July 23, 2018 Service Request No:R1806365

Ms. Alene Onion
New York State DEC
625 Broadway
Albany, NY 12233-3502

Laboratory Results for: LCI 2018

Dear Ms.Onion,

Enclosed are the results of the sample(s) submitted to our laboratory July 10, 2018
For your reference, these analyses have been assigned our service request number **R1806365.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Jason Fagel

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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ALS Environmental

Client: New York State DEC
Project: LCI 2018
Sample Matrix: Water

Service Request: R1806365
Date Received: 07/10/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV, validation deliverables including all summary forms and associated raw data. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 07/10/2018. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at 6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 07/23/2018

SAMPLE DETECTION SUMMARY

CLIENT ID: 18PKTPRPDEEP			Lab ID: R1806365-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Ammonia as Nitrogen, undistilled	0.0191		0.0008	0.0050	mg/L	ASTM D6919-09
Nitrate+Nitrite as Nitrogen	0.0100		0.0007	0.0020	mg/L	353.2
Nitrogen, Total Kjeldahl (TKN)	1.58		0.08	0.10	mg/L	351.2
Phosphorus, Total	0.0481		0.0020	0.0050	mg/L	365.1

CLIENT ID: 18PKTPRPSURF			Lab ID: R1806365-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Nitrate+Nitrite as Nitrogen	0.0024		0.0007	0.0020	mg/L	353.2
Nitrogen, Total Kjeldahl (TKN)	0.37		0.08	0.10	mg/L	351.2
Phosphorus, Total	0.0143		0.0020	0.0050	mg/L	365.1

Sample Receipt Information

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Client: New York State DEC **Service Request:**R1806365
Project: LCI 2018/PK2018

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1806365-001	18PKTPRPDEEP	7/5/2018	1017
R1806365-002	18PKTPRPSURF	7/5/2018	1005

CHAIN OF CUSTODY

New York State Department of Environmental Conservation – Division of Water

Project Name: LCI	**Project Number:** PK2018	**NYSDEC SDG:**
Sampler Collector:	**Sampler Signature:**	**Sampler Phone No.:**
Project Manager: Scott Kishbaugh	**X Report to Project Manager** **Report to:** Alene Onion	☐ **Bill to Project Manager** **Bill to:** Jason Fagel
Address: 625 Broadway, 4th Floor Albany, NY 12233-3502	**Address:** 625 Broadway, 4th Floor Albany, NY 12233-3502	**Address:** 625 Broadway, 4th Floor Albany, NY 12233-3502
Phone: (518) 402-8286	**Phone:** (518) 402-8166	**Phone:** 518-402-8156
Email: scott.kishbaugh@dec.ny.gov	**Email:** alene.onion@dec.ny.gov	**Email:** Jason.fagel@dec.ny.gov

Matrix Codes:
WW = Wastewater
GW = Groundwater
AW = Ambient Water
SE = Sediment
SL = Sludge
T = Tissue
O = Other _____

Preservative Codes:
0 = Cool to < 6°C
1 = HCL
2 = HNO_3
3 = H_2SO_4
4 = NaOH
5 = Zn. Acetate
6 = MeOH
7 = NaHSO4
8 = Other_____

NYSDEC LCI Sample ID	Collection Date	Collection Time	Matrix Code	No. of Containers	Analyses Ordered (list)														Location Info
					3			2			0	3		0				0		
					TP, NOx, NH_3, TKN	TP								Alkalinity				Chlorophyll a | Vol (ml)		
18PKTPRPDEEP	7-5-18	10:17	AW	1	X														
18PKTPRPSURF	7-5-18	10:05	AW	1	X														

Special Analysis Instructions:

Relinquished by Sampler: Irene Holak	**Date:** 07-09-18	**Time:** 1030	**Received by:** Brian McGuire	**Date:** 7/9/18	**Time:** 10:30	**Laboratory Receipt Notes:**
Relinquished by: Brian McGuire	**Date:** 7/9/18	**Time:** 1800	**Received by:**	**Date:** 7-10-18	**Time:** 08:50	**Sample**
Relinquished by:	**Date:**	**Time:**	**Received by Laboratory:**	**Date:**	**Time:**	**Properl** **Sample**

R1806365 5
New York State DEC
LCI 2018

R1806365 5
New York State DEC
LCI 2018

Cooler Receipt and Preservation Check Form

Project/Client NYSDEC LCI Folder Number Ground

Cooler received on 7-10-18 by: KE

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	Y N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 7-10-18 Time: 09:00 ID: IR#7 (IR#9) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	2.5						
Correction Factor (°C)	0.0						
Corrected Temp (°C)	2.5						
Temp from:Type of bottle	—						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by KE on 7-10-18 at 09:02
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 7/10/18 Time: 1332 by: @

9. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
10. Did all bottle labels and tags agree with custody papers? (YES) NO
11. Were correct containers used for the tests indicated? (YES) NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
13. Air Samples: Cassettes / Tubes Intact with MS? Canisters Pressurized Tedlar® Bags Inflated (N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2	204518	H_2SO_4	✓		188709	5/19				
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-			**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).			
		HCl	**	**						

Bottle lot numbers: 091817-2mm

Explain all Discrepancies/ Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: @

PC Secondary Review: JMM 7/11/18

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Approved	New Jersey ID # NY004	
DoD ELAP #65817	New York ID # 10145	Pennsylvania ID# 68-786
Florida ID # E87674	North Carolina #676	Rhode Island ID # 158
		Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: New York State DEC
Project: LCI 2018/PK2018

Service Request: R1806365

Sample Name: 18PKTPRPDEEP
Lab Code: R1806365-001
Sample Matrix: Water

Date Collected: 07/5/18
Date Received: 07/10/18

Analysis Method	Extracted/Digested By	Analyzed By
351.2	NSMITH	GNITAJOUPPI
353.2		GNITAJOUPPI
365.1	MROGERSON	MROGERSON
ASTM D6919-09		AMOSES

Sample Name: 18PKTPRPSURF
Lab Code: R1806365-002
Sample Matrix: Water

Date Collected: 07/5/18
Date Received: 07/10/18

Analysis Method	Extracted/Digested By	Analyzed By
351.2	NSMITH	GNITAJOUPPI
353.2		GNITAJOUPPI
365.1	MROGERSON	MROGERSON
ASTM D6919-09		AMOSES

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

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General Chemistry

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Analytical Report

Client:	New York State DEC	**Service Request:**	R1806365
Project:	LCI 2018/PK2018	**Date Collected:**	07/05/18 10:17
Sample Matrix:	Water	**Date Received:**	07/10/18 08:50
Sample Name:	18PKTPRPDEEP	**Basis:**	NA
Lab Code:	R1806365-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	ASTM D6919-09	**0.0191**	mg/L	0.0050	1	07/18/18 21:11	NA	
Nitrate+Nitrite as Nitrogen	353.2	**0.0100**	mg/L	0.0020	1	07/11/18 13:37	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**1.58**	mg/L	0.10	1	07/18/18 11:23	07/17/18	
Phosphorus, Total	365.1	**0.0481**	mg/L	0.0050	1	07/17/18 14:53	07/13/18	

Analytical Report

Client:	New York State DEC	**Service Request:**	R1806365
Project:	LCI 2018/PK2018	**Date Collected:**	07/05/18 10:05
Sample Matrix:	Water	**Date Received:**	07/10/18 08:50
Sample Name:	18PKTPRPSURF	**Basis:**	NA
Lab Code:	R1806365-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.0050 U	mg/L	0.0050	1	07/18/18 14:46	NA	
Nitrate+Nitrite as Nitrogen	353.2	**0.0024**	mg/L	0.0020	1	07/11/18 13:38	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	**0.37**	mg/L	0.10	1	07/18/18 11:25	07/17/18	
Phosphorus, Total	365.1	**0.0143**	mg/L	0.0050	1	07/17/18 14:54	07/13/18	

QC Summary Forms

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Analytical Report

Client:	New York State DEC	**Service Request:**	R1806365
Project:	LCI 2018/PK2018	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1806365-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.0050	U	mg/L	0.0050	1	07/18/18 14:14	NA	
Nitrate+Nitrite as Nitrogen	353.2	0.0020	U	mg/L	0.0020	1	07/11/18 13:15	NA	
Nitrogen, Total Kjeldahl (TKN)	351.2	0.10	U	mg/L	0.10	1	07/18/18 11:09	07/17/18	
Phosphorus, Total	365.1	0.0050	U	mg/L	0.0050	1	07/17/18 14:50	07/13/18	

Analytical Report

Client:	New York State DEC	**Service Request:**	R1806365
Project:	LCI 2018/PK2018	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1806365-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.0050 U	mg/L	0.0050	1	07/18/18 20:39	

Client: New York State DEC
Project: LCI 2018/PK2018
Sample Matrix: Water

Service Request:R1806365
Date Collected:07/05/18
Date Received:07/10/18
Date Analyzed:07/17/18 - 07/18/18

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: 18PKTPRPSURF
Lab Code: R1806365-002

Units:mg/L
Basis:NA

			Matrix Spike R1806365-002MS			Duplicate Matrix Spike R1806365-002DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrogen, Total Kjeldahl (TKN)	351.2	0.37	2.73	2.50	95	2.78	2.50	96	75-125	2	20
Phosphorus, Total	365.1	0.0143	0.0380	0.0250	95	0.0374	0.0250	93	75-125	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: New York State DEC
Project: LCI 2018/PK2018
Sample Matrix: Water

Service Request: R1806365
Date Analyzed: 07/11/18 - 07/18/18

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R1806365-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.497	0.500	99	70-130
Nitrate+Nitrite as Nitrogen	353.2	0.514	0.500	103	70-130
Nitrogen, Total Kjeldahl (TKN)	351.2	2.33	2.50	93	70-130
Phosphorus, Total	365.1	0.0224	0.0250	90	70-130

Client: New York State DEC
Project: LCI 2018/PK2018
Sample Matrix: Water

Service Request: R1806365
Date Analyzed: 07/18/18

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R1806365-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.489	0.500	98	70-130