	Site Cover Photographs
Attachment C	Annual Groundwater Monitoring Report- 2015

Cc: William R. Dacunto – River Place 1 LLC
Richard Rienzo - Con Edison

Attachment A
NYSDEC Institutional and Engineering Controls
Certification Form



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site Details

Box 1

Site No. C231024

Site Name CE - W 42nd St. - River Place I

Site Address: 640 W 42nd Street Zip Code: 10036
City/Town: New York
County: New York
Site Acreage: 2.7

Reporting Period: August 06, 2015 to August 06, 2016

1. Is the information above correct?

YES NO

☒ ☐

If NO, include handwritten above or on a separate sheet.

2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?

☐ ☒

3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?

☐ ☒

4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?

☐ ☒

If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

5. Is the site currently undergoing development?

☐ ☒

Box 2

YES NO

6. Is the current site use consistent with the use(s) listed below?
Restricted-Residential, Commercial, and Industrial

☒ ☐

7. Are all ICs/ECs in place and functioning as designed?

☒ ☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Box 2A

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?

YES NO

☐☒

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid?
(The Qualitative Exposure Assessment must be certified every five years)

☒☐

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C231024**Box 3****Description of Institutional Controls**Parcel**10890001**Owner

River Place I, LLC

Institutional Control

Site Management Plan

Ground Water Use Restriction

Soil Management Plan

Landuse Restriction

Annual reports on quarterly groundwater monitoring and annual indoor air monitoring events were required, but are now discontinued. An annual certification, that the ground cover is intact as well as the continued effectiveness of the newly-installed vapor barrier and that the groundwater restrictions are still in force, is still required.

Box 4**Description of Engineering Controls**Parcel**10890001**Engineering Control

Cover System

Ground covers act to prevent people from being exposed to the contaminated soils.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

☒ ☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

☒ ☐

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C231024

Box 6

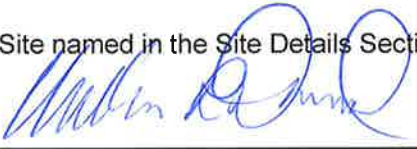
SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I William R. Dacunto at 7 World Trade Center, 250 Greenwich St.
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.


Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

8/23/16
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joel Blander at 21 Penn Plaza, New York, New York 10001
print name print business address

am certifying as a Professional Engineer for the Remedial Party
(Owner or Remedial Party)



Joel Blander
Signature of Professional Engineer, for the Owner or
Remedial Party, Rendering Certification

Stamp
(Required for PE)

9/8/16
Date

Attachment B
Site Cover Photographs

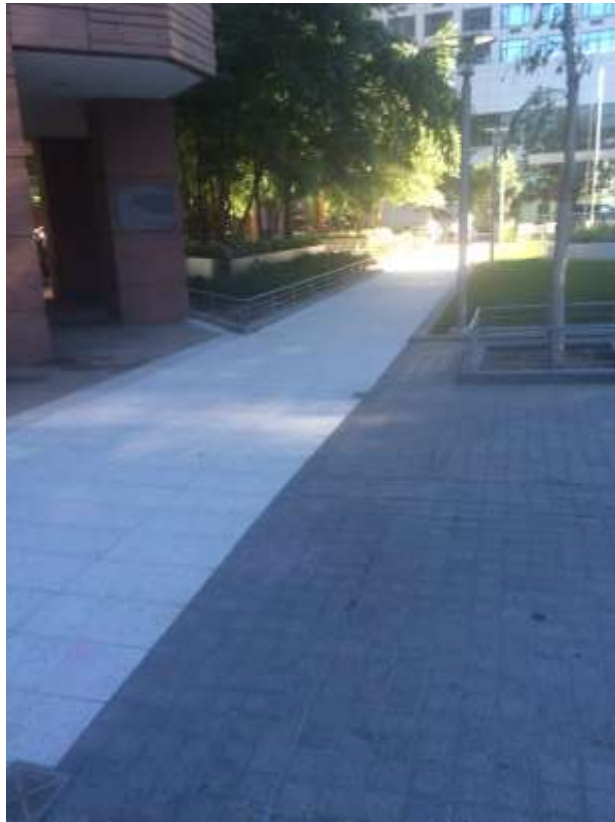


Photo 1: View of walkway at the Site.



Photo 2: View of building entrance ground cover at the Site.

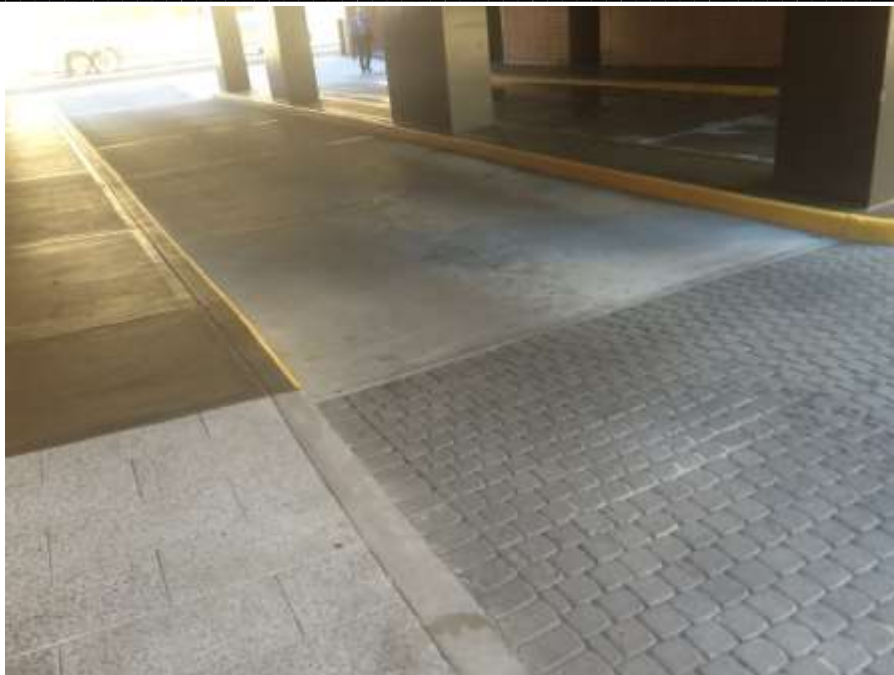


Photo 3: View of ground cover and roadway at the Site.



Photo 4: View of ground cover and landscaped area of the Site.



Photo 5: Surface cover in Site lobby.



Photo 6: Ground cover in the bicycle storage room of the Site.



Photo 7: Typical surface cover in ground floor hallway area of Site



Photo 8: Surface cover in Site mechanical room

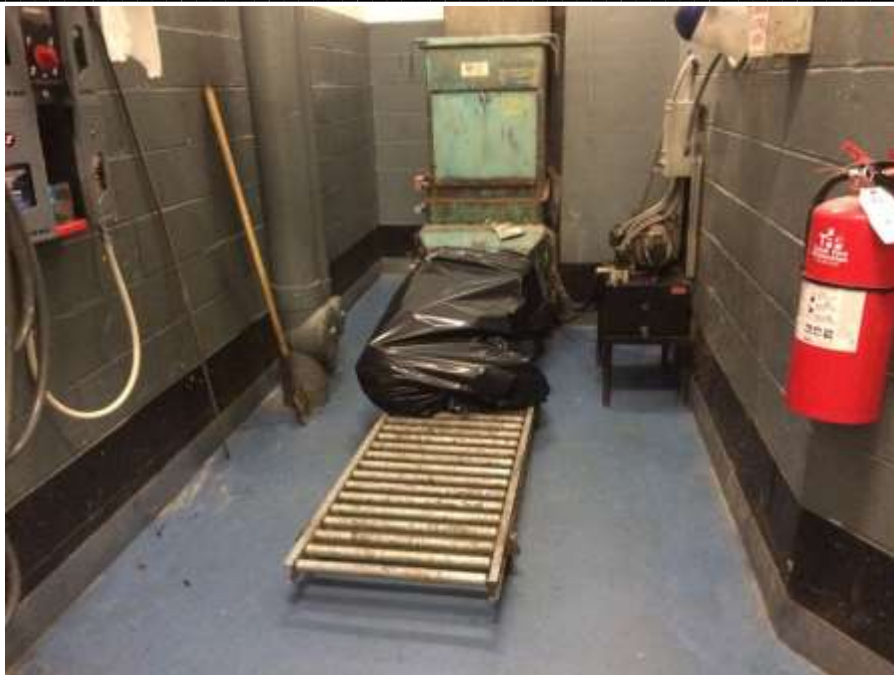


Photo 9: Surface cover in Site compactor room.



Photo 10: Surface cover in Site fire pump room.



Photo 11: Surface cover in Site gas meter room.



Photo 12: Surface cover in oil pump room



Photo 13: Surface cover beneath Site AST.



Photo 14: Surface cover in the Site oil pump room.



Photo 15: Site bowling alley lounge area.

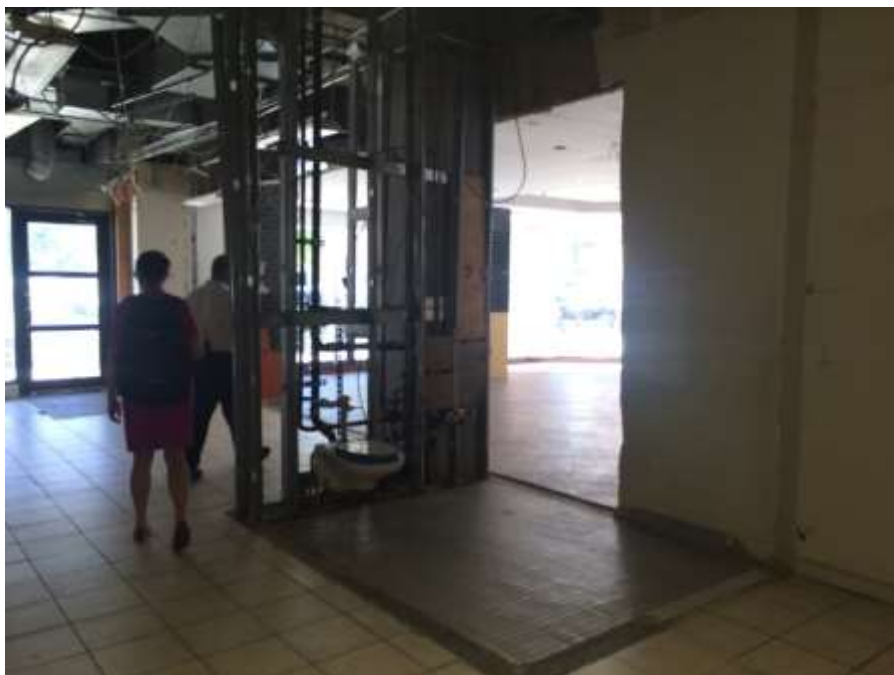


Photo 16: Surface cover at vacant commercial space within Site.



Photo 17: Site bowling alley.



Photo 18: Location of repaired pavers and surface cover.



Photo 19: Fill port on 41st Street sidewalk.

Attachment C
Annual Groundwater Monitoring Report- 2015

November 6, 2015

Mr. Douglas MacNeal
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support, 11th Floor
625 Broadway
Albany, New York 12233

**RE: Annual Groundwater Monitoring Report – 2015
River Place I & II
West 42nd Street, New York, New York
BCP Site Nos. C231024 and C231012
Langan Project No.: 170040901**

Dear Mr. MacNeal:

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. (Langan) is pleased to present this letter report summarizing groundwater monitoring well sampling activities for River Place I & II located between West 41st and West 42nd Streets and 11th and 12th Avenues in New York, New York (the Site). A Site Location Map is attached as Figure 1. A Final Engineering Report (FER) for the Site was approved by the New York State Department of Environmental Conservation (NYSDEC) and a Certificate of Completion (COC) was issued on June 19, 2007. A Site Management Plan (SMP) dated July 2006 was approved by NYSDEC.

In accordance with the SMP, quarterly groundwater monitoring began on March 16, 2009 and was conducted for two years. Following quarterly monitoring, an annual monitoring program was implemented and will continue until groundwater exhibits consistent or declining levels of contamination. This report summarizes the results of the fifth annual sampling event conducted in October 2015.

2015 Annual Groundwater Sampling

On October 16, 2015, Langan sampled groundwater monitoring wells MW-N2 and MW-S2. A Well Location Map is attached as Figure 2. During sampling, Langan visually inspected the monitoring wells for evidence of tampering or damage, and measured the depth to groundwater. The water level was measured using a Solinst oil/water interface probe. Water level measurements were repeated at least once to verify the accuracy of the initial measurement. All measurements were recorded on Langan field sampling forms. Copies of the completed field forms are included as Attachment A of this report.

Prior to collecting groundwater samples, MW-N2 and MW-S2 were purged using low-flow purge and sample techniques. The wells were purged using clean, dedicated, polyethylene tubing attached to a Waterra positive displacement pump. During purging, groundwater was monitored for dissolved oxygen, pH, oxidation reduction potential (ORP), temperature, turbidity, and specific conductance. These readings are included on the sampling forms in Attachment A. Prior to sampling, the wells were allowed to recover to approximately 90 percent or more of the static water level.

MW-N2 and MW-S2 were purged until physical and chemical parameters stabilized. Approximately 2 to 2.5 gallons were purged from monitoring wells MW-N2 and MW-S2, respectively. After purging, samples MW-N2_101615 and MW-S2_101615 were collected using a Waterra pump and dedicated tubing.

Groundwater samples MW-N2_101615 and MW-S2_101615 were collected into laboratory-prepared containers, tightly sealed, uniquely labeled, and then stored on ice for transport to Alpha Analytical (Alpha) in Westborough, Massachusetts, under standard chain-of-custody procedures. The groundwater samples were analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260, semivolatile organic compounds (SVOCs) by EPA Method 8270, Target Analyte List (TAL) metals by EPA SW 6000/7000, cyanide (total) by EPA SW 9012, and cyanide (available) by EPA 9014.

Findings

Observations

- Measurable free product was not observed in either well.
- A sheen was observed on purged water from MW-N2
- Odors were noted in both monitoring wells.
- The wells were observed to be in good condition.

Groundwater Analytical Results

Analytical results for the 2015 annual monitoring event that exceeded the New York State Department of Environmental Conservation (NYSDEC) Technical and Operations Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) Class GA are summarized below.

MW-N2 VOCs 1,2,4-trimethylbenzene - benzene - ethylbenzene - naphthalene p/m-xylene o-xylene toluene SVOCs 2,4-dimethylphenol - acenaphthene - benzo(a)anthracene Biphenyl naphthalene phenol Inorganics - iron - magnesium manganese sodium	MW-S2 VOCs 1,2,4-trimethylbenzene - benzene - ethylbenzene - isopropylbenzene naphthalene n-propylbenzene o-xylene SVOCs - benzo(a)anthracene - benzo(a)pyrene - benzo(b)fluoranthene - benzo(k)fluoranthene chrysene indeno(1,2,3-cd)pyrene naphthalene Inorganics - iron - magnesium manganese sodium
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Analytical results for the First Quarter 2009 through Fifth Annual 2015 sampling rounds are summarized in Table 1 and the laboratory analytical report for the 2015 annual sampling results is included as Attachment B.

In general, VOC and SVOC concentrations in both wells decreased since the last sampling event. VOC and SVOC concentrations are lower in the sample collected from MW-S2.

Please contact us if you have any questions.

Sincerely,

**Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.**



Ryan Manderbach, CHMM
Senior Project Manager

Enclosure(s):

Figure 1	Site Location Map
Figure 2	Well Location Map
Table 1	VOCs, SVOCs, Total Metals and Cyanide Detections in Groundwater Samples
Attachment A	Groundwater Sampling Forms
Attachment B	Laboratory Analytical Reports, Chain-of-Custody and Certifications

cc:

Richard Rienzo- Con Edison
William R. Dacunto- River Place II LLC
Nicole Rice – Langan

TABLES

Table 1
VOC, SVOC, Metals and Cyanide Exceedances in Groundwater Samples
River Place II
New York, New York
Langan Project No. 170040901

		Park Area Northern Well																							
		2009				2010				2011	2012	2013	2014	2015											
		1st Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter ⁷	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5										
LOCATION	NYSDEC TOGS 1.1.1 AWQS	MW-N-3-16-09	DUP-3-16-09	MW-N-6-17-09	MW-N-9/18/09	MW-N2-1-7-2010	MW-N2-3-01-10	MW-N2-6-10-10	MW-N2-9-8-10	MW-N2-12-15-10	MW-N2-10-17-11	MW-N2-101712	MW-N2-100813	MW-N2_101414	MW-N2_101615										
SAMPLING DATE		3/16/2009	3/16/2009	6/17/2009	9/18/2009	1/7/2010	3/1/2010	6/10/2010	9/8/2010	12/15/2010	10/17/2011	10/17/2012	10/8/2013	10/14/2014	10/16/2014										
LAB SAMPLE ID		L0903143-01	L0903143-03	L0908040-01	L0913185-01	L1000282-01	L1003006-01	L1008735-02	L1013903-01	L1020042-01	L1116955-02	L1218727-02	L1320135-02	L1424443-01	L1526418-02										
SAMPLE TYPE																									
SAMPLE DEPTH (ft.)																									
VOCs (µg/L)																									
1,2,4-Trimethylbenzene	5	1200	U	1200	U	1200	U	1200	U	250	U	500	U	620	U	270	J	240	J	80	J	130	J	89	J
1,3,5-Trimethylbenzene	5	1200	U	1200	U	1200	U	1200	U	250	U	500	U	620	U	96	J	620	U	250	U	250	U	250	U
Benzene	1	19000		19000		17000		15000		2900		1100		2100		2400		1600		1100		1400		1200	
Ethylbenzene	5	1900		1900		1900		1800		1400		170		410		810		980		810		580	J	250	
Isopropylbenzene	5	250	U	250	U	250	U	250	U	50	U	100	U	120	U	120	U	100	U	620	U	250	U	250	U
Methylene chloride	5	2500	U	2500	U	2500	U	2500	U	2500	U	500	U	1000	U	1200	U	1200	U	1000	U	620	U	250	U
Naphthalene	10	15000		15000		18000		19000		22000		4200		5400		12000		15000		10000		9200		3600	
n-Butylbenzene	5	250	U	250	U	250	U	250	U	50	U	100	U	120	U	120	U	100	U	620	U	250	U	250	U
n-Propylbenzene	5	250	U	250	U	250	U	250	U	50	U	100	U	120	U	120	U	100	U	620	U	250	U	250	U
o-Xylene	5	1400		1300		1400		1200		1000		180		330		590		760		630		470	J	230	J
p/m-Xylene	5	3200		3100		3100		2900		2200		330		600		1100		1400		1200		760		280	
p-Isopropyltoluene	5	250	U	250	U	250	U	250	U	50	U	100	U	120	U	120	U	100	U	620	U	250	U	250	U
Styrene	5	500	U	500	U	500	U	500	U	500	U	100	U	200	U	250	U	250	U	620	U	250	U	250	U
Toluene	5	4200		4000		4400		4100		740		75	U	150	U	290		420		410		240	J	90	J
SVOCs (µg/L)																									
2,4-Dimethylphenol	50	1800		1800		830		1200		270		500	U	29		160		10	U	230		150		89	
Acenaphthene	20	120		160		95		99		61		65		93		97		170		140		190		110	
Benzo(a)anthracene	0.002	8.8		39	U	8.2	U	9.6	U	40	U	10	U	9.2		80	U	100	U	80	U	50	U	1.5	
Benzo(a)pyrene	0	7.2		39	U	8.2	U	9.6	U	40	U	10	U	8.9		80	U	100	U	80	U	50	U	1.2	
Benzo(b)fluoranthene	0.002	8.4		39	U	8.2	U	9.6	U	40	U	10	U	9.2		80	U	100	U	80	U	50	U	1.2	
Benzo(k)fluoranthene	0.002	3.9	U	39	U	8.2	U	9.6	U	40	U	10	U	4	U	80	U	100	U	80	U	50	U	0.8	J
Biphenyl	5	50		56		26	U	36		72		250	U	30		34		52		46		47		28	
Bis(2-Ethylhexyl)phthalate	5	24	U	24	U	26	U	46		25	U	250	U	5	U	5	U	5	U	3	U	3	U	15	U
Chrysene	0.002	4.1		39	U	8.2	U	9.6	U	40	U	10	U	7.2		80	U	100	U	80	U	50	U	1	
Fluorene	50	56		80		59		47		40	U	39		60		80	U	100	U	58	J	67		29	
Indeno(1,2,3-cd)Pyrene	0.002	3.9	U	39	U	8.2	U	9.6	U	40	U	10	U	4	U	80	U	100	U	80	U	50	U	0.64	J
Naphthalene	10	12000		14000		8900		9400		2200		2700		4200		6900		9100		6800		8400		2800	
Phenanthrene	50	100		150		53		62		40		52		84		80	U	100	U	97		90		33	
Phenol	1	120		110		61		87		35	U	350	U	17		27		16		5	U	5	U	25	U
Total Metals																									
Arsenic, Total	25	15		17		15		15		11		6		5		11		14		128		7.6		6.78	
Iron, Total	300	5300		2700		1900		1200		3500		4000		4800		2600		12000		3300		1270		1780	
Lead, Total	25	15		10	U	10	U	10	U	10	U	10	U	10	U	10	U	67		10	U	2.4	J	1.79	
Magnesium, Total	35000	70000		72000		70000		59000		83000		46000		46000		51000		86000		64000		42000		57700	
Manganese, Total	300	1570		1430		1570		1340		746		603		632		528		816		582		542.8		337.5	
Mercury, Total	0.7	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.3		0.2	U	0.2	U	0.2	U
Sodium, Total	20000	300000		320000		270000		250000		240000		110000		160000		200000		240000		210000		127000		175000	
General Chemistry																									
Cyanide, Total	200	1100		1090		789		799		890		1780		1500		1060		1680		612		126		1210	
																							1000		
																								156	

Notes:
1. Groundwater samples were compared to New York State Department of Environmental Conservation (NYSDEC) Technical and Operations Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards (AWQS).
2. Only compounds with exceedances are shown in the table.
3. NYSDEC TOGS 1.1.1 AWQS exceedances are highlighted and bolded.
4. Reporting Limits (RL) above NYSDEC TOGS standards are italicized.
5. µg/L = micrograms per liter
6. VOCs = Volatile Organic Compounds
7. SVOCs = Semivolatile Organic Compounds
8. NA = Not Analyzed
9. Monitoring well MW-S was destroyed during construction activities. No data is available for the 3rd Quarter 2009.
10. Monitoring wells MW-N and MW-S were destroyed due to construction activities. Monitoring wells MW-N2 and MW-S2 were installed in the approximate locations of MW-N and MW-S once construction was complete. New monitoring well locations are shown on Figure 2.

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to RL.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

Table 1
VOC, SVOC, Metals and Cyanide Exceedances in Groundwater Samples
River Place II
New York, New York
Langan Project No. 170040901

		Park Area Southern Well ⁶											
		2009		4th Quarter ⁷	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	2011	2012	2013	2014	2015
		1st Quarter	2nd Quarter						YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
LOCATION	NYSDEC TOGS 1.1.1 AWQS	MW-S-3-16-09	MW-S-6-17-09	MW-S2-1-7-2010	MW-S2-3-01-10	MW-S2-6-10-10	MW-S2-9-8-10	MW-S2-12-15-10	MW-S2-10-17-11	MW-S2-101712	MW-S2-100813	MW-S2_101414	MW-S2_101615
SAMPLING DATE		3/16/2009	6/17/2009	1/7/2010	3/1/2010	6/10/2010	9/8/2010	12/15/2010	10/17/2011	10/17/2012	10/8/2013	10/14/2014	10/16/2015
LAB SAMPLE ID		L0903143-02	L0908040-02	L1000282-02	L1003006-02	L1008735-01	L1013903-02	L1020042-02	L1116955-01	L1218727-01	L1320135-01	L1424443-02	L1526418-01
SAMPLE TYPE													
SAMPLE DEPTH (ft.)													
VOCs (µg/L)													
1,2,4-Trimethylbenzene	5	76	25 U	280	130	180	150	200	45	79	26	7.2	6.8
1,3,5-Trimethylbenzene	5	62 U	25 U	61	120 U	120 U	120 U	120 U	12 U	3 J	10 U	2.5 U	1 J
Benzene	1	140	170	200	75	120	110	120	23	94	99	44	26
Ethylbenzene	5	160	20	710	330	590	460	560	100	260	160	60	41
Isopropylbenzene	5	35	5.4	64	30	61	44	63	13	55	46	19	15
Methylene chloride	5	120 U	50 U	420	250 U	250 U	250 U	250 U	25 U	6.2 U	10 U	2.5 U	2.5 U
Naphthalene	10	610	350	4900	1800	1700	1900	1100	170	150	62	36	50
n-Butylbenzene	5	12 U	5 U	6.2	25 U	25 U	25 U	25 U	2.5 U	6.2 U	10 U	0.77 J	2.5 U
n-Propylbenzene	5	19	5 U	42	25 U	37	30	37	8.5	34	22	9.3	5.6
o-Xylene	5	43	16	320	110	150	70	50 U	24	20	12	12	10
p/m-Xylene	5	50	21	410	150	150	82	50 U	17	9.2	10 U	4.8	4.2
p-Isopropyltoluene	5	12 U	5 U	11	25 U	25 U	25 U	25 U	2.5 U	6.2 U	10 U	2.5 U	2.5 U
Styrene	5	25 U	10 U	40	50 U	50 U	50 U	50 U	5 U	6.2 U	10 U	2.5 U	2.5 U
Toluene	5	19 U	29	180	46	38 U	38 U	38 U	8.5	4.2 J	10 U	3	1.7 J
SVOCs (µg/L)													
2,4-Dimethylphenol	50	10 U	10 U	10 U	500 U	10 U	10 U	10 U	5 U	5 U	25 U	25 U	5 U
Acenaphthene	20	14	0.2 U	200 U	63	59	41	63	15	49	39	34	17
Benzo(a)anthracene	0.002	0.2 U	0.2 U	200 U	10 U	4.4	10 U	18	4.2	6.3	6.5	3.4	2.2
Benzo(a)pyrene	0	0.2 U	0.2 U	200 U	15	4.8	10 U	17	4	5.4	6.4	2.6	2.2
Benzo(b)fluoranthene	0.002	0.2 U	0.2 U	200 U	14	3.4	10 U	17	2.9	3	4.7	3.9	1.7
Benzo(k)fluoranthene	0.002	0.2 U	0.2 U	200 U	10 U	2 U	10 U	10 U	1.5	3.2	3.3	1.2	0.65 J
Biphenyl	5	8.5	5.1 U	49	250 U	46	27	55	6.9	26	13	10 U	2.6
Bis(2-Ethylhexyl)phthalate	5	5 U	5.1 U	5 U	250 U	5 U	5 U	5 U	3 U	3 U	15 U	15 U	3 U
Chrysene	0.002	0.2 U	0.2 U	200 U	10 U	4	10 U	10 U	3.2	5.3	6	3.3	2.1
Fluorene	50	8.9	0.2 U	200 U	61	53	36	42	13	33	16	6.1	4.2
Indeno(1,2,3-cd)Pyrene	0.002	0.2 U	0.2 U	200 U	10 U	2 U	10 U	15	1.8	3.3	3.1	2.1	0.83 J
Naphthalene	10	300	0.62	11000	1400	1600	990	400	9.3	90	51	19	23
Phenanthrene	50	-	0.2 U	200 U	120	74	52	63	16	32	11	25	5.4
Phenol	1	7 U	7.2 U	7.7	350 U	7 U	7 U	7 U	5 U	5 U	25 U	25 U	5 U
Total Metals													
Arsenic, Total	25	20	6	17	13	10	18	19	13	10.5	9.04	18.2	5.4
Iron, Total	300	21000	9200	3200	11000	5000	9800	12000	9900	12100	5830	33400	5800
Lead, Total	25	158	45	17	117	29	86	166	42	108.7	70.29	366.9	13.3
Magnesium, Total	35000	71000	48000	120000	87000	85000	93000	84000	68000	43800	53800	95500	81100
Manganese, Total	300	598	403	327	636	430	492	558	537	574.9	279.6	1074	529.7
Mercury, Total	0.7	0.5	0.2 U	0.3	0.6	0.2	0.5	0.9	0.2 U	0.8	0.2 U	1.58	0.12 J
Sodium, Total	20000	96000	100000	98000	89000	68000	76000	67000	42000	32600	49400	71700	56600
General Chemistry													
Cyanide, Total	200	1920	1920	1090	973	1110	1540	1410	798	152	1030	1380	135

Notes:

- Groundwater samples were compared to New York State Department of Environmental Conservation (NYSDEC) Technical and Operations Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards (AWQS).
- Only compounds with exceedances are shown in the table.
- NYSDEC TOGS 1.1.1 AWQS exceedances are highlighted and bolded.
- Reporting Limits (RL) above NYSDEC TOGS standards are italicized.
- µg/L = micrograms per liter
- VOCs = Volatile Organic Compounds
- SVOCs = Semivolatile Organic Compounds
- NA = Not Analyzed
- Monitoring well MW-S was destroyed during construction activities. No data is available for the 3rd Quarter 2009.
- Monitoring wells MW-N and MW-S were destroyed due to construction activities. Monitoring wells MW-N2 and MW-S2 were installed in the approximate locations of MW-N and MW-S once construction was complete. New monitoring well locations are shown on Figure 2.

Qualifiers:

- U = The analyte was analyzed for, but was not detected at a level greater than or equal to RL.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

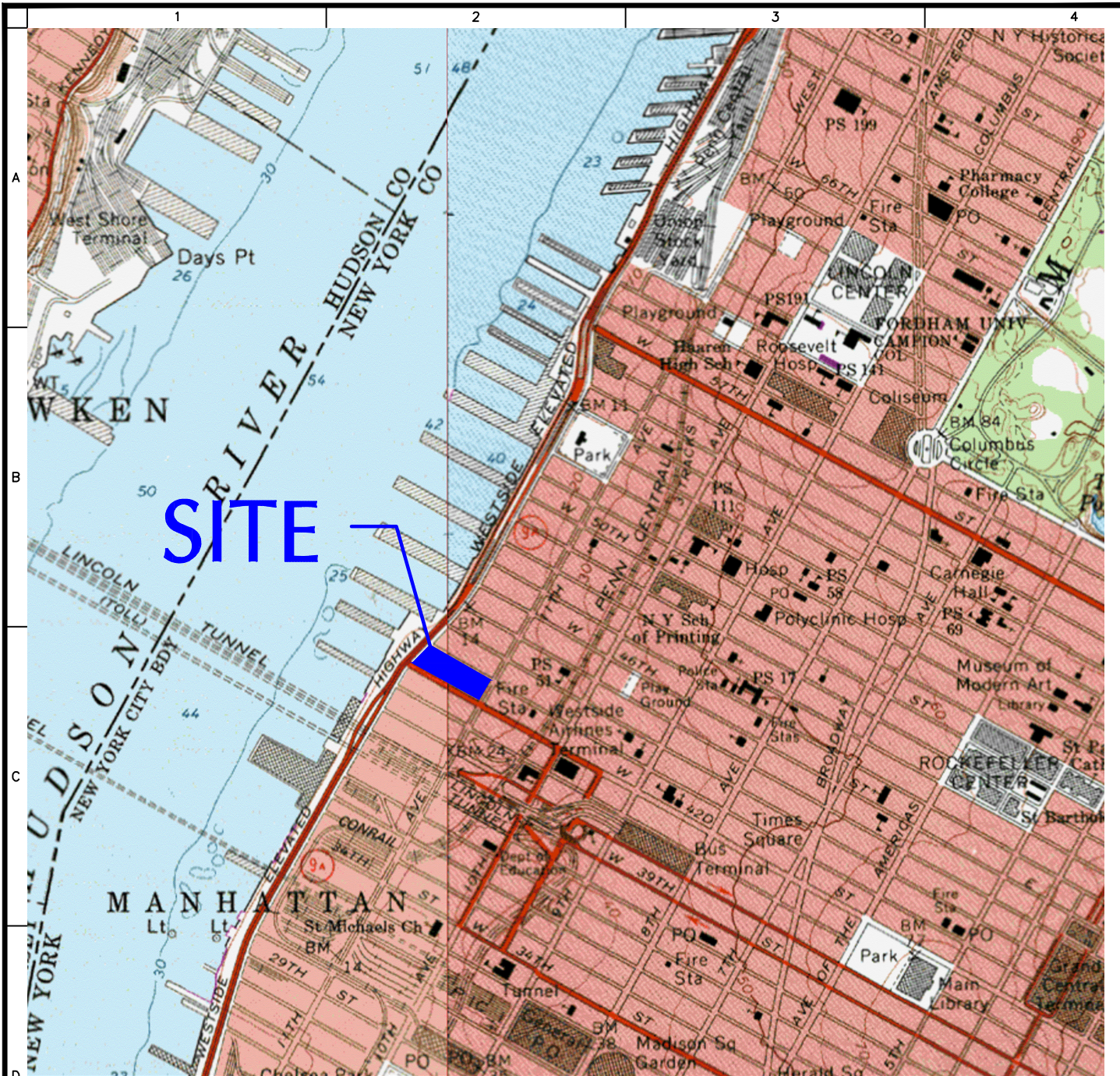
Table 1
VOC, SVOC, Metals and Cyanide Exceedances in Groundwater Samples
River Place II
New York, New York
Langan Project No. 170040901

		Quality Control													
		2009					2010				2011	2012	2015		
		1st Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	YEAR 1	YEAR 2	YEAR 5		
LOCATION		FB-3-16-09	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK-1-7-2010	TB-3-01-10	TB-6-10-10	TB-9-8-10	TB-12-15-10	TRIP BLANK-101711	TRIP BLANK	TB01_101615		
SAMPLING DATE	NYSDEC TOGS 1.1.1 AWQS	3/16/2009	3/16/2009	6/17/2009	9/18/2009	1/7/2010	3/1/2010	6/10/2010	9/8/2010	12/15/2010	10/17/2011	10/17/2012	10/16/2015		
LAB SAMPLE ID		L0903143-04	L0903143-05	L0908040-03	L0913185-02	L1000282-03	L1003006-03	L1008735-03	L1013903-03	L1020042-03	L1116955-03	L1218727-03	L1526418-04		
SAMPLE TYPE															
SAMPLE DEPTH (ft.)															
VOCs (µg/L)															
1,2,4-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
1,3,5-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Benzene	1	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U
Isopropylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U
Methylene chloride	5	5	U	5	U	5	U	5	U	5	U	5	U	2.5	U
Naphthalene	10	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
n-Butylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U
n-Propylbenzene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U
o-Xylene	5	1	U	1	U	1	U	1	U	1	U	1	U	2.5	U
p/m-Xylene	5	1	U	1	U	1	U	1	U	1	U	1	U	2.5	U
p-Isopropyltoluene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U
Styrene	5	1	U	1	U	1	U	1	U	1	U	1	U	2.5	U
Toluene	5	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	0.75	U	2.5	U
SVOCs (µg/L)															
2,4-Dimethylphenol	50	9.6	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.002	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.002	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.002	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	5	4.8	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	5	4.8	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	50	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)Pyrene	0.002	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	0.34	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50	0.19	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	1	6.7	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals															
Arsenic, Total	25	5	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Total	300	50	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead, Total	25	10	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Total	35000	100	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Total	300	10	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury, Total	0.7	0.2	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Total	20000	2000	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry															
Cyanide, Total	200	5	U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1. Groundwater samples were compared to New York State Department of Environmental Conservation (NYSDEC) Technical and Operations Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards (AWQS).
2. Only compounds with exceedances are shown in the table.
3. NYSDEC TOGS 1.1.1 AWQS exceedances are highlighted and bolded.
4. Reporting Limits (RL) above NYSDEC TOGS standards are italicized.
5. µg/L = micrograms per liter
6. VOCs = Volatile Organic Compounds
7. SVOCs = Semivolatile Organic Compounds
8. NA = Not Analyzed
9. Monitoring well MW-S was destroyed during construction activities. No data is available for the 3rd Quarter 2009.
10. Monitoring wells MW-N and MW-S were destroyed due to construction activities. Monitoring wells MW-N2 and MW-S2 were installed in the approximate locations of MW-N and MW-S once construction was complete. New monitoring well locations are shown on Figure 2.

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to RL.
J = The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

FIGURES



WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

BASE MAP OBTAINED FROM THE UNITED STATES GEOLOGICAL SURVEY (USGS), TOPOGRAPHIC MAPS, CENTRAL PARK, NY QUADRANGLE, DATED 1979, AND WEEHAWKEN NJ, NY QUADRANGLE, DATED 1967 ABD REVISED 1981.

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Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan CT, Inc.
Langan International LLC
Collectively known as Langan

Project

RIVER PLACE I AND II

NEW YORK

Figure Title

**SITE LOCATION
MAP**

NEW YORK

Project No.

170040901

Date

10/22/2014

Scale

NTS

Drawn By

NCR

Checked By

JH

Submission Date

November 2014

Figure

1

Sheet 1 of 2

ATTACHMENT A
GROUNDWATER SAMPLING FORMS

GROUND WATER SAMPLE FIELD INFORMATION FORM									
Site:		Well#/Location: MW-52				Job No.			
Date: 10/16/15		Weather: 60s, P.C.				Sampling Personnel:			
Well Information									
Sample ID	MW-52 10/16/15								
Well Depth (ft)	19.72 (soft bottom)								
Screened Interval (ft)									
Casing Elevation (msl)									
Casing Diameter (in)									
Depth to Water (ft)	9.02 (from N) @ 0800								
Water Elevation (msl)									
Casing Volume (gal)									
PID/FID Reading (ppm)	0.0								
Purging Information									
Purging Method	Low Flow Waterma								
Purging Rate (l/m; gpm)									
Start Purge Time	0750								
End Purge Time	0915								
Volume Purged (gal)	2.6								
Sampling Information									
Sampling Method									
Start Sampling Time	0920								
End Sampling Time	0950								
Depth Before Sampling (ft)	9.64 after = 9.6								
Number Bottles Collected	8								
Parameters									
Sample Time	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Depth to Water (ft)	Purged Volume (gallons)	
0750	—	—	—	—	—	—	9.02	—	
0815	14.82	6.09	-67	1.99	129	4.41	9.29	0.25	
0820	15.40	6.71	-118	1.97	144	3.40	9.39	0.5	
0825	15.37	6.81	-117	1.98	136	3.34	9.41	0.7	
0830	15.39	6.85	-116	1.97	122	2.73	9.45	0.85	
0835	15.30	6.87	-116	1.98	123	2.46	9.51	1.1	
0840	15.21	6.89	-118	1.99	104	2.31	9.53	1.25	
0845	15.14	6.88	-119	1.99	110	2.79	9.55	1.45	
0850	15.28	6.91	-122	1.99	85.8	2.37	9.58	1.55	
0855	15.23	6.92	-121	2.00	70.4	2.19	9.59	1.75	
0900	15.25	6.93	-122	2.00	62.2	2.11	9.62	2.0	
0905	15.29	6.93	-122	2.00	54.3	2.16	9.63	2.2	
0910	15.36	6.94	-123	2.00	51.5	2.18	9.64	2.3	
0915	15.18	6.94	-124	2.02	50.7	2.17	9.65	2.5	
Notes/Remarks									
Stability PH - ± 0.1 unit Specific Conductance - ± 3% Temperature - ± 3% Dissolved Oxygen - ± 10% above 0.5 mg/L Turbidity - ± 10% above 5 NTU ORP/Eh - ± 10 millivolts Maximum flow rate - < 0.5 L/m or 0.13 gpm Maximum drawdown - < 0.33 feet									
water has mild odor, no sheen Slight turbidity when beginning pumping. Volume = $(0.163 \frac{\text{gal}}{\text{ft}})(10 \text{ ft}) = \sim 1.6 \text{ gal}$									

\\wangan.com\data\NY\other\environmental group\Forms\Low-Flow Spreadsheet\Low-Flow Sampling Spreadsheet_V2.0 - K Liu

GROUND WATER SAMPLE FIELD INFORMATION FORM								
Site:		Well#/Location: MW-N2			Job No.			
Date: 10/16/15		Weather:			Sampling Personnel:			
Well Information					Purging Information			
Sample ID					Purging Method			
Well Depth (ft)		19.70			Purging Rate (l/m; gpm)			
Screened Interval (ft)					Start Purge Time		1030	
Casing Elevation (msl)					End Purge Time		1200	
Casing Diameter (in)					Volume Purged (gal)		2.1	
Depth to Water (ft)		9.29 (from N) @0800						
Water Elevation (msl)								
Casing Volume (gal)								
PID/FID Reading (ppm)		0.0						
					Sampling Information			
					Sampling Method			
					Start Sampling Time		1200	
					End Sampling Time		1235	
					Depth Before Sampling (ft)		9.36 (9.34 at W)	
					Number Bottles Collected		8	
Parameters								
Sample Time	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Depth to Water (ft)	Purged Volume (gallons)
1030	-	-	-	-	-	-	9.30	-
1050	15.13	7.26	-118	3.07	22.5	3.40	9.36	0.25
1055	14.97	6.97	-116	3.04	11.3	2.41	9.36	0.5
1100	15.02	6.95	-116	2.98	9.1	2.15	9.37	0.65
1105	15.02	6.95	-113	2.88	8.6	1.90	9.37	0.75
1110	15.08	6.95	-111	2.84	8.1	1.83	9.37	0.88
1115	15.18	6.96	-107	2.73	6.5	1.72	9.38	1.0
1125	15.12	6.98	-98	2.66	6.4	1.65	9.35	1.2
1130	15.03	6.98	-95	2.63	6.5	1.53	9.35	1.3
1135	15.31	6.98	-94	2.53	6.5	1.68	9.36	1.5
1140	15.33	6.99	-93	2.51	5.5	1.63	9.36	1.6
1145	15.28	7.00	-92	2.45	4.1	1.54	9.36	1.70
1150	15.26	7.00	-92	2.43	4.0	1.51	9.36	1.85
1155	15.48	7.00	-90	2.40	3.9	1.49	9.36	2
Notes/Remarks								
Stability PH ± 0.1 unit Specific Conductance ± 3% Temperature ± 3% Dissolved Oxygen ± 10% above 0.5 mg/L Turbidity ± 10% above 5 NTU ORP/Eh ± 10 millivolts Maximum flow rate < 0.5 L/m or 0.13 gpm Maximum drawdown < 0.33 feet		- Pumps clear initially, strong MGP odor. - Inlet @ 15 ft btoe (same as S2) - 1120 - PF collected w/w/o 10/16/15 (mixture of 1 gal S2 + 1 gal N2, mixed transferred into 3x40 mL vials w/ unused paper cup).						

W:\data\WY\other\environmental group\Forms\Low-Flow Spreadsheet\Low-Flow Sampling Spreadsheet_V2.0 - K.Liu

ATTACHMENT B
**LABORATORY ANALYTICAL REPORTS, CHAIN-OF-
CUSTODY AND CERTIFICATIONS**



www.alphalab.com



Alpha Analytical

Laboratory Code: 11148

SDG Number: L1526418

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Project Name: RIVER PLACE I & II
Project Number: 170040901

Lab Number: L1526418
Report Date: 10/23/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1526418-01	MW-S2_101615	WATER	NY, NY	10/16/15 09:20	10/16/15
L1526418-02	MW-N2_101615	WATER	NY, NY	10/16/15 12:00	10/16/15
L1526418-03	WW01_101615	WATER	NY, NY	10/16/15 11:20	10/16/15
L1526418-04	TB01_101615	WATER	NY, NY	10/16/15 00:00	10/16/15

Project Name: RIVER PLACE I & II
Project Number: 170040901

Lab Number: L1526418
Report Date: 10/23/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the

Project Name: RIVER PLACE I & II
Project Number: 170040901

Lab Number: L1526418
Report Date: 10/23/15

Case Narrative (continued)

MDL column.

Semivolatile Organics by SIM

L1526418-01: The sample has elevated detection limits due to the dilution required by the sample matrix.

L1526418-02: The surrogate recoveries are below the acceptance criteria for 2-fluorophenol (0%), phenol-d6 (0%), nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), 2,4,6-tribromophenol (0%) and 4-terphenyl-d14 (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Cyanide, Physiologically Available

The WG832054-5 Laboratory Duplicate RPD (36%), performed on L1526418-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Report Date: 10/23/15

Title: Technical Director/Representative

List of Organic Method Qualifiers

Table 1

Qualifier (Q)	Description
B	Entered if the analyte is found in the associated blank as well as the sample.
C	Applied to pesticide results when the identification has been confirmed by GC/MS.
D	Included when the all identified compounds in the analysis are at the secondary dilution factor.
E	Identified compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
J	Indicates an estimated value, may indicate one of the following, depending on the situation: (1) The reported value is estimated and below the MDL. (2) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero. (3) QC associated with this analyte is within warning limits.
N	Included for TIC that indicate presumptive evidence of a compound.
U	Entered if the analyte was analyzed for, but not detected.
P	Used for a pesticide/Aroclor target analyte when the concentration difference between 2 GC columns is greater than 25%; the lower value is flagged with a "P".
EMPC	"Estimated Maximum Possible Concentration" – The amount of analyte cannot be accurately quantified, so a maximum concentration has been estimated for the compound.
"XYZ"	"Wildcard" or Laboratory defined qualifier.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable, please assess qualifier priority in the following order: U, E, J, B, D, C, P, N. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 64)

List of Inorganic Method Qualifiers

Table 2

Qualifier	Column (1)	Description
Concentration qualifiers		
B	C	Entered if the reported value was less than the CRDL, but greater than the IDL.
U	C	Entered if the analyte was analyzed for, but not detected.
J	C	Entered if the reported value is estimated and below the MDL.
*	C	Duplicate precision exceeds RPD limit.
M	C	Replicate precision exceeds RPD limit.
"XYZ"	C	"Wildcard" or Laboratory defined qualifier.
Qualifier specific entries		
E	Q	Entered if the reported value is estimated because of the presence of interferences.
Method qualifiers		
A	M	Flame atomic absorption
AS	M	Semi-automated spectrophotometric
AV	M	Automated cold vapor atomic absorption
C	M	Manual spectrophotometric
F	M	Furnace atomic absorption
MS	M	Mass spectrometry (ICP-MS)
NR	M	Analyte is not required to be analyzed
P	M	Inductively coupled plasma (ICP)
" "	M	No data have been entered

(1) The term "Column" is used to indicate under which column heading in the reporting forms that the qualifier will be found under.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable to column C, please assess qualifier priority in the following order: U, J, B. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 65)

Volatile Organics Instruments

Volatile Organics: Jack

Instrument: Agilent 5975MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Quimby

Instrument: Agilent 5973MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Curly

Instrument: Agilent 5972 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar 3000
Autosampler: Archon
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: Elaine

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min



Volatile Organics: Gonzo

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 μ m
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: VOA101

Instrument: Agilent 5975C inert XL MSD
Trap: EST K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Restek RTX-VMS
Column Length: 30 Meters
df: 1.40 μ m
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Charlie/Voa100/Voa104

Instrument: Agilent 5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Agilent DB-624
Column Length: 25 Meters
df: 1.12 μ m
ID: 0.20 mm
Desorb: 2 min

Volatile Organics: M

Instrument: Agilent 6890

Concentrator: Tekmar 2016
Autosampler: Tekmar 3100

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: L/N

Instrument: Agilent 6890

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: O/P

Instrument: Agilent 7890A

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instrument: Agilent 6890 GC / 5975 MSD	Column Type: Restek RTX-1
	Column Length: 60 Meters
Concentrator: Entech 7100A	df: 1.00 um
Autosampler: Entech 7016CA	ID: 0.52 mm
Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material	
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material	

Semivolatile Organics Instruments

Semivolatile Organics (Acid/Base/Neutral Extractables): Buffy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (Acid/Base/Neutral Extractables): Juliet/GCMS5/GCMS7

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Dakota/Mork

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Mindy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Pesticides/PCB : Pest 11/Pest2/Pest7/Pest12

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek RTX-CLP (Channel A)	df: 0.32 um
Column: Restek RTX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Pesticides/PCB: Pest 10/ Pest9

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek STX-CLP (Channel A)	df: 0.32 um
Column: Restek STX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs
Column Type: Restek RTX-1701 (Channel A)
Column Type: Restek RTX-5 (Channel B)
Column Length: 30 Meters (Both)

Injection Volume: 1uL
df: 0.25 um
df: 0.25 um
ID: 0.32 mm (Both)

Petro9

Instrument: Agilent 6890 w/FID
Column: Restek RTX-5
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25 um
ID: 0.32 mm

EPH Petro10/ Petro11

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5-MS
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.32 mm

Explosives

Instrument: Dionex ICS-3000, AS50 Autosampler and PDA-100 detectors.
Injection Volume: 100uL
Column: Phenomenex Synergi 4u Hydro-RP and Luna 5u Phenyl-Hexyl.

GC/MS Forensic Semivolatile Organic Instruments

Semivolatile Organics (ALK-PAH extractables): PAH1/PAH2/PAH3/PAH4

Instrument: Agilent 5973C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH8/PAH9/PAH10/PAH11/PAH12/PAH13/PAH14

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH17/PAH18/PAH19

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

GC/FID Forensic Semivolatile Organic Instruments

Semivolatile Organics (SHC extractables):PAH1/PAH2/PAH3/PAH4/PAH8

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables): FID6 (dual column)/ FID9 (dual column)/ FID17 (dual column)

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables):FID7 (dual column)

Instrument: Agilent 7890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm



Sample Delivery Group Form

Laboratory Job number: L1526418

Project Manager: Ben Rao

Review Date: 10/19/2015

Project Number: 170040901

Project Name: RIVER PLACE I & II

Received: 10/16/2015 15:05

Client Account: Langan Engineering & Environmental

Received by: RS/SH

Samples Delivered by: COURIER

Call Tracker #

Bill Of Laden N/A

Trackingnum

Coc Present Present

Container Status Intact

Sample IDs

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt <2, 7, >12

Are samples Properly Preserved? Yes

Initial pH preserved in house with

Final pH

Other Issues

Chlorine Check N/A

Are VOA/VPV Vials Present? Yes

Aqueous: Do Vials Contain Head Space? No

Soils: Is MeOH Covering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
A	Absent	Yes	No	3.1 - IR Gun	No	No

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 23 2015, 03:11 pm

Login Number: L1526418

Account: LANGAN-NYC Langan Engineering & Environmental Project: 170040901

Sample # Client ID Received: 16OCT15 Due Date: 23OCT15
Mat PR Collected Container

L1526418-01 MW-S2_101615 1 S0 16OCT15 09:20 2-Amber-A1,1-Plastic-C.25,2-Plastic-E.25,3-Vial-B
| ASP-A Package Due Date: 10/23/15

ASP-A, NYTCL-8260, NYTCL-8270/8270SIM, NYTCL-8270, NYTCL-8270-SIM, PACN, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TCN-9010

L1526418-02 MW-N2_101615 1 S0 16OCT15 12:00 2-Amber-A1,1-Plastic-C.25,2-Plastic-E.25,3-Vial-B
| Package Due Date: 10/23/15

NYTCL-8260, NYTCL-8270/8270SIM, NYTCL-8270, NYTCL-8270-SIM, PACN, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TCN-9010

L1526418-03 WW01_101615 1 S0 16OCT15 11:20 3-Vial-B
| Package Due Date: 10/23/15

NYTCL-8260

L1526418-04 TB01_101615 1 S0 16OCT15 00:00 2-Vial-B
| Package Due Date: 10/23/15

NYTCL-8260

Organics

Volatiles Data

Volatiles Sample Data

Form 1

Volatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-01
 Client ID : MW-S2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8260C
 Lab File ID : 1021A06
 Sample Amount : 10 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1526418
 Project Number : 170040901
 Date Collected : 10/16/15 09:20
 Date Received : 10/16/15
 Date Analyzed : 10/21/15 12:28
 Dilution Factor : 1
 Analyst : PD
 Instrument ID : ELAINE.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.13	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.50	0.14	U
563-58-6	1,1-Dichloropropene	ND	2.5	0.70	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.14	U
71-43-2	Benzene	26	0.50	0.16	
108-88-3	Toluene	1.7	2.5	0.70	J
100-41-4	Ethylbenzene	41	2.5	0.70	
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	1.5	2.5	0.70	J
75-35-4	1,1-Dichloroethene	ND	0.50	0.14	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 12:28
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A06	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.70	U
179601-23-1	p/m-Xylene	4.2	2.5	0.70	
95-47-6	o-Xylene	10	2.5	0.70	
1330-20-7	Xylenes, Total	14	2.5	0.70	
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
540-59-0	1,2-Dichloroethene, Total	ND	2.5	0.70	U
74-95-3	Dibromomethane	ND	5.0	1.0	U
96-18-4	1,2,3-Trichloropropane	ND	2.5	0.70	U
107-13-1	Acrylonitrile	ND	5.0	1.5	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	1.6	5.0	1.5	J
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-05-4	Vinyl acetate	ND	5.0	1.0	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
594-20-7	2,2-Dichloropropane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
142-28-9	1,3-Dichloropropane	ND	2.5	0.70	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.5	0.70	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 12:28
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A06	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
108-86-1	Bromobenzene	ND	2.5	0.70	U
104-51-8	n-Butylbenzene	ND	2.5	0.70	U
135-98-8	sec-Butylbenzene	ND	2.5	0.70	U
98-06-6	tert-Butylbenzene	ND	2.5	0.70	U
95-49-8	o-Chlorotoluene	ND	2.5	0.70	U
106-43-4	p-Chlorotoluene	ND	2.5	0.70	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
87-68-3	Hexachlorobutadiene	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	15	2.5	0.70	
99-87-6	p-Isopropyltoluene	ND	2.5	0.70	U
91-20-3	Naphthalene	50	2.5	0.70	
103-65-1	n-Propylbenzene	5.6	2.5	0.70	
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
108-67-8	1,3,5-Trimethylbenzene	1.0	2.5	0.70	J
95-63-6	1,2,4-Trimethylbenzene	6.8	2.5	0.70	
123-91-1	1,4-Dioxane	ND	250	41.	U
105-05-5	p-Diethylbenzene	1.3	2.0	0.70	J
622-96-8	p-Ethyltoluene	3.2	2.0	0.70	
95-93-2	1,2,4,5-Tetramethylbenzene	2.3	2.0	0.65	
60-29-7	Ethyl ether	ND	2.5	0.70	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	2.5	0.70	U

Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02D	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:05
Sample Matrix	: WATER	Dilution Factor	: 100
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A07	Instrument ID	: ELAINE.I
Sample Amount	: 0.1 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	250	70.	U
75-34-3	1,1-Dichloroethane	ND	250	70.	U
67-66-3	Chloroform	ND	250	70.	U
56-23-5	Carbon tetrachloride	ND	50	13.	U
78-87-5	1,2-Dichloropropane	ND	100	13.	U
124-48-1	Dibromochloromethane	ND	50	15.	U
79-00-5	1,1,2-Trichloroethane	ND	150	50.	U
127-18-4	Tetrachloroethene	ND	50	18.	U
108-90-7	Chlorobenzene	ND	250	70.	U
75-69-4	Trichlorofluoromethane	ND	250	70.	U
107-06-2	1,2-Dichloroethane	ND	50	13.	U
71-55-6	1,1,1-Trichloroethane	ND	250	70.	U
75-27-4	Bromodichloromethane	ND	50	19.	U
10061-02-6	trans-1,3-Dichloropropene	ND	50	16.	U
10061-01-5	cis-1,3-Dichloropropene	ND	50	14.	U
542-75-6	1,3-Dichloropropene, Total	ND	50	14.	U
563-58-6	1,1-Dichloropropene	ND	250	70.	U
75-25-2	Bromoform	ND	200	65.	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	14.	U
71-43-2	Benzene	1200	50	16.	
108-88-3	Toluene	85	250	70.	J
100-41-4	Ethylbenzene	240	250	70.	J
74-87-3	Chloromethane	ND	250	70.	U
74-83-9	Bromomethane	ND	250	70.	U
75-01-4	Vinyl chloride	ND	100	7.0	U
75-00-3	Chloroethane	ND	250	70.	U
75-35-4	1,1-Dichloroethene	ND	50	14.	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02D	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:05
Sample Matrix	: WATER	Dilution Factor	: 100
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A07	Instrument ID	: ELAINE.I
Sample Amount	: 0.1 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-60-5	trans-1,2-Dichloroethene	ND	250	70.	U
79-01-6	Trichloroethene	ND	50	18.	U
95-50-1	1,2-Dichlorobenzene	ND	250	70.	U
541-73-1	1,3-Dichlorobenzene	ND	250	70.	U
106-46-7	1,4-Dichlorobenzene	ND	250	70.	U
1634-04-4	Methyl tert butyl ether	ND	250	70.	U
179601-23-1	p/m-Xylene	300	250	70.	
95-47-6	o-Xylene	230	250	70.	J
1330-20-7	Xylenes, Total	530	250	70.	J
156-59-2	cis-1,2-Dichloroethene	ND	250	70.	U
540-59-0	1,2-Dichloroethene, Total	ND	250	70.	U
74-95-3	Dibromomethane	ND	500	100	U
96-18-4	1,2,3-Trichloropropane	ND	250	70.	U
107-13-1	Acrylonitrile	ND	500	150	U
100-42-5	Styrene	ND	250	70.	U
75-71-8	Dichlorodifluoromethane	ND	500	100	U
67-64-1	Acetone	260	500	150	J
75-15-0	Carbon disulfide	ND	500	100	U
78-93-3	2-Butanone	ND	500	190	U
108-05-4	Vinyl acetate	ND	500	100	U
108-10-1	4-Methyl-2-pentanone	ND	500	100	U
591-78-6	2-Hexanone	ND	500	100	U
74-97-5	Bromochloromethane	ND	250	70.	U
594-20-7	2,2-Dichloropropane	ND	250	70.	U
106-93-4	1,2-Dibromoethane	ND	200	65.	U
142-28-9	1,3-Dichloropropane	ND	250	70.	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	70.	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02D	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:05
Sample Matrix	: WATER	Dilution Factor	: 100
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A07	Instrument ID	: ELAINE.I
Sample Amount	: 0.1 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
108-86-1	Bromobenzene	ND	250	70.	U
104-51-8	n-Butylbenzene	ND	250	70.	U
135-98-8	sec-Butylbenzene	ND	250	70.	U
98-06-6	tert-Butylbenzene	ND	250	70.	U
95-49-8	o-Chlorotoluene	ND	250	70.	U
106-43-4	p-Chlorotoluene	ND	250	70.	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	70.	U
87-68-3	Hexachlorobutadiene	ND	250	70.	U
98-82-8	Isopropylbenzene	ND	250	70.	U
99-87-6	p-Isopropyltoluene	ND	250	70.	U
91-20-3	Naphthalene	4900	250	70.	
103-65-1	n-Propylbenzene	ND	250	70.	U
87-61-6	1,2,3-Trichlorobenzene	ND	250	70.	U
120-82-1	1,2,4-Trichlorobenzene	ND	250	70.	U
108-67-8	1,3,5-Trimethylbenzene	ND	250	70.	U
95-63-6	1,2,4-Trimethylbenzene	89	250	70.	J
123-91-1	1,4-Dioxane	ND	25000	4100	U
105-05-5	p-Diethylbenzene	ND	200	70.	U
622-96-8	p-Ethyltoluene	ND	200	70.	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	200	65.	U
60-29-7	Ethyl ether	ND	250	70.	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	250	70.	U

Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-03D	Date Collected	: 10/16/15 11:20
Client ID	: WW01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:42
Sample Matrix	: WATER	Dilution Factor	: 25
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A08	Instrument ID	: ELAINE.I
Sample Amount	: 0.4 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	62	18.	U
75-34-3	1,1-Dichloroethane	ND	62	18.	U
67-66-3	Chloroform	ND	62	18.	U
56-23-5	Carbon tetrachloride	ND	12	3.4	U
78-87-5	1,2-Dichloropropane	ND	25	3.3	U
124-48-1	Dibromochloromethane	ND	12	3.7	U
79-00-5	1,1,2-Trichloroethane	ND	38	12.	U
127-18-4	Tetrachloroethene	ND	12	4.5	U
108-90-7	Chlorobenzene	ND	62	18.	U
75-69-4	Trichlorofluoromethane	ND	62	18.	U
107-06-2	1,2-Dichloroethane	ND	12	3.3	U
71-55-6	1,1,1-Trichloroethane	ND	62	18.	U
75-27-4	Bromodichloromethane	ND	12	4.8	U
10061-02-6	trans-1,3-Dichloropropene	ND	12	4.1	U
10061-01-5	cis-1,3-Dichloropropene	ND	12	3.6	U
542-75-6	1,3-Dichloropropene, Total	ND	12	3.6	U
563-58-6	1,1-Dichloropropene	ND	62	18.	U
75-25-2	Bromoform	ND	50	16.	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	12	3.6	U
71-43-2	Benzene	950	12	4.0	
108-88-3	Toluene	62	62	18.	
100-41-4	Ethylbenzene	180	62	18.	
74-87-3	Chloromethane	ND	62	18.	U
74-83-9	Bromomethane	ND	62	18.	U
75-01-4	Vinyl chloride	ND	25	1.7	U
75-00-3	Chloroethane	ND	62	18.	U
75-35-4	1,1-Dichloroethene	ND	12	3.6	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-03D	Date Collected	: 10/16/15 11:20
Client ID	: WW01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:42
Sample Matrix	: WATER	Dilution Factor	: 25
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A08	Instrument ID	: ELAINE.I
Sample Amount	: 0.4 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-60-5	trans-1,2-Dichloroethene	ND	62	18.	U
79-01-6	Trichloroethene	ND	12	4.4	U
95-50-1	1,2-Dichlorobenzene	ND	62	18.	U
541-73-1	1,3-Dichlorobenzene	ND	62	18.	U
106-46-7	1,4-Dichlorobenzene	ND	62	18.	U
1634-04-4	Methyl tert butyl ether	ND	62	18.	U
179601-23-1	p/m-Xylene	200	62	18.	
95-47-6	o-Xylene	160	62	18.	
1330-20-7	Xylenes, Total	360	62	18.	
156-59-2	cis-1,2-Dichloroethene	ND	62	18.	U
540-59-0	1,2-Dichloroethene, Total	ND	62	18.	U
74-95-3	Dibromomethane	ND	120	25.	U
96-18-4	1,2,3-Trichloropropane	ND	62	18.	U
107-13-1	Acrylonitrile	ND	120	38.	U
100-42-5	Styrene	ND	62	18.	U
75-71-8	Dichlorodifluoromethane	ND	120	25.	U
67-64-1	Acetone	56	120	36.	J
75-15-0	Carbon disulfide	ND	120	25.	U
78-93-3	2-Butanone	ND	120	48.	U
108-05-4	Vinyl acetate	ND	120	25.	U
108-10-1	4-Methyl-2-pentanone	ND	120	25.	U
591-78-6	2-Hexanone	ND	120	25.	U
74-97-5	Bromochloromethane	ND	62	18.	U
594-20-7	2,2-Dichloropropane	ND	62	18.	U
106-93-4	1,2-Dibromoethane	ND	50	16.	U
142-28-9	1,3-Dichloropropane	ND	62	18.	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	62	18.	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-03D	Date Collected	: 10/16/15 11:20
Client ID	: WW01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:42
Sample Matrix	: WATER	Dilution Factor	: 25
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A08	Instrument ID	: ELAINE.I
Sample Amount	: 0.4 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
108-86-1	Bromobenzene	ND	62	18.	U
104-51-8	n-Butylbenzene	ND	62	18.	U
135-98-8	sec-Butylbenzene	ND	62	18.	U
98-06-6	tert-Butylbenzene	ND	62	18.	U
95-49-8	o-Chlorotoluene	ND	62	18.	U
106-43-4	p-Chlorotoluene	ND	62	18.	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	62	18.	U
87-68-3	Hexachlorobutadiene	ND	62	18.	U
98-82-8	Isopropylbenzene	ND	62	18.	U
99-87-6	p-Isopropyltoluene	ND	62	18.	U
91-20-3	Naphthalene	2400	62	18.	
103-65-1	n-Propylbenzene	ND	62	18.	U
87-61-6	1,2,3-Trichlorobenzene	ND	62	18.	U
120-82-1	1,2,4-Trichlorobenzene	ND	62	18.	U
108-67-8	1,3,5-Trimethylbenzene	ND	62	18.	U
95-63-6	1,2,4-Trimethylbenzene	49	62	18.	J
123-91-1	1,4-Dioxane	ND	6200	1000	U
105-05-5	p-Diethylbenzene	ND	50	18.	U
622-96-8	p-Ethyltoluene	26	50	18.	J
95-93-2	1,2,4,5-Tetramethylbenzene	ND	50	16.	U
60-29-7	Ethyl ether	ND	62	18.	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	62	18.	U

Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-04	Date Collected	: 10/16/15 00:00
Client ID	: TB01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 11:52
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A05	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.13	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.50	0.14	U
563-58-6	1,1-Dichloropropene	ND	2.5	0.70	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.14	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.14	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-04	Date Collected	: 10/16/15 00:00
Client ID	: TB01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 11:52
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A05	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.70	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
1330-20-7	Xylenes, Total	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
540-59-0	1,2-Dichloroethene, Total	ND	2.5	0.70	U
74-95-3	Dibromomethane	ND	5.0	1.0	U
96-18-4	1,2,3-Trichloropropane	ND	2.5	0.70	U
107-13-1	Acrylonitrile	ND	5.0	1.5	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	1.5	5.0	1.5	J
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-05-4	Vinyl acetate	ND	5.0	1.0	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
594-20-7	2,2-Dichloropropane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
142-28-9	1,3-Dichloropropane	ND	2.5	0.70	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.5	0.70	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-04	Date Collected	: 10/16/15 00:00
Client ID	: TB01_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 11:52
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A05	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
108-86-1	Bromobenzene	ND	2.5	0.70	U
104-51-8	n-Butylbenzene	ND	2.5	0.70	U
135-98-8	sec-Butylbenzene	ND	2.5	0.70	U
98-06-6	tert-Butylbenzene	ND	2.5	0.70	U
95-49-8	o-Chlorotoluene	ND	2.5	0.70	U
106-43-4	p-Chlorotoluene	ND	2.5	0.70	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
87-68-3	Hexachlorobutadiene	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
99-87-6	p-Isopropyltoluene	ND	2.5	0.70	U
91-20-3	Naphthalene	ND	2.5	0.70	U
103-65-1	n-Propylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.5	0.70	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.5	0.70	U
123-91-1	1,4-Dioxane	ND	250	41.	U
105-05-5	p-Diethylbenzene	ND	2.0	0.70	U
622-96-8	p-Ethyltoluene	ND	2.0	0.70	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.0	0.65	U
60-29-7	Ethyl ether	ND	2.5	0.70	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	2.5	0.70	U

Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832832-3	Date Collected	: NA
Client ID	: WG832832-3BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/21/15 11:16
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A04	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	2.5	0.70	U
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
67-66-3	Chloroform	ND	2.5	0.70	U
56-23-5	Carbon tetrachloride	ND	0.50	0.13	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.13	U
124-48-1	Dibromochloromethane	ND	0.50	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.50	U
127-18-4	Tetrachloroethene	ND	0.50	0.18	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
75-69-4	Trichlorofluoromethane	ND	2.5	0.70	U
107-06-2	1,2-Dichloroethane	ND	0.50	0.13	U
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.70	U
75-27-4	Bromodichloromethane	ND	0.50	0.19	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.50	0.14	U
563-58-6	1,1-Dichloropropene	ND	2.5	0.70	U
75-25-2	Bromoform	ND	2.0	0.65	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.14	U
71-43-2	Benzene	ND	0.50	0.16	U
108-88-3	Toluene	ND	2.5	0.70	U
100-41-4	Ethylbenzene	ND	2.5	0.70	U
74-87-3	Chloromethane	ND	2.5	0.70	U
74-83-9	Bromomethane	ND	2.5	0.70	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U
75-00-3	Chloroethane	ND	2.5	0.70	U
75-35-4	1,1-Dichloroethene	ND	0.50	0.14	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832832-3	Date Collected	: NA
Client ID	: WG832832-3BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/21/15 11:16
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A04	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-60-5	trans-1,2-Dichloroethene	ND	2.5	0.70	U
79-01-6	Trichloroethene	ND	0.50	0.18	U
95-50-1	1,2-Dichlorobenzene	ND	2.5	0.70	U
541-73-1	1,3-Dichlorobenzene	ND	2.5	0.70	U
106-46-7	1,4-Dichlorobenzene	ND	2.5	0.70	U
1634-04-4	Methyl tert butyl ether	ND	2.5	0.70	U
179601-23-1	p/m-Xylene	ND	2.5	0.70	U
95-47-6	o-Xylene	ND	2.5	0.70	U
1330-20-7	Xylenes, Total	ND	2.5	0.70	U
156-59-2	cis-1,2-Dichloroethene	ND	2.5	0.70	U
540-59-0	1,2-Dichloroethene, Total	ND	2.5	0.70	U
74-95-3	Dibromomethane	ND	5.0	1.0	U
96-18-4	1,2,3-Trichloropropane	ND	2.5	0.70	U
107-13-1	Acrylonitrile	ND	5.0	1.5	U
100-42-5	Styrene	ND	2.5	0.70	U
75-71-8	Dichlorodifluoromethane	ND	5.0	1.0	U
67-64-1	Acetone	ND	5.0	1.5	U
75-15-0	Carbon disulfide	ND	5.0	1.0	U
78-93-3	2-Butanone	ND	5.0	1.9	U
108-05-4	Vinyl acetate	ND	5.0	1.0	U
108-10-1	4-Methyl-2-pentanone	ND	5.0	1.0	U
591-78-6	2-Hexanone	ND	5.0	1.0	U
74-97-5	Bromochloromethane	ND	2.5	0.70	U
594-20-7	2,2-Dichloropropane	ND	2.5	0.70	U
106-93-4	1,2-Dibromoethane	ND	2.0	0.65	U
142-28-9	1,3-Dichloropropane	ND	2.5	0.70	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.5	0.70	U



Form 1

Volatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832832-3	Date Collected	: NA
Client ID	: WG832832-3BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/21/15 11:16
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,8260C	Analyst	: PD
Lab File ID	: 1021A04	Instrument ID	: ELAINE.I
Sample Amount	: 10 ml	GC Column	: RTX-502.2
Level	: LOW	%Solids	: N/A
Extract Volume (MeOH)	: N/A	Injection Volume	: N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
108-86-1	Bromobenzene	ND	2.5	0.70	U
104-51-8	n-Butylbenzene	ND	2.5	0.70	U
135-98-8	sec-Butylbenzene	ND	2.5	0.70	U
98-06-6	tert-Butylbenzene	ND	2.5	0.70	U
95-49-8	o-Chlorotoluene	ND	2.5	0.70	U
106-43-4	p-Chlorotoluene	ND	2.5	0.70	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.70	U
87-68-3	Hexachlorobutadiene	ND	2.5	0.70	U
98-82-8	Isopropylbenzene	ND	2.5	0.70	U
99-87-6	p-Isopropyltoluene	ND	2.5	0.70	U
91-20-3	Naphthalene	ND	2.5	0.70	U
103-65-1	n-Propylbenzene	ND	2.5	0.70	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.5	0.70	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.5	0.70	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.5	0.70	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.5	0.70	U
123-91-1	1,4-Dioxane	ND	250	41.	U
105-05-5	p-Diethylbenzene	ND	2.0	0.70	U
622-96-8	p-Ethyltoluene	ND	2.0	0.70	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.0	0.65	U
60-29-7	Ethyl ether	ND	2.5	0.70	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	2.5	0.70	U

Semivolatiles Data- Method 8270D

Semivolatile Sample Data

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-01
 Client ID : MW-S2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D
 Lab File ID : 26418-01
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 09:20
 Date Received : 10/16/15
 Date Analyzed : 10/23/15 04:14
 Date Extracted : 10/21/15
 Dilution Factor : 1
 Analyst : MY
 Instrument ID : SV109.I
 GC Column : RTX-5
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.21	U
111-44-4	Bis(2-chloroethyl)ether	ND	2.0	0.41	U
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.30	U
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.35	U
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	U
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.48	U
121-14-2	2,4-Dinitrotoluene	ND	5.0	1.0	U
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.89	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.36	U
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.43	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	2.0	0.60	U
111-91-1	Bis(2-chloroethoxy)methane	ND	5.0	0.60	U
77-47-4	Hexachlorocyclopentadiene	ND	20	0.58	U
78-59-1	Isophorone	ND	5.0	0.79	U
98-95-3	Nitrobenzene	ND	2.0	0.40	U
86-30-6	NitrosoDiPhenylAmine(NDPA)/DPA	ND	2.0	0.34	U
621-64-7	n-Nitrosodi-n-propylamine	ND	5.0	0.64	U
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	3.0	0.93	U
85-68-7	Butyl benzyl phthalate	ND	5.0	1.1	U
84-74-2	Di-n-butylphthalate	ND	5.0	0.77	U
117-84-0	Di-n-octylphthalate	ND	5.0	1.2	U
84-66-2	Diethyl phthalate	ND	5.0	0.39	U
131-11-3	Dimethyl phthalate	ND	5.0	0.33	U
92-52-4	Biphenyl	2.6	2.0	0.24	

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-01
 Client ID : MW-S2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D
 Lab File ID : 26418-01
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 09:20
 Date Received : 10/16/15
 Date Analyzed : 10/23/15 04:14
 Date Extracted : 10/21/15
 Dilution Factor : 1
 Analyst : MY
 Instrument ID : SV109.I
 GC Column : RTX-5
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
106-47-8	4-Chloroaniline	ND	5.0	0.84	U
88-74-4	2-Nitroaniline	ND	5.0	0.96	U
99-09-2	3-Nitroaniline	ND	5.0	0.67	U
100-01-6	4-Nitroaniline	ND	5.0	0.83	U
132-64-9	Dibenzofuran	4.7	2.0	0.22	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	10	0.36	U
98-86-2	Acetophenone	ND	5.0	0.43	U
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.78	U
59-50-7	P-Chloro-M-Cresol	ND	2.0	0.54	U
95-57-8	2-Chlorophenol	ND	2.0	0.58	U
120-83-2	2,4-Dichlorophenol	ND	5.0	0.56	U
105-67-9	2,4-Dimethylphenol	ND	5.0	0.58	U
88-75-5	2-Nitrophenol	ND	10	1.0	U
100-02-7	4-Nitrophenol	ND	10	1.1	U
51-28-5	2,4-Dinitrophenol	ND	20	1.4	U
534-52-1	4,6-Dinitro-o-cresol	ND	10	1.4	U
108-95-2	Phenol	ND	5.0	0.27	U
95-48-7	2-Methylphenol	ND	5.0	0.70	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	5.0	0.72	U
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.75	U
65-85-0	Benzoic Acid	ND	50	1.0	U
100-51-6	Benzyl Alcohol	ND	2.0	0.68	U
86-74-8	Carbazole	7.7	2.0	0.37	



Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-02
 Client ID : MW-N2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D
 Lab File ID : 26418-02
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 12:00
 Date Received : 10/16/15
 Date Analyzed : 10/23/15 04:39
 Date Extracted : 10/21/15
 Dilution Factor : 1
 Analyst : MY
 Instrument ID : SV109.I
 GC Column : RTX-5
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.21	U
111-44-4	Bis(2-chloroethyl)ether	ND	2.0	0.41	U
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.30	U
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.35	U
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	U
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.48	U
121-14-2	2,4-Dinitrotoluene	ND	5.0	1.0	U
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.89	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.36	U
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.43	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	2.0	0.60	U
111-91-1	Bis(2-chloroethoxy)methane	ND	5.0	0.60	U
77-47-4	Hexachlorocyclopentadiene	ND	20	0.58	U
78-59-1	Isophorone	ND	5.0	0.79	U
98-95-3	Nitrobenzene	ND	2.0	0.40	U
86-30-6	NitrosoDiPhenylAmine(NDPA)/DPA	ND	2.0	0.34	U
621-64-7	n-Nitrosodi-n-propylamine	ND	5.0	0.64	U
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	3.0	0.93	U
85-68-7	Butyl benzyl phthalate	ND	5.0	1.1	U
84-74-2	Di-n-butylphthalate	ND	5.0	0.77	U
117-84-0	Di-n-octylphthalate	ND	5.0	1.2	U
84-66-2	Diethyl phthalate	ND	5.0	0.39	U
131-11-3	Dimethyl phthalate	ND	5.0	0.33	U
92-52-4	Biphenyl	20	2.0	0.24	

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-02
 Client ID : MW-N2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D
 Lab File ID : 26418-02
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 12:00
 Date Received : 10/16/15
 Date Analyzed : 10/23/15 04:39
 Date Extracted : 10/21/15
 Dilution Factor : 1
 Analyst : MY
 Instrument ID : SV109.I
 GC Column : RTX-5
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
106-47-8	4-Chloroaniline	ND	5.0	0.84	U
88-74-4	2-Nitroaniline	ND	5.0	0.96	U
99-09-2	3-Nitroaniline	ND	5.0	0.67	U
100-01-6	4-Nitroaniline	ND	5.0	0.83	U
132-64-9	Dibenzofuran	39	2.0	0.22	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	10	0.36	U
98-86-2	Acetophenone	12	5.0	0.43	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.78	U
59-50-7	P-Chloro-M-Cresol	ND	2.0	0.54	U
95-57-8	2-Chlorophenol	ND	2.0	0.58	U
120-83-2	2,4-Dichlorophenol	ND	5.0	0.56	U
105-67-9	2,4-Dimethylphenol	110	5.0	0.58	
88-75-5	2-Nitrophenol	ND	10	1.0	U
100-02-7	4-Nitrophenol	ND	10	1.1	U
51-28-5	2,4-Dinitrophenol	ND	20	1.4	U
534-52-1	4,6-Dinitro-o-cresol	ND	10	1.4	U
108-95-2	Phenol	3.0	5.0	0.27	J
95-48-7	2-Methylphenol	39	5.0	0.70	
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	31	5.0	0.72	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.75	U
65-85-0	Benzoic Acid	ND	50	1.0	U
100-51-6	Benzyl Alcohol	ND	2.0	0.68	U
86-74-8	Carbazole	88	2.0	0.37	



Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental	Lab Number : L1526418
Project Name : RIVER PLACE I & II	Project Number: 170040901
Lab ID : WG832884-1	Date Collected : NA
Client ID : WG832884-1BLANK	Date Received : NA
Sample Location :	Date Analyzed : 10/22/15 19:21
Sample Matrix : WATER	Date Extracted : 10/21/15
Analytical Method : 1,8270D	Dilution Factor : 1
Lab File ID : 832884-1	Analyst : MY
Sample Amount : 1000 ml	Instrument ID : SV109.I
Extraction Method : EPA 3510C	GC Column : RTX-5
Extract Volume : 1000 uL	%Solids : N/A
GPC Cleanup : N	Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.21	U
111-44-4	Bis(2-chloroethyl)ether	ND	2.0	0.41	U
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.30	U
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.35	U
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.32	U
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.48	U
121-14-2	2,4-Dinitrotoluene	ND	5.0	1.0	U
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.89	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.36	U
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.43	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	2.0	0.60	U
111-91-1	Bis(2-chloroethoxy)methane	ND	5.0	0.60	U
77-47-4	Hexachlorocyclopentadiene	ND	20	0.58	U
78-59-1	Isophorone	ND	5.0	0.79	U
98-95-3	Nitrobenzene	ND	2.0	0.40	U
86-30-6	NitrosoDiPhenylAmine(NDPA)/DPA	ND	2.0	0.34	U
621-64-7	n-Nitrosodi-n-propylamine	ND	5.0	0.64	U
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	3.0	0.93	U
85-68-7	Butyl benzyl phthalate	ND	5.0	1.1	U
84-74-2	Di-n-butylphthalate	ND	5.0	0.77	U
117-84-0	Di-n-octylphthalate	ND	5.0	1.2	U
84-66-2	Diethyl phthalate	ND	5.0	0.39	U
131-11-3	Dimethyl phthalate	ND	5.0	0.33	U
92-52-4	Biphenyl	ND	2.0	0.24	U

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : WG832884-1
 Client ID : WG832884-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,8270D
 Lab File ID : 832884-1
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 10/22/15 19:21
 Date Extracted : 10/21/15
 Dilution Factor : 1
 Analyst : MY
 Instrument ID : SV109.I
 GC Column : RTX-5
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
106-47-8	4-Chloroaniline	ND	5.0	0.84	U
88-74-4	2-Nitroaniline	ND	5.0	0.96	U
99-09-2	3-Nitroaniline	ND	5.0	0.67	U
100-01-6	4-Nitroaniline	ND	5.0	0.83	U
132-64-9	Dibenzofuran	ND	2.0	0.22	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	10	0.36	U
98-86-2	Acetophenone	ND	5.0	0.43	U
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.78	U
59-50-7	P-Chloro-M-Cresol	ND	2.0	0.54	U
95-57-8	2-Chlorophenol	ND	2.0	0.58	U
120-83-2	2,4-Dichlorophenol	ND	5.0	0.56	U
105-67-9	2,4-Dimethylphenol	ND	5.0	0.58	U
88-75-5	2-Nitrophenol	ND	10	1.0	U
100-02-7	4-Nitrophenol	ND	10	1.1	U
51-28-5	2,4-Dinitrophenol	ND	20	1.4	U
534-52-1	4,6-Dinitro-o-cresol	ND	10	1.4	U
108-95-2	Phenol	ND	5.0	0.27	U
95-48-7	2-Methylphenol	ND	5.0	0.70	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	5.0	0.72	U
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.75	U
65-85-0	Benzoic Acid	ND	50	1.0	U
100-51-6	Benzyl Alcohol	ND	2.0	0.68	U
86-74-8	Carbazole	ND	2.0	0.37	U



Semivolatiles Data- Method 8270C-SIM

Semivolatile Sample Data

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-01D
 Client ID : MW-S2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D-SIM
 Lab File ID : 26418-01
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 09:20
 Date Received : 10/16/15
 Date Analyzed : 10/22/15 17:10
 Date Extracted : 10/21/15
 Dilution Factor : 5
 Analyst : KV
 Instrument ID : MINDY.I
 GC Column : RXI-5SiMS
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
83-32-9	Acenaphthene	17	1.0	0.18	
91-58-7	2-Chloronaphthalene	ND	1.0	0.18	U
206-44-0	Fluoranthene	5.3	1.0	0.19	
87-68-3	Hexachlorobutadiene	ND	2.5	0.18	U
91-20-3	Naphthalene	23	1.0	0.22	
56-55-3	Benzo(a)anthracene	2.2	1.0	0.08	
50-32-8	Benzo(a)pyrene	2.2	1.0	0.20	
205-99-2	Benzo(b)fluoranthene	1.7	1.0	0.08	
207-08-9	Benzo(k)fluoranthene	0.65	1.0	0.21	J
218-01-9	Chrysene	2.1	1.0	0.19	
208-96-8	Acenaphthylene	3.2	1.0	0.18	
120-12-7	Anthracene	2.5	1.0	0.18	
191-24-2	Benzo(ghi)perylene	1.3	1.0	0.21	
86-73-7	Fluorene	4.2	1.0	0.18	
85-01-8	Phenanthrene	5.4	1.0	0.08	
53-70-3	Dibenzo(a,h)anthracene	0.24	1.0	0.20	J
193-39-5	Indeno(1,2,3-cd)Pyrene	0.83	1.0	0.20	J
129-00-0	Pyrene	8.1	1.0	0.20	
91-57-6	2-Methylnaphthalene	3.8	1.0	0.22	
87-86-5	Pentachlorophenol	ND	4.0	1.1	U
118-74-1	Hexachlorobenzene	ND	4.0	0.16	U
67-72-1	Hexachloroethane	ND	4.0	0.15	U

Form 1

SemiVolatile Organics

Client : Langan Engineering & Environmental
 Project Name : RIVER PLACE I & II
 Lab ID : L1526418-02D
 Client ID : MW-N2_101615
 Sample Location : NY, NY
 Sample Matrix : WATER
 Analytical Method : 1,8270D-SIM
 Lab File ID : 6418-2D
 Sample Amount : 1000 ml
 Extraction Method : EPA 3510C
 Extract Volume : 1000 uL
 GPC Cleanup : N

Lab Number : L1526418
 Project Number: 170040901
 Date Collected : 10/16/15 12:00
 Date Received : 10/16/15
 Date Analyzed : 10/22/15 18:32
 Date Extracted : 10/21/15
 Dilution Factor : 200
 Analyst : KV
 Instrument ID : MINDY.I
 GC Column : RXI-5SiMS
 %Solids : N/A
 Injection Volume : 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
83-32-9	Acenaphthene	77	40	7.0	
91-58-7	2-Chloronaphthalene	ND	40	7.0	U
206-44-0	Fluoranthene	12	40	7.6	J
87-68-3	Hexachlorobutadiene	ND	100	7.2	U
91-20-3	Naphthalene	2400	40	8.6	
56-55-3	Benzo(a)anthracene	4.7	40	3.2	J
50-32-8	Benzo(a)pyrene	ND	40	7.8	U
205-99-2	Benzo(b)fluoranthene	ND	40	3.2	U
207-08-9	Benzo(k)fluoranthene	ND	40	8.4	U
218-01-9	Chrysene	ND	40	7.6	U
208-96-8	Acenaphthylene	ND	40	7.0	U
120-12-7	Anthracene	7.9	40	7.0	J
191-24-2	Benzo(ghi)perylene	ND	40	8.4	U
86-73-7	Fluorene	30	40	7.4	J
85-01-8	Phenanthrene	48	40	3.0	
53-70-3	Dibenzo(a,h)anthracene	ND	40	7.8	U
193-39-5	Indeno(1,2,3-cd)Pyrene	ND	40	8.0	U
129-00-0	Pyrene	8.8	40	8.0	J
91-57-6	2-Methylnaphthalene	60	40	9.0	
87-86-5	Pentachlorophenol	ND	160	44.	U
118-74-1	Hexachlorobenzene	ND	160	6.4	U
67-72-1	Hexachloroethane	ND	160	6.0	U

Form 1

SemiVolatile Organics

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number:	: 170040901
Lab ID	: WG832885-1	Date Collected	: NA
Client ID	: WG832885-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/22/15 12:10
Sample Matrix	: WATER	Date Extracted	: 10/21/15
Analytical Method	: 1,8270D-SIM	Dilution Factor	: 1
Lab File ID	: 832885-1	Analyst	: KV
Sample Amount	: 1000 ml	Instrument ID	: MINDY.I
Extraction Method	: EPA 3510C	GC Column	: RXI-5SiMS
Extract Volume	: 1000 uL	%Solids	: N/A
GPC Cleanup	: N	Injection Volume	: 1 uL

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
83-32-9	Acenaphthene	ND	0.20	0.04	U
91-58-7	2-Chloronaphthalene	ND	0.20	0.04	U
206-44-0	Fluoranthene	ND	0.20	0.04	U
87-68-3	Hexachlorobutadiene	ND	0.50	0.04	U
91-20-3	Naphthalene	ND	0.20	0.04	U
56-55-3	Benzo(a)anthracene	ND	0.20	0.02	U
50-32-8	Benzo(a)pyrene	ND	0.20	0.04	U
205-99-2	Benzo(b)fluoranthene	ND	0.20	0.02	U
207-08-9	Benzo(k)fluoranthene	ND	0.20	0.04	U
218-01-9	Chrysene	ND	0.20	0.04	U
208-96-8	Acenaphthylene	ND	0.20	0.04	U
120-12-7	Anthracene	ND	0.20	0.04	U
191-24-2	Benzo(ghi)perylene	ND	0.20	0.04	U
86-73-7	Fluorene	ND	0.20	0.04	U
85-01-8	Phenanthrene	ND	0.20	0.02	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	0.04	U
193-39-5	Indeno(1,2,3-cd)Pyrene	ND	0.20	0.04	U
129-00-0	Pyrene	ND	0.20	0.04	U
91-57-6	2-Methylnaphthalene	ND	0.20	0.05	U
87-86-5	Pentachlorophenol	ND	0.80	0.22	U
118-74-1	Hexachlorobenzene	ND	0.80	0.03	U
67-72-1	Hexachloroethane	ND	0.80	0.03	U

Metals

Inorganic Data (ICPMS Analysis)

Form 1

METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 16:28
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020A	Analyst	: TT
Lab File ID	: wg832810.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.392	0.010	0.002	
7440-36-0	Antimony, Total	0.0002	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0054	0.0005	0.0001	
7440-39-3	Barium, Total	0.2067	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.0022	0.0010	0.0003	
7440-48-4	Cobalt, Total	0.0027	0.0005	0.0001	
7440-50-8	Copper, Total	0.0020	0.0010	0.0003	
7439-89-6	Iron, Total	5.80	0.050	0.012	
7439-92-1	Lead, Total	0.0133	0.0010	0.0001	
7440-02-0	Nickel, Total	0.0020	0.0005	0.0001	
7440-09-7	Potassium, Total	21.6	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0030	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0078	0.0100	0.0026	J

Form 1

METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 16:16
Sample Matrix	: WATER	Dilution Factor	: 20
Analytical Method	: 1,6020A	Analyst	: TT
Lab File ID	: wg832810.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-70-2	Calcium, Total	217	2.00	0.640	
7439-95-4	Magnesium, Total	81.1	1.40	0.446	
7439-96-5	Manganese, Total	0.5297	0.0200	0.0060	
7440-23-5	Sodium, Total	56.6	2.00	0.322	

Form 1 METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 16:31
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020A	Analyst	: TT
Lab File ID	: wg832810.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.025	0.010	0.002	
7440-36-0	Antimony, Total	0.0006	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0027	0.0005	0.0001	
7440-39-3	Barium, Total	0.1745	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.0016	0.0010	0.0003	
7440-48-4	Cobalt, Total	0.0060	0.0005	0.0001	
7440-50-8	Copper, Total	0.0011	0.0010	0.0003	
7439-89-6	Iron, Total	1.62	0.050	0.012	
7439-92-1	Lead, Total	0.0006	0.0010	0.0001	J
7439-96-5	Manganese, Total	0.4365	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0013	0.0005	0.0001	
7440-09-7	Potassium, Total	30.6	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0019	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0035	0.0100	0.0026	J

Form 1 METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 16:34
Sample Matrix	: WATER	Dilution Factor	: 20
Analytical Method	: 1,6020A	Analyst	: TT
Lab File ID	: wg832810.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-70-2	Calcium, Total	164	2.00	0.640	
7439-95-4	Magnesium, Total	59.6	1.40	0.446	
7440-23-5	Sodium, Total	189	2.00	0.322	

Inorganic Data (Mercury Analysis)

Form 1 METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/20/15 21:16
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: EA
Lab File ID	: Hg4102015B.pcl	Instrument ID	: FIMS4
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 10/20/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	0.00012	0.00020	0.00006	J

Form 1

METALS

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/20/15 21:17
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,7470A	Analyst	: EA
Lab File ID	: Hg4102015B.pcl	Instrument ID	: FIMS4
Sample Amount	: 25ml	%Solids	: N/A
Digestion Method	: EPA 7470A	Date Digested	: 10/20/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Wet Chemistry

Cyanide Analysis

Results

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832054-1	Date Collected	: NA
Client ID	: WG832054-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/19/15 11:46
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 64,9014(M)	Analyst	: JO
Lab File ID	: 151019-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/19/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Physiologically Available	ND	0.005	0.00005	U

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832054-4	Date Collected	:
Client ID	: Negative Laboratory	Date Received	:
Sample Location	:	Date Analyzed	: 10/19/15 11:47
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 64,9014(M)	Analyst	: joko
Lab File ID	: 151019-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/19/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Physiologically Available	0.032	.005	0.00005	

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832054-5	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615DUP	Date Received	: 10/16/15
Sample Location	:	Date Analyzed	: 10/19/15 11:56
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 64,9014(M)	Analyst	: joko
Lab File ID	: 151019-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/19/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Physiologically Available	0.085	0.005	0.00005	

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/19/15 11:56
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 64,9014(M)	Analyst	: JO
Lab File ID	: 151019-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/19/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Physiologically Available	0.060	0.005	0.00005	

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/19/15 11:52
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 64,9014(M)	Analyst	: JO
Lab File ID	: 151019-A	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/19/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Physiologically Available	0.037	0.005	0.00005	

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: WG832585-1	Date Collected	: NA
Client ID	: WG832585-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/21/15 12:57
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JO
Lab File ID	: 151021-E	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/20/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	ND	0.005	0.001	U

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-01	Date Collected	: 10/16/15 09:20
Client ID	: MW-S2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:03
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JO
Lab File ID	: 151021-E	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/20/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	0.135	0.005	0.001	

Form 1

WETCHEM

Client	: Langan Engineering & Environmental	Lab Number	: L1526418
Project Name	: RIVER PLACE I & II	Project Number	: 170040901
Lab ID	: L1526418-02	Date Collected	: 10/16/15 12:00
Client ID	: MW-N2_101615	Date Received	: 10/16/15
Sample Location	: NY, NY	Date Analyzed	: 10/21/15 13:04
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,9010C/9012B	Analyst	: JO
Lab File ID	: 151021-E	Instrument ID	: LACHAT
Sample Amount	:	%Solids	: N/A
Digestion Method	:	Date Digested	: 10/20/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
57-12-5	Cyanide, Total	0.156	0.005	0.001	

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Drinking Water Bacteriology

Coliform, Total / E. coli (Qualitative)	SM 18-21 9222B (97)/40CFR141.23(F)6:
	SM 18-21 9223B (97) (Colilert)
Standard Plate Count	SM 18-21 9215B

Drinking Water Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Drinking Water Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4

Drinking Water Metals II

Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4

Drinking Water Metals III

Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Drinking Water Miscellaneous

Organic Carbon, Total	SM 18-21 5310C (00)
Perchlorate	EPA 332.0 Rev. 1

Drinking Water Non-Metals

Alkalinity	SM 18-21 2920B (97)
Calcium Hardness	EPA 200.7 Rev. 4.4
Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-21 2120B (01)
Cyanide	SM 18-21 4500-CNE (99)
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-21 4500-F (07)
Nitrate (as N)	SM 18-21 4500-ND3 F (00)
Nitrite (as N)	SM 18-21 4500-NO3 F (00)
Solids, Total Dissolved	SM 18-21 2540C (97)
Specific Conductance	SM 18-21 2510B (97)

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below

Drinking Water Non-Metals

Sulfate (as SO₄) EPA 300.0 Rev. 2.1

Drinking Water Trihalomethanes

Bromodichloromethane EPA 524.2

Bromoform EPA 524.2

Chloroform EPA 524.2

Dibromochloromethane EPA 524.2

Total Trihalomethanes EPA 524.2

Fuel Additives

Methyl tert-butyl ether EPA 524.2

Naphthalene EPA 524.2

Microextractables

1,2-Dibromo-3-chloropropane EPA 504.1

1,2-Dibromoethane EPA 504.1

Volatile Aromatics

1,2,3-Trichlorobenzene EPA 524.2

1,2,4-Trichlorobenzene EPA 524.2

1,2,4-Trimethylbenzene EPA 524.2

1,2-Dichlorobenzene EPA 524.2

1,3,5-Trimethylbenzene EPA 524.2

1,3-Dichlorobenzene EPA 524.2

1,4-Dichlorobenzene EPA 524.2

2-Chlorotoluene EPA 524.2

4-Chlorotoluene EPA 524.2

Benzene EPA 524.2

Volatile Aromatics

Bromobenzene EPA 524.2

Chlorobenzene EPA 524.2

Ethyl benzene EPA 524.2

Hexachlorobutadiene EPA 524.2

Isopropylbenzene EPA 524.2

n-Butylbenzene EPA 524.2

n-Propylbenzene EPA 524.2

p-Isopropyltoluene (P-Cymene) EPA 524.2

sec-Butylbenzene EPA 524.2

Styrene EPA 524.2

tert-Butylbenzene EPA 524.2

Toluene EPA 524.2

Total Xylenes EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane EPA 524.2

1,1,1-Trichloroethane EPA 524.2

1,1,2,2-Tetrachloroethane EPA 524.2

1,1,2-Trichloroethane EPA 524.2

1,1-Dichloroethane EPA 524.2

1,1-Dichloroethene EPA 524.2

1,1-Dichloropropene EPA 524.2

1,2,3-Trichloropropane EPA 524.2

1,2-Dichloroethane EPA 524.2

1,2-Dichloropropane EPA 524.2

1,3-Dichloropropane EPA 524.2

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ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below.

Volatile Halocarbons

2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below

Acrylates

Acrolein (Propenal)	EPA 624
	EPA 8260C
Acrylonitrile	EPA 624
	EPA 8260C
Ethyl methacrylate	EPA 8260C

Amines

2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 625
	EPA 8270D
Pyridine	EPA 625
	EPA 8270D

Bacteriology

Coliform, Fecal	SM 18-21 9221E (99)
	SM 18-21 9222D (87)
Coliform, Total	SM 18-21 9221B (99)
	SM 18-21 9222B (97)
Standard Plate Count	SM 18-21 9215B

Benzidines

3,3'-Dichlorobenzidine	EPA 625
	EPA 8270D

Benzidines

Benzidine	EPA 625
	EPA 8270D

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 608
	EPA 8081B
4,4'-DDE	EPA 608
	EPA 8081B
4,4'-DDT	EPA 608
	EPA 8081B

Aldrin	EPA 608
	EPA 8081B

alpha-BHC	EPA 608
	EPA 8081B
alpha-Chlordane	EPA 6081B
beta-BHC	EPA 608
	EPA 8081B

Chlordane Total	EPA 608
	EPA 8081B

delta-BHC	EPA 608
	EPA 8081B

Dieldrin	EPA 608
	EPA 8081B

Endosulfan I	EPA 608
	EPA 8081B
Endosulfan II	EPA 608

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Chlorinated Hydrocarbon Pesticides

Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 608
	EPA 8081B
Endrin	EPA 608
	EPA 8081B
Endrin aldehyde	EPA 608
	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 608
	EPA 8081B
Heptachlor epoxide	EPA 608
	EPA 8081B
Lindane	EPA 608
	EPA 8081B
Methoxychlor	EPA 608
	EPA 8081B
Toxaphene	EPA 608
	EPA 8081B

Chlorinated Hydrocarbons

2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 625
	EPA 8270D
Hexachlorobutadiene	EPA 625
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625
	EPA 8270D
Hexachloroethane	EPA 625
	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dinoseb	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 18-21 5210B (01)
Carbonaceous BOD	SM 18-21 5210B (01)
Chemical Oxygen Demand	EPA 410.4 Rev. 2.0
	SM 18-21 5220D (97)

Fuel Oxygenates

Di-isopropyl ether	EPA 8260C
Ethanol	EPA 8260C
Methyl tert-butyl ether	EPA 8260C

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270D
2-Chloronaphthalene	EPA 625

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Fuel Oxygenates

tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
tert-butyl ethyl ether (ETBE)	EPA 8260C

Haloothers

4-Bromophenylphenyl ether	EPA 825
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 825
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 825
	EPA 8270D
Bis(2-chloroethyl) ether	EPA 825
	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 825
	EPA 8270D

Low Level Polynuclear Aromatics

Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM

Low Level Polynuclear Aromatics

Naphthalene Low Level	EPA 8270D SIM
Mineral	
Acidity	SM 18-21 2310B.4a (97)
Alkalinity	SM 18-21 2320B (97)
Chloride	EPA 300.0 Rev. 2.1
	SM 18-21 4500-Cl- E (97)
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-21 4600-F C (97)
Hardness, Total	EPA 200.7 Rev. 4.4
	SM 18-21 2340B (97)
Sulfate (as SO ₄)	EPA 300.0 Rev. 2.1
	SM 15 426 C

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8330
1,3-Dinitrobenzene	EPA 8270D
	EPA 8330
2,4,6-Trinitrotoluene	EPA 8330
2,4-Dinitrotoluene	EPA 825
	EPA 8270D
	EPA 8330
2,6-Dinitrotoluene	EPA 825
	EPA 8270D
	EPA 8330
2-Amino-4,6-dinitrotoluene	EPA 8330
2-Nitrotoluene	EPA 8330

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8 WALKUP DR
WESTBOROUGH, MA 01581-1019

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Nitroaromatics and Isophorone

3-Nitrotoluene	EPA 8330
4-Amino-2,6-dinitrotoluene	EPA 8330
4-Nitrotoluene	EPA 8330
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330
Isophorone	EPA 625
	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330
Nitrobenzene	EPA 625
	EPA 8270D
	EPA 8330
Octahydro-tetranitro-tetrazocine	EPA 8330

Nitrosoamines

N-Nitrosodimethylamine	EPA 625
	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625
	EPA 8270D

Nutrient

Ammonia (as N)	EPA 350.1 Rev. 2.0
	SM 18 4500-NH3 H
Kjeldahl Nitrogen, Total	EPA 351.1 Rev. 1978
	LACHAT 10-107-08-2
Nitrate (as N)	EPA 300.0 Rev. 2.1
	EPA 353.2 Rev. 2.0

Nutrient

Nitrate (as N)	SM 18-21 4500-NO3 F (00)
Nitrite (as N)	SM 18-21 4500-NO2 B (00)
Orthophosphate (as P)	SM 18-21 4500-P E
Phosphorus, Total	SM 18-21 4500-P E

Organophosphate Pesticides

Atrazine	EPA 8270D
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Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C

Phthalate Esters

Benzyl butyl phthalate	EPA 625
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270D
Diethyl phthalate	EPA 625
	EPA 8270D
Dimethyl phthalate	EPA 625
	EPA 8270D
Di-n-butyl phthalate	EPA 625
	EPA 8270D
Di-n-octyl phthalate	EPA 625
	EPA 8270D

Polychlorinated Biphenyls

PCB-1016	EPA 608
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ENVIRONMENTAL ANALYSES NON POTABLE WATER
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Polychlorinated Biphenyls

PCB-1016	EPA-8082A
PCB-1221	EPA 608
	EPA-8082A
PCB-1232	EPA 608
	EPA-8082A
PCB-1242	EPA-608
	EPA-8082A
PCB-1248	EPA 608
	EPA-8082A
PCB-1254	EPA 608
	EPA-8082A
PCB-1260	EPA 608
	EPA-8082A
PCB-1262	EPA-8082A
PCB-1268	EPA-8082A

Polynuclear Aromatics

Benzo(a)pyrene	EPA-8270D
Benzo(b)fluoranthene	EPA 625
	EPA-8270D
Benzo(ghi)perylene	EPA 625
	EPA-8270D
Benzo(k)fluoranthene	EPA 625
	EPA-8270D
Chrysene	EPA 625
	EPA-8270D
Dibenzo(a,h)anthracene	EPA 625
	EPA-8270D
Fluoranthene	EPA 625
	EPA-8270D
Fluorene	EPA 625
	EPA-8270D

Polynuclear Aromatics

Acenaphthene	EPA 625
	EPA-8270D
Acenaphthylene	EPA 625
	EPA-8270D
Anthracene	EPA 625
	EPA-8270D
Benzo(a)anthracene	EPA 625
	EPA-8270D
Benzo(a)pyrene	EPA 625

Indeno(1,2,3-cd)pyrene	EPA 625
	EPA-8270D
Naphthalene	EPA 625
	EPA-8270D
Phenanthrene	EPA 625
	EPA-8270D
Pyrene	EPA 625
	EPA-8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA-8270D
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Priority Pollutant Phenols

2,4,5-Trichlorophenol	EPA 625 EPA 8270D
2,4,6-Trichlorophenol	EPA 625 EPA 8270D
2,4-Dichlorophenol	EPA 625 EPA 8270D
2,4-Dimethylphenol	EPA 625 EPA 8270D
2,4-Dinitrophenol	EPA 625 EPA 8270D
2-Chlorophenol	EPA 625 EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625 EPA 8270D
2-Methylphenol	EPA 625 EPA 8270D
2-Nitrophenol	EPA 625 EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625 EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625 EPA 8270D
Pentachlorophenol	EPA 625 EPA 8270D

Priority Pollutant Phenols

Phenol	EPA 625 EPA 8270D
Residue	
Solids, Total	SM 18-21 2540B (97)
Solids, Total Dissolved	SM 18-21 2540C (97)
Solids, Total Suspended	SM 18-21 2540D (97)

Semi-Volatile Organics

1,1-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270D
Benzole Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 624 EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C

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Volatile Aromatics

1,3-Dichlorobenzene	EPA 624
	EPA 8260C
1,4-Dichlorobenzene	EPA 624
	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 624
	EPA 8260C
Chlorobenzene	EPA 624
	EPA 8260C
Ethylbenzene	EPA 624
	EPA 8260C
Isopropylbenzene	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 624
	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 624
	EPA 8260C
Total Xylenes	EPA 624
	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 624
	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 624
	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 624
	EPA 8260C
1,1-Dichloroethane	EPA 624
	EPA 8260C
1,1-Dichloroethene	EPA 624
	EPA 8260C
1,1-Dichloropropane	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8011
	EPA 8260C
1,2-Dibromoethane	EPA 8011
	EPA 8260C
1,2-Dichloroethane	EPA 624
	EPA 8260C
1,2-Dichloropropane	EPA 624
	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloroethyl vinyl ether	EPA 624
	EPA 8260C

Serial No.: 48542

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons

Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 624
	EPA 8260C
Bromoform	EPA 624
	EPA 8260C
Bromomethane	EPA 624
	EPA 8260C
Carbon tetrachloride	EPA 624
	EPA 8260C
Chloroethane	EPA 624
	EPA 8260C
Chloroform	EPA 624
	EPA 8260C
Chloromethane	EPA 624
	EPA 8260C
cis-1,2-Dichloroethene	EPA 624
	EPA 8260C
cis-1,3-Dichloropropene	EPA 624
	EPA 8260C
Dibromochloromethane	EPA 624
	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 624
	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 624

Volatile Halocarbons

Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 624
	EPA 8260C
trans-1,2-Dichloroethene	EPA 624
	EPA 8260C
trans-1,3-Dichloropropene	EPA 624
	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 624
	EPA 8260C
Trichlorofluoromethane	EPA 624
	EPA 8260C
Vinyl chloride	EPA 624
	EPA 8260C

Volatiles Organics

1,4-Dioxane	EPA 8260C
2-Butanone (Methyl ethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

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Volatiles Organics

Vinyl acetate

EPA 8260C

Wastewater Metals I

Lead, Total

EPA 6010C

Wastewater Metals I

Barium, Total

EPA 200.7 Rev. 4.4

Magnesium, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

Manganese, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 200.8 Rev. 5.4

EPA 6020A

EPA 6010C

Cadmium, Total

EPA 200.7 Rev. 4.4

EPA 6020A

EPA 200.8 Rev. 5.4

Nickel, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 200.8 Rev. 5.4

EPA 6020A

EPA 6010C

Calcium, Total

EPA 200.7 Rev. 4.4

EPA 6020A

EPA 6010C

EPA 200.7 Rev. 4.4

Chromium, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 200.8 Rev. 5.4

Potassium, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 200.8 Rev. 5.4

EPA 6020A

EPA 6010C

Copper, Total

EPA 200.7 Rev. 4.4

EPA 6020A

EPA 200.8 Rev. 5.4

Sodium, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 6010C

EPA 6020A

Iron, Total

EPA 200.7 Rev. 4.4

Wastewater Metals II

Aluminum, Total

EPA 200.7 Rev. 4.4

EPA 6010C

EPA 200.8 Rev. 5.4

EPA 6020A

EPA 6010C

Lead, Total

EPA 200.7 Rev. 4.4

EPA 6020A

EPA 200.8 Rev. 5.4

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below

Wastewater Metals II

Antimony, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Arsenic, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Beryllium, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Chromium VI

EPA 7196A

SM 18-19 3500-CrD

Mercury, Total

EPA 245.1 Rev. 3.0

EPA 7470A

Selenium, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Vanadium, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Zinc, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

Wastewater Metals II

Zinc, Total

EPA 6010C

EPA 6020A

Wastewater Metals III

Cobalt, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Molybdenum, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Thallium, Total

EPA 200.7 Rev. 4.4

EPA 200.8 Rev. 5.4

EPA 6010C

EPA 6020A

Tin, Total

EPA 200.7 Rev. 4.4

EPA 6010C

Titanium, Total

EPA 200.7 Rev. 4.4

Wastewater Miscellaneous

Boron, Total

EPA 200.7 Rev. 4.4

EPA 6010C

Bromide

EPA 300.0 Rev. 2.1

Color

SM 18-21 2120B (01)

Cyanide, Total

SM 18-21 4500-CNE (09)

Formaldehyde

EPA 8315A

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below.

Wastewater Miscellaneous

Oil and Grease Total Recoverable (HEM EPA 1664A)	
Organic Carbon, Total	SM 18-21 5310C (00)
Phenols	EPA 420.1 Rev. 1978
	SM 14 510C
Silica, Dissolved	EPA 200.7 Rev. 4.4
Specific Conductance	EPA 120.1 Rev. 1982
	SM 18-21 2510B (97)
Sulfide (as S)	SM 18-21 4500-S D (00)
Surfactant (MBAS)	SM 18-21 5540C (00)
Total Petroleum Hydrocarbons	EPA 1664A

Sample Preparation Methods

EPA 3005A
EPA 3015
EPA 3510C
EPA 5030B
EPA 9010C
EPA 9030B
SM 18-20 4500-CN C
SM 18-21 4500-NH3 B (97)

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
Benzidine	EPA 8270D

Characteristic Testing

Corrosivity	EPA 9040C
	EPA 9045D
Ignitability	EPA 1010A
	EPA 1030
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B

Chlorinated Hydrocarbon Pesticides

4,4-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D

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All approved analytes are listed below:

Chlorinated Hydrocarbons

2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A

Haloethers

4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl) ether	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM

Low Level Polynuclear Aromatic Hydrocarbons

Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I

Barium, Total	EPA 6010C
	EPA 6020A
Cadmium, Total	EPA 6010C
	EPA 6020A
Calcium, Total	EPA 6010C
Chromium, Total	EPA 6010C
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6020A
Iron, Total	EPA 6010C
	EPA 6020A
Lead, Total	EPA 6010C
	EPA 6020A
Magnesium, Total	EPA 6010C

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8 WALKUP DR
WESTBOROUGH, MA 01581-1019

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below

Metals I

Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
Silver, Total	EPA 6010C
	EPA 6020A
Sodium, Total	EPA 6010C

Metals II

Aluminum, Total	EPA 6010C
	EPA 6020A
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A

Metals III

Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6020A
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C

Minerals

Chloride	EPA 9251
Sulfate (as SO ₄)	EPA 9038

Miscellaneous

Boron, Total	EPA 6010C
Cyanide, Total	EPA 6012B
	EPA 9014
Formaldehyde	EPA 3315A
Phenols	EPA 9065
Specific Conductance	EPA 9050A

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8330
1,3-Dinitrobenzene	EPA 8330
2,4,6-Trinitrotoluene	EPA 8330
2,4-Dinitrotoluene	EPA 8270D
	EPA 8330
2,6-Dinitrotoluene	EPA 8270D

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Nitroaromatics and Isophorone

2,6-Dinitrotoluene	EPA 8330
2-Amino-4,6-dinitrotoluene	EPA 8330
2-Nitrotoluene	EPA 8330
3-Nitrotoluene	EPA 8330
4-Amino-2,6-dinitrotoluene	EPA 8330
4-Nitrotoluene	EPA 8330
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330
Isophorone	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330
Nitrobenzene	EPA 8270D
	EPA 8330
Octahydro-tetranitro-tetrazocine	EPA 8330
Pyridine	EPA 8270D

Nitrosoamines

N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C

Phthalate Esters

Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D

Phthalate Esters

Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D

Polychlorinated Biphenyls

PCB-1016	EPA 8082A
PCB-1221	EPA 8082A
PCB-1232	EPA 8082A
PCB-1242	EPA 8082A
PCB-1248	EPA 8082A
PCB-1254	EPA 8082
PCB-1260	EPA 8082A
PCB-1262	EPA 8082A
PCB-1268	EPA 8082A

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D

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Polynuclear Aromatic Hydrocarbons

Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6-Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D

Semi-Volatile Organics

1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C

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All approved analytes are listed below

Volatile Aromatics

n-Propylbenzene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropene	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
Bromochloromethane	EPA 8260C

Volatile Halocarbons

Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260C
2-Butanone (Methyl ethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C

Serial No.: 48543

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER WAKEFIELD
ALPHA ANALYTICAL
8 WALKUP DR
WESTBOROUGH, MA 01581-1019

NY Lab Id No: 11148

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below:

Volatile Organics

4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260B
	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
tert-butyl alcohol	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

EPA 3005A
EPA 3050B
EPA 3540C
EPA 3546
EPA 3580A
EPA 5035A-H
EPA 5035A-L
EPA 9010C
EPA 9030B

Serial No.: 48543

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2014
Issued April 01, 2013
Revised April 18, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MASSFIELD, MA 02048

NY Lab Id No: 11827

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Amines

1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Pyridine	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 8270D

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B

Chlorinated Hydrocarbon Pesticides

Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin/aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D

Dissolved Gases

Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

Is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Haloethers

4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy) methane	EPA 8270D
Bis(2-chloroethyl) ether	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 8270D

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Mineral

Alkalinity	SM 18-21, 2320B (97)
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Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D

Nitrosoamines

N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D

Organophosphate Pesticides

Atrazine	EPA 8270D
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Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D
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Phthalate Esters

Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Dinonyl phthalate	EPA 8270D
Dioctyl phthalate	EPA 8270D

Polychlorinated Biphenyls

PCB 118	EPA 8082A
PCB 128	EPA 8082A
PCB 1016	EPA 8082A

Serial No.: 49076

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No. 11627

Is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Polychlorinated Biphenyls

PCB-1221	EPA 8082A
PCB-1232	EPA 8082A
PCB-1242	EPA 8082A
PCB-1248	EPA 8082A
PCB-1254	EPA 8082A
PCB-1260	EPA 8082A

Polynuclear Aromatics

Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6-Tetrachlorophenol	EPA 8270D
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Priority Pollutant Phenols

2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Residue

Solids, Total Suspended	SM 18.21 2540D (97)
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Semi-Volatile Organics

1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D

Serial No.: 49076

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id. No. 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Semi-Volatile Organics

Caprolactam EPA 8270D
Dibenzofuran EPA 8270D

Wastewater Metals I

Barium, Total EPA 6020A
Cadmium, Total EPA 6020A
Chromium, Total EPA 6020A
Copper, Total EPA 6020A
Iron, Total EPA 6020A
Lead, Total EPA 6020A
Manganese, Total EPA 6020A
Nickel, Total EPA 6020A
Silver, Total EPA 6020A
Strontium, Total EPA 6020A

Wastewater Metals II

Aluminum, Total EPA 6020A
Antimony, Total EPA 6020A
Arsenic, Total EPA 6020A
Beryllium, Total EPA 6020A
Mercury, Low Level EPA 1631E
Mercury, Total EPA 7470A
Selenium, Total EPA 6020A
Vanadium, Total EPA 6020A
Zinc, Total EPA 6020A

Wastewater Metals III

Cobalt, Total EPA 6020A
Molybdenum, Total EPA 6020A
Thallium, Total EPA 6020A

Wastewater Miscellaneous

Specific Conductance EPA 9050A
Turbidity EPA 180.1 Rev. 2.0

Sample Preparation Methods

EPA 3020A
EPA 3510C

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MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No. 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below

Amines

1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
Benzidine	EPA 8270D

Characteristic Testing

Comsolivity	EPA 9040C
	EPA 9045D
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B

Chlorinated Hydrocarbon Pesticides

Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D
Halogenethers	
4-Bromophenylphenyl ether	EPA 8270D

Serial No.: 49077

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No. 11627

Is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Haloethers

4-Chlorophenyl phenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl) ether	EPA 8270D
Bis(2-chloroisopropyl) ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I

Barium, Total	EPA 6020A
Cadmium, Total	EPA 6020A
Chromium, Total	EPA 6020A

Metals I

Copper, Total	EPA 6020A
Iron, Total	EPA 6020A
Lead, Total	EPA 6020A
Manganese, Total	EPA 6020A
Nickel, Total	EPA 6020A
Silver, Total	EPA 6020A

Metals II

Aluminum, Total	EPA 6020A
Antimony, Total	EPA 6020A
Arsenic, Total	EPA 6020A
Beryllium, Total	EPA 6020A
Mercury, Total	EPA 7471B
	EPA 7474
Selenium, Total	EPA 6020A
Vanadium, Total	EPA 6020A
Zinc, Total	EPA 6020A

Metals III

Cobalt, Total	EPA 6020A
Molybdenum, Total	EPA 6020A
Titanium, Total	EPA 6020A

Miscellaneous

Organic Carbon, Total	EPA 8060
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270D

Serial No.: 49077

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below.

Nitroaromatics and Isophorone

2,6-Dinitrotoluene	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D
Pyridine	EPA 8270D

Nitrosamines

N-Nitrosodimethylamine	EPA 8270D
N-Nitrosod-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D
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Phthalate Esters

Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D

Polychlorinated Biphenyls

PCB-1	EPA 8082A
PCB-1016	EPA 8082A
PCB-1221	EPA 8082A
PCB-1232	EPA 8082A
PCB-1242	EPA 8082A
PCB-1248	EPA 8082A

Polychlorinated Biphenyls

PCB-1254	EPA 8082A
PCB-1260	EPA 8082A

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6-Tetrachlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D

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MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below

Priority Pollutant Phenols

2,4-Dinitrophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Sample Preparation Methods

EPA 3580A

Semi-Volatile Organics

1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Dibenzofuran	EPA 8270D

Sample Preparation Methods

EPA 3050B
EPA 3051A
EPA 3540C
EPA 3570

Serial No.: 49077

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires: 12:01 AM April 01, 2014
Issued April 01, 2013
Revised April 18, 2013

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOSEPH L. WATKINS
ALPHA ANALYTICAL
320 FORBES BOULEVARD
MANSFIELD, MA 02048

NY Lab Id No: 11627

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards (2003) for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Acrylates

Acetonitrile	EPA TO-15
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15

Polychlorinated Biphenyls

TCB-1016	EPA TO-10A
PCB-1221	EPA TO-10A
PCB-1232	EPA TO-10A
PCB-1242	EPA TO-10A
PCB-1248	EPA TO-10A
PCB-1254	EPA TO-10A
PCB-1260	EPA TO-10A
PCB-1262	EPA TO-10A
PCB-1266	EPA TO-10A

Polynuclear Aromatics

Naphthalene	EPA TO-15
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Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15

Purgeable Aromatics

2-Chlorotoluene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15
o-Xylene	EPA TO-15
Styrene	EPA TO-15
Toluene	EPA TO-15
Total Xylenes	EPA TO-15

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-15
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-15
1,1,2-Trichloroethane	EPA TO-15
1,1-Dichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-15
1,2-Dibromo-3-chloropropane	EPA TO-15
1,2-Dibromoethane	EPA TO-15
1,2-Dichloroethane	EPA TO-15
1,2-Dichloropropane	EPA TO-15
3-Chloropropene (Allyl chloride)	EPA TO-15
Bromodichloromethane	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-15

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ENVIRONMENTAL ANALYSES AIR AND EMISSIONS

All approved analytes are listed below:

Purgeable Halocarbons

Carbon tetrachloride	EPA TO-15
Chloroethane	EPA TO-15
Chloroform	EPA TO-15
Chloromethane	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-15
Dibromochloromethane	EPA TO-15
Dichlorodifluoromethane	EPA TO-15
Methylene chloride	EPA TO-15
Tetrachloroethene	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-15
Trichloroethene	EPA TO-15
Trichlorofluoromethane	EPA TO-15
Vinyl bromide	EPA TO-15
Vinyl chloride	EPA TO-15

Volatile Chlorinated Organics

Benzyl chloride	EPA TO-15
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Volatile Organics

1,2-Dichlorotetrafluoroethane	EPA TO-15
1,3-Butadiene	EPA TO-15
1,4-Dioxane	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methyl ethyl ketone)	EPA TO-15
Acetaldehyde	EPA TO-15

Volatile Organics

Acetone	EPA TO-15
Carbon disulfide	EPA TO-15
Cyclohexane	EPA TO-15
Hexane	EPA TO-15
Isopropanol	EPA TO-15
Methanol	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
n-Heptane	EPA TO-15
tert-butyl alcohol	EPA TO-15
Vinyl acetate	EPA TO-15

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