April 21, 2016 Service Request No:R1603661

Jennifer Good
H & S Environmental
160 East Main Street, 2F
Westborough, MA 01581

Laboratory Results for: Bethpage GM-38

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory April 15, 2016
For your reference, these analyses have been assigned our service request number **R1603661.**

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

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ALS Group USA, Corp.
dba ALS Environmental

H&S
R1603661

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ALS Environmental

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Service Request No.:	R1603661
Project:	Bethpage GM-38
Date Received:	04/15/16
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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 II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS).

Sample Receipt

Water samples were received for analysis at ALS Environmental on 04/15/16. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

!,4-Dioxane

Water samples were analyzed for 1,4-Dioxane by method 8270D-LL from SW-846.

All initial calibration and continuing criteria were met for all analytes.

All Tuning criteria were within QC limits.

All Laboratory Control Sample (LCS) recoveries were within limits.

Site specific QC was performed on BP-GM-38-PS-RW1-041416 as requested. All MS/MSD recoveries and RPD's were acceptable.

All Internal Standard Areas were within limits.

All surrogate standard recoveries were within limits.

The Method blanks associated with these samples were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

Client: H & S Environmental **Service Request:**R1603661
Project: Bethpage GM-38

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1603661-001	BP-GM-38-PS-RW1-041416	4/14/2016	0805
R1603661-002	BP-GM-38-PS-RW1-DUP-041416	4/14/2016	0805

Client: H & S Environmental **Service Request:** R1603661
Project: Bethpage GM-38

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
8270D	Water	1,4-Dioxane

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% (25% for CLP) 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 Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	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 http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

Analytical Report

Client:	H & S Environmental	**Service Request:**	R1603661
Project:	Bethpage GM-38	**Date Collected:**	04/14/16 08:05
Sample Matrix:	Water	**Date Received:**	04/15/16 09:20
Sample Name:	BP-GM-38-PS-RW1-041416	**Units:**	ug/L
Lab Code:	R1603661-001	**Basis:**	NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**3.2**	0.50	0.10	0.013	1	04/19/16 13:37	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	104	70 - 130	04/19/16 13:37	

Analytical Report

Client:	H & S Environmental	**Service Request:**	R1603661
Project:	Bethpage GM-38	**Date Collected:**	04/14/16 08:05
Sample Matrix:	Water	**Date Received:**	04/15/16 09:20
Sample Name:	BP-GM-38-PS-RW1-DUP-041416	**Units:**	ug/L
Lab Code:	R1603661-002	**Basis:**	NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	**3.1**	0.50	0.10	0.013	1	04/19/16 14:36	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	101	70 - 130	04/19/16 14:36	

Analytical Report

Client:	H & S Environmental	**Service Request:**	R1603661
Project:	Bethpage GM-38	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1604069-01	**Basis:**	NA

1,4-Dioxane by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3535A

Analyte Name	Result	LOQ	LOD	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dioxane	ND U	0.50	0.10	0.013	1	04/19/16 11:41	4/19/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,4-Dioxane-d8	98	70 - 130	04/19/16 11:41	

Client: H & S Environmental
Project: Bethpage GM-38
Sample Matrix: Water

Service Request: R1603661
Date Analyzed: 04/19/16

Duplicate Lab Control Sample Summary
1,4-Dioxane by GC/MS

Units:ug/L
Basis:NA

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ1604069-02			RQ1604069-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	8270D	8.78	9.88	89	8.88	9.88	90	70-130	1	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	H & S Environmental	**Service Request:**	R1603661
Project:	Bethpage GM-38	**Date Collected:**	04/14/16
Sample Matrix:	Water	**Date Received:**	04/15/16
		Date Analyzed:	04/19/16
		Date Extracted:	04/19/16

Duplicate Matrix Spike Summary
1,4-Dioxane by GC/MS

Sample Name:	BP-GM-38-PS-RW1-041416	**Units:**	ug/L
Lab Code:	R1603661-001	**Basis:**	NA
Analysis Method:	8270D		
Prep Method:	EPA 3535A		

		Matrix Spike RQ1604069-04			**Duplicate Matrix Spike** RQ1604069-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	3.2	12.3	9.88	92	12.6	9.88	94	70-130	2	30

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.

ALS-Environmental
1565 Jefferson Rd, Bldg 300, Suite 360
Rochester, NY 14623
585.288.5380

Client: KOMAN Government Solutions, LLC
160 E. Main St., Suite 2F
Westborough, MA 01581

Project Manager: Jen Good

Telephone No.: 508-366-7442

Email: jgood@komangs.com

CHAIN of CUSTODY

Project: **NWIRP Bethpage GM-38 Monthly O&M - 1,4-dioxane sampling**

Method of Shipment: FedEx Priority Overnight

Special Detection Limit/Reporting:

Requires DOD QSM reporting.

Standard TAT (no more than 10 days).

Sample I.D.	Lab Sample No.	No. of Containers	Matrix: Soil	Water	Air	Other	Prsv.: Yes	No	Sampling Date	Sampling Time	1,4-dioxane (8270)													
BP-GM-38-PS-RW1-041416		3		X				X	4/14/16	8:05	3													
BP-GM-38-PS-RW1-DUP-041416		1		X				X	4/14/16	8:05	1													

MS/MSD for 1,4-dioxane

Sample Received Intact: Yes No

Temperature received: (Ice) No ice

Relinq. by sampler (Sign & Print Name)	Date	Time	Received by (Sign & Print Name)
Randy Hoffmaster/KGS	4/14/16		
Relinquished by	Date	Time	Received by
Randy Hoffmaster	4/14/16	12 NOON	
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
			4/15/16 09

Lab Work No.

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H & S Environmental
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Cooler Receipt and Preservation Check Fo

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H & S Environmental
Bethpage GM-38

Project/Client Kennan Folder Number R1603661

Cooler received on 4/15/16 by: CK

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)
2	**Custody papers** properly completed (ink, signed)?	(Y) N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N

5a	**Perchlorate** samples have required headspace?	Y N (NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) N NA
6	Where did the bottles originate?	(ALS/ROC) CLIENT
7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 4/15/16 Time: 1005 ID: IR#3 (IR#5) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	2.7	2.8					
Correction Factor (°C)	+0.0	-0.1					
Corrected Temp (°C)	2.7	2.7					
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 Same Day Rule

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

All samples held in storage location: _____ by _____ on _____ at _____
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: JMS 4/18/16

Cooler Breakdown: Date: 4-15-16 Time: 15:07 by: RE

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 110915-1BMC

Other Comments:

headspace : BFE (1 vial)

PC Secondary Review: JMS 4/18/16

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