10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

February 17, 2017

Mark Schaeffer
Stantec
1060 Andrew Drive
Suite 140
West Chester, PA 19380

Work Order: **HS17020197**

Laboratory Results for: **MHIC - 631/632**

Dear Mark,

ALS Environmental received 2 sample(s) on Feb 04, 2017 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

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

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

Sincerely,

Generated By: Jumoke.Lawal
Erica Padilla
PM

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
Work Order: HS17020197

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS17020197-01	MHIC_AST_632_PA_2'	Soil		03-Feb-2017 08:30	04-Feb-2017 13:15	☐
HS17020197-02	MHIC_AST_631_PA_2'	Soil		03-Feb-2017 09:00	04-Feb-2017 13:15	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
Work Order: HS17020197

CASE NARRATIVE

GC Semivolatiles by Method SW8015

Batch ID: R289668

Sample ID: **HS17020522-01MS**
• MS and MSD are for an unrelated sample

GCMS Semivolatiles by Method SW8270

Batch ID: 112152

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R289164

Sample ID: **HS17020191-07MS**
• MS and MSD are for an unrelated sample

Batch ID: R289256

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020

Batch ID: 112199

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW3550

Batch ID: R289526

Sample ID: **HS17020521-10DUP**
• DUP is for an unrelated sample

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
Sample ID: MHIC_AST_632_PA_2'
Collection Date: 03-Feb-2017 08:30

ANALYTICAL REPORT
WorkOrder:HS17020197
Lab ID:HS17020197-01
Matrix:Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**					Analyst: AKP
1,2,4-Trimethylbenzene	**0.32**		**0.040**	**0.20**	**mg/Kg**	50	09-Feb-2017 02:36
1,2-Dibromoethane	U		0.00034	0.0034	mg/Kg	1	08-Feb-2017 07:26
1,2-Dichloroethane	U		0.00041	0.0034	mg/Kg	1	08-Feb-2017 07:26
1,3,5-Trimethylbenzene	**0.049**		**0.00055**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
Benzene	**0.036**		**0.00034**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
Ethylbenzene	**0.056**		**0.00048**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
Isopropylbenzene	**0.0058**		**0.00062**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
m,p-Xylene	**3.3**		**0.065**	**0.40**	**mg/Kg**	50	09-Feb-2017 02:36
Methyl tert-butyl ether	U		0.00034	0.0034	mg/Kg	1	08-Feb-2017 07:26
Naphthalene	**0.0037**		**0.00055**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
Toluene	**0.056**		**0.00041**	**0.0034**	**mg/Kg**	1	08-Feb-2017 07:26
Xylenes, Total	**4.7**		**0.040**	**0.20**	**mg/Kg**	50	09-Feb-2017 02:36
Surr: 1,2-Dichloroethane-d4	*104*			*70-128*	*%REC*	*1*	*08-Feb-2017 07:26*
Surr: 1,2-Dichloroethane-d4	*93.2*			*70-128*	*%REC*	*50*	*09-Feb-2017 02:36*
Surr: 4-Bromofluorobenzene	*98.6*			*73-126*	*%REC*	*1*	*08-Feb-2017 07:26*
Surr: 4-Bromofluorobenzene	*100*			*73-126*	*%REC*	*50*	*09-Feb-2017 02:36*
Surr: Dibromofluoromethane	*96.1*			*71-128*	*%REC*	*1*	*08-Feb-2017 07:26*
Surr: Dibromofluoromethane	*92.7*			*71-128*	*%REC*	*50*	*09-Feb-2017 02:36*
Surr: Toluene-d8	*117*			*73-127*	*%REC*	*1*	*08-Feb-2017 07:26*
Surr: Toluene-d8	*96.3*			*73-127*	*%REC*	*50*	*09-Feb-2017 02:36*
LOW-LEVEL SEMIVOLATILES		**Method:SW8270**			Prep:SW3541 / 08-Feb-2017		Analyst: ACN
Anthracene	U		0.00050	0.0033	mg/Kg	1	08-Feb-2017 18:36
Benz(a)anthracene	U		0.0016	0.0033	mg/Kg	1	08-Feb-2017 18:36
Benzo(a)pyrene	U		0.0010	0.0033	mg/Kg	1	08-Feb-2017 18:36
Benzo(b)fluoranthene	U		0.0012	0.0033	mg/Kg	1	08-Feb-2017 18:36
Benzo(g,h,i)perylene	U		0.00070	0.0033	mg/Kg	1	08-Feb-2017 18:36
Chrysene	U		0.00080	0.0033	mg/Kg	1	08-Feb-2017 18:36
Fluorene	U		0.0011	0.0033	mg/Kg	1	08-Feb-2017 18:36
Phenanthrene	U		0.0015	0.0033	mg/Kg	1	08-Feb-2017 18:36
Pyrene	U		0.00060	0.0033	mg/Kg	1	08-Feb-2017 18:36
Surr: 2,4,6-Tribromophenol	*94.5*			*36-126*	*%REC*	*1*	*08-Feb-2017 18:36*
Surr: 2-Fluorobiphenyl	*82.7*			*43-125*	*%REC*	*1*	*08-Feb-2017 18:36*
Surr: 2-Fluorophenol	*83.3*			*37-125*	*%REC*	*1*	*08-Feb-2017 18:36*
Surr: 4-Terphenyl-d14	*98.3*			*32-125*	*%REC*	*1*	*08-Feb-2017 18:36*
Surr: Nitrobenzene-d5	*99.1*			*37-125*	*%REC*	*1*	*08-Feb-2017 18:36*
Surr: Phenol-d6	*91.8*			*40-125*	*%REC*	*1*	*08-Feb-2017 18:36*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ANALYTICAL REPORT

Client: Stantec
Project: MHIC - 631/632
Sample ID: MHIC_AST_632_PA_2'
Collection Date: 03-Feb-2017 08:30

WorkOrder:HS17020197
Lab ID:HS17020197-01
Matrix:Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GLYCOLS AND ALCOHOLS BY SW8015C		**Method:SW8015**					Analyst: NPI
Diethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:18
Ethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:18
Propylene glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:18
Tetraethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:18
Triethylene glycol	**4.0**		**1.0**	**1.0**	**mg/Kg**	1	16-Feb-2017 22:18
METALS BY SW6020A		**Method:SW6020**			Prep:SW3050A / 09-Feb-2017		Analyst: JCJ
Lead	**8.42**		**0.0480**	**0.480**	**mg/Kg**	1	10-Feb-2017 17:41
MOISTURE		**Method:SW3550**					Analyst: DFF
Percent Moisture	**13.2**		**0.0100**	**0.0100**	**wt%**	1	14-Feb-2017 11:26

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client:	Stantec		**ANALYTICAL REPORT**
Project:	MHIC - 631/632	WorkOrder:	HS17020197
Sample ID:	MHIC_AST_631_PA_2'	Lab ID:	HS17020197-02
Collection Date:	03-Feb-2017 09:00	Matrix:	Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES BY SW8260C		**Method:SW8260**					Analyst: WLR
1,2,4-Trimethylbenzene	**0.00081**	J	**0.00078**	**0.0039**	**mg/Kg**	1	08-Feb-2017 09:22
1,2-Dibromoethane	U		0.00039	0.0039	mg/Kg	1	08-Feb-2017 09:22
1,2-Dichloroethane	U		0.00047	0.0039	mg/Kg	1	08-Feb-2017 09:22
1,3,5-Trimethylbenzene	U		0.00062	0.0039	mg/Kg	1	08-Feb-2017 09:22
Benzene	**0.0030**	J	**0.00039**	**0.0039**	**mg/Kg**	1	08-Feb-2017 09:22
Ethylbenzene	U		0.00055	0.0039	mg/Kg	1	08-Feb-2017 09:22
Isopropylbenzene	U		0.00070	0.0039	mg/Kg	1	08-Feb-2017 09:22
m,p-Xylene	**0.0013**	J	**0.0012**	**0.0078**	**mg/Kg**	1	08-Feb-2017 09:22
Methyl tert-butyl ether	U		0.00039	0.0039	mg/Kg	1	08-Feb-2017 09:22
Naphthalene	U		0.00062	0.0039	mg/Kg	1	08-Feb-2017 09:22
Toluene	U		0.00047	0.0039	mg/Kg	1	08-Feb-2017 09:22
Xylenes, Total	**0.0013**	J	**0.00078**	**0.0039**	**mg/Kg**	1	08-Feb-2017 09:22
Surr: 1,2-Dichloroethane-d4	*93.7*			*70-128*	*%REC*	*1*	*08-Feb-2017 09:22*
Surr: 4-Bromofluorobenzene	*93.5*			*73-126*	*%REC*	*1*	*08-Feb-2017 09:22*
Surr: Dibromofluoromethane	*90.8*			*71-128*	*%REC*	*1*	*08-Feb-2017 09:22*
Surr: Toluene-d8	*106*			*73-127*	*%REC*	*1*	*08-Feb-2017 09:22*
LOW-LEVEL SEMIVOLATILES		**Method:SW8270**			Prep:SW3541 / 08-Feb-2017		Analyst: ACN
Anthracene	U		0.00050	0.0033	mg/Kg	1	08-Feb-2017 18:55
Benz(a)anthracene	U		0.0016	0.0033	mg/Kg	1	08-Feb-2017 18:55
Benzo(a)pyrene	U		0.0010	0.0033	mg/Kg	1	08-Feb-2017 18:55
Benzo(b)fluoranthene	U		0.0012	0.0033	mg/Kg	1	08-Feb-2017 18:55
Benzo(g,h,i)perylene	U		0.00070	0.0033	mg/Kg	1	08-Feb-2017 18:55
Chrysene	U		0.00080	0.0033	mg/Kg	1	08-Feb-2017 18:55
Fluorene	U		0.0011	0.0033	mg/Kg	1	08-Feb-2017 18:55
Phenanthrene	U		0.0015	0.0033	mg/Kg	1	08-Feb-2017 18:55
Pyrene	U		0.00060	0.0033	mg/Kg	1	08-Feb-2017 18:55
Surr: 2,4,6-Tribromophenol	*88.1*			*36-126*	*%REC*	*1*	*08-Feb-2017 18:55*
Surr: 2-Fluorobiphenyl	*86.3*			*43-125*	*%REC*	*1*	*08-Feb-2017 18:55*
Surr: 2-Fluorophenol	*75.1*			*37-125*	*%REC*	*1*	*08-Feb-2017 18:55*
Surr: 4-Terphenyl-d14	*97.1*			*32-125*	*%REC*	*1*	*08-Feb-2017 18:55*
Surr: Nitrobenzene-d5	*92.1*			*37-125*	*%REC*	*1*	*08-Feb-2017 18:55*
Surr: Phenol-d6	*83.4*			*40-125*	*%REC*	*1*	*08-Feb-2017 18:55*
GLYCOLS AND ALCOHOLS BY SW8015C		**Method:SW8015**					Analyst: NPI
Diethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:50
Ethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:50
Propylene glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:50
Tetraethylene Glycol	U		1.0	1.0	mg/Kg	1	16-Feb-2017 22:50
Triethylene glycol	**1.4**		**1.0**	**1.0**	**mg/Kg**	1	16-Feb-2017 22:50

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

RIGHT SOLUTIONS | RIGHT PARTNER

ANALYTICAL REPORT

Client: Stantec
Project: MHIC - 631/632
Sample ID: MHIC_AST_631_PA_2'
Collection Date: 03-Feb-2017 09:00

WorkOrder:HS17020197
Lab ID:HS17020197-02
Matrix:Soil

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY SW6020A		**Method:SW6020**			Prep:SW3050A / 09-Feb-2017		Analyst: JCJ
Lead	**2.77**		**0.0479**	**0.479**	**mg/Kg**	1	10-Feb-2017 17:46
MOISTURE		**Method:SW3550**					Analyst: DFF
Percent Moisture	**15.5**		**0.0100**	**0.0100**	**wt%**	1	14-Feb-2017 11:26

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

RIGHT SOLUTIONS | RIGHT PARTNER

WEIGHT LOG

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

Batch ID: 1519 **Method:** VOLATILES BY SW8260C

SampID	Container	Sample Wt/Vol	Final Volume	Weight Factor	Container Type
HS17020197-01	1	7.201 (g)	5 (mL)	0.69	TerraCore (5035A)
HS17020197-01	3	6.20599999999999 (g)	5 (mL)	0.81	TerraCore (5035A)
HS17020197-02	1	5.72 (g)	5 (mL)	0.87	TerraCore (5035A)
HS17020197-02	2	6.386 (g)	5 (mL)	0.78	TerraCore (5035A)

Batch ID: 112152 **Method:** LOW-LEVEL SEMIVOLATILES **Prep:** 3541_B_LOW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS17020197-01	1	30.08	1 (mL)	0.03324
HS17020197-02	1	30.02	1 (mL)	0.03331

Batch ID: 112199 **Method:** METALS BY SW6020A **Prep:** 3050_I_LOW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS17020197-01	1	0.5206	50 (mL)	96.04
HS17020197-02	1	0.5214	50 (mL)	95.9

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 112152	**Test Name :** LOW-LEVEL SEMIVOLATILES			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30		08 Feb 2017 11:10	08 Feb 2017 18:36	1
HS17020197-02	MHIC_AST_631_PA_2'	03 Feb 2017 09:00		08 Feb 2017 11:10	08 Feb 2017 18:55	1
Batch ID 112199	**Test Name :** METALS BY SW6020A			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30		09 Feb 2017 14:39	10 Feb 2017 17:41	1
HS17020197-02	MHIC_AST_631_PA_2'	03 Feb 2017 09:00		09 Feb 2017 14:39	10 Feb 2017 17:46	1
Batch ID R289164	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30			08 Feb 2017 07:26	1
HS17020197-02	MHIC_AST_631_PA_2'	03 Feb 2017 09:00			08 Feb 2017 09:22	1
Batch ID R289256	**Test Name :** VOLATILES BY SW8260C			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30			09 Feb 2017 02:36	50
Batch ID R289526	**Test Name :** MOISTURE			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30			14 Feb 2017 11:26	1
HS17020197-02	MHIC_AST_631_PA_2'	03 Feb 2017 09:00			14 Feb 2017 11:26	1
Batch ID R289668	**Test Name :** GLYCOLS AND ALCOHOLS BY SW8015C			**Matrix:** Soil		
HS17020197-01	MHIC_AST_632_PA_2'	03 Feb 2017 08:30			16 Feb 2017 22:18	1
HS17020197-02	MHIC_AST_631_PA_2'	03 Feb 2017 09:00			16 Feb 2017 22:50	1

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289668** **Instrument:** **FID-1** **Method:** **SW8015**

MBLK Sample ID: **MBLK-170216** Units: **mg/Kg** Analysis Date: **16-Feb-2017 19:06**
Client ID: Run ID: **FID-1_289668** SeqNo: **3989542** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diethylene Glycol	U	1.0								
Ethylene Glycol	U	1.0								
Propylene glycol	U	1.0								
Tetraethylene Glycol	U	1.0								
Triethylene glycol	U	1.0								

LCS Sample ID: **LCS-170216** Units: **mg/Kg** Analysis Date: **16-Feb-2017 19:37**
Client ID: Run ID: **FID-1_289668** SeqNo: **3989543** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diethylene Glycol	24.47	1.0	25	0	97.9	70 - 130				
Ethylene Glycol	27.16	1.0	25	0	109	70 - 130				
Propylene glycol	24.13	1.0	25	0	96.5	70 - 130				
Tetraethylene Glycol	23.43	1.0	25	0	93.7	70 - 130				
Triethylene glycol	24.69	1.0	25	0	98.7	70 - 130				

LCSD Sample ID: **LCSD-170216** Units: **mg/Kg** Analysis Date: **16-Feb-2017 20:09**
Client ID: Run ID: **FID-1_289668** SeqNo: **3989544** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diethylene Glycol	26.1	1.0	25	0	104	70 - 130	24.47	6.44	30	
Ethylene Glycol	28.83	1.0	25	0	115	70 - 130	27.16	5.97	30	
Propylene glycol	25.42	1.0	25	0	102	70 - 130	24.13	5.19	30	
Tetraethylene Glycol	21.44	1.0	25	0	85.8	70 - 130	23.43	8.84	30	
Triethylene glycol	27.91	1.0	25	0	112	70 - 130	24.69	12.3	30	

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289668** **Instrument:** **FID-1** **Method:** **SW8015**

MS Sample ID: **HS17020522-01MS** Units: **mg/Kg** Analysis Date: **16-Feb-2017 21:14**
Client ID: Run ID: **FID-1_289668** SeqNo: **3989546** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diethylene Glycol	39.3	1.0	25	18.11	84.8	70 - 130				
Ethylene Glycol	34.08	1.0	25	9.737	97.4	70 - 130				
Propylene glycol	23.64	1.0	25	0	94.5	70 - 130				
Tetraethylene Glycol	37.16	1.0	25	30.7	25.9	70 - 130				S
Triethylene glycol	19.75	1.0	25	0	79.0	70 - 130				

MSD Sample ID: **HS17020522-01MSD** Units: **mg/Kg** Analysis Date: **16-Feb-2017 21:46**
Client ID: Run ID: **FID-1_289668** SeqNo: **3989547** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Diethylene Glycol	41.24	1.0	25	18.11	92.5	70 - 130	39.3	4.82	30	
Ethylene Glycol	35.1	1.0	25	9.737	101	70 - 130	34.08	2.95	30	
Propylene glycol	24.33	1.0	25	0	97.3	70 - 130	23.64	2.91	30	
Tetraethylene Glycol	37.78	1.0	25	30.7	28.4	70 - 130	37.16	1.66	30	S
Triethylene glycol	15.13	1.0	25	0	60.5	70 - 130	19.75	26.5	30	S

The following samples were analyzed in this batch: HS17020197-01 HS17020197-02

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: 112199 **Instrument: ICPMS04** **Method: SW6020**

MBLK Sample ID: **MBLK-112199** Units: **mg/Kg** Analysis Date: **10-Feb-2017 17:32**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984137** PrepDate: **09-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	U	0.500								

LCS Sample ID: **LCS-112199** Units: **mg/Kg** Analysis Date: **10-Feb-2017 17:36**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984138** PrepDate: **09-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	9.695	0.500	10	0	97.0	80 - 120				

MS Sample ID: **HS17020342-16MS** Units: **mg/Kg** Analysis Date: **10-Feb-2017 20:49**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984178** PrepDate: **09-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	17.84	0.473	9.45	9.383	89.5	75 - 125				

MSD Sample ID: **HS17020342-16MSD** Units: **mg/Kg** Analysis Date: **10-Feb-2017 20:54**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984179** PrepDate: **09-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	19.53	0.475	9.504	9.383	107	75 - 125	17.84	9.05	20	

PDS Sample ID: **HS17020342-16PDS** Units: **mg/Kg** Analysis Date: **10-Feb-2017 20:59**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984180** PrepDate: **09-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	18.98	0.475	9.491	9.383	101	75 - 125				

SD Sample ID: **HS17020342-16SD** Units: **mg/Kg** Analysis Date: **10-Feb-2017 20:44**
Client ID: Run ID: **ICPMS04_289334** SeqNo: **3984177** PrepDate: **09-Feb-2017** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Lead	8.882	2.37					9.383	5.34	10	

The following samples were analyzed in this batch: HS17020197-01 HS17020197-02

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: 112152 **Instrument: SV-7** **Method: SW8270**

MBLK Sample ID: **MBLK-112152** Units: **ug/Kg** Analysis Date: **08-Feb-2017 16:01**
Client ID: Run ID: **SV-7_289228** SeqNo: **3981228** PrepDate: **08-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	U	3.3								
Benz(a)anthracene	U	3.3								
Benzo(a)pyrene	U	3.3								
Benzo(b)fluoranthene	U	3.3								
Benzo(g,h,i)perylene	U	3.3								
Chrysene	U	3.3								
Fluorene	U	3.3								
Phenanthrene	U	3.3								
Pyrene	U	3.3								
Surr: 2,4,6-Tribromophenol	*157.6*	*0*	*167*	*0*	*94.3*	*36 - 126*				
Surr: 2-Fluorobiphenyl	*147.9*	*0*	*167*	*0*	*88.5*	*43 - 125*				
Surr: 2-Fluorophenol	*155.6*	*0*	*167*	*0*	*93.2*	*37 - 125*				
Surr: 4-Terphenyl-d14	*160*	*0*	*167*	*0*	*95.8*	*32 - 125*				
Surr: Nitrobenzene-d5	*184.5*	*0*	*167*	*0*	*111*	*37 - 125*				
Surr: Phenol-d6	*162.6*	*0*	*167*	*0*	*97.4*	*40 - 125*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: 112152 **Instrument: SV-7** **Method: SW8270**

LCS Sample ID: **LCS-112152** Units: **ug/Kg** Analysis Date: **08-Feb-2017 15:01**
Client ID: Run ID: **SV-7_289228** SeqNo: **3981225** PrepDate: **08-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	137.3	3.3	167	0	82.2	50 - 123				
Benz(a)anthracene	137.5	3.3	167	0	82.3	50 - 131				
Benzo(a)pyrene	135.3	3.3	167	0	81.0	50 - 130				
Benzo(b)fluoranthene	157	3.3	167	0	94.0	50 - 137				
Benzo(g,h,i)perylene	149.1	3.3	167	0	89.3	50 - 130				
Chrysene	136.7	3.3	167	0	81.8	50 - 130				
Fluorene	135.5	3.3	167	0	81.1	50 - 125				
Phenanthrene	133.3	3.3	167	0	79.8	50 - 125				
Pyrene	128.9	3.3	167	0	77.2	45 - 130				
Surr: 2,4,6-Tribromophenol	*153*	*0*	*167*	*0*	*91.6*	*36 - 126*				
Surr: 2-Fluorobiphenyl	*133*	*0*	*167*	*0*	*79.6*	*43 - 125*				
Surr: 2-Fluorophenol	*151.1*	*0*	*167*	*0*	*90.5*	*37 - 125*				
Surr: 4-Terphenyl-d14	*139.4*	*0*	*167*	*0*	*83.5*	*32 - 125*				
Surr: Nitrobenzene-d5	*160.5*	*0*	*167*	*0*	*96.1*	*37 - 125*				
Surr: Phenol-d6	*177.1*	*0*	*167*	*0*	*106*	*40 - 125*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: 112152 **Instrument: SV-7** **Method: SW8270**

MS Sample ID: **HS17020195-02MS** Units: **ug/Kg** Analysis Date: **08-Feb-2017 16:59**
Client ID: Run ID: **SV-7_289228** SeqNo: **3981231** PrepDate: **08-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	153	3.3	166.8	0	91.7	50 - 123				
Benz(a)anthracene	157.8	3.3	166.8	0	94.6	50 - 131				
Benzo(a)pyrene	158.7	3.3	166.8	0	95.1	50 - 130				
Benzo(b)fluoranthene	170.6	3.3	166.8	0	102	50 - 137				
Benzo(g,h,i)perylene	171.7	3.3	166.8	0	103	50 - 130				
Chrysene	159.4	3.3	166.8	0	95.6	50 - 130				
Fluorene	142	3.3	166.8	0	85.1	50 - 125				
Phenanthrene	145.2	3.3	166.8	0	87.0	50 - 125				
Pyrene	150.9	3.3	166.8	0	90.4	45 - 130				
Surr: 2,4,6-Tribromophenol	*166*	*0*	*166.8*	*0*	*99.5*	*36 - 126*				
Surr: 2-Fluorobiphenyl	*144.4*	*0*	*166.8*	*0*	*86.6*	*43 - 125*				
Surr: 2-Fluorophenol	*149.6*	*0*	*166.8*	*0*	*89.7*	*37 - 125*				
Surr: 4-Terphenyl-d14	*163.5*	*0*	*166.8*	*0*	*98.0*	*32 - 125*				
Surr: Nitrobenzene-d5	*166*	*0*	*166.8*	*0*	*99.5*	*37 - 125*				
Surr: Phenol-d6	*168.2*	*0*	*166.8*	*0*	*101*	*40 - 125*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: 112152 **Instrument: SV-7** **Method: SW8270**

MSD Sample ID: **HS17020195-02MSD** Units: **ug/Kg** Analysis Date: **08-Feb-2017 17:19**
Client ID: Run ID: **SV-7_289228** SeqNo: **3981232** PrepDate: **08-Feb-2017** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	156.2	3.3	166.6	0	93.7	50 - 123	153	2.05	30	
Benz(a)anthracene	146.2	3.3	166.6	0	87.8	50 - 131	157.8	7.65	30	
Benzo(a)pyrene	152.8	3.3	166.6	0	91.7	50 - 130	158.7	3.77	30	
Benzo(b)fluoranthene	183.4	3.3	166.6	0	110	50 - 137	170.6	7.18	30	
Benzo(g,h,i)perylene	172.7	3.3	166.6	0	104	50 - 130	171.7	0.583	30	
Chrysene	150.6	3.3	166.6	0	90.4	50 - 130	159.4	5.73	30	
Fluorene	157.7	3.3	166.6	0	94.7	50 - 125	142	10.5	30	
Phenanthrene	149.1	3.3	166.6	0	89.5	50 - 125	145.2	2.65	30	
Pyrene	144.2	3.3	166.6	0	86.5	45 - 130	150.9	4.55	30	
Surr: 2,4,6-Tribromophenol	*177.6*	*0*	*166.6*	*0*	*107*	*36 - 126*	*166*	*6.71*	*30*	
Surr: 2-Fluorobiphenyl	*156.1*	*0*	*166.6*	*0*	*93.7*	*43 - 125*	*144.4*	*7.77*	*30*	
Surr: 2-Fluorophenol	*150.6*	*0*	*166.6*	*0*	*90.4*	*37 - 125*	*149.6*	*0.676*	*30*	
Surr: 4-Terphenyl-d14	*155*	*0*	*166.6*	*0*	*93.0*	*32 - 125*	*163.5*	*5.36*	*30*	
Surr: Nitrobenzene-d5	*166.5*	*0*	*166.6*	*0*	*99.9*	*37 - 125*	*166*	*0.32*	*30*	
Surr: Phenol-d6	*173.9*	*0*	*166.6*	*0*	*104*	*40 - 125*	*168.2*	*3.37*	*30*	

The following samples were analyzed in this batch: HS17020197-01 HS17020197-02

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289164** **Instrument:** **VOA5** **Method:** **SW8260**

MBLK Sample ID: **VBLKS2-020717** Units: **ug/Kg** Analysis Date: **08-Feb-2017 01:39**
Client ID: Run ID: **VOA5_289164** SeqNo: **3979828** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
1,3,5-Trimethylbenzene	U	5.0								
Benzene	U	5.0								
Ethylbenzene	U	5.0								
Isopropylbenzene	U	5.0								
m,p-Xylene	U	10								
Methyl tert-butyl ether	U	5.0								
Naphthalene	U	5.0								
Toluene	U	5.0								
Xylenes, Total	U	5.0								
Surr: 1,2-Dichloroethane-d4	*48.35*	*0*	*50*	*0*	*96.7*	*70 - 128*				
Surr: 4-Bromofluorobenzene	*46.81*	*0*	*50*	*0*	*93.6*	*73 - 126*				
Surr: Dibromofluoromethane	*46.49*	*0*	*50*	*0*	*93.0*	*71 - 128*				
Surr: Toluene-d8	*51.62*	*0*	*50*	*0*	*103*	*73 - 127*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289164** **Instrument:** **VOA5** **Method:** **SW8260**

LCS Sample ID: **VLCSS2-020717** Units: **ug/Kg** Analysis Date: **08-Feb-2017 00:53**
Client ID: Run ID: **VOA5_289164** SeqNo: **3979827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	48.55	5.0	50	0	97.1	79 - 123				
1,2-Dibromoethane	50.81	5.0	50	0	102	70 - 120				
1,2-Dichloroethane	50.9	5.0	50	0	102	73 - 121				
1,3,5-Trimethylbenzene	48.31	5.0	50	0	96.6	70 - 123				
Benzene	48.13	5.0	50	0	96.3	79 - 122				
Ethylbenzene	48.87	5.0	50	0	97.7	80 - 122				
Isopropylbenzene	48.35	5.0	50	0	96.7	72 - 127				
m,p-Xylene	95.87	10	100	0	95.9	79 - 122				
Methyl tert-butyl ether	49.36	5.0	50	0	98.7	76 - 124				
Naphthalene	49.47	5.0	50	0	98.9	71 - 128				
Toluene	47.88	5.0	50	0	95.8	79 - 120				
Xylenes, Total	145.5	5.0	150	0	97.0	79 - 123				
Surr: 1,2-Dichloroethane-d4	*53.83*	*0*	*50*	*0*	*108*	*70 - 128*				
Surr: 4-Bromofluorobenzene	*49.17*	*0*	*50*	*0*	*98.3*	*73 - 126*				
Surr: Dibromofluoromethane	*50.74*	*0*	*50*	*0*	*101*	*71 - 128*				
Surr: Toluene-d8	*50.94*	*0*	*50*	*0*	*102*	*73 - 127*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289164** **Instrument:** **VOA5** **Method:** **SW8260**

MS Sample ID: **HS17020191-07MS** Units: **ug/Kg** Analysis Date: **08-Feb-2017 04:44**
Client ID: Run ID: **VOA5_289164** SeqNo: **3979836** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	35.38	4.8	47.5	0	74.5	79 - 123				S
1,2-Dibromoethane	34.58	4.8	47.5	0	72.8	70 - 120				
1,2-Dichloroethane	35.67	4.8	47.5	0	75.1	73 - 121				
1,3,5-Trimethylbenzene	36.01	4.8	47.5	0	75.8	70 - 123				
Benzene	35.52	4.8	47.5	0	74.8	79 - 122				S
Ethylbenzene	36.16	4.8	47.5	0	76.1	80 - 122				S
Isopropylbenzene	35.99	4.8	47.5	0	75.8	72 - 127				
m,p-Xylene	71.1	9.5	95	0	74.8	79 - 122				S
Methyl tert-butyl ether	33.7	4.8	47.5	0	70.9	76 - 124				S
Naphthalene	30.39	4.8	47.5	0	64.0	71 - 128				S
Toluene	35.45	4.8	47.5	0	74.6	79 - 120				S
Xylenes, Total	106.5	4.8	142.5	0	74.7	79 - 123				S
Surr: 1,2-Dichloroethane-d4	*49.5*	*0*	*47.5*	*0*	*104*	*70 - 128*				
Surr: 4-Bromofluorobenzene	*46.79*	*0*	*47.5*	*0*	*98.5*	*73 - 126*				
Surr: Dibromofluoromethane	*48.3*	*0*	*47.5*	*0*	*102*	*71 - 128*				
Surr: Toluene-d8	*49.06*	*0*	*47.5*	*0*	*103*	*73 - 127*				

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: R289164 **Instrument: VOA5** **Method: SW8260**

MSD Sample ID: **HS17020191-07MSD** Units: **ug/Kg** Analysis Date: **08-Feb-2017 05:07**
Client ID: Run ID: **VOA5_289164** SeqNo: **3979837** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	36.82	4.8	47.5	0	77.5	79 - 123	35.38	3.97	30	S
1,2-Dibromoethane	36.65	4.8	47.5	0	77.1	70 - 120	34.58	5.81	30	
1,2-Dichloroethane	36.42	4.8	47.5	0	76.7	73 - 121	35.67	2.09	30	
1,3,5-Trimethylbenzene	37.75	4.8	47.5	0	79.5	70 - 123	36.01	4.72	30	
Benzene	37.63	4.8	47.5	0	79.2	79 - 122	35.52	5.77	30	
Ethylbenzene	37.86	4.8	47.5	0	79.7	80 - 122	36.16	4.6	30	S
Isopropylbenzene	37.97	4.8	47.5	0	79.9	72 - 127	35.99	5.35	30	
m,p-Xylene	74.71	9.5	95	0	78.6	79 - 122	71.1	4.96	30	S
Methyl tert-butyl ether	35.17	4.8	47.5	0	74.0	76 - 124	33.7	4.25	30	S
Naphthalene	33.33	4.8	47.5	0	70.2	71 - 128	30.39	9.23	30	S
Toluene	38.14	4.8	47.5	0	80.3	79 - 120	35.45	7.29	30	
Xylenes, Total	111.9	4.8	142.5	0	78.5	79 - 123	106.5	4.96	30	S
Surr: 1,2-Dichloroethane-d4	*49.48*	*0*	*47.5*	*0*	*104*	*70 - 128*	*49.5*	*0.0447*	*30*	
Surr: 4-Bromofluorobenzene	*46.95*	*0*	*47.5*	*0*	*98.8*	*73 - 126*	*46.79*	*0.354*	*30*	
Surr: Dibromofluoromethane	*47.77*	*0*	*47.5*	*0*	*101*	*71 - 128*	*48.3*	*1.12*	*30*	
Surr: Toluene-d8	*49.05*	*0*	*47.5*	*0*	*103*	*73 - 127*	*49.06*	*0.0137*	*30*	

The following samples were analyzed in this batch: HS17020197-01 HS17020197-02

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: R289256 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-170208** Units: **ug/Kg** Analysis Date: **09-Feb-2017 00:08**
Client ID: Run ID: **VOA2_289256** SeqNo: **3981867** PrepDate: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	U	250								
m,p-Xylene	U	500								
Xylenes, Total	U	250								
Surr: 1,2-Dichloroethane-d4	*2270*	*0*	*2500*	*0*	*90.8*	*70 - 128*				
Surr: 4-Bromofluorobenzene	*2463*	*0*	*2500*	*0*	*98.5*	*73 - 126*				
Surr: Dibromofluoromethane	*2335*	*0*	*2500*	*0*	*93.4*	*71 - 128*				
Surr: Toluene-d8	*2513*	*0*	*2500*	*0*	*101*	*73 - 127*				

LCS Sample ID: **VLCSW-170208** Units: **ug/L** Analysis Date: **08-Feb-2017 22:54**
Client ID: Run ID: **VOA2_289256** SeqNo: **3981995** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	49.78	5.0	50	0	99.6	70 - 125				
m,p-Xylene	92.9	10	100	0	92.9	78 - 121				
Xylenes, Total	140.1	5.0	150	0	93.4	80 - 120				
Surr: 1,2-Dichloroethane-d4	*47.28*	*0*	*50*	*0*	*94.6*	*70 - 125*				
Surr: 4-Bromofluorobenzene	*50.16*	*0*	*50*	*0*	*100*	*72 - 125*				
Surr: Dibromofluoromethane	*47.11*	*0*	*50*	*0*	*94.2*	*71 - 125*				
Surr: Toluene-d8	*48.6*	*0*	*50*	*0*	*97.2*	*75 - 125*				

LCSD Sample ID: **VLCSDW-170208** Units: **ug/L** Analysis Date: **08-Feb-2017 23:19**
Client ID: Run ID: **VOA2_289256** SeqNo: **3981996** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	47.69	5.0	50	0	95.4	70 - 125	49.78	4.28	20	
m,p-Xylene	88.79	10	100	0	88.8	78 - 121	92.9	4.52	20	
Xylenes, Total	134.7	5.0	150	0	89.8	78 - 121	140.1	3.88	20	
Surr: 1,2-Dichloroethane-d4	*47.61*	*0*	*50*	*0*	*95.2*	*70 - 125*	*47.28*	*0.69*	*20*	
Surr: 4-Bromofluorobenzene	*49.67*	*0*	*50*	*0*	*99.3*	*72 - 125*	*50.16*	*0.977*	*20*	
Surr: Dibromofluoromethane	*47.01*	*0*	*50*	*0*	*94.0*	*71 - 125*	*47.11*	*0.22*	*20*	
Surr: Toluene-d8	*47.83*	*0*	*50*	*0*	*95.7*	*75 - 125*	*48.6*	*1.6*	*20*	

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: R289256 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS17020218-35MS** Units: **ug/Kg** Analysis Date: **09-Feb-2017 03:01**
Client ID: Run ID: **VOA2_289256** SeqNo: **3981874** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	46.2	5.0	50	0	92.4	79 - 123				
m,p-Xylene	88.41	10	100	0	88.4	79 - 122				
Xylenes, Total	133.5	5.0	150	0	89.0	79 - 123				
Surr: 1,2-Dichloroethane-d4	*46.4*	*0*	*50*	*0*	*92.8*	*70 - 128*				
Surr: 4-Bromofluorobenzene	*50.18*	*0*	*50*	*0*	*100*	*73 - 126*				
Surr: Dibromofluoromethane	*45.91*	*0*	*50*	*0*	*91.8*	*71 - 128*				
Surr: Toluene-d8	*48.29*	*0*	*50*	*0*	*96.6*	*73 - 127*				

MSD Sample ID: **HS17020218-35MSD** Units: **ug/Kg** Analysis Date: **09-Feb-2017 03:26**
Client ID: Run ID: **VOA2_289256** SeqNo: **3981875** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trimethylbenzene	44.38	5.0	50	0	88.8	79 - 123	46.2	4.02	30	
m,p-Xylene	85.96	10	100	0	86.0	79 - 122	88.41	2.81	30	
Xylenes, Total	129.6	5.0	150	0	86.4	79 - 123	133.5	2.98	30	
Surr: 1,2-Dichloroethane-d4	*47.87*	*0*	*50*	*0*	*95.7*	*70 - 128*	*46.4*	*3.11*	*30*	
Surr: 4-Bromofluorobenzene	*50.56*	*0*	*50*	*0*	*101*	*73 - 126*	*50.18*	*0.758*	*30*	
Surr: Dibromofluoromethane	*46.14*	*0*	*50*	*0*	*92.3*	*71 - 128*	*45.91*	*0.496*	*30*	
Surr: Toluene-d8	*48.76*	*0*	*50*	*0*	*97.5*	*73 - 127*	*48.29*	*0.956*	*30*	

The following samples were analyzed in this batch: HS17020197-01

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

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Client: Stantec
Project: MHIC - 631/632
WorkOrder: HS17020197

QC BATCH REPORT

Batch ID: **R289526** **Instrument:** **Balance1** **Method:** **SW3550**

DUP Sample ID: **HS17020521-10DUP** Units: **wt%** Analysis Date: **14-Feb-2017 11:26**
Client ID: Run ID: **Balance1_289526** SeqNo: **3986876** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	2.64	0.0100					2.01	27.1	20	R

The following samples were analyzed in this batch: HS17020197-01 HS17020197-02

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

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Client: Stantec
Project: MHIC - 631/632
WorkOrder: **HS17020197**

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
M	Manually integrated, see raw data for justification
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/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
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
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/Kg	Milligrams per Kilogram

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	16-022-1	27-Mar-2017
California	2919 2016-2018	31-Jul-2018
Illinois	003872	09-May-2017
Kansas	E-10352 2016-2017	31-Jul-2017
Kentucky	96 2016-2017	30-Apr-2017
Louisiana	03087 2016-2017	30-Jun-2017
North Carolina	624-2017	31-Dec-2017
North Dakota	R193 2016-2017	30-Apr-2017
Oklahoma	2016-122	31-Aug-2017
Texas	TX104704231-16-17	30-Apr-2017

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Client: Stantec
Project: MHIC - 631/632
Work Order: HS17020197

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS17020197-01	MHIC_AST_632_PA_2'	Out	2/9/2017 1:44:02 PM	PVL	METPREP
HS17020197-02	MHIC_AST_631_PA_2'	Out	2/9/2017 1:44:02 PM	PVL	METPREP
HS17020197-01	MHIC_AST_632_PA_2'	Return	2/9/2017 1:44:20 PM	PVL	8D
HS17020197-02	MHIC_AST_631_PA_2'	Return	2/9/2017 1:44:20 PM	PVL	8D

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Sample Receipt Checklist

Client Name: Stantec-PA
Work Order: HS17020197

Date/Time Received: **04-Feb-2017 13:15**
Received by: **CL**

Checklist completed by: *Cesar A. Lira* (eSignature) 6-Feb-2017 (Date)

Reviewed by: *Erica Padilla* (eSignature) 8-Feb-2017 (Date)

Matrices: **Solid**

Carrier name: **FedEx**

	Yes	No	Not Present / N/A
Shipping container/cooler in good condition?	☑	☐	☐ Not Present
Custody seals intact on shipping container/cooler?	☑	☐	☐ Not Present
Custody seals intact on sample bottles?	☐	☐	☑ Not Present
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
TX1005 solids received in hermetically sealed vials?	☐	☐	☑ N/A
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	
Temperature(s)/Thermometer(s):	0.2c/0.7c uc/c		IR#20
Cooler(s)/Kit(s):	Lrg. Blue		
Date/Time sample(s) sent to storage:	2/6/2017 1:00pm		
Water - VOA vials have zero headspace?	☐	☐	☑ No VOA vials submitted
Water - pH acceptable upon receipt?	☐	☐	☑ N/A
pH adjusted?	☐	☐	☑ N/A
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 157759

HS17020197

Stantec
MHIC - 631/632

ALS Project Manager:

Customer Information		Project Information	
Purchase Order	MHIC - 631/632	Project Name	MHIC - 631/632
Work Order		Project Number	
Company Name	Stantec	Bill To Company	Stantec
Send Report To		Invoice Attn	
Address	1060 Andrew Drive Suite 140	Address	1060 Andrew Drive Suite 140
City/State/Zip	West Chester, PA 19380	City/State/Zip	West Chester, PA 19380
Phone	610-840-2552	Phone	610-840-2552
Fax	610-840-2501	Fax	610-840-2501
e-Mail Address	Mark.Schuetter@stantec.com	e-Mail Address	

A	8260_LL_W (8260 Client Select List)
B	8270_LOW_W (8270 LL Client Select List)
C	8011_W (EDB (only))
D	ICP_DISS (Diss Lead (Lab Filter))
E	8260_LL_W (8260 Client Select List (Trip Blank))
F	5035 / 8260 VOC
G	SOB 8011 EDB only – ALS Michigan
H	8270 SVOC / 6020 PB + Glycols
I	Moisture.
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MHIC_AST_632_PA_2'	2.3.17	930	So.1	MeOH	6						X	X	X	X		
2	~~KM~~	~~2.3.17~~		So.1	MeOH	6	X	X	X	X	X						
3	MHIC_AST_631_PA_2'	2.3.17	900	So.1	MeOH	6						X	X	X	X		
4																	
5																	
6																	
7																	
8																	
9																	
0																	

Sampler(s) Please Print & Sign: Karl McGorry

Shipment Method: Fedex

Required Turnaround Time: (Check Box) TAT 10 days Other:

Results Due Date:

Relinquished by:	Date: 2.3.17	Time: 1130	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): 2.4.17 1315
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: [Stantec-MHIC]

Cooler ID	Cooler Temp.
L.Blue	0.2
Red	2.0

QC Package: (Check One Box Below) QC Level STD

Other:

C/F 0.5

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note:
1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed.

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ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 2.3.17 Time: 7:35
Name: Jaclyn McGuire
Company: Stantec
Seal Broken By:
Date: 02/04/17

Lg blue FEB 04 2017

ORIGIN ID:NMZA (484) 875-3075
KAREN MIDDLETON
SECOR
102 PICKERING WAY
SUITE 200
EXTON, PA 19341
UNITED STATES US

SHIP DATE: 03FEB17
ACTWGT: 25.00 LB
CAD: 5929714/INET3850
DIMS: 24x12x18 IN

BILL THIRD PARTY

TO
ALS ENVIRONMENTAL
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
INV:
PO:
REF: 64BP.041150.50236
DEPT:

546J1/33BB/53C1

J171017010601uv

FedEx Express

SATURDAY 9:30A
FIRST OVERNIGHT

TRK# 0201 7783 4715 7976

XO SGRA

77099
IAH
TX-US

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