10-May-2016

Roger Bellas
Pennsylvania DEP Bureau of Air Quality
12th Floor RCSOB
400 Market Street
Harrisburg, PA 17105

Tel: (570) 826-2511
Fax:

Re: Keystone Landfill (KSL)-4/19/16 Work Order: **1604724**

Dear Roger,

ALS Environmental received 6 samples on 21-Apr-2016 11:50 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Rob Nieman

Electronically approved by: Rob Nieman

Rob Nieman
Project Manager

ALS Environmental

Date: 10-May-16

Client: Pennsylvania DEP Bureau of Air Quality
Project: Keystone Landfill (KSL)-4/19/16
Work Order: **1604724**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1604724-01	KSL041916-1 / Red	Air		4/19/2016 11:26	4/21/2016 11:50	☐
1604724-02	KSL041916-2 / Blue	Air		4/19/2016 11:26	4/21/2016 11:50	☐
1604724-03	KSL041916-3 / Green	Air		4/19/2016 11:26	4/21/2016 11:50	☐
1604724-04	KSL041916-4 / Orange	Air		4/19/2016 11:26	4/21/2016 11:50	☐
1604724-05	KSL041916-5 / Yellow	Air		4/19/2016 11:26	4/21/2016 11:50	☐
1604724-06	KSL041916-Summa	Air		4/19/2016 11:26	4/21/2016 11:50	☐

ALS Environmental

Date: *10-May-16*

Client: Pennsylvania DEP Bureau of Air Quality
Project: Keystone Landfill (KSL)-4/19/16

Work Order: 1604724

Analytical Results

Lab ID: 1604724-01A
Collection Date: 4/19/2016 11:26:00 AM
Client Sample ID: KSL041916-1 / Red
Matrix: AIR

Analyses

AMMONIA BY NIOSH 6015 MOD.		Method: **N6015**	Air Volume (L): **95.408**	Analyst: **ALST**
Date Analyzed: 4/29/2016		Reporting Limit		
	µg/sample	µg/sample	ug/m3	ppb
Ammonia	ND	1.2	<13	<18

Lab ID: 1604724-02A
Collection Date: 4/19/2016 11:26:00 AM
Client Sample ID: KSL041916-2 / Blue
Matrix: AIR

Analyses

ALDEHYDES BY HPLC		Method: **ETO-11**	Air Volume (L): **213.6**	Analyst: **JMB**
Date Analyzed: 4/26/2016 00:45		Reporting Limit		
	µg/sample	µg/sample	**ug/m3**	**ppb**
Acetaldehyde	**0.23**	**0.20**	**1.1**	**0.60**
Acrolein	ND	0.20	<0.94	<0.41
Formaldehyde	**0.50**	**0.20**	**2.3**	**1.9**

Lab ID: 1604724-03A
Collection Date: 4/19/2016 11:26:00 AM
Client Sample ID: KSL041916-3 / Green
Matrix: AIR

Analyses

METHANOL BY NIOSH 2000 MOD.		Method: **N2000**	Air Volume (L): **7.12**	Analyst: **MHW**
Date Analyzed: 4/26/2016		Reporting Limit		
	µg/sample	µg/sample	ug/m3	ppb
Methanol	ND	10	<1,400	<1,100

Lab ID: 1604724-04A
Collection Date: 4/19/2016 11:26:00 AM
Client Sample ID: KSL041916-4 / Orange
Matrix: AIR

Analyses

METHYLAMINE BY OSHA 40		Method: **O40**	Air Volume (L): **21.36**	Analyst: **JMB**
Date Analyzed: 5/5/2016 16:22		Reporting Limit		
	µg/sample	µg/sample	ug/m3	ppb
Methylamine	ND	2.5	<120	<92

Note:

ALS Environmental

Date: *10-May-16*

Client: Pennsylvania DEP Bureau of Air Quality
Project: Keystone Landfill (KSL)-4/19/16

Work Order: 1604724

Analytical Results

Lab ID: 1604724-05A
Client Sample ID: KSL041916-5 / Yellow

Collection Date: 4/19/2016 11:26:00 AM
Matrix: AIR

Analyses

AMINE(S) BY OSHA PV2060 MOD.		Method: **O2060**	Air Volume (L): **21.36**	Analyst: **MHW**
Date Analyzed: 4/25/2016	µg/sample	Reporting Limit µg/sample	ug/m3	ppb
Triethylamine	ND	10	<470	<110

Note:

QC BATCH REPORT

Batch ID: **35446** Instrument ID: **GC5** Method: **O2060**

MBLK Sample ID: **MBLK-35446-35446** Units: **µg/sample** Analysis Date: **4/25/2016**

Client ID: Run ID: **GC5_160425A** SeqNo: **1267616** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Triethylamine	ND	10								

LCS Sample ID: **LCS-35446-35446** Units: **µg/sample** Analysis Date: **4/25/2016**

Client ID: Run ID: **GC5_160425A** SeqNo: **1267617** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Triethylamine	92.57	10	90.75	0	102	70-130	0			

LCSD Sample ID: **LCSD-35446-35446** Units: **µg/sample** Analysis Date: **4/25/2016**

Client ID: Run ID: **GC5_160425A** SeqNo: **1267636** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Triethylamine	78.96	10	90.75	0	87	70-130	92.57	15.9	20	

The following samples were analyzed in this batch: 1604724-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pennsylvania DEP Bureau of Air Quality
Work Order: 1604724
Project: Keystone Landfill (KSL)-4/19/16

QC BATCH REPORT

Batch ID: **35466** Instrument ID: **GC1** Method: **N2000**

MBLK Sample ID: **MBLK-35466-35466** Units: **µg/sample** Analysis Date: **4/26/2016**
Client ID: Run ID: **GC1_160426A** SeqNo: **1268968** Prep Date: **4/26/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methanol	ND	10								

LCS Sample ID: **LCS-35466-35466** Units: **µg/sample** Analysis Date: **4/26/2016**
Client ID: Run ID: **GC1_160426A** SeqNo: **1268969** Prep Date: **4/26/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methanol	87.03	10	79.1	0	110	64.1-145	0			

LCSD Sample ID: **LCSD-35466-35466** Units: **µg/sample** Analysis Date: **4/26/2016**
Client ID: Run ID: **GC1_160426A** SeqNo: **1268988** Prep Date: **4/26/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methanol	88.32	10	79.1	0	112	64.1-145	87.03	1.47	20	

The following samples were analyzed in this batch: 1604724-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pennsylvania DEP Bureau of Air Quality
Work Order: 1604724
Project: Keystone Landfill (KSL)-4/19/16

QC BATCH REPORT

Batch ID: **35440** Instrument ID: **HPLC2** Method: **ETO-11**

MBLK Sample ID: **MBLK-35440-35440** Units: **µg/sample** Analysis Date: **4/26/2016 12:45 AM**
Client ID: Run ID: **HPLC2_160426A** SeqNo: **1268238** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetaldehyde	ND	0.20								
Formaldehyde	0.3858	0.20								

LCS Sample ID: **LCS-35440-35440** Units: **µg/sample** Analysis Date: **4/26/2016 12:45 AM**
Client ID: Run ID: **HPLC2_160426A** SeqNo: **1268239** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetaldehyde	1.258	0.20	2	0	62.9	61.5-120	0			
Formaldehyde	2.069	0.20	2	0	103	70-130	0			

LCSD Sample ID: **LCSD-35440-35440** Units: **µg/sample** Analysis Date: **4/26/2016 12:45 AM**
Client ID: Run ID: **HPLC2_160426A** SeqNo: **1268244** Prep Date: **4/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acetaldehyde	1.298	0.20	2	0	64.9	61.5-120	1.258	3.09	20	
Formaldehyde	2.047	0.20	2	0	102	70-130	2.069	1.06	20	

The following samples were analyzed in this batch: 1604724-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pennsylvania DEP Bureau of Air Quality
Work Order: 1604724
Project: Keystone Landfill (KSL)-4/19/16

QC BATCH REPORT

Batch ID: **R128659** Instrument ID: **HPLC1** Method: **O40**

MBLK Sample ID: **MB-R128659-R128659** Units: **µg/sample** Analysis Date: **5/5/2016 04:22 PM**
Client ID: Run ID: **HPLC1_160505A** SeqNo: **1276413** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylamine	ND	2.5								

LCS Sample ID: **LCS-R128659-R128659** Units: **µg/sample** Analysis Date: **5/5/2016 04:22 PM**
Client ID: Run ID: **HPLC1_160505A** SeqNo: **1276414** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylamine	7.458	2.5	9.175	0	81.3	9.88-161	0			

LCSD Sample ID: **LCSD-R128659-R128659** Units: **µg/sample** Analysis Date: **5/5/2016 04:22 PM**
Client ID: Run ID: **HPLC1_160505A** SeqNo: **1276429** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Methylamine	6.924	2.5	9.175	0	75.5	9.88-161	7.458	7.43	20	

The following samples were analyzed in this batch: 1604724-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pennsylvania DEP Bureau of Air Quality
Work Order: 1604724
Project: Keystone Landfill (KSL)-4/19/16

QC BATCH REPORT

Batch ID: **R128485** Instrument ID: **SUB** Method: **N6015**

MBLK Sample ID: **MB-R128485-R128485** Units: **µg/sample** Analysis Date: **4/29/2016**
Client ID: Run ID: **SUB_160429D** SeqNo: **1273473** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia	ND	1.2								

LCS Sample ID: **LCS-R128485-R128485** Units: **µg/sample** Analysis Date: **4/29/2016**
Client ID: Run ID: **SUB_160429D** SeqNo: **1273474** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia	24.2	1.2	24.3	0	99.6	74.3-115.2	0			

LCSD Sample ID: **LCSD-R128485** Units: **µg/sample** Analysis Date: **4/29/2016**
Client ID: Run ID: **SUB_160429D** SeqNo: **1273479** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia	24.3	1.2	24.3	0	100	74.3-115.2	24.2	0.412	20	

The following samples were analyzed in this batch: 1604724-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 10-May-16

Client: Pennsylvania DEP Bureau of Air Quality
Project: Keystone Landfill (KSL)-4/19/16
WorkOrder: **1604724**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
E	EPA Method
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SDL	Sample Detection Limit
SW	SW-846 Method

Units Reported	Description
µg/sample	
ppbv	
ppm	

ALS Environmental

Sample Receipt Checklist

Client Name: **PADEP-HARRISBURG** Date/Time Received: **21-Apr-16 11:50**

Work Order: **1604724** Received by: **SNH**

Checklist completed by: Stephanie Harrington 21-Apr-16 Reviewed by: Rob Nieman 22-Apr-16

eSignature | Date | eSignature | Date

Matrices:

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):			
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: