91622

MRI REPORT

Test Report for Trial Burn No. 1 and No. 2 on the Drake Chemical Superfund Site's Mobile On-site Hazardous Waste Incinerator

Volume 2—Appendices A through B

For OHM Remediation Services Corp.
180 Myrtle Street
Lock Haven, PA 17745

Attn: Mr. Gary Jones
Technical Manager

OHM Subcontract No. 292521-02

MRI Project No. 3620-13/23

September 12, 1997

MIDWEST RESEARCH INSTITUTE 425 Volker Boulevard, Kansas City, MO 64110-2299 • (816) 753-7600

Appendices

A List of Samples Collected
B Field Sampling Data
C Process Data and Certificates of Analysis for Spike Materials
D Modified Method 5 Calculations and Laboratory Particulate Results
E Calibration Data for Sampling Equipment
F Galbraith Laboratory Results
G Report on Chemical Analysis Results for Semivolatile Organics
H Report on Chemical Analysis Results for PCDDs/PCDFs
I Not used
J Report on Chemical Analysis Results for VOCs
K Report on Chemical Analysis Results for Metals
L Report on Chemical Analysis Results for Chlorides
M Report on Chemical Analysis Results for Cr^{+6}
N Example Calculations

Appendix A

List of Samples Collected

Condition 1
Condition 2

Condition 1

List of Samples Collected

Table A1-1. Samples to Be Analyzed for VOCs

	Run 1 Dup	Run 2 Dup	Run 3 Dup	Run 4 Dup
1A. Bottom Ash	1127*, 1171	2127,2171	3127,3171	4127,4171
1B. Fly Ash	1131*, 1175	2131,2175	3131,3175	4131,4175
1C. Feed	1199	2199	3199	4199

* Analyze in duplicate.

NOTE:

Two separate samples of bottom ash and fly ash were collected in each run and both are to be analyzed. One of the samples (from Run 1) are to be analyzed in duplicate as indicated above.

Table A1-2. Samples to Be Analyzed for Semivolatile Compounds

		Run 1		Run 2		Run 3		Run 4	
2A.	Solid Feed (analyze for SVOCs)	1120*		2120		3120		4120	
2X.	Solid Feed (analyze for Fenac)	1200		2200		3200		4200	
2B.	Solid Feed Spikes (archive—analyze only if needed)	1124 (100% naphthalene) 1125 (100% 1,4-dichlorobenzene)							
			Dup		Dup		Dup		Dup
2C.	Bottom Ash (analyze for 2 POHCs and all SVOCs in both samples from each run including Fenac)	1126*	1170	2126	2170	3126	3170	4126	4170
2D.	Fly ash (analyze for 2 POHCs and all SVOCs in both samples from each run including Fenac)	1130*	1174	2130	2174	3130	3174	4130	4174

* Analyze in duplicate

Table A1-2 (Continued)

	Run 1	Run 2	Run 3	Run 4	Blank Train
2E. MM5-SV Samples (analyzed for 2 POHCs, 10 PICs, and D/F)					
FH Rinse	1108	2108	3108	4108	1154
Filter	1109	2109	3109	4109	1155
BH Rinse	1110	2110	3110	4110	1156
XAD	1111	2111	3111	4111	1157
Condensate	1112	2112	3112	4112	1158
Toluene Rinse	1113	2113	3113	4113	1159
2F. MM5-SV Reagent Blanks (analyze if necessary)					
MeOH	1143				
$MeCl_2$	1144				
Filter	1146				
XAD	1147				
Water	1148				
Toluene	1145				
2G. EPA D/F Audit Samples (analyzed for D/F)					
Samples are in cold room; see Brad Deck					
EPA #7003					
EPA #7197					

Note: The amount of POHCs that would be present in the MM5-SV extract, at 99.99% DRE, are:

Naphthalene	60 µg
1,4-Dichlorobenzene	60 µg

Table A1-3A. Feed Samples to Be Analyzed for Metals (As, Be, Cd, Cr, Pb, Hg)

Run 1	Run 2	Run 3	Run 4
1121	2121	3121	4121

Table A1-3B. Samples to Be Analyzed for TCLP Metals (Ag, As, Ba, Cd, Cr, Hg, Pb, and Se)

	Run 1	Dup	Run 2	Dup	Run 3	Dup	Run 4	Dup
3E. Bottom Ash	1128	1172	2128	2172	3128	3172	4128	4172
3B. Fly Ash	1132	1176	2132	2176	3132	3176	4132	4176

Table A1-4. Particulate/HCl Train Samples for MRI

	Run 1	Run 2	Run 3	Run 4
4A. M5-PH (Determine particulate wt.)				
FH Acetone	1101	2101	3101	4101
Filter	1102	2102	3102	4102
(Filter No.)	(6)	(5)	(7)	(8)
4B. M5-PH Train Reagent Blanks				
Acetone	1138			
Filter	1139			
(Filter No.)	(9)			
Water	1140			
4C. M5-PH Train Samples to Be Archived				
Impingers 1-3	1103	2103	3103	4103
Impingers 4-6	1105	2105	3105	4105
4D. M5-PH Train (Samples to be analyzed for Cl^- per Method 9057 by MRI)				
H_2SO_4 aliquot	1104*	2104	3104	4104
NaOH aliquot	1106*	2106	3106	4106
H_2SO_4 blank	1141	* Duplicate analysis required		
NaOH blank	1142			
4E. Cl^- Knowns (To be analyzed for Cl^- per Method 9057 by MRI)				
H_2SO_4	1161			
H_2SO_4	1162	Knowns to be prepared by D. Hooton		
NaOH	1163			
NaOH	1164			

Note: All samples analyzed for Cl^- are to be analyzed in duplicate in accordance with Method 9057. Also, matrix spikes are required, to assess recovery efficiency.

Note: None of these samples were included in Federal Express shipment on 1/28/97. Will be sent 1/29/97.

Note: 4A, 4B and 4C shipped back on MRI truck.

5.0 Samples for Galbraith Labs

Samples, listed below, are to be analyzed by Galbraith Labs as follows:

	Run 1	Run 2	Run 3	Run 4
5A. Waste Feed Samples	1122*	2122	3122	4122
(Analyze for total solids, ash, HHV, total Cl, and moisture content)			* Analyze in duplicate	
5B. Bottom Ash Samples	1129, 1173	2129, 2173	3129, 3173	4129, 4173
(Analyze for TOC in quadriplicate per Method 9060)				
5C. Fly Ash Samples	1133, 1177	2133, 2177	3133, 3177	4133, 4177
(Analyze for TOC in quadriplicate per Method 9060)				
5D. Solid Feed Knowns				
Total Cl	1165*			
HHV	1166*			
Ash	1167*			

* Shipped to Galbraith Labs with samples from Runs 3 and 4.

6.0 Samples for Corps of Engineers (COE)

Extra samples were taken for the COE, as follows:

	Run 1	Run 2	Run 3	Run 4
6A. Solid Feed	1135 *	2135 *	3135 **	4135 **
6B. Bottom Ash	1136 *	2136 *	3136 **	4136 **
6C. Fly Ash	1137 *	2137 *	3137 **	4137 **

* Given to Tony Garcia 1/28/97.

** Given to Tony Garcia 2/3/97

Condition 2

List of Samples Collected

Table A2-1. Samples to Be Analyzed for VOCs

	Run 5 Dup	Run 6 Dup	Run 7 Dup	Run 8 Dup
1A. Bottom Ash	5127*, 5171	6127,6171	7127,7171	8127,8171
1B. Fly Ash	5131*, 5175	6131,6175	7131,7175	8131,8175
1C. Feed	5199	6199	7199	8199

* Analyze in duplicate.

NOTE:

Two separate samples of bottom ash and fly ash were collected in each run and both are to be analyzed. Two of the samples (from Run 5) are to be analyzed in duplicate as indicated above.

Samples were sent to ECC for BNA/Fenac analysis 2/20/97.

Table A2-2. Samples to Be Analyzed for Semivolatile Compounds

		Run 5		Run 6		Run 7		Run 8	
2A.	Solid Feed (analyze for SVOCs)	5120*		6120		7120		8120	
2X.	Solid Feed (analyze for Fenac)	5200		6200		7200		8200	
2B.	Solid Feed Spikes (*archive—analyze* only if needed)	5124 (100% naphthalene) 5125 (100% 1,4-dichlorobenzene)							
			Dup		Dup		Dup		Dup
2C.	Bottom Ash (analyze for 2 POHCs and all SVOCs in both samples from each run including Fenac)	5126*	5170	6126	6170	7126	7170	8126	8170
2D.	Fly ash (analyze for 2 POHCs and all SVOCs in both samples from each run including Fenac)	5130*	5174	6130	6174	7130	7174	8130	8174

* Analyze in duplicate

Table A2-2 (Continued)

	Run 5	Run 6	Run 7	Run 8	Blank Train
2E. MM5-SV Samples (analyzed for 2 POHCs, 10 PICs, and D/F)					
FH Rinse	5108	6108	7108	8108	5154
Filter	5109	6109	7109	8109	5155
BH Rinse	5110	6110	7110	8110	5156
XAD	5111	6111	7111	8111	5157
Condensate	5112	6112	7112	8112	5158
Toluene Rinse	5113	6113	7113	8113	5159
2F. MM5-SV Reagent Blanks (analyze if necessary)					
$MeOH/MeCl_2$	5143				
$MeOH/MeCl_2$	5144				
Filter	5146				
XAD	5147				
Water	5148				
Toluene	5145				

Note: The amount of POHCs that would be present in the MM5-SV extract, at 99.99% DRE, are:

Naphthalene	60 µg
1,4-Dichlorobenzene	60 µg

Analyze D/F audit samples from EPA (sent to Greg Jungclaus).

Table A2-3A. Samples to Be Analyzed for Metals

		Run 5	Run 6	Run 7	Run 8
3A.	Solid Feed (Analyze for 22 metals in Table G4-7a of TBP)	5121*	6121	7121	8121
3B.	Metal Spike (archive—analyze only if needed)	5123* (see note below)			
3C.	MM5-MM Train (Analyze for 22 metals, except Hg)				
	HNO_3 Rinse	5115	6115	7115	8115**
	Filter	5116	6116	7116	8116**
	Impingers (H_2O_2/HNO_3)	5117	6117	7117	8117**
3D.	MM5-MM Reagent Blanks				
	HNO_3 Rinse	5149			
	Filter	5150	Metals requested 3 extra blank filters		
	(H_2O_2/HNO_3)	5151			
3E.	MM5-MM Hg Train (Analyze for Hg only except in Run 8)				
	HNO_3 Rinse	5178	6178	7178	8178***
	Filter	5179	6179	7179	8179***
	Impingers HNO_3/H_2O_2	5180	6180	7180	8180***
	Impinger #4	5181	6181	7181	8181***
	Impingers $KMnO_4/H_2SO_4$	5182	6182	7182	8182***
	HCl Rinses	5183	6183	7183	8183***
3F.	MM5-MM Hg Train Blanks				
	HNO_3	5189			
	Filter	5190			
	HNO_3/H_2O_2	5191			
	$KMnO_4/H_2SO_4$	5192			
	Type I H_2O	5193			
	8N HCl	5194			

Note: Samples are to be archived. Analyze only if needed. Composition of the metal spike material is expected to be:

As_2O_3	13.7%
$BeSO_4 \cdot 4H_2O$	5.2%
$Cd(NO_3)_2 \cdot 4H_2O$	4.4%
Cr_2O_3	7.7%
PbO	69.0%

NOTE: Feed was also spiked with Mn.

* Solid feed from one run to be analyzed in duplicate.
** Analyze for K and Mn only
*** Analyze for all 22 metals including Hg

Table A2-3B. Samples to Be Analyzed for TCLP Metals (Ag, As, Ba, Cd, Cr, Hg, Pb and Se)

	Run 5	Dup	Run 6	Dup	Run 7	Dup	Run 8	Dup
3G. Bottom Ash	5128	5172	6128	6172	7128	7172	8128	8172
3H. Fly Ash	5132	5176	6132	6176	7132	7176	8132	8176

Table A2-3C. Samples to Be Analyzed for Cr^{+6}

	Run 5	Run 6	Run 7	Run 8
A. MM5-Cr^{+6}				
Aliquot for Cr^{+6}	5187	6187	7187	8187
Filtrate (to be archived, use if needed)	5186	6186	7186	8186
B. MM5-Cr^{+6} Blanks				
KOH Blank (1N)	5195			
KOH Blank (2N)	5197	(Archive, do not analyze)		
Water Blank	5196			

Table A2-4. Particulate/HCl Train Samples for MRI

	Run 5	Run 6	Run 7	Run 8
4A. M5-PH (Determine particulate wt.)				
FH Acetone	5101	6101	7101	8101
Filter	5102	6102	7102	8102
(Filter No.)	(10)	(11)	(12)	(13)
4B. M5-PH Train Reagent Blanks				
Acetone	5138			
Filter	5139			
(Filter No.)	(16)			
Water	5140			
4C. M5-PH Train Samples to Be Archived				
Impingers 1-3	5103	6103	7103	8103
Impingers 4-6	5105	6105	7105	8105
4D. M5-PH Train (Samples to be analyzed for Cl^- per Method 9057 by MRI)				
H_2SO_4 aliquot	5104**	6104	7104	8104
NaOH aliquot	5106**	6106	7106	8106
H_2SO_4 blank	5141	** Duplicate analysis required		
NaOH blank	5142			
4E. Cl^- Knowns (To be analyzed for Cl^- per Method 9057 by MRI)				
H_2SO_4	5161			
H_2SO_4	5162	Knowns to be prepared by D. Hooton		
NaOH	5163			
NaOH	5164			

Note: All samples analyzed for Cl^- are to be analyzed in duplicate in accordance with Method 9057. Also, matrix spikes are required, to assess recovery efficiency.

Note: 4A, 4B and 4C shipped back on MRI truck.

5.0 Samples for Galbraith Labs

Samples, listed below, are to be analyzed by Galbraith Labs as follows:

	Run 5	Run 6	Run 7	Run 8
5A. Waste Feed Samples (Analyze for total solids, ash, HHV, total Cl, and moisture content)	5122*	6122	7122	8122
5B. Bottom Ash Samples (Analyze for TOC in quadriplicate per Method 9060)	5129, 5173	6129, 6173	7129, 7173	8129,8173
5C. Fly Ash Samples (Analyze for TOC in quadriplicate per Method 9060)	5133, 5177	6133, 6177	7133, 7177	8133, 8177
5D. Solid Feed Knowns				
Total Cl HHV Ash	5165** 5166** 5167**	Knowns to be prepared by D. Hooton and shipped separately to Galbraith Labs.		

* Analyze in duplicate.

** Shipped to Galbraith Labs with samples from Runs 3 and 4.

Note: 5A, 5B, and 5C were sent by Federal Express on 2/5/97.

6.0 Samples for Corps of Engineers (COE)

Extra samples were taken for the COE, as follows:

	Run 5	Run 6	Run 7	Run 8
6A. Solid Feed	5135 *	6135 *	7135 *	8135 *
6B. Bottom Ash	5136 *	6136 *	7136 *	8136 *
6C. Fly Ash	5137 *	6137 *	7137 *	8137 *

* Given to Tony Garcia 2/5/97.

Appendix B

Field Sampling Data

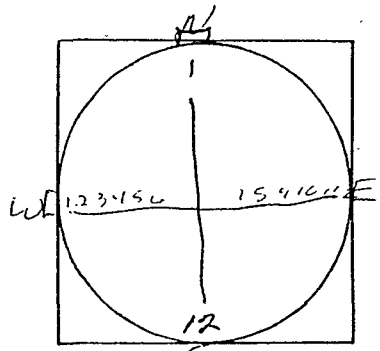
Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
Run 7
Run 8
Field Calibration Data
Velocity Traverse Data and Cyclonic Flow Check
Sample Traceability Forms

Run 1

Field Sampling Data

FIELD DATA

RUN NO. 1	PROBE NO. S-4	NOZZLE DIA. .371
PROJECT NO. 3620-13-30	PROBE LENGTH AND TYPE 5' heated glass	ASSUMED MOISTURE % SAT
PLANT Drake @ OHM RSC	SAMPLE BOX NO. ~~4~~ 4	METER ΔH@ 1.908
DATE 1-25-97	METER BOX NO. N10	METER CORRECTION 0.989
SAMPLING LOCATION Stack Outlet (Low)	TEMP. CONTROLLER NO. N10	PITOT NO. M-12.1
SAMPLE TYPE DIMS PIT-1	TEMP. METER NO. N10	PITOT COEFFICIENT 0.837
OPERATOR Gerlick	THERMOCOUPLE I.D. NO. 96-4	BAROMETRIC PRESSURE 29.13
FILTER NO. 6	UMBILICAL CORD I.D. NO. N125-8	SITE TO BARO. ELEVATION (ft.) 34'
RECORD DATA EVERY 7.5 MIN.	UMBILICAL CORD I.D. NO. —	CORRECTED B.P. (0.1 in./100 ft.) 29.10
UMBILICAL/SAMPLER HOOKUP UH-1	NOZZLE NO. PH1	STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	0940	1555				
PASS/FAIL		PASS				

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1000	1335	1336	1557	
VACUUM, In. Hg	≥15"	6"	≥15"	7"	≥15"
CFM	.002	.002	.004	.002	
VOLUMES					
FINAL		906.451			
INITIAL		~~839.264~~ 837.264			
DIFFERENCE		906.780 229			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, In. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 837.264
FINAL VOLUME 927.897
LEAK CHECK VOLUME .329
ADJUSTED FINAL VOLUME 927.568

COMMENTS

Revision 11/18/86

APPENDIX B

AR315508

RUN NO. 1 (MM5(H)-1) SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-25-97 PROJECT NO. 3620-13-30 OPERATOR Gulick

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 837.264		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F		
	0	1140	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
W12	7.5	1203.5	842.856	842.785	.34	1.86	1.90	178	68	68	4.5	40		251	248	13.0	
W11	15.0	1211.0	848.869	848.800	.41	2.17	2.20	179	69	67	6.0	40		252	249	13.0	
W10	22.5	1218.5	854.706	854.560	.40	2.04	2.05	180	73	68	6.0	44		256	248	12.6	
W9	30.0	1226.0	860.503	860.350	.39	2.00	2.00	180	77	76	5.5	46		255	247	12.6	
W8	37.5	1233.5	866.457	866.365	.39	2.10	2.16	179	81	71	6.0	51		253	247	12.6	
W7	45.0	1241	872.227	872.00	.38	1.96	1.95	180	83	73	6.0	58		257	248	12.7	
W6	52.5	1248.5	878.024	877.965	.38	1.97	1.95	180	86	75	6.0	66		253	253	12.7	
W5	60.0	1256	883.537	883.457	.38	1.99	2.00	180	88	76	6.0	48		252	253	12.7	
W4	67.5	1303.5	887.574	889.415	.37	1.93	1.95	180	88	77	5.5	46		253	248	12.7	
W3	75	1311	895.331	895.330	.37	1.93	1.95	180	89	78	5.5	45		253	250	12.7	
W2	82.5	1318.5	901.093	900.935	.36	1.94	1.95	180	90	79	5.5	45		253	248	12.7	
W1	90.0	1326	906.649	906.451	.36	1.80	1.80	181	90	79	5.0	50		251	244	12.5	
								~~180~~	~~87~~				NA				
	0	1350		906.750													
N12	7.5	1357.5	912.631	912.550	.39	2.02	2.00	180	79	78	5.5	44		251	236	12.6	
N11	15	1405	918.203	918.140	.42	2.15	2.15	180	81	76	6.5	44		261	247	12.5	
N10	22.5	1412.5	924.864	924.890	.41	2.23	2.25	179	85	77	6.5	42		252	253	12.6	
N9	30.0	1420	930.758	930.60	.39	2.03	2.00	180	88	77	6.0	42		258	253	12.7	
N8	37.5	1427.5	936.582	936.450	.38	1.98	2.00	180	88	78	6.0	42		252	246	12.7	
N7	45	1435	942.096	942.100	.34	1.79	1.90	180	89	78	5.0	40		257	245	12.7	
N6	52.5	1442.5	947.931	947.875	.38	1.99	2.00	180	89	79	6.0	40		253	252	12.7	
N5	60	1450	953.766	953.760	.38	1.99	2.00	180	89	79	6.0	45		253	245	12.7	
N4	67.5	1457.5	959.757	959.685	.40	2.09	2.10	180	90	79	6.5	42		253	250	12.8	
N3	75	1305	966.039	965.950	.42	2.30	2.30	179	90	80	7.0	43		252	246	13.2	
N2	82.5	1312.5	972.196	972.100	.42	2.20	2.20	180	91	81	7.0	41		252	240	13.0	
N1	90	1320	977.919	977.897	.38	1.96	1.96	181	91	81	6.0	43		255	246	12.9	

COMMENTS

* Stopped Sampling at 1140.5 SV Train plugged
Restart at 1156.5

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake OHIO RSC
Sampling Location Stack Outlet (Lower)
Sample Type (Multi-Point; ~~Single-Point~~)
Flow Control Device (Microvalve; ~~Critical Orifice~~)
For Sampling From M5 Console No. N10
Pump Type Diaphram
Pump I.D. N10
Flow Meter Type Rotameter
Flow Meter I.D. N10

Project No. 3620-13-20
Run No. 1 Date 1-25-97
Operator Gulick
Bag Type Mylar Sample No. 1107
Method 3 Train No.
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.

Desired Flow Rate (cc/min) 100 cc
Leak Check Before Sampling ~~4 in Hg~~ pass After Sampling pass
Total Sampling Time (min) 180 Average Flow Meter Reading
Flow Rate (cc/min): Average 100 Highest 100 cc Lowest 100 cc
Estimated Actual Volume (liters) 18

Time 24 Hr Clock	Flow Meter Reading	Comments
1140	100	ok
1140.5		Shut Down
1157	100	Restart
1205	100	ok
1215	100	ok
1225	100	ok
1235	100	ok
1245	100	ok
1255	100	ok
1310	100	ok
1320	100	ok
1326		Port Change
1350	100	Restart
1400	100	ok
1410	100	ok
1420	100	ok
1430	100	ok
1450	100	ok
1305	100	ok
1315	100	ok
1320		End of Run

DRAKE 3620.13 [redacted] 1107
MM5PH ORSAT B[redacted]
TRIAL BURN SA[redacted]
For disposal c[redacted] P.GORMAN
MIDWEST RESEARCH INSTITUTE

AR315510

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 1
SAMPLE NO. 1107 DATE 01-25-97
PLANT SAMPLING LOCATION Stack - Lower Level
ANALYSIS TIME (24hr-CLOCK) 1735
SAMPLE TYPE (BAG, ~~GRAB~~) BAG
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

RUN / GAS	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	8.7
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 20.4 2 20.4 3	11.7	1 20.4 2 20.4 3	11.7	1 20.4 2 20.4 3	11.7	11.7

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2	> 4%	.3% by Volume	O_2	≥ 15%	.2% by Volume
	≤ 4%	.2% by Volume		< 15%	.3% by Volume

Comments:

DRAKE 3620.13 1107
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack

Run No. 1 Sampling Train No. MM5PH-1 Sample Box No. 4
Set-up person(s): A. Carender Date: 1/23/97
Transfer to Sampler:
Relinquished By A. Carender Received By O. Neal Date/Time 1-24-97 9:00

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz) *	PH-1			
Probe (Liner-Glass) *				
Female Probe Outlet Blank-Off				
90° Bypass *				
Filter Holder Front		Filter Type: Whatman QM-A		
Filter Holder Back with Teflon® Filter Support		Filter Number: #6		
45/90° Connector				
1st Impinger (2-Liter, Mod-GBS)		50 mLs ±1 mL 0.1 N H_2SO_4	1021.4	1071.3
1st Impinger Replacement		50 mLs ±1 mL	NA	NA
U-Connector (A)		0.1 N H_2SO_4		
2nd Impinger (GBS)		100 mLs ±2 mLs	473.8	572.8
U-Connector (B)		0.1 N H_2SO_4		
3rd Impinger (GBS)		100 mLs ±2 mLs	573.0	672.2
U-Connector (C)		0.1 N H_2SO_4		
4th Impinger (Mod-GBS)		Empty	489.1	
U-Connector (D)				
5th Impinger (Mod-GBS)		100 mLs ±2 mLs	550.1	648.2
U-Connector (E)		0.1 N NaOH		
6th Impinger (Mod-GBS)		100 mLs ±2 mLs	486.1	584.6
U-Connector (F)		0.1 N NaOH		
7th Impinger (Mod-GBS)		~200 g indicating silica gel		625.6
U-Connector (G)				
8th Impinger (Mod-GBS)		~200 g indicating silica gel		659.8
Impinger Outlet Connector	UH-1			

* Before and after sampling: Nozzle openings covered with aluminum foil or Teflon® tape, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with aluminum foil, Teflon® tape or as described above.

Component Changes After Set-up And Before Recovery And Other Comments:

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack
Run No. 1 Sampling Train No. MM5pH-1 Sample Box No. 4

TRAIN PURGE WITH ASCARITE-FILTERED AIR

Condensate in front-half? Filter Holder Damp Purged By N/A
Date/Start Time: N/A Stop Time N/A Purge Rate: [ΔH = N/A in.H_2O]
Moisture Removed? By heating filter in hot box
Transfer for Recovery:
Relinquished By D. Neal Received By J. McC Date/Time 1-25-97 1430
Sample box recovery person(s): J. McC Date: 1-25-97
Probe recovery person(s): R. Cocman, J. Surma, B. Edwards, D. Neal Date: 1-25-97
Weights below are in grams.

BACK HALF RECOVERY

Impinger:	1st	Replacement 1st	2nd	3rd	4th	5th	6th	7th	8th
Final Wt.	3712.9	NA	835.2	700.4	863.9	651.7	586.3	646.4	670.0
Initial Wt.	1071.3	↓	572.8	672.2	489.1	648.2	584.6	625.6	659.8
Net Wt.	2641.6	↓	262.4	28.2	374.8	3.5	1.7	19.8	10.2

[Total Condensate Collected: 3342.2]

Description and/or color: clear — clear clear clear clear clear 0 15
Recovery: →→→→→ Impingers 1-3 ←←←←←←←←← →→ Impingers 4-6 ←←←←←←← % Blue

Sample Number: 1103 1105
Sample Bottle Tare Wt. 1297.1 492.9
Sample Bottle Gross Wt. 4474.5 1067.0 Before Rinses
Components Rinsed*: filter support, filter holder back, 45/90° connector, 1st-3rd impingers, U-connectors A-B — 4th-6th impingers, U-connectors C-E
Sample Bottle Gross Wt. 4564.2 1160.5 After Rinses
Net Sample Wt. ~~3177.4~~ 3,267.1 667.6 for Mass Collected Computations
Sample Mixed, Then: for HCl for Cl_2
Aliquot Sample Number: →→→→→ 1104 →→→→→ 1106 for Chloride Analysis
Sample Bottle Tare Wt. 99.4 99.2
Sample Bottle Gross Wt. 4453.9 209.2 1060.1 199.6 After Aliquoting
Sample Bottle Final Wt. After SIE Check
Net Sample Wt. 3156.8 109.8 567.2 100.4

FRONT HALF RECOVERY

FILTER:
Sample Number: 1102 Description/Color: off-white / intact

TRAIN RINSES: Sample Number: 1101
Sample Bottle Tare Wt. 268.9
Components Rinsed**: nozzle, probe liner, bypass, filter holder front
Sample Bottle Gross Wt. 315.1 with Acetone Rinses
Net Acetone Sample Wt. 46.2
Sample Bottle Final Wt. 478.3 with added Water Rinses
Net Water Sample Wt. ~~209.4~~ 163.2

* Using a total of 100 mLs ±2 mLs ASTM Type I water per sample, rinse components twice. Thoroughly mix each sample and added rinses before aliquoting.

** Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

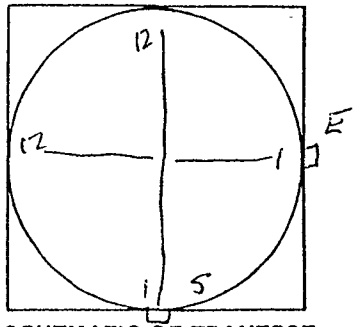
COMMENTS:

FIELD DATA

RUN NO. 1 (SV)
PROJECT NO. 3620-13-30
PLANT Drake OHM RSC
DATE 1-25-97
SAMPLING LOCATION Stack Outlet (Lower)
SAMPLE TYPE MM5 - SV-1
OPERATOR Griffin
FILTER NO. NA
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP 4H-8

PROBE NO. S-1
PROBE LENGTH AND TYPE 8' heated/glass
SAMPLE BOX NO. 012001
METER BOX NO. N-9
TEMP. CONTROLLER NO. N-9
TEMP. METER NO. N-9
THERMOCOUPLE I.D. NO. 96-6-A
UMBILICAL CORD I.D. NO. N-125-6
UMBILICAL CORD I.D. NO.
NOZZLE NO. SV-2

NOZZLE DIA. .365
ASSUMED MOISTURE % 5±1
METER ΔH@ 1.933
METER CORRECTION .995
PITOT NO. M-119
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.13
SITE TO BARO. ELEVATION (ft.) 34
CORRECTED B.P. (0.1 in./100 ft.) 29.10
STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	0830	1524				
PASS/FAIL		pass				

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	0830	1143	1150	1328	1344
VACUUM, In. Hg	≥15"	13"	≥15"	13"	≥15"
CFM	.002	.002	.002	.001	.001
VOLUMES					
FINAL		941,002		102.999	
INITIAL		940,521		1012.659	
DIFFERENCE		.481		.340	

.340
.481
.821

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1522				
VACUUM, In. Hg	13"	≥15"		≥15"	
CFM	.001				
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 940.478
FINAL VOLUME 1078.811
LEAK CHECK VOLUME .821
ADJUSTED FINAL VOLUME 1077.990

COMMENTS

Revision 11/18/86

APPENDIX B

AR315514

8

RUN NO. 1 MM5SV-1 SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-25-97 PROJECT NO. 3620-13-30 OPERATOR Griffin

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 940.478		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F	XAD-2	
	8	1140	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
S-12	7.5	1147.5	946.39 *	946.64	.43	2.15	2.2	179	67	67	12	36	X	245	253	47	10.6
S-11	15	1211	952.98	952.74	.48	2.29	2.3	180	68	66	12	38	X	243	250	57	10.6
S-10	22.5	1218.5	958.99	958.76	.48	2.20	2.2	181	73	67	12	38	X	252	246	53	10.7
S-9	30	1226	965.09	964.92	.49	2.26	2.3	181	77	69	13	38	X	237	249	53	10.7
S-8	37.5	1233.5	971.18	971.00	.46	2.24	2.2	180	81	71	13	38	X	252	250	51	10.7
S-7	45	1241	977.22	977.05	.45	2.20	2.2	180	83	73	13	39	X	252	246	56	10.7
S-6	52.5	1248.5	983.08	983.05	.44	2.06	2.1	181	86	75	13	39	X	249	249	49	10.7
S-5	60	1256	988.83	988.83	.44	1.97	2.0	182	87	77	12	39	X	252	248	48	10.8
S-4	67.5	1303.5	994.92	994.90	.47	2.21	2.2	181	85	78	13	40	X	247	250	50	11.2
S-3	75	1311	1000.89	1000.90	.45	2.12	2.1	181	89	79	13	40	X	250	251	48	11.0
S-2	82.5	1318.5	1006.87	1006.74	.40	2.13	2.1	181	91	80	13	40	X	249	244	51	11.6
S-1	90	1326	1012.699	1012.559	.42	1.99	2.0	181	91	81	13	39	X	247	248	49	11.6
													X				
		1350	Init	1012.959									X				
E-12	97.5	1357.5	1018.55	1018.71	.38	1.85	1.9	180	78	77	10	37	X	237	246	42	12.8
E-11	105	1405	1023.91	1024.03	.37	1.73	1.7	181	91	77	9	38	X	248	254	49	12.8
E-10	112.5	1412.5	1029.37	1029.39	.38	1.78	1.8	181	85	78	9	38	X	248	250	41	13.0
E-9	120	1420	1034.78	1034.76	.37	1.74	1.7	181	88	79	9	39	X	253	250	42	13.1
E-8	127.5	1427.5	1040.34	1040.23	.39	1.84	1.8	181	90	80	10	39	X	245	247	42	13.1
E-7	135	1435	1045.71	1045.72	.38	1.71	1.7	182	90	81	10	39	X	245	251	47	13.2
E-6	142.5	1442.5	1051.16	1051.19	.39	1.76	1.8	182	90	81	11	39	X	248	248	49	13.1
E-5	150	1450	1056.53	1056.51	.38	1.71	1.7	182	91	82	10	40	X	249	251	51	13.2
E-4	157.5	1457.5	1062.12	1062.13	.39	1.85	1.9	181	91	83	12	40	X	251	248	50	13.4
E-3	165	1505	1067.99	1067.89	.41	2.03	2.0	180	91	83	13	40	X	246	249	51	13.6
E-2	172.5	1512.5	1073.71	1073.56	.41	1.94	1.9	181	91	83	13	41	X	247	248	50	13.2
E-1	180	1520	1078.813	1078.811	.34	1.54	1.5	182	91	84	11	41	X	251	248	49	13.2

COMMENTS Down @ 1148 Umbilicle Kinked Restart @ 1156.5 → 1203.5 Changed out O_2 Meter @ Port Change
1140.5 941.002

* New Desired @ Point 1 946.87

APPENDIX B

AR315515

[redacted]

INTEGRATED GAS SAMPLING DATA FORM FOR U.S. EPA METHOD 3

Plant: OHM RSC
Sample Location: Stack Outlet (Lower)
Sample Type (Multi-Point, ~~Single-Point~~): MP
Flow Control Device (Microvalve, ~~Critical Orifice~~): MV
For Sampling From M5 Console No.: N-8 N-9
Pump Type: ~~Emerson Rotameter~~ DS diaphragm
Pump I.D.: DS N-8 N-9
Flow Meter Type: Rotameter
Flow Meter I.D.: ~~68800~~ N-9

Project No.: 3620-13-30 DS
Run No.: 1 Date: 1-24-97 ~~1-25-97~~
Operator: Griffin
Bag Type: mylar Sample No.: 1114
Method 3 Train No.: NA
Pump Type: NA
Pump I.D.: NA
Flow Meter Type: NA
Flow Meter I.D.: NA

Desired Flow Rate (cc/min): 100
Leak Check Before Sampling: Pass After Sampling: Pass
Total Sampling Time (min): 179 Average Flow Meter Reading: 1.0
Flow Rate (cc/min): Average: 100 Highest: 100 Lowest: 100
Estimated Actual Volume (liters): 18

Time 24 Hr Clock	Flow Meter Reading	Comments
1157	1.0	Start
1212	1.0	
1227	1.0	
1242	1.0	
1257	1.0	
1326	1.0	Down for Port Change
1350	1.0	Restart
1405	1.0	
1420	1.0	
1435	1.0	
1450	1.0	
1505	1.0	
1520	1.0	Down

DRAKE 3620.13 1114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 1
SAMPLE NO. 1114 DATE 01-25-91
PLANT SAMPLING LOCATION Stack - Lower Level
ANALYSIS TIME (24hr-CLOCK) 1620
SAMPLE TYPE (BAG, ~~GRAB~~)
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

GAS \ RUN	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	8.7
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 20.4 2 20.4 3	11.7	1 20.4 2 20.4 3	11.7	1 20.4 2 20.4 3	11.7	11.7

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2 > 4% .3% by Volume
≤ 4% .2% by Volume

O_2 ≥ 15% .2% by Volume
< 15% .3% by Volume

Comments:

DRAKE 3620.13 1114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 1 Sampling Train No. MMS SV-1 Sample Box No. 012001
Set-up person(s): A. Carender Date: 1-25-97
Transfer to Sampler:
Relinquished By A. Carender Received By D. Neal Date/Time 1-25-97 9:00

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz) *	SV-7			
Probe (Liner-Glass) *				
Female Probe Outlet Blank-Off				
90° Bypass *				
Filter Holder Front				
Filter Holder Back with Teflon®-coated 316 SS Filter Support		Filter Type: Whatman QM-A		
45/90° Connector				
Condenser (Standard)		Thermocouple No. 9203 ~~4962~~		***
XAD-2 Resin Cartridge (Standard)	#2	~65 grams XAD-2 Resin + Surrogates		517.0
(Documentation of standards injection is separate); resin spiked on 01-10-97 and maintained near 4°C until use.				
1st Impinger (2-L Mod-GBS)		Empty	1045.3	
1st Impinger Replacement	not used	Empty	NA	
U-Connector (A)				
2nd Impinger (Mod-GBS)		100 mLs	488.6	587.0
U-Connector (B)		ASTM Type II Water		
3rd Impinger (GBS)		100 mLs	477.8	527.0
U-Connector (C)		ASTM Type II Water		
4th Impinger (Mod-GBS)		Empty	469.5	
U-Connector (D)				
5th Impinger (Mod-GBS)		~200 g indicating silica gel		554.7
U-Connector (E)				
6th Impinger (Mod-GBS)		~200 g indicating silica gel		749.8
Impinger Outlet Connector	UH 8			

* Before and after sampling: Nozzle openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil or as described above.

*** Cartridge weighed with blank-offs in place; then, cartridge covered with aluminum foil to seal out light during storage and sampling.

Component Changes after Set-up and before Recovery and Other Comments:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 1 Sampling Train No. MM5 SV-1 Sample Box No. 012001
Transfer for Recovery:
Relinquished By D. Neal Received By A. Carandang Date/Time 1-25-97 16:15
Sample box recovery person(s): A. Carandang, T. McG Date: 1-25-97
Probe recovery person(s): P. Gorman, R. Howe, D. Neal Date: 1/25/97
Weights below are in grams.

RESIN CARTRIDGE AND IMPINGERS RECOVERY

Impinger:	XAD-2 Cartridge*	1st	Replacement 1st	2nd	3rd	4th	5th	6th
Final Wt.	514.3	3704.2	NR	824.7	787.8	579.3	681.9	759.8
Initial Wt.	517.0	~~3045.0~~ 1045.3		587.0	577.0	469.5	654.7	749.8
Net Wt.	~~-2.7~~ -1.7	~~659.2~~ 2658.9		237.7	210.8	109.8	27.2	10.0

[Total Condensate Collected: ~~3254.7~~ 3252.7 grams].

Description and/or color: intact/tan clear clear ac clear clear clear 20 40
Sample Recovery: Cartridge* → 1st-4th Impingers and Replacement 1st Impinger ← ← ← ← % Blue

Sample Number: 1111 1112
Sample Bottle Tare Wt. 1394.4
Transfer impinger contents only (i.e., do not add component rinses to this sample).

Sample Bottle Final Wt. 4804.2
Net Sample Wt. 3409.8
Components Rinsed**: 1st-4th impingers, replacement 1st impinger, U-connectors A-C; combine rinses with train back rinses below (sample number XX010)

FILTER RECOVERY AND TRAIN RINSES

FILTER:
Sample Number: 1109 Description/Color: intact/off-white

TRAIN RINSES:	FRONT	BACK	QA RINSES
Sample Number:	1108	1110	1113
Sample Bottle Tare Wt.	263.4	1266.7	489.4
Sample Bottle Final Wt.	485.1	734.9	~~955.7~~ 1059.3 ac
Net Sample Wt.	221.7	468.2	569.9

Components Rinsed***: Front -- nozzle, probe liner, bypass, filter holder front; Back -- filter support, filter holder back, 45/90° connector, condenser

* Replace blank-offs and remove aluminum foil, then weigh the cartridge; replace aluminum foil to cover the entire cartridge.
** Methanol/methylene chloride (1:1 v/v) rinses 3 times; add rinses to train back rinses (sample number XX010).
*** TRAIN FRONT/BACK RINSES: Methanol/methylene chloride (1:1 v/v) rinses with brushing of front components 3 times or more until perceivably clean, and methanol/methylene chloride (1:1 v/v) rinses of back components 3 times, but without brushing, and including 5-minute soaks of underlined components 3 times.
QA RINSES: Follow with toluene rinses and soaks, but without brushing, in the same manner as above for the train front and back rinses.

COMMENTS:

SOLID WASTE FEED SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 100 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX120, ✓ & XX199 & XX200 stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX121, stored at near water ice temperature (i.e., 4°C). All samples, XX122, stored at near room temperature or cooler (i.e., 26°C).

Run No. 21 Date: 1/25/97 Sampler(s): PAUL M. MUZYKA PAUL CAVANAUGH PAUL S. ALSOUFI

Composite Sample Number:	✓120	✓121	✓122	✓199	✓200
Composite Sample Designation:	SVOC	METALS	GALBT	VOC	FENAC

Grab No.	Time	Interruptions/Comments
		Caution: Material may contain β-naphthylamine.
1	1156	DIRT
2	1211	"
3	1226	"
4	1241	"
5	1256	"
6	1311	"
7	1326	"
8	1353	" FDA RESUMED SAMPLING FOR CHROMIUM
9	1409	DIRT
10	1423	"
11	1438	"
12	1453	DIRT
13	15:08	DIRT
14	15:23	"
15		
16		
17		
18		
19		
20		

FDA

Relinquished By D. Wilson Received By D. Wilson Date/Time 1-25-97 1655

WSTFEED3.WPD January 24, 1997

AR315520

SOLID WASTE FEED SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 60 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap and wrapped in aluminum foil to seal out light. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 1 Date: 1/25/97 Sampler(s): PAUL M. MUZYKA
DAVID S. ALBERT
PAUL CANANAUGH

Composite Sample Number: 1135
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
		Caution: Material may contain β-naphthylamine.
1	1156	DIRT
2	1211	"
3	1226	"
4	1241	"
5	1256	"
6	1311	"
7	1326	"
8	1353	" -OIL REQUIRED FOLLOWING PORT CHANGE
9	1409	DIRT
10	1423	"
11	1438	"
12	1453	DIRT
13	1508	"
14	1523	"
15		
16		
17		
18		
19		
20		

Relinquished By [signature] Received By [signature] Date/Time 1-27-97 1655

WSTFED3C.WPD December 4, 1996

AR315521

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: Jan 25-97 Recorded By: Neil Quarles

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
1036	40041/2.1	40041/1.1	Dirt : START SPIKING 1036:50
1038	"	"	1038:46
1040	"	"	1040:42
1042	"	"	1042:37
1044	"	"	1044:33
1046	"	"	1046:29
1048	"	33089/1.1	1048:25
1050	"	"	1050:21
1052	"	40041/1.1	1052:16
1054	"	"	1054:12
1056	"	"	1056:08
1058	"	"	1058:04
1100	"	"	1100:00
1101	"	"	1101:55
1103	"	"	1103:50
1105	"	"	1105:45
1107	"	"	1107:41
1109	"	33089/1.1	1109:38
1111	"	"	1111:34
1113	"	"	1113:30
1115	"	"	1115:26
1117	"	"	1117:22
1119	"	"	1119:18
1121	"	40041/1.1	1121:14
1123	"	"	1123:10
1125	"	"	1125:05
1127	"	"	1127:01
1128	"	"	1128:58
1130	"	"	1130:53
1132	"	"	1132:48
1134	"	"	1134:44
1136	"	"	1136:39
1138	"	"	1138:35
1140	"	"	1140:31
1142	"	"	1142:27

APPENDIX B

AR315522

16

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: Jan 25 97 Recorded By: Neil Swan / Ed Pucci

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
1144	40041/2.1	40041/1.1	O.T — N.B. [illegible] 1144:22
1146	"	"	1146:18
1148	"	"	1148:14
1150	"	"	1150:09
1152	"	"	1152:05
1154	"	"	1154:01
1155	"	"	1155:57
			11:57 52
			11:59 47
			12:01 43
			12:03 39
			12:05 35
			12:07 32
			12:09 28
			12:11 25
			12:13 19
			12:15 15
			12:17 12
			12:19 07
			12:21 02
			12:23 57
			12:25 53
			12:27 49
			12:29 45
			12:31 40
			12:33 36
			12:35 33
			12:37 28
			12:39 25
			12:41 21
			12:43 17
			12:45 12
			12:47 07
			12:49 03
			12:50 58
	33089/1.1	40041/2.1	
		40041/1.1	
	40041 2.1	40041 2.1	
		33089 /1.1	

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: JAN 25 97 Recorded By: Ed Tucci / Neil Rummel

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	33089 / 1.1	DIRT
			12:52 53
			12:54 49
			12:56 45
			12:58 42
			13:00 37
			13:02 32
			13:04 28
			13:06 25
			13:08 22
			13:10 17
			13:12 12
			13:14 07
			13:16 03
			13:17 00
			13:19 55
			13:24 50
			13:23 46
			13:25 43
			13:27 37
			13:28 34
			13:30 30
			13:32 28
			13:34 25
			13:36 23
			13:38 20 EP
1340			1340 16 NG
1342			1342 13
			1344 13
			1346 12
			1348 11
			1350 10
			1352 09
			1354 08
			1356 06
			1358 05

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: Jan 25 97 Recorded By: Neil Burns

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene		REMARKS
	40041/12.1	33089/1.1	0.RT	1400 04
				1402 03
				1404 02
				1406 01
		40041/11.1		1408 00
				1409 58
				1411 57
				1413 56
				1415 55
				1417 54
				1419 53
				1421 50
				1423 49
				1425 48
				1427 47
				1429 46
		33089/1.1		1431 44
				1433 43
				1435 42
				1437 41
				1439 39
				1441 38
				1443 37
		40041/11.1		1445 37
				1447 36
				1449 34
				1451 33
				1453 32
				1455 31
				1457 30
				1459 29
				1501 28
				1503 25
				1505 22
				1507 19

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: Jan 25-97 Recorded By: Neil Dawson / P. CAVANAUGH

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
D:RT	40041 12.1	40041 11.1	
	"	"	1508:17
	"	"	1511 13
	"	"	1513 09
	"	"	1515 05
	"	"	1517 00
	"	"	1519 54
	"	"	1521 51
	"	"	1523 47
	"	"	1525 43 End of 1st Run
	"	"	1527 38
	"	"	1529 35
	"	"	1531 30
	"	"	1533 35 PC
	"	"	1535 35
	"	"	1537 35
	"	"	15:40 ~~15:39~~ 10
	"	"	15:42 06
	"	"	15:44 01
	"	"	15:45 56
	"	"	15:47 53
	"	"	15:49 47
	"	"	15:51 43
	"	"	15:53 39
	"	"	15:55 35
	"	"	15:57 31
	"	"	15:59 28
	"	"	16:01 23
	"	"	16:03 19
	"	"	16:05 16
	"	"	16:07 12
	"	"	16:09 07
	"	"	16:11 04
	"	"	16:12 58
	"	"	16:14 54
	"	"	16:16 49
	"	"	16:18 46
	"	"	16:20 40

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 1 Date: 1/25/97 Recorded By: P. GAVANAUGH / J. Kraft / Neil Brooks

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS		
	40041/2.1	40041/1.1	DIRT		
	"	"	"	16:22	41
	"	"	"	16:24	34
	"	"	"	16:26	28
	"	"	"	16:28	24
	"	"	"	16:30	18
	"	"	"	16:32	15
	"	"	"	16:34	12
	"	"	"	16:36	07
	"	"	"	16:38	04
	"	"	"	16:39	58
	"	"	"	16:40	54
	"	"	"	16:42	49
	"	"	"	16:44	45
	"	"	"	16:47	41
	"	"	"	16:48	37
	"	"	"	16:50	34
	"	"	"	16:52	29
	"	"	"	16:54	25
	"	"	"	16:56	20
	"	"	"	16:58	16
	"	"	"	17:00	12
	"	"	"	17:02	08
	"	"	"	17:04	03
	"	"	"	17:06	59
	"	"	"	17:08	49
	"	"	"	17:10	50
	"	"	"	17:12	46
	"	"	"	17:14	42 NG
	"	"	"	17:16	38
	"	"	"	17:18	34
	"	"	"	17:20	29
	"	"	"	17:22	24
	"	"	"	17:24	22
	"	"	"	17:26	13
	"	"	"	17:28	13

POHC (NAPHTHALENE) SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: One (1) grab sample collected from a randomly selected POHC spike bag. Grab sample collected with a plastic scoop and placed into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap and wrapped in aluminum foil to seal out light.

SAMPLING FREQUENCY: One (1) grab sample collected during the trial burn.

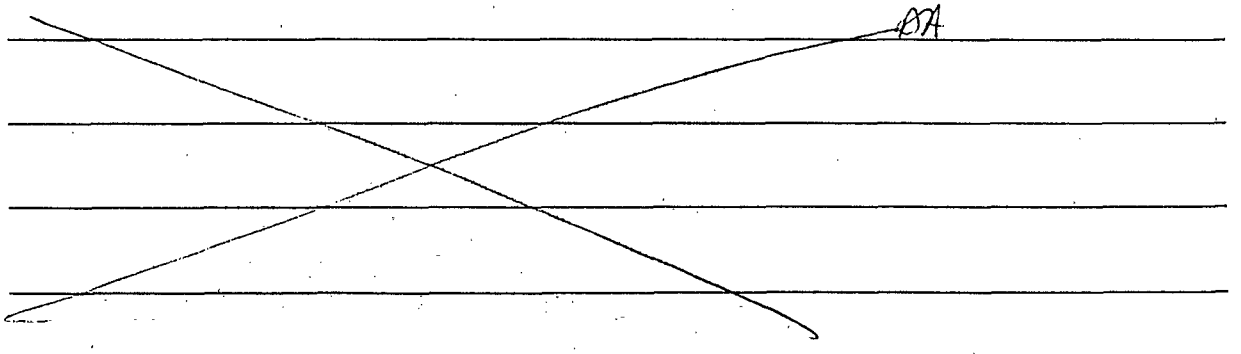
SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 1 Date: ~~1-24-97~~ 1-25-97 Sampler(s): D. ALBURTY

Grab Sample Number: 1124

Lot Number: 40041/2.1

Time	Interruptions/Comments
1345	FLAKES / DUST



Relinquished By _____ Received By _____ Date/Time 1-25-97 1426

POHCNAPH.WPD October 28, 1996

AR315528

POHC (1,4-DICHLOROBENZENE) SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: One (1) grab sample collected from a randomly selected POHC spike bag. Grab sample collected with a plastic scoop and placed into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap and wrapped in aluminum foil to seal out light.

SAMPLING FREQUENCY: One (1) grab sample collected during the trial burn.

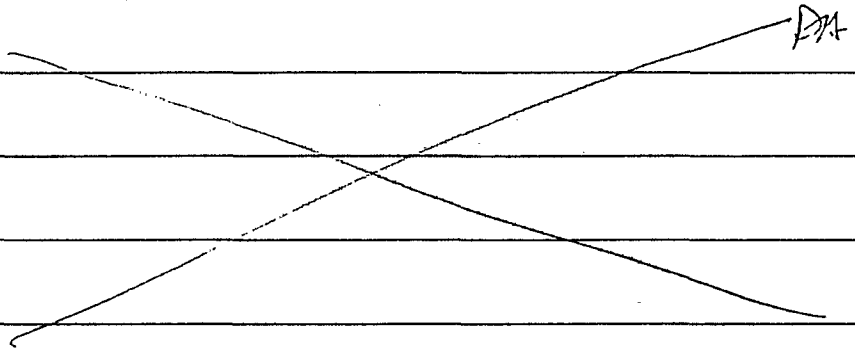
SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 1 Date: 25 DA 1-24-97 Sampler(s): D. ALBERTY

Grab Sample Number: 1125

Lot Number: 33089/1.1

Time	Interruptions/Comments
1410 ~~1310~~ DA	WHITE, CRYSTALLINE



Relinquished By K. Alberty Received By K. Alberty Date/Time 1-25-97 1426

POCHDCB.WPD October 28, 1996

AR315529

BOTTOM ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX126 and XX127, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX128, stored at near water ice temperature (i.e., 4°C). All samples, XX129, stored at near room temperature or cooler (i.e., 26°C).

Run No. 1 Date: 1-25-97 Sampler(s): D. ALBERTY

Composite Sample Number:	1126	1127	1128	1129
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1205	DARK, MOIST, SOME ROCKS
2	1237	" " "
3	1307	" " "
4	1401	" " "
5	1436	" " "
6	1515	" " "
7		
8		
9		
10		

Relinquished By D. Alberty Received By D. Alberty Date/Time 1-25-97 1823

BOTMASH3.WPD January 20, 1997

BOTTOM ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX170 and XX171, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX172, stored at near water ice temperature (i.e., 4°C). All samples, XX173, stored at near room temperature or cooler (i.e., 26°C).

Run No. 1 Date: 1-25-97 Sampler(s): P. ALBERT

Composite Sample Number:	1170	1171	1172	1173
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1208	WET, MOIST, SOME LUMPS
2	1237	" " " "
3	1307	" " " "
4	1401	" " " "
5	1436	" " " "
6	1515	" " " "
7		
8		
9		
10		

DK

Relinquished By D. Albury Received By D. Albury Date/Time 1-25-97 1623

EOTMSH3D.WPD January 20, 1997

AR315531

BOTTOM ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 1 Date: 1-25-97 Sampler(s): D. ALBURTY

Composite Sample Number: 1136
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
1	1205	MOIST, SOME ROCKS
2	1237	" " " "
3	1307	" " " "
4	1401	" " " "
5	1436	" " " "
6	1515	" " " "
7		
8		
9		
10		

Relinquished By D. Alburty Received By D. Alburty Date/Time 1-25-97 1823

BOTMS-H3C.WPD January 20, 1997

AR315532

FLY ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of nine (9) ~~eighteen (18)~~ spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX130 and XX131, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX132, stored at near water ice temperature (i.e., 4°C). All samples, XX133, stored at near room temperature or cooler (i.e., 26°C).

Run No. 1 Date: 1-25 EH 1-24-97 Sampler(s): D. ALBURTY

Composite Sample Number: /130 /131 /132 /133
Composite Sample Designation: SVOC VOC TCLP/METALS GALBT

Event No.	Time	Interruptions/Comments
1	1641	READY, MOIST
2		
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By [signature] Received By D. Albury Date/Time 1-25-97 1700

FLYASH3.WPD January 20, 1997

AR315533

FLY ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of (9) ~~eighteen (18)~~ spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX174 and XX175, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX176, stored at near water ice temperature (i.e., 4°C). All samples, XX177, stored at near room temperature or cooler (i.e., 26°C).

Run No. 1 Date: 1-25-97 Sampler(s): P. ALBURY

Composite Sample Number:	!174	!175	!176	!177
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	1650	125 T, moist
2		DA
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By _____ Received By _____ Date/Time 1-25-97 1700

FLYASH3D.WPD January 20, 1997

AR315534

FLY ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of (9) ~~eighteen (18)~~ nine (9) spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

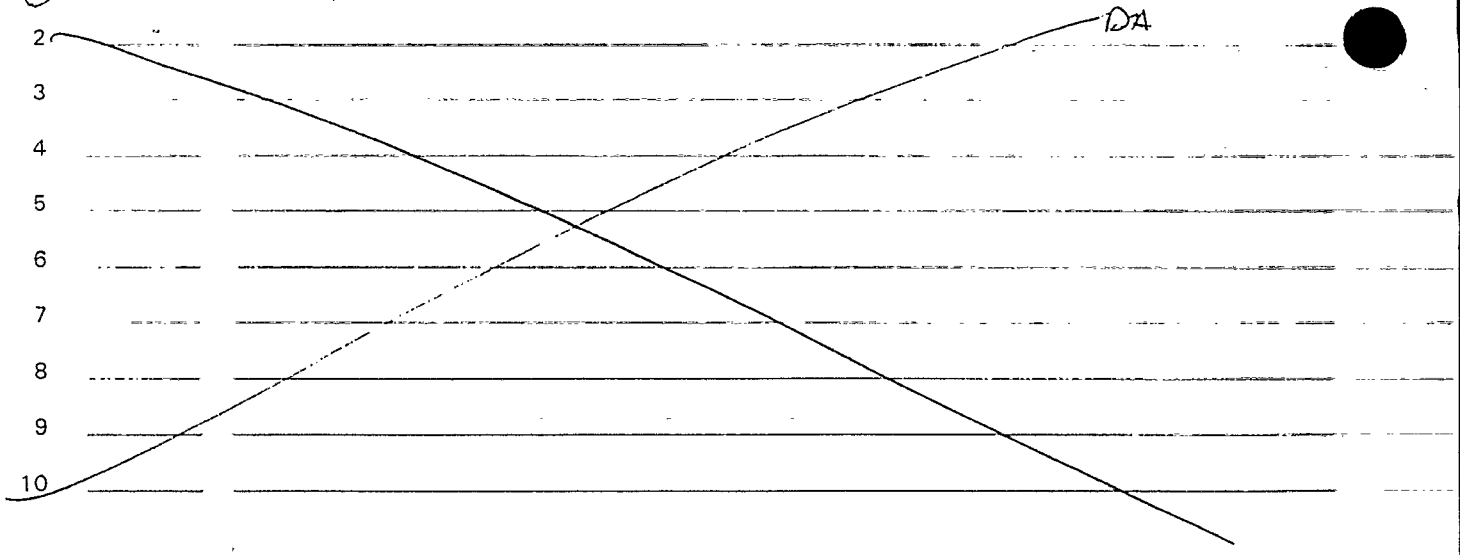
SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 1 Date: 1-25-97 Sampler(s): D. ALBRIGHT

Composite Sample Number: 1137
Composite Sample Designation: COE

Event No.	Time	Interruptions/Comments
1	1700	RUN, NIGHT
2		
3		
4		
5		
6		
7		
8		
9		
10		



Relinquished By D. ALBRIGHT Received By C. Murray Date/Time 1-25-97 1700

FLYASH3C WPD January 20, 1997

AR315535

Run 2

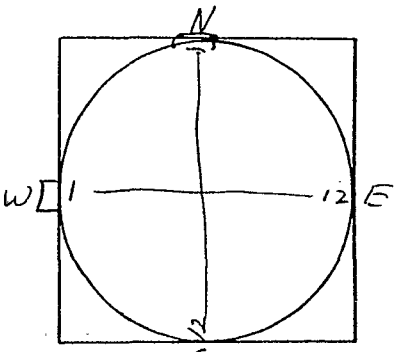
Field Sampling Data

FIELD DATA

RUN NO. 2
PROJECT NO. 3620-13-30
PLANT Drake OHMR SC
DATE 1-25-97
SAMPLING LOCATION Stack Outlet (Clean)
SAMPLE TYPE mms-PH-2
OPERATOR Gulick
FILTER NO. 96 to 5
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP UH-4 UH-4

PROBE NO. S-2
PROBE LENGTH AND TYPE 8' Heated Glass
SAMPLE BOX NO. 012004
METER BOX NO. N10
TEMP. CONTROLLER NO. N10
TEMP. METER NO. N10
THERMOCOUPLE I.D. NO. 96-2
UMBILICAL CORD I.D. NO. N125-8
UMBILICAL CORD I.D. NO. ←
NOZZLE NO. mm-1

NOZZLE DIA. 13/64 .371
ASSUMED MOISTURE % SAT
METER ΔH@ 1.908
METER CORRECTION 0.989
PITOT NO. M120
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.27
SITE TO BARO. ELEVATION (ft.) 34
CORRECTED B.P. (0.1 in./100 ft.) 29.24
STATIC PRESSURE -.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1718	2207				
PASS/FAIL		PASS				

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1720	1922	1930	2205	
VACUUM, In. Hg	≥15"	10"	≥15"	10"	≥15"
CFM	.007	.002	.004	.002	
VOLUMES					
FINAL		1048.337			
INITIAL		1047.926			
DIFFERENCE		.411			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, In. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 978.713
FINAL VOLUME 1121.371
LEAK CHECK VOLUME .411
ADJUSTED FINAL VOLUME 1120.960

COMMENTS

Revision 11/18/86

APPENDIX B

AR315537

31

RUN NO. 2 MM5B/H-2 SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-25-97 PROJECT NO. 3620 13-30 OPERATOR Gulick

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 778.713		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F		
	0	1750	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
W-12	7.5	1757.5	984.250	984.220	.38	1.86	1.85	181	67	67	5.0	34		248	255	130	
W11	15	1805	990.060	990.000	.44	2.05	2.05	182	70	66	9.0	35		251	249	13.0	
W10	22.5	1812.5	996.020	995.950	.45	2.12	2.10	182	75	69	10.0	36		251	251	13.5	
W9	30	1820	1001.920	1001.92	.42	2.08	2.10	181	79	69	10.0	36		248	251	13.4	
W8	37.5	1827.5	1007.702	1007.710	.42	1.99	2.00	182	81	71	9.0	39		255	252	13.3	
W7	45	1835	1013.506	1013.550	.42	2.00	2.00	182	84	72	9.0	41		248	254	13.3	
W6	52.5	1842.5	1019.395	1019.410	.43	2.05	2.05	182	85	74	9.0	44		254	249	13.2	
W5	60	1850	1025.357	1025.395	.44	2.10	2.10	182	86	74	9.0	46		247	250	13.0	
W4	67.5	1857.5	1031.345	1031.355	.42	2.11	2.10	181	88	76	9.0	51		256	248	13.3	
W3	75	1905	1037.199	1037.190	.40	2.01	2.00	181	89	77	9.0	58		251	249	13.0	
W2	82.5	1912.5	1042.702	1042.765	.37	1.78	1.86	182	89	78	8.5	60		251	247	13.2	
W1	90	1920	1047.973	1047.926	.34	1.63	1.66	182	88	78	7.0	59		246	250	13.0	
													Purge				
	0	2030		1048.337													
N12	7.5	2037.5	1054.426	1054.416	.45	2.22	2.20	181	73	72	7.0	41		254	253	13.6	
N11	15	2045	1060.660	1060.640	.49	2.32	2.30	182	77	73	7.5	44		248	244	13.0	
N10	22.5	2052.5	1066.917	1066.910	.49	2.33	2.35	182	81	73	7.5	47		253	254	13.0	
N9	30	2100	1073.100	1073.130	.47	2.25	2.25	182	88	77	7.5	46		249	251	13.5	
N8	37.5	2107.5	1078.871	1078.935	.41	1.96	1.95	182	87	76	7.0	42		248	248	13.2	
N7	45	2115	1084.577	1084.630	.40	1.92	1.90	182	87	77	7.0	46		247	252	13.0	
N6	52.5	2122.5	1090.646	1090.715	.45	2.16	2.15	182	89	78	7.5	55		250	252	13.0	
N5	60	2130	1096.726	1096.700	.45	2.17	2.15	182	90	79	7.5	46		247	255	13.5	
N4	67.5	2137.5	1103.135	1103.050	.50	2.41	2.40	182	90	79	8.5	53		252	252	13.2	
N3	75	2145	1109.432	1109.180	.48	2.32	2.30	182	92	80	8.0	60		252	249	13.2	
N2	82.5	2152.5	1115.638	1115.415	.49	2.25	2.30	183	92	80	8.5	60		252	257	13.0	
N1	90	2200	1121.603	1121.371	.43	2.08	2.10	182	92	81	10.0	53		248	247	13.3	

COMMENTS

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake RSC
Sampling Location Stack Outlet (Lower)
Sample Type (Multi-Point, ~~Single-Point~~)
Flow Control Device (Microvalve, ~~Critical Orifice~~)
For Sampling From M5 Console No. N10
Pump Type Diaphram
Pump I.D. N10
Flow Meter Type Rotameter
Flow Meter I.D. N10

Project No. 3620-13-30
Run No. 2 Date 1-25-97
Operator Gulick
Bag Type Mylar Sample No. 2107
Method 3 Train No.
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.

Desired Flow Rate (cc/min) 100
Leak Check Before Sampling PASS After Sampling PASS
Total Sampling Time (min) 180 Average Flow Meter Reading 100
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters) 18

Time 24 Hr Clock	Flow Meter Reading	Comments
1750	100	Begin Run 2
1800	100	ok
1815	100	ok
1825	100	ok
1840	100	ok
1900	100	ok
1915	100	ok
1920	-	Port change
2030	100	Resume Run
2045	100	ok
2100	100	ok
2115	100	ok
2125	100	ok
2140	100	ok
2155	100	ok
2200	-	End Run 2
		DRAKE 3620.13 2107
		MM5PH ORSAT BAG
		TRIAL BURN SAMPLE
		For disposal call: P.GORMAN
		MIDWEST RESEARCH INSTITUTE

AR315539

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620 13.30 RUN NO. 2
SAMPLE NO. 2107 DATE 01-25-97
PLANT SAMPLING LOCATION Stack - Lower Level
ANALYSIS TIME (24hr-CLOCK) 2310
SAMPLE TYPE (BAG, ~~GRAB~~) _____
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

RUN / GAS	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	8.7
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 21.0 2 21.0 3	12.3	1 21.0 2 21.0 3	12.3	1 21.0 2 21.0 3	12.3	12.3

91-16 SEV SURMAN wkshl 052191

Acceptance Criteria

CO_2 > 4% .3% by Volume
≤ 4% .2% by Volume

O_2 ≥ 15% .2% by Volume
< 15% .3% by Volume

Comments:

DRAKE 3620.13 2107
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack

Run No. 2 Sampling Train No. MM5PH-2 Sample Box No. 012004
Set-up person(s): J. McCann Date: 1/23/97
Transfer to Sampler:
Relinquished By J. McCann Received By P. Neal Date/Time 1-25-97 1600

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz) *	MM-1			
Probe (Liner-Glass) *				
Female Probe Outlet Blank-Off				
90° Bypass *				
Filter Holder Front		Filter Type: Whatman QM-A		
Filter Holder Back with Teflon® Filter Support		Filter Number: #5		
45/90° Connector				
1st Impinger (2-Liter, Mod-GBS)		50 mLs ±1 mL 0.1 N H_2SO_4	1021.9	1079.1
1st Impinger Replacement	Not used	50 mLs ±1 mL 0.1 N H_2SO_4	NA	NA
U-Connector (A)				
2nd Impinger (GBS)		100 mLs ±2 mLs 0.1 N H_2SO_4	487.7	591.3
U-Connector (B)				
3rd Impinger (GBS)		100 mLs ±2 mLs 0.1 N H_2SO_4	490.2	595.0
U-Connector (C)				
4th Impinger (Mod-GBS)		Empty	484.8	
U-Connector (D)				
5th Impinger (Mod-GBS)		100 mLs ±2 mLs 0.1 N NaOH	466.5	570.1
U-Connector (E)				
6th Impinger (Mod-GBS)		100 mLs ±2 mLs 0.1 N NaOH	477.0	579.0
U-Connector (F)				
7th Impinger (Mod-GBS)		~200 g indicating silica gel		644.2
U-Connector (G)				
8th Impinger (Mod-GBS)		~200 g indicating silica gel		679.4
Impinger Outlet Connector	UH-4			

* Before and after sampling: Nozzle openings covered with aluminum foil or Teflon® tape, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with aluminum foil, Teflon® tape or as described above.

Component Changes After Set-up And Before Recovery And Other Comments:

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack
Run No. 2 Sampling Train No. MM PH-2 Sample Box No. 012004

TRAIN PURGE WITH ASCARITE-FILTERED AIR

Condensate in front-half? None Purged By N/A
Date/Start Time: N/A Stop Time N/A Purge Rate: [ΔH = N/A in.H_2O]
Moisture Removed? N/A
Transfer for Recovery:
Relinquished By D. Neal Received By J. McCann Date/Time N/A
Sample box recovery person(s): J. McCann Date: 1-25-97
Probe recovery person(s): P. Gorman, J. Surman, B. Edwards, D. Neal Date: 1-25-97
Weights below are in grams.

BACK HALF RECOVERY

Impinger:	1st	Replacement 1st	2nd	3rd	4th	5th	6th	7th	8th
Final Wt.	~~1079.1~~ 3328-1	NR	838.2	848.4	843.8	816.4	581.6	672.8	691.0
Initial Wt.	1079.1	↓	591.3	595.0	484.8	570.1	579.0	649.2	679.4
Net Wt.	2249.0	↓	246.9	253.4	359.0	246.3	2.6	~~23.6~~ 23.6	11.6

[Total Condensate Collected: 3397.4]

Description and/or color: clear — clear clear clear clear clear clear 20 90
Recovery: → → → → → Impingers 1-3 ← ← ← ← ← ← ← ← → → Impingers 4-6 ← ← ← ← ← ← ← ← % Blue

Sample Number:	2103	2105	
Sample Bottle Tare Wt.	~~1303.2~~	494.6	
Sample Bottle Gross Wt.	4305.8	1300.9	Before Rinses
Components Rinsed*:	filter support, filter holder back, 45/90° connector, 1st-3rd impingers, U-connectors A-B	4th-6th impingers, U-connectors C-E	
Sample Bottle Gross Wt.	4395.2	1392.8	After Rinses
Net Sample Wt.	3092.0	898.2	for Mass Collected Computations
Sample Mixed, Then:	for HCl	for Cl_2	
Aliquot Sample Number:	→ → → → → 2104	→ → → → → 2106	for Chloride Analysis
Sample Bottle Tare Wt.	~~98.6~~ 99.0	98.9	
Sample Bottle Gross Wt.	4283.7	210.6	1283.5 / 205.5 After Aliquoting
Sample Bottle Final Wt.			After SIE Check
Net Sample Wt.	2980.5	111.6	789.0 / 106.6

FRONT HALF RECOVERY

FILTER:
Sample Number: 2102 Description/Color: off white / intact

TRAIN RINSES: Sample Number: 2101
Sample Bottle Tare Wt. 263.1
Components Rinsed**: nozzle, probe liner, bypass, filter holder front
Sample Bottle Gross Wt. ~~335.6~~ with Acetone Rinses
Net Acetone Sample Wt. 72.5
Sample Bottle Final Wt. 406.8 with added Water Rinses
Net Water Sample Wt. ~~143~~ 71.2

* Using a total of 100 mLs ±2 mLs ASTM Type I water per sample, rinse components twice. Thoroughly mix each sample and added rinses before aliquoting.

** Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS:

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD REAGENT BLANK PREPARATION DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack

Blank(s) Prepared By: J. McCa Date: 1-25-97

Weights below are in grams.

Reagent Blank Description	Sample Number	Bottle Tare Weight	Bottle Gross Weight	Net Sample Weight
Acetone for particulate matter Volume needed: 200 mLs Lot Number: BM743	1138	171.1	321.6	150.5
Filter for particulate matter Type: Whatman QM-A Filter Number: 9 Lot Number: ~~45202~~ 165103	1139			
ASTM Type I Water for particulate matter Volume needed: 200 mLs Lot Number: 1-23-97	1140	169.3	364.2	194.9
60 mLs ±1 mL 0.1 N H_2SO_4 plus 20 mLs ±0.5 mL ASTM Type I Water for chloride 0.1 N H_2SO_4 Lot Number: 1-7-97 Water Lot Number: 1-23-97	1141	98.9	177.8	78.9
50 mLs ± 1 mL 0.1 N NaOH, plus 25 mLs ±0.5 mL ASTM Type I Water for chloride 0.1 N NaOH Lot Number: 12-12-96 Water Lot Number: 1-23-97	1142	97.8	170.9	73.1

NOTE: Lots may be identified above by a manufacturer's lot number or by the date of reagent preparation. If different lots of a particular reagent are used, indicate the applicable test run number(s) and sampling location(s) where the train(s) loaded and/or recovered with that reagent are used (i.e., list each reagent blank sample number with the applicable test run number(s) and sampling location(s) below).

Sample Number	For Test Run Number(s)	For Sampling Location(s)

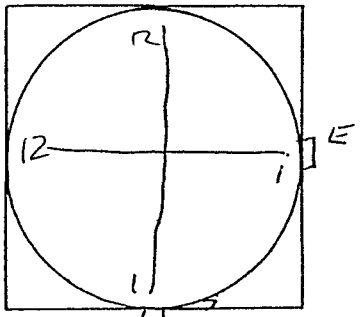
COMMENTS:

FIELD DATA

RUN NO 2 (SV)
PROJECT NO. 3620-13-30
PLANT Drake CHM RSC
DATE 1-25-97
SAMPLING LOCATION Stack Outlet (lower)
SAMPLE TYPE MM5 – SV-2
OPERATOR Griffin
FILTER NO NA
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP UH 36

PROBE NO. S-3
PROBE LENGTH AND TYPE 8' heated glass
SAMPLE BOX NO. SV-2 010293
METER BOX NO. N-9
TEMP. CONTROLLER NO. N-9
TEMP. METER NO. N-9
THERMOCOUPLE I.D. NO. DGT UH127 96-3
UMBILICAL CORD I.D. NO. N-125-6
UMBILICAL CORD I.D. NO. —
NOZZLE NO. SV-2

NOZZLE DIA .365
ASSUMED MOISTURE % 5±
METER ΔH@ 1.933
METER CORRECTION 0.995
PITOT NO. ~~N-120~~ M-127
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.27
SITE TO BARO. ELEVATION (ft.) 34
CORRECTED B.P. (0.1 in./100 ft.) 29.24
STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1742	2205				
PASS/FAIL		PASS				

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	.008	1924	1932	2201	
VACUUM, in. Hg	≥15"	13"	≥15"	14"	≥15"
CFM	1745	.020	.017	.013	
VOLUMES					
FINAL		151.085			
INITIAL		148.787			
DIFFERENCE		3.298			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, in. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 79.212
FINAL VOLUME 220.901
LEAK CHECK VOLUME 3.298
ADJUSTED FINAL VOLUME 217.403

Revision 1

APPENDIX B

AR315544

38

RUN NO. 2 MM5SV-2 SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-25-97 PROJECT NO. 3620-13-30 OPERATOR Gr. Em

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min: 0	1750	GAS METER READING (V_m), ft³ INITIAL 79.212: DESIRED	ACTUAL	VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O: DESIRED	ACTUAL	STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE: INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F	PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F	X AD° L	
S-12	7.5	1757.5	85.01	85.03	.45	2.07	2.1	181	67	66	12	33	X	251	260	39	13.8
S-11	15.0	1805	90.94	91.00	.47	2.17	2.2	181	69	66	12	37	X	250	252	41	13.3
S-10	22.5	1812.5	97.05	96.99	.49	2.28	2.3	181	76	68	13	35	X	255	249	43	13.6
S-9	30	1820	103.13	103.27	.48	2.24	2.2	181	80	69	13	34	X	252	248	40	13.5
S-8	37.5	1827.5	109.11	109.14	.46	2.16	2.2	181	83	72	13	34	X	253	249	42	13.8
S-7	45	1835	114.98	114.99	.44	2.08	2.1	181	86	74	12	34	X	251	251	42	13.8
S-6	52.5	1842.5	120.75	120.65	.42	1.94	2.0	181	88	77	12	34	X	254	250	43	13.8
S-5	60	1850	126.46	126.35	.43	1.95	2.0	182	89	78	12	33	X	252	249	46	14.0
S-4	67.5	1857.5	132.41	132.22	.44	2.10	2.1	181	92	80	12	34	X	250	249	43	14.2
S-3	75	1905	137.79	137.60	.36	1.72	1.7	181	92	82	11	33	X	253	249	43	14.2
S-2	82.5	1912.5	143.40	143.04	.39	1.87 1.91	1.9	181	92	83	12	33	X	248	247	52	14.3
S-1	90	1920	148.938	148.787	.38	1.82	1.9	181	92	83	12	34	X	248	247	58	14.1
		2030	Init	152.085													
E-12	97.5	2037.5	157.66	157.64	.40	1.88	1.9	181	77	77	12	33	X	249	249	35	14.2
E-11	105	2045	163.25	163.25	.40	1.88	1.9	181	81	76	12	34	X	250	250	41	13.5
E-10	112.5	2052.5	168.93	168.93	.41	1.94	1.9	181	85	77	12	35	X	252	247	41	14.0
E-9	120	2100	174.78	174.53	.43	2.04	2.0	181	89	79	12	36	X	250	250	42	14.2
E-8	127.5	2107.5	180.51	180.24	.41	1.95	2.0	181	91	80	12	36	X	249	249	41	14.0
E-7	135	2115	186.12	185.91	.41	1.87	1.9	182	91	81	12	36	X	254	248	43	14.3
E-6	142.5	2122.5	191.80	191.59	.40	1.91	1.9	181	93	82	12	36	X	253	250	39	14.3
E-5	150	2130	197.41	197.26	.39	1.87	1.9	181	93	83	12	36	X	249	249	39	14.6
E-4	157.5	2137.5	203.24	203.00	.42	2.01	2.0	181	93	83	12.5	36	X	249	249	41	14.6
E-3	165	2145	209.22	209.90	.44	2.11	2.1	181	95	84	13.5	37	X	253	249	47	14.6
E-2	172.5	2152.5	215.13	214.90	.45	2.06	2.1	182	94	85	14	37	X	249	249	67	14.5
E-1	180	2200	220.898	220.901	.41	1.97	2.0	181	94	85	14	38	X	248	248	44	14.7

COMMENTS

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake OHM RSC
Sampling Location ~~Stack Outlet~~
Sample Type (Multi-Point, ~~Single-Point~~) MP
Flow Control Device (Microvalve, ~~Critical Orifice~~) MV
For Sampling From M5 Console No. N9
Pump Type ~~diaphram Emerson Roots Vacuff~~
Pump I.D. N-9
Flow Meter Type Rotameter
Flow Meter I.D. ~~RB42D~~ N-9
Desired Flow Rate (cc/min) 100
Leak Check Before Sampling Pass After Sampling Pass
Total Sampling Time (min) 180 Average Flow Meter Reading 1.0
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters) 18

Project No. 3620-13-3
Run No. 2 Date 1-25-97
Operator Gr. Fl
Bag Type Mylar Sample No. 2114
Method 3 Train No. NA
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.

Time 24 Hr Clock	Flow Meter Reading	Comments
1750	1.0	Start
1805	1.0	
1820	1.0	
1835	1.0	
1850	1.0	
1905	1.0	
1920	1.0	Down for Bkt Change
2030	1.0	Restart
2045	1.0	
2100	1.0	
2115	1.0	
2130	1.0	
2145	1.0	
2200	1.0	Stop

DRAKE 3620.13 2114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

AR315546

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620,13,30 RUN NO. 2
SAMPLE NO. 2114 DATE 01-25-97
PLANT SAMPLING LOCATION Stack Lower Level
ANALYSIS TIME (24hr-CLOCK) 2225
SAMPLE TYPE (BAG, ~~GRAB~~)
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

GAS \ RUN	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	1 8.7 2 8.7 3	8.7	8.7
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 21.0 2 21.0 3	12.3	1 21.0 2 21.0 3	12.3	1 21.0 2 21.0 3	12.3	12.3

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2	> 4%	.3% by Volume	O_2	≥ 15%	.2% by Volume
	≤ 4%	.2% by Volume		< 15%	.3% by Volume

Comments:

DRAKE 3620.13 2114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

APPENDIX B

AR315547

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 2 Sampling Train No. MM5 SV-2 Sample Box No. 10288
Set-up person(s): J. McCann Date: 1/25/97
Transfer to Sampler:
Relinquished By J. McCann Received By D. Neal Date/Time 1/25/97 1600

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA		
Sampling Nozzle (Quartz)	SV-2 *		Initial Weights (grams)**	
Probe (Liner-Glass)	*		Empty	Loaded
Female Probe Outlet Blank-Off				
90° Bypass	*			
Filter Holder Front				
Filter Holder Back with Teflon®-coated 316 SS Filter Support		Filter Type: Whatman QM-A		
45/90° Connector				
Condenser (Standard)		Thermocouple No. XAD-5		***
XAD-2 Resin Cartridge (Standard)	6(T)	~65 grams XAD-2 Resin + Surrogates		487.9
(Documentation of standards injection is separate); resin spiked on 1/14/97 and maintained near 4°C until use.				
1st Impinger (2-L Mod-GBS)		Empty	986.1	
1st Impinger Replacement		Empty	Not used	
U-Connector (A)				
2nd Impinger (Mod-GBS)		100 mLs	552.9	655.0
U-Connector (B)		ASTM Type II Water		
3rd Impinger (GBS)		100 mLs	479.5	581.4
U-Connector (C)		ASTM Type II Water		
4th Impinger (Mod-GBS)		Empty	474.4	
U-Connector (D)				
5th Impinger (Mod-GBS)		~200 g indicating silica gel		664.7
U-Connector (E)				
6th Impinger (Mod-GBS)		~200 g indicating silica gel		655.3
Impinger Outlet Connector	UH-35			

* Before and after sampling: Nozzle openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with *Teflon®* plug. Bypass inlet covered (not sealed) with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil or as described above.

*** Cartridge weighed with blank-offs in place; then, cartridge covered with aluminum foil to seal out light during storage and sampling.

Component Changes after Set-up and before Recovery and Other Comments:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 - MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 2 Sampling Train No. MM5 SV-2 Sample Box No. 10288
Transfer for Recovery:
Relinquished By M. Raile & D. Neel Received By A. Carender Date/Time 1/25/97 2230
Sample box recovery person(s): A. Carender Date: 1/25/97
Probe recovery person(s): P. Gorman, R. Howe, M. Raile Date: 1/25/97
Weights below are in grams.

RESIN CARTRIDGE AND IMPINGERS RECOVERY

Impinger:	XAD-2 Cartridge*	1st	Replacement 1st	2nd	3rd	4th	5th	6th
Final Wt.	494.6	*3770.2	NA	773.0	~~475.7~~ 870.1	476.4	685.8	662.3
Initial Wt.	487.9	986.1	|	655.0	581.4	474.4	664.7	655.3
Net Wt.	6.7	2784.1	|	~~1180.8~~ 118.0	~~-105.7~~ 288.7	2.0	21.1	7.0

[Total Condensate Collected: 3,227.6 grams]

Description and/or color:	White	clear	—	clear	clear	clear	15	20
Sample Recovery:	Cartridge*	→ 1st-4th Impingers and Replacement 1st Impinger ← ← ← ←					% Blue	

Sample Number: 2111 2112
Sample Bottle Tare Wt. 1357.0
Transfer impinger contents only (i.e., do not add component rinses to this sample).

Sample Bottle Final Wt. 4753.8
Net Sample Wt. 3396.8
Components Rinsed**: 1st-4th impingers, replacement 1st impinger, U-connectors A-C; combine rinses with train back rinses below (sample number XX010)

FILTER RECOVERY AND TRAIN RINSES

FILTER:
Sample Number: 2109 Description/Color: intact/whitish

TRAIN RINSES:	FRONT	BACK	QA RINSES
Sample Number:	2108	2110	2113
Sample Bottle Tare Wt.	263.2	267.0	491.2
Components Rinsed***:	Front -- nozzle, probe liner, bypass, filter holder front; Back -- filter support, filter holder back, 45/90° connector, condenser		
Sample Bottle Final Wt.	464.2	664.2	983.8
Net Sample Wt.	201.0	397.2	492.6

* Replace blank-offs and remove aluminum foil, then weigh the cartridge; replace aluminum foil to cover the entire cartridge.
** Methanol/methylene chloride (1:1 v/v) rinses 3 times; add rinses to train back rinses (sample number XX010).
*** TRAIN FRONT/BACK RINSES: Methanol/methylene chloride (1:1 v/v) rinses with brushing of front components 3 times or more until perceivably clean, and methanol/methylene chloride (1:1 v/v) rinses of back components 3 times, but without brushing, and including 5-minute soaks of underlined components 3 times.
QA RINSES: Follow with toluene rinses and soaks, but without brushing, in the same manner as above for the train front and back rinses.

COMMENTS: Glass noted in bottom of impinger

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY TRAIN SET-UP DATA
FIELD BLANK TRAIN

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack Cond. 1
Run No. Blank Sampling Train No. Blank-2 Sample Box No. 012003
Set-up person(s): A. Carender Date: 1/25/97
Transfer to Sampler:
Relinquished By A. Carender Received By J. McCann Date/Time 1/25/97 11:00

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA		
			Initial Weights (grams)**	
			Empty	Loaded
Sampling Nozzle (Quartz)	NR *			
Probe (Liner-Glass)	*			
Female Probe Outlet Blank-Off				
90° Bypass	*			
Filter Holder Front				
Filter Holder Back with Teflon®-coated 316 SS Filter Support		Filter Type: Whatman QM-A		
45/90° Connector				
Condenser (Standard)		Thermocouple No. 92-1		
XAD-2 Resin Cartridge (Standard)	# 1(T)	~65 grams XAD-2 Resin + Surrogates		488.4 ***
(Documentation of standards injection is separate); resin spiked on 1/10/97 and maintained near 4°C until use.				
1st Impinger (2-L Mod-GBS)		Empty	1013.4	
1st Impinger Replacement		Empty	NA	
U-Connector (A)				
2nd Impinger (Mod-GBS)		100 mLs	485.0	585.1
U-Connector (B)		ASTM Type II Water		
3rd Impinger (GBS)		100 mLs	459.7	559.1
U-Connector (C)		ASTM Type II Water		
4th Impinger (Mod-GBS)		Empty	474.4	
U-Connector (D)				
5th Impinger (Mod-GBS)		~200 g indicating silica gel		630.2
U-Connector (E)				
6th Impinger (Mod-GBS)		~200 g indicating silica gel		628.7
Impinger Outlet Connector	UH-9			

* Before and after use: Nozzle openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil or as described above.

*** Cartridge weighed with blank-offs in place; then, cartridge covered with aluminum foil to seal out light during storage and use.

Component Changes after Set-up and before Recovery and Other Comments:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY SAMPLE RECOVERY DATA

FIELD BLANK TRAIN

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack
Run No. Blank Cond.1 Sampling Train No. Blank-2 Sample Box No. 012003
Transfer for Recovery:
Relinquished By J. McCann Received By A. Carender Date/Time 1/25/97 14:30
Sample box recovery person(s): A. Carender Date: 1/25/97
Probe recovery person(s): P. Gorman, R. Howe, B. Edwards Date: 1/25/97
Weights below are in grams.

RESIN CARTRIDGE AND IMPINGERS RECOVERY

Impinger:	XAD-2 Cartridge*	1st	Replacement 1st	2nd	3rd	4th	5th	6th
Final Wt.	488.4	1013.4	NA	585.0	559.0	474.4	630.3	~~628.9~~
Initial Wt.	488.4	1013.4		585.1	559.1	474.4	630.2	~~628.7~~
Net Wt.	0	0		(0.1)	(0.1)	0	0.1	0.2

[Overall Weight Difference: 0.1 grams]

Description and/or color:	white	clear	~~blue~~	clear	clear	clear	95	~~95~~
Sample Recovery:	Cartridge*	→ 1st-4th Impingers and Replacement 1st Impinger ← ← ←					% Blue	

Sample Number: 1157 1158
Sample Bottle Tare Wt. 168.5
Transfer impinger contents only (i.e., do not add component rinses to this sample).

Sample Bottle Final Wt. 364.0
Net Sample Wt. 195.5
Components Rinsed**: 1st-4th impingers, replacement 1st impinger, U-connectors A-C; combine rinses with train back rinses below (sample number XX156)

FILTER RECOVERY AND TRAIN RINSES

FILTER:
Sample Number: 155 Description/Color: white/tan

TRAIN RINSES:	FRONT	BACK	QA RINSES
Sample Number:	1154	1156	1159
Sample Bottle Tare Wt.	267.1	266.8	494.1
Components Rinsed***:	Front -- nozzle, probe liner, bypass, filter holder front; Back -- filter support, filter holder back, 45/90° connector, condenser		
Sample Bottle Final Wt.	~~318.2~~ 426.0 ac	603.8	~~910.3~~ 981.9 ac
Net Sample Wt.	158.9	337.0	487.8

* Replace blank-offs and remove aluminum foil, then weigh the cartridge; replace aluminum foil to cover the entire cartridge.
** Methanol/methylene chloride (1:1 v/v) rinses 3 times; add rinses to train back rinses (sample number XX156).
*** TRAIN FRONT/BACK RINSES: Methanol/methylene chloride (1:1 v/v) rinses with brushing of front components 3 times or more in the same manner as is being done for the source sampling trains, and methanol/methylene chloride (1:1 v/v) rinses of back components 3 times, but without brushing, and including 5-minute soaks of underlined components 3 times.
QA RINSES: Follow with toluene rinses and soaks, but without brushing, in the same manner as above for the train front and back rinses.

COMMENTS:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD REAGENT BLANK PREPARATION DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Blank(s) Prepared By: A. Carender Date: 1-27-97

Weights below are in grams.

Reagent Blank Description	Sample Number	Bottle Tare Weight	Bottle Gross Weight	Net Sample Weight
Methanol and methylene chloride, 1:1 v/v Volume needed: 450 mLs Methanol Lot Number: B0237 Methylene chloride Lot Number: 40409	143	265.0	695.1	430.1
Methanol and methylene chloride, 1:1 v/v Volume needed: 450 mLs Lot Numbers: same as above	144	263.9	663.1	399.2
Toluene Volume needed: 900 mLs Lot Number: B[illegible]27	145	492.9	880.0	387.1
Filter Type: Whatman QM-A Lot Number: 12/2/96	146			
XAD Cartridge Cartridge Number: 6	147			
ASTM Type II Water Volume needed: 200 mLs Lot Number: 12/3/96	148	169.2	367.0	197.8

NOTE: Lots may be identified above by a manufacturer's lot number or by the date of reagent preparation. If different lots of a particular reagent are used, indicate the applicable test run number(s) and sampling location(s) where the train(s) loaded and/or recovered with that reagent are used (i.e., list each reagent blank sample number with the applicable test run number(s) and sampling location(s) below).

Sample Number	For Test Run Number(s)	For Sampling Location(s)

COMMENTS:

SOLID WASTE FEED SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 100 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX120, XX199, XX200 stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX121, stored at near water ice temperature (i.e., 4°C). All samples, XX122, stored at near room temperature or cooler (i.e., 26°C).

Run No. 2 Date: 1-25-97 Sampler(s): Paul M. Muzyka / Stockman

Composite Sample Number:	Z120	Z121	Z122	Z 199	Z 200
Composite Sample Designation:	SVOC	METALS	GALBT	VOC	FENAC

Grab No.	Time	Interruptions/Comments
		Caution: Material may contain β-naphthylamine.
1	1750	DIRT
2	1805	"
3	1820	"
4	1835	"
5	1850	"
6	1905	"
7	1920	"
8	1935	"
9	1950	"
10	2030	"
11	2045	"
12	2100	"
13	2115	"
14	2130	"
15	2145	"
16	2200	"
17		
18		
19		
20		

Relinquished By Shawn M Hoffman Received By [signature] Date/Time 1-25-97 2210 2010 EST

WSTFEED3.WPD January 24, 1997

AR315553

SOLID WASTE FEED SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerato
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 60 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap and wrapped in aluminum foil to seal out light. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 2 Date: 1-25-97 Sampler(s): Paul Mikezyka Shawn m Sackman

Composite Sample Number: 7135
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
		Caution: Material may contain β-naphthylamine.
(1)	1750	DIRT
(2)	1805	DIRT
(3)	1820	"
(4)	1835	"
(5)	1850	"
(6)	1905	"
7	1920	"
(8)	1935	"
9	1950	"
10	2030	"
11	2045	"
12	2100	"
13	2115	"
14	2130	"
15	2145	"
16	2200	"
17		DA
18		
19		
20		

Relinquished By: Shawn m Sackman Received By: [illegible] Date/Time 1-25-97 2216 2200

WSTFED3C.WPD December 4, 1996

AR315554

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 2 Date: Jan 25 - 97 Recorded By: Neil Howard

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene		REMARKS
	40041 / 2.1	40041 / 1.1	Dirt	1730 08
	"	"	"	1732 04
	"	"	"	1733 59
	"	"	"	1735 55
	"	"	"	1737 51
	"	"	"	1739 46
	"	"	"	1741 42
	"	"	"	1743 39
	"	"	"	1745 35
	"	"	"	1747 30
	"	"	"	1749 27
	"	"	"	1751 23 Begin 2nd Run
	"	"	"	1753 20
	"	"	"	1755 15
	"	"	"	1757 10
	"	"	"	1759 05
	"	"	"	1800 00
	"	"	"	1802 56
	"	"	"	1804 51
	"	"	"	1806 47
	"	"	"	1808 44
	"	"	"	1810 40
	"	"	"	1812 35
	"	"	"	1814 31
	"	"	"	1816 28
	"	"	"	1818 23
	"	"	"	1820 18
	"	"	"	1822 15
	"	"	"	1824 10
	"	"	"	1826 06
	"	"	"	1828 02
	"	"	"	1829 57
	"	"	"	1931 46
	"	"	"	1933 43
	"	"	"	1835 43

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 2 Date: Jan 25. 97 Recorded By: Neil Rivard / P. CAVANAUGH

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene				REMARKS
	40041 / 2.1	40041 / 1.1	DI. WT	1837	40	
	"	"	"	1839	36	
	"	"	"	1841	32	
	"	"	"	1843	29	
	"	"	"	1845	25	
	"	"	"	1847	20	
	"	"	"	1849	16	
	"	"	"	1851	11	
	"	"	"	1853	07	
	"	"	"	1855	02	
	"	"	"	1856	53	
	"	"	"	1858	53	
	"	"	"	19:00	49	PC
	"	"	"	19:02	43	
	"	"	"	19:04	42	
	"	"	"	19:06	37	
	"	"	"	19:08	33	
	"	"	"	19:10	28	
	"	"	"	19:12	23	
	"	"	"	19:14	20	
	"	"	"	19:16	16	
	"	"	"	19:18	12	
	"	"	"	19:20	08	
	"	"	" PORT CHANGE	~~19:22~~	~~04~~	SKIPPED
	"	"	"	19:24	00	
	"	"	"	19:26	58	
	"	"	"	1928	52	
	"	"	"	1929	46	
	"	"	"	1931	41	
	"	"	"	1933	36	
	"	"	"	1935	33	
	"	"	"	1937	30	
	"	"	"	1939	25	
	"	"	"	1941	21	
	"	"	"	1943	17	

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 2 Date: Dec 25, 97 Recorded By: J Hurley

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene		REMARKS	
	40091/21	40041/1.1	Dirt	1945	14
	"	"	"	1947	09
	"	"	"	1949	04
	"	"	"	1951	01
	"	"	"	1952	55
	"	"	"	1954	50
	"	"	"	1956	46
	"	"	"	1958	42
	"	"	"	2000	37
	"	"	"	2002	34
	"	"	"	2004	30
	"	"	"	2006	26
	"	"	"	2008	22
	"	"	"	2010	18
	"	"	"	2012	14
	"	"	"	2014	08
	"	"	"	2016	05
	"	"	"	2018	00
	"	"	"	2019	55
	"	"	"	2021	51
	"	"	"	2023	47
	"	"	"	2025	43
	"	"	"	2027	39
	"	"	"	2029	36
	"	"	"	2031	31
	"	"	"	2033	26
	"	"	"	2035	23
	"	"	"	2037	19
	"	"	"	2039	15
	"	"	"	2041	10
	"	"	"	2043	06
	"	"	"	2045	01
	"	"	"	2046	57
	"	"	"	2048	52
	"	"	"	2050.	48

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 2 Date: Jan 25 97 Recorded By: J Hurley

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS		
	40041/2.1	40041/1.1	Dirt	2052	44
	"	"	"	2054	40
	"	"	"	2056	35
	"	"	"	2058	31
	"	"	"	2100	27
	"	"	"	2102	23
	"	"	"	2104	19
	"	"	"	2106	15
	"	"	"	2108	11
	"	"	"	2110	08
	"	"	"	2112	06
	"	"	"	2114	03
	"	"	"	2116	00
	"	"	"	2117	57
	"	"	"	2119	54
	"	"	"	2121	51
	"	"	"	2123	48
	"	"	"	2125	45
	"	"	"	2127	43
	"	"	"	2129	42
	"	"	"	2131	41
	"	"	"	2133	39
	"	"	"	2135	38
	"	"	"	2137	37
	"	"	"	2139	35
	"	"	"	2141	35
	"	"	"	2143	34
	"	"	"	2145	32
	"	"	"	2147	31
	"	"	"	2149	30
	"	"	"	2151	29
	"	"	"	2153	28
	"	"	"	2155	27
	"	"	"	2157	25
	"	"	"	2159	25

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 2 Date: Jan 25, 97 Recorded By: J Hurley

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	40041/1.1	Dirt 2201 23

BOTTOM ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incine
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX126 and XX127, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX128, stored at near water ice temperature (i.e., 4°C). All samples, XX129, stored at near room temperature or cooler (i.e., 26°C).

Run No. 2 Date: 1-25-97 Sampler(s): D. HAGERTY

Composite Sample Number: Z126 Z127 Z128 Z129
Composite Sample Designation: SVOC VOC TCLP/METALS GALBT

Grab No.	Time	Interruptions/Comments
1	1506	DARK, MOIST SOME ROCKS
2	1536	" " " "
3	1603	" " " "
4	1645	" " " "
5	2117	" " " "
6	2144	" " " "
7		
8		
9		
10		

Relinquished By D. Allen Received By D. Allen Date/Time 1-25-97 215

BOTMASH3.WPD January 20, 1997

AR315560

BOTTOM ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX170 and XX171, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX172, stored at near water ice temperature (i.e., 4°C). All samples, XX173, stored at near room temperature or cooler (i.e., 26°C).

Run No. 2 Date: 1-25-97 Sampler(s): D. ALBERT

Composite Sample Number: Z170 Z171 Z172 Z173
Composite Sample Designation: SVOC VOC TCLP/METALS GALBT

Grab No.	Time	Interruptions/Comments
1	1800	DARK, MOIST SOME ROCKS
2	1836	" " " "
3	1903	" " " "
4	2048	" " " "
5	2117	" " " "
6	2144	" " " "
7		DA
8		
9		
10		

Relinquished By D. Albert Received By D. Albert Date/Time 1-25-97 2157

BOTMSH3D.WPD January 20, 1997

AR315561

BOTTOM ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incine
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. PA 2 Date: 1-25-97 Sampler(s): D. Hunt

Composite Sample Number: 2136
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
1	1500	DARK, MIST, SOME RICKS
2	1536	" " " "
3	1603	" " " "
4	2033	" " " "
5	2117	" " " "
6	2144	" " " "
7		LOA
8		
9		
10		

Relinquished By D. Hunt Received By D. Hunt Date/Time 1-25-97

BOTMSH3C.WPD January 20, 1997

AR315562

FLY ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

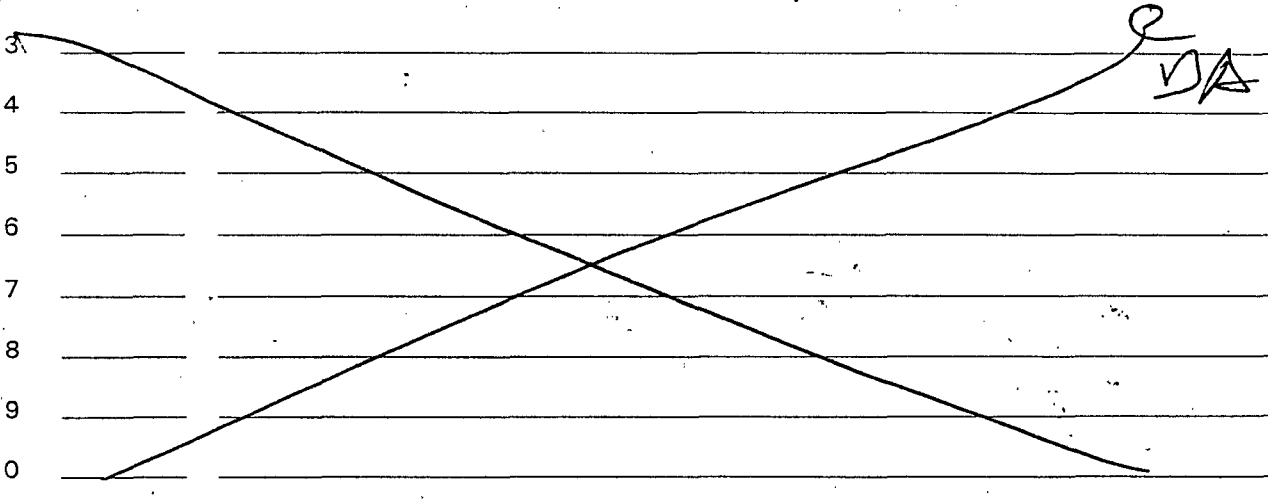
SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX130 and XX131, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX132, stored at near water ice temperature (i.e., 4°C). All samples, XX133, stored at near room temperature or cooler (i.e., 26°C).

Run No. 2 Date: 1-25-97 Sampler(s): D. ALBURTY

Composite Sample Number:	~~Z130~~	Z131	~~Z132~~ Z132	Z133
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	2028	MOD, WET & CHUNKY TRUCK #1
2	2345	" " " TRUCK #2
3		
4		
5		
6		
7		
8		
9		
10		



Relinquished By D. Alburty Received By D. Alburty Date/Time 1-25-97 2355

FLY ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX174 and XX175, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX176, stored at near water ice temperature (i.e., 4°C). All samples, XX177, stored at near room temperature or cooler (i.e., 26°C).

Run No. 2 Date: 1-25-97 Sampler(s): D. ALBUCCY

Composite Sample Number:	~~174~~	Z 175	Z176	~~177~~
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	2028	RED, WET & CHUNKY TRUCK #1
2	2345	" " " " " #2
3		
4		
5		
6		
7		
8		
9		
10		

9 DA

Relinquished By D. Albucky Received By D. Albucky Date/Time 1-25-97 2355

FLY ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

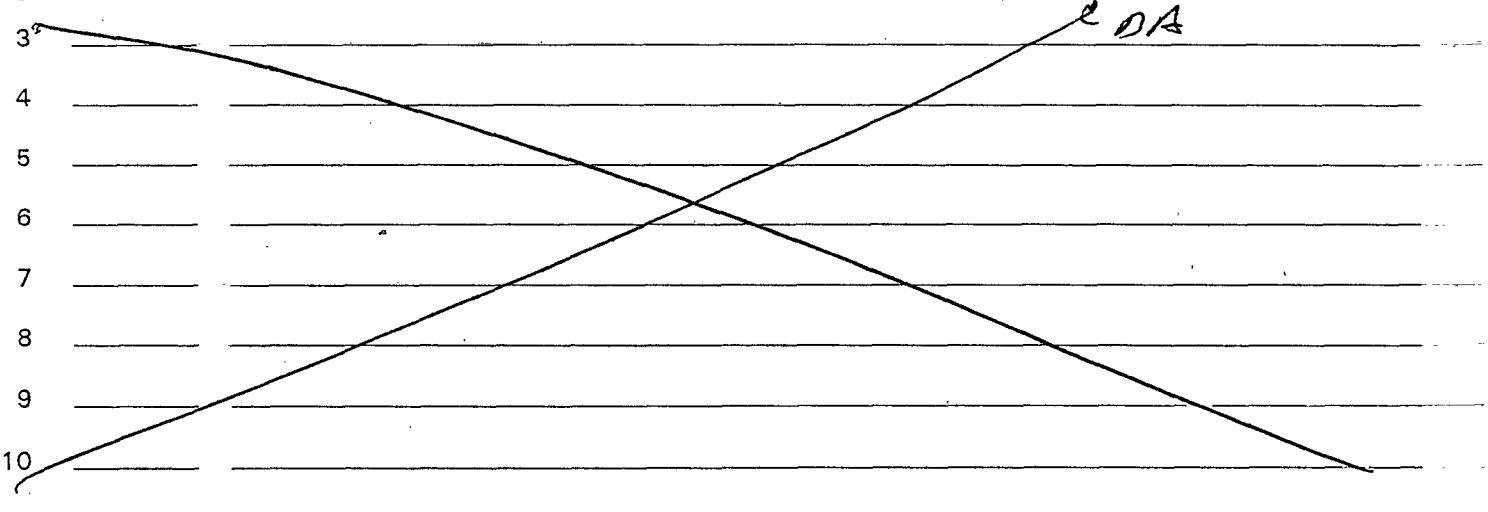
SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 2 Date: 1-25-97 Sampler(s): D. ALBURTY

Composite Sample Number: 2-137
Composite Sample Designation: COE

Event No.	Time	Interruptions/Comments
1	2330	RED, WET & CLUMPY TRUCK #1
2	2345	" " " " #2
3		
4		
5		
6		
7		
8		
9		
10		



Relinquished By D. Alburty Received By D. Alburty Date/Time 1-25-97 2355

FLYASH3C.WPD January 20, 1997

Run 3

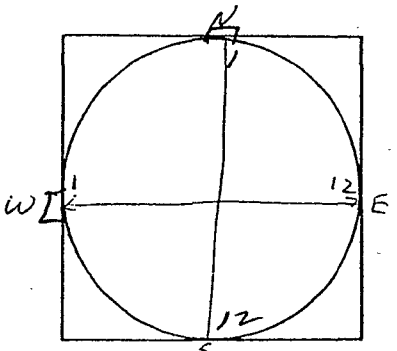
Field Sampling Data

MRI-Applied/R362013.APP

AR315566

FIELD DATA

RUN NO.	3	PROBE NO.	S-4	NOZZLE DIA.	0.371
PROJECT NO.	36203-30	PROBE LENGTH AND TYPE	8' heated Glass	ASSUMED MOISTURE %	SAT
PLANT	Duke Otto K's C	SAMPLE BOX NO.	xxx4	METER ΔH@	1.908
DATE	1-31-97	METER BOX NO.	N10	METER CORRECTION	0.989
SAMPLING LOCATION	Stack Outlet (Lower)	TEMP. CONTROLLER NO.	N10	PITOT NO.	M121
SAMPLE TYPE	Mmts PM-1	TEMP. METER NO.	N10	PITOT COEFFICIENT	0.837
OPERATOR	Gielick	THERMOCOUPLE I.D. NO.	96-4	BAROMETRIC PRESSURE	29.24
FILTER NO.	7	UMBILICAL CORD I.D. NO.	N125-8	SITE TO BARO. ELEVATION (ft.)	34
RECORD DATA EVERY	7.5 MIN.	UMBILICAL CORD I.D. NO.	-	CORRECTED B.P. (0.1 in./100 ft.)	29.21
UMBILICAL/SAMPLER HOOKUP	UH-1	NOZZLE NO.	PH-1	STATIC PRESSURE	-0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1103	1614				
PASS/FAIL		PASS				

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1105	1358	1404	1615	
VACUUM, In. Hg	≥15"	8.0"	≥15"	10"	≥15"
CFM	.004	.001	.002	.002	
VOLUMES					
FINAL		191.362			
INITIAL		190.978			
DIFFERENCE		.384			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, In. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 122.494
FINAL VOLUME 261.622
LEAK CHECK VOLUME .384
ADJUSTED FINAL VOLUME 261.238

COMMENTS

Revision 11/18/88

APPENDIX B

AR315567

NDMSPP-1

RUN NO. 3 SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-31-97 PROJECT NO. 3620-13-30 OPERATOR Bulick

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 122.494		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F		
	0	1225	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
W 1	7.5	1232.5	128.075	128.850	0.37	1.99	2.00	180	67	66	7.0	35		252	251	12.5	
W 2	15	1240	133.570	133.650	0.36	1.83	1.85	180	66	65	7.0	38		252	248	12.5	
W 3	22.5	1247.5	139.242	139.240	0.38	1.94	1.95	180	70	66	7.0	40		251	250	12.5	
W 4	30	1255	144.902	145.990	0.39	1.92	1.90	181	76	68	7.5	45		251	250	12.5	
W 5	37.5	1302.5	150.634	150.660	0.38	1.97	1.95	180	79	69	7.5	42		252	253	12.5	
W 6	45	1310	156.341	156.380	0.39	1.93	1.95	181	82	70	7.5	42		254	252	12.5	
W 7	52.5	1317.5	162.132	162.180	0.40	1.99	2.00	181	83	72	7.5	41		255	252	12.5	
W 8	60	1325	167.860	167.930	0.39	1.94	1.95	181	84	73	7.0	41		252	253	12.5	
W 9	67.5	1332.5	173.611	173.650	0.39	1.95	1.95	181	86	75	7.0	46		256	252	12.5	
W 10	75	1340	179.376	179.260	0.34	1.96	1.95	181	84	76	7.0	44		252	252	12.5	
W 11	82.5	1347.5	185.299	185.240	0.41	2.06	2.05	181	89	77	8.0	48		256	254	12.6	
W 12	90	1355	190.988	190.978	0.36	1.90	1.95	180	90	78	7.5	49		255	252	12.8	
	0	1441		191.362				~~180~~	~~76~~	~~75~~							
N 12	7.5	1448.5	197.622	197.620	0.45	2.33	2.35	180	76	75	9.5	45		250	249	12.9	
N 11	15	1456	203.894	203.850	0.45	2.34	2.35	180	78	75	10.0	46		252	251	13.0	
N 10	22.5	1503.5	210.137	210.080	0.44	2.30	2.35	180	84	76	10.0	46		257	252	12.8	
N 9	30	1511	216.105	216.130	0.40	2.10	2.10	180	86	77	9.5	46		253	252	13.1	
N 8	37.5	1518.5	221.773	221.790	0.36	1.90	1.90	180	87	77	8.0	49		254	253	13.1	
N 7	45	1526	227.166	227.230	0.34	1.71	1.70	181	88	78	7.5	50		252	253	13.0	
N 6	52.5	1533.5	232.938	232.900	0.37	1.95	1.95	180	90	79	8.0	44		253	253	13.5	
N 5	60	1541	238.661	238.570	0.38	1.92	1.90	181	90	80	8.5	43		255	251	13.4	
N 4	67.5	1548.5	244.328	244.375	0.39	1.89	1.90	182	91	80	8.5	41		253	252	13.3	
N 3	75	1556	250.072	250.120	0.40	1.93	1.95	182	91	81	8.5	40		253	252	13.0	
N 2	82.5	1603.5	256.033	256.030	0.41	2.07	2.05	181	92	81	8.5	45		256	254	12.8	
N 1	90	1611	261.624	261.622	0.36	1.82	1.80	181	92	82	8.0	44		252	253	12.7	

COMMENTS

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake OHM RSC
Sampling Location Stack Outlet (Lower)
Sample Type (Multi-Point, Single-Point)
Flow Control Device (Microvalve, Critical Orifice)
For Sampling From M5 Console No. N10
Pump Type Diaphram
Pump I.D. N10
Flow Meter Type Rotameter
Flow Meter I.D. N10

Project No. 3620-13-30
Run No. 3 Date 1-31-97
Operator Gobicke
Bag Type Mylar Sample No. 3107
Method 3 Train No.
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.

Desired Flow Rate (cc/min) 100
Leak Check Before Sampling 0 Pass After Sampling Pass
Total Sampling Time (min) 180 Average Flow Meter Reading 1.0
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters)

Time 24 Hr Clock	Flow Meter Reading	Comments
1225	100	Begin Run 3
1240	100	ok
1255	100	ok
1310	100	ok
1325	100	ok
1340	100	ok
1355	—	Port Change
1441	100	Restart.
1455	100	ok
1510	100	ok
1525	100	ok
1540	100	ok
1555	100	ok
1610	100	ok
1611	—	End of Run 3

DRAKE 3620.13 3107
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P. GORMAN

APR 95569

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 3
SAMPLE NO. 3107 DATE 01-31-97
PLANT SAMPLING LOCATION Stack - Lower Level
ANALYSIS TIME (24hr-CLOCK) 1705
SAMPLE TYPE (BAG, ~~GRAB~~) _____
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES NO CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE NO CHANGE IN 4 MIN.
PIPETTES NO CHANGE IN 4 MIN.

RUN / GAS	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 9.0 2 9.0 3	9.0	1 9.0 2 9.0 3	9.0	1 9.0 2 9.0 3	9.0	9.0
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 20.7 2 20.7 3	11.7	1 20.7 2 20.7 3	11.7	1 20.7 2 20.7 3	11.7	11.7

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2	> 4%	.3% by Volume	O_2	≥ 15%	.2% by Volume
	≤ 4%	.2% by Volume		< 15%	.3% by Volume

Comments:

DRAKE 3620.13 3107
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack

Run No. 3 Sampling Train No. MM5PH-1 Sample Box No. 4
Set-up person(s): J. McCann Date: 1-25-97
Transfer to Sampler:
Relinquished By J. McCann Received By D. Neal Date/Time 1/27/97 11:10

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz)	PH-1 *			
Probe (Liner-Glass)	*			
Female Probe Outlet Blank-Off				
90° Bypass	*			
Filter Holder Front		Filter Type: Whatman QM-A		
Filter Holder Back with Teflon® Filter Support		Filter Number: 7		
45/90° Connector				
1st Impinger (2-Liter, Mod-GBS)		50 mLs ±1 mL 0.1 N H_2SO_4	1021.4	1078.5
1st Impinger Replacement	not used	50 mLs ±1 mL	—	—
U-Connector (A)		0.1 N H_2SO_4		
2nd Impinger (GBS)		100 mLs ±2 mLs	473.8	574.5
U-Connector (B)		0.1 N H_2SO_4		
3rd Impinger (GBS)		100 mLs ±2 mLs	573.0	674.6
U-Connector (C)		0.1 N H_2SO_4		
4th Impinger (Mod-GBS)		Empty	489.0	
U-Connector (D)				
5th Impinger (Mod-GBS)		100 mLs ±2 mLs	550.1	650.6
U-Connector (E)		0.1 N NaOH		
6th Impinger (Mod-GBS)		100 mLs ±2 mLs	486.1	588.0
U-Connector (F)		0.1 N NaOH		
7th Impinger (Mod-GBS)		~200 g indicating silica gel		~~680.0~~ 683.5
U-Connector (G)				
8th Impinger (Mod-GBS)		~200 g indicating silica gel		693.9
Impinger Outlet Connector	OH-1			

* Before and after sampling: Nozzle openings covered with aluminum foil or Teflon® tape, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with aluminum foil, Teflon® tape or as described above.

Component Changes After Set-up And Before Recovery And Other Comments:

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack
Run No. 3 Sampling Train No. MM5 PH-1 Sample Box No. 4

TRAIN PURGE WITH ASCARITE-FILTERED AIR

Condensate in front-half? None Purged By N/A
Date/Start Time: N/A Stop Time N/A Purge Rate: [ΔH = N/A in.H_2O]
Moisture Removed? N/A
Transfer for Recovery:
Relinquished By O. Neal Received By J. McCann Date/Time 1-31-97 1630
Sample box recovery person(s): J. McCann Date: 1-31-97
Probe recovery person(s): J. Surman, O. Neal, D. Latney Date: 1-31-97
Weights below are in grams.

BACK HALF RECOVERY

Impinger:	1st	Replacement 1st	2nd	3rd	4th	5th	6th	7th	8th
Final Wt.	3531.0	NA	840.3	898.7	870.2	697.5	589.6	709.4	702.0
Initial Wt.	1076.5	~~[illegible]~~	574.5	674.6	489.0	650.6	588.0	683.5	693.9
Net Wt.	2454.5	↓	265.8	224.1	381.2	46.9	1.6	25.9	8.1

[Total Condensate Collected: 3408.1]

Description and/or color: clear ____ clear clear clear clear clear 10 20
Recovery: →→→→→ Impingers 1-3 ←←←←←←←←← →→ Impingers 4-6 ←←←←←←← % Blue

Sample Number:	3103	3105	
Sample Bottle Tare Wt.	1305.4	498.2	
Sample Bottle Gross Wt.	4506.1	____	Before Rinses
Components Rinsed*:	filter support, filter holder back, 45/90° connector, 1st-3rd impingers, U-connectors A-B	4th-6th impingers, U-connectors C-E	
Sample Bottle Gross Wt.	4593.1	1214.2	After Rinses
Net Sample Wt.	3287.7	716.0	for Mass Collected Computations
Sample Mixed, Then:		for Cl_2	
Aliquot Sample Number:	→→→→→ 3104 for HCl	→→→→→ 3106	for Chloride Analysis
Sample Bottle Tare Wt.	98.9	98.8	
Sample Bottle Gross Wt.	4475.0 216.7	1114.3 198.8	After Aliquoting
Sample Bottle Final Wt.			After SIE Check
Net Sample Wt.	3169.6 117.8	616.1 100.0	

FRONT HALF RECOVERY

FILTER:
Sample Number: 3102 Description/Color: light pink/intact

TRAIN RINSES: Sample Number: 3101
Sample Bottle Tare Wt. 266.5
Components Rinsed**: nozzle, probe liner, bypass, filter holder front
Sample Bottle Gross Wt. 344.4 with Acetone Rinses
Net Acetone Sample Wt. 77.9
Sample Bottle Final Wt. 488.6 with added Water Rinses
Net Water Sample Wt. ~~[illegible]~~ 144.2

* Using a total of 100 mLs ±2 mLs ASTM Type I water per sample, rinse components twice. Thoroughly mix each sample and added rinses before aliquoting.

** Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

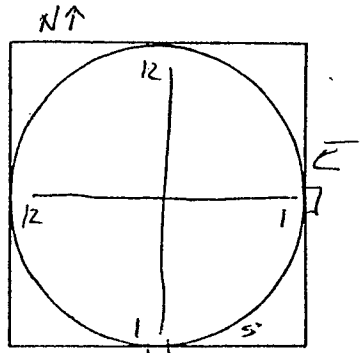
COMMENTS:

FIELD DATA

RUN NO. 3 (SV)
PROJECT NO. 3620-13-30
PLANT Pratt OHM RSC
DATE 1-31-97
SAMPLING LOCATION Stack Outlet (Lower)
SAMPLE TYPE MM5-SV-1
OPERATOR Griffin
FILTER NO. N/A
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP LH-82

PROBE NO. 8-1
PROBE LENGTH AND TYPE 8' heated glass
SAMPLE BOX NO. 012-001
METER BOX NO. N9
TEMP. CONTROLLER NO. N9
TEMP. METER NO. N9
THERMOCOUPLE I.D. NO. 96-6A
UMBILICAL CORD I.D. NO. N-125-6
UMBILICAL CORD I.D. NO. —
NOZZLE NO. SV2 / PCB1

NOZZLE DIA. .365 / .371
ASSUMED MOISTURE % Sat
METER ΔH@ 1.933
METER CORRECTION 0.995
PITOT NO. M119
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.24
SITE TO BARO. ELEVATION (ft.) 34
CORRECTED B.P. (0.1 in./100 ft.) 29.21
STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1107	1614				
PASS/FAIL		pass				

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1107	1401	1431	1614	
VACUUM, In. Hg	≥15"	11"	≥15"	12"	≥15"
CFM	.008	.007	.007	.002	
VOLUMES					
FINAL		292.972			
INITIAL		292.540			
DIFFERENCE		.432			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, In. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 223.385
FINAL VOLUME 361.411
LEAK CHECK VOLUME .432
ADJUSTED FINAL VOLUME 360.979

COMMENTS

Revision 11/18/86

APPENDIX B

AR315573

67

RUN NO. mm5 3 SV-1 SAMPLING LOCATION Stack Outlet (Lower) p. 1 of 1

DATE 1-31-97 PROJECT NO. 3620-23-30 OPERATOR Griffin

TRAVERSE POINT NUMBER	SAMPLING TIME, min / CLOCK TIME (24-hr.)		GAS METER READING (V_m), ft³ INITIAL 223.385		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F	XAD °F	
	0	1225	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
S-1	7.5	1232.5	228.98	229.02	.42	1.93	1.9	181	66	66	8	31	X	245	249	40	12.9
S-2	15	1240	234.82	234.74	.44	2.11	2.1	180	66	65	9	32	X	244	247	41	12.9
S-3	22.5	1247.5	240.70	240.52	.44	2.12	2.1	180	70	66	10	33	X	249	246	45	12.8
S-4	30	1255	246.41	246.28	.43	1.94	2.0	181	75	68	10	35	X	249	249	53	12.9
S-5	37.5	1302.5	252.03	251.95	.41	1.91	1.9	181	74	70	10	36	X	247	249	42	12.6
S-6	45	1310	257.53	257.38	.37	1.83	1.8	181	82	72	9	37	X	248	250	42	12.8
S-7	52.5	1317.5	263.18	263.00	.41	1.92	1.9	181	83	73	10	37	X	248	250	43	12.8
S-8	60	1325	268.91	268.76	.44	1.98	2.0	182	85	75	10	36	X	247	250	43	12.6
S-9	67.5	1332.5	274.88	274.64	.45	2.13	2.1	181	88	77	10	37	X	253	250	43	12.7
S-10	75	1340	280.86	280.73	.45	2.14	2.2	181	89	79	11	38	X	247	250	45	12.7
S-11	82.5	1347.5	286.80	286.70	.44	2.10	2.1	181	92	80	11	39	X	247	251	46	12.6
S-12	90	1355	292.546	292.540	.41	1.96	2.0	181	92	82	10	40	X	249	250	47	12.8
	1441 ~~1446~~		Initial	292.972													
E-12	97.5	1448.5	298.63	298.64	.37	1.94	1.96	180	77	77	10	32	X	250	246	40	12.9
E-11	105	1456	304.45	304.36	.39	2.04	2.0	180	78	76	10	35	X	246	249	40	12.9
E-10	112.5	1503.5	310.30	310.23	.39	2.05	2.1	180	84	77	11	37	X	252	249	43	12.8
E-9	120	1511	315.97	315.88	.35	1.92	1.9	181	87	79	10	39	X	248	249	41	12.8
E-8	127.5	1518.5	321.58	321.51	.37	1.88	1.9	181	89	80	10	39	X	247	249	43	12.8
E-7	135	1526	327.20	327.14	.37	1.88	1.9	181	90	81	10	40	X	252	250	42	12.8
E-6	142.5	1533.5	332.91	332.75	.38	1.93	1.9	181	92	81	10	39	X	248	249	39	13.0
E-5	150	1541	338.40	338.24	.35	1.78	1.8	181	92	83	10	39	X	251	248	40	12.9
E-4	157.5	1548.5	343.98	343.83	.38	1.85	1.9	182	92	83	11	40	X	252	250	42	12.7
E-3	165	1556	349.64	349.52	.37	1.90	1.9	182	92	84	11	40	X	250	248	43	12.5
E-2	172.5	1603.5	355.60	355.50	.41	2.10	2.1	181	94	84	12	40	X	251	250	45	13.1
E-1	180	1611	361.411	361.411	.39	2.00	2.0	181	94	85	12	41	X	248	249	50	12.8

COMMENTS Broke SV-2 Nozzle at port change (After Final leak check passed) .365
Replaced broken nozzle with ACB-1 (.371) for 2nd traverse
Sample recovered from broken nozzle in field lab [signature] 1-31-97

APPENDIX B

AR315574

68

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake OHM RSC
Sampling Location Stack Outlet (Lower)
Sample Type (Multi-Point, ~~Single-Point~~) MP
Flow Control Device (Microvalve, ~~Critical Orifice~~) MV
For Sampling From M5 Console No. N9
Pump Type ~~Emerson Rotary Vane~~ Diaphram
Pump I.D. N-9
Flow Meter Type Rotameter
Flow Meter I.D. ~~RF-4-D~~ N-9
Desired Flow Rate (cc/min) 100
Leak Check Before Sampling pass After Sampling pass
Total Sampling Time (min) 177 Average Flow Meter Reading 1.0
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters) ~~25.16~~

Project No. 3620-13-30
Run No. 3 Date 1-31-97
Operator Griffin
Bag Type Mylar Sample No. 3114
Method 3 Train No. NA
Pump Type /
Pump I.D.
Flow Meter Type /
Flow Meter I.D.

Time 24 Hr Clock	Flow Meter Reading	Comments
1227	1.0	2 min Purge (Run started @ 1225)
1240	1.0	
1255	1.0	
1310	1.0	
1325	1.0	
1340	1.0	
1355	1.0	Down for Port Change
1443	1.0	Restart
1458	1.0	
1512	1.0	
1527	1.0	
1542	1.0	
1557	1.0	
1611	1.0	

DRAKE 3620.13 3114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

AR315575

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 3
SAMPLE NO. 3114 DATE 01-31-97
PLANT SAMPLING LOCATION Stack-Lower Level
ANALYSIS TIME (24hr-CLOCK) 1820
SAMPLE TYPE (BAG, ~~GRAB~~) BAG
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

GAS \ RUN	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.9 2 8.9 3	8.9	1 8.9 2 8.9 3	8.9	1 8.9 2 8.9 3	8.9	8.9
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 20.8 2 20.8 3	11.9	1 20.8 2 20.8 3	11.9	1 20.8 2 20.8 3	11.9	11.9

91-16 SEV SURMAN wkSht 052191

Acceptance Criteria

CO_2 > 4% .3% by Volume
≤ 4% .2% by Volume

O_2 ≥ 15% .2% by Volume
< 15% .3% by Volume

Comments:

DRAKE 3620.13 3114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 3 Sampling Train No. MM5 SV-1 Sample Box No. 012001
Set-up person(s): A. Carender Date: 1/27/97
Transfer to Sampler:
Relinquished By D. Carender Received By D. Nea Date/Time 1/27/97 11:15

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz)	SNR/PCB-1 *			
Probe (Liner-Glass)	*			
Female Probe Outlet Blank-Off				
90° Bypass	*			
Filter Holder Front				
Filter Holder Back with Teflon®-coated 316 SS Filter Support		Filter Type: Whatman QM-A		
45/90° Connector				
Condenser (Standard)		Thermocouple No. 92-3		***
XAD-2 Resin Cartridge (Standard)	# 5(T)	~65 grams XAD-2 Resin + Surrogates	481.6	
(Documentation of standards injection is separate); resin spiked on 1/14/97 and maintained near 4°C until use.				
1st Impinger (2-L Mod-GBS)		Empty	1041.7	
1st Impinger Replacement		Empty	NA	
U-Connector (A)				
2nd Impinger (Mod-GBS)		100 mLs	486.5	586.2
U-Connector (B)		ASTM Type II Water		
3rd Impinger (GBS)		100 mLs	475.8	576.3
U-Connector (C)		ASTM Type II Water		
4th Impinger (Mod-GBS)		Empty	468.8	
U-Connector (D)				
5th Impinger (Mod-GBS)		~200 g indicating silica gel		630.9
U-Connector (E)				
6th Impinger (Mod-GBS)		~200 g indicating silica gel		740.2
Impinger Outlet Connector	UH-~~S~~2			

* Before and after sampling: Nozzle openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil or as described above.

*** Cartridge weighed with blank-offs in place; then, cartridge covered with aluminum foil to seal out light during storage and sampling.

Component Changes after Set-up and before Recovery and Other Comments:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 3 Sampling Train No. mm5 SW-1 Sample Box No. 012001
Transfer for Recovery:
Relinquished By D. Neal Received By A. Carender Date/Time 1/31/97 1645
Sample box recovery person(s): A. Carender Date: 1/31/97
Probe recovery person(s): J. Surman, D. Neal, R. Howe Date: 1/31/97
Weights below are in grams.

RESIN CARTRIDGE AND IMPINGERS RECOVERY

Impinger:	XAD-2 Cartridge*	1st	Replacement 1st	2nd	3rd	4th	5th	6th
Final Wt.	485.1	3684.0	Not used	806.3	782.1	717.5	648.3	749.3
Initial Wt.	481.6	1041.7	↓	586.2	576.3	468.8	630.9	740.2
Net Wt.	3.5	2642.3	↓	~~clear ac~~ 220.1	205.8	248.7	17.4	9.1

[Total Condensate Collected: ~~3347.0~~ 3346.9 grams]

Description and/or color:	intact/clear	clear	—	clear	clear	clear	3%	15%

Sample Recovery: Cartridge* → 1st-4th Impingers and Replacement 1st Impinger ←←←← % Blue

Sample Number: 3 111 3 112
Sample Bottle Tare Wt. 1401.1
Transfer impinger contents only (i.e., do not add component rinses to this sample).

Sample Bottle Final Wt. 4904.1
Net Sample Wt. 3503.0
Components Rinsed**: 1st-4th impingers, replacement 1st impinger, U-connectors A-C; combine rinses with train back rinses below (sample number XX010)

FILTER RECOVERY AND TRAIN RINSES

FILTER:
Sample Number: 109 Description/Color: intact/whitish to off white

TRAIN RINSES:	FRONT	BACK	QA RINSES
Sample Number:	3 108	3 110	3 113
Sample Bottle Tare Wt.	263.3	263.4	493.7
Components Rinsed***:	Front -- nozzle, probe liner, bypass, filter holder front; Back -- filter support, filter holder back, 45/90° connector, condenser		
Sample Bottle Final Wt.	433.2	737.2	1169.6
Net Sample Wt.	169.9	473.8	675.9

* Replace blank-offs and remove aluminum foil, then weigh the cartridge; replace aluminum foil to cover the entire cartridge.
** Methanol/methylene chloride (1:1 v/v) rinses 3 times; add rinses to train back rinses (sample number XX010).
*** TRAIN FRONT/BACK RINSES: Methanol/methylene chloride (1:1 v/v) rinses with brushing of front components 3 times or more until perceivably clean, and methanol/methylene chloride (1:1 v/v) rinses of back components 3 times, but without brushing, and including 5-minute soaks of underlined components 3 times.
QA RINSES: Follow with toluene rinses and soaks, but without brushing, in the same manner as above for the train front and back rinses.

COMMENTS: Inadvertantly added one toluene rinse to sample 3110 from first impinger and filter support/back filter half

1023RCCX.WPD June 4, 1996 (rev. 1023RCC3.WPD October 25, 1996)

AR315578

SOLID WASTE FEED SAMPLING DATA

RUN 3 COND. 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 100 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX120, ~~stored~~ XXXX stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX121, stored at near water ice temperature (i.e., 4°C). All samples, XX122, stored at near room temperature or cooler (i.e., 26°C).

Run No. 3 Date: ~~1-27-97~~ 1-31-97 DA Sampler(s): Paul McMurray/Kit, John Ellis

Composite Sample Number: 3120 3121 3122 3199 3200 Dup. 21 H, 14 BOB comps
Composite Sample Designation: SVOC METALS GALBT VOC FENAC

Grab No.	Time	Interruptions/Comments	
		Caution: Material may contain β-naphthylamine.	
1		DIRT	
2	1230	DIRT	JF
3	1245	"	JF
4	1300	(Brown Dirt)	DH
5	1315	" "	DH
6	1330	" "	DH
7	1345	" "	DH
DA ~~8~~	1356	Port change stopped sampling	DH
9	1445	STARTED TO SAMPLE	JF
10	1500	BROWN DIRT	JF
11	1515	"	JF
12	1530	" "	JF
13	1545	" "	BG
14	1600	" "	BG
~~15~~			DA
16			
17			
18			
19			
20			

Relinquished By [signature] Received By [signature] Date/Time 1614 1-31-97

WSTFEED3.WPD January 24, 1997

AR315579

RUN 3 COND. 1

SOLID WASTE FEED SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 60 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap and wrapped in aluminum foil to seal out light. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 3 Date: 1-31-97 ~~1-27-97~~ DH Sampler(s): Paul McMurry/Kirk Daniel Hilty John Fallis Bob Comos

Composite Sample Number: 3135
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments	
		Caution: Material may contain β-naphthylamine.	
1	1230	DIRT	
2	1245	"	
3	1300	BROWN DIRT	DH
4	1315	" "	DH
5	1330	" "	DH
6	1345	" "	DH
~~DH 7~~	1356	PORT CHANGE	
8	1445	START TO SAMPLE	JF
9	1500	BROWN DIRT	JF
10	1515	" "	JF
11	1530	" "	JF
* 12	1545	" "	BC
13	1600	" "	BC
14		* NOTE - B. COMOS INADVERTANTLY DID NOT LOG ON COS	
15		START, BUT DID TAKE SAMPLES - DH # 12 & 13	
16			
17			
18			
19			
20			

Relinquished By Bob Comos Received By Daniel Hilty Date/Time 1-31-97 1614

WSTFED3C.WPD December 4, 1996

SPIKING DATA - Condition 1

1/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 3 Date: Jan 31 97 Recorded By: Neil Rivers

NOTE: FEED PREP CLOCK 4 MIN. FAST AS COMPARED TO CONSOLES - Q ALBURTY 1-31-97 QA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS		
	40041/2.1	40041/1.1	Dirt + Began spiking	1123	37
	"	"	"	1125	34
	"	"	"	1127	30
	"	"	"	1129	26
	"	"	"	1131	22
	"	"	"	1133	17
	"	"	"	1135	13
	"	"	"	1137	08
	"	"	"	1139	04
	"	"	"	1140	00
	"	"	"	1142	55
	"	"	"	1144	51
	"	"	"	1146	46
	"	"	"	1148	43
	"	"	"	1150	39
	"	"	"	1152	35
	"	"	"	1154	31
	"	"	"	1156	27
	"	"	"	1158	22
	"	"	"	1200	18
	"	"	"	1202	14
	"	"	"	1204	09
	"	"	"	1206	04
	"	"	"	1208	00
	"	"	"	1209	56
	"	"	"	1211	51
	"	"	"	1213	47
	"	"	"	1215	43
	"	"	"	1217	39
	"	"	"	1219	36
	"	"	"	1221	31
	"	"	"	1223	28
	"	"	"	1225	24
	"	"	"	1227	20 Begin Sampling
	"	"	"	1229	15

2/9

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SEE NOTE PG 1 -DA

Run No. 3 Date: Jan 31 - 97 Recorded By: Neil Rudd / Joe Herley

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041 / 1.1	40041 / 1.1	O.RT 1231 10
	"	"	" 1233 07
	"	"	" 1235 02
	"	"	" 1236 57
	"	"	" 1238 53
	"	"	" 1240 48
	"	"	" 1242 44
	"	"	" 1244 39
	"	"	" 1246 35
	"	"	" 1248 33
	"	"	" 1250 27
	"	"	" 1252 24
	"	"	" 1254 20
	"	"	" 1256 16
	"	"	" 1258 11
	"	"	" 1300 07
	"	"	" 1302 03
	"	"	" 1303 58
	"	"	" 1305 54
	"	"	" 1307 49
	"	"	" 1309 45
	"	"	" 1311 41
	"	"	" 1313 37
	"	"	" 1315 33
	"	"	" 1317 29
	"	"	" 1319 25
	"	"	" 1321 21
	"	"	" 1323 17
	"	"	" 1325 13
	"	"	" 1327 08
	"	"	" 1329 04
	"	"	" 1331 00
	"	"	" 1332 55
	"	"	" 1334 50
	"	"	" 1336 46

SPIKING DATA - Condition 1

3/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 3 Date: Jan 31 97 Recorded By: Joe Hurley / Neil Arnwine

SEE NOTE PG. 1 -DA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	40041/1.1	Dirt
	"	"	1338 42
	"	"	1340 38
	"	"	1342 34
	"	"	1344 30
	"	"	1346 26
	"	"	1348 22
	"	"	1350 18
	"	"	1352 14
	"	"	1354 09
	"	"	1356 05
	"	"	1358 00
	"	"	H 1359 ~~1359~~ 55
	"	"	H 1401 ~~1351~~ 50
	"	"	H 1403 ~~1353~~ 46
	"	"	1405 42
	"	"	1407 41 - NG
	"	"	1409 39
	"	"	1411 35
	"	"	1413 31
	"	"	1715 27
	"	"	1417 23
	"	"	1419 19
	"	"	1421 15
	"	"	1423 10
	"	"	1425 05
	"	"	1427 01
	"	"	1428 57
	"	"	1430 53
	"	"	1432 48
	"	"	1434 44
	"	"	1436 40
	"	"	1438 36
	"	"	1440 32
	"	"	1442 28
	"	"	1444 24

ADDENDUM 8

AR315583

SPIKING DATA - Condition 1

4/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 3 Date: Jan 31-Feb 1 Recorded By: Neil Russo / Joe Hecle,

SEE NOTE PG. 1 -RA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS		
	40041 / 2.1	40041 / 1.1	DIRT	1446	19
	"	"	"	1448	16
	"	"	"	1450	11
	"	"	"	1452	06
	"	"	"	1454	02
	"	"	"	1455	59 NA-58 sec.
	"	"	"	1457	53
	"	"	"	1459	48
	"	"	"	1501	44
	"	"	"	1503	40
	"	"	"	1505	37
	"	"	"	1507	32
	"	"	"	1509	28
	"	"	"	1511	23
	"	"	"	1513	20
	"	"	"	1515	15
	"	"	"	1517	11
	"	"	"	1519	07
	"	"	"	1521	03
	"	"	"	1523	59
	"	"	"	1524	54
	"	"	"	1526	49
	"	"	"	1528	45
	"	"	"	1530	41
	"	"	"	1532	37
	"	"	"	1534	33
	"	"	"	1536	29
	"	"	"	1538	25
	"	"	"	1540	21
	"	"	"	1542	17
	"	"	"	1544	13
	"	"	"	1546	08
	"	"	"	1548	04
	"	"	"	1550	00
	"	"	"	1551	55

APPENDIX B

AR315584

78

SPIKING DATA - Condition 1

5/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 3 Date: Jan 31 97 Recorded By: Joe Hurley

SEE NOTE PG. 1 - DA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/21	40041/1.1	
	"	"	D.I.
1553	"	"	50
1555	"	"	46
1557	"	"	42
1559	"	"	38
1601	"	"	34
1603	"	"	30
1605	"	"	25
1607	"	"	21
1609	"	"	17
1611	"	"	14
1613	"	"	10
1615	"	"	05 Stop Sampling - End Run 3
1617	"	"	01
1618	"	"	56
1620	"	"	51
1622	"	"	46
1624	"	"	42
1626	"	"	38
1628	"	"	34
1630	"	"	30
1632	"	"	26
1634	"	"	23
1636	"	"	20
1638	"	"	16
1640	"	"	11
1642	"	"	06
1644	"	"	01
1646	"	"	56
1647	"	"	51
1649	"	"	47
1651	"	"	43
1653	"	"	39
1655	"	"	35
1657	"	"	31
1659	"	"	27

SPIKING DATA - Condition 1

4/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SEE NOTE PG. 1 - DA

Run No. 3/4 Date: Jan 31, 97 Recorded By: Neil Ross

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	40041/1.1	
0:RT			NB
			1701 23
			1703 19
			1705 15
			1707 11
			1709 06 Run # 4 is underway
			1711 02
			1713 59
			1715 54
			1717 49
			1719 44
			1721 41
			1723 37
			1725 33
			1727 28
			1729 25
			1731 20
			1733 16
			1735 11
			1737 07
			1739 03
			1740 58
			1748 53
			1744 49
			1746 45
			1748 42
			1750 38
			1751 33
			1754 29
			1756 26
			1758 21
			1800 16
			1801 12
			1804 08
			1806 03
			1807 58

RUN 3 CONT. 1

BOTTOM ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX126 and XX127, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX128, stored at near water ice temperature (i.e., 4°C). All samples, XX129, stored at near room temperature or cooler (i.e., 26°C).

Run No. 3 Date: 1-31-97 Sampler(s): D. ALBURTY

Composite Sample Number:	3126	3127	3128	3129
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1235	DARK, MIST, SOME ROCKS
2	1303	" " " "
3	1336	" " " "
4	1408	" " " "
5	1524	" " " "
6	1552	" " " "
7		
8		
9		
10		

Relinquished By _____ Received By _____ Date/Time 1-31-97 1860

BOTMASH3.WPD January 20, 1997

AR315587

RUN 3 COND. 1

BOTTOM ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX170 and XX171, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX172, stored at near water ice temperature (i.e., 4°C). All samples, XX173, stored at near room temperature or cooler (i.e., 26°C).

Run No. 3 Date: 1-31-97 Sampler(s): D. AUGUSTY

Composite Sample Number:	3170	3171	3172	3173
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1235	DARK, MOIST, SOME ROCKS
2	1301	" " " " (USED COE SCOOP)
3	1336	" " " "
4	1448	" " " "
5	1524	" " " "
6	1552	" " " "
7		
8		
9		
10		

Relinquished By D. Augusty Received By D. Augusty Date/Time 1-31-97 1755

BOTMSH3D.WPD January 20, 1997

AR315588

RUN 3 COND 1

BOTTOM ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 3 Date: 1-31-97 Sampler(s): D. ALBURTY

Composite Sample Number: J136
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
1	1235	DARK, MOIST, SOME ROCKS
2	1301	" " " "
3	1336	" " " "
4	1448	" " " "
5	1524	" " " "
6	1552	" " " "
7		
8		
9		
10		

Relinquished By D. Alburty Received By D. Alburty Date/Time 1-31-97 1806

BOTMSH3C.WPD January 20, 1997

AR315589

RUN 3 COND. 1

FLY ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX130 and XX131, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX132, stored at near water ice temperature (i.e., 4°C). All samples, XX133, stored at near room temperature or cooler (i.e., 26°C).

Run No. 3 Date: 1-31-97 Sampler(s): D. ALLBURTY

Composite Sample Number:	3130	3131	3132	3133*
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	1630	RED, MOIST ASH
2		
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By D. Allburty Received By D. Allburty Date/Time 1-31-97 1645

FLYASH3.WPD January 20, 1997

AR315590

RUN 3 COND. 1

FLY ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

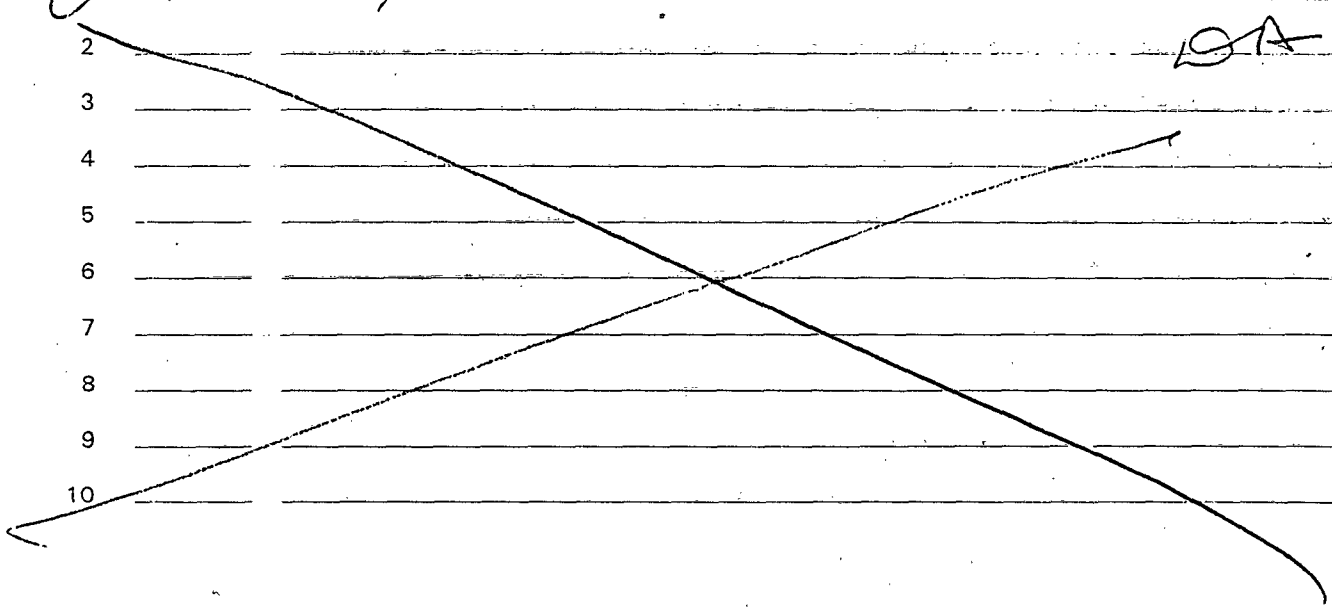
SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX174 and XX175, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX176, stored at near water ice temperature (i.e., 4°C). All samples, XX177, stored at near room temperature or cooler (i.e., 26°C).

Run No. 3 Date: 1-31-97 Sampler(s): DJ, ALB, ZT

Composite Sample Number:	3 174	3 175	3 176	3 177
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	1122	RED, MOIST
2		
3		
4		
5		
6		
7		
8		
9		
10		



Relinquished By D. Allen Received By D. Allen Date/Time 1-31-97 1645

FLYASH3D.WPD January 20, 1997

AR315591

RUN 3 COND. 1

FLY ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 DA spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 3 Date: 1-31-97 Sampler(s): D. ALLSUETY

Composite Sample Number: 3137
Composite Sample Designation: COE

Event No.	Time	Interruptions/Comments
1	1627	1251, MOIST, DSM
2		9A
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By D. Allsuety Received By D. Allsuety Date/Time 1-31-97 1645

FLYASH3C.WPD January 20, 1997

AR315592

Run 4

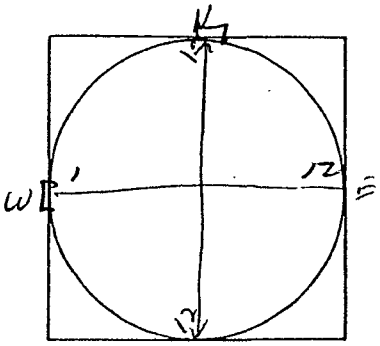
Field Sampling Data

FIELD DATA

RUN NO. 4 (PH)
PROJECT NO. 7620-23-30
PLANT Duke OHM RSC
DATE 1-31-97
SAMPLING LOCATION Stack Outlet (upper)
SAMPLE TYPE MM5-PH-2
OPERATOR Gulick
FILTER NO. 8
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP UH-4

PROBE NO. 10-2
PROBE LENGTH AND TYPE 8' Heated Glass
SAMPLE BOX NO. 012004
METER BOX NO. N-7
TEMP. CONTROLLER NO. N-7
TEMP. METER NO. N-7
THERMOCOUPLE I.D. NO. 96-2
UMBILICAL CORD I.D. NO. N-503
UMBILICAL CORD I.D. NO.
NOZZLE NO. MM-1

NOZZLE DIA. .371
ASSUMED MOISTURE % 5+
METER ΔH@ 1.874
METER CORRECTION 0.996
PITOT NO. M120
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.12
SITE TO BARO. ELEVATION (ft.) 39
CORRECTED B.P. (0.1 in./100 ft.) 29.08
STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1143	2027				
PASS/FAIL		PASS				

PITOT LEAK CHECK ≥3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1145	1840	1845	2026	
VACUUM, in. Hg	≥15"	9.0"	≥15"	9.0"	≥15"
CFM	0.009	.001	0.003	.001	
VOLUMES					
FINAL		1065.162			
INITIAL		1064.716			
DIFFERENCE		.446			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, in. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 998.729
FINAL VOLUME 1129.423
LEAK CHECK VOLUME .446
ADJUSTED FINAL VOLUME 1128.977

COMMENTS

Revision 11/18/88

APPENDIX B

AR315594

RR

MM5(PH)-2

RUN NO. 4 (PH) SAMPLING LOCATION Stack Outlet (upper) p. 1 of 1

DATE 1-31-97 PROJECT NO. 3620-13-30 OPERATOR Gurlick

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 998.729		VELOCITY HEAD (Δp_s), In. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), In H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., In. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F		
	0	1705	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
N12	7.5	1712.5	1004.069	1004.040	.41	1.68	1.70	184	73	73	6.5	37		256	251	12.5	
N11	15	1720	1009.245	1009.840	.44	1.90	1.90	183	73	72	9.0	38		256	256	12.5	
N10	22.5	1727.5	1015.361	1015.450	.45	1.85	1.85	184	76	74	8.5	41		253	254	12.4	
N9	30	1735	1020.925	1020.925	.44	1.81	1.80	184	78	74	7.5	41		256	251	12.2	
N8	37.5	1742.5	1026.435	1026.730	.43	1.77	1.75	184	79	75	7.5	41		254	253	12.3	
N7	45	1750	1031.686	1032.110	.42	1.73	1.70	184	80	75	7.0	43		252	253	12.2	
N6	52.5	1757.5	1037.207	1037.350	.42	1.65	1.60	185	82	77	7.0	50		252	256	12.1	
N5	60	1805	1042.786	1042.750	.46	1.81	1.75	185	83	78	7.0	43		255	253	12.3	
N4	67.5	1812.5	1048.471	1048.380	.45	1.87	1.85	184	84	79	7.5	42		256	253	12.3	
N3	75	1820	1054.155	1054.050	.45	1.87	1.85	185	84	79	7.5	47		251	254	12.2	
N2	82.5	1827.5	1059.722	1059.650	.43	1.75	1.80	184	85	86	7.5	43		250	253	12.3	
N1	90	1835	1064.694	1064.716	.36	1.42	1.45	185	87	82	6.5	49		258	255	12.5	
	0	1850		1065.162									1.1				
W1	7.5	1857.5	1070.170	1070.255	.35	1.45	1.45	184	81	81	6.5	47		254	251	12.4	
W2	15	1905	1075.321	1075.390	.39	1.53	1.55	185	83	81	6.5	45		252	251	12.5	
W3	22.5	1912.5	1080.762	1080.725	.41	1.71	1.70	184	85	81	8.0	47		251	255	12.3	
W4	30	1920	1086.336	1086.448	.43	1.79	1.80	184	86	81	9.0	58		258	253	12.0	
W5	37.5	1927.5	1091.710	1091.775	.42	1.66	1.65	185	87	82	8.0	45		266	255	12.5	
W6	45	1935	1096.993	1097.126	.43	1.60	1.60	186	88	82	7.5	44		268	258	12.5	
W7	52.5	1942.5	1102.458	1102.500	.41	1.72	1.70	184	84	83	7.5	43		254	253	12.3	
W8	60	1950	1107.789	1107.825	.39	1.63	1.65	184	88	83	7.5	42		255	254	12.5	
W9	67.5	1957.5	1113.188	1113.135	.40	1.68	1.65	184	88	83	7.5	45		254	253	12.7	
W10	75	2005	1118.654	1118.590	.41	1.72	1.70	184	88	83	8.0	44		260	251	12.6	
W11	82.5	2012.5	1124.125	1124.080	.41	1.72	1.70	184	88	84	8.0	45		253	252	12.6	
W12	90	2020	1129.523	1129.423	.40	1.68	1.70	184	88	83	8.0	45		253	252	12.5	

COMMENTS

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake OHM RSC
Sampling Location Stack Outlet (upper)
Sample Type (Multi-Point, ~~Single-Point~~)
Flow Control Device (~~Microvalve~~, ~~Critical Orifice~~)
For Sampling From M5 Console No. N7
Pump Type Diaphram
Pump I.D. N7
Flow Meter Type Rotameter
Flow Meter I.D. N7

Project No. 3620-13-30
Run No. 4 Date 1-31-97
Operator Gu/Ek
Bag Type Mylar Sample No. 4107
Method 3 Train No.
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.

Desired Flow Rate (cc/min) 100
Leak Check Before Sampling PASS After Sampling PASS
Total Sampling Time (min) 180 Average Flow Meter Reading 100
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters) 18

Time 24 Hr Clock	Flow Meter Reading	Comments
1705	100	Bag in Run 4
1720	100	ok
1735	100	OK
1750	100	Ok
1805	100	Ok
1820	100	Ok
1835	—	Port Change
1850	100	Restart
1905	100	Ok
1920	100	Ok
1935	100	Ok
1950	100	Ok
2005	100	Ok
2020	—	End Run 4

4107

DRAKE 36 ..12
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

AR315596

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 4
SAMPLE NO. 4107 DATE 01-31-97
PLANT SAMPLING LOCATION Stack - Upper Level
ANALYSIS TIME (24hr-CLOCK) 1025
SAMPLE TYPE (BAG, ~~GRAB~~) _____
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

GAS \ RUN	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 8.6 2 8.6 3	8.6	1 8.7 2 8.7 3	8.7	1 8.6 2 8.6 3	8.6	8.6
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 21.4 2 21.4 3	12.8	1 21.4 2 21.4 3	12.7	1 21.3 2 21.3 3	12.7	12.7

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2 >4% .3% by Volume
≤4% .2% by Volume

O_2 ≥15% .2% by Volume
<15% .3% by Volume

Comments:

DRAKE 3620.13 4107
MM5PH ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack

Run No. 4 Sampling Train No. MM5 PH-2 Sample Box No. 012004
Set-up person(s): J. McCann Date: 1-27-97
Transfer to Sampler:
Relinquished By J. McCann Received By R. Howe Date/Time 1/27/97 1304

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz) *	MM-1			
Probe (Liner-Glass) *				
Female Probe Outlet Blank-Off				
90° Bypass *				
Filter Holder Front		Filter Type: Whatman QM-A		
Filter Holder Back with Teflon® Filter Support		Filter Number: 8		
45/90° Connector				
1st Impinger (2-Liter, Mod-GBS)		50 mLs ±1 mL 0.1 N H_2SO_4	1021.9	1076.8
1st Impinger Replacement	not used	50 mLs ±1 mL	—	—
U-Connector (A)		0.1 N H_2SO_4		
2nd Impinger (GBS)		100 mLs ±2 mLs	487.7	592.6
U-Connector (B)		0.1 N H_2SO_4		
3rd Impinger (GBS)		100 mLs ±2 mLs	490.2	593.4
U-Connector (C)		0.1 N H_2SO_4		
4th Impinger (Mod-GBS)		Empty	483.3	
U-Connector (D)				
5th Impinger (Mod-GBS)		100 mLs ±2 mLs	466.5	567.9
U-Connector (E)		0.1 N NaOH		
6th Impinger (Mod-GBS)		100 mLs ±2 mLs	477.0	577.4
U-Connector (F)		0.1 N NaOH		
7th Impinger (Mod-GBS)		~200 g indicating silica gel		654.7
U-Connector (G)				
8th Impinger (Mod-GBS)		~200 g indicating silica gel		669.2
Impinger Outlet Connector	UH-4			

* Before and after sampling: Nozzle openings covered with aluminum foil or Teflon® tape, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with aluminum foil, Teflon® tape or as described above.

Component Changes After Set-up And Before Recovery And Other Comments:

40 *CFR* 266, APPENDIX IX, METHOD 0050 - MODIFIED PARTICULATE MATTER, HCl, AND Cl_2 TRAIN (MM5PH) FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile HWI
Source Location: Lock Haven, Pennsylvania
Sampling Location: Mobile Hazardous Waste Incinerator (HWI) Stack
Run No. 4 Sampling Train No. MM5 PH-2 Sample Box No. 012004

TRAIN PURGE WITH ASCARITE-FILTERED AIR

Condensate in front-half? None Purged By N/A
Date/Start Time: N/A Stop Time N/A Purge Rate: [ΔH = N/A in.H_2O]
Moisture Removed? N/A
Transfer for Recovery:
Relinquished By K. Howe Received By J. McCa Date/Time 1-31-97 2100
Sample box recovery person(s): J. McCa Date: 2-1-97
Probe recovery person(s): P. Gorman, D. Neal, D. Lattray Date:
Weights below are in grams.

BACK HALF RECOVERY

Impinger:	1st	Replacement 1st	2nd	3rd	4th	5th	6th	7th	8th
Final Wt.	3227.6	NA	867.2	870.0	813.4	575.7	580.0	676.3	675.1
Initial Wt.	1076.8	↓	592.6	593.4	483.3	567.9	577.4	654.7	669.2
Net Wt.	2150.8	↓	274.6	276.6	330.1	7.8	2.6	21.6	5.9

[Total Condensate Collected: 3070.0]

Description and/or color: clear — clear clear clear clear clear 15 30
Recovery: →→→→→ Impingers 1-3 ←←←←←←←←← →→ Impingers 4-6 ←←←←←←← % Blue

Sample Number:	4103	4105
Sample Bottle Tare Wt.	1352.3	496.7
Sample Bottle Gross Wt.	4307.9	1031.9 Before Rinses
Components Rinsed*:	filter support, filter holder back, 45/90° connector, 1st-3rd impingers, U-connectors A-B	4th-6th impingers, U-connectors C-E
Sample Bottle Gross Wt.	4396.5	1125.1 After Rinses
Net Sample Wt.	3044.2	628.4 for Mass Collected Computations
Sample Mixed, Then:	for HCl	for Cl_2
Aliquot Sample Number:	→→→→→ 4104	→→→→→ 4106 for Chloride Analysis
Sample Bottle Tare Wt.	97.5	97.9
Sample Bottle Gross Wt.	4284.3 209.8	1015.0 207.9 After Aliquoting
Sample Bottle Final Wt.		After SIE Check
Net Sample Wt.	2932.0 112.3	518.3 110.0

FRONT HALF RECOVERY

FILTER:
Sample Number: 4102 Description/Color: light pink / intact

TRAIN RINSES: Sample Number: 4101
Sample Bottle Tare Wt. 266.8
Components Rinsed**: nozzle, probe liner, bypass, filter holder front
Sample Bottle Gross Wt. 341.4 with Acetone Rinses
Net Acetone Sample Wt. 74.6
Sample Bottle Final Wt. 423.0 with added Water Rinses
Net Water Sample Wt. ~~156.2~~ 81.6

* Using a total of 100 mLs ±2 mLs ASTM Type I water per sample, rinse components twice. Thoroughly mix each sample and added rinses before aliquoting.

** Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

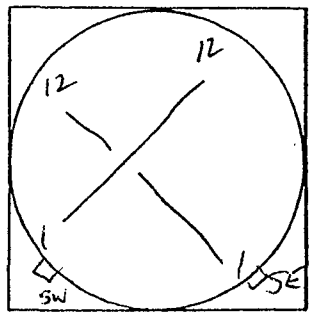
COMMENTS:

FIELD DATA

RUN NO. 4 (SV)
PROJECT NO. 3620-2330
PLANT Dark OHM KSC
DATE 1-31-97
SAMPLING LOCATION Stack Outlet (upper)
SAMPLE TYPE MMS - SV-2
OPERATOR Gaffney
FILTER NO NA
RECORD DATA EVERY 7.5 MIN.
UMBILICAL/SAMPLER HOOKUP UH35

PROBE NO. ~~S-2~~ DF 8-3
PROBE LENGTH AND TYPE 8' Heated Glass
SAMPLE BOX NO. ~~N-2~~ 10288
METER BOX NO. N-5
TEMP. CONTROLLER NO. N-5
TEMP. METER NO. N-5
THERMOCOUPLE I.D. NO. 96-3
UMBILICAL CORD I.D. NO. N-115-3
UMBILICAL CORD I.D. NO.
NOZZLE NO. DF-1

NOZZLE DIA. .371
ASSUMED MOISTURE % Est
METER ΔH@ 1.969
METER CORRECTION .985
PITOT NO. 111-127
PITOT COEFFICIENT .837
BAROMETRIC PRESSURE 29.12
SITE TO BARO. ELEVATION (ft.) 39
CORRECTED B.P. (0.1 in./100 ft.) 29.08
STATIC PRESSURE -0.41



SCHEMATIC OF TRAVERSE POINT LAYOUT

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)	1138	2026				
PASS/FAIL		pass				

PITOT LEAK CHECK ≥ 3" H_2O

	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)						
PASS/FAIL						

SAMPLE TRAIN LEAK CHECKS

	INITIAL	FINAL	INITIAL	FINAL	INITIAL
TIME (24 hr)	1140	1537	1544	2025	
VACUUM, In. Hg	≥15"	12"	≥15"	12"	≥15"
CFM	0.005	.002	.005	.004	
VOLUMES					
FINAL		171.505			
INITIAL		171.404			
DIFFERENCE		.464			

SAMPLE TRAIN LEAK CHECKS

	FINAL	INITIAL	FINAL	INITIAL	FINAL
TIME (24 hr)					
VACUUM, In. Hg		≥15"		≥15"	
CFM					
VOLUMES					
FINAL					
INITIAL					
DIFFERENCE					

INITIAL VOLUME 101.851
FINAL VOLUME 244.243
LEAK CHECK VOLUME .404
ADJUSTED FINAL VOLUME 243.839

COMMENTS

Revision 11/18/88

APPENDIX B

AR315600

94

SV-2

RUN NO. 4 (SV) SAMPLING LOCATION Stack Outlet p. 1 of 1

DATE 1-31-97 PROJECT NO. 3220-73-30 OPERATOR Griffin

TRAVERSE POINT NUMBER	CLOCK TIME (24-hr.) / SAMPLING TIME, min		GAS METER READING (V_m), ft³ INITIAL 101.851		VELOCITY HEAD (Δp_s), in. H_2O	ORIFICE PRESSURE DIFFERENTIAL (ΔH), in H_2O		STACK TEMP. (T_s), °F	DRY GAS METER TEMPERATURE		PUMP VAC., in. Hg	IMPINGER TEMP., °F	SAMPLE BOX TEMP., °F	PROBE TEMP., °F	FILTER TEMP., °F	XAD °F	
	0	1765	DESIRED	ACTUAL		DESIRED	ACTUAL		INLET ($T_{m\,in}$), °F	OUTLET ($T_{m\,out}$), °F							
SW-12	7.5	1712.5	107.73	107.92	.41	2.15	2.2	180	69	68	12	31	X	248	245	38	12.0
SW-11	15	1720	113.73	113.95	.40	2.19	2.2	179	68	68	11	32	X	250	247	44	11.8
SW-10	22.5	1727.5	119.54	119.77	.39	2.06	2.1	180	75	70	11	33	X	253	243	42	11.8
SW-9	30	1735	125.42	125.53	.38	2.11	2.1	179	77	71	10	34	X	249	245	37	12.0
SW-8	37.5	1742.5	131.11	131.21	.37	1.97	2.0	180	79	72	10	34	X	252	246	42	11.9
SW-7	45	1750	136.94	137.12	.37	2.06	2.1	179	80	73	10	34	X	249	248	41	11.9
SW 6	52.5	1757.5	142.66	142.85	.37	1.98	2.0	180	83	74	10	35	X	250	247	43	12.0
SW 5	60	1805	148.55	148.56	.37	2.09	2.1	180	84	75	10	34	X	249	247	40	12.0
SW 4	67.5	1812.5	154.49	154.49	.38	2.13	2.1	179	84	76	10	34	X	253	245	42	12.0
SW 3	75	1820	160.24	160.32	.37	1.99	2.0	180	84	77	10	34	X	249	245	45	11.7
SW 2	82.5	1827.5	165.79	165.98	.33	1.86	1.9	179	85	78	10	35	X	248	247	48	12.1
SW 1	90	1835	171.192	171.401	.31	1.75	1.8	179	87	79	9	35	X	251	248	50	—
		1850	Traverse	171.803													
SE-1	97.5	1857.5	177.36	177.43	.32	1.87	1.9	178	78	75	10	32	X	247	245	40	11.9
SE-2	105	1905	182.69	182.87	.32	1.72	1.7	180	81	78	9	34	X	250	248	49	12.0
SE-3	112.5	1912.5	188.65	188.80	.38	2.14	2.1	179	84	78	10	34	X	253	245	43	12.0
SE-4	120	1920	194.69	194.89	.39	2.19	2.2	179	85	75	11	34	X	248	245	45	12.5
SE-5	127.5	1927.5	200.73	200.96	.39	2.19	2.2	179	85	78	11	35	X	251	247	48	12.8
SE-6	135	1935	206.64	206.90	.39	2.10	2.1	180	85	79	11	36	X	248	245	49	12.7
SE-7	142.5	1942.5	212.62	212.78	.38	2.14	2.1	179	87	79	11	36	X	252	248	42	12.7
SE-8	150	1950	218.75	218.90	.40	2.25	2.3	179	86	79	11	35	X	252	246	42	12.7
SE-9	157.5	1957.5	225.16	225.34	.42	2.47	2.5	178	86	79	12	36	X	249	246	43	12.8
SE-10	165	2005	231.58	231.76	.42	2.47	2.5	178	86	79	12	36	X	250	246	46	12.9
SE-11	172.5	2012.5	237.99	238.03	.41	2.41	2.4	178	86	79	12	37	X	247	244	47	12.9
SE-12	180	2020	244.241	244.243	.40	2.35	2.3	178	85	79	12	37	X	248	246	43	12.9

COMMENTS

INTEGRATED GAS SAMPLING DATA FORM
FOR U.S. EPA METHOD 3

Plant Drake CHM RSC
Sampling Location Stack Outlet (upper)
Sample Type (Multi-Point, Single-Point) MP
Flow Control Device (Microvalve, Critical Orifice) MV
For Sampling From M5 Console No. N5
Pump Type Diaphram
Pump I.D. N-5
Flow Meter Type Rotameter
Flow Meter I.D. ~~MSSD N5~~
Desired Flow Rate (cc/min) 100
Leak Check Before Sampling 2000
Total Sampling Time (min) 180
Flow Rate (cc/min): Average 100 Highest 100 Lowest 100
Estimated Actual Volume (liters) 18

Project No. 3620-13-38
Run No. 4 Date 1-31-97
Operator Griffin
Bag Type mylar Sample No. 4114
Method 3 Train No. NA
Pump Type
Pump I.D.
Flow Meter Type
Flow Meter I.D.
After Sampling gm
Average Flow Meter Reading 1.0

Time 24 Hr Clock	Flow Meter Reading	Comments
1705	1.0	Start after 1 min purge
1720	1.0	
1735	1.0	
1750	1.0	
1805	1.0	
1820	1.0	
1835	1.0	Down for M/C change
1850	1.0	Restart
1905	1.0	
1920	1.0	
1935	1.0	
1950	1.0	
2005	1.0	
2020	1.0	Down

DRAKE 3620.13
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

4114

AR315602

OXYGEN AND CARBON DIOXIDE BY ORSAT

PROJECT NO. 3620.13.30 RUN NO. 4
SAMPLE NO. 4114 DATE 01-31-97
PLANT SAMPLING LOCATION Stack - Upper Level
ANALYSIS TIME (24hr-CLOCK) 2030
SAMPLE TYPE (BAG, ~~GRAB~~) BAG
OPERATOR J. Surman

ORSAT LEAK CHECK BEFORE ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.
ORSAT LEAK CHECK AFTER ANALYSIS:
BURETTE No CHANGE IN 4 MIN.
PIPETTES No CHANGE IN 4 MIN.

RUN / GAS	1		2		3		AVERAGE NET VOLUME
	ACTUAL READING	NET	ACTUAL READING	NET	ACTUAL READING	NET	
CO_2	1 7.5 2 7.5 3		1 2 3		1 2 3		
O_2 (NET IS SECOND READING MINUS ACTUAL CO_2 READING)	1 20.2 2 20.3 3		1 2 3		1 2 3		

91-16 SEV SURMAN wksht 052191

Acceptance Criteria

CO_2 > 4% .3% by Volume
≤ 4% .2% by Volume

O_2 ≥ 15% .2% by Volume
< 15% .3% by Volume

Comments:
Results from MM5PM train used here rather than these results. This bag was leaking
J. Surman 01-31-97

DRAKE 3620.13 4114
MM5SV ORSAT BAG
TRIAL BURN SAMPLE
For disposal call: P.GORMAN
MIDWEST RESEARCH INSTITUTE

APPENDIX B

AR315603

97

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY TRAIN SET-UP DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 4 Sampling Train No. SV-2 Sample Box No. 10288
Set-up person(s): A. Carender Date: 1/27/97
Transfer to Sampler:
Relinquished By A. Carender Received By D. Letney Date/Time 1/27/97 1305

TRAIN COMPONENT	COMPONENT NO.	LOADING DATA	Initial Weights (grams)** Empty	Loaded
Sampling Nozzle (Quartz) *	DF-1			
Probe (Liner-Glass) *				
Female Probe Outlet Blank-Off				
90° Bypass *				
Filter Holder Front				
Filter Holder Back with Teflon®-coated 316 SS Filter Support		Filter Type: Whatman QM-A		
45/90° Connector				
Condenser (Standard)		Thermocouple No. XAD-5		***
XAD-2 Resin Cartridge (Standard)	#3 (T)	~65 grams XAD-2 Resin + Surrogates		487.1
(Documentation of standards injection is separate); resin spiked on 1/14/97 and maintained near 4°C until use.				
1st Impinger (2-L Mod-GBS)		Empty	981.8	
1st Impinger Replacement		Empty	Not used	
U-Connector (A)				
2nd Impinger (Mod-GBS)		100 mLs	553.7	654.1
U-Connector (B)		ASTM Type II Water		
3rd Impinger (GBS)		100 mLs	479.4	578.9
U-Connector (C)		ASTM Type II Water		
4th Impinger (Mod-GBS)		Empty	473.3	
U-Connector (D)				
5th Impinger (Mod-GBS)		~200 g indicating silica gel		637.8
U-Connector (E)				
6th Impinger (Mod-GBS)		~200 g indicating silica gel		635.1
Impinger Outlet Connector	UH-35			

* Before and after sampling: Nozzle openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil, and nozzle placed in Ziploc® bag. Probe liner outlet sealed with glass female blank-off, and inlet sealed with Teflon® plug. Bypass inlet covered (not sealed) with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil.

** Initial weights of additional components exchanged during the run also entered here. All exchange component openings covered with methanol/methylene chloride/toluene/acetone-rinsed aluminum foil or as described above.

*** Cartridge weighed with blank-offs in place; then, cartridge covered with aluminum foil to seal out light during storage and sampling.

Component Changes after Set-up and before Recovery and Other Comments:

SW-846, METHOD 0010; 40 *CFR* 60, APPENDIX A, METHOD 23 -
MODIFIED SEMIVOLATILE ORGANICS TRAIN (MM5SV) FOR POHCs, PICs AND PCDDs/PCDFs
FIELD LABORATORY SAMPLE RECOVERY DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania
Sampling Location: Incinerator Stack

Run No. 4 Sampling Train No. SV-2 Sample Box No. 10288
Transfer for Recovery:
Relinquished By D. Letney Received By A. Carender Date/Time 1-31-97 2100
Sample box recovery person(s): J. McCan, A. Carender Date: 1-31-97
Probe recovery person(s): P. Gorman, D. Neal, D. Letney Date: 1/31/97
Weights below are in grams.

RESIN CARTRIDGE AND IMPINGERS RECOVERY

Impinger:	XAD-2 Cartridge*	1st	Replacement 1st	2nd	3rd	4th	5th	6th
Final Wt.	497.3	3763.3	NA	893.7	813.1	488.7	657.6	642.9
Initial Wt.	487.1	981.8	—	654.1	578.9	473.3	637.8	635.1
Net Wt.	10.2	2781.5	↓	239.6	234.2	15.4	19.8	7.8

[Total Condensate Collected: 3308.5 grams]

Description and/or color:	white	clear		clear	clear	clear	0	15
Sample Recovery:	Cartridge*	→ 1st-4th Impingers and Replacement 1st Impinger ← ← ← ←					% Blue	

Sample Number: 4111 4112
Sample Bottle Tare Wt. 1358.6
Transfer impinger contents only (i.e., do not add component rinses to this sample).

Sample Bottle Final Wt. 4829.2
Net Sample Wt. 3470.6
Components Rinsed**: 1st-4th impingers, replacement 1st impinger, U-connectors A-C; combine rinses with train back rinses below (sample number XX010)

FILTER RECOVERY AND TRAIN RINSES

FILTER:
Sample Number: 4109 Description/Color: white

TRAIN RINSES:	FRONT	BACK	QA RINSES
Sample Number:	4108	4110	4113
Sample Bottle Tare Wt.	263.4	264.3	490.8
Components Rinsed***:	Front -- nozzle, probe liner, bypass, filter holder front; Back -- filter support, filter holder back, 45/90° connector, condenser		
Sample Bottle Final Wt.	463.8	769.4	1207.4
Net Sample Wt.	200.4	505.1	716.6

* Replace blank-offs and remove aluminum foil, then weigh the cartridge; replace aluminum foil to cover the entire cartridge.
** Methanol/methylene chloride (1:1 v/v) rinses 3 times; add rinses to train back rinses (sample number XX010).
*** TRAIN FRONT/BACK RINSES: Methanol/methylene chloride (1:1 v/v) rinses with brushing of front components 3 times or more until perceivably clean, and methanol/methylene chloride (1:1 v/v) rinses of back components 3 times, but without brushing, and including 5-minute soaks of underlined components 3 times.
QA RINSES: Follow with toluene rinses and soaks, but without brushing, in the same manner as above for the train front and back rinses.

COMMENTS:

RUN 4 COND. 1

SOLID WASTE FEED SAMPLING DATA

Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately ~~60~~ 100 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX120, ~~XX199~~ XX200 stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX121, stored at near water ice temperature (i.e., 4°C). All samples, XX122, stored at near room temperature or cooler (i.e., 26°C).

Run No. 4 Date: 1-31-97 Sampler(s): Bob Jones John Flora Dave Wolf

Composite Sample Number: 4120 4121 4122 4194 4200
Composite Sample Designation: SVOC MCMW GALBT VOC F-ENAC

Grab No.	Time	Interruptions/Comments	
		Caution: Material may contain β-naphthylamine.	
1	1710	Brown Dirt	JF
2	1725	" "	JF
3	1740	" "	JF
4	1755	" "	JF
5	1810	" "	JF
6	1825	" "	JF
~~7~~	1840	Stopped sampling to change Port	DH
~~8~~	1855	~~start sampling Location~~ port changed	DH
9	1900	Brown Dirt	DH
10	1915	" "	DH
11	1930	" "	DH
12	1945	" "	DH
13	2000	" "	JF
14	2015	" "	JF
~~15~~			DH
16			
17			
18			
19			
20			

Relinquished By _____ Received By D. Allwein Date/Time 1-31-97 2028

WSTFED31.WPD January 20, 1997

AR315606

RUN 4 COND. 1

SOLID WASTE FEED SAMPLING DATA (COE)

Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the solid waste feed conveyor to the kiln in the solid waste storage and preparation building.

SAMPLING METHOD: Equal-sized grab samples of approximately 60 grams each collected with an aluminum* scoop from material on the apron conveyor belt. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 15 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, ~~XX120,~~ stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. ~~All samples, XX121, stored at near water ice temperature (i.e., 4°C). All samples, XX122, stored at near room temperature or cooler (i.e., 20°C).~~

Run No. 4/ Date: 1-31-97 Sampler(s): Bob Thomas Daniel Hill

Composite Sample Number: ~~120~~ 4135 ~~122~~
Composite Sample Designation: ~~SVOC~~ (COE) ~~GALBT~~

Grab No.	Time	Interruptions/Comments	
		Caution: Material may contain β-naphthylamine.	
1	1710	(Brown Dirt)	JF
2	1725	" "	JF
3	1740	" "	JF
4	1755	" "	JF
5	1810	" "	JF
6	1825	" "	JF
X	1840	Stopped sampling to change Port	DH
X	1855	Port changed	DH
9	1900	Brown Dirt	DH
10	1915	" "	DH
11	1930	" "	DH
12	1945	" "	DH
13	2000	" "	JF
14	2015	" "	JF
15			
16			
17			
18			
19			
20			

Relinquished By _____ Received By D. Albright Date/Time 1-31-97 2025

WSTFED31.WPD January 20, 1997

AR315607

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 3/4 Date: Jan 31, 97 Recorded By: Neil Woods

4/9

SEE NOTE PG. 1 - DS

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	40041/1.1	
O.RT			1701 NB 23
			1703 19
			1705 15
			1707 11
			1709 06 Run #4 [redacted] is underway
			1711 02
			1713 59
			1715 54
			1717 49
			1719 44
			1721 41
			1723 37
			1725 33
			1727 28
			1729 25
			1731 20
			1733 16
			1735 11
			1737 07
			1739 03
			1740 58
			1748 53
			1744 49
			1746 45
			1748 42
			1750 38
			1752 33
			1754 29
			1756 26
			1758 21
			1800 16
			1802 12
			1804 08
			1806 03
			1807 58

SPIKING DATA - Condition 1

7/9

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 4 Date: Jan 31 97 Recorded By: Neil Russo / Joe Hurley

SEE NOTE PG. 1 -DA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	40041/2.1	40041/1.1	DILT 1809 55
	"	"	" 1811 50
	"	"	" 1813 46
	"	"	" 1815 42
	"	"	" 1817 38
	"	"	" 1819 34
	"	"	" 1821 28
	"	"	" 1823 26
	"	"	" 1825 23
	"	"	" 1827 18
	"	"	" 1829 13
	"	"	" 1831 08
	"	"	" 1833 05
	"	"	" 1834 00
	"	"	" 1836 56 -H
	"	"	" 1838 51
	"	"	" 1840 47
	"	"	" 1842 43
	"	"	" 1844 39
	"	"	" 1846 35
	"	"	" 1848 31
	"	"	" 1850 26
	"	"	" 1852 22
	"	"	" 1854 19
	"	"	" 1856 14
	"	"	" 1858 10
	"	"	" 1900 06
	"	"	" 1902 02
	"	"	" 1903 57
	"	"	" 1905 53
	"	"	" 1907 48
	"	"	" 1909 44
	"	"	" 1911 40
	"	"	" 1913 36
	"	"	" 1915 32

SPIKING DATA - Condition 1

8/9

MRI Project No.: 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

Run No. 4 Date: Jan 31, 97 Recorded By: Joe Hirle / [illegible]

SEE NOTE PG. 1 – DA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene		REMARKS
	40041/2.1	40041/1.1	Pint	1917 27
	"	"	"	1919 24
	"	"	"	1921 20
	"	"	"	1923 15
	"	"	"	1925 11
	"	"	"	1927 07
	"	"	"	1929 03
	"	"	"	1930 58
	"	"	"	1932 54
	"	"	"	1934 49
	"	"	"	1936 45
	"	"	"	1938 40
	"	"	"	1940 36
	"	"	"	1942 32
	"	"	"	1944 28
	"	"	"	1946 25
	"	"	"	1948 21
	"	"	"	1950 16
	"	"	"	1952 12
	"	"	"	1954 07
	"	"	"	1956 03 N.Q.
	"	"	"	1957 58
	"	"	"	1959 54
	"	"	"	2001 49
	"	"	"	2003 45
	"	"	"	2005 42
	"	"	"	2007 38
	"	"	"	2009 34
	"	"	"	2011 29
	"	"	"	2013 26
	"	"	"	2015 22
	"	"	"	2017 17
	"	"	"	2019 12
	"	"	"	2021 08
	"	"	"	2023 04

SPIKING DATA - Condition 1

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corporation, Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

9/9

Run No. 4 Date: Jan 31 97 Recorded By: Neil Quinn

SEE NOTE PG 1 - DA

24 - Hr TIME	LOT NO. Naphthalene	LOT NO. 1,4-Dichlorobenzene	REMARKS
	400 41 / 2.1	400 41 / 1.1	DIRT
	"	"	
			2025 00
			2026 55
			2027 30 End of Run # 4

RUN 4 COND. 1

BOTTOM ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX126 and XX127, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX128, stored at near water ice temperature (i.e., 4°C). All samples, XX129, stored at near room temperature or cooler (i.e., 26°C).

Run No. 4 Date: 1-31-97 Sampler(s): D. ALBUTT

Composite Sample Number:	4126	4127	4128	4129
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1713	DARK, MOIST, SOME ROCKS
2	1745	" " " "
3	1825	" " " "
4	1904	" " " "
5	1934	" " " "
6	2006	" " " "
7		
8		
9		
10		

Relinquished By D. Albutt Received By D. Albutt Date/Time 1-31-97 2010

BOTMASH3.WPD January 20, 1997

AR315612

RUN 4 COND. 1

BOTTOM ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples, XX170 and XX171, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX172, stored at near water ice temperature (i.e., 4°C). All samples, XX173, stored at near room temperature or cooler (i.e., 26°C).

Run No. 4 Date: 1-31-97 Sampler(s): D. ALBURTY

Composite Sample Number:	4170	4171	4172	4173
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Grab No.	Time	Interruptions/Comments
1	1713	DARK, MOIST ASH, SOME ROCKS
2	1725	" " " " "
3	1745	" " " " "
4	1904	" " " " "
5	1934	" " " " "
6	2006	" " " " "
7		
8		
9		
10		

Relinquished By D. Alburty Received By D. Alburty Date/Time 1-31-97 2010

BOTMSH3D.WPD January 20, 1997

AR315613

RUN 4 COND. 1

BOTTOM ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: In the bottom ash storage building. Grab samples collected from the front end loader used for transfering ash from the ash pile at the final drop off of the belt conveyor system from the kiln.

SAMPLING METHOD: Equal sized grab samples of about 200 grams each collected with an aluminum* scoop. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol.)

SAMPLING FREQUENCY: One (1) grab sample collected every 30 minutes during the run. Sampling conducted continually according to schedule except during stack port changes on the stack and delays incurred during the run as noted below.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 4 Date: 1-31-97 Sampler(s): D. ALBURT

Composite Sample Number: 4 136
Composite Sample Designation: COE

Grab No.	Time	Interruptions/Comments
1	1713	DARK, MOIST, SOME ROCKS
2	1725	" " " "
3	1745	" " " "
4	1904	" " " "
5	1934	" " " "
6	2006	" " " "
7		
8		
9		
10		

Relinquished By D. Albert Received By D. Albert Date/Time 1-31-97 2010

BOTMSH3C.WPD January 20, 1997

AR315614

RUN 4 COND 1

FLY ASH SAMPLING DATA

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the first dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX130 and XX131, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX132, stored at near water ice temperature (i.e., 4°C). All samples, XX133, stored at near room temperature or cooler (i.e., 26°C).

Run No. 4 Date: 1-31-97 Sampler(s): D. ALBURTY

Composite Sample Number:	4130	4131	4132	4133
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	2052	RED, HARD WET ASH (9 GRABS 1ST TRUCK)
2	2355	" " " " (7 GRABS, 2ND TRUCK NOT FULL)
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By D. Alburty Received By D. Alburty Date/Time 02-01-97 0015

FLYASH3.WPD January 20, 1997

AR315615

RUN 4 COND. 1

FLY ASH SAMPLING DATA (DUPLICATE SAMPLES)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the first dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into 16 oz., wide mouth, precleaned, clear glass bottles. Bottles sealed with Teflon®-lined screw caps. (*As per COE protocol.)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples, XX174 and XX175, stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil. All samples, XX176, stored at near water ice temperature (i.e., 4°C). All samples, XX177, stored at near room temperature or cooler (i.e., 26°C).

Run No. 4 Date: 1-31-97 / 2-01-97 Sampler(s): ~~D. ALBURTY~~

Composite Sample Number:	4174	4175	4176	4177
Composite Sample Designation:	SVOC	VOC	TCLP/METALS	GALBT

Event No.	Time	Interruptions/Comments
1	2047	WET, HARD RED ASH 1ST TRUCK (9 GRABS)
2	0010	" " " " " 2nd TRUCK (7 GRABS NOT AS FULL)
3		
4		
5		
6		
7		
8		
9		
10		

Relinquished By D. Albury Received By D. Albury Date/Time 02-01-97 0015

FLYASH3D.WPD January 20, 1997

AR315616

RUN 4 COND. 1

FLY ASH SAMPLING DATA (SAMPLE FOR COE)

MRI Project No. 3620.13.30
Client/Source: OHM Remediation Services Corp., Drake Chemical Superfund Site, Mobile Hazardous Waste Incinerator
Source Location: Lock Haven, Pennsylvania

SAMPLING LOCATION: At the drop off of the fly ash pugmill discharge conveyor from the baghouse and evaporative cooler.

SAMPLING METHOD: Equal sized (approx. 100 grams) grab samples collected with an aluminum* scoop from each of ~~eighteen (18)~~ 9 DA spacially spaced points over the surface and from a depth of 3 to 6 inches below the surface of the pile in the dump truck bed located under the end of the conveyor. Grab samples deposited, combined, and mixed in an aluminum* pan; then cut and split into a 16 oz., wide mouth, precleaned, clear glass bottle. Bottle sealed with Teflon®-lined screw cap. (*As per COE protocol,)

SAMPLING FREQUENCY: Grab samples collected immediately after the end of the run.

SAMPLE PRESERVATION: All samples stored at near water ice temperature (i.e., 4°C), and bottles wrapped in aluminum foil.

Run No. 4 Date: 1-31-97 Sampler(s): D. ALBURTY

Composite Sample Number: 4137
Composite Sample Designation: COE

Event No.	Time	Interruptions/Comments
1	2040	WET, RED ASH 1ST TRUCK (9 GRABS)
2	2400	" " " 2nd TRUCK (7 GRABS, NOT AS FULL)
3		DA
4		
5		
6		
7		
8		
9		
10		

Relinquished By D. Alburty Received By D. Alburty Date/Time 02-01-97 0015

FLYASH3C.WPD January 20, 1997

AR315617