Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Instrument ID: LCMS1
File ID: 1LM.LM31405
Workgroup (AAB#): WG535337
Matrix: WATER

Run Date: 08/17/2015
Run Time: 17:17
Analyst: JWR
Cal ID: LCMS1 - 06-AUG-15

Sample ID: WG535343-02
Method: 6850
QC Key: STD

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		0.00100	0.00107	mg/kg	1.45	7.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343755
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Instrument ID: LCMS1
File ID: 1LM.LM31417
Workgroup (AAB#): WG535337
Matrix: WATER

Run Date: 08/17/2015
Run Time: 21:04
Analyst: JWR
Cal ID: LCMS1 - 06-AUG-15

Sample ID: WG535343-03
Method: 6850
QC Key: STD

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		0.00100	0.00101	mg/kg	1.38	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343755
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Instrument ID: LCMS1
File ID: 1LM.LM31428
Workgroup (AAB#): WG535337
Matrix: WATER

Run Date: 08/18/2015
Run Time: 00:32
Analyst: JWR
Cal ID: LCMS1 - 06-AUG-15

Sample ID: WG535343-05
Method: 6850
QC Key: STD

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		0.00100	0.000996	mg/kg	1.35	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343755
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080781 Run Date: 08/17/2015 Sample ID: WG535337-07

Instrument ID: LCMS1 Run Time: 17:35 Prep Method: 6850

File ID: 1LM.LM31406 Analyst: JWR Method: 6850

Workgroup (AAB#): WG535337 Matrix: Soil Units: mg/kg

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.00200	0.00214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4343754
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080781 Run Date: 08/17/2015 Sample ID: WG535337-08

Instrument ID: LCMS1 Run Time: 21:23 Prep Method: 6850

File ID: 1LM.LM31418 Analyst: JWR Method: 6850

Workgroup (AAB#): WG535337 Matrix: Soil Units: mg/kg

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.00200	0.00205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4343754
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080781 Run Date: 08/18/2015 Sample ID: WG535337-09

Instrument ID: LCMS1 Run Time: 00:51 Prep Method: 6850

File ID: 1LM.LM31429 Analyst: JWR Method: 6850

Workgroup (AAB#): WG535337 Matrix: Soil Units: mg/kg

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.00200	0.00200	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4343754
Report generated 08/20/2015 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15080781
Instrument ID: LCMS1
Workgroup (AAB#): WG535337

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15080781-01	1.00	01	367000
L15080781-02	1.00	01	399000
L15080781-03	1.00	01	491000
L15080781-04	1.00	01	395000
L15080781-05	1.00	01	431000
L15080781-06	1.00	01	417000
L15080781-07	1.00	01	413000
L15080781-08	1.00	01	440000
L15080781-09	1.00	01	457000
L15080781-10	1.00	01	442000
L15080781-11	1.00	01	411000
WG535337-02	1.00	01	435000
WG535337-03	1.00	01	425000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4343757
Report generated 08/20/2015 14:55

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-01
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31414
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 20:07	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2050	1020	2.01	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-02
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 20:26	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5050	1710	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-03
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 20:45	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12500	3910	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-04
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 22:01	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7940	2600	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-05
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 22:19	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32400	11100	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-06
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31422
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 22:38	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	10100	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-07
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31423
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 22:57	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3860	1260	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-08
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31424
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 23:16	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11000	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-09
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31425
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 23:35	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8520	3200	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-10
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31426
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 23:54	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3020	1030	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	L15080781-11
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31427
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/18/2015 00:13	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9500	3030	3.14	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/05/2015 22:28	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/05/2015 22:47	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/05/2015 23:06	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/05/2015 23:25	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/05/2015 23:44	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/06/2015 00:03	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/06/2015 00:22	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/06/2015 00:41	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-01
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31407
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 17:54	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22300	6920	3.22	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-02
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31408
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 18:13	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	230	237	0.970	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-03
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31409
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 18:32	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25500	7370	3.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-07
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31406
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 17:35	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23300	7120	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-08
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/17/2015 21:23	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	8270	3.10	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**	6850	**Samplenum:**	WG535337-09
Instrument:	LCMS1	**Prep Date:**	08/17/2015 15:00	**File ID:**	1LM.LM31429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG535337	**Analysis Date:**	08/18/2015 00:51	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25400	7950	3.19	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31404
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/17/2015 16:58	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156	92.6	1.68	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31405
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/17/2015 17:17	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	113000	33800	3.34	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/17/2015 21:04	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	129000	40500	3.19	2.3	3.8	

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/17/2015 21:42	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	617	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios
Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/18/2015 00:32	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	126000	41600	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080781	**Prep Method:**		**Samplenum:**	WG535343-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG535337	**Analysis Date:**	08/18/2015 01:10	**Units:**	mg/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	358	99.4	3.60	2.3	3.8	

2.1.1.3 Sample Data

Data File	LM31414.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 8:07:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-01	**Injection Vial**	11.00
Data File	LM31414.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 8:07:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.69	5.00	-

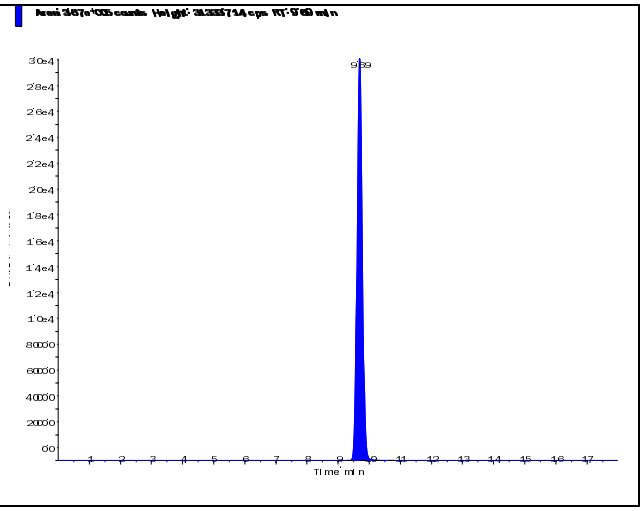
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.050e+03	9.68	N/A	0.0147
Perchlorate conf	1.020e+03	9.70	N/A	0.0267

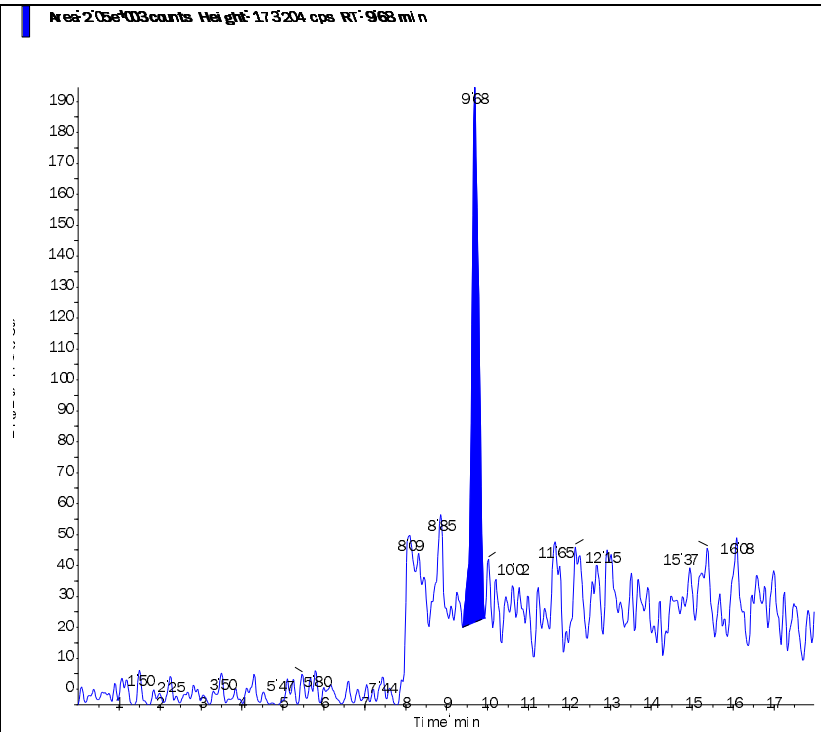
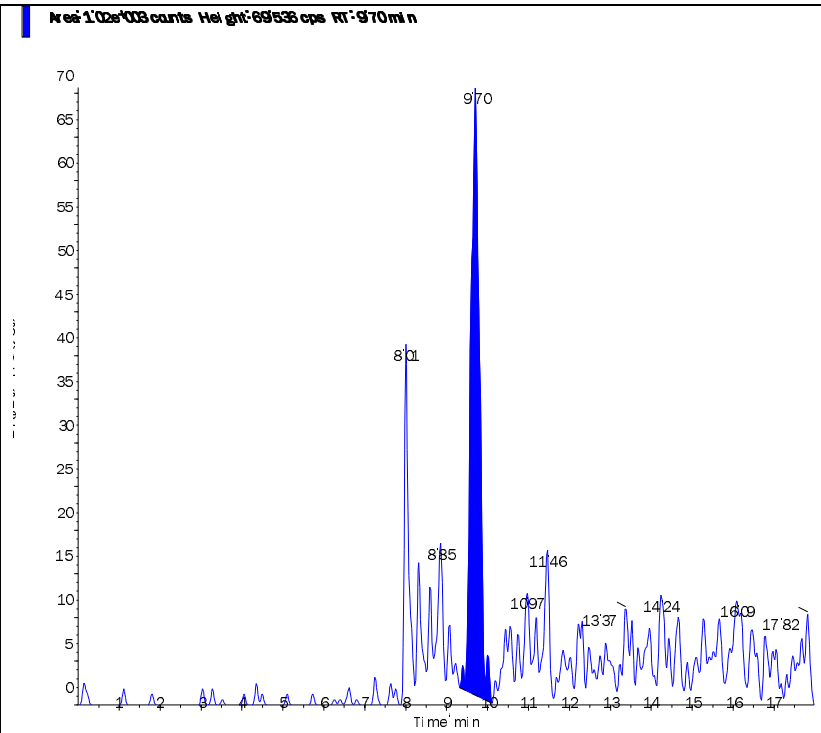
O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.68 (9.52) min Calculated conc: 0.0147 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.0267 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	

s.dataFile Page 2 of 2

Data File	LM31415.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 8:26:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-02	**Injection Vial**	12.00
Data File	LM31415.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 8:26:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	9.68	5.00	-

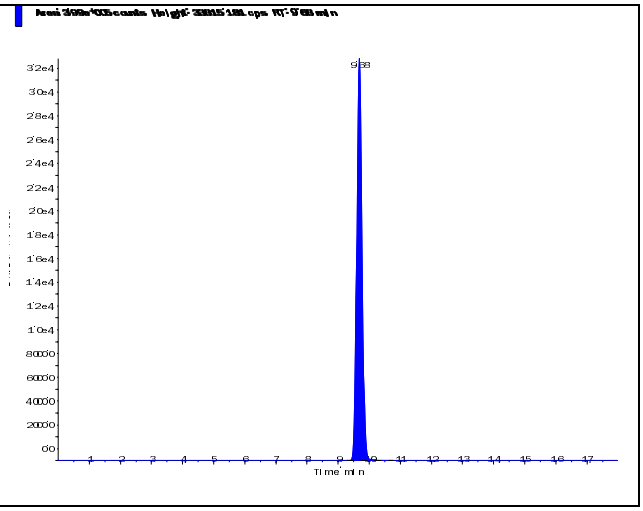
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.050e+03	9.69	N/A	0.0409
Perchlorate conf	1.710e+03	9.69	N/A	0.0446

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

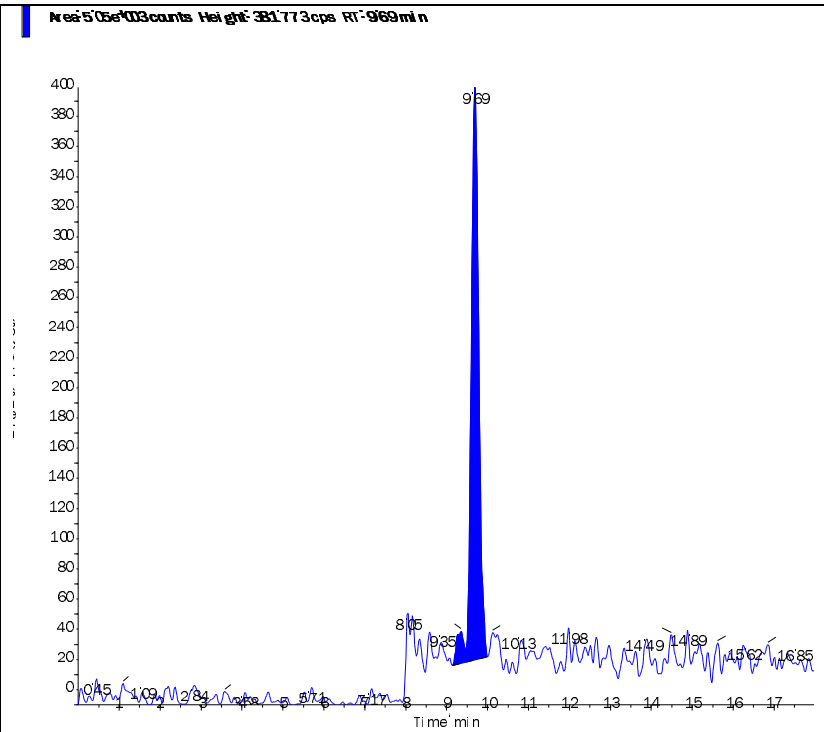
Concentration: 5.00 ug/L

Sample Type: (Unknown)



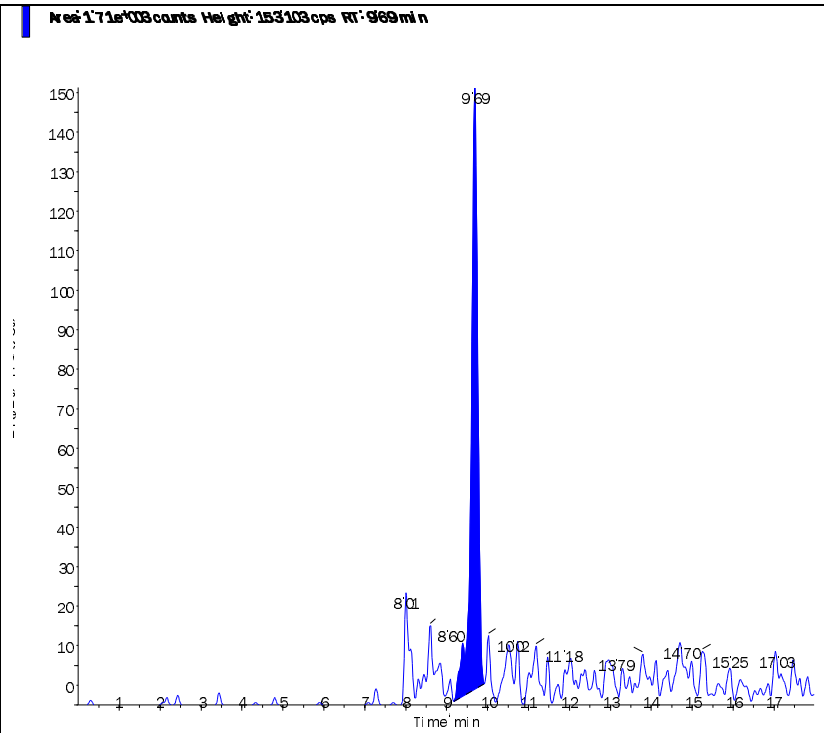
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.52) min
Calculated conc:	0.0409 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.48) min
Calculated conc:	0.0446 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)



Data File	LM31416.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 8:45:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-03	**Injection Vial**	13.00
Data File	LM31416.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 8:45:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.60	5.00	-

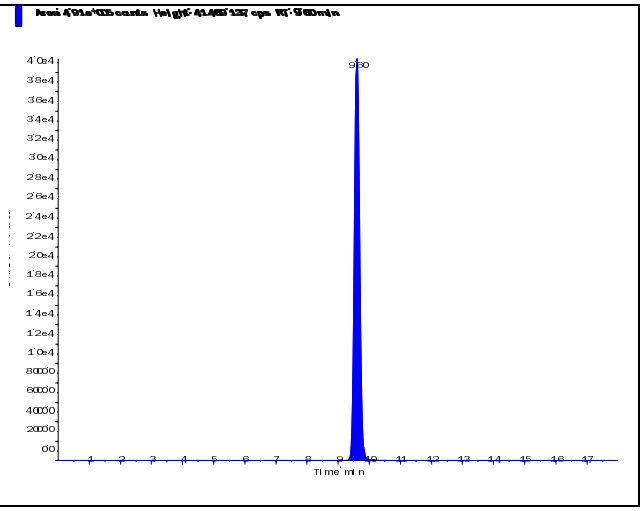
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.250e+04	9.62	N/A	0.0882
Perchlorate conf	3.910e+03	9.59	N/A	0.0885

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

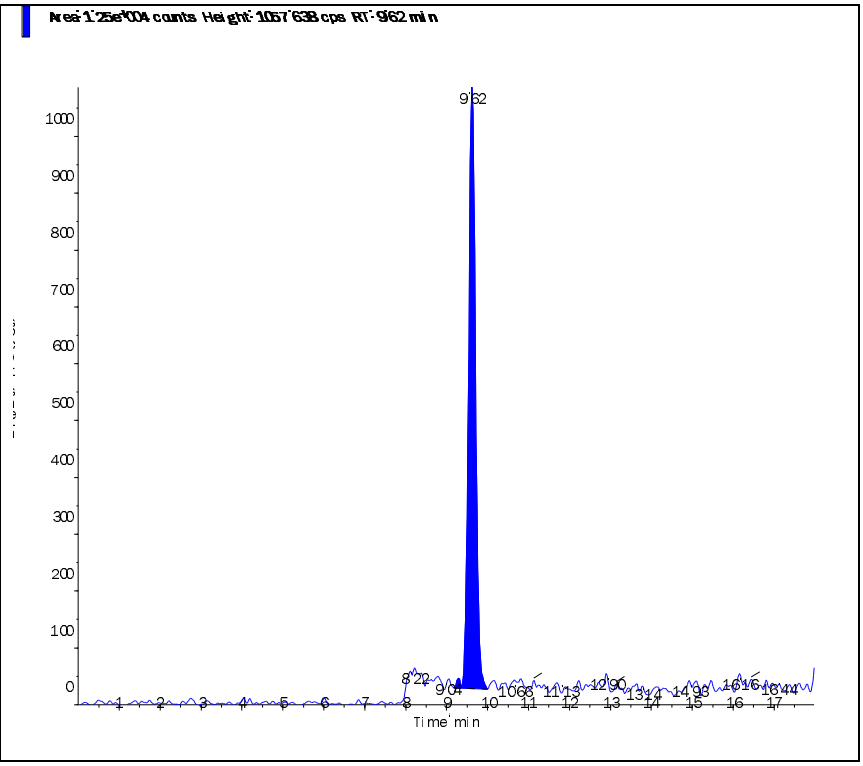
Sample Type: (Unknown)



s.dataFile Page 1 of 2

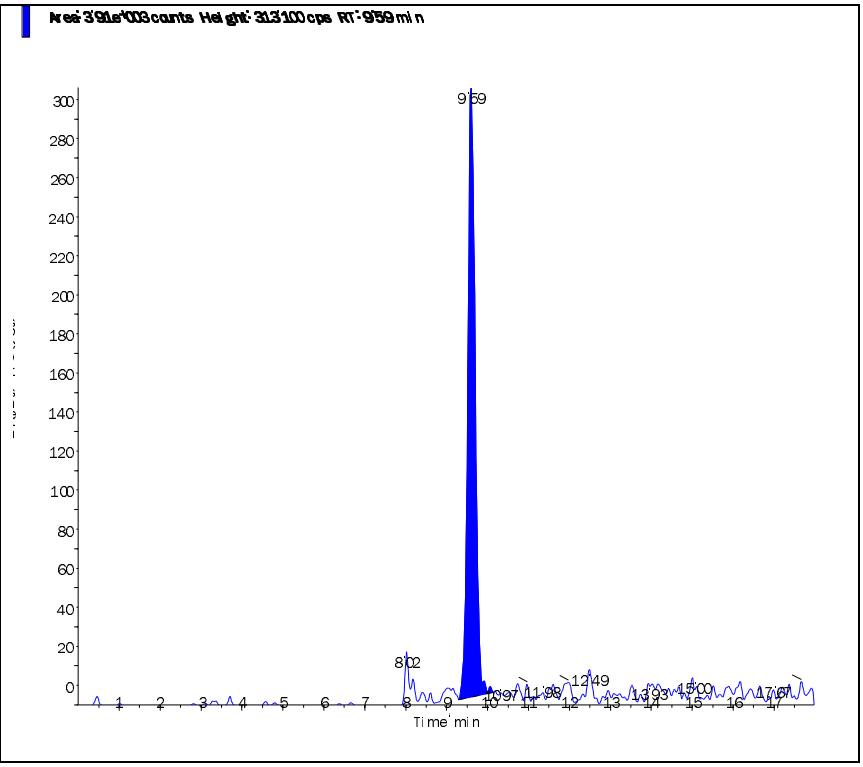
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.52) min
Calculated conc:	0.0882 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.48) min
Calculated conc:	0.0885 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)



s.dataFile Page 2 of 2

Data File	LM31420.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 10:01:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-04 RS	**Injection Vial**	14.00
Data File	LM31420.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 10:01:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	WG535337-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.950e+05	9.68	5.00	-

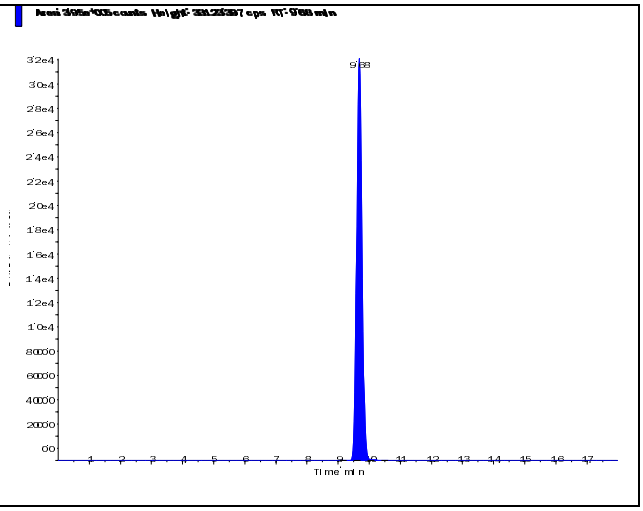
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.940e+03	9.70	N/A	0.0685
Perchlorate conf	2.600e+03	9.67	N/A	0.0719

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

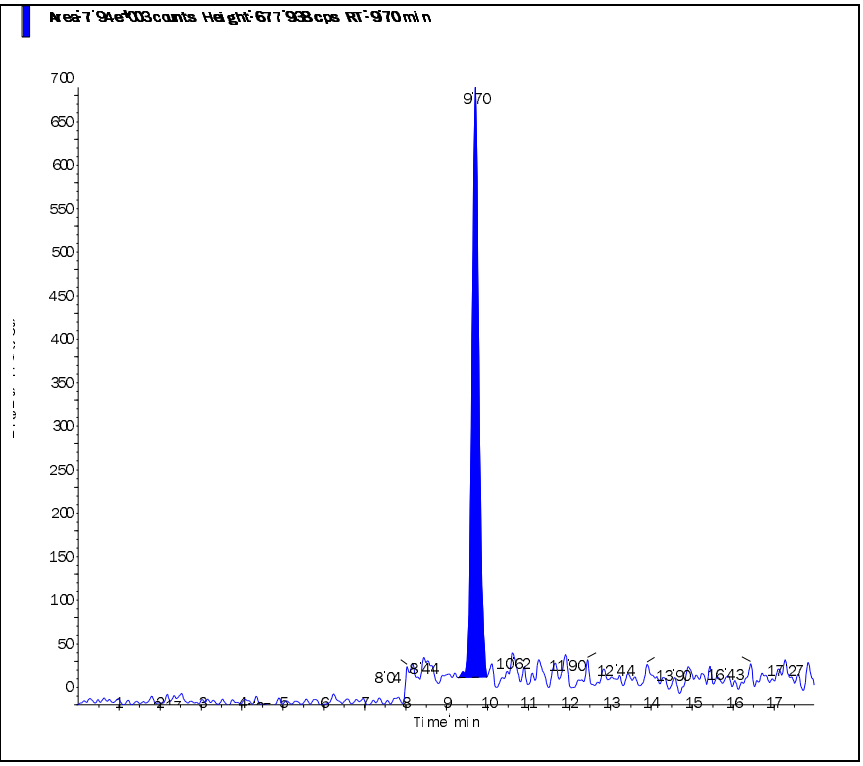
Sample Type: (Unknown)



s.dataFile Page 1 of 2

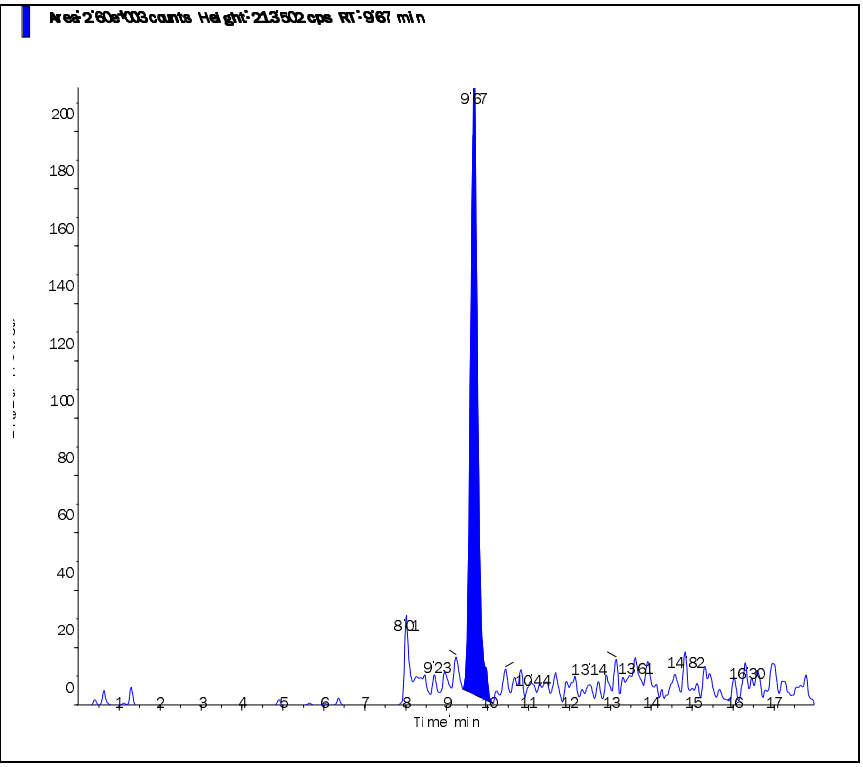
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.52) min
Calculated conc:	0.0685 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.48) min
Calculated conc:	0.0719 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)



s.dataFile Page 2 of 2

Data File	LM31421.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 10:19:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-05 MS	**Injection Vial**	15.00
Data File	LM31421.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 10:19:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	WG535337-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.310e+05	9.68	5.00	-

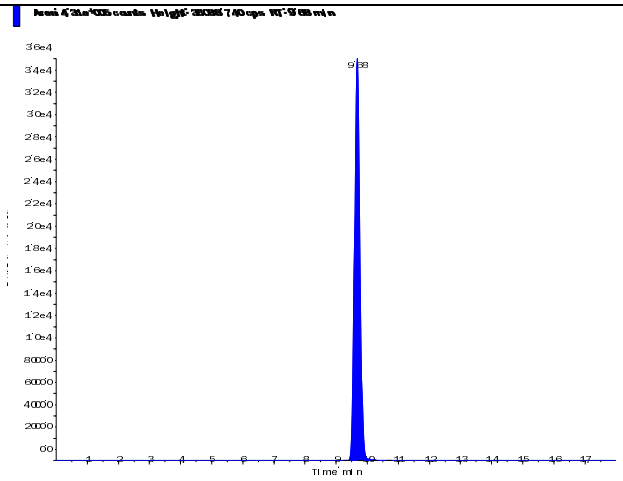
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.240e+04	9.69	N/A	0.273
Perchlorate conf	1.110e+04	9.67	N/A	0.30

O18LP (Internal Standard)

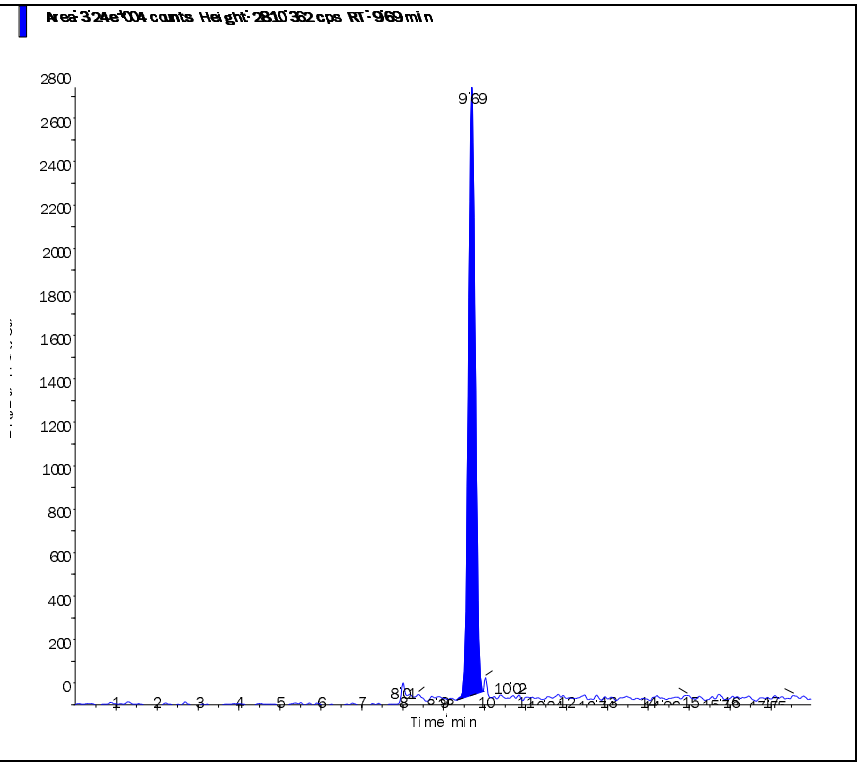
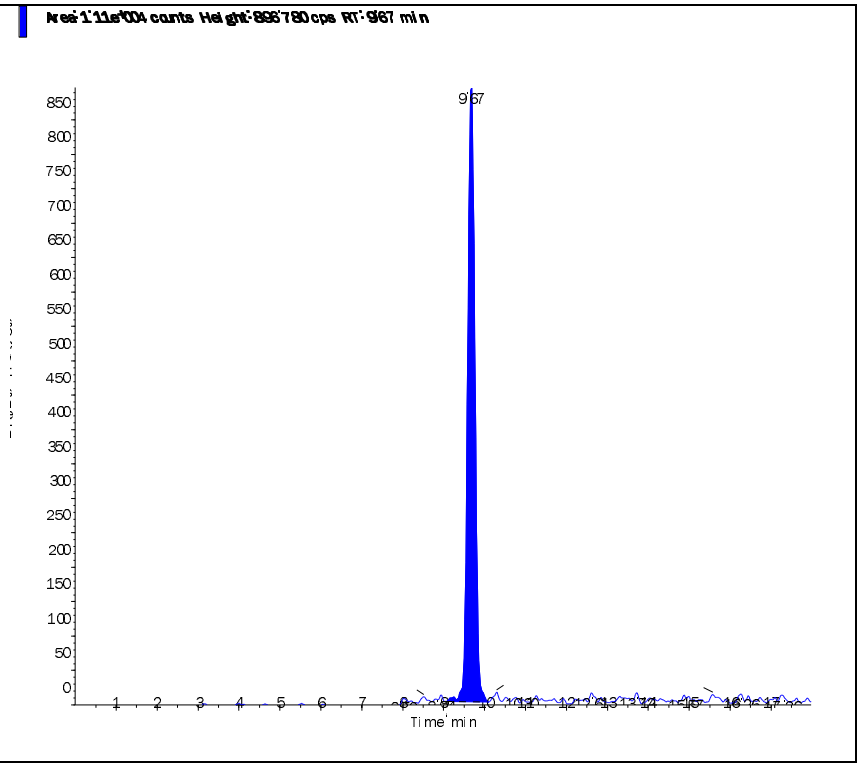
RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.69 (9.52) min Calculated conc: 0.273 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (9.48) min Calculated conc: 0.30 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	

s.dataFile Page 2 of 2

Data File	LM31422.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 10:38:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-06 MSD	**Injection Vial**	16.00
Data File	LM31422.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 10:38:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	WG535337-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.68	5.00	-

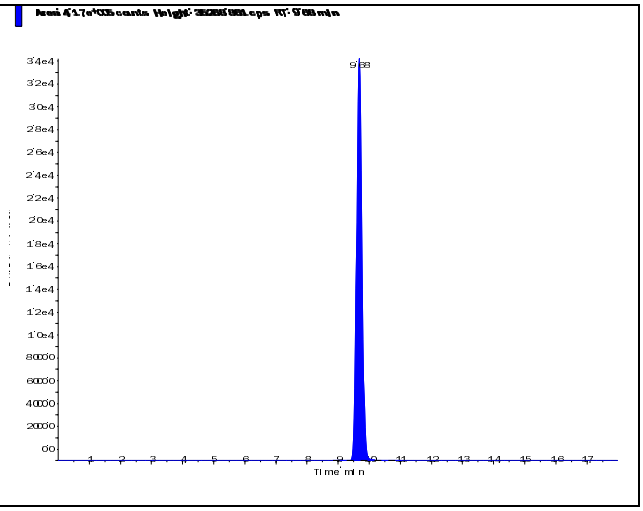
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.69	N/A	0.282
Perchlorate conf	1.010e+04	9.67	N/A	0.281

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

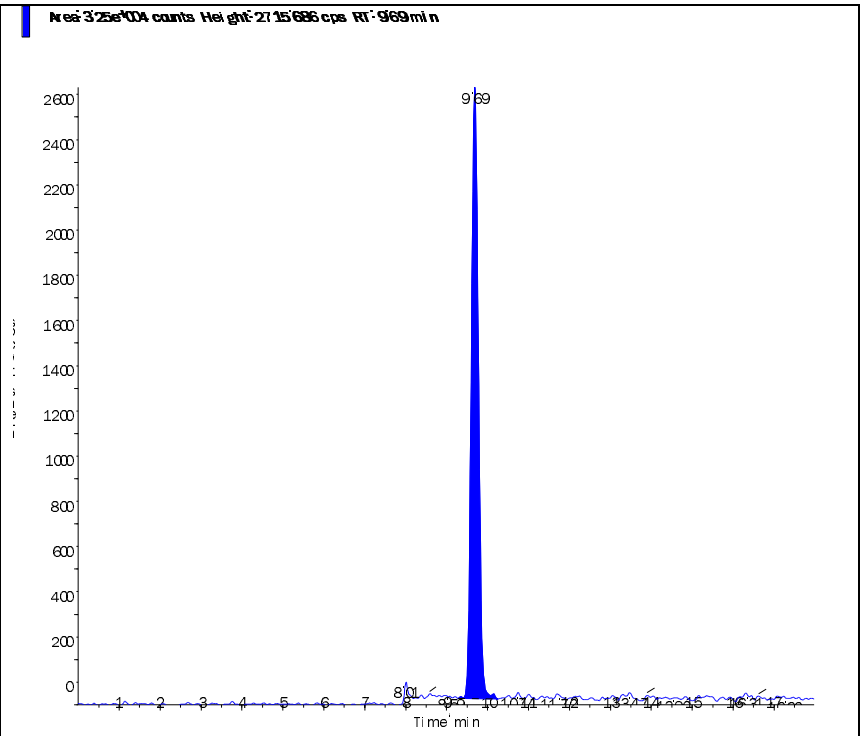
Sample Type: (Unknown)



s.dataFile Page 1 of 2

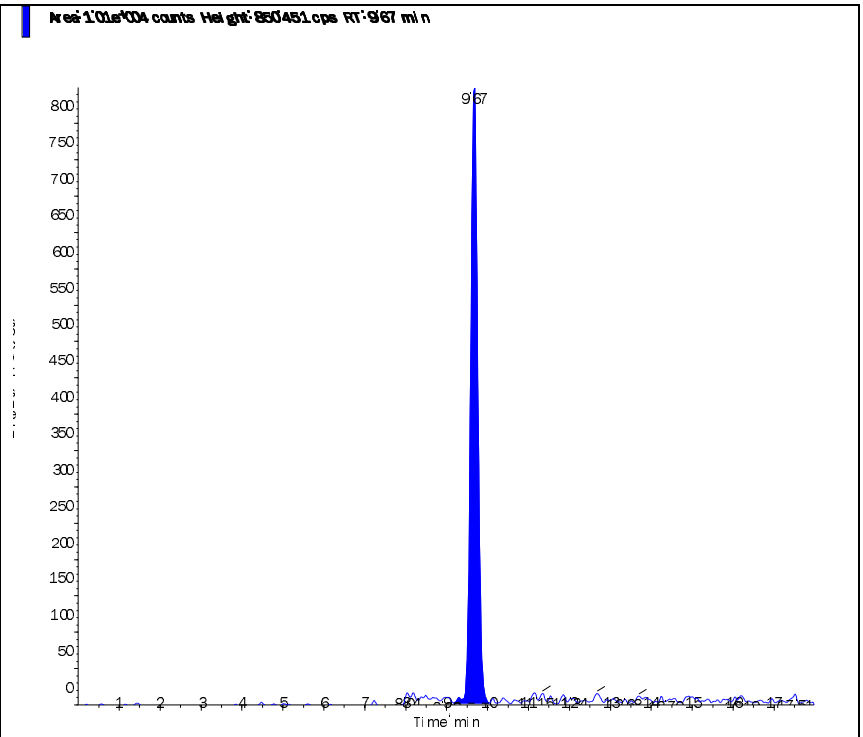
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.52) min
Calculated conc:	0.282 ng/ml
Area Ratio:	0.078
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.48) min
Calculated conc:	0.281 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)



s.dataFile Page 2 of 2

Data File	LM31423.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 10:57:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-07	**Injection Vial**	17.00
Data File	LM31423.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 10:57:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.130e+05	9.70	5.00	-

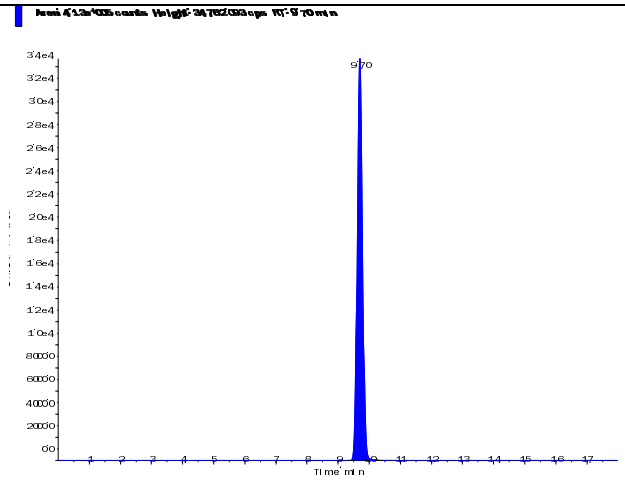
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.860e+03	9.69	N/A	0.0286
Perchlorate conf	1.260e+03	9.67	N/A	0.0297

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

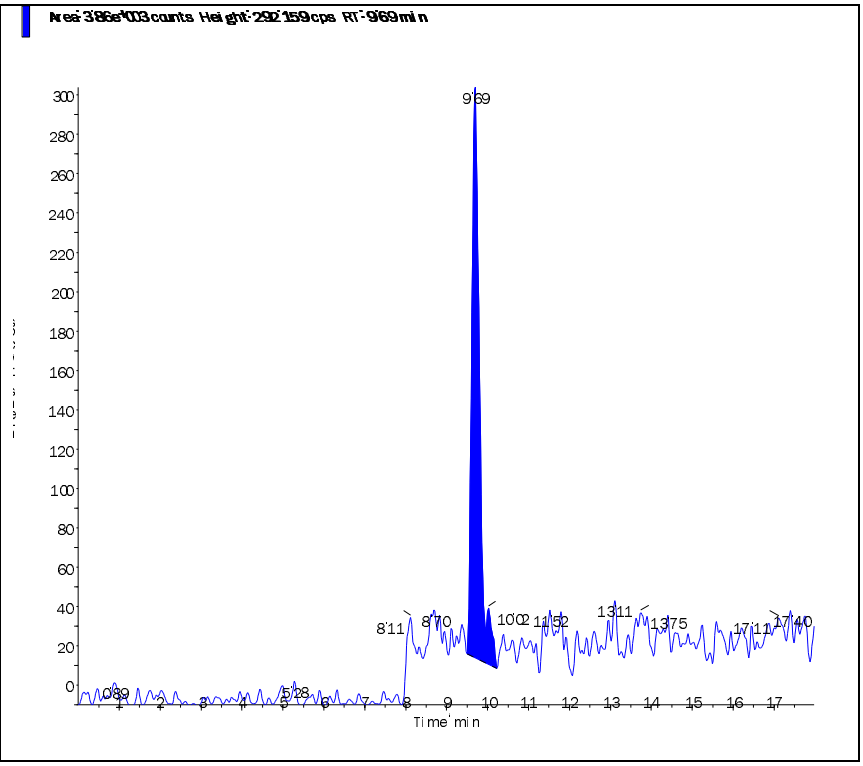
Sample Type: (Unknown)



s.dataFile Page 1 of 2

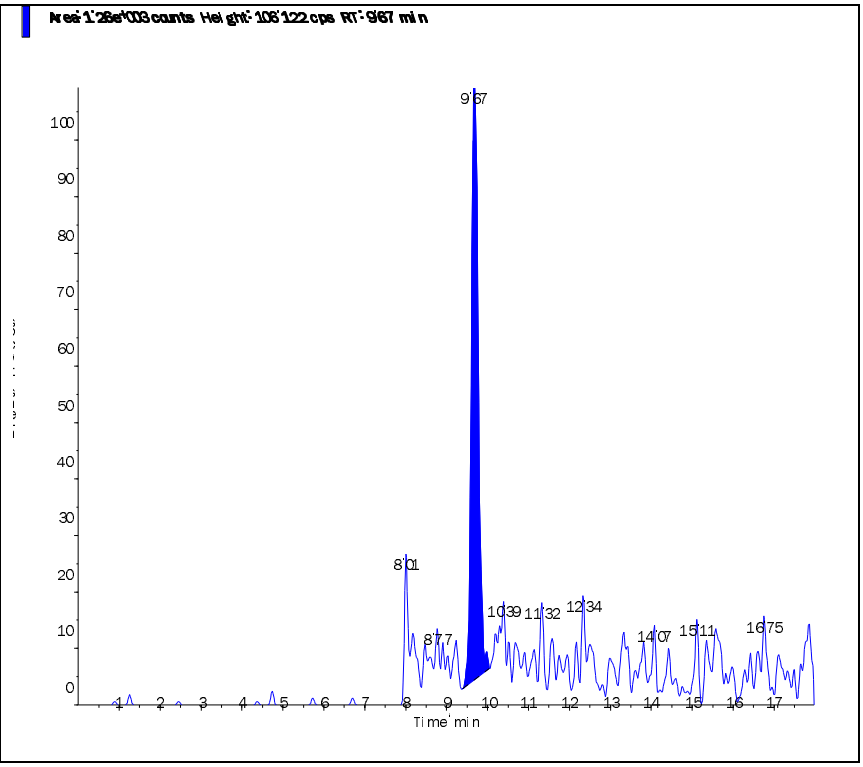
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.52) min
Calculated conc:	0.0286 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.48) min
Calculated conc:	0.0297 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)



Data File	LM31424.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 11:16:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-08	**Injection Vial**	18.00
Data File	LM31424.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 11:16:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.69	5.00	-

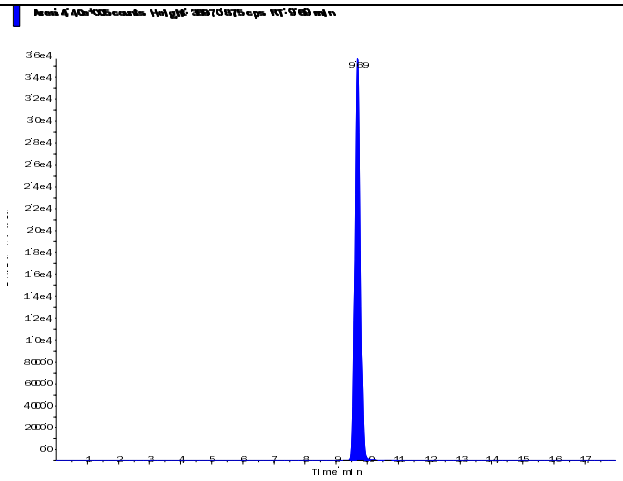
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.70	N/A	0.26
Perchlorate conf	1.100e+04	9.68	N/A	0.291

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

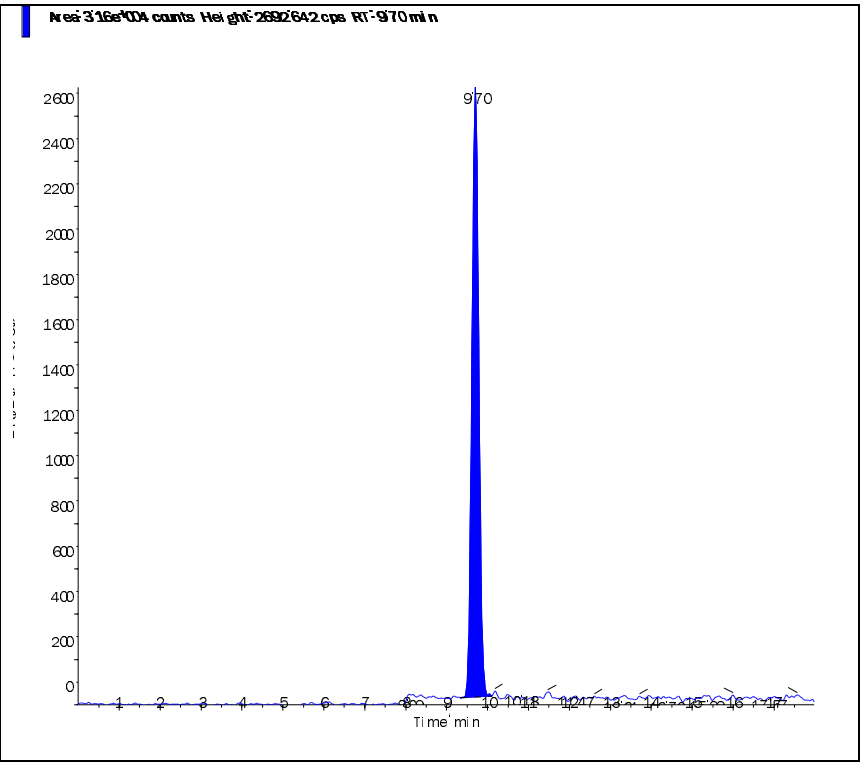
Sample Type: (Unknown)



s.dataFile Page 1 of 2

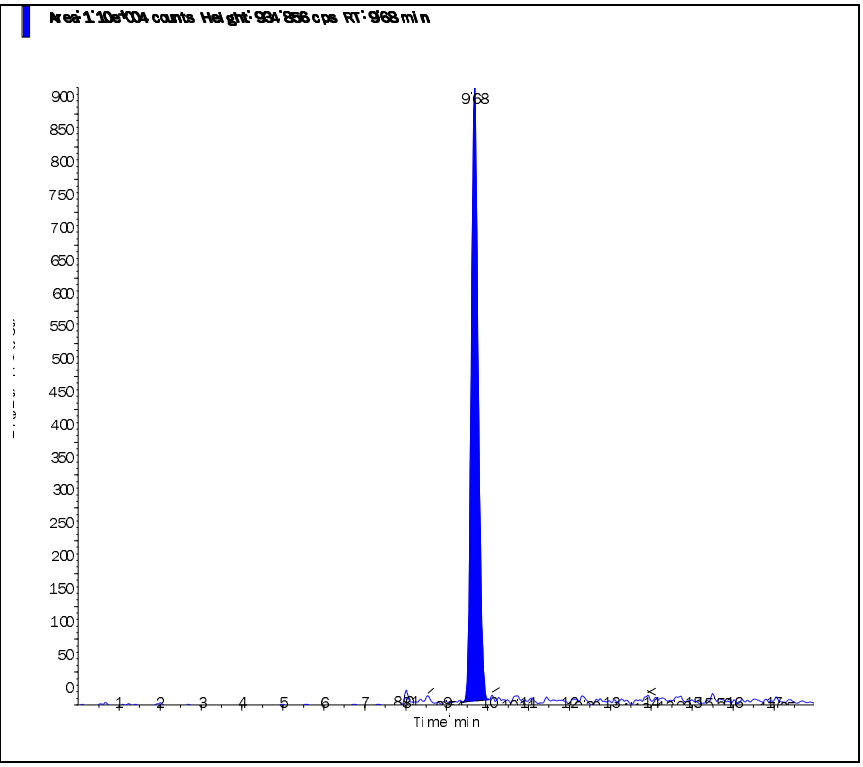
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.52) min
Calculated conc:	0.26 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.48) min
Calculated conc:	0.291 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)



Data File	LM31425.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 11:35:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-09	**Injection Vial**	19.00
Data File	LM31425.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 11:35:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.68	5.00	-

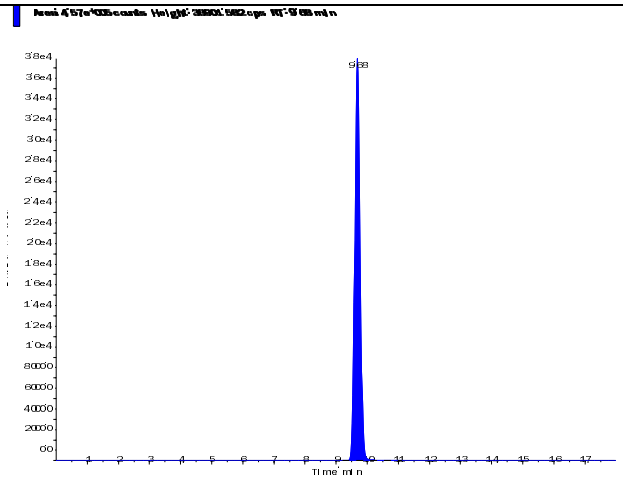
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.520e+03	9.69	N/A	0.063
Perchlorate conf	3.200e+03	9.67	N/A	0.0768

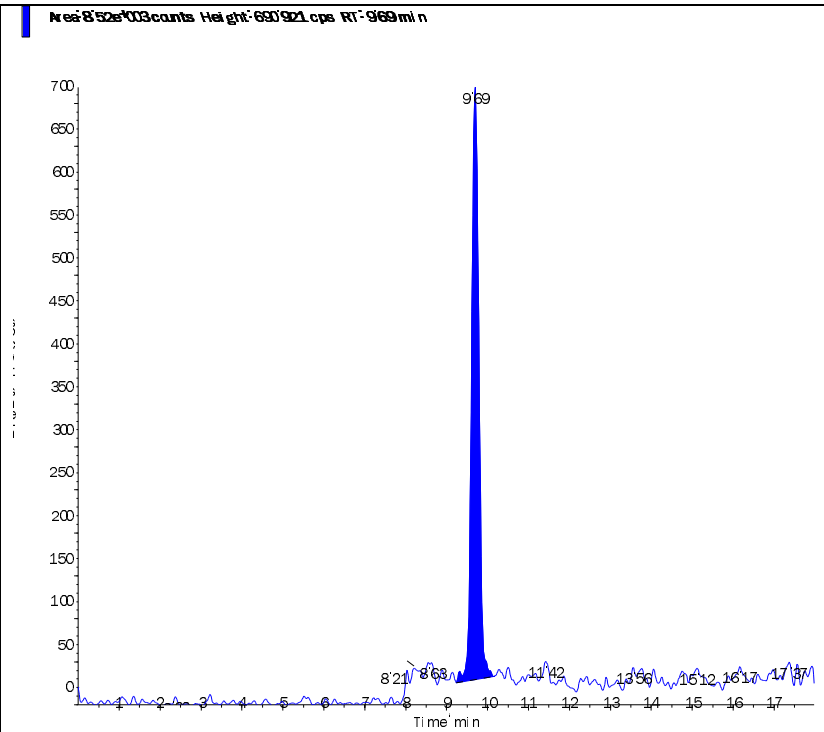
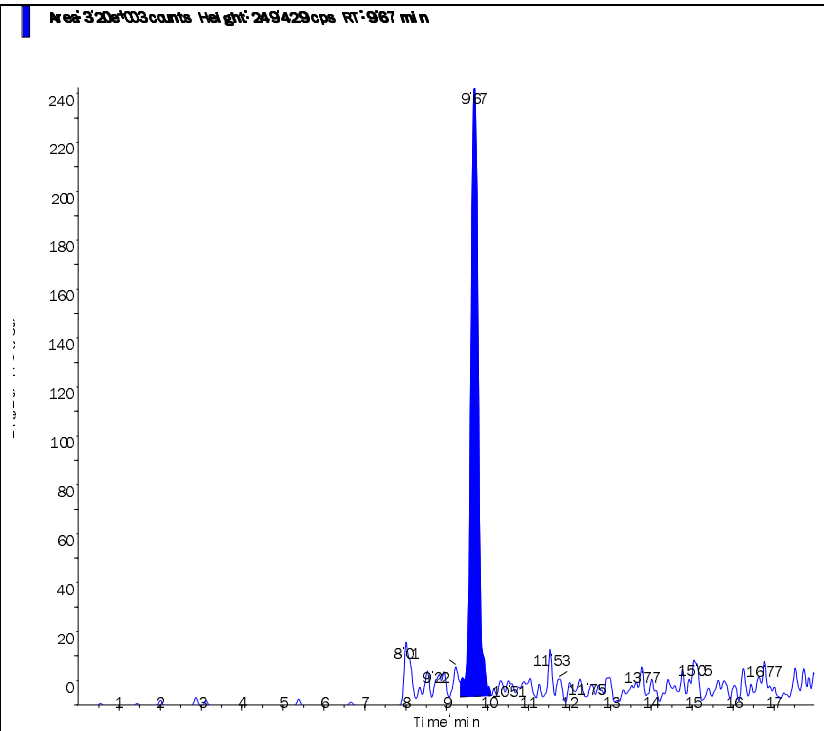
O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)



Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.69 (9.52) min Calculated conc: 0.063 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (9.48) min Calculated conc: 0.0768 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	

Data File	LM31426.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/17/2015 11:54:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-10	**Injection Vial**	20.00
Data File	LM31426.wiff	**Injection Volume**	10.00
Acquisition Date	8/17/2015 11:54:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.69	5.00	-

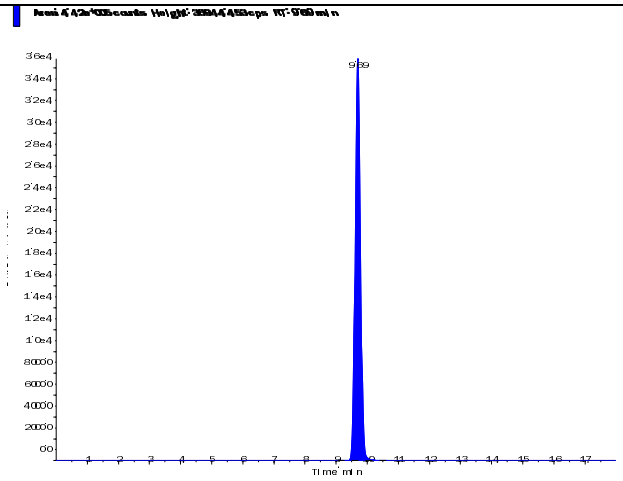
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+03	9.73	N/A	0.0193
Perchlorate conf	1.030e+03	9.68	N/A	0.0213

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

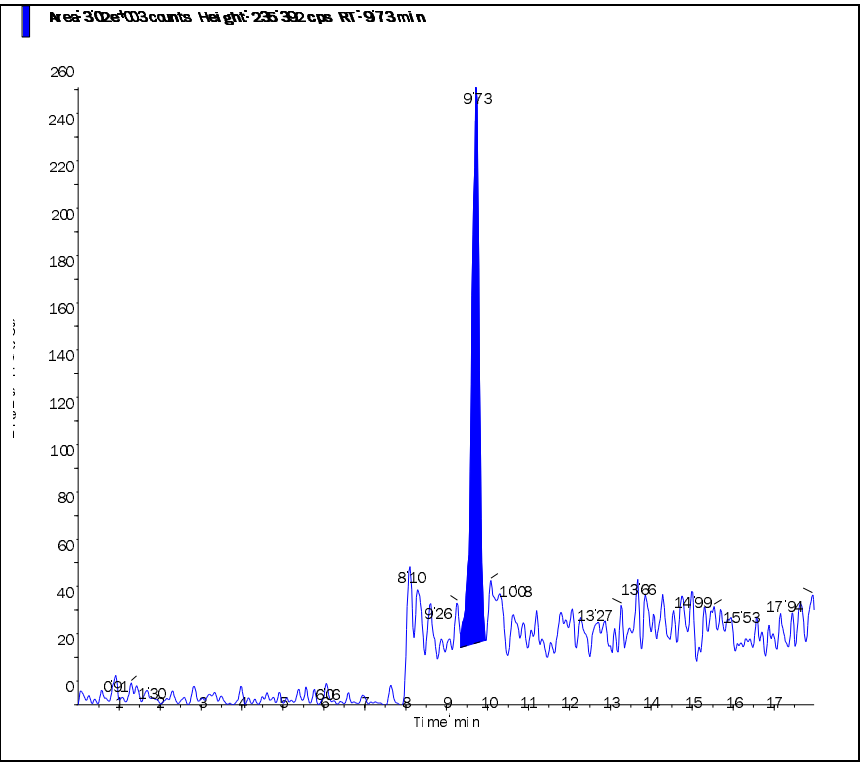
Sample Type: (Unknown)



s.dataFile Page 1 of 2

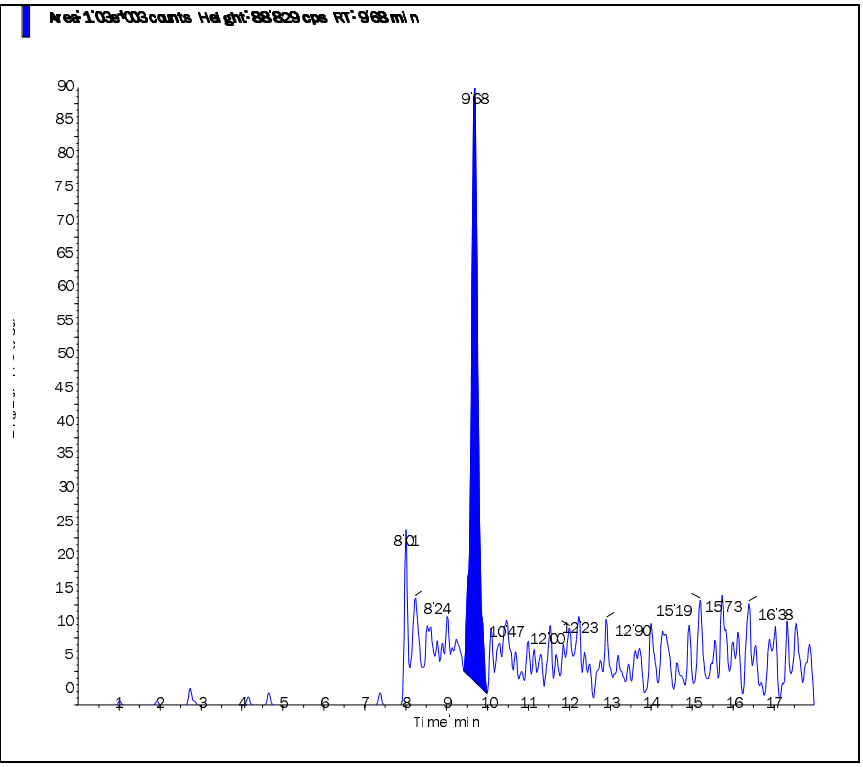
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	0.0193 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.48) min
Calculated conc:	0.0213 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)



s.dataFile Page 2 of 2

Data File	LM31427.wiff	**Result Table**	081715_JWR.rdb
Acquisition Date	8/18/2015 12:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080781-11	**Injection Vial**	21.00
Data File	LM31427.wiff	**Injection Volume**	10.00
Acquisition Date	8/18/2015 12:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	081715_JWR.rdb
Sample ID	L15080781-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.110e+05	9.68	5.00	-

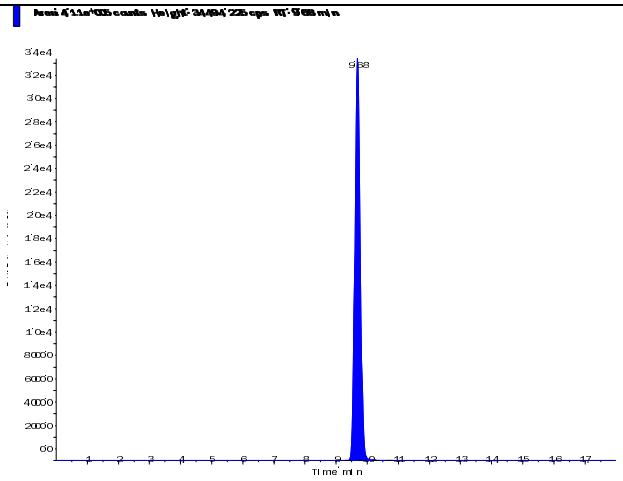
Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.500e+03	9.70	N/A	0.0795
Perchlorate conf	3.030e+03	9.70	N/A	0.0813

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

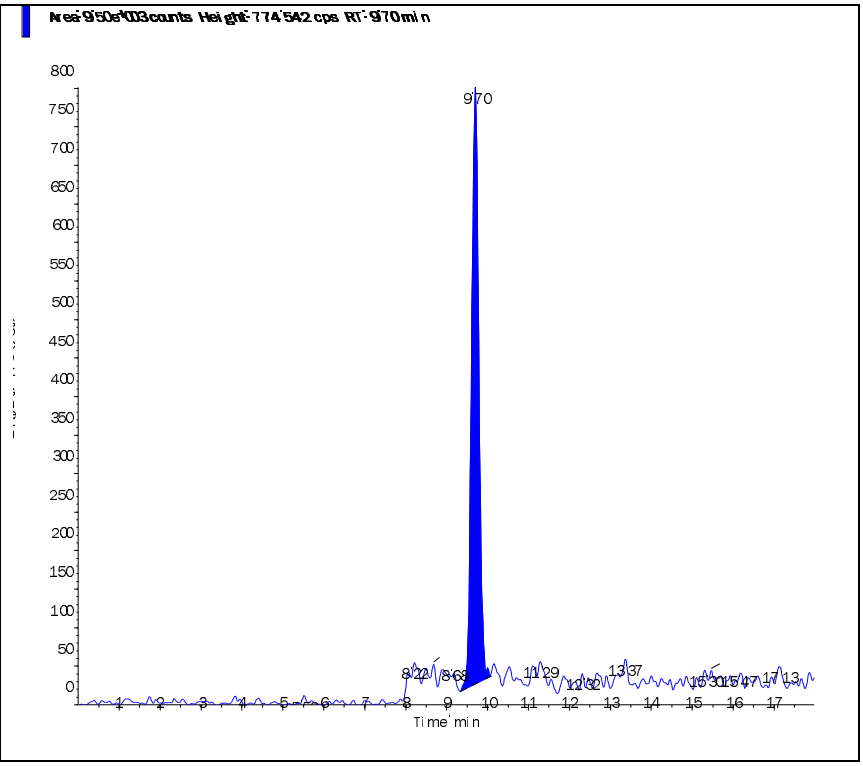
Sample Type: (Unknown)



s.dataFile Page 1 of 2

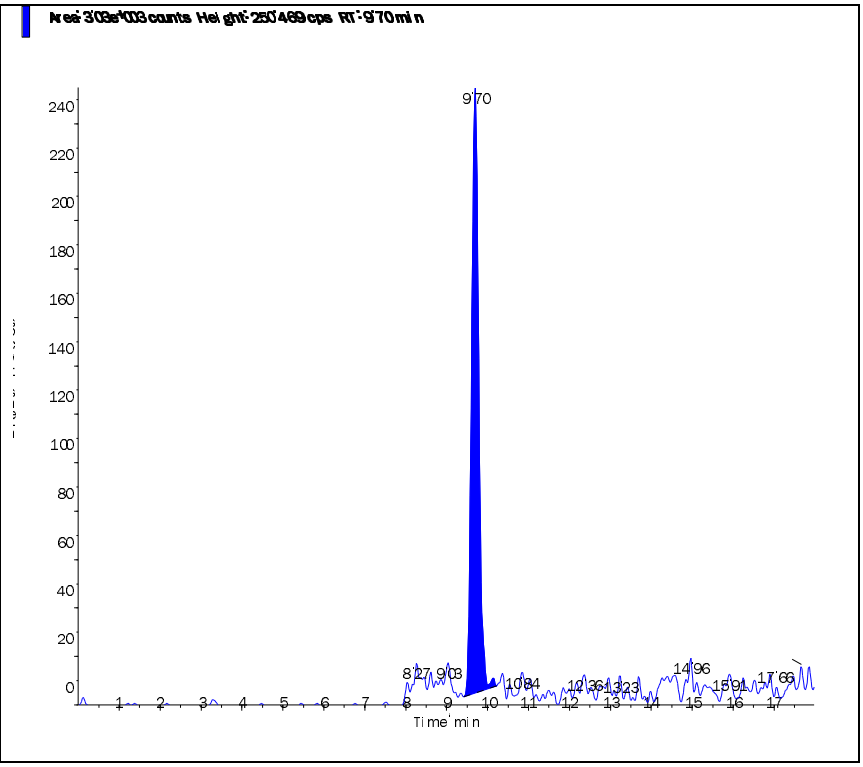
Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.52) min
Calculated conc:	0.0795 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)



Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.0813 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)



s.dataFile Page 2 of 2

2.1 Semivolatiles Data

2.1.2 Explosives (8330B)

2.1.2.1 Summary Data

Login Number: L15080781
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: Tetryl. This is a poor performing analyte. Please see the applicable QC report for a detailed presentation of the failures.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: Recoveries and/or RPDs failed for five analytes due to sample matrix interference in the MS/MSD. Nitroglycerin failed due to the presence of Nitroglycerin in the reference sample. Please see the applicable QC report for a detailed presentation of the failures.

SAMPLES

Samples: Samples 01, 04, 07-09 and 11 were analyzed at dilutions to be within calibration range. All sample results were confirmed by diode array detection.

Surrogates: All acceptance criteria were met. The surrogate summary form for the samples references an incorrect calibration date; however the values are correct.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 103107
Approved By: Wade DeLong

Microbac

Lab Report #: L15080781
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L15080781-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 12:52
Collect Date:	08/13/2015 09:35	**Dilution:**	1	**File ID:**	5L015537.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	96.2

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.254	0.102
1,3-Dinitrobenzene	99-65-0		ND	0.254	0.102
2,4,6-Trinitrotoluene	118-96-7		ND	0.254	0.102
2,4-Dinitrotoluene	121-14-2		ND	0.254	0.102
2,6-Dinitrotoluene	606-20-2		ND	0.254	0.102
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.254	0.102
2-Nitrotoluene	88-72-2		ND	0.254	0.102
3-Nitrotoluene	99-08-1		ND	0.254	0.102
4-Nitrotoluene	99-99-0		ND	0.254	0.102
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.254	0.102
HMX	2691-41-0		ND	0.254	0.102
Nitrobenzene	98-95-3		ND	0.254	0.102
RDX	121-82-4		ND	0.254	0.102
Tetryl	479-45-8		ND	0.254	0.102

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	85.7	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 14:11
Collect Date:	08/13/2015 09:35	**Dilution:**	5	**File ID:**	5L015585.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	96.2

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	13.0		1.27	0.508

Sample #:	L15080781-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 13:14
Collect Date:	08/13/2015 10:05	**Dilution:**	1	**File ID:**	5L015538.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	93.5

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.259	0.104
1,3-Dinitrobenzene	99-65-0		ND	0.259	0.104
2,4,6-Trinitrotoluene	118-96-7		ND	0.259	0.104
2,4-Dinitrotoluene	121-14-2		ND	0.259	0.104
2,6-Dinitrotoluene	606-20-2		ND	0.259	0.104
2-Amino-4,6-dinitrotoluene	35572-78-2	0.140	J	0.259	0.104
2-Nitrotoluene	88-72-2		ND	0.259	0.104
3-Nitrotoluene	99-08-1		ND	0.259	0.104
4-Nitrotoluene	99-99-0		ND	0.259	0.104
4-Amino-2,6-dinitrotoluene	19406-51-0	0.145	J	0.259	0.104
HMX	2691-41-0		ND	0.259	0.104
Nitrobenzene	98-95-3		ND	0.259	0.104
RDX	121-82-4		ND	0.259	0.104
Tetryl	479-45-8		ND	0.259	0.104

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.9	50	150	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 02:26
Collect Date:	08/13/2015 10:05	**Dilution:**	1	**File ID:**	5L015567.F
Sample Tag:	02	**Units:**	mg/kg	**Percent Solid:**	93.5

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	8.05		0.259	0.104

Sample #:	L15080781-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-3	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 13:35
Collect Date:	08/13/2015 10:40	**Dilution:**	1	**File ID:**	5L015539.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.249	0.0995
1,3-Dinitrobenzene	99-65-0		ND	0.249	0.0995
2,4,6-Trinitrotoluene	118-96-7		ND	0.249	0.0995
2,4-Dinitrotoluene	121-14-2		ND	0.249	0.0995
2,6-Dinitrotoluene	606-20-2		ND	0.249	0.0995
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.249	0.0995
2-Nitrotoluene	88-72-2		ND	0.249	0.0995
3-Nitrotoluene	99-08-1		ND	0.249	0.0995
4-Nitrotoluene	99-99-0		ND	0.249	0.0995
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.249	0.0995
HMX	2691-41-0		ND	0.249	0.0995
Nitrobenzene	98-95-3		ND	0.249	0.0995
RDX	121-82-4		ND	0.249	0.0995
Tetryl	479-45-8		ND	0.249	0.0995

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.6	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-3	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 03:05
Collect Date:	08/13/2015 10:40	**Dilution:**	1	**File ID:**	5L015568.F
Sample Tag:	02	**Units:**	mg/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0		ND	0.249	0.0995

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 13:56
Collect Date:	08/13/2015 10:55	**Dilution:**	1	**File ID:**	5L015540.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.246	0.0984
1,3-Dinitrobenzene	99-65-0		ND	0.246	0.0984
2,4,6-Trinitrotoluene	118-96-7		ND	0.246	0.0984
2,4-Dinitrotoluene	121-14-2	0.205	J	0.246	0.0984
2,6-Dinitrotoluene	606-20-2		ND	0.246	0.0984
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.246	0.0984
2-Nitrotoluene	88-72-2		ND	0.246	0.0984
3-Nitrotoluene	99-08-1		ND	0.246	0.0984
4-Nitrotoluene	99-99-0		ND	0.246	0.0984
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.246	0.0984
HMX	2691-41-0	0.129	J	0.246	0.0984
Nitrobenzene	98-95-3		ND	0.246	0.0984
RDX	121-82-4		ND	0.246	0.0984
Tetryl	479-45-8		ND	0.246	0.0984

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	93.0	50	150	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 14:51
Collect Date:	08/13/2015 10:55	**Dilution:**	20	**File ID:**	5L015586.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	53.2		4.92	1.97

Sample #:	L15080781-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4MS	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 14:17
Collect Date:	08/13/2015 10:55	**Dilution:**	1	**File ID:**	5L015541.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	1.07		0.262	0.105
1,3-Dinitrobenzene	99-65-0	1.04		0.262	0.105
2,4,6-Trinitrotoluene	118-96-7	1.90		0.262	0.105
2,4-Dinitrotoluene	121-14-2	1.28		0.262	0.105
2,6-Dinitrotoluene	606-20-2	1.23		0.262	0.105
2-Amino-4,6-dinitrotoluene	35572-78-2	0.787		0.262	0.105
2-Nitrotoluene	88-72-2	1.23		0.262	0.105
3-Nitrotoluene	99-08-1	1.15		0.262	0.105
4-Nitrotoluene	99-99-0	1.17		0.262	0.105
4-Amino-2,6-dinitrotoluene	19406-51-0	1.23		0.262	0.105
HMX	2691-41-0	1.07		0.262	0.105
Nitrobenzene	98-95-3	1.25		0.262	0.105
RDX	121-82-4	1.12		0.262	0.105
Tetryl	479-45-8	0.655		0.262	0.105

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	104	50	150	

Microbac

Lab Report #: L15080781
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L15080781-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4MS	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 05:02
Collect Date:	08/13/2015 10:55	**Dilution:**	1	**File ID:**	5L015571.F
Sample Tag:	02	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	58.4	I	0.262	0.105

I	Semiquantitative result (out of instrument calibration range)

Certificate of Analysis

Sample #:	L15080781-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4MSD	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 05:42
Collect Date:	08/13/2015 10:55	**Dilution:**	1	**File ID:**	5L015572.F
Sample Tag:	02	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	12.5	I	0.249	0.0996

I	Semiquantitative result (out of instrument calibration range)

Certificate of Analysis

Sample #:	L15080781-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-4MSD	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 14:38
Collect Date:	08/13/2015 10:55	**Dilution:**	1	**File ID:**	5L015542.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	90.9

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4	0.920		0.249	0.0996
1,3-Dinitrobenzene	99-65-0	0.877		0.249	0.0996
2,4,6-Trinitrotoluene	118-96-7	1.37		0.249	0.0996
2,4-Dinitrotoluene	121-14-2	1.11		0.249	0.0996
2,6-Dinitrotoluene	606-20-2	1.06		0.249	0.0996
2-Amino-4,6-dinitrotoluene	35572-78-2	1.03		0.249	0.0996
2-Nitrotoluene	88-72-2	1.05		0.249	0.0996
3-Nitrotoluene	99-08-1	1.64		0.249	0.0996
4-Nitrotoluene	99-99-0	1.02		0.249	0.0996
4-Amino-2,6-dinitrotoluene	19406-51-0	1.26		0.249	0.0996
HMX	2691-41-0	0.954		0.249	0.0996
Nitrobenzene	98-95-3	1.11		0.249	0.0996
RDX	121-82-4	0.930		0.249	0.0996
Tetryl	479-45-8	0.529		0.249	0.0996

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	99.8	50	150	

Sample #:	L15080781-07	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-5	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 14:59
Collect Date:	08/13/2015 11:10	**Dilution:**	1	**File ID:**	5L015543.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.255	0.102
1,3-Dinitrobenzene	99-65-0		ND	0.255	0.102
2,4,6-Trinitrotoluene	118-96-7		ND	0.255	0.102
2,4-Dinitrotoluene	121-14-2		ND	0.255	0.102
2,6-Dinitrotoluene	606-20-2		ND	0.255	0.102
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.255	0.102
2-Nitrotoluene	88-72-2		ND	0.255	0.102

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
3-Nitrotoluene	99-08-1		ND	0.255	0.102
4-Nitrotoluene	99-99-0		ND	0.255	0.102
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.255	0.102
HMX	2691-41-0		ND	0.255	0.102
Nitrobenzene	98-95-3		ND	0.255	0.102
RDX	121-82-4		ND	0.255	0.102
Tetryl	479-45-8		ND	0.255	0.102

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	92.8	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-07	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-5	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 15:30
Collect Date:	08/13/2015 11:10	**Dilution:**	20	**File ID:**	5L015587.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	57.6		5.10	2.04

Sample #:	L15080781-08	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-6	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 15:20
Collect Date:	08/13/2015 11:35	**Dilution:**	1	**File ID:**	5L015544.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	81.3

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.250	0.0998
1,3-Dinitrobenzene	99-65-0		ND	0.250	0.0998
2,4,6-Trinitrotoluene	118-96-7		ND	0.250	0.0998
2,4-Dinitrotoluene	121-14-2	0.313		0.250	0.0998
2,6-Dinitrotoluene	606-20-2		ND	0.250	0.0998
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.250	0.0998
2-Nitrotoluene	88-72-2		ND	0.250	0.0998
3-Nitrotoluene	99-08-1		ND	0.250	0.0998
4-Nitrotoluene	99-99-0		ND	0.250	0.0998
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.250	0.0998
HMX	2691-41-0		ND	0.250	0.0998
Nitrobenzene	98-95-3		ND	0.250	0.0998
RDX	121-82-4		ND	0.250	0.0998
Tetryl	479-45-8		ND	0.250	0.0998

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	90.7	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-08	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-6	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 16:09
Collect Date:	08/13/2015 11:35	**Dilution:**	20	**File ID:**	5L015588.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	81.3

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	48.5		4.99	2.00

Sample #:	L15080781-09	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-7	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 16:02
Collect Date:	08/13/2015 11:50	**Dilution:**	1	**File ID:**	5L015546.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	92.1

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.250	0.0999
1,3-Dinitrobenzene	99-65-0		ND	0.250	0.0999
2,4,6-Trinitrotoluene	118-96-7		ND	0.250	0.0999
2,4-Dinitrotoluene	121-14-2		ND	0.250	0.0999
2,6-Dinitrotoluene	606-20-2		ND	0.250	0.0999
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.250	0.0999
2-Nitrotoluene	88-72-2		ND	0.250	0.0999
3-Nitrotoluene	99-08-1		ND	0.250	0.0999
4-Nitrotoluene	99-99-0		ND	0.250	0.0999
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.250	0.0999
HMX	2691-41-0		ND	0.250	0.0999
Nitrobenzene	98-95-3		ND	0.250	0.0999
RDX	121-82-4		ND	0.250	0.0999
Tetryl	479-45-8		ND	0.250	0.0999

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	86.8	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-09	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-7	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 16:48
Collect Date:	08/13/2015 11:50	**Dilution:**	5	**File ID:**	5L015589.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	92.1

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	10.2		1.25	0.500

Sample #:	L15080781-10	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-8	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 16:24
Collect Date:	08/13/2015 12:10	**Dilution:**	1	**File ID:**	5L015547.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	95.9

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.255	0.102
1,3-Dinitrobenzene	99-65-0		ND	0.255	0.102
2,4,6-Trinitrotoluene	118-96-7		ND	0.255	0.102
2,4-Dinitrotoluene	121-14-2		ND	0.255	0.102
2,6-Dinitrotoluene	606-20-2		ND	0.255	0.102
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.255	0.102
2-Nitrotoluene	88-72-2		ND	0.255	0.102
3-Nitrotoluene	99-08-1		ND	0.255	0.102
4-Nitrotoluene	99-99-0		ND	0.255	0.102
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.255	0.102
HMX	2691-41-0		ND	0.255	0.102
Nitrobenzene	98-95-3		ND	0.255	0.102
RDX	121-82-4		ND	0.255	0.102
Tetryl	479-45-8		ND	0.255	0.102

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	87.9	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-10	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-8	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 08:18
Collect Date:	08/13/2015 12:10	**Dilution:**	1	**File ID:**	5L015576.F
Sample Tag:	02	**Units:**	mg/kg	**Percent Solid:**	95.9

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	0.549		0.255	0.102

Sample #:	L15080781-11	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-X	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 16:45
Collect Date:	08/13/2015 11:55	**Dilution:**	1	**File ID:**	5L015548.F
Sample Tag:	01	**Units:**	mg/kg	**Percent Solid:**	92.8

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	0.251	0.101
1,3-Dinitrobenzene	99-65-0		ND	0.251	0.101
2,4,6-Trinitrotoluene	118-96-7		ND	0.251	0.101
2,4-Dinitrotoluene	121-14-2		ND	0.251	0.101
2,6-Dinitrotoluene	606-20-2		ND	0.251	0.101
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.251	0.101
2-Nitrotoluene	88-72-2		ND	0.251	0.101
3-Nitrotoluene	99-08-1		ND	0.251	0.101
4-Nitrotoluene	99-99-0		ND	0.251	0.101
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.251	0.101
HMX	2691-41-0		ND	0.251	0.101
Nitrobenzene	98-95-3		ND	0.251	0.101
RDX	121-82-4		ND	0.251	0.101
Tetryl	479-45-8		ND	0.251	0.101

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	90.3	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080781-11	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	PAD-X	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 17:27
Collect Date:	08/13/2015 11:55	**Dilution:**	5	**File ID:**	5L015590.F
Sample Tag:	DL01	**Units:**	mg/kg	**Percent Solid:**	92.8

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	11.3		1.26	0.503

2.1.2.2 QC Summary Data

Example 8330 Calculations

Sample Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot (y = mx + b)

y = response of analyte as area (from quantitation report)
x = concentration analyte
m = slope from curve
b = intercept from curve

Step 2: Retrieve y from quantitation report

Step 3: Retreive extraction data from logsheet

Vf = Final extract volume (mL)
Vi = Initial vome of sample (mL) or initial weight (g)

Step 4: Solve for concentration in extract (x):

x = (y - b)/m = [(7.774 -(- 0.04773)]/ 0.1711 = 45.2

Step 5: Solve for analyte concentration in sample (Cx):

Cx = (x) (Vf /Vi)

Example CCV Calculation: **(Vf/Vi) = 1**
HMX

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Concentration (ug/L):	45.16830115

Example Water Calculation:

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Volume of extract (mL):	10.00
Volume of sample extracted (mL):	1000.00
Concentration (ug/L):	0.451683011

Example Soil Calculation:
1,3,5-Trinitrobenzene

Slope from curve, m:	0.411263
Intercept from curve, b:	-0.0850241
Area of analyte, y:	20.26089
Volume of extract (mL):	20.00
Weight of sample extracted (g):	2.00
Concentration (ug/kg):	494.7178351
Concentration (mg/kg):	0.494717835

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG535785
Analyst: RAH
Spike Analyst: RAH
Method: METHOD
Run Date: 08/20/2015 14:08
SOP: EXTNT02 Revison 12
Spike Witness: JDH
Surr Solution: STD68828

TIME ON: 15:20 OFF: 09:20 ON: _____ OFF: _____
Acetonitrile Lot #: COA18404
WATER Lot #: COA18284

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L15080781-01	SAMP		8330-SPE		9.84 g	1 mL			40 mL	Transparent
2	L15080781-02	SAMP		8330-SPE		9.65 g	1 mL			40 mL	Transparent
3	L15080781-03	SAMP		8330-SPE		10.05 g	1 mL			40 mL	Transparent
4	L15080781-04	RS01		8330-SPE		10.16 g	1 mL			40 mL	Transparent
5	L15080781-05	MS01	L15080781-04	8330-SPE		9.53 g	1 mL	1 mL	STD71678	40 mL	Transparent
6	L15080781-06	SD01	L15080781-04	8330-SPE		10.04 g	1 mL	1 mL	STD71678	40 mL	Transparent
7	L15080781-07	SAMP		8330-SPE		9.81 g	1 mL			40 mL	Transparent
8	L15080781-08	SAMP		8330-SPE		10.02 g	1 mL			40 mL	Transparent
9	L15080781-09	SAMP		8330-SPE		10.01 g	1 mL			40 mL	Transparent
10	L15080781-10	SAMP		8330-SPE		9.82 g	1 mL			40 mL	Transparent
11	L15080781-11	SAMP		8330-SPE		9.95 g	1 mL			40 mL	Transparent
12	L15080782-01	SAMP		8330-SPE		9.94 g	1 mL			40 mL	Transparent
13	L15080782-02	SAMP		8330-SPE		10.13 g	1 mL			40 mL	Transparent
14	L15080782-03	SAMP		8330-SPE		10.1 g	1 mL			40 mL	Transparent
15	L15080782-04	SAMP		8330-SPE		9.92 g	1 mL			40 mL	Transparent
16	L15080782-05	SAMP		8330-SPE		10.42 g	1 mL			40 mL	Transparent
17	L15080782-06	SAMP		8330-SPE		10.01 g	1 mL			40 mL	Transparent
18	WG535785-01	BLANK		8330-SPE		10 g	1 mL			40 mL	Transparent
19	WG535785-02	LCS		8330-SPE		10 g	1 mL	1 mL	STD71678	40 mL	Transparent
20	WG535785-03	REF	L15080781-04	8330-SPE		10.16 g	1 mL			40 mL	Transparent
21	WG535785-04	MS	L15080781-04	8330-SPE		9.53 g	1 mL	1 mL	STD71678	40 mL	Transparent
22	WG535785-05	MSD	L15080781-04	8330-SPE		10.04 g	1 mL	1 mL	STD71678	40 mL	Transparent

CTRL TEMP ON@ 2.3C, OFF@ 2.3C

BATH TEMP ON@ 11C, OFF@ 18C

Analyst: _____

Reviewer: _____

EXTRACT - Modified 01/23/2009
PDF ID: 4347634
Report generated: 08/21/2015 15:35

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 072815
Analyst1: JWR Analyst2: NA
Method: 8330PLUS-PETN SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: NA
Eluent ID#:

Column 1 ID: KINETEX 5UM C18 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: NA Surrogate STD: COA17825 Calibration STD STD71667 (07/28/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG532973 : Alternate Source STD71668
Analytical Column : Kinetex 5um C18 100A (250x4.6mm)
Phenomenex S/N 764987-2
Analytes : 8330-MixA, 8330-MixB, PETN and Surr(1,2-DNB)

Nitroglycerin is not resolved from TNT on the 210nm signal using this Analytical Column. Nitroglycerin will be analyzed separately using the Phenomenex Ultracarb 5um ODS(20) Analytical Column.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015170.F	WG532973-01 STD	1	1	STD71667	07/28/15 17:04
2	5L015171.F	WG532973-02 STD	1	1	STD71667	07/28/15 17:25
3	5L015172.F	WG532973-03 STD-CCV	1	1	STD71667	07/28/15 17:46
4	5L015173.F	WG532973-04 STD	1	1	STD71667	07/28/15 18:07
5	5L015174.F	WG532973-05 STD	1	1	STD71667	07/28/15 18:28
6	5L015175.F	WG532973-06 STD	1	1	STD71667	07/28/15 18:49
7	5L015176.F	WG532973-07 SSCV	1	1	STD71668	07/28/15 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 11-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 072915
Analyst1: JWR Analyst2: NA
Method: 8330-NG SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: NA
Eluent ID#:

Column 1 ID: ULTRACARB 5UM ODS Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: NA Surrogate STD: COA17825 Calibration STD STD71667 (07/29/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533611 : Alternate Source STD71668
Analytical Column : Ultracarb 5um ODS (20) 90A (250x4.6mm)
Phenomenex S/N 740424-1
Analytes : Nitroglycerin and Surr(1,2-DNB) Only

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015180.F	WG533611-01 STD	1	1	STD71667	07/29/15 17:27
2	5L015181.F	WG533611-02 STD	1	1	STD71667	07/29/15 18:06
3	5L015182.F	WG533611-03 STD-CCV	1	1	STD71667	07/29/15 18:45
4	5L015183.F	WG533611-04 STD	1	1	STD71667	07/29/15 19:24
5	5L015184.F	WG533611-05 STD	1	1	STD71667	07/29/15 20:03
6	5L015185.F	WG533611-06 STD	1	1	STD71667	07/29/15 20:42
7	5L015186.F	WG533611-07 SSCV	1	1	STD71668	07/29/15 21:21

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 11-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:

Workgroups: Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB

Internal STD: NA Surrogate STD: STD68828 Calibration STD
CCV STD: STD71667 LCS STD: STD71678 MS/MSD STD: STD71678

Comments: Pressure = 166 bar

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015534.F	WG536240-01 8330 CCV 500 PPB	1	1	STD71667	08/24/15 11:35
2	5L015535.F	WG535785-01 BLANK	7	1		08/24/15 12:10
3	5L015536.F	WG535785-02 LCS	7	1		08/24/15 12:31
4	5L015537.F	L15080781-01 8330-SPE	7	1		08/24/15 12:52
5	5L015538.F	L15080781-02 8330-SPE	7	1		08/24/15 13:14
6	5L015539.F	L15080781-03 8330-SPE	7	1		08/24/15 13:35
49	5L015540.F	L15080781-04 8330-SPE	7	1		08/24/15 13:56
50	5L015541.F	L15080781-05 8330-SPE	7	1		08/24/15 14:17
51	5L015542.F	L15080781-06 8330-SPE	7	1		08/24/15 14:38
10	5L015543.F	L15080781-07 8330-SPE	7	1		08/24/15 14:59
11	5L015544.F	L15080781-08 8330-SPE	7	1		08/24/15 15:20
12	5L015545.F	WG536240-02 8330 CCV 500 PPB	1	1	STD71667	08/24/15 15:41
13	5L015546.F	L15080781-09 8330-SPE	7	1		08/24/15 16:02
14	5L015547.F	L15080781-10 8330-SPE	7	1		08/24/15 16:24
15	5L015548.F	L15080781-11 8330-SPE	7	1		08/24/15 16:45
16	5L015549.F	L15080782-01	7	1		08/24/15 17:06
17	5L015550.F	L15080782-02	7	1		08/24/15 17:27
18	5L015551.F	L15080782-03	7	1		08/24/15 17:48
19	5L015552.F	L15080782-04	7	1		08/24/15 18:09
20	5L015553.F	L15080782-05	7	1		08/24/15 18:30
21	5L015554.F	L15080782-06	7	1		08/24/15 18:51
22	5L015555.F	Solvent Rinse	1	1	STD71667	08/24/15 19:12
23	5L015556.F	WG536240-03 8330 CCV 500 PPB	1	1	STD71667	08/24/15 19:33
24	5L015557.F	Solvent Rinse	1	1	STD71667	08/24/15 19:55
25	5L015558.F	Solvent Rinse	1	1	STD71667	08/24/15 20:34
26	5L015559.F	WG536240-04 8330 CCV 500 PPB	1	1	STD71667	08/24/15 21:13
27	5L015560.F	WG535784-01 BLANK	1	1	STD71667	08/24/15 21:52
28	5L015561.F	WG535784-02 LCS	1	1	STD71667	08/24/15 22:31
29	5L015562.F	WG535784-03 LCS2	1	1	STD71667	08/24/15 23:11
30	5L015563.F	L15080772-01 8330-SPE	1	1	STD71667	08/24/15 23:50
31	5L015564.F	WG535785-01 BLANK	7	1		08/25/15 00:29
32	5L015565.F	WG535785-02 LCS	7	1		08/25/15 01:08
33	5L015566.F	L15080781-01 8330-SPE	7	1		08/25/15 01:47

Page: 1 Approved: 26-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:
Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB
Workgroups:
Internal STD: NA Surrogate STD: STD68828
CCV STD: STD71667 LCS STD: STD71678 STD71678

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	5L015567.F	L15080781-02 8330-SPE	7	1		08/25/15 02:26
35	5L015568.F	L15080781-03 8330-SPE	7	1		08/25/15 03:05
68	5L015569.F	L15080781-04 8330-SPE	7	1		08/25/15 03:44
37	5L015570.F	WG536240-05 8330 CCV 500 PPB	1	1	STD71667	08/25/15 04:23
69	5L015571.F	L15080781-05 8330-SPE	7	1		08/25/15 05:02
70	5L015572.F	L15080781-06 8330-SPE	7	1		08/25/15 05:42
40	5L015573.F	L15080781-07 8330-SPE	7	1		08/25/15 06:21
41	5L015574.F	L15080781-08 8330-SPE	7	1		08/25/15 07:00
42	5L015575.F	L15080781-09 8330-SPE	7	1		08/25/15 07:39
43	5L015576.F	L15080781-10 8330-SPE	7	1		08/25/15 08:18
44	5L015577.F	L15080781-11 8330-SPE	7	1		08/25/15 08:57
45	5L015578.F	L15080782-01	7	1		08/25/15 09:36
46	5L015579.F	L15080782-02	7	1		08/25/15 10:15
47	5L015580.F	L15080782-03	7	1		08/25/15 10:54
48	5L015581.F	WG536240-06 8330 CCV 500 PPB	1	1	STD71667	08/25/15 11:33
55	5L015582.F	L15080782-04	7	1		08/25/15 12:14
56	5L015583.F	L15080782-05	7	1		08/25/15 12:53
57	5L015584.F	L15080782-06	7	1		08/25/15 13:32
58	5L015585.F	L15080781-01 5x	7	5		08/25/15 14:11
71	5L015586.F	L15080781-04 8330-SPE	7	20		08/25/15 14:51
60	5L015587.F	L15080781-07 20x	7	20		08/25/15 15:30
61	5L015588.F	L15080781-08 20x	7	20		08/25/15 16:09
62	5L015589.F	L15080781-09 5x	7	5		08/25/15 16:48
63	5L015590.F	L15080781-11 5x	7	5		08/25/15 17:27
64	5L015591.F	L15080782-02 20x	7	20		08/25/15 18:06
65	5L015592.F	WG536240-07 8330 CCV 500 PPB	1	1	STD71667	08/25/15 18:45
66	5L015593.F	L15080782-05 5x	7	5		08/25/15 19:24
67	5L015594.F	WG536240-08 8330 CCV 500 PPB	1	1	STD71667	08/25/15 20:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
50				
	L15080781-05 MS: 2,4,6-TNT failed high and 2-A-4,6-DNT failed low due to SMI.			
51				
	L15080781-06 MSD: 3 analytes failed high due to SMI.			
12				

Page: 2 Approved: 26-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:

Workgroups: Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB

Internal STD: NA Surrogate STD: STD68828
CCV STD: STD71667 LCS STD: STD71678 STD71678

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	WG536240-02 8330 CCV 500 PPB: PETN failed high. Non target analyte.			
23				
	WG536240-03 8330 CCV 500 PPB: Tetryl failed low.			
33	X	5	Over Calibration Range	Nitroglycerin
	L15080781-01			
68	X	20	Over Calibration Range	Nitroglycerin
	L15080781-04			
69				
	L15080781-05 MS: Nitroglycerin (NG) failed high due to the presence of NG in the reference sample.			
70				
	L15080781-05 MS: Nitroglycerin (NG) failed low due to the presence of NG in the reference sample.			
40	X	20	Over Calibration Range	Nitroglycerin
	L15080781-07			
41	X	20	Over Calibration Range	Nitroglycerin
	L15080781-08			
42	X	5	Over Calibration Range	Nitroglycerin
	L15080781-09			
44	X	5	Over Calibration Range	Nitroglycerin
	L15080781-11			
46	X	20	Over Calibration Range	Nitroglycerin
	L15080782-02			
56	X	5	Over Calibration Range	Nitroglycerin
	L15080782-05			

Page: 3 Approved: 26-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUL-2015
Analyst: JWR
Analyst: NA
Method: 8330PLUS-PETN
Instrument: HPLC5
Curve Workgroup: WG532973
Runlog ID: 69487
Analytical Workgroups: ICAL-ONLY (MIXA, MIXB, PETN & SURR)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	173 BAR
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
31-JUL-2015
John Richards

Secondary Reviewer:
11-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2015 15:14:29

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2015
Analyst: JWR
Analyst: NA
Method: 8330-NG
Instrument: HPLC5
Curve Workgroup: WG533611
Runlog ID: 69576
Analytical Workgroups: ICAL-ONLY (NITROGLYCERIN & SURR)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	172 BAR
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
03-AUG-2015
John Richards

Secondary Reviewer:
11-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-12-2015 16:14:25

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: ECL
Analyst: NA
Method: 8330
Instrument: HPLC5
Curve Workgroup: NA
Runlog ID: 70031
Analytical Workgroups: L15080772, L15080781, L15080782

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ECL
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
26-AUG-2015

Secondary Reviewer:
26-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-26-2015 11:16:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8330B

AAB#: WG536214

Login Number: L15080781

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
PAD-1	01	08/13/15					08/20/2015	7.2	14		08/24/15	3.9	40	
PAD-1	01	08/13/15					08/20/2015	7.2	14		08/25/15	5	40	
PAD-2	02	08/13/15					08/20/2015	7.2	14		08/25/15	4.5	40	
PAD-2	02	08/13/15					08/20/2015	7.2	14		08/24/15	4	40	
PAD-3	03	08/13/15					08/20/2015	7.1	14		08/24/15	4	40	
PAD-3	03	08/13/15					08/20/2015	7.1	14		08/25/15	4.5	40	
PAD-4	04	08/13/15					08/20/2015	7.1	14		08/25/15	5	40	
PAD-4	04	08/13/15					08/20/2015	7.1	14		08/24/15	4	40	
PAD-4MS	05	08/13/15					08/20/2015	7.1	14		08/24/15	4	40	
PAD-4MS	05	08/13/15					08/20/2015	7.1	14		08/25/15	4.6	40	
PAD-4MSD	06	08/13/15					08/20/2015	7.1	14		08/24/15	4	40	
PAD-4MSD	06	08/13/15					08/20/2015	7.1	14		08/25/15	4.6	40	
PAD-5	07	08/13/15					08/20/2015	7.1	14		08/24/15	4	40	
PAD-5	07	08/13/15					08/20/2015	7.1	14		08/25/15	5.1	40	
PAD-6	08	08/13/15					08/20/2015	7.1	14		08/25/15	5.1	40	
PAD-6	08	08/13/15					08/20/2015	7.1	14		08/24/15	4.1	40	
PAD-7	09	08/13/15					08/20/2015	7.1	14		08/24/15	4.1	40	
PAD-7	09	08/13/15					08/20/2015	7.1	14		08/25/15	5.1	40	
PAD-8	10	08/13/15					08/20/2015	7.1	14		08/25/15	4.8	40	
PAD-8	10	08/13/15					08/20/2015	7.1	14		08/24/15	4.1	40	
PAD-X	11	08/13/15					08/20/2015	7.1	14		08/24/15	4.1	40	
PAD-X	11	08/13/15					08/20/2015	7.1	14		08/25/15	5.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4352054
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080781
Instrument Id: HPLC5
Workgroup (AAB#): WG536214

Method: 8330
CAL ID: HPLC5-28-JUL-15
Matrix: Soil

Sample Number	Dilution	Tag	1
WG535785-01	1.00	01	91.2
WG535785-02	1.00	01	101

Surrogates	Surrogate Limits		
1 - 1,2-Dinitrobenzene	50	-	150

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4352062
Report generated: 08/26/2015 11:30

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080781
Instrument Id: HPLC5
Workgroup (AAB#): WG536214

Method: 8330
CAL ID: HPLC5-29-JUL-15
Matrix: Soil

Sample Number	Dilution	Tag	1
L15080781-01	1.00	01	85.7
L15080781-02	1.00	01	91.9
L15080781-03	1.00	01	91.6
L15080781-04	1.00	01	93.0
L15080781-05	1.00	01	104
L15080781-06	1.00	01	99.8
L15080781-07	1.00	01	92.8
L15080781-08	1.00	01	90.7
L15080781-09	1.00	01	86.8
L15080781-10	1.00	01	87.9
L15080781-11	1.00	01	90.3

Surrogates	Surrogate Limits		
1 - 1,2-Dinitrobenzene	50	-	150

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4352062
Report generated: 08/26/2015 11:30

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L15080781
Blank File ID: 5L015535.F
Prep Date: 08/20/15 14:08
Analyzed Date: 08/24/15 12:10
Analyst: ECL

Work Group: WG536214
Blank Sample ID: WG535785-01
Instrument ID: HPLC5
Method: 8330B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535785-02	5L015536.F	08/24/15 12:31	01
PAD-1	L15080781-01	5L015537.F	08/24/15 12:52	01
PAD-2	L15080781-02	5L015538.F	08/24/15 13:14	01
PAD-3	L15080781-03	5L015539.F	08/24/15 13:35	01
PAD-4	L15080781-04	5L015540.F	08/24/15 13:56	01
PAD-4MS	L15080781-05	5L015541.F	08/24/15 14:17	01
PAD-4MSD	L15080781-06	5L015542.F	08/24/15 14:38	01
PAD-5	L15080781-07	5L015543.F	08/24/15 14:59	01
PAD-6	L15080781-08	5L015544.F	08/24/15 15:20	01
PAD-7	L15080781-09	5L015546.F	08/24/15 16:02	01
PAD-8	L15080781-10	5L015547.F	08/24/15 16:24	01
PAD-X	L15080781-11	5L015548.F	08/24/15 16:45	01
LCS	WG535785-02	5L015565.F	08/25/15 01:08	02
PAD-2	L15080781-02	5L015567.F	08/25/15 02:26	02
PAD-3	L15080781-03	5L015568.F	08/25/15 03:05	02
PAD-4MS	L15080781-05	5L015571.F	08/25/15 05:02	02
PAD-4MSD	L15080781-06	5L015572.F	08/25/15 05:42	02
PAD-8	L15080781-10	5L015576.F	08/25/15 08:18	02
PAD-1	L15080781-01	5L015585.F	08/25/15 14:11	DL01
PAD-4	L15080781-04	5L015586.F	08/25/15 14:51	DL01
PAD-5	L15080781-07	5L015587.F	08/25/15 15:30	DL01
PAD-6	L15080781-08	5L015588.F	08/25/15 16:09	DL01
PAD-7	L15080781-09	5L015589.F	08/25/15 16:48	DL01
PAD-X	L15080781-11	5L015590.F	08/25/15 17:27	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4352055
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15080781 Prep Date: 08/20/15 14:08 Sample ID: WG535785-01
Instrument ID: HPLC5 Run Date: 08/24/15 12:10 Prep Method: METHOD
File ID: 5L015535.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
Contract #: Cal ID: HPLC5-28-JUL-15

Analytes	MDL	RL	Concentration	Dilution	Qualifier
1,3,5-Trinitrobenzene	0.100	0.250	0.100	1	U
1,3-Dinitrobenzene	0.100	0.250	0.100	1	U
2,4,6-Trinitrotoluene	0.100	0.250	0.100	1	U
2,4-Dinitrotoluene	0.100	0.250	0.100	1	U
2,6-Dinitrotoluene	0.100	0.250	0.100	1	U
2-Amino-4,6-dinitrotoluene	0.100	0.250	0.100	1	U
2-Nitrotoluene	0.100	0.250	0.100	1	U
3-Nitrotoluene	0.100	0.250	0.100	1	U
4-Nitrotoluene	0.100	0.250	0.100	1	U
4-Amino-2,6-dinitrotoluene	0.100	0.250	0.100	1	U
HMX	0.100	0.250	0.100	1	U
Nitrobenzene	0.100	0.250	0.100	1	U
RDX	0.100	0.250	0.100	1	U
Tetryl	0.100	0.250	0.100	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	91.2	50 - 150	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 4352056
26-AUG-2015 11:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15080781 Prep Date: 08/20/15 14:08 Sample ID: WG535785-01
Instrument ID: HPLC5 Run Date: 08/25/15 00:29 Prep Method: METHOD
File ID: 5L015564.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
Contract #: Cal ID: HPLC5-29-JUL-15

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitroglycerin	0.100	0.250	0.100	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 4352056
26-AUG-2015 11:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080781 Run Date: 08/24/2015 Sample ID: WG535785-02
Instrument ID: HPLC5 Run Time: 12:31 Prep Method: METHOD
File ID: 5L015536.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
QC Key: STD Lot#: STD71678 Cal ID: HPLC5-28-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,3,5-Trinitrobenzene	1.00	0.962	96.2	75 - 125	
1,3-Dinitrobenzene	1.00	0.910	91.0	80 - 125	
2,4,6-Trinitrotoluene	1.00	0.892	89.2	40 - 130	
2,4-Dinitrotoluene	1.00	1.03	103	80 - 125	
2,6-Dinitrotoluene	1.00	1.03	103	80 - 120	
2-Amino-4,6-dinitrotoluene	1.00	0.910	91.0	80 - 125	
2-Nitrotoluene	1.00	1.02	102	80 - 125	
3-Nitrotoluene	1.00	0.997	99.7	75 - 120	
4-Nitrotoluene	1.00	1.01	101	75 - 125	
4-Amino-2,6-dinitrotoluene	1.00	1.02	102	80 - 125	
HMX	1.00	1.01	101	75 - 125	
Nitrobenzene	1.00	0.978	97.8	75 - 125	
RDX	1.00	0.894	89.4	70 - 135	
Tetryl	1.00	0.677	67.7	10 - 150	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	101	50 - 150	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4352057
Report generated: 08/26/2015 11:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080781 Run Date: 08/25/2015 Sample ID: WG535785-02
Instrument ID: HPLC5 Run Time: 01:08 Prep Method: METHOD
File ID: 5L015565.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
QC Key: STD Lot#: STD71678 Cal ID: HPLC5-29-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Nitroglycerin	1.00	1.01	101	50 - 150	

LCS - Modified 03/06/2008
PDF File ID: 4352057
Report generated: 08/26/2015 11:29

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15080781 Cal ID: HPLC5- 28-JUL-15 Worknum: WG536214

Instrument ID: HPLC5 Contract #: Prep Method: METHOD

Parent ID: L15080781-04 File ID: 5L015540.F Dil: 1 Method: 8330B

Sample ID: L15080781-05 MS File ID: 5L015541.F Dil: 1 Matrix: Soil

Sample ID: L15080781-06 MSD File ID: 5L015542.F Dil: 1 Units: mg/kg

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,3-Dinitrobenzene	ND	1.05	1.04	99.4	0.996	0.877	88	17.3	80 - 125	20	
2,4,6-Trinitrotoluene	ND	1.05	1.90	181	0.996	1.37	138	32.2	40 - 130	20	*#
2,4-Dinitrotoluene	0.205	1.05	1.28	102	0.996	1.11	91.2	13.7	80 - 125	20	
2,6-Dinitrotoluene	ND	1.05	1.23	117	0.996	1.06	106	14.5	80 - 120	20	
2-Amino-4,6-dinitrotoluene	ND	1.05	0.787	75	0.996	1.03	103	26.5	80 - 125	20	*#
2-Nitrotoluene	ND	1.05	1.23	117	0.996	1.05	105	15.6	80 - 125	20	
3-Nitrotoluene	ND	1.05	1.15	110	0.996	1.64	164	34.7	75 - 120	20	*#
4-Amino-2,6-dinitrotoluene	ND	1.05	1.23	117	0.996	1.26	127	2.98	80 - 125	20	*
4-Nitrotoluene	ND	1.05	1.17	111	0.996	1.02	103	13.4	75 - 125	20	
HMX	0.129	1.05	1.07	90	0.996	0.954	82.8	11.8	75 - 125	20	
Nitrobenzene	ND	1.05	1.25	119	0.996	1.11	111	11.5	75 - 125	20	
RDX	ND	1.05	1.12	107	0.996	0.930	93.4	18.3	70 - 135	20	
1,3,5-Trinitrobenzene	ND	1.05	1.07	102	0.996	0.920	92.4	15.3	75 - 125	20	
Tetryl	ND	1.05	0.655	62.4	0.996	0.529	53.1	21.3	10 - 150	20	#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4352058
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15080781 Cal ID: HPLC5- 29-JUL-15 Worknum: WG536214

Instrument ID: HPLC5 Contract #: Prep Method: METHOD

Parent ID: L15080781-04 File ID: 5L015569.F Dil: 1 Method: 8330B

Sample ID: L15080781-05 MS File ID: 5L015571.F Dil: 1 Matrix: Soil

Sample ID: L15080781-06 MSD File ID: 5L015572.F Dil: 1 Units: mg/kg

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Nitroglycerin	50.8	1.05	58.4	719	0.996	12.5	-3850	130	50 - 150	20	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4352058
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080781
Analytical Method: 8330B
ICAL Workgroup: WG532973

Instrument ID: HPLC5
Initial Calibration Date: 28-JUL-15 18:49
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,3,5-Trinitrobenzene		2.563	1.81	1.00000	
1,3-Dinitrobenzene		1.757	0.547	1.00000	
2,4,6-Trinitrotoluene		2.553	0.889	1.00000	
2,4-Dinitrotoluene		1.812	0.761	1.00000	
2,6-Dinitrotoluene		3.949	1.08	1.00000	
2-Amino-4,6-Dinitrotoluene		3.076	0.666	1.00000	
2-Nitrotoluene		4.741	0.181	1.00000	
3-Nitrotoluene		4.158	0.974	1.00000	
4-Amino-2,6-Dinitrotoluene		4.409	0.695	1.00000	
4-Nitrotoluene		5.554	0.693	1.00000	
HMX		6.021	3.59	1.00000	
Nitrobenzene		2.670	0.656	1.00000	
RDX		5.254	0.490	1.00000	
Tetryl		4.294	20.2	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

This method always uses linear calibration model (R)

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080781
Analytical Method: 8330B
ICAL Workgroup: WG533611

Instrument ID: HPLC5
Initial Calibration Date: 29-JUL-15 20:42
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Nitroglycerin		4.812	10.1	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

This method always uses linear calibration model (R)

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080781

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 28-JUL-15 18:49

Column ID: F

Analyte	WG532973-01			WG532973-02			WG532973-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,3,5-Trinitrobenzene	2500	991.814453	2.521	1000	396.295471	2.523	500	197.109299	2.537
1,3-Dinitrobenzene	2500	1411.42993	1.771	1000	568.028503	1.760	500	284.072418	1.760
2,4,6-Trinitrotoluene	2500	974.182678	2.566	1000	392.044861	2.551	500	194.836273	2.566
2,4-Dinitrotoluene	2500	1372.43994	1.822	1000	549.840759	1.819	500	275.747192	1.813
2,6-Dinitrotoluene	2500	622.536377	4.016	1000	252.196823	3.965	500	126.237503	3.961
2-Amino-4,6-Dinitrotoluene	2500	809.163513	3.090	1000	325.839783	3.069	500	161.914459	3.088
2-Nitrotoluene	2500	526.755920	4.746	1000	211.387894	4.731	500	105.705894	4.730
3-Nitrotoluene	2500	600.730774	4.162	1000	240.866150	4.152	500	121.053528	4.130
4-Amino-2,6-Dinitrotoluene	2500	563.906372	4.433	1000	227.286270	4.400	500	112.949600	4.427
4-Nitrotoluene	2500	450.963043	5.544	1000	180.891342	5.528	500	90.4980621	5.525
HMX	2500	403.691498	6.193	1000	162.028519	6.172	500	81.4797287	6.136
Nitrobenzene	2500	930.451172	2.687	1000	373.494019	2.677	500	186.814148	2.676
RDX	2500	474.205902	5.272	1000	190.689224	5.244	500	95.1124268	5.257
Tetryl	2500	710.558167	3.518	1000	276.833466	3.612	500	136.376709	3.666

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080781

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 28-JUL-15 18:49

Column ID: F

Analyte	WG532973-04			WG532973-05			WG532973-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,3,5-Trinitrobenzene	100	39.1087761	2.557	50.0	18.9872684	2.633	25.0	9.58763695	2.608
1,3-Dinitrobenzene	100	56.8638077	1.759	50.0	28.6916466	1.743	25.0	14.2731066	1.752
2,4,6-Trinitrotoluene	100	39.1071548	2.557	50.0	19.4835911	2.566	25.0	9.96548939	2.509
2,4-Dinitrotoluene	100	55.7852859	1.793	50.0	27.3670940	1.827	25.0	13.9069824	1.798
2,6-Dinitrotoluene	100	25.4875622	3.923	50.0	12.6918964	3.940	25.0	6.42807293	3.889
2-Amino-4,6-Dinitrotoluene	100	32.3182602	3.094	50.0	16.2640076	3.074	25.0	8.22596264	3.039
2-Nitrotoluene	100	21.0944118	4.741	50.0	10.5271387	4.750	25.0	5.26605225	4.747
3-Nitrotoluene	100	24.3847847	4.101	50.0	11.9510508	4.184	25.0	5.92842102	4.217
4-Amino-2,6-Dinitrotoluene	100	22.5457687	4.435	50.0	11.4810839	4.355	25.0	5.67660379	4.404
4-Nitrotoluene	100	17.9864368	5.560	50.0	8.88252831	5.629	25.0	4.51449776	5.538
HMX	100	16.6524467	6.005	50.0	8.35225487	5.986	25.0	4.43644667	5.635
Nitrobenzene	100	37.5737915	2.661	50.0	18.6683807	2.678	25.0	9.47487164	2.639
RDX	100	18.9215622	5.285	50.0	9.50990677	5.258	25.0	4.79806185	5.210
Tetryl	100	25.8222389	3.873	50.0	8.40212917	5.951	25.0	4.86094904	5.143

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080781

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 29-JUL-15 20:42

Column ID: F

Analyte	WG533611-01			WG533611-02			WG533611-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Nitroglycerin	2500	521.975647	4.789	1000	214.874191	4.654	500	107.846924	4.636

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080781

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 29-JUL-15 20:42

Column ID: F

Analyte	WG533611-04			WG533611-05			WG533611-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Nitroglycerin	100	20.3422699	4.916	50.0	8.74479485	5.718	25.0	6.00766230	4.161

INT_CAL - Modified 03/06/2008
PDF File ID: 4352059
Report generated 08/26/2015 11:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080781 Run Date: 07/28/2015 Sample ID: WG532973-07
Instrument ID: HPLC5 Run Time: 19:10 Method: 8330B
File ID: 5L015176.F Analyst: JWR QC Key: STD
ICal Workgroup: WG532973 Cal ID: HPLC5 - 28-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Sym-Trinitrobenzene		500	511	ug/L	2.47	2.30	30	
1,3-Dinitrobenzene		500	513	ug/L	1.72	2.50	30	
2,4,6-Trinitrotoluene		500	518	ug/L	2.47	3.60	30	
2,4-Dinitrotoluene		500	531	ug/L	1.71	6.10	30	
2,6-Dinitrotoluene		500	526	ug/L	3.79	5.30	30	
2-Amino-4,6-Dinitrotoluene		500	508	ug/L	3.03	1.60	30	
2-Nitrotoluene		500	523	ug/L	4.53	4.70	30	
3-Nitrotoluene		500	531	ug/L	3.91	6.20	30	
4-Nitrotoluene		500	511	ug/L	5.42	2.20	30	
4-Amino-2,6-Dinitrotoluene		500	552	ug/L	4.00	10.5	30	
HMX		500	521	ug/L	5.91	4.30	30	
Nitrobenzene		500	517	ug/L	2.59	3.40	30	
RDX		500	534	ug/L	4.92	6.90	30	
Tetryl		500	492	ug/L	3.68	1.60	30	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4352060
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080781 Run Date: 07/29/2015 Sample ID: WG533611-07
Instrument ID: HPLC5 Run Time: 21:21 Method: 8330B
File ID: 5L015186.F Analyst: JWR QC Key: STD
ICal Workgroup: WG533611 Cal ID: HPLC5 - 29-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Nitroglycerin		500	516	ug/L	4.59	3.20	30	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4352060
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781 Run Date: 08/24/2015 Sample ID: WG536240-01
Instrument ID: HPLC5 Run Time: 11:35 Method: 8330B
File ID: 5L015534.F Analyst: ECL QC Key: STD
Workgroup (AAB#): WG536214 Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sym-Trinitrobenzene		0.500	0.530	mg/kg	2.38	6.00	20	
1,3-Dinitrobenzene		0.500	0.510	mg/kg	1.73	2.02	20	
2,4,6-Trinitrotoluene		0.500	0.514	mg/kg	2.49	2.81	20	
2,4-Dinitrotoluene		0.500	0.552	mg/kg	1.65	10.5	20	
2,6-Dinitrotoluene		0.500	0.559	mg/kg	3.56	11.9	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.470	mg/kg	3.28	6.09	20	
2-Nitrotoluene		0.500	0.529	mg/kg	4.48	5.85	20	
3-Nitrotoluene		0.500	0.547	mg/kg	3.79	9.47	20	
4-Nitrotoluene		0.500	0.524	mg/kg	5.29	4.77	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.545	mg/kg	4.06	8.96	20	
HMX		0.500	0.515	mg/kg	5.98	2.96	20	
Nitrobenzene		0.500	0.516	mg/kg	2.60	3.15	20	
RDX		0.500	0.536	mg/kg	4.91	7.20	20	
Tetryl		0.500	0.511	mg/kg	3.55	2.17	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781 Run Date: 08/24/2015 Sample ID: WG536240-02
Instrument ID: HPLC5 Run Time: 15:41 Method: 8330B
File ID: 5L015545.F Analyst: ECL QC Key: STD
Workgroup (AAB#): WG536214 Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sym-Trinitrobenzene		0.500	0.535	mg/kg	2.36	7.03	20	
1,3-Dinitrobenzene		0.500	0.504	mg/kg	1.75	0.813	20	
2,4,6-Trinitrotoluene		0.500	0.500	mg/kg	2.56	0.0923	20	
2,4-Dinitrotoluene		0.500	0.539	mg/kg	1.69	7.82	20	
2,6-Dinitrotoluene		0.500	0.522	mg/kg	3.82	4.45	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.468	mg/kg	3.29	6.42	20	
2-Nitrotoluene		0.500	0.516	mg/kg	4.59	3.15	20	
3-Nitrotoluene		0.500	0.496	mg/kg	4.19	0.840	20	
4-Nitrotoluene		0.500	0.547	mg/kg	5.06	9.41	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.528	mg/kg	4.19	5.63	20	
HMX		0.500	0.514	mg/kg	6.00	2.72	20	
Nitrobenzene		0.500	0.518	mg/kg	2.59	3.54	20	
RDX		0.500	0.531	mg/kg	4.95	6.29	20	
Tetryl		0.500	0.473	mg/kg	3.84	5.30	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781 Run Date: 08/24/2015 Sample ID: WG536240-03
Instrument ID: HPLC5 Run Time: 19:33 Method: 8330B
File ID: 5L015556.F Analyst: ECL QC Key: STD
Workgroup (AAB#): WG536214 Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Sym-Trinitrobenzene		0.500	0.524	mg/kg	2.41	4.72	20	
1,3-Dinitrobenzene		0.500	0.514	mg/kg	1.72	2.82	20	
2,4,6-Trinitrotoluene		0.500	0.519	mg/kg	2.47	3.86	20	
2,4-Dinitrotoluene		0.500	0.536	mg/kg	1.70	7.20	20	
2,6-Dinitrotoluene		0.500	0.518	mg/kg	3.85	3.56	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.459	mg/kg	3.35	8.14	20	
2-Nitrotoluene		0.500	0.523	mg/kg	4.53	4.62	20	
3-Nitrotoluene		0.500	0.526	mg/kg	3.95	5.12	20	
4-Nitrotoluene		0.500	0.512	mg/kg	5.41	2.42	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.534	mg/kg	4.14	6.84	20	
HMX		0.500	0.515	mg/kg	5.98	3.00	20	
Nitrobenzene		0.500	0.512	mg/kg	2.62	2.44	20	
RDX		0.500	0.542	mg/kg	4.86	8.34	20	
Tetryl		0.500	0.370	mg/kg	4.96	25.9	20	*

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Run Date: 08/24/2015
Sample ID: WG536240-04
Instrument ID: HPLC5
Run Time: 21:13
Method: 8330B
File ID: 5L015559.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.509	mg/kg	4.65	1.79	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Run Date: 08/25/2015
Sample ID: WG536240-05
Instrument ID: HPLC5
Run Time: 04:23
Method: 8330B
File ID: 5L015570.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.494	mg/kg	4.79	1.14	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Run Date: 08/25/2015
Sample ID: WG536240-06
Instrument ID: HPLC5
Run Time: 11:33
Method: 8330B
File ID: 5L015581.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.489	mg/kg	4.83	2.10	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080781
Run Date: 08/25/2015
Sample ID: WG536240-07
Instrument ID: HPLC5
Run Time: 18:45
Method: 8330B
File ID: 5L015592.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.480	mg/kg	4.93	4.02	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352061
Report generated 08/26/2015 11:30

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG535732 Analyst: AC ADT(on): 08/19/2015 15:19
Method: D2216-90 Instrument: BAL021 ADT(off): 08/20/2015 07:49
SOP: K0003 Rev: 13

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L15080781-01	1.283	23.6	22.752			96.20	
L15080781-02	1.278	22.873	21.461			93.46	
L15080781-03	1.271	20.359	16.896			81.86	
L15080781-04	1.274	22.018	20.12			90.85	
L15080781-05	1.274	22.018	20.12			90.85	
L15080781-06	1.274	22.018	20.12			90.85	
L15080781-07	1.268	29.363	24.085			81.21	
L15080781-08	1.267	22.006	18.134			81.33	
L15080781-09	1.272	25.549	23.623			92.07	
L15080781-10	1.273	25.791	24.79			95.92	
L15080781-11	1.276	21.799	20.322			92.80	
L15080833-01	1.271	20.984	20.867			99.41	
L15080833-02	1.279	21.04	20.902			99.30	
L15080833-03	1.276	20.676	20.589			99.55	
L15080833-04	1.285	21.507	21.346			99.20	
L15080833-05	1.284	20.59	20.432			99.18	
L15080833-06	1.282	20.23	20.096			99.29	
L15080833-07	1.281	20.601	20.451			99.22	
L15080833-08	1.279	24.055	23.935			99.47	
L15080834-01	1.272	20.485	20.342			99.26	
L15080896-01	1.285	23.077	22.697			98.26	
L15080896-02	1.281	20.267	20			98.59	
L15080896-03	1.281	24.168	23.93			98.96	
L15080896-04	1.277	24.418	23.71			96.94	
L15080896-05	1.268	21.963	21.201			96.32	
L15080896-06	1.267	22.502	20.884			92.38	
L15080965-01	1.28	23.539	22.305			94.46	
L15080965-02	1.267	24.998	23.711			94.58	
L15081004-01	1.281	12.478	10.203			79.68	
WG535732-01	1.279	21.04	20.902			99.30	0.6983
WG535732-02	1.267	22.502	20.884			92.38	7.619
WG535732-03	1.269	15.756	15.671			99.41	0.5867
WG535732-04	1.27	18.575	17.34			92.86	7.137

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4343141
Report generated: 08/20/2015 07:59

3.0 Attachments

Microbac Laboratories Inc.
List of Valid Qualifiers
August 26, 2015

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)

Qualkey: STD

Z	Cannot be resolved from isomer - see below

Laboratory: Microbac Laboratories- Ohio Valley Division 158 Starlite Drive, Marietta, OH 45750 contact: Michelle Taylor 1-740-373-4071 X 4167

OK JV 8/14/15

Client: Draper Aden Associates **Attn:** **Address:** **Phone:** **Fax:** **Fax:**	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP. Radford, Virginia **Location:** HWMU-13 (Open Burning Ground) **Event:** August 2015 - Annual Soil Monitoring **DAA JN:** B03204-215 **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: 12-237-301-01-9853-5451 **Carrier:** **Tracking Number:**

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B HNO_3, C H_2SO_4, D $Na_2S_2O_3$, E NaOH, F ZnAc, G Other (<6 deg C), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 4: Sample Type
G Grab, C Composite

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Invoice
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

GENERAL NOTES:
1. Estimated results required. Level 4/comprehensive deliverable
2. Report results on a DRY WEIGHT BASIS.
3. Report results in mg/kg.

Sample ID	Date: 2015	Time	Box 1: Matrix	Number of Bottles	Perchlorate - 6850	DRY WEIGHT	8330B -AIR DRY
Box 4 - Sample Type					G	G	G
Box 3 - Filtered/Unfiltered					NA	NA	NA
Required pH of Sample					NA	NA	NA
Box 2 - Preservative					G	G	G
Box 5 - Sample Container Type					1-4 oz. AG		1-4oz. AG
PAD-1	8/13	0935	S	2	X	X	X
PAD-2		1005	S	2	X	X	X
PAD-3		1040	S	2	X	X	X
PAD-4		1055	S	2	X	X	X
PAD-4ms		1055	S	2	X	X	X
PAD-4msd		1055	S	2	X	X	X
PAD-5		1110	S	2	X	X	X
PAD-6		1135	S	2	X	X	X
PAD-7		1150	S	2	X	X	X
PAD-8		1210	S	2	X	X	X
PAD-X		1155	S	2	X	X	X

PAD-4 ~~MW-~~ is the designated sample for lab to use for MS / MSD... JV 8/14/15

lients Special Instructions:
Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

Sampler Name (Print): KEN CODDINGTON	Date: 8/13/15	#1 Relinquished by (Signature):	Date: 8/13/15	#2 Relinquish by (Signature)
Sampler Signature:	Time: 0630	Company Name: DAA	Time: 1706	Company Name:
Sampler Name (Print): Will Mason Dacy	Date: 8-13-15	#1 Received by (Signature):	Date:	#2 Received by (Signature)
Sampler Signature:	Time: 0630	Company Name:	Time:	Company Name:

Microbac OVD
Received: 08/14/2015 10:18
By: BRENDA GREGORY 221000073958
Brenda Gregory

Sample Storage Time Requested:
YS ORG/6 MTHS
RG

1/3

ANALYTICAL METHOD: 8330B (AIR DRY PREP) - Microbac, Marietta, OH
TYPE METHOD: Explosives

Analyte List for: All PAD Samples

Constituent	CASRN	SW-846 Method
Nitroglycerin	55-63-0	8330B
1,3,5-Trinitrobenzene	99-35-4	8330B
2,4,6-Trinitrotoluene	118-96-7	8330B
2-amino-4,6-dinitrotoluene	35572-78-2	8330B
4-amino-2,6-dinitrotoluene	19406-51-0	8330B
1,3-Dinitrobenzene	99-65-0	8330B
2,4-Dinitrotoluene	121-14-2	8330B
2,6-Dinitrotoluene	606-20-2	8330B
2-Nitrotoluene (ortho)	88-72-2	8330B
3-Nitrotoluene (meta)	99-08-1	8330B
4-Nitrotoluene (para)	99-99-0	8330B
HMX	2691-41-0	8330B
Nitrobenzene	98-95-3	8330B
RDX	121-82-4	8330B
Tetryl	479-45-8	8330B

Analyte List for SB-1, SB-2, NB-1, NB-2, Berm-1 and Pond-1 ONLY

Method 8330B (~~SIR~~ AIR DRY PREP) : - Microbac, Marietta, OH

No.	PARAMETER	CAS RN
1.	2,4,6-trinitrotoluene (2,4,6-TNT)	118-96-7
2.	2,4-dinitrotoluene (2,4-DNT)	121-14-2
3.	HMX	2691-41-0
4.	2-amino-4,6-dinitrotoluene	35572-78-2
5.	4-amino-2,6-dinitrotoluene	19406-51-0
6.	Nitroglycerin	55-63-0

Microbac OVD
Received: 08/14/2015 10:18
By: BRENDA GREGORY 221000073958

Brenda Gregory

\\draperaden.net\daa\Teams\Environmental\BBG\Databases\RAAP\Sample Event Set Up\Semi-Annual Events\HWMU-13\Annual OBG Soil Event\2015- Unit 13-OBG - Target Analyte List --Soil Samples.doc

Microbac

Laboratory Report Number: L15080782

Abridged data.
Full deliverable available.

Janet Frazier
Draper Aden Associates
2206 South Main Street
Blacksburg, VA 24060

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on August 26 2015

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: VA
Accrediting Authority: Common Wealth of Virginia ID:460187
QAPP: Microbac OVD

Microbac

Lab Report #: L15080782
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112937	I	3.0		1Z2373010198535451	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L15080782
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
NB-1	L15080782-01	08/13/2015 10:15	08/14/2015 10:18
NB-2	L15080782-02	08/13/2015 12:30	08/14/2015 10:18
SB-1	L15080782-03	08/13/2015 13:00	08/14/2015 10:18
SB-2	L15080782-04	08/13/2015 13:15	08/14/2015 10:18
BERM-1	L15080782-05	08/13/2015 09:00	08/14/2015 10:18
POND-1	L15080782-06	08/13/2015 09:20	08/14/2015 10:18

Microbac REPORT L15080782
PREPARED FOR Draper Aden Associates
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 9
2.0 Full Sample Data Package 18
2.1 Semivolatiles Data 19
2.1.1 Explosives (8330B) 20
2.1.1.1 Summary Data 21
2.1.1.2 QC Summary Data 32
2.1.1.3 Sample Data 67
2.1.1.4 Standards Data 134
2.1.1.5 Raw QC Data 212
3.0 Attachments 223

1.0 Summary Data

1.1 Narratives

Login Number: L15080782
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: Samples 02 and 05 were analyzed at dilutions to be within calibration range. All sample results were confirmed by diode array detection.

Surrogates: All acceptance criteria were met. The surrogate summary form for the samples references an incorrect calibration date; however the values are correct.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 103108
Approved By: Wade DeLong

1.2 Certificate of Analysis

Microbac

Lab Report #: L15080782
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L15080782-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:06
Collect Date:	08/13/2015 10:15	**Dilution:**	1	**File ID:**	5L015549.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.252	0.101
2,4-Dinitrotoluene	121-14-2	0.125	J	0.252	0.101
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.252	0.101
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.252	0.101
HMX	2691-41-0	0.386		0.252	0.101

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	107	50	150	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 09:36
Collect Date:	08/13/2015 10:15	**Dilution:**	1	**File ID:**	5L015578.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	3.87		0.252	0.101

Sample #:	L15080782-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:27
Collect Date:	08/13/2015 12:30	**Dilution:**	1	**File ID:**	5L015550.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.247	0.0987
2,4-Dinitrotoluene	121-14-2	2.07		0.247	0.0987
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.247	0.0987
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.247	0.0987
HMX	2691-41-0		ND	0.247	0.0987

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	134	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 18:06
Collect Date:	08/13/2015 12:30	**Dilution:**	20	**File ID:**	5L015591.F
Sample Tag:	DL01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	56.2		4.94	1.97

Sample #:	L15080782-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:48
Collect Date:	08/13/2015 13:00	**Dilution:**	1	**File ID:**	5L015551.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.248	0.0990
2,4-Dinitrotoluene	121-14-2		ND	0.248	0.0990
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.248	0.0990
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.248	0.0990
HMX	2691-41-0		ND	0.248	0.0990

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.8	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 10:54
Collect Date:	08/13/2015 13:00	**Dilution:**	1	**File ID:**	5L015580.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0		ND	0.248	0.0990

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:09
Collect Date:	08/13/2015 13:15	**Dilution:**	1	**File ID:**	5L015552.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7	2.50		0.252	0.101
2,4-Dinitrotoluene	121-14-2	2.34		0.252	0.101
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.252	0.101
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.252	0.101
HMX	2691-41-0		ND	0.252	0.101

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	113	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 12:14
Collect Date:	08/13/2015 13:15	**Dilution:**	1	**File ID:**	5L015582.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	2.78		0.252	0.101

Sample #:	L15080782-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	BERM-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:30
Collect Date:	08/13/2015 09:00	**Dilution:**	1	**File ID:**	5L015553.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.240	0.0960
2,4-Dinitrotoluene	121-14-2		ND	0.240	0.0960
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.240	0.0960
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.240	0.0960
HMX	2691-41-0		ND	0.240	0.0960

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	94.2	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	BERM-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 19:24
Collect Date:	08/13/2015 09:00	**Dilution:**	5	**File ID:**	5L015593.F
Sample Tag:	DL01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	10.6		1.20	0.480

Sample #:	L15080782-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	POND-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:51
Collect Date:	08/13/2015 09:20	**Dilution:**	1	**File ID:**	5L015554.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.250	0.0999
2,4-Dinitrotoluene	121-14-2		ND	0.250	0.0999
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.250	0.0999
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.250	0.0999
HMX	2691-41-0		ND	0.250	0.0999

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	108	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	POND-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 13:32
Collect Date:	08/13/2015 09:20	**Dilution:**	1	**File ID:**	5L015584.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	5.26		0.250	0.0999

2.0 Full Sample Data Package

2.1 Semivolatiles Data

2.1.1 Explosives (8330B)

2.1.1.1 Summary Data

Login Number: L15080782
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: Samples 02 and 05 were analyzed at dilutions to be within calibration range. All sample results were confirmed by diode array detection.

Surrogates: All acceptance criteria were met. The surrogate summary form for the samples references an incorrect calibration date; however the values are correct.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 103108
Approved By: Wade DeLong

Microbac

Lab Report #: L15080782
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L15080782-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:06
Collect Date:	08/13/2015 10:15	**Dilution:**	1	**File ID:**	5L015549.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.252	0.101
2,4-Dinitrotoluene	121-14-2	0.125	J	0.252	0.101
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.252	0.101
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.252	0.101
HMX	2691-41-0	0.386		0.252	0.101

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	107	50	150	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 09:36
Collect Date:	08/13/2015 10:15	**Dilution:**	1	**File ID:**	5L015578.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	3.87		0.252	0.101

Sample #:	L15080782-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:27
Collect Date:	08/13/2015 12:30	**Dilution:**	1	**File ID:**	5L015550.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.247	0.0987
2,4-Dinitrotoluene	121-14-2	2.07		0.247	0.0987
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.247	0.0987
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.247	0.0987
HMX	2691-41-0		ND	0.247	0.0987

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	134	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-02	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	NB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 18:06
Collect Date:	08/13/2015 12:30	**Dilution:**	20	**File ID:**	5L015591.F
Sample Tag:	DL01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	56.2		4.94	1.97

Sample #:	L15080782-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 17:48
Collect Date:	08/13/2015 13:00	**Dilution:**	1	**File ID:**	5L015551.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.248	0.0990
2,4-Dinitrotoluene	121-14-2		ND	0.248	0.0990
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.248	0.0990
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.248	0.0990
HMX	2691-41-0		ND	0.248	0.0990

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	91.8	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-03	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 10:54
Collect Date:	08/13/2015 13:00	**Dilution:**	1	**File ID:**	5L015580.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0		ND	0.248	0.0990

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:09
Collect Date:	08/13/2015 13:15	**Dilution:**	1	**File ID:**	5L015552.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7	2.50		0.252	0.101
2,4-Dinitrotoluene	121-14-2	2.34		0.252	0.101
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.252	0.101
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.252	0.101
HMX	2691-41-0		ND	0.252	0.101

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	113	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-04	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	SB-2	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 12:14
Collect Date:	08/13/2015 13:15	**Dilution:**	1	**File ID:**	5L015582.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	2.78		0.252	0.101

Sample #:	L15080782-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	BERM-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:30
Collect Date:	08/13/2015 09:00	**Dilution:**	1	**File ID:**	5L015553.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.240	0.0960
2,4-Dinitrotoluene	121-14-2		ND	0.240	0.0960
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.240	0.0960
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.240	0.0960
HMX	2691-41-0		ND	0.240	0.0960

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	94.2	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-05	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	BERM-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 19:24
Collect Date:	08/13/2015 09:00	**Dilution:**	5	**File ID:**	5L015593.F
Sample Tag:	DL01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	10.6		1.20	0.480

Sample #:	L15080782-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	POND-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/24/2015 18:51
Collect Date:	08/13/2015 09:20	**Dilution:**	1	**File ID:**	5L015554.F
Sample Tag:	01	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
2,4,6-Trinitrotoluene	118-96-7		ND	0.250	0.0999
2,4-Dinitrotoluene	121-14-2		ND	0.250	0.0999
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	0.250	0.0999
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	0.250	0.0999
HMX	2691-41-0		ND	0.250	0.0999

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	108	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080782-06	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	POND-1	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 14:08
Matrix:	Soil	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG536214	**Analyst:**	ECL	**Run Date:**	08/25/2015 13:32
Collect Date:	08/13/2015 09:20	**Dilution:**	1	**File ID:**	5L015584.F
Sample Tag:	02	**Units:**	mg/kg		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0	5.26		0.250	0.0999

2.1.1.2 QC Summary Data

Example 8330 Calculations

Sample Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot (y = mx + b)

y = response of analyte as area (from quantitation report)
x = concentration analyte
m = slope from curve
b = intercept from curve

Step 2: Retrieve y from quantitation report

Step 3: Retreive extraction data from logsheet

Vf = Final extract volume (mL)
Vi = Initial vome of sample (mL) or initial weight (g)

Step 4: Solve for concentration in extract (x):

x = (y - b)/m = [(7.774 -(- 0.04773)]/ 0.1711 = 45.2

Step 5: Solve for analyte concentration in sample (Cx):

Cx = (x) (Vf /Vi)

Example CCV Calculation: **(Vf/Vi) = 1**
HMX

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Concentration (ug/L):	45.16830115

Example Water Calculation:

Slope from curve, m:	0.171145
Intercept from curve, b:	0.0436711
Area of analyte, y:	7.774
Volume of extract (mL):	10.00
Volume of sample extracted (mL):	1000.00
Concentration (ug/L):	0.451683011

Example Soil Calculation:
1,3,5-Trinitrobenzene

Slope from curve, m:	0.411263
Intercept from curve, b:	-0.0850241
Area of analyte, y:	20.26089
Volume of extract (mL):	20.00
Weight of sample extracted (g):	2.00
Concentration (ug/kg):	494.7178351
Concentration (mg/kg):	0.494717835

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG535785
Analyst: RAH
Spike Analyst: RAH
Method: METHOD
Run Date: 08/20/2015 14:08
SOP: EXTNT02 Revison 12
Spike Witness: JDH
Surr Solution: STD68828

TIME ON: 15:20 OFF: 09:20 ON: _____ OFF: _____
Acetonitrile Lot #: COA18404
WATER Lot #: COA18284

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L15080781-01	SAMP		8330-SPE		9.84 g	1 mL			40 mL	Transparent
2	L15080781-02	SAMP		8330-SPE		9.65 g	1 mL			40 mL	Transparent
3	L15080781-03	SAMP		8330-SPE		10.05 g	1 mL			40 mL	Transparent
4	L15080781-04	RS01		8330-SPE		10.16 g	1 mL			40 mL	Transparent
5	L15080781-05	MS01	L15080781-04	8330-SPE		9.53 g	1 mL	1 mL	STD71678	40 mL	Transparent
6	L15080781-06	SD01	L15080781-04	8330-SPE		10.04 g	1 mL	1 mL	STD71678	40 mL	Transparent
7	L15080781-07	SAMP		8330-SPE		9.81 g	1 mL			40 mL	Transparent
8	L15080781-08	SAMP		8330-SPE		10.02 g	1 mL			40 mL	Transparent
9	L15080781-09	SAMP		8330-SPE		10.01 g	1 mL			40 mL	Transparent
10	L15080781-10	SAMP		8330-SPE		9.82 g	1 mL			40 mL	Transparent
11	L15080781-11	SAMP		8330-SPE		9.95 g	1 mL			40 mL	Transparent
12	L15080782-01	SAMP		8330-SPE		9.94 g	1 mL			40 mL	Transparent
13	L15080782-02	SAMP		8330-SPE		10.13 g	1 mL			40 mL	Transparent
14	L15080782-03	SAMP		8330-SPE		10.1 g	1 mL			40 mL	Transparent
15	L15080782-04	SAMP		8330-SPE		9.92 g	1 mL			40 mL	Transparent
16	L15080782-05	SAMP		8330-SPE		10.42 g	1 mL			40 mL	Transparent
17	L15080782-06	SAMP		8330-SPE		10.01 g	1 mL			40 mL	Transparent
18	WG535785-01	BLANK		8330-SPE		10 g	1 mL			40 mL	Transparent
19	WG535785-02	LCS		8330-SPE		10 g	1 mL	1 mL	STD71678	40 mL	Transparent
20	WG535785-03	REF	L15080781-04	8330-SPE		10.16 g	1 mL			40 mL	Transparent
21	WG535785-04	MS	L15080781-04	8330-SPE		9.53 g	1 mL	1 mL	STD71678	40 mL	Transparent
22	WG535785-05	MSD	L15080781-04	8330-SPE		10.04 g	1 mL	1 mL	STD71678	40 mL	Transparent

CTRL TEMP ON@ 2.3C, OFF@ 2.3C

BATH TEMP ON@ 11C, OFF@ 18C

Analyst: _____

Reviewer: _____

EXTRACT - Modified 01/23/2009
PDF ID: 4347633
Report generated: 08/21/2015 15:35

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 072815
Analyst1: JWR Analyst2: NA
Method: 8330PLUS-PETN SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: NA
Eluent ID#:

Column 1 ID: KINETEX 5UM C18 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: NA Surrogate STD: COA17825 Calibration STD STD71667 (07/28/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG532973 : Alternate Source STD71668
Analytical Column : Kinetex 5um C18 100A (250x4.6mm)
Phenomenex S/N 764987-2
Analytes : 8330-MixA, 8330-MixB, PETN and Surr(1,2-DNB)

Nitroglycerin is not resolved from TNT on the 210nm signal using this Analytical Column. Nitroglycerin will be analyzed separately using the Phenomenex Ultracarb 5um ODS(20) Analytical Column.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015170.F	WG532973-01 STD	1	1	STD71667	07/28/15 17:04
2	5L015171.F	WG532973-02 STD	1	1	STD71667	07/28/15 17:25
3	5L015172.F	WG532973-03 STD-CCV	1	1	STD71667	07/28/15 17:46
4	5L015173.F	WG532973-04 STD	1	1	STD71667	07/28/15 18:07
5	5L015174.F	WG532973-05 STD	1	1	STD71667	07/28/15 18:28
6	5L015175.F	WG532973-06 STD	1	1	STD71667	07/28/15 18:49
7	5L015176.F	WG532973-07 SSCV	1	1	STD71668	07/28/15 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 11-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 072915
Analyst1: JWR Analyst2: NA
Method: 8330-NG SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: NA
Eluent ID#:

Column 1 ID: ULTRACARB 5UM ODS Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: NA Surrogate STD: COA17825 Calibration STD STD71667 (07/29/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533611 : Alternate Source STD71668
Analytical Column : Ultracarb 5um ODS (20) 90A (250x4.6mm)
Phenomenex S/N 740424-1
Analytes : Nitroglycerin and Surr(1,2-DNB) Only

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015180.F	WG533611-01 STD	1	1	STD71667	07/29/15 17:27
2	5L015181.F	WG533611-02 STD	1	1	STD71667	07/29/15 18:06
3	5L015182.F	WG533611-03 STD-CCV	1	1	STD71667	07/29/15 18:45
4	5L015183.F	WG533611-04 STD	1	1	STD71667	07/29/15 19:24
5	5L015184.F	WG533611-05 STD	1	1	STD71667	07/29/15 20:03
6	5L015185.F	WG533611-06 STD	1	1	STD71667	07/29/15 20:42
7	5L015186.F	WG533611-07 SSCV	1	1	STD71668	07/29/15 21:21

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 11-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:

Workgroups: Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB

Internal STD: NA Surrogate STD: STD68828 Calibration STD
CCV STD: STD71667 LCS STD: STD71678 MS/MSD STD: STD71678

Comments: Pressure = 166 bar

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5L015534.F	WG536240-01 8330 CCV 500 PPB	1	1	STD71667	08/24/15 11:35
2	5L015535.F	WG535785-01 BLANK	7	1		08/24/15 12:10
3	5L015536.F	WG535785-02 LCS	7	1		08/24/15 12:31
4	5L015537.F	L15080781-01 8330-SPE	7	1		08/24/15 12:52
5	5L015538.F	L15080781-02 8330-SPE	7	1		08/24/15 13:14
6	5L015539.F	L15080781-03 8330-SPE	7	1		08/24/15 13:35
49	5L015540.F	L15080781-04 8330-SPE	7	1		08/24/15 13:56
50	5L015541.F	L15080781-05 8330-SPE	7	1		08/24/15 14:17
51	5L015542.F	L15080781-06 8330-SPE	7	1		08/24/15 14:38
10	5L015543.F	L15080781-07 8330-SPE	7	1		08/24/15 14:59
11	5L015544.F	L15080781-08 8330-SPE	7	1		08/24/15 15:20
12	5L015545.F	WG536240-02 8330 CCV 500 PPB	1	1	STD71667	08/24/15 15:41
13	5L015546.F	L15080781-09 8330-SPE	7	1		08/24/15 16:02
14	5L015547.F	L15080781-10 8330-SPE	7	1		08/24/15 16:24
15	5L015548.F	L15080781-11 8330-SPE	7	1		08/24/15 16:45
16	5L015549.F	L15080782-01	7	1		08/24/15 17:06
17	5L015550.F	L15080782-02	7	1		08/24/15 17:27
18	5L015551.F	L15080782-03	7	1		08/24/15 17:48
19	5L015552.F	L15080782-04	7	1		08/24/15 18:09
20	5L015553.F	L15080782-05	7	1		08/24/15 18:30
21	5L015554.F	L15080782-06	7	1		08/24/15 18:51
22	5L015555.F	Solvent Rinse	1	1	STD71667	08/24/15 19:12
23	5L015556.F	WG536240-03 8330 CCV 500 PPB	1	1	STD71667	08/24/15 19:33
24	5L015557.F	Solvent Rinse	1	1	STD71667	08/24/15 19:55
25	5L015558.F	Solvent Rinse	1	1	STD71667	08/24/15 20:34
26	5L015559.F	WG536240-04 8330 CCV 500 PPB	1	1	STD71667	08/24/15 21:13
27	5L015560.F	WG535784-01 BLANK	1	1	STD71667	08/24/15 21:52
28	5L015561.F	WG535784-02 LCS	1	1	STD71667	08/24/15 22:31
29	5L015562.F	WG535784-03 LCS2	1	1	STD71667	08/24/15 23:11
30	5L015563.F	L15080772-01 8330-SPE	1	1	STD71667	08/24/15 23:50
31	5L015564.F	WG535785-01 BLANK	7	1		08/25/15 00:29
32	5L015565.F	WG535785-02 LCS	7	1		08/25/15 01:08
33	5L015566.F	L15080781-01 8330-SPE	7	1		08/25/15 01:47

Page: 1 Approved: 26-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:

Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB

Workgroups:

Internal STD: NA Surrogate STD: STD68828
CCV STD: STD71667 LCS STD: STD71678 STD71678

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	5L015567.F	L15080781-02 8330-SPE	7	1		08/25/15 02:26
35	5L015568.F	L15080781-03 8330-SPE	7	1		08/25/15 03:05
68	5L015569.F	L15080781-04 8330-SPE	7	1		08/25/15 03:44
37	5L015570.F	WG536240-05 8330 CCV 500 PPB	1	1	STD71667	08/25/15 04:23
69	5L015571.F	L15080781-05 8330-SPE	7	1		08/25/15 05:02
70	5L015572.F	L15080781-06 8330-SPE	7	1		08/25/15 05:42
40	5L015573.F	L15080781-07 8330-SPE	7	1		08/25/15 06:21
41	5L015574.F	L15080781-08 8330-SPE	7	1		08/25/15 07:00
42	5L015575.F	L15080781-09 8330-SPE	7	1		08/25/15 07:39
43	5L015576.F	L15080781-10 8330-SPE	7	1		08/25/15 08:18
44	5L015577.F	L15080781-11 8330-SPE	7	1		08/25/15 08:57
45	5L015578.F	L15080782-01	7	1		08/25/15 09:36
46	5L015579.F	L15080782-02	7	1		08/25/15 10:15
47	5L015580.F	L15080782-03	7	1		08/25/15 10:54
48	5L015581.F	WG536240-06 8330 CCV 500 PPB	1	1	STD71667	08/25/15 11:33
55	5L015582.F	L15080782-04	7	1		08/25/15 12:14
56	5L015583.F	L15080782-05	7	1		08/25/15 12:53
57	5L015584.F	L15080782-06	7	1		08/25/15 13:32
58	5L015585.F	L15080781-01 5x	7	5		08/25/15 14:11
71	5L015586.F	L15080781-04 8330-SPE	7	20		08/25/15 14:51
60	5L015587.F	L15080781-07 20x	7	20		08/25/15 15:30
61	5L015588.F	L15080781-08 20x	7	20		08/25/15 16:09
62	5L015589.F	L15080781-09 5x	7	5		08/25/15 16:48
63	5L015590.F	L15080781-11 5x	7	5		08/25/15 17:27
64	5L015591.F	L15080782-02 20x	7	20		08/25/15 18:06
65	5L015592.F	WG536240-07 8330 CCV 500 PPB	1	1	STD71667	08/25/15 18:45
66	5L015593.F	L15080782-05 5x	7	5		08/25/15 19:24
67	5L015594.F	WG536240-08 8330 CCV 500 PPB	1	1	STD71667	08/25/15 20:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
50				
	L15080781-05 MS: 2,4,6-TNT failed high and 2-A-4,6-DNT failed low due to SMI.			
51				
	L15080781-06 MSD: 3 analytes failed high due to SMI.			
12				

Page: 2 Approved: 26-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPLC5 Dataset: 082415
Analyst1: ECL Analyst2: NA
Method: 8330 SOP: HPLC02 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 00195722
Eluent ID#:

Workgroups: Column 1 ID: KINETEX 5UM C18 Column 2 ID: ULTRACARB

Internal STD: NA Surrogate STD: STD68828
CCV STD: STD71667 LCS STD: STD71678 STD71678

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	WG536240-02 8330 CCV 500 PPB: PETN failed high. Non target analyte.			
23				
	WG536240-03 8330 CCV 500 PPB: Tetryl failed low.			
33	X	5	Over Calibration Range	Nitroglycerin
	L15080781-01			
68	X	20	Over Calibration Range	Nitroglycerin
	L15080781-04			
69				
	L15080781-05 MS: Nitroglycerin (NG) failed high due to the presence of NG in the reference sample.			
70				
	L15080781-05 MS: Nitroglycerin (NG) failed low due to the presence of NG in the reference sample.			
40	X	20	Over Calibration Range	Nitroglycerin
	L15080781-07			
41	X	20	Over Calibration Range	Nitroglycerin
	L15080781-08			
42	X	5	Over Calibration Range	Nitroglycerin
	L15080781-09			
44	X	5	Over Calibration Range	Nitroglycerin
	L15080781-11			
46	X	20	Over Calibration Range	Nitroglycerin
	L15080782-02			
56	X	5	Over Calibration Range	Nitroglycerin
	L15080782-05			

Page: 3 Approved: 26-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUL-2015
Analyst: JWR
Analyst: NA
Method: 8330PLUS-PETN
Instrument: HPLC5
Curve Workgroup: WG532973
Runlog ID: 69487
Analytical Workgroups: ICAL-ONLY (MIXA, MIXB, PETN & SURR)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	173 BAR
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
31-JUL-2015
John Richards

Secondary Reviewer:
11-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-11-2015 15:14:29

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUL-2015
Analyst: JWR
Analyst: NA
Method: 8330-NG
Instrument: HPLC5
Curve Workgroup: WG533611
Runlog ID: 69576
Analytical Workgroups: ICAL-ONLY (NITROGLYCERIN & SURR)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	172 BAR
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	NA
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
03-AUG-2015
John Richards

Secondary Reviewer:
11-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-12-2015 16:14:25

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: ECL
Analyst: NA
Method: 8330
Instrument: HPLC5
Curve Workgroup: NA
Runlog ID: 70031
Analytical Workgroups: L15080772, L15080781, L15080782

ANALYTICAL	
System Performance Check	NA
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ECL
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
26-AUG-2015

Secondary Reviewer:
26-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-26-2015 11:16:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8330B AAB#: WG536214

Login Number: L15080782

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
NB-1	01	08/13/15					08/20/2015	7.2	14		08/25/15	4.8	40	
NB-1	01	08/13/15					08/20/2015	7.2	14		08/24/15	4.1	40	
NB-2	02	08/13/15					08/20/2015	7.1	14		08/25/15	5.2	40	
NB-2	02	08/13/15					08/20/2015	7.1	14		08/24/15	4.1	40	
SB-1	03	08/13/15					08/20/2015	7	14		08/25/15	4.9	40	
SB-1	03	08/13/15					08/20/2015	7	14		08/24/15	4.2	40	
SB-2	04	08/13/15					08/20/2015	7	14		08/24/15	4.2	40	
SB-2	04	08/13/15					08/20/2015	7	14		08/25/15	4.9	40	
BERM-1	05	08/13/15					08/20/2015	7.2	14		08/24/15	4.2	40	
BERM-1	05	08/13/15					08/20/2015	7.2	14		08/25/15	5.2	40	
POND-1	06	08/13/15					08/20/2015	7.2	14		08/25/15	5	40	
POND-1	06	08/13/15					08/20/2015	7.2	14		08/24/15	4.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4352064
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080782
Instrument Id: HPLC5
Workgroup (AAB#): WG536214

Method: 8330
CAL ID: HPLC5-28-JUL-15
Matrix: Soil

Sample Number	Dilution	Tag	1
WG535785-01	1.00	01	91.2
WG535785-02	1.00	01	101

Surrogates	Surrogate Limits		
1 - 1,2-Dinitrobenzene	50	-	150

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4352073
Report generated: 08/26/2015 11:37

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080782
Instrument Id: HPLC5
Workgroup (AAB#): WG536214

Method: 8330
CAL ID: HPLC5-29-JUL-15
Matrix: Soil

Sample Number	Dilution	Tag	1
L15080782-01	1.00	01	107
L15080782-02	1.00	01	134
L15080782-03	1.00	01	91.8
L15080782-04	1.00	01	113
L15080782-05	1.00	01	94.2
L15080782-06	1.00	01	108

Surrogates	Surrogate Limits		
1 - 1,2-Dinitrobenzene	50	-	150

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4352073
Report generated: 08/26/2015 11:37

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L15080782
Blank File ID: 5L015535.F
Prep Date: 08/20/15 14:08
Analyzed Date: 08/24/15 12:10
Analyst: ECL

Work Group: WG536214
Blank Sample ID: WG535785-01
Instrument ID: HPLC5
Method: 8330B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535785-02	5L015536.F	08/24/15 12:31	01
NB-1	L15080782-01	5L015549.F	08/24/15 17:06	01
NB-2	L15080782-02	5L015550.F	08/24/15 17:27	01
SB-1	L15080782-03	5L015551.F	08/24/15 17:48	01
SB-2	L15080782-04	5L015552.F	08/24/15 18:09	01
BERM-1	L15080782-05	5L015553.F	08/24/15 18:30	01
POND-1	L15080782-06	5L015554.F	08/24/15 18:51	01
LCS	WG535785-02	5L015565.F	08/25/15 01:08	02
NB-1	L15080782-01	5L015578.F	08/25/15 09:36	02
SB-1	L15080782-03	5L015580.F	08/25/15 10:54	02
SB-2	L15080782-04	5L015582.F	08/25/15 12:14	02
POND-1	L15080782-06	5L015584.F	08/25/15 13:32	02
NB-2	L15080782-02	5L015591.F	08/25/15 18:06	DL01
BERM-1	L15080782-05	5L015593.F	08/25/15 19:24	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4352065
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15080782 Prep Date: 08/20/15 14:08 Sample ID: WG535785-01
Instrument ID: HPLC5 Run Date: 08/24/15 12:10 Prep Method: METHOD
File ID: 5L015535.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
Contract #: Cal ID: HPLC5-28-JUL-15

Analytes	MDL	RL	Concentration	Dilution	Qualifier
2,4,6-Trinitrotoluene	0.100	0.250	0.100	1	U
2,4-Dinitrotoluene	0.100	0.250	0.100	1	U
2-Amino-4,6-dinitrotoluene	0.100	0.250	0.100	1	U
4-Amino-2,6-dinitrotoluene	0.100	0.250	0.100	1	U
HMX	0.100	0.250	0.100	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	91.2	50 - 150	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 4352066
26-AUG-2015 11:36

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15080782 Prep Date: 08/20/15 14:08 Sample ID: WG535785-01
Instrument ID: HPLC5 Run Date: 08/25/15 00:29 Prep Method: METHOD
File ID: 5L015564.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
Contract #: Cal ID: HPLC5-29-JUL-15

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitroglycerin	0.100	0.250	0.100	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 4352066
26-AUG-2015 11:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080782 Run Date: 08/24/2015 Sample ID: WG535785-02
Instrument ID: HPLC5 Run Time: 12:31 Prep Method: METHOD
File ID: 5L015536.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
QC Key: STD Lot#: STD71678 Cal ID: HPLC5-28-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
2,4,6-Trinitrotoluene	1.00	0.892	89.2	40 - 130	
2,4-Dinitrotoluene	1.00	1.03	103	80 - 125	
2-Amino-4,6-dinitrotoluene	1.00	0.910	91.0	80 - 125	
4-Amino-2,6-dinitrotoluene	1.00	1.02	102	80 - 125	
HMX	1.00	1.01	101	75 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dinitrobenzene	101	50 - 150	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4352067
Report generated: 08/26/2015 11:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080782 Run Date: 08/25/2015 Sample ID: WG535785-02
Instrument ID: HPLC5 Run Time: 01:08 Prep Method: METHOD
File ID: 5L015565.F Analyst: ECL Method: 8330B
Workgroup (AAB#): WG536214 Matrix: Soil Units: mg/kg
QC Key: STD Lot#: STD71678 Cal ID: HPLC5-29-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Nitroglycerin	1.00	1.01	101	50 - 150	

LCS - Modified 03/06/2008
PDF File ID: 4352067
Report generated: 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080782
Analytical Method: 8330B
ICAL Workgroup: WG532973

Instrument ID: HPLC5
Initial Calibration Date: 28-JUL-15 18:49
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
2,4,6-Trinitrotoluene		2.553	0.889	1.00000	
2,4-Dinitrotoluene		1.812	0.761	1.00000	
2-Amino-4,6-Dinitrotoluene		3.076	0.666	1.00000	
4-Amino-2,6-Dinitrotoluene		4.409	0.695	1.00000	
HMX		6.021	3.59	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

This method always uses linear calibration model (R)

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080782
Analytical Method: 8330B
ICAL Workgroup: WG533611

Instrument ID: HPLC5
Initial Calibration Date: 29-JUL-15 20:42
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Nitroglycerin		4.812	10.1	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

This method always uses linear calibration model (R)

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080782

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 28-JUL-15 18:49

Column ID: F

Analyte	WG532973-01			WG532973-02			WG532973-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
2,4,6-Trinitrotoluene	2500	974.182678	2.566	1000	392.044861	2.551	500	194.836273	2.566
2,4-Dinitrotoluene	2500	1372.43994	1.822	1000	549.840759	1.819	500	275.747192	1.813
2-Amino-4,6-Dinitrotoluene	2500	809.163513	3.090	1000	325.839783	3.069	500	161.914459	3.088
4-Amino-2,6-Dinitrotoluene	2500	563.906372	4.433	1000	227.286270	4.400	500	112.949600	4.427
HMX	2500	403.691498	6.193	1000	162.028519	6.172	500	81.4797287	6.136

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080782

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 28-JUL-15 18:49

Column ID: F

Analyte	WG532973-04			WG532973-05			WG532973-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
2,4,6-Trinitrotoluene	100	39.1071548	2.557	50.0	19.4835911	2.566	25.0	9.96548939	2.509
2,4-Dinitrotoluene	100	55.7852859	1.793	50.0	27.3670940	1.827	25.0	13.9069824	1.798
2-Amino-4,6-Dinitrotoluene	100	32.3182602	3.094	50.0	16.2640076	3.074	25.0	8.22596264	3.039
4-Amino-2,6-Dinitrotoluene	100	22.5457687	4.435	50.0	11.4810839	4.355	25.0	5.67660379	4.404
HMX	100	16.6524467	6.005	50.0	8.35225487	5.986	25.0	4.43644667	5.635

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080782

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 29-JUL-15 20:42

Column ID: F

Analyte	WG533611-01			WG533611-02			WG533611-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Nitroglycerin	2500	521.975647	4.789	1000	214.874191	4.654	500	107.846924	4.636

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080782

Analytical Method: 8330B

Instrument ID: HPLC5

Initial Calibration Date: 29-JUL-15 20:42

Column ID: F

Analyte	WG533611-04			WG533611-05			WG533611-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Nitroglycerin	100	20.3422699	4.916	50.0	8.74479485	5.718	25.0	6.00766230	4.161

INT_CAL - Modified 03/06/2008
PDF File ID: 4352068
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080782 Run Date: 07/28/2015 Sample ID: WG532973-07
Instrument ID: HPLC5 Run Time: 19:10 Method: 8330B
File ID: 5L015176.F Analyst: JWR QC Key: STD
ICal Workgroup: WG532973 Cal ID: HPLC5 - 28-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2,4,6-Trinitrotoluene		500	518	ug/L	2.47	3.60	30	
2,4-Dinitrotoluene		500	531	ug/L	1.71	6.10	30	
2-Amino-4,6-Dinitrotoluene		500	508	ug/L	3.03	1.60	30	
4-Amino-2,6-Dinitrotoluene		500	552	ug/L	4.00	10.5	30	
HMX		500	521	ug/L	5.91	4.30	30	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4352069
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080782 Run Date: 07/29/2015 Sample ID: WG533611-07
Instrument ID: HPLC5 Run Time: 21:21 Method: 8330B
File ID: 5L015186.F Analyst: JWR QC Key: STD
ICal Workgroup: WG533611 Cal ID: HPLC5 - 29-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Nitroglycerin		500	516	ug/L	4.59	3.20	30	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4352069
Report generated 08/26/2015 11:36

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/24/2015
Sample ID: WG536240-01
Instrument ID: HPLC5
Run Time: 11:35
Method: 8330B
File ID: 5L015534.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
2,4,6-Trinitrotoluene		0.500	0.514	mg/kg	2.49	2.81	20	
2,4-Dinitrotoluene		0.500	0.552	mg/kg	1.65	10.5	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.470	mg/kg	3.28	6.09	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.545	mg/kg	4.06	8.96	20	
HMX		0.500	0.515	mg/kg	5.98	2.96	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/24/2015
Sample ID: WG536240-02
Instrument ID: HPLC5
Run Time: 15:41
Method: 8330B
File ID: 5L015545.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
2,4,6-Trinitrotoluene		0.500	0.500	mg/kg	2.56	0.0923	20	
2,4-Dinitrotoluene		0.500	0.539	mg/kg	1.69	7.82	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.468	mg/kg	3.29	6.42	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.528	mg/kg	4.19	5.63	20	
HMX		0.500	0.514	mg/kg	6.00	2.72	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/24/2015
Sample ID: WG536240-03
Instrument ID: HPLC5
Run Time: 19:33
Method: 8330B
File ID: 5L015556.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 28-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
2,4,6-Trinitrotoluene		0.500	0.519	mg/kg	2.47	3.86	20	
2,4-Dinitrotoluene		0.500	0.536	mg/kg	1.70	7.20	20	
2-Amino-4,6-Dinitrotoluene		0.500	0.459	mg/kg	3.35	8.14	20	
4-Amino-2,6-Dinitrotoluene		0.500	0.534	mg/kg	4.14	6.84	20	
HMX		0.500	0.515	mg/kg	5.98	3.00	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/24/2015
Sample ID: WG536240-04
Instrument ID: HPLC5
Run Time: 21:13
Method: 8330B
File ID: 5L015559.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.509	mg/kg	4.65	1.79	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/25/2015
Sample ID: WG536240-05
Instrument ID: HPLC5
Run Time: 04:23
Method: 8330B
File ID: 5L015570.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.494	mg/kg	4.79	1.14	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/25/2015
Sample ID: WG536240-06
Instrument ID: HPLC5
Run Time: 11:33
Method: 8330B
File ID: 5L015581.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.489	mg/kg	4.83	2.10	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/25/2015
Sample ID: WG536240-07
Instrument ID: HPLC5
Run Time: 18:45
Method: 8330B
File ID: 5L015592.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.480	mg/kg	4.93	4.02	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080782
Run Date: 08/25/2015
Sample ID: WG536240-08
Instrument ID: HPLC5
Run Time: 20:03
Method: 8330B
File ID: 5L015594.F
Analyst: ECL
QC Key: STD
Workgroup (AAB#): WG536214
Cal ID: HPLC5 - 29-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Nitroglycerin		0.500	0.482	mg/kg	4.91	3.62	20	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4352070
Report generated 08/26/2015 11:37

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 26, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 26, 2015

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)

Qualkey: STD

Z	Cannot be resolved from isomer - see below

Laboratory: Microbac Laboratories- Ohio Valley Division 158 Starlite Drive, Marietta, OH 45750 contact: Michelle Taylor X 4167

ok JCA 8/10/15

Client: Draper Aden Associates **Attn:** **Address:** **Phone:** **Fax:** **Fax:**	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP. Radford, Virginia **Location:** HWMU-13 (Open Burning Ground) **Event:** August 2015 - Annual Soil Monitoring **DAA JN:** B03204-215 **Lab JN:**		**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** *YES* **Carrier:** **Tracking Number:**	

Box 1: Matrix		**Box 2: Preservative**		**Box 3: Filtered/Unfiltered**	**Box 4: Sample Type**	**Invoice**
SW Surface Water	T Trip Blank	A HCL	E NaOH	F Filtered	G Grab	**Copy to Consultant:** *YES*
GW Groundwater	E Equipment Blank	B HNO_3	F ZnAc	U Unfiltered	C Composite	**Bill:** *CLIENT* *OTHER*
L Leachate	P Product	C H_2SO_4	G Other (<6 deg c)	**Box 5: Sample Container Type**		**Preserved and shipped on ice:** *YES*
S Soil	O Other	D $Na_2S_2O_3$	H None	P Plastic V VOA AG Amber Glass CG Clear Glass		

Box 4 - Sample Type					G							
Box 3 - Filtered/Unfiltered					NA							
Required pH of Sample					NA							
Box 2 - Preservative					G							
Box 5 - Sample Container Type					1-4 oz AG							
Sample ID	**Date: 2015**	**Time**	**Box 1: Matrix**	**Number of Bottles**	**8330B -AIR DRY (S-PREP)**							
NB-1	8/13	1015	S	1	X							
NB-2		1230	S	1	X							
SB-1		1300	S	1	X							
SB-2		1315	S	1	X							
BERM-1		0900	S	1	X							
POND-1		0920	S	1	X							

GENERAL NOTES:

1. **Estimated results required.**
2. **Level 4/comprehensive deliverable**
3. **Report results on a DRY WEIGHT BASIS.**
4. **Report results in mg/kg.**
5. **VELAP Accreditation required.**

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

Sampler Name (Print): Will Mason Deep	Date: 8-13-15	#1 Relinquished by (Signature):	Date: 8/13/15	#2 Relin by (Sign	
Sampler Signature:	Time: 0630	Company Name: DAA	Time: 1700	Compar Name:	
Sampler Name (Print): KEN COLLINGTON	Date: 8/13/15	#1 Received by (Signature):	Date:	#2 Rece by (Sign	
Sampler Signature:	Time: 0630	Company Name:	Time:	Compar Name:	

Microbac OVD
Received: 08/14/2015 10:18
By: BRENDA GREGORY 221000074002

Brenda Gregory

Sample Storage Time Requested:
30 DYS ORG/6 MTHS INORG

2/3

Internal Chain of Custody Report

Login: L15080782
Account: 3070
Project: 3070.001
Samples: 6
Due Date: 25-AUG-2015

Samplenum	Container ID	Products
L15080782-01	616922	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080782-02	616923	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080782-03	616924	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L15080782
Account: 3070
Project: 3070.001
Samples: 6
Due Date: 25-AUG-2015

Samplenum	Container ID	Products
L15080782-04	616925	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080782-05	616926	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080782-06	616927	8330-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-AUG-2015 19:39	BRG		
2	PREP	W1	EXT	18-AUG-2015 08:55	JDH	CLS	
3	STORE	EXT	A2	21-AUG-2015 13:11	CLS	JDH	
4	ANALYZ*	EXT	SEMI	24-AUG-2015 09:58	ECL	JDH	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - July 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV

Acetate
Formate

OVL RSK01/GC-FID

Acetylene
Propane

OVL K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15080772

bridged data.
Full deliverable available.

Janet Frazier
Draper Aden Associates
2206 South Main Street
Blacksburg, VA 24060

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on August 28 2015

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: VA
Accrediting Authority: Common Wealth of Virginia ID:460187
QAPP: Microbac OVD

Microbac

Lab Report #: L15080772
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112937	I	3.0		1Z2373010198535451	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15080772
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
EB	L15080772-01	08/13/2015 07:15	08/14/2015 10:18

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15080772
PREPARED FOR Draper Aden Associates
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 11
2.0 Full Sample Data Package 16
2.1 General Chromatography Data 136
2.1.1 6850 LC/MS Data 18
2.1.1.1 Summary Data 19
2.1.1.2 QC Summary Data 24
2.1.1.3 Sample Data 79
2.1.1.4 Standards Data 82
2.1.1.5 Raw QC Data 129
2.1 Semivolatiles Data 136
2.1.2 Explosives (8330B) 137
2.1.2.1 Summary Data 138
2.1.2.2 QC Summary Data 144
2.1.2.3 Sample Data 177
2.1.2.4 Standards Data 183
2.1.2.5 Raw QC Data 252
3.0 Attachments 268

1.0 Summary Data

1.1 Narratives

Login Number: L15080772
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 103253
Approved By: Leslie Bucina

Login Number: L15080772
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: All acceptance criteria were met. The surrogate summary form for the samples references an incorrect calibration date; however the values are correct.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 103109
Approved By: Wade DeLong

1.2 Certificate of Analysis

Microbac

Lab Report #: L15080772
Lab Project #: 3070.001
Project Name: Draper Aden Associates
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L15080772-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	EB	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 18:22
Collect Date:	08/13/2015 07:15	**Dilution:**	1	**File ID:**	1LM.LM31438
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Perchlorate	14797-73-0		ND	0.200	0.100

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080772-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	EB	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	07/28/2015 18:49
Workgroup #:	WG535990	**Analyst:**	ECL	**Run Date:**	08/21/2015 16:31
Collect Date:	08/13/2015 07:15	**Dilution:**	1	**File ID:**	5L015527.F
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,3,5-Trinitrobenzene	99-35-4		ND	1.02	0.255
1,3-Dinitrobenzene	99-65-0		ND	1.02	0.255
2,4,6-Trinitrotoluene	118-96-7		ND	1.02	0.255
2,4-Dinitrotoluene	121-14-2		ND	1.02	0.255
2,6-Dinitrotoluene	606-20-2		ND	1.02	0.255
2-Amino-4,6-dinitrotoluene	35572-78-2		ND	1.02	0.255
2-Nitrotoluene	88-72-2		ND	1.02	0.255
3-Nitrotoluene	99-08-1		ND	1.02	0.255
4-Nitrotoluene	99-99-0		ND	1.02	0.255
4-Amino-2,6-dinitrotoluene	19406-51-0		ND	1.02	0.255
HMX	2691-41-0		ND	1.02	0.255
Nitrobenzene	98-95-3		ND	1.02	0.255
RDX	121-82-4		ND	1.02	0.255
Tetryl	479-45-8		ND	1.02	0.255

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dinitrobenzene	97.3	50	150	

ND	Not detected at or above the reporting limit (RL)

Certificate of Analysis

Sample #:	L15080772-01	**PrePrep Method:**	N/A	**Instrument:**	HPLC5
Client ID:	EB	**Prep Method:**	METHOD	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	8330B	**Cal Date:**	07/29/2015 20:42
Workgroup #:	WG535990	**Analyst:**	ECL	**Run Date:**	08/24/2015 23:50
Collect Date:	08/13/2015 07:15	**Dilution:**	1	**File ID:**	5L015563.F
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitroglycerin	55-63-0		ND	1.02	0.255

ND	Not detected at or above the reporting limit (RL)

OK JV 8/14/15

Laboratory: Microbac Laboratories- Ohio Valley Division 158 Starlite Drive, Marietta, OH 45750 contact: Michelle Taylor 1-740-373-4071 X 4167

Client: Draper Aden Associates **Attn:** **Address:** **Phone:** **Fax:** **Fax:**	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP. Radford, Virginia **Location:** HWMU-13 (Open Burning Ground) **Event:** August 2015 - Annual Soil Monitoring **DAA JN:** B03204-215 **Lab JN:**	**Project Specific (PS) ~~or Batch (B) QC~~:** **Sample Collection for Project Complete?** *YES* **Carrier:** **Tracking Number:**

Box 1: Matrix
SW Surface Water, T Trip Blank, GW Groundwater, E Equipment Blank, L Leachate, P Product, S Soil, O Other

Box 2: Preservative
A HCL, B HNO_3, C H_2SO_4, D $Na_2S_2O_3$, E NaOH, F ZnAc, G Other (<6 deg C), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Box 4: Sample Type
G Grab, C Composite

Invoice
Copy to Consultant: *YES*
Bill: *CLIENT* *OTHER* _____
Preserved and shipped on ice: *YES*

Box 4 - Sample Type					G	.	G								
Box 3 - Filtered/Unfiltered					F	.	U								
Required pH of Sample					NA	.	NA								
Box 2 - Preservative					H	.	H								
Box 5 - Sample Container Type					1-250 ml P		2-1LAG								
Sample ID	**Date: 2015**	**Time**	**Box 1: Matrix**	**Number of Bottles**	**Perchlorate - 6850**		**8330B** (*)								
~~SQ BLK~~	8/13	0715	W	3	X		X								
EB															
NYC 8-13-15															

GENERAL NOTES:
1. **Estimated results required.** **Level 4/comprehensive deliverable**

(*) See attached analyte list. JVK 8/13/15

Pre-sampling Equipment Blank

lients Special Instructions:
Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

Sampler Name (Print): REN CODDINGTON	Date: 8/13/15	#1 Relinquished by (Signature):	Date: 8/13/15	#2 Reli by (Sig	
Sampler Signature:	Time: 0630	Company Name: DAA	Time: 1700	Compa Name:	
Sampler Name (Print): Will Mason-Dase	Date: 8/13/15	#1 Received by (Signature):	Date:	#2 Rec by (Sig	
Sampler Signature:	Time: 0630	Company Name:	Time:	Compa Name:	

Microbac OVD
Received: 08/14/2015 10:18
By: BRENDA GREGORY 221000073959
Brenda Gregory

Sample Storage Time Requested:
30 DYS ORG/6 MTHS INORG

(*) OK to report w/ soil event. JVK 8/13/15

JVK 8/14

1/2

EQUIPMENT BLANK ONLY- WATER -

Open Burning Ground (OBG) – Unit 13
Radford Army Ammunition Plant
Annual Soil Monitoring Event

Based on revised permit effective June 12, 2014

ANALYTICAL METHOD: 8330B
- Microbac, Marietta, OH
TYPE METHOD: Explosives

Constituent	CASRN	SW-846 Method
Nitroglycerin	55-63-0	8330B
1,3,5-Trinitrobenzene	99-35-4	8330B
2,4,6-Trinitrotoluene	118-96-7	8330B
2-amino-4,6-dinitrotoluene	35572-78-2	8330B
4-amino-2,6-dinitrotoluene	19406-51-0	8330B
1,3-Dinitrobenzene	99-65-0	8330B
2,4-Dinitrotoluene	121-14-2	8330B
2,6-Dinitrotoluene	606-20-2	8330B
2-Nitrotoluene (ortho)	88-72-2	8330B
3-Nitrotoluene (meta)	99-08-1	8330B
4-Nitrotoluene (para)	99-99-0	8330B
HMX	2691-41-0	8330B
Nitrobenzene	98-95-3	8330B
RDX	121-82-4	8330B
Tetryl	479-45-8	8330B

VELAP ✓
AT 8/13/15

Microbac OVD
Received: 08/14/2015 10:18
By: BRENDA GREGORY 221000073959

Brenda Gregory

T:\Environmental\BBG\Databases\RAAP\Sample Event Set Up\Semi-Annual Events\HWMU-13\Annual OBG Soil Event\2015- Unit 13-OBG - EQ Blank.doc

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-54357-1
Client Project/Site: RAAP - HWMU-13 (Open Burning Ground)

For:
Draper Aden Associates, Inc.
2206 South Main street
Blacksburg, Virginia 24060

Attn: Janet Frazier

Authorized for release by:
8/31/2015 2:21:07 PM

Mark Loeb, Project Manager II
(330)966-9387
mark.loeb@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Sample Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-54357-1	PAD-1	Solid	08/13/15 09:35	08/14/15 10:00
240-54357-2	PAD-2	Solid	08/13/15 10:05	08/14/15 10:00
240-54357-3	PAD-3	Solid	08/13/15 10:40	08/14/15 10:00
240-54357-4	PAD-4	Solid	08/13/15 10:55	08/14/15 10:00
240-54357-5	PAD-5	Solid	08/13/15 11:10	08/14/15 10:00
240-54357-6	PAD-6	Solid	08/13/15 11:35	08/14/15 10:00
240-54357-7	PAD-7	Solid	08/13/15 11:50	08/14/15 10:00
240-54357-8	PAD-8	Solid	08/13/15 12:10	08/14/15 10:00
240-54357-9	PAD-X	Solid	08/13/15 11:55	08/14/15 10:00
240-54357-10	PAD-XX	Solid	08/13/15 09:40	08/14/15 10:00
240-54357-11	NB-1	Solid	08/13/15 10:15	08/14/15 10:00
240-54357-12	NB-2	Solid	08/13/15 12:30	08/14/15 10:00
240-54357-13	SB-1	Solid	08/13/15 13:00	08/14/15 10:00
240-54357-14	SB-2	Solid	08/13/15 13:15	08/14/15 10:00
240-54357-15	BERM-1	Solid	08/13/15 09:00	08/14/15 10:00
240-54357-16	POND-1	Solid	08/13/15 09:20	08/14/15 10:00
240-54357-17	EB	Water	08/13/15 12:40	08/14/15 10:00

Detection Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-1 — Lab Sample ID: 240-54357-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	14	J	17	6.6	mg/Kg	1	☼	8015C	Total/NA
Arsenic	1.5		1.5	0.40	mg/Kg	1	☼	6010C	Total/NA
Barium	170		20	0.40	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.082	J	0.49	0.021	mg/Kg	1	☼	6010C	Total/NA
Chromium	11		0.98	0.073	mg/Kg	1	☼	6010C	Total/NA
Lead	54	B	0.98	0.022	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: PAD-2 — Lab Sample ID: 240-54357-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.7		1.4	0.40	mg/Kg	1	☼	6010C	Total/NA
Barium	120		19	0.40	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.35	J	0.48	0.020	mg/Kg	1	☼	6010C	Total/NA
Chromium	20		0.97	0.072	mg/Kg	1	☼	6010C	Total/NA
Lead	220	B	0.97	0.021	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.027	J	0.12	0.017	mg/Kg	1	☼	7471A	Total/NA
Cr (VI)	0.31	J	0.87	0.28	mg/Kg	1	☼	7196A	Total/NA

Client Sample ID: PAD-3 — Lab Sample ID: 240-54357-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.9		1.6	0.44	mg/Kg	1	☼	6010C	Total/NA
Barium	82		22	0.44	mg/Kg	1	☼	6010C	Total/NA
Chromium	15		1.1	0.081	mg/Kg	1	☼	6010C	Total/NA
Lead	8.8	B	1.1	0.024	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.033	J	0.12	0.017	mg/Kg	1	☼	7471A	Total/NA
Cr (VI)	0.55	J	1.0	0.33	mg/Kg	1	☼	7196A	Total/NA

Client Sample ID: PAD-4 — Lab Sample ID: 240-54357-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	19		18	7.1	mg/Kg	1	☼	8015C	Total/NA
Arsenic	2.4		1.3	0.36	mg/Kg	1	☼	6010C	Total/NA
Barium	79		18	0.36	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.18	J	0.44	0.019	mg/Kg	1	☼	6010C	Total/NA
Chromium	13		0.89	0.067	mg/Kg	1	☼	6010C	Total/NA
Lead	120	B F1	0.89	0.020	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: PAD-5 — Lab Sample ID: 240-54357-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.2		1.4	0.39	mg/Kg	1	☼	6010C	Total/NA
Barium	76		19	0.39	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.11	J	0.48	0.020	mg/Kg	1	☼	6010C	Total/NA
Chromium	12		0.96	0.072	mg/Kg	1	☼	6010C	Total/NA
Lead	120	B	0.96	0.021	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.029	J	0.10	0.014	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: PAD-6 — Lab Sample ID: 240-54357-6

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-6 (Continued) — Lab Sample ID: 240-54357-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.7		1.5	0.40	mg/Kg	1	☼	6010C	Total/NA
Barium	82		20	0.40	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.19	J	0.49	0.021	mg/Kg	1	☼	6010C	Total/NA
Chromium	59		0.99	0.074	mg/Kg	1	☼	6010C	Total/NA
Lead	900	B	0.99	0.022	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.038	J	0.12	0.016	mg/Kg	1	☼	7471A	Total/NA
Cr (VI)	2.2		0.91	0.29	mg/Kg	1	☼	7196A	Total/NA

Client Sample ID: PAD-7 — Lab Sample ID: 240-54357-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	11	J	18	7.0	mg/Kg	1	☼	8015C	Total/NA
Arsenic	1.8		1.5	0.40	mg/Kg	1	☼	6010C	Total/NA
Barium	92		19	0.40	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.11	J	0.49	0.020	mg/Kg	1	☼	6010C	Total/NA
Chromium	12		0.97	0.073	mg/Kg	1	☼	6010C	Total/NA
Lead	97	B	0.97	0.021	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.018	J	0.10	0.014	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: PAD-8 — Lab Sample ID: 240-54357-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.6		1.3	0.36	mg/Kg	1	☼	6010C	Total/NA
Barium	190		18	0.36	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.037	J	0.44	0.019	mg/Kg	1	☼	6010C	Total/NA
Chromium	25		0.89	0.067	mg/Kg	1	☼	6010C	Total/NA
Lead	110	B	0.89	0.020	mg/Kg	1	☼	6010C	Total/NA
Cr (VI)	0.56	J	0.83	0.27	mg/Kg	1	☼	7196A	Total/NA

Client Sample ID: PAD-X — Lab Sample ID: 240-54357-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	8.5	J	18	6.7	mg/Kg	1	☼	8015C	Total/NA
Arsenic	2.0		1.4	0.39	mg/Kg	1	☼	6010C	Total/NA
Barium	96		19	0.39	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.10	J	0.47	0.020	mg/Kg	1	☼	6010C	Total/NA
Chromium	12		0.94	0.071	mg/Kg	1	☼	6010C	Total/NA
Lead	91	B	0.94	0.021	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: PAD-XX — Lab Sample ID: 240-54357-10

No Detections.

Client Sample ID: NB-1 — Lab Sample ID: 240-54357-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.9		1.7	0.48	mg/Kg	1	☼	6010C	Total/NA
Barium	110		23	0.48	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.30	J	0.58	0.024	mg/Kg	1	☼	6010C	Total/NA
Chromium	14		1.2	0.087	mg/Kg	1	☼	6010C	Total/NA
Lead	210	B	1.2	0.026	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: NB-1 (Continued) — Lab Sample ID: 240-54357-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.44	J	2.3	0.39	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.044	J	0.13	0.018	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: NB-2 — Lab Sample ID: 240-54357-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.6		1.5	0.41	mg/Kg	1	☼	6010C	Total/NA
Barium	91		20	0.41	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.17	J	0.50	0.021	mg/Kg	1	☼	6010C	Total/NA
Chromium	12		1.0	0.075	mg/Kg	1	☼	6010C	Total/NA
Lead	180	B	1.0	0.022	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.032	J	0.14	0.019	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: SB-1 — Lab Sample ID: 240-54357-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.0		1.7	0.48	mg/Kg	1	☼	6010C	Total/NA
Barium	100		23	0.48	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.23	J	0.58	0.024	mg/Kg	1	☼	6010C	Total/NA
Chromium	18		1.2	0.087	mg/Kg	1	☼	6010C	Total/NA
Lead	73	B	1.2	0.026	mg/Kg	1	☼	6010C	Total/NA
Selenium	0.40	J	2.3	0.40	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.050	J	0.13	0.018	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: SB-2 — Lab Sample ID: 240-54357-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.2		2.0	0.54	mg/Kg	1	☼	6010C	Total/NA
Barium	130		26	0.54	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.40	J	0.66	0.028	mg/Kg	1	☼	6010C	Total/NA
Chromium	23		1.3	0.098	mg/Kg	1	☼	6010C	Total/NA
Lead	150	B	1.3	0.029	mg/Kg	1	☼	6010C	Total/NA
Selenium	0.50	J	2.6	0.45	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.076	J	0.15	0.021	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: BERM-1 — Lab Sample ID: 240-54357-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.8		1.3	0.36	mg/Kg	1	☼	6010C	Total/NA
Barium	79		18	0.36	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.11	J	0.44	0.019	mg/Kg	1	☼	6010C	Total/NA
Chromium	13		0.88	0.066	mg/Kg	1	☼	6010C	Total/NA
Lead	160	B	0.88	0.019	mg/Kg	1	☼	6010C	Total/NA
Selenium	0.38	J	1.8	0.30	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.016	J	0.11	0.015	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: POND-1 — Lab Sample ID: 240-54357-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.1		1.3	0.36	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: POND-1 (Continued) — Lab Sample ID: 240-54357-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	64		18	0.36	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.11	J	0.44	0.018	mg/Kg	1	☼	6010C	Total/NA
Chromium	15		0.88	0.066	mg/Kg	1	☼	6010C	Total/NA
Lead	70	B	0.88	0.019	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: EB — Lab Sample ID: 240-54357-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.099	J	0.20	0.090	ug/L	1		7470A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-1

Date Collected: 08/13/15 09:35
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-1

Matrix: Solid
Percent Solids: 96.4

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	**14**	**J**	17	6.6	mg/Kg	☼	08/17/15 08:08	08/19/15 04:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*40 - 160*	*08/17/15 08:08*	*08/19/15 04:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.5**		1.5	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Barium	**170**		20	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Cadmium	**0.082**	**J**	0.49	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Chromium	**11**		0.98	0.073	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Lead	**54**	**B**	0.98	0.022	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Selenium	2.0	U	2.0	0.33	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1
Silver	0.98	U	0.98	0.062	mg/Kg	☼	08/17/15 11:15	08/18/15 11:42	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.093	U	0.093	0.013	mg/Kg	☼	08/17/15 14:35	08/18/15 11:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.83	U	0.83	0.27	mg/Kg	☼	08/20/15 08:55	08/21/15 15:33	1
Percent Solids	**96**		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	**3.6**		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-2

Date Collected: 08/13/15 10:05
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-2

Matrix: Solid
Percent Solids: 92.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.7		1.4	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Barium	120		19	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Cadmium	0.35	J	0.48	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Chromium	20		0.97	0.072	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Lead	220	B	0.97	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Selenium	1.9	U	1.9	0.33	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1
Silver	0.97	U	0.97	0.061	mg/Kg	☼	08/17/15 11:15	08/18/15 11:47	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	J	0.12	0.017	mg/Kg	☼	08/17/15 14:35	08/18/15 11:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.31	J	0.87	0.28	mg/Kg	☼	08/20/15 08:55	08/21/15 15:35	1
Percent Solids	92		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	7.6		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-3

Date Collected: 08/13/15 10:40
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-3

Matrix: Solid
Percent Solids: 79.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.9		1.6	0.44	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Barium	82		22	0.44	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Cadmium	0.54	U	0.54	0.023	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Chromium	15		1.1	0.081	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Lead	8.8	B	1.1	0.024	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Selenium	2.2	U	2.2	0.37	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1
Silver	1.1	U	1.1	0.068	mg/Kg	☼	08/17/15 11:15	08/18/15 11:59	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.033	J	0.12	0.017	mg/Kg	☼	08/17/15 14:35	08/18/15 12:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.55	J	1.0	0.33	mg/Kg	☼	08/20/15 08:55	08/21/15 15:37	1
Percent Solids	79		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	21		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-4

Date Collected: 08/13/15 10:55
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-4

Matrix: Solid
Percent Solids: 90.9

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	**19**		18	7.1	mg/Kg	☼	08/19/15 08:52	08/21/15 07:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*80*		*40 - 160*	*08/19/15 08:52*	*08/21/15 07:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.4**		1.3	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Barium	**79**		18	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Cadmium	**0.18**	**J**	0.44	0.019	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Chromium	**13**		0.89	0.067	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Lead	**120**	**B F1**	0.89	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Selenium	1.8	U	1.8	0.30	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1
Silver	0.89	U	0.89	0.056	mg/Kg	☼	08/17/15 11:15	08/18/15 11:23	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.099	U	0.099	0.014	mg/Kg	☼	08/17/15 14:35	08/18/15 11:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.88	U	0.88	0.29	mg/Kg	☼	08/20/15 08:55	08/21/15 15:49	1
Percent Solids	**91**		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	**9.1**		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-5

Date Collected: 08/13/15 11:10
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-5

Matrix: Solid
Percent Solids: 93.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.2**		1.4	0.39	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Barium	**76**		19	0.39	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Cadmium	**0.11**	**J**	0.48	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Chromium	**12**		0.96	0.072	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Lead	**120**	**B**	0.96	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Selenium	1.9	U	1.9	0.33	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1
Silver	0.96	U	0.96	0.060	mg/Kg	☼	08/17/15 11:15	08/18/15 12:03	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.029**	**J**	0.10	0.014	mg/Kg	☼	08/17/15 14:35	08/18/15 12:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.86	U	0.86	0.28	mg/Kg	☼	08/20/15 08:55	08/21/15 15:51	1
Percent Solids	**93**		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	**6.8**		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-6

Date Collected: 08/13/15 11:35
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-6

Matrix: Solid
Percent Solids: 88.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		1.5	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Barium	82		20	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Cadmium	0.19	J	0.49	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Chromium	59		0.99	0.074	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Lead	900	B	0.99	0.022	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Selenium	2.0	U	2.0	0.34	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1
Silver	0.99	U	0.99	0.062	mg/Kg	☼	08/17/15 11:15	08/18/15 12:07	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.038	J	0.12	0.016	mg/Kg	☼	08/17/15 14:35	08/18/15 12:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	2.2		0.91	0.29	mg/Kg	☼	08/20/15 08:55	08/21/15 15:53	1
Percent Solids	88		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	12		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-7

Date Collected: 08/13/15 11:50
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-7

Matrix: Solid
Percent Solids: 92.6

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	11	J	18	7.0	mg/Kg	☼	08/17/15 08:08	08/19/15 07:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*78*		*40 - 160*	*08/17/15 08:08*	*08/19/15 07:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.8		1.5	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Barium	92		19	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Cadmium	0.11	J	0.49	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Chromium	12		0.97	0.073	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Lead	97	B	0.97	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Selenium	1.9	U	1.9	0.33	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1
Silver	0.97	U	0.97	0.061	mg/Kg	☼	08/17/15 11:15	08/18/15 12:11	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018	J	0.10	0.014	mg/Kg	☼	08/17/15 14:35	08/18/15 11:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.86	U	0.86	0.28	mg/Kg	☼	08/20/15 08:55	08/21/15 15:55	1
Percent Solids	93		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	7.4		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-8

Date Collected: 08/13/15 12:10
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-8

Matrix: Solid
Percent Solids: 96.2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6		1.3	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Barium	190		18	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Cadmium	0.037	J	0.44	0.019	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Chromium	25		0.89	0.067	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Lead	110	B	0.89	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Selenium	1.8	U	1.8	0.30	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1
Silver	0.89	U	0.89	0.056	mg/Kg	☼	08/17/15 11:15	08/18/15 12:15	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.094	U	0.094	0.013	mg/Kg	☼	08/17/15 14:35	08/18/15 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.56	J	0.83	0.27	mg/Kg	☼	08/20/15 08:55	08/21/15 15:57	1
Percent Solids	96		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	3.8		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-X

Date Collected: 08/13/15 11:55
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-9

Matrix: Solid
Percent Solids: 93.9

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	8.5	J	18	6.7	mg/Kg	☼	08/17/15 08:08	08/19/15 08:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*71*		*40 - 160*	*08/17/15 08:08*	*08/19/15 08:54*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0		1.4	0.39	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Barium	96		19	0.39	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Cadmium	0.10	J	0.47	0.020	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Chromium	12		0.94	0.071	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Lead	91	B	0.94	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Selenium	1.9	U	1.9	0.32	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1
Silver	0.94	U	0.94	0.059	mg/Kg	☼	08/17/15 11:15	08/18/15 12:19	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.098	U	0.098	0.014	mg/Kg	☼	08/17/15 14:35	08/18/15 11:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.85	U	0.85	0.28	mg/Kg	☼	08/20/15 08:58	08/21/15 15:59	1
Percent Solids	94		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	6.1		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-XX

Lab Sample ID: 240-54357-10

Date Collected: 08/13/15 09:40
Matrix: Solid
Date Received: 08/14/15 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	97		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	2.8		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: NB-1

Date Collected: 08/13/15 10:15
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-11

Matrix: Solid
Percent Solids: 77.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.9		1.7	0.48	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Barium	110		23	0.48	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Cadmium	0.30	J	0.58	0.024	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Chromium	14		1.2	0.087	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Lead	210	B	1.2	0.026	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Selenium	0.44	J	2.3	0.39	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1
Silver	1.2	U	1.2	0.073	mg/Kg	☼	08/17/15 11:15	08/18/15 12:23	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044	J	0.13	0.018	mg/Kg	☼	08/17/15 14:35	08/18/15 11:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	22		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: NB-2

Date Collected: 08/13/15 12:30
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-12

Matrix: Solid
Percent Solids: 81.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6		1.5	0.41	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Barium	91		20	0.41	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Cadmium	0.17	J	0.50	0.021	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Chromium	12		1.0	0.075	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Lead	180	B	1.0	0.022	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Selenium	2.0	U	2.0	0.34	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1
Silver	1.0	U	1.0	0.063	mg/Kg	☼	08/17/15 11:15	08/18/15 12:27	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.032	J	0.14	0.019	mg/Kg	☼	08/17/15 14:35	08/18/15 11:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	19		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: SB-1

Date Collected: 08/13/15 13:00
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-13

Matrix: Solid
Percent Solids: 74.8

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0		1.7	0.48	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Barium	100		23	0.48	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Cadmium	0.23	J	0.58	0.024	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Chromium	18		1.2	0.087	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Lead	73	B	1.2	0.026	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Selenium	0.40	J	2.3	0.40	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1
Silver	1.2	U	1.2	0.073	mg/Kg	☼	08/17/15 11:15	08/18/15 12:31	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.050	J	0.13	0.018	mg/Kg	☼	08/17/15 14:35	08/18/15 11:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	25		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: SB-2

Date Collected: 08/13/15 13:15
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-14

Matrix: Solid
Percent Solids: 71.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.2		2.0	0.54	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Barium	130		26	0.54	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Cadmium	0.40	J	0.66	0.028	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Chromium	23		1.3	0.098	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Lead	150	B	1.3	0.029	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Selenium	0.50	J	2.6	0.45	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1
Silver	1.3	U	1.3	0.083	mg/Kg	☼	08/17/15 11:15	08/18/15 12:35	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.076	J	0.15	0.021	mg/Kg	☼	08/17/15 14:35	08/18/15 11:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	71		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	29		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: BERM-1

Date Collected: 08/13/15 09:00
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-15

Matrix: Solid
Percent Solids: 94.3

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.8		1.3	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Barium	79		18	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Cadmium	0.11	J	0.44	0.019	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Chromium	13		0.88	0.066	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Lead	160	B	0.88	0.019	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Selenium	0.38	J	1.8	0.30	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1
Silver	0.88	U	0.88	0.056	mg/Kg	☼	08/17/15 11:15	08/18/15 12:47	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016	J	0.11	0.015	mg/Kg	☼	08/17/15 14:35	08/18/15 11:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	5.7		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: POND-1

Date Collected: 08/13/15 09:20
Date Received: 08/14/15 10:00

Lab Sample ID: 240-54357-16

Matrix: Solid
Percent Solids: 96.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.1**		1.3	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Barium	**64**		18	0.36	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Cadmium	**0.11**	**J**	0.44	0.018	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Chromium	**15**		0.88	0.066	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Lead	**70**	**B**	0.88	0.019	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Selenium	1.8	U	1.8	0.30	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1
Silver	0.88	U	0.88	0.055	mg/Kg	☼	08/17/15 11:15	08/18/15 12:51	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.12	0.016	mg/Kg	☼	08/17/15 14:35	08/18/15 11:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**96**		0.10	0.10	%			08/17/15 13:33	1
Percent Moisture	**3.6**		0.10	0.10	%			08/17/15 13:33	1

Client Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: EB

Lab Sample ID: 240-54357-17

Date Collected: 08/13/15 12:40
Date Received: 08/14/15 10:00

Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	480	U	480	190	ug/L		08/17/15 06:16	08/18/15 20:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*75*		*40 - 160*	*08/17/15 06:16*	*08/18/15 20:53*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	10	U	10	0.92	ug/L		08/17/15 10:24	08/18/15 13:03	1
Arsenic	15	U	15	2.9	ug/L		08/17/15 10:24	08/18/15 13:03	1
Barium	200	U	200	1.0	ug/L		08/17/15 10:24	08/18/15 13:03	1
Cadmium	5.0	U	5.0	0.14	ug/L		08/17/15 10:24	08/18/15 13:03	1
Chromium	10	U	10	0.55	ug/L		08/17/15 10:24	08/18/15 13:03	1
Lead	10	U	10	1.9	ug/L		08/17/15 10:24	08/18/15 13:03	1
Selenium	20	U	20	4.0	ug/L		08/17/15 10:24	08/18/15 13:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.099**	**J**	0.20	0.090	ug/L		08/17/15 14:00	08/20/15 10:23	1

Surrogate Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**OTPH1 (40-160)**						
240-54357-1	PAD-1	71						
240-54357-4	PAD-4	80						
240-54357-4 MS	PAD-4	103						
240-54357-4 MSD	PAD-4	88						
240-54357-7	PAD-7	78						
240-54357-9	PAD-X	71						
240-54357-9 MS	PAD-X	75						
240-54357-9 MSD	PAD-X	75						
LCS 240-193512/22-A	Lab Control Sample	64						
LCS 240-193887/11-A	Lab Control Sample	64						
MB 240-193512/21-A	Method Blank	60						
MB 240-193887/10-A	Method Blank	61						

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	**Client Sample ID**	**OTPH1 (40-160)**						
240-54357-17	EB	75						
LCS 240-193488/4-A	Lab Control Sample	79						
MB 240-193488/3-A	Method Blank	76						

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 240-193488/3-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193488**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	500	U	500	200	ug/L		08/17/15 06:16	08/18/15 19:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*76*		*40 - 160*	*08/17/15 06:16*	*08/18/15 19:18*	*1*

Lab Sample ID: LCS 240-193488/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193488**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel	2500	1850		ug/L		74	40 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*79*		*40 - 160*

Lab Sample ID: MB 240-193512/21-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193512**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	17	U	17	6.4	mg/Kg		08/17/15 08:08	08/18/15 21:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*60*		*40 - 160*	*08/17/15 08:08*	*08/18/15 21:56*	*1*

Lab Sample ID: LCS 240-193512/22-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193512**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel	83.3	53.1		mg/Kg		64	52 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*64*		*40 - 160*

Lab Sample ID: 240-54357-9 MS — **Client Sample ID: PAD-X**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel	8.5	J	87.4	57.2		mg/Kg	☼	56	10 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl (Surr)	*75*		*40 - 160*

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: 240-54357-9 MSD — **Client Sample ID: PAD-X**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193799 — **Prep Batch: 193512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel	8.5	J	88.6	64.1		mg/Kg	☼	63	10 - 124	11	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*75*		*40 - 160*

Lab Sample ID: MB 240-193887/10-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194176 — **Prep Batch: 193887**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel	17	U	17	6.4	mg/Kg		08/19/15 08:52	08/20/15 23:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*61*		*40 - 160*	*08/19/15 08:52*	*08/20/15 23:50*	*1*

Lab Sample ID: LCS 240-193887/11-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194176 — **Prep Batch: 193887**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel	83.3	54.7		mg/Kg		66	52 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*64*		*40 - 160*

Lab Sample ID: 240-54357-4 MS — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194176 — **Prep Batch: 193887**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel	19		92.4	70.6		mg/Kg	☼	56	10 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl (Surr)	*103*		*40 - 160*

Lab Sample ID: 240-54357-4 MSD — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194176 — **Prep Batch: 193887**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel	19		91.9	77.0		mg/Kg	☼	63	10 - 124	9	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*88*		*40 - 160*

QC Sample Results

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-193558/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193699 — **Prep Batch: 193558**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	U	1.5	0.41	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Barium	20	U	20	0.41	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Cadmium	0.50	U	0.50	0.021	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Chromium	1.0	U	1.0	0.075	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Lead	0.0978	J	1.0	0.022	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Selenium	2.0	U	2.0	0.34	mg/Kg		08/17/15 11:15	08/18/15 11:15	1
Silver	1.0	U	1.0	0.063	mg/Kg		08/17/15 11:15	08/18/15 11:15	1

Lab Sample ID: LCS 240-193558/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193699 — **Prep Batch: 193558**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	193		mg/Kg		96	80 - 120
Barium	200	191		mg/Kg		95	80 - 120
Cadmium	5.00	4.92		mg/Kg		98	80 - 120
Chromium	20.0	19.6		mg/Kg		98	80 - 120
Lead	50.0	47.6		mg/Kg		95	80 - 120
Selenium	200	192		mg/Kg		96	80 - 120
Silver	5.00	4.88		mg/Kg		98	80 - 120

Lab Sample ID: 240-54357-4 MS — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193699 — **Prep Batch: 193558**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.4		204	186		mg/Kg	☼	90	75 - 125
Barium	79		204	250		mg/Kg	☼	84	75 - 125
Cadmium	0.18	J	5.09	4.85		mg/Kg	☼	91	75 - 125
Chromium	13		20.4	30.3		mg/Kg	☼	84	75 - 125
Lead	120	B F1	50.9	139	F1	mg/Kg	☼	43	75 - 125
Selenium	1.8	U	204	184		mg/Kg	☼	90	75 - 125
Silver	0.89	U	5.09	4.37		mg/Kg	☼	86	75 - 125

Lab Sample ID: 240-54357-4 MSD — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193699 — **Prep Batch: 193558**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	2.4		204	188		mg/Kg	☼	91	75 - 125	1	20
Barium	79		204	274		mg/Kg	☼	96	75 - 125	9	20
Cadmium	0.18	J	5.09	4.95		mg/Kg	☼	94	75 - 125	2	20
Chromium	13		20.4	30.4		mg/Kg	☼	84	75 - 125	0	20
Lead	120	B F1	50.9	163		mg/Kg	☼	92	75 - 125	16	20
Selenium	1.8	U	204	187		mg/Kg	☼	92	75 - 125	2	20
Silver	0.89	U	5.09	4.55		mg/Kg	☼	89	75 - 125	4	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 240-193542/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 193699 — **Prep Batch: 193542**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	15	U	15	2.9	ug/L		08/17/15 10:24	08/18/15 12:56	1
Barium	1.04	J	200	1.0	ug/L		08/17/15 10:24	08/18/15 12:56	1
Cadmium	5.0	U	5.0	0.14	ug/L		08/17/15 10:24	08/18/15 12:56	1
Chromium	10	U	10	0.55	ug/L		08/17/15 10:24	08/18/15 12:56	1
Lead	10	U	10	1.9	ug/L		08/17/15 10:24	08/18/15 12:56	1
Selenium	20	U	20	4.0	ug/L		08/17/15 10:24	08/18/15 12:56	1
Silver	10	U	10	0.92	ug/L		08/17/15 10:24	08/18/15 12:56	1

Lab Sample ID: LCS 240-193542/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 193699 — **Prep Batch: 193542**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2000	2030		ug/L		102	80 - 120
Barium	2000	1940		ug/L		97	80 - 120
Cadmium	50.0	51.2		ug/L		102	80 - 120
Chromium	200	200		ug/L		100	80 - 120
Lead	500	491		ug/L		98	80 - 120
Selenium	2000	2100		ug/L		105	80 - 120
Silver	50.0	51.9		ug/L		104	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-193543/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 193999 — **Prep Batch: 193543**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.090	ug/L		08/17/15 14:00	08/19/15 14:53	1

Lab Sample ID: LCS 240-193543/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 193999 — **Prep Batch: 193543**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.58		ug/L		92	80 - 120

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 240-193569/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193862 — **Prep Batch: 193569**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10	U	0.10	0.014	mg/Kg		08/17/15 14:35	08/18/15 11:19	1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 240-193569/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193862 — **Prep Batch: 193569**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.833	0.783		mg/Kg		94	80 - 120		

Lab Sample ID: 240-54357-4 MS — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193862 — **Prep Batch: 193569**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.099	U	0.167	0.178		mg/Kg	☼	107	80 - 120		

Lab Sample ID: 240-54357-4 MSD — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193862 — **Prep Batch: 193569**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.099	U	0.167	0.170		mg/Kg	☼	102	80 - 120	5	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 240-194081/9-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194369 — **Prep Batch: 194081**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.80	U	0.80	0.26	mg/Kg		08/20/15 08:55	08/21/15 00:00	1

Lab Sample ID: LCSI 240-194081/11-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194369 — **Prep Batch: 194081**

Analyte			Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)			643	626		mg/Kg		97	75 - 125		

Lab Sample ID: LCSS 240-194081/10-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 194369 — **Prep Batch: 194081**

Analyte			Spike Added	LCSS Result	LCSS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)			20.0	18.9		mg/Kg		94	90 - 110		

Method: Moisture - Percent Moisture

Lab Sample ID: 240-54357-4 DU — **Client Sample ID: PAD-4**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 193596

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	91			91		%				0	20
Percent Moisture	9.1			9.1		%				0.2	20

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 240-54357-16 DU
Matrix: Solid
Analysis Batch: 193596

Client Sample ID: POND-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	96			97		%				0.8	20
Percent Moisture	3.6			2.8	F3	%				24	20

QC Association Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

GC Semi VOA

Prep Batch: 193488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-17	EB	Total/NA	Water	3520C	
LCS 240-193488/4-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-193488/3-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 193512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	3540C	
240-54357-7	PAD-7	Total/NA	Solid	3540C	
240-54357-9	PAD-X	Total/NA	Solid	3540C	
240-54357-9 MS	PAD-X	Total/NA	Solid	3540C	
240-54357-9 MSD	PAD-X	Total/NA	Solid	3540C	
LCS 240-193512/22-A	Lab Control Sample	Total/NA	Solid	3540C	
MB 240-193512/21-A	Method Blank	Total/NA	Solid	3540C	

Analysis Batch: 193799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	8015C	193512
240-54357-7	PAD-7	Total/NA	Solid	8015C	193512
240-54357-9	PAD-X	Total/NA	Solid	8015C	193512
240-54357-9 MS	PAD-X	Total/NA	Solid	8015C	193512
240-54357-9 MSD	PAD-X	Total/NA	Solid	8015C	193512
240-54357-17	EB	Total/NA	Water	8015C	193488
LCS 240-193488/4-A	Lab Control Sample	Total/NA	Water	8015C	193488
LCS 240-193512/22-A	Lab Control Sample	Total/NA	Solid	8015C	193512
MB 240-193488/3-A	Method Blank	Total/NA	Water	8015C	193488
MB 240-193512/21-A	Method Blank	Total/NA	Solid	8015C	193512

Prep Batch: 193887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-4	PAD-4	Total/NA	Solid	3540C	
240-54357-4 MS	PAD-4	Total/NA	Solid	3540C	
240-54357-4 MSD	PAD-4	Total/NA	Solid	3540C	
LCS 240-193887/11-A	Lab Control Sample	Total/NA	Solid	3540C	
MB 240-193887/10-A	Method Blank	Total/NA	Solid	3540C	

Analysis Batch: 194176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-4	PAD-4	Total/NA	Solid	8015C	193887
240-54357-4 MS	PAD-4	Total/NA	Solid	8015C	193887
240-54357-4 MSD	PAD-4	Total/NA	Solid	8015C	193887
LCS 240-193887/11-A	Lab Control Sample	Total/NA	Solid	8015C	193887
MB 240-193887/10-A	Method Blank	Total/NA	Solid	8015C	193887

Metals

Prep Batch: 193542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-17	EB	Total Recoverable	Water	3005A	
LCS 240-193542/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-193542/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 193543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-17	EB	Total/NA	Water	7470A	
LCS 240-193543/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-193543/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 193558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	3050B	
240-54357-2	PAD-2	Total/NA	Solid	3050B	
240-54357-3	PAD-3	Total/NA	Solid	3050B	
240-54357-4	PAD-4	Total/NA	Solid	3050B	
240-54357-4 MS	PAD-4	Total/NA	Solid	3050B	
240-54357-4 MSD	PAD-4	Total/NA	Solid	3050B	
240-54357-5	PAD-5	Total/NA	Solid	3050B	
240-54357-6	PAD-6	Total/NA	Solid	3050B	
240-54357-7	PAD-7	Total/NA	Solid	3050B	
240-54357-8	PAD-8	Total/NA	Solid	3050B	
240-54357-9	PAD-X	Total/NA	Solid	3050B	
240-54357-11	NB-1	Total/NA	Solid	3050B	
240-54357-12	NB-2	Total/NA	Solid	3050B	
240-54357-13	SB-1	Total/NA	Solid	3050B	
240-54357-14	SB-2	Total/NA	Solid	3050B	
240-54357-15	BERM-1	Total/NA	Solid	3050B	
240-54357-16	POND-1	Total/NA	Solid	3050B	
LCS 240-193558/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 240-193558/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 193569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	7471A	
240-54357-2	PAD-2	Total/NA	Solid	7471A	
240-54357-3	PAD-3	Total/NA	Solid	7471A	
240-54357-4	PAD-4	Total/NA	Solid	7471A	
240-54357-4 MS	PAD-4	Total/NA	Solid	7471A	
240-54357-4 MSD	PAD-4	Total/NA	Solid	7471A	
240-54357-5	PAD-5	Total/NA	Solid	7471A	
240-54357-6	PAD-6	Total/NA	Solid	7471A	
240-54357-7	PAD-7	Total/NA	Solid	7471A	
240-54357-8	PAD-8	Total/NA	Solid	7471A	
240-54357-9	PAD-X	Total/NA	Solid	7471A	
240-54357-11	NB-1	Total/NA	Solid	7471A	
240-54357-12	NB-2	Total/NA	Solid	7471A	
240-54357-13	SB-1	Total/NA	Solid	7471A	
240-54357-14	SB-2	Total/NA	Solid	7471A	
240-54357-15	BERM-1	Total/NA	Solid	7471A	
240-54357-16	POND-1	Total/NA	Solid	7471A	
LCS 240-193569/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 240-193569/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 193699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	6010C	193558

Metals (Continued)

Analysis Batch: 193699 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-2	PAD-2	Total/NA	Solid	6010C	193558
240-54357-3	PAD-3	Total/NA	Solid	6010C	193558
240-54357-4	PAD-4	Total/NA	Solid	6010C	193558
240-54357-4 MS	PAD-4	Total/NA	Solid	6010C	193558
240-54357-4 MSD	PAD-4	Total/NA	Solid	6010C	193558
240-54357-5	PAD-5	Total/NA	Solid	6010C	193558
240-54357-6	PAD-6	Total/NA	Solid	6010C	193558
240-54357-7	PAD-7	Total/NA	Solid	6010C	193558
240-54357-8	PAD-8	Total/NA	Solid	6010C	193558
240-54357-9	PAD-X	Total/NA	Solid	6010C	193558
240-54357-11	NB-1	Total/NA	Solid	6010C	193558
240-54357-12	NB-2	Total/NA	Solid	6010C	193558
240-54357-13	SB-1	Total/NA	Solid	6010C	193558
240-54357-14	SB-2	Total/NA	Solid	6010C	193558
240-54357-15	BERM-1	Total/NA	Solid	6010C	193558
240-54357-16	POND-1	Total/NA	Solid	6010C	193558
240-54357-17	EB	Total Recoverable	Water	6010C	193542
LCS 240-193542/2-A	Lab Control Sample	Total Recoverable	Water	6010C	193542
LCS 240-193558/2-A	Lab Control Sample	Total/NA	Solid	6010C	193558
MB 240-193542/1-A	Method Blank	Total Recoverable	Water	6010C	193542
MB 240-193558/1-A	Method Blank	Total/NA	Solid	6010C	193558

Analysis Batch: 193862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	7471A	193569
240-54357-2	PAD-2	Total/NA	Solid	7471A	193569
240-54357-3	PAD-3	Total/NA	Solid	7471A	193569
240-54357-4	PAD-4	Total/NA	Solid	7471A	193569
240-54357-4 MS	PAD-4	Total/NA	Solid	7471A	193569
240-54357-4 MSD	PAD-4	Total/NA	Solid	7471A	193569
240-54357-5	PAD-5	Total/NA	Solid	7471A	193569
240-54357-6	PAD-6	Total/NA	Solid	7471A	193569
240-54357-7	PAD-7	Total/NA	Solid	7471A	193569
240-54357-8	PAD-8	Total/NA	Solid	7471A	193569
240-54357-9	PAD-X	Total/NA	Solid	7471A	193569
240-54357-11	NB-1	Total/NA	Solid	7471A	193569
240-54357-12	NB-2	Total/NA	Solid	7471A	193569
240-54357-13	SB-1	Total/NA	Solid	7471A	193569
240-54357-14	SB-2	Total/NA	Solid	7471A	193569
240-54357-15	BERM-1	Total/NA	Solid	7471A	193569
240-54357-16	POND-1	Total/NA	Solid	7471A	193569
LCS 240-193569/2-A	Lab Control Sample	Total/NA	Solid	7471A	193569
MB 240-193569/1-A	Method Blank	Total/NA	Solid	7471A	193569

Analysis Batch: 193999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-193543/2-A	Lab Control Sample	Total/NA	Water	7470A	193543
MB 240-193543/1-A	Method Blank	Total/NA	Water	7470A	193543

Metals (Continued)

Analysis Batch: 194152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-17	EB	Total/NA	Water	7470A	193543

General Chemistry

Analysis Batch: 193596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	Moisture	
240-54357-2	PAD-2	Total/NA	Solid	Moisture	
240-54357-3	PAD-3	Total/NA	Solid	Moisture	
240-54357-4	PAD-4	Total/NA	Solid	Moisture	
240-54357-4 DU	PAD-4	Total/NA	Solid	Moisture	
240-54357-5	PAD-5	Total/NA	Solid	Moisture	
240-54357-6	PAD-6	Total/NA	Solid	Moisture	
240-54357-7	PAD-7	Total/NA	Solid	Moisture	
240-54357-8	PAD-8	Total/NA	Solid	Moisture	
240-54357-9	PAD-X	Total/NA	Solid	Moisture	
240-54357-10	PAD-XX	Total/NA	Solid	Moisture	
240-54357-11	NB-1	Total/NA	Solid	Moisture	
240-54357-12	NB-2	Total/NA	Solid	Moisture	
240-54357-13	SB-1	Total/NA	Solid	Moisture	
240-54357-14	SB-2	Total/NA	Solid	Moisture	
240-54357-15	BERM-1	Total/NA	Solid	Moisture	
240-54357-16	POND-1	Total/NA	Solid	Moisture	
240-54357-16 DU	POND-1	Total/NA	Solid	Moisture	

Prep Batch: 194081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	3060A	
240-54357-2	PAD-2	Total/NA	Solid	3060A	
240-54357-3	PAD-3	Total/NA	Solid	3060A	
240-54357-4	PAD-4	Total/NA	Solid	3060A	
240-54357-5	PAD-5	Total/NA	Solid	3060A	
240-54357-6	PAD-6	Total/NA	Solid	3060A	
240-54357-7	PAD-7	Total/NA	Solid	3060A	
240-54357-8	PAD-8	Total/NA	Solid	3060A	
240-54357-9	PAD-X	Total/NA	Solid	3060A	
LCSI 240-194081/11-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSS 240-194081/10-A	Lab Control Sample	Total/NA	Solid	3060A	
MB 240-194081/9-A	Method Blank	Total/NA	Solid	3060A	

Analysis Batch: 194369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-1	PAD-1	Total/NA	Solid	7196A	194081
240-54357-2	PAD-2	Total/NA	Solid	7196A	194081
240-54357-3	PAD-3	Total/NA	Solid	7196A	194081
240-54357-4	PAD-4	Total/NA	Solid	7196A	194081
240-54357-5	PAD-5	Total/NA	Solid	7196A	194081
240-54357-6	PAD-6	Total/NA	Solid	7196A	194081
240-54357-7	PAD-7	Total/NA	Solid	7196A	194081
240-54357-8	PAD-8	Total/NA	Solid	7196A	194081

General Chemistry (Continued)

Analysis Batch: 194369 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-54357-9	PAD-X	Total/NA	Solid	7196A	194081
LCSI 240-194081/11-A	Lab Control Sample	Total/NA	Solid	7196A	194081
LCSS 240-194081/10-A	Lab Control Sample	Total/NA	Solid	7196A	194081
MB 240-194081/9-A	Method Blank	Total/NA	Solid	7196A	194081

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-1
Lab Sample ID: 240-54357-1
Date Collected: 08/13/15 09:35
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-1
Lab Sample ID: 240-54357-1
Date Collected: 08/13/15 09:35
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 96.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			193512	08/17/15 08:08	SDE	TAL CAN
Total/NA	Analysis	8015C		1	193799	08/19/15 04:10	DEB	TAL CAN
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 11:42	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:48	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:33	GNR	TAL CAN

Client Sample ID: PAD-2
Lab Sample ID: 240-54357-2
Date Collected: 08/13/15 10:05
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-2
Lab Sample ID: 240-54357-2
Date Collected: 08/13/15 10:05
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 92.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 11:47	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:58	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:35	GNR	TAL CAN

Client Sample ID: PAD-3
Lab Sample ID: 240-54357-3
Date Collected: 08/13/15 10:40
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-3
Lab Sample ID: 240-54357-3
Date Collected: 08/13/15 10:40
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 11:59	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 12:03	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:37	GNR	TAL CAN

Client Sample ID: PAD-4
Lab Sample ID: 240-54357-4
Date Collected: 08/13/15 10:55
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-4
Lab Sample ID: 240-54357-4
Date Collected: 08/13/15 10:55
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			193887	08/19/15 08:52	SDE	TAL CAN
Total/NA	Analysis	8015C		1	194176	08/21/15 07:50	DEB	TAL CAN
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 11:23	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:23	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:49	GNR	TAL CAN

Client Sample ID: PAD-5
Lab Sample ID: 240-54357-5
Date Collected: 08/13/15 11:10
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-5
Lab Sample ID: 240-54357-5
Date Collected: 08/13/15 11:10
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:03	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-5
Lab Sample ID: 240-54357-5
Date Collected: 08/13/15 11:10
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7471A		1	193862	08/18/15 12:13	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:51	GNR	TAL CAN

Client Sample ID: PAD-6
Lab Sample ID: 240-54357-6
Date Collected: 08/13/15 11:35
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-6
Lab Sample ID: 240-54357-6
Date Collected: 08/13/15 11:35
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:07	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 12:01	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:53	GNR	TAL CAN

Client Sample ID: PAD-7
Lab Sample ID: 240-54357-7
Date Collected: 08/13/15 11:50
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-7
Lab Sample ID: 240-54357-7
Date Collected: 08/13/15 11:50
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 92.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			193512	08/17/15 08:08	SDE	TAL CAN
Total/NA	Analysis	8015C		1	193799	08/19/15 07:19	DEB	TAL CAN
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:11	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:36	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:55	GNR	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: PAD-8
Lab Sample ID: 240-54357-8
Date Collected: 08/13/15 12:10
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-8
Lab Sample ID: 240-54357-8
Date Collected: 08/13/15 12:10
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 96.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:15	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:30	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:55	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:57	GNR	TAL CAN

Client Sample ID: PAD-X
Lab Sample ID: 240-54357-9
Date Collected: 08/13/15 11:55
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: PAD-X
Lab Sample ID: 240-54357-9
Date Collected: 08/13/15 11:55
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			193512	08/17/15 08:08	SDE	TAL CAN
Total/NA	Analysis	8015C		1	193799	08/19/15 08:54	DEB	TAL CAN
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:19	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:50	DSH	TAL CAN
Total/NA	Prep	3060A			194081	08/20/15 08:58	GNR	TAL CAN
Total/NA	Analysis	7196A		1	194369	08/21/15 15:59	GNR	TAL CAN

Client Sample ID: PAD-XX
Lab Sample ID: 240-54357-10
Date Collected: 08/13/15 09:40
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: NB-1 — Lab Sample ID: 240-54357-11

Date Collected: 08/13/15 10:15 — **Matrix: Solid**
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: NB-1 — Lab Sample ID: 240-54357-11

Date Collected: 08/13/15 10:15 — **Matrix: Solid**
Date Received: 08/14/15 10:00 — **Percent Solids: 77.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:23	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:44	DSH	TAL CAN

Client Sample ID: NB-2 — Lab Sample ID: 240-54357-12

Date Collected: 08/13/15 12:30 — **Matrix: Solid**
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: NB-2 — Lab Sample ID: 240-54357-12

Date Collected: 08/13/15 12:30 — **Matrix: Solid**
Date Received: 08/14/15 10:00 — **Percent Solids: 81.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:27	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:46	DSH	TAL CAN

Client Sample ID: SB-1 — Lab Sample ID: 240-54357-13

Date Collected: 08/13/15 13:00 — **Matrix: Solid**
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: SB-1 — Lab Sample ID: 240-54357-13

Date Collected: 08/13/15 13:00 — **Matrix: Solid**
Date Received: 08/14/15 10:00 — **Percent Solids: 74.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: SB-1
Lab Sample ID: 240-54357-13
Date Collected: 08/13/15 13:00
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 74.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1	193699	08/18/15 12:31	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:56	DSH	TAL CAN

Client Sample ID: SB-2
Lab Sample ID: 240-54357-14
Date Collected: 08/13/15 13:15
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: SB-2
Lab Sample ID: 240-54357-14
Date Collected: 08/13/15 13:15
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 71.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:35	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:32	DSH	TAL CAN

Client Sample ID: BERM-1
Lab Sample ID: 240-54357-15
Date Collected: 08/13/15 09:00
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: BERM-1
Lab Sample ID: 240-54357-15
Date Collected: 08/13/15 09:00
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:47	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:54	DSH	TAL CAN

Lab Chronicle

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Client Sample ID: POND-1
Lab Sample ID: 240-54357-16
Date Collected: 08/13/15 09:20
Matrix: Solid
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193596	08/17/15 13:33	LCN	TAL CAN

Client Sample ID: POND-1
Lab Sample ID: 240-54357-16
Date Collected: 08/13/15 09:20
Matrix: Solid
Date Received: 08/14/15 10:00
Percent Solids: 96.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193558	08/17/15 11:15	DEE	TAL CAN
Total/NA	Analysis	6010C		1	193699	08/18/15 12:51	KLC	TAL CAN
Total/NA	Prep	7471A			193569	08/17/15 14:35	DEE	TAL CAN
Total/NA	Analysis	7471A		1	193862	08/18/15 11:38	DSH	TAL CAN

Client Sample ID: EB
Lab Sample ID: 240-54357-17
Date Collected: 08/13/15 12:40
Matrix: Water
Date Received: 08/14/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			193488	08/17/15 06:16	CSC	TAL CAN
Total/NA	Analysis	8015C		1	193799	08/18/15 20:53	DEB	TAL CAN
Total Recoverable	Prep	3005A			193542	08/17/15 10:24	WAL	TAL CAN
Total Recoverable	Analysis	6010C		1	193699	08/18/15 13:03	KLC	TAL CAN
Total/NA	Prep	7470A			193543	08/17/15 14:00	WAL	TAL CAN
Total/NA	Analysis	7470A		1	194152	08/20/15 10:23	WAL	TAL CAN

Laboratory References:
TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Draper Aden Associates, Inc.
Project/Site: RAAP - HWMU-13 (Open Burning Ground)

TestAmerica Job ID: 240-54357-1

Laboratory: TestAmerica Canton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Virginia	NELAP	3	460175	09-14-15 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

* Certification renewal pending - certification considered valid.

H5H160405 Analytical Report 1

Sample Receipt Documentation 59

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 240-54357-1

RAAP

Lot #: H5H160405

Mark Loeb

TestAmerica North Canton
4101 Shuffel Street NW
North Canton, OH 44720

TESTAMERICA LABORATORIES, INC.

Ryan Henry

Ryan Henry
Project Manager

August 27, 2015

ANALYTICAL METHODS SUMMARY

H5H160405

PARAMETER	ANALYTICAL METHOD
Dibenzodioxins and Dibenzofurans, HRGC/HRMS	SW846 8290A
Percent Moisture	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

H5H160405

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
M7FXV	001	PAD-1	08/13/15	09:35
M7FXW	002	PAD-2	08/13/15	10:05
M7FXX	003	PAD-3	08/13/15	10:40
M7FX0	004	PAD-4	08/13/15	10:55
M7FX1	005	PAD-5	08/13/15	11:10
M7FX2	006	PAD-6	08/13/15	11:35
M7FX3	007	PAD-7	08/13/15	11:50
M7FX4	008	PAD-8	08/13/15	12:10
M7FX5	009	PAD-XX	08/13/15	09:40
M7FX6	010	NB-1	08/13/15	10:15
M7FX7	011	NB-2	08/13/15	12:30
M7FX8	012	SB-1	08/13/15	13:00
M7FX9	013	SB-2	08/13/15	13:15
M7F0A	014	BERM-1	08/13/15	09:00
M7F0C	015	POND-1	08/13/15	09:20
M7F0D	016	EB	08/13/15	12:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H5H160405

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

Custody seals were not present.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

For solid and sediments samples, when percent moisture is included in the report header field, the sample results are reported on a dry weight basis. When percent moisture is not contained in the header field, sample results are reported on an as received or wet weight basis.

All positive 2378-TCDF results at or above the minimum level were confirmed on a DB-225 column.

The 2378-TCDF result for samples PAD-4 (Original), PAD-4 (Matrix Spike) and PAD-4 (Matrix Spike Duplicate) are reported with an "X" qualifier to indicate that this analyte was reported from the DB-225 analytical column analysis. All other analytes for these samples were reported from the Rtx-5 analytical column analysis. The DB-225 analytical column raw data is included in the data package after each Rtx-5 column analysis.

The following flags are used to qualify results for chlorinated dioxin and furan results:

> **J** – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is "the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point". The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:
>
> **Minimum Level**: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.
>
> Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample

extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of $\geq$2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.
- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within +/- 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.[1,2,3] The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Qis}{His \times RRF \times W \times S}$$

Where:

N	=	peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
His	=	peak height of quantitation ion for appropriate internal standard
Qis	=	ng of internal standard added to sample
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated

estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{As \times Qis}{Ais \times RRF \times W \times S}$$

Where:

As	=	Sum of areas of the target peaks
Qis	=	ng of internal standard added to sample
Ais	=	Sum of areas of the internal standard peaks
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of $\geq$2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA150004
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	TN02014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-14-7
TestAmerica Knoxville	Federal	USDA		P330-11-00260
TestAmerica Knoxville	Utah	NELAC	8	TN000092014-5
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	00165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes in this report. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 001	Work Order #....:	M7FXV1AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	4.2
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.2 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.091	pg/g
1,2,3,7,8-PeCDD	**0.25**	**Q J**	**5.1**	**0.035**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.26**	**Q B J**	**5.1**	**0.033**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.63**	**B J**	**5.1**	**0.032**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.60**	**Q B J**	**5.1**	**0.031**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**11**	**B**	**5.1**	**0.064**	**pg/g**
OCDD	**110**	**B**	**10**	**0.061**	**pg/g**
2,3,7,8-TCDF	**0.76**	**Q J**	**1.0**	**0.041**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.1	0.034	pg/g
2,3,4,7,8-PeCDF	**0.25**	**Q J**	**5.1**	**0.028**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.50**	**C B J**	**5.1**	**0.026**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.25**	**Q B J**	**5.1**	**0.025**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.20**	**Q J**	**5.1**	**0.026**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.1	0.032	pg/g
1,2,3,4,6,7,8-HpCDF	**1.6**	**B J**	**5.1**	**0.021**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.22**	**Q B J**	**5.1**	**0.032**	**pg/g**
OCDF	**4.3**	**Q B J**	**10**	**0.015**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	40 - 135
13C-1,2,3,7,8-PeCDD	65	40 - 135
13C-1,2,3,4,7,8-HxCDD	75	40 - 135
13C-1,2,3,6,7,8-HxCDD	74	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	84	40 - 135
13C-OCDD	60	40 - 135
13C-2,3,7,8-TCDF	69	40 - 135
13C-1,2,3,7,8-PeCDF	61	40 - 135
13C-2,3,4,7,8-PeCDF	65	40 - 135
13C-1,2,3,4,7,8-HxCDF	79	40 - 135
13C-1,2,3,6,7,8-HxCDF	76	40 - 135
13C-2,3,4,6,7,8-HxCDF	80	40 - 135
13C-1,2,3,7,8,9-HxCDF	80	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	75	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	80	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: PAD-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 001	**Work Order #....:**	M7FXV1AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	4.2
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 002	Work Order #....:	M7FXW1AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.12	pg/g
1,2,3,7,8-PeCDD	1.5	Q J	5.7	0.10	pg/g
1,2,3,4,7,8-HxCDD	1.9	B J	5.7	0.060	pg/g
1,2,3,6,7,8-HxCDD	3.9	B J	5.7	0.056	pg/g
1,2,3,7,8,9-HxCDD	6.9	C B	5.7	0.055	pg/g
1,2,3,4,6,7,8-HpCDD	55	B	5.7	0.078	pg/g
OCDD	510	B	11	0.13	pg/g
1,2,3,7,8-PeCDF	0.66	Q J	5.7	0.046	pg/g
2,3,4,7,8-PeCDF	0.67	J	5.7	0.042	pg/g
1,2,3,4,7,8-HxCDF	1.6	C B J	5.7	0.029	pg/g
1,2,3,6,7,8-HxCDF	0.83	B J	5.7	0.026	pg/g
2,3,4,6,7,8-HxCDF	0.49	Q J	5.7	0.031	pg/g
1,2,3,7,8,9-HxCDF	0.14	B J	5.7	0.037	pg/g
1,2,3,4,6,7,8-HpCDF	5.6	B J	5.7	0.029	pg/g
1,2,3,4,7,8,9-HpCDF	0.97	Q B J	5.7	0.045	pg/g
OCDF	13	B	11	0.024	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	77	40 - 135
13C-1,2,3,7,8-PeCDD	75	40 - 135
13C-1,2,3,4,7,8-HxCDD	72	40 - 135
13C-1,2,3,6,7,8-HxCDD	74	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	80	40 - 135
13C-OCDD	62	40 - 135
13C-1,2,3,7,8-PeCDF	75	40 - 135
13C-2,3,4,7,8-PeCDF	76	40 - 135
13C-1,2,3,4,7,8-HxCDF	80	40 - 135
13C-1,2,3,6,7,8-HxCDF	78	40 - 135
13C-2,3,4,6,7,8-HxCDF	80	40 - 135
13C-1,2,3,7,8,9-HxCDF	77	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	78	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	76	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 002	**Work Order #....:**	M7FXW1AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 002	**Work Order #....:**	M7FXW1AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	0.85	J	1.1	0.098	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	74	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 003	**Work Order #....:**	M7FXX1AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	19
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.2	0.098	pg/g
1,2,3,7,8-PeCDD	ND		6.1	0.035	pg/g
1,2,3,4,7,8-HxCDD	ND		6.1	0.022	pg/g
1,2,3,6,7,8-HxCDD	**0.11**	**Q B J**	**6.1**	**0.022**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.15**	**B J**	**6.1**	**0.021**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**14**	**B**	**6.1**	**0.069**	**pg/g**
OCDD	**1300**	**B**	**12**	**0.18**	**pg/g**
2,3,7,8-TCDF	**0.067**	**Q J**	**1.2**	**0.021**	**pg/g**
1,2,3,7,8-PeCDF	ND		6.1	0.015	pg/g
2,3,4,7,8-PeCDF	ND		6.1	0.016	pg/g
1,2,3,4,7,8-HxCDF	**0.19**	**Q B J**	**6.1**	**0.019**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.092**	**Q B J**	**6.1**	**0.017**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.11**	**Q J**	**6.1**	**0.018**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.1	0.025	pg/g
1,2,3,4,6,7,8-HpCDF	**0.17**	**Q B J**	**6.1**	**0.013**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		6.1	0.022	pg/g
OCDF	**0.52**	**Q B J**	**12**	**0.017**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	79	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	80	40 - 135
13C-1,2,3,6,7,8-HxCDD	79	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	82	40 - 135
13C-OCDD	69	40 - 135
13C-2,3,7,8-TCDF	77	40 - 135
13C-1,2,3,7,8-PeCDF	84	40 - 135
13C-2,3,4,7,8-PeCDF	73	40 - 135
13C-1,2,3,4,7,8-HxCDF	83	40 - 135
13C-1,2,3,6,7,8-HxCDF	84	40 - 135
13C-2,3,4,6,7,8-HxCDF	85	40 - 135
13C-1,2,3,7,8,9-HxCDF	79	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	81	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	72	40 - 135
13C-OCDF	61	40 - 135

TestAmerica Canton

Sample ID: PAD-3

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 003	**Work Order #....:**	M7FXX1AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	19
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.2 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 004	Work Order #....:	M7FX01AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.12	pg/g
1,2,3,7,8-PeCDD	1.1	Q J	5.7	0.056	pg/g
1,2,3,4,7,8-HxCDD	1.1	B J	5.7	0.051	pg/g
1,2,3,6,7,8-HxCDD	2.1	Q B J	5.7	0.050	pg/g
1,2,3,7,8,9-HxCDD	2.7	Q B J	5.7	0.047	pg/g
1,2,3,4,6,7,8-HpCDD	41	B	5.7	0.11	pg/g
OCDD	410	B	11	0.11	pg/g
2,3,7,8-TCDF	1.0	J X	1.1	0.11	pg/g
1,2,3,7,8-PeCDF	0.42	Q J	5.7	0.056	pg/g
2,3,4,7,8-PeCDF	0.66	Q J	5.7	0.054	pg/g
1,2,3,4,7,8-HxCDF	1.6	C B J	5.7	0.036	pg/g
1,2,3,6,7,8-HxCDF	0.77	Q B J	5.7	0.032	pg/g
2,3,4,6,7,8-HxCDF	0.56	Q J	5.7	0.036	pg/g
1,2,3,7,8,9-HxCDF	ND		5.7	0.044	pg/g
1,2,3,4,6,7,8-HpCDF	6.5	B	5.7	0.046	pg/g
1,2,3,4,7,8,9-HpCDF	0.63	Q B J	5.7	0.074	pg/g
OCDF	13	B	11	0.034	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	79	40 - 135
13C-1,2,3,7,8-PeCDD	72	40 - 135
13C-1,2,3,4,7,8-HxCDD	75	40 - 135
13C-1,2,3,6,7,8-HxCDD	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	63	40 - 135
13C-OCDD	75	40 - 135
13C-2,3,7,8-TCDF	71	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	74	40 - 135
13C-1,2,3,4,7,8-HxCDF	77	40 - 135
13C-1,2,3,6,7,8-HxCDF	77	40 - 135
13C-2,3,4,6,7,8-HxCDF	79	40 - 135
13C-1,2,3,7,8,9-HxCDF	74	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	71	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	64	40 - 135
13C-OCDF	53	40 - 135

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Sample ID: PAD-4

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 004	**Work Order #....:**	M7FX01AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).
X	See project narrative.

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 005	Work Order #....:	M7FX11AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	14
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.17	pg/g
1,2,3,7,8-PeCDD	**0.24**	**J**	**5.7**	**0.075**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.39**	**B J**	**5.7**	**0.053**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.75**	**Q B J**	**5.7**	**0.056**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.1**	**C B J**	**5.7**	**0.051**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**12**	**B**	**5.7**	**0.10**	**pg/g**
OCDD	**130**	**B**	**11**	**0.15**	**pg/g**
1,2,3,7,8-PeCDF	**0.25**	**J**	**5.7**	**0.053**	**pg/g**
2,3,4,7,8-PeCDF	**0.44**	**Q J**	**5.7**	**0.049**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.87**	**C B J**	**5.7**	**0.038**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.38**	**Q B J**	**5.7**	**0.037**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.42**	**J**	**5.7**	**0.040**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.7	0.051	pg/g
1,2,3,4,6,7,8-HpCDF	**2.4**	**Q B J**	**5.7**	**0.074**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.7	0.11	pg/g
OCDF	**3.7**	**B J**	**11**	**0.044**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	72	40 - 135
13C-1,2,3,7,8-PeCDD	62	40 - 135
13C-1,2,3,4,7,8-HxCDD	75	40 - 135
13C-1,2,3,6,7,8-HxCDD	73	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	70	40 - 135
13C-OCDD	55	40 - 135
13C-1,2,3,7,8-PeCDF	66	40 - 135
13C-2,3,4,7,8-PeCDF	67	40 - 135
13C-1,2,3,4,7,8-HxCDF	71	40 - 135
13C-1,2,3,6,7,8-HxCDF	70	40 - 135
13C-2,3,4,6,7,8-HxCDF	71	40 - 135
13C-1,2,3,7,8,9-HxCDF	66	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	69	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	68	40 - 135
13C-OCDF	51	40 - 135

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Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 005	**Work Order #....:**	M7FX11AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	14
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-5

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 005	**Work Order #....:**	M7FX11AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	14
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	**0.50**	**J**	**1.1**	**0.071**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	73	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 006	Work Order #....:	M7FX21AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.17	pg/g
1,2,3,7,8-PeCDD	**1.1**	**Q J**	**5.6**	**0.11**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.95**	**B J**	**5.6**	**0.084**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.7**	**B J**	**5.6**	**0.085**	**pg/g**
1,2,3,7,8,9-HxCDD	**2.7**	**B J**	**5.6**	**0.080**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**38**	**B**	**5.6**	**0.15**	**pg/g**
OCDD	**340**	**B**	**11**	**0.22**	**pg/g**
1,2,3,7,8-PeCDF	**0.50**	**J**	**5.6**	**0.084**	**pg/g**
2,3,4,7,8-PeCDF	**0.64**	**Q J**	**5.6**	**0.079**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.4**	**BCJ**	**5.6**	**0.057**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.66**	**Q B J**	**5.6**	**0.052**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.46**	**J**	**5.6**	**0.059**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.6	0.072	pg/g
1,2,3,4,6,7,8-HpCDF	**5.3**	**B J**	**5.6**	**0.048**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.57**	**B J**	**5.6**	**0.082**	**pg/g**
OCDF	**13**	**B**	**11**	**0.037**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	76	40 - 135
13C-1,2,3,7,8-PeCDD	76	40 - 135
13C-1,2,3,4,7,8-HxCDD	72	40 - 135
13C-1,2,3,6,7,8-HxCDD	77	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	80	40 - 135
13C-OCDD	72	40 - 135
13C-1,2,3,7,8-PeCDF	83	40 - 135
13C-2,3,4,7,8-PeCDF	81	40 - 135
13C-1,2,3,4,7,8-HxCDF	76	40 - 135
13C-1,2,3,6,7,8-HxCDF	75	40 - 135
13C-2,3,4,6,7,8-HxCDF	75	40 - 135
13C-1,2,3,7,8,9-HxCDF	76	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	81	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	74	40 - 135
13C-OCDF	62	40 - 135

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Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 006	**Work Order #....:**	M7FX21AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-6

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 006	**Work Order #....:**	M7FX21AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	13
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	0.96	J	1.1	0.080	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	73	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 007	**Work Order #....:**	M7FX31AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	8.5
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.15	pg/g
1,2,3,7,8-PeCDD	**0.44**	**J**	**5.4**	**0.073**	**pg/g**
1,2,3,4,7,8-HxCDD	**0.37**	**B J**	**5.4**	**0.063**	**pg/g**
1,2,3,6,7,8-HxCDD	**0.81**	**Q B J**	**5.4**	**0.063**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.2**	**Q B J**	**5.4**	**0.059**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**19**	**B**	**5.4**	**0.12**	**pg/g**
OCDD	**180**	**B**	**11**	**0.16**	**pg/g**
1,2,3,7,8-PeCDF	**0.42**	**Q J**	**5.4**	**0.073**	**pg/g**
2,3,4,7,8-PeCDF	**0.75**	**Q J**	**5.4**	**0.066**	**pg/g**
1,2,3,4,7,8-HxCDF	**1.6**	**BCJ**	**5.4**	**0.053**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.71**	**Q B J**	**5.4**	**0.054**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.53**	**Q J**	**5.4**	**0.055**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.4	0.074	pg/g
1,2,3,4,6,7,8-HpCDF	**3.0**	**B J**	**5.4**	**0.034**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.54**	**B J**	**5.4**	**0.055**	**pg/g**
OCDF	**6.3**	**B Q J**	**11**	**0.043**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	40 - 135
13C-1,2,3,7,8-PeCDD	80	40 - 135
13C-1,2,3,4,7,8-HxCDD	73	40 - 135
13C-1,2,3,6,7,8-HxCDD	75	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	80	40 - 135
13C-OCDD	62	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	76	40 - 135
13C-1,2,3,4,7,8-HxCDF	77	40 - 135
13C-1,2,3,6,7,8-HxCDF	73	40 - 135
13C-2,3,4,6,7,8-HxCDF	79	40 - 135
13C-1,2,3,7,8,9-HxCDF	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	78	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	71	40 - 135
13C-OCDF	54	40 - 135

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 007	**Work Order #....:**	M7FX31AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	8.5
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-7

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 007	**Work Order #....:**	M7FX31AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	8.5
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	0.45	Q J	1.1	0.061	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	78	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 008	**Work Order #....:**	M7FX41AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	6.5
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.1	0.15	pg/g
1,2,3,7,8-PeCDD	ND		5.3	0.061	pg/g
1,2,3,4,7,8-HxCDD	ND		5.3	0.051	pg/g
1,2,3,6,7,8-HxCDD	**0.21**	**Q B J**	**5.3**	**0.052**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.39**	**Q B J**	**5.3**	**0.048**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**5.5**	**B**	**5.3**	**0.099**	**pg/g**
OCDD	**82**	**B**	**11**	**0.14**	**pg/g**
2,3,7,8-TCDF	**0.20**	**J**	**1.1**	**0.091**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.3	0.053	pg/g
2,3,4,7,8-PeCDF	**0.30**	**Q J**	**5.3**	**0.050**	**pg/g**
1,2,3,4,7,8-HxCDF	**0.34**	**Q B J**	**5.3**	**0.040**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.19**	**Q B J**	**5.3**	**0.037**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.24**	**Q J**	**5.3**	**0.041**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.3	0.055	pg/g
1,2,3,4,6,7,8-HpCDF	**1.2**	**B J**	**5.3**	**0.035**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.3	0.058	pg/g
OCDF	**2.2**	**Q B J**	**11**	**0.041**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	72	40 - 135
13C-1,2,3,7,8-PeCDD	69	40 - 135
13C-1,2,3,4,7,8-HxCDD	70	40 - 135
13C-1,2,3,6,7,8-HxCDD	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	70	40 - 135
13C-OCDD	51	40 - 135
13C-2,3,7,8-TCDF	71	40 - 135
13C-1,2,3,7,8-PeCDF	70	40 - 135
13C-2,3,4,7,8-PeCDF	68	40 - 135
13C-1,2,3,4,7,8-HxCDF	68	40 - 135
13C-1,2,3,6,7,8-HxCDF	72	40 - 135
13C-2,3,4,6,7,8-HxCDF	71	40 - 135
13C-1,2,3,7,8,9-HxCDF	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	71	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	67	40 - 135
13C-OCDF	45	40 - 135

TestAmerica Canton

Sample ID: PAD-8

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 008	**Work Order #....:**	M7FX41AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	6.5
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 009	**Work Order #....:**	M7FX51AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	3.3
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.17	pg/g
1,2,3,7,8-PeCDD	**0.23**	**J**	**5.0**	**0.062**	**pg/g**
1,2,3,4,7,8-HxCDD	ND		5.0	0.046	pg/g
1,2,3,6,7,8-HxCDD	**0.43**	**B J**	**5.0**	**0.048**	**pg/g**
1,2,3,7,8,9-HxCDD	**0.60**	**Q B J**	**5.0**	**0.044**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**8.4**	**B**	**5.0**	**0.10**	**pg/g**
OCDD	**65**	**B**	**10**	**0.13**	**pg/g**
2,3,7,8-TCDF	**0.45**	**J**	**1.0**	**0.071**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.0	0.046	pg/g
2,3,4,7,8-PeCDF	ND		5.0	0.046	pg/g
1,2,3,4,7,8-HxCDF	**0.27**	**Q B J**	**5.0**	**0.046**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.27**	**Q B J**	**5.0**	**0.045**	**pg/g**
2,3,4,6,7,8-HxCDF	ND		5.0	0.049	pg/g
1,2,3,7,8,9-HxCDF	ND		5.0	0.063	pg/g
1,2,3,4,6,7,8-HpCDF	**1.2**	**B J**	**5.0**	**0.034**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		5.0	0.055	pg/g
OCDF	**2.4**	**Q B J**	**10**	**0.029**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	74	40 - 135
13C-1,2,3,7,8-PeCDD	70	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	73	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	69	40 - 135
13C-OCDD	62	40 - 135
13C-2,3,7,8-TCDF	74	40 - 135
13C-1,2,3,7,8-PeCDF	80	40 - 135
13C-2,3,4,7,8-PeCDF	74	40 - 135
13C-1,2,3,4,7,8-HxCDF	71	40 - 135
13C-1,2,3,6,7,8-HxCDF	67	40 - 135
13C-2,3,4,6,7,8-HxCDF	69	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	72	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	67	40 - 135
13C-OCDF	56	40 - 135

TestAmerica Canton

Sample ID: PAD-XX

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 009	**Work Order #....:**	M7FX51AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	3.3
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.3 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 010	**Work Order #....:**	M7FX61AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	25
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.3	0.22	pg/g
1,2,3,7,8-PeCDD	**1.6**	**Q J**	**6.6**	**0.12**	**pg/g**
1,2,3,4,7,8-HxCDD	**1.3**	**Q B J**	**6.6**	**0.11**	**pg/g**
1,2,3,6,7,8-HxCDD	**2.4**	**B J**	**6.6**	**0.11**	**pg/g**
1,2,3,7,8,9-HxCDD	**2.8**	**B J**	**6.6**	**0.10**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**59**	**B**	**6.6**	**0.24**	**pg/g**
OCDD	**570**	**B**	**13**	**0.38**	**pg/g**
1,2,3,7,8-PeCDF	**1.3**	**J**	**6.6**	**0.14**	**pg/g**
2,3,4,7,8-PeCDF	**1.8**	**J**	**6.6**	**0.14**	**pg/g**
1,2,3,4,7,8-HxCDF	**3.3**	**C B J**	**6.6**	**0.084**	**pg/g**
1,2,3,6,7,8-HxCDF	**1.6**	**Q B J**	**6.6**	**0.080**	**pg/g**
2,3,4,6,7,8-HxCDF	**1.1**	**J**	**6.6**	**0.085**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		6.6	0.11	pg/g
1,2,3,4,6,7,8-HpCDF	**13**	**B**	**6.6**	**0.095**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**1.4**	**B J**	**6.6**	**0.16**	**pg/g**
OCDF	**31**	**B**	**13**	**0.096**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	71	40 - 135
13C-1,2,3,7,8-PeCDD	72	40 - 135
13C-1,2,3,4,7,8-HxCDD	77	40 - 135
13C-1,2,3,6,7,8-HxCDD	79	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	81	40 - 135
13C-OCDD	66	40 - 135
13C-1,2,3,7,8-PeCDF	76	40 - 135
13C-2,3,4,7,8-PeCDF	72	40 - 135
13C-1,2,3,4,7,8-HxCDF	75	40 - 135
13C-1,2,3,6,7,8-HxCDF	77	40 - 135
13C-2,3,4,6,7,8-HxCDF	78	40 - 135
13C-1,2,3,7,8,9-HxCDF	76	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	78	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	68	40 - 135
13C-OCDF	59	40 - 135

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 010	**Work Order #....:**	M7FX61AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	25
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: NB-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 010	**Work Order #....:**	M7FX61AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	25
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	2.3	1.3	0.12	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	74	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 011	Work Order #....:	M7FX71AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/24/15	Percent Moisture	37
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.6	0.24	pg/g
1,2,3,7,8-PeCDD	0.71	Q J	8.0	0.12	pg/g
1,2,3,4,7,8-HxCDD	0.85	B J	8.0	0.093	pg/g
1,2,3,6,7,8-HxCDD	1.5	B J	8.0	0.098	pg/g
1,2,3,7,8,9-HxCDD	2.6	C B J	8.0	0.090	pg/g
1,2,3,4,6,7,8-HpCDD	34	B	8.0	0.20	pg/g
OCDD	370	B	16	0.27	pg/g
2,3,7,8-TCDF	1.2	Q J	1.6	0.16	pg/g
1,2,3,7,8-PeCDF	0.56	Q J	8.0	0.089	pg/g
2,3,4,7,8-PeCDF	0.75	Q J	8.0	0.090	pg/g
1,2,3,4,7,8-HxCDF	1.3	C B J	8.0	0.070	pg/g
1,2,3,6,7,8-HxCDF	0.72	Q B J	8.0	0.070	pg/g
2,3,4,6,7,8-HxCDF	0.61	J	8.0	0.074	pg/g
1,2,3,7,8,9-HxCDF	ND		8.0	0.088	pg/g
1,2,3,4,6,7,8-HpCDF	6.2	B J	8.0	0.077	pg/g
1,2,3,4,7,8,9-HpCDF	0.84	Q B J	8.0	0.12	pg/g
OCDF	14	B J	16	0.051	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	76	40 - 135
13C-1,2,3,7,8-PeCDD	74	40 - 135
13C-1,2,3,4,7,8-HxCDD	69	40 - 135
13C-1,2,3,6,7,8-HxCDD	73	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	70	40 - 135
13C-2,3,7,8-TCDF	76	40 - 135
13C-1,2,3,7,8-PeCDF	80	40 - 135
13C-2,3,4,7,8-PeCDF	75	40 - 135
13C-1,2,3,4,7,8-HxCDF	73	40 - 135
13C-1,2,3,6,7,8-HxCDF	73	40 - 135
13C-2,3,4,6,7,8-HxCDF	72	40 - 135
13C-1,2,3,7,8,9-HxCDF	75	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	73	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	69	40 - 135
13C-OCDF	62	40 - 135

TestAmerica Canton

Sample ID: NB-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 011	**Work Order #....:**	M7FX71AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/24/15	**Percent Moisture**	37
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 012	**Work Order #....:**	M7FX81AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	47
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.9	0.29	pg/g
1,2,3,7,8-PeCDD	ND		9.3	0.13	pg/g
1,2,3,4,7,8-HxCDD	ND		9.3	0.14	pg/g
1,2,3,6,7,8-HxCDD	**0.76**	**Q B J**	**9.3**	**0.14**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.7**	**B J**	**9.3**	**0.13**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**37**	**B**	**9.3**	**0.32**	**pg/g**
OCDD	**1400**	**B**	**19**	**0.63**	**pg/g**
2,3,7,8-TCDF	ND		1.9	0.18	pg/g
1,2,3,7,8-PeCDF	ND		9.3	0.12	pg/g
2,3,4,7,8-PeCDF	ND		9.3	0.12	pg/g
1,2,3,4,7,8-HxCDF	ND		9.3	0.10	pg/g
1,2,3,6,7,8-HxCDF	**0.40**	**Q B J**	**9.3**	**0.090**	**pg/g**
2,3,4,6,7,8-HxCDF	ND		9.3	0.10	pg/g
1,2,3,7,8,9-HxCDF	ND		9.3	0.13	pg/g
1,2,3,4,6,7,8-HpCDF	**3.9**	**B J**	**9.3**	**0.081**	**pg/g**
1,2,3,4,7,8,9-HpCDF	ND		9.3	0.13	pg/g
OCDF	**7.5**	**B J**	**19**	**0.084**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	70	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	66	40 - 135
13C-1,2,3,6,7,8-HxCDD	74	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	76	40 - 135
13C-OCDD	68	40 - 135
13C-2,3,7,8-TCDF	64	40 - 135
13C-1,2,3,7,8-PeCDF	74	40 - 135
13C-2,3,4,7,8-PeCDF	72	40 - 135
13C-1,2,3,4,7,8-HxCDF	69	40 - 135
13C-1,2,3,6,7,8-HxCDF	71	40 - 135
13C-2,3,4,6,7,8-HxCDF	73	40 - 135
13C-1,2,3,7,8,9-HxCDF	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	74	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	70	40 - 135
13C-OCDF	61	40 - 135

TestAmerica Canton

Sample ID: SB-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 012	**Work Order #....:**	M7FX81AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	47
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 013	Work Order #....:	M7FX91AC	Matrix....:	SOLID
Date Sampled....:	08/13/15	Date Received....:	08/15/15	Dilution Factor:	1
Prep Date....:	08/17/15	Analysis Date....:	08/25/15	Percent Moisture	37
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	Instrument ID....:	D2A	Method:	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.6	0.30	pg/g
1,2,3,7,8-PeCDD	1.1	J	8.0	0.20	pg/g
1,2,3,4,7,8-HxCDD	1.3	Q B J	8.0	0.14	pg/g
1,2,3,6,7,8-HxCDD	2.5	B J	8.0	0.13	pg/g
1,2,3,7,8,9-HxCDD	3.5	C B J	8.0	0.13	pg/g
1,2,3,4,6,7,8-HpCDD	61	B	8.0	0.34	pg/g
OCDD	1600	B	16	0.55	pg/g
1,2,3,7,8-PeCDF	2.6	J	8.0	0.24	pg/g
2,3,4,7,8-PeCDF	5.0	J	8.0	0.24	pg/g
1,2,3,4,7,8-HxCDF	9.8	C B	8.0	0.14	pg/g
1,2,3,6,7,8-HxCDF	4.1	B J	8.0	0.14	pg/g
2,3,4,6,7,8-HxCDF	3.1	Q J	8.0	0.14	pg/g
1,2,3,7,8,9-HxCDF	0.56	Q B J	8.0	0.17	pg/g
1,2,3,4,6,7,8-HpCDF	15	B	8.0	0.10	pg/g
1,2,3,4,7,8,9-HpCDF	3.5	B J	8.0	0.17	pg/g
OCDF	25	B	16	0.11	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	75	40 - 135
13C-1,2,3,7,8-PeCDD	73	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	72	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	72	40 - 135
13C-OCDD	67	40 - 135
13C-1,2,3,7,8-PeCDF	73	40 - 135
13C-2,3,4,7,8-PeCDF	71	40 - 135
13C-1,2,3,4,7,8-HxCDF	67	40 - 135
13C-1,2,3,6,7,8-HxCDF	68	40 - 135
13C-2,3,4,6,7,8-HxCDF	70	40 - 135
13C-1,2,3,7,8,9-HxCDF	73	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	71	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	67	40 - 135
13C-OCDF	61	40 - 135

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 013	**Work Order #....:**	M7FX91AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	37
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
C	Co-eluting isomer.
J	Estimated Result.
Q	Estimated maximum possible concentration (EMPC).

TestAmerica Canton

Sample ID: SB-2

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 013	**Work Order #....:**	M7FX91AD	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	37
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D12C	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

Confirmation Run

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDF	3.0	1.6	0.16	pg/g

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDF	75	40 - 135

Sample results, minimum levels, and estimated detection limits are reported on a dry weight basis and have been adjusted for percent moisture.

QUALIFIERS

TestAmerica Canton

Sample ID: BERM-1

Trace Level Organic Compounds

Lot - Sample #....:	H5H160405 - 014	**Work Order #....:**	M7F0A1AC	**Matrix....:**	SOLID
Date Sampled....:	08/13/15	**Date Received....:**	08/15/15	**Dilution Factor:**	1
Prep Date....:	08/17/15	**Analysis Date....:**	08/25/15	**Percent Moisture**	16
Prep Batch # ....:	5229015				
Initial Wgt/Vol :	10.1 g	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Linda K. McWhirter				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.2	0.18	pg/g
1,2,3,7,8-PeCDD	ND		5.9	0.13	pg/g
1,2,3,4,7,8-HxCDD	**0.56**	**B J**	**5.9**	**0.094**	**pg/g**
1,2,3,6,7,8-HxCDD	**1.4**	**B J**	**5.9**	**0.090**	**pg/g**
1,2,3,7,8,9-HxCDD	**1.9**	**BCJ**	**5.9**	**0.087**	**pg/g**
1,2,3,4,6,7,8-HpCDD	**22**	**B**	**5.9**	**0.18**	**pg/g**
OCDD	**210**	**B**	**12**	**0.21**	**pg/g**
2,3,7,8-TCDF	**1.0**	**Q J**	**1.2**	**0.11**	**pg/g**
1,2,3,7,8-PeCDF	ND		5.9	0.068	pg/g
2,3,4,7,8-PeCDF	ND		5.9	0.068	pg/g
1,2,3,4,7,8-HxCDF	**0.77**	**Q B J**	**5.9**	**0.063**	**pg/g**
1,2,3,6,7,8-HxCDF	**0.39**	**Q B J**	**5.9**	**0.054**	**pg/g**
2,3,4,6,7,8-HxCDF	**0.31**	**Q J**	**5.9**	**0.060**	**pg/g**
1,2,3,7,8,9-HxCDF	ND		5.9	0.082	pg/g
1,2,3,4,6,7,8-HpCDF	**3.1**	**B J**	**5.9**	**0.054**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.41**	**Q B J**	**5.9**	**0.086**	**pg/g**
OCDF	**8.4**	**B J**	**12**	**0.060**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	75	40 - 135
13C-1,2,3,7,8-PeCDD	67	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	70	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	70	40 - 135
13C-OCDD	63	40 - 135
13C-2,3,7,8-TCDF	71	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	68	40 - 135
13C-1,2,3,4,7,8-HxCDF	67	40 - 135
13C-1,2,3,6,7,8-HxCDF	71	40 - 135
13C-2,3,4,6,7,8-HxCDF	71	40 - 135
13C-1,2,3,7,8,9-HxCDF	67	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	66	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	60	40 - 135
13C-OCDF	54	40 - 135