

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFEK91AG-MS Matrix.....: SO
 MS Lot-Sample #: A5G130319-032 HFEK91AH-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
trans-1,3-Dichloropropene	ND	180	120	ug/kg	67		SW846 8260B
	ND	200	130	ug/kg	65	10	SW846 8260B
Ethylbenzene	22	180	210	ug/kg	106		SW846 8260B
	22	200	210	ug/kg	94	0.19	SW846 8260B
2-Hexanone	ND	180	100	ug/kg	55		SW846 8260B
	ND	200	97	ug/kg	48	2.7	SW846 8260B
Methylene chloride	ND	180	180	ug/kg	100		SW846 8260B
	ND	200	200	ug/kg	96	8.1	SW846 8260B
4-Methyl-2-pentanone	ND	180	140	ug/kg	77		SW846 8260B
	ND	200	150	ug/kg	72	5.6	SW846 8260B
Methyl tert-butyl ether	ND	180	170	ug/kg	97		SW846 8260B
	ND	200	190	ug/kg	92	6.9	SW846 8260B
Styrene	ND	180	170	ug/kg	96		SW846 8260B
	ND	200	180	ug/kg	88	3.8	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	180	160	ug/kg	89		SW846 8260B
	ND	200	170	ug/kg	85	8.5	SW846 8260B
Tetrachloroethene	ND	180	180	ug/kg	98		SW846 8260B
	ND	200	190	ug/kg	93	6.9	SW846 8260B
Toluene	76	180	260	ug/kg	104		SW846 8260B
	76	200	270	ug/kg	94	1.5	SW846 8260B
1,1,1-Trichloroethane	ND	180	140	ug/kg	77		SW846 8260B
	ND	200	160	ug/kg	78	14	SW846 8260B
1,1,2-Trichloroethane	ND	180	180	ug/kg	98		SW846 8260B
	ND	200	180	ug/kg	89	2.2	SW846 8260B
Trichloroethene	2200	180	3200	ug/kg	594 a		SW846 8260B
	2200	200	2200	ug/kg	37 a,p	36	SW846 8260B
Vinyl chloride	ND	180	170	ug/kg	95		SW846 8260B
	ND	200	180	ug/kg	87	3.9	SW846 8260B
Xylenes (total)	190	540	850	ug/kg	123		SW846 8260B
	190	610	750	ug/kg	92	12	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(59 - 138)
	85	(59 - 138)
1,2-Dichloroethane-d4	87	(61 - 130)
	82	(61 - 130)
Toluene-d8	92	(60 - 143)
	86	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	85	(47 - 158)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A5G130319 Work Order #...: HFEK91AG-MS Matrix.....: SO
MS Lot-Sample #: A5G130319-032 HFEK91AH-MSD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFEK91AG-MS Matrix.....: SO
 MS Lot-Sample #: A5G130319-032 HFEK91AH-MSD
 Date Sampled...: 07/11/05 14:15 Date Received...: 07/13/05
 Prep Date.....: 07/14/05 Analysis Date...: 07/19/05
 Prep Batch #....: 5200671
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acetone	71	(10 - 200)			SW846 8260B
	46	(10 - 200)	6.9	(0-66)	SW846 8260B
Benzene	94	(55 - 138)			SW846 8260B
	93	(55 - 138)	11	(0-20)	SW846 8260B
Bromodichloromethane	62	(47 - 131)			SW846 8260B
	61	(47 - 131)	10	(0-51)	SW846 8260B
Bromoform	68	(26 - 141)			SW846 8260B
	64	(26 - 141)	5.9	(0-64)	SW846 8260B
Bromomethane	109	(15 - 152)			SW846 8260B
	97	(15 - 152)	1.3	(0-72)	SW846 8260B
2-Butanone	57	(21 - 195)			SW846 8260B
	50	(21 - 195)	0.73	(0-60)	SW846 8260B
Carbon disulfide	70	(27 - 149)			SW846 8260B
	69	(27 - 149)	9.5	(0-73)	SW846 8260B
Carbon tetrachloride	66	(32 - 143)			SW846 8260B
	61	(32 - 143)	4.5	(0-68)	SW846 8260B
Chlorobenzene	92	(49 - 139)			SW846 8260B
	92	(49 - 139)	13	(0-22)	SW846 8260B
Chloroethane	66	(32 - 140)			SW846 8260B
	71	(32 - 140)	20	(0-66)	SW846 8260B
Chloroform	94	(59 - 128)			SW846 8260B
	89	(59 - 128)	7.7	(0-46)	SW846 8260B
Chloromethane	66	(28 - 130)			SW846 8260B
	63	(28 - 130)	7.9	(0-81)	SW846 8260B
Dibromochloromethane	43 a	(44 - 135)			SW846 8260B
	44	(44 - 135)	15	(0-61)	SW846 8260B
1,1-Dichloroethane	95	(56 - 130)			SW846 8260B
	89	(56 - 130)	6.2	(0-54)	SW846 8260B
1,2-Dichloroethane	88	(56 - 126)			SW846 8260B
	84	(56 - 126)	7.2	(0-38)	SW846 8260B
1,1-Dichloroethene	98	(43 - 147)			SW846 8260B
	90	(43 - 147)	4.0	(0-27)	SW846 8260B
cis-1,2-Dichloroethene	91	(48 - 127)			SW846 8260B
	85	(48 - 127)	5.2	(0-52)	SW846 8260B
trans-1,2-Dichloroethene	92	(47 - 127)			SW846 8260B
	88	(47 - 127)	8.2	(0-58)	SW846 8260B
1,2-Dichloropropane	93	(54 - 125)			SW846 8260B
	91	(54 - 125)	9.8	(0-43)	SW846 8260B
cis-1,3-Dichloropropene	73	(30 - 138)			SW846 8260B
	72	(30 - 138)	11	(0-49)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFEK91AG-MS Matrix.....: SO
 MS Lot-Sample #: A5G130319-032 HFEK91AH-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
trans-1,3-Dichloropropene	67	(34 - 134)			SW846 8260B
	65	(34 - 134)	10	(0-57)	SW846 8260B
Ethylbenzene	106	(36 - 133)			SW846 8260B
	94	(36 - 133)	0.19	(0-72)	SW846 8260B
2-Hexanone	55	(20 - 190)			SW846 8260B
	48	(20 - 190)	2.7	(0-70)	SW846 8260B
Methylene chloride	100	(45 - 129)			SW846 8260B
	96	(45 - 129)	8.1	(0-49)	SW846 8260B
4-Methyl-2-pentanone	77	(42 - 143)			SW846 8260B
	72	(42 - 143)	5.6	(0-60)	SW846 8260B
Methyl tert-butyl ether	97	(70 - 130)			SW846 8260B
	92	(70 - 130)	6.9	(0-30)	SW846 8260B
Styrene	96	(23 - 136)			SW846 8260B
	88	(23 - 136)	3.8	(0-65)	SW846 8260B
1,1,2,2-Tetrachloroethane	89	(33 - 162)			SW846 8260B
	85	(33 - 162)	8.5	(0-90)	SW846 8260B
Tetrachloroethene	98	(31 - 137)			SW846 8260B
	93	(31 - 137)	6.9	(0-81)	SW846 8260B
Toluene	104	(46 - 147)			SW846 8260B
	94	(46 - 147)	1.5	(0-24)	SW846 8260B
1,1,1-Trichloroethane	77	(48 - 132)			SW846 8260B
	78	(48 - 132)	14	(0-57)	SW846 8260B
1,1,2-Trichloroethane	98	(58 - 128)			SW846 8260B
	89	(58 - 128)	2.2	(0-52)	SW846 8260B
Trichloroethene	594 a	(46 - 143)			SW846 8260B
	37 a,p	(46 - 143)	36	(0-23)	SW846 8260B
Vinyl chloride	95	(30 - 136)			SW846 8260B
	87	(30 - 136)	3.9	(0-80)	SW846 8260B
Xylenes (total)	123	(33 - 135)			SW846 8260B
	92	(33 - 135)	12	(0-78)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	89	(59 - 138)
	85	(59 - 138)
1,2-Dichloroethane-d4	87	(61 - 130)
	82	(61 - 130)
Toluene-d8	92	(60 - 143)
	86	(60 - 143)
4-Bromofluorobenzene	95	(47 - 158)
	85	(47 - 158)

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFEK91AG-MS Matrix.....: SO
MS Lot-Sample #: A5G130319-032 HFEK91AH-MSD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

- a Spiked analyte recovery is outside stated control limits.
- p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFENM1AD-MS Matrix.....: SO
 MS Lot-Sample #: A5G130319-069 HFENM1AE-MSD
 Date Sampled...: 07/12/05 09:15 Date Received...: 07/13/05
 Prep Date.....: 07/14/05 Analysis Date...: 07/21/05
 Prep Batch #....: 5202495
 Dilution Factor: 1.02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acetone	470	200	510	ug/kg	17		SW846 8260B
	470	210	480	ug/kg	0.74 a	6.9	SW846 8260B
Benzene	ND	200	180	ug/kg	86		SW846 8260B
	ND	210	180	ug/kg	87	4.0	SW846 8260B
Bromodichloromethane	ND	200	92	ug/kg	45 a		SW846 8260B
	ND	210	98	ug/kg	47	6.3	SW846 8260B
Bromoform	ND	200	130	ug/kg	66		SW846 8260B
	ND	210	140	ug/kg	67	5.3	SW846 8260B
Bromomethane	ND	200	98	ug/kg	48		SW846 8260B
	ND	210	100	ug/kg	48	3.9	SW846 8260B
2-Butanone	ND	200	340	ug/kg	167		SW846 8260B
	ND	210	330	ug/kg	155	4.7	SW846 8260B
Carbon disulfide	ND	200	130	ug/kg	66		SW846 8260B
	ND	210	130	ug/kg	63	1.5	SW846 8260B
Carbon tetrachloride	ND	200	85	ug/kg	42		SW846 8260B
	ND	210	96	ug/kg	45	11	SW846 8260B
Chlorobenzene	ND	200	170	ug/kg	83		SW846 8260B
	ND	210	180	ug/kg	84	4.4	SW846 8260B
Chloroethane	ND	200	87	ug/kg	42		SW846 8260B
	ND	210	89	ug/kg	42	2.9	SW846 8260B
Chloroform	ND	200	170	ug/kg	84		SW846 8260B
	ND	210	180	ug/kg	84	3.0	SW846 8260B
Chloromethane	8.0	200	160	ug/kg	74		SW846 8260B
	8.0	210	160	ug/kg	73	2.6	SW846 8260B
Dibromochloromethane	ND	200	99	ug/kg	48		SW846 8260B
	ND	210	100	ug/kg	50	5.8	SW846 8260B
1,1-Dichloroethane	ND	200	170	ug/kg	85		SW846 8260B
	ND	210	180	ug/kg	86	3.8	SW846 8260B
1,2-Dichloroethane	ND	200	180	ug/kg	89		SW846 8260B
	ND	210	180	ug/kg	87	0.60	SW846 8260B
1,1-Dichloroethene	ND	200	170	ug/kg	81		SW846 8260B
	ND	210	170	ug/kg	79	0.51	SW846 8260B
cis-1,2-Dichloroethene	ND	200	170	ug/kg	81		SW846 8260B
	ND	210	170	ug/kg	79	0.95	SW846 8260B
trans-1,2-Dichloroethene	ND	200	170	ug/kg	83		SW846 8260B
	ND	210	180	ug/kg	83	3.4	SW846 8260B
1,2-Dichloropropane	ND	200	180	ug/kg	89		SW846 8260B
	ND	210	180	ug/kg	87	0.85	SW846 8260B
cis-1,3-Dichloropropene	ND	200	140	ug/kg	67		SW846 8260B
	ND	210	140	ug/kg	64	0.98	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFENM1AD-MS Matrix.....: SO
MS Lot-Sample #: A5G130319-069 HFENM1AE-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
trans-1,3-Dichloropropene	ND	200	120	ug/kg	59		SW846 8260B
	ND	210	140	ug/kg	65	13	SW846 8260B
Ethylbenzene	ND	200	170	ug/kg	82		SW846 8260B
	ND	210	180	ug/kg	85	6.9	SW846 8260B
2-Hexanone	ND	200	130	ug/kg	63		SW846 8260B
	ND	210	140	ug/kg	67	9.3	SW846 8260B
Methylene chloride	ND	200	180	ug/kg	89		SW846 8260B
	ND	210	180	ug/kg	86	0.70	SW846 8260B
4-Methyl-2-pentanone	ND	200	140	ug/kg	70		SW846 8260B
	ND	210	140	ug/kg	67	1.8	SW846 8260B
Methyl tert-butyl ether	ND	200	160	ug/kg	78		SW846 8260B
	ND	210	160	ug/kg	74	1.0	SW846 8260B
Styrene	ND	200	150	ug/kg	73		SW846 8260B
	ND	210	150	ug/kg	73	4.1	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	200	150	ug/kg	75		SW846 8260B
	ND	210	150	ug/kg	72	1.1	SW846 8260B
Tetrachloroethene	ND	200	170	ug/kg	83		SW846 8260B
	ND	210	180	ug/kg	86	6.7	SW846 8260B
Toluene	ND	200	180	ug/kg	89		SW846 8260B
	ND	210	200	ug/kg	93	8.2	SW846 8260B
1,1,1-Trichloroethane	ND	200	140	ug/kg	71		SW846 8260B
	ND	210	150	ug/kg	72	4.4	SW846 8260B
1,1,2-Trichloroethane	ND	200	180	ug/kg	86		SW846 8260B
	ND	210	180	ug/kg	87	3.6	SW846 8260B
Trichloroethene	100	200	240	ug/kg	67		SW846 8260B
	100	210	490	ug/kg	185	69	SW846 8260B
	Qualifiers: a,p						
Vinyl chloride	ND	200	180	ug/kg	87		SW846 8260B
	ND	210	190	ug/kg	91	7.8	SW846 8260B
Xylenes (total)	ND	610	480	ug/kg	79		SW846 8260B
	ND	630	510	ug/kg	80	4.3	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(59 - 138)
	78	(59 - 138)
1,2-Dichloroethane-d4	94	(61 - 130)
	90	(61 - 130)
Toluene-d8	93	(60 - 143)
	92	(60 - 143)
4-Bromofluorobenzene	90	(47 - 158)
	88	(47 - 158)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A5G130319
MS Lot-Sample #: A5G130319-069

Work Order #...: HFENM1AD-MS
HFENM1AE-MSD

Matrix.....: SO

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

- a Spiked analyte recovery is outside stated control limits.
- p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A5G130319 Work Order #....: HFENM1AD-MS Matrix.....: SO
 MS Lot-Sample #: A5G130319-069 HFENM1AE-MSD
 Date Sampled...: 07/12/05 09:15 Date Received...: 07/13/05
 Prep Date.....: 07/14/05 Analysis Date...: 07/21/05
 Prep Batch #....: 5202495
 Dilution Factor: 1.02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acetone	17 0.74 a	(10 - 200) (10 - 200)	6.9	(0-66)	SW846 8260B
Benzene	86 87	(55 - 138) (55 - 138)	4.0	(0-20)	SW846 8260B
Bromodichloromethane	45 a 47	(47 - 131) (47 - 131)	6.3	(0-51)	SW846 8260B
Bromoform	66 67	(26 - 141) (26 - 141)	5.3	(0-64)	SW846 8260B
Bromomethane	48 48	(15 - 152) (15 - 152)	3.9	(0-72)	SW846 8260B
2-Butanone	167 155	(21 - 195) (21 - 195)	4.7	(0-60)	SW846 8260B
Carbon disulfide	66 63	(27 - 149) (27 - 149)	1.5	(0-73)	SW846 8260B
Carbon tetrachloride	42 45	(32 - 143) (32 - 143)	11	(0-68)	SW846 8260B
Chlorobenzene	83 84	(49 - 139) (49 - 139)	4.4	(0-22)	SW846 8260B
Chloroethane	42 42	(32 - 140) (32 - 140)	2.9	(0-66)	SW846 8260B
Chloroform	84 84	(59 - 128) (59 - 128)	3.0	(0-46)	SW846 8260B
Chloromethane	74 73	(28 - 130) (28 - 130)	2.6	(0-81)	SW846 8260B
Dibromochloromethane	48 50	(44 - 135) (44 - 135)	5.8	(0-61)	SW846 8260B
1,1-Dichloroethane	85 86	(56 - 130) (56 - 130)	3.8	(0-54)	SW846 8260B
1,2-Dichloroethane	89 87	(56 - 126) (56 - 126)	0.60	(0-38)	SW846 8260B
1,1-Dichloroethene	81 79	(43 - 147) (43 - 147)	0.51	(0-27)	SW846 8260B
cis-1,2-Dichloroethene	81 79	(48 - 127) (48 - 127)	0.95	(0-52)	SW846 8260B
trans-1,2-Dichloroethene	83 83	(47 - 127) (47 - 127)	3.4	(0-58)	SW846 8260B
1,2-Dichloropropane	89 87	(54 - 125) (54 - 125)	0.85	(0-43)	SW846 8260B
cis-1,3-Dichloropropene	67 64	(30 - 138) (30 - 138)	0.98	(0-49)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A5G130319 Work Order #...: HFENM1AD-MS Matrix.....: SO
MS Lot-Sample #: A5G130319-069 HFENM1AE-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
trans-1,3-Dichloropropene	59	(34 - 134)			SW846 8260B
	65	(34 - 134)	13	(0-57)	SW846 8260B
Ethylbenzene	82	(36 - 133)			SW846 8260B
	85	(36 - 133)	6.9	(0-72)	SW846 8260B
2-Hexanone	63	(20 - 190)			SW846 8260B
	67	(20 - 190)	9.3	(0-70)	SW846 8260B
Methylene chloride	89	(45 - 129)			SW846 8260B
	86	(45 - 129)	0.70	(0-49)	SW846 8260B
4-Methyl-2-pentanone	70	(42 - 143)			SW846 8260B
	67	(42 - 143)	1.8	(0-60)	SW846 8260B
Methyl tert-butyl ether	78	(70 - 130)			SW846 8260B
	74	(70 - 130)	1.0	(0-30)	SW846 8260B
Styrene	73	(23 - 136)			SW846 8260B
	73	(23 - 136)	4.1	(0-65)	SW846 8260B
1,1,2,2-Tetrachloroethane	75	(33 - 162)			SW846 8260B
	72	(33 - 162)	1.1	(0-90)	SW846 8260B
Tetrachloroethene	83	(31 - 137)			SW846 8260B
	86	(31 - 137)	6.7	(0-81)	SW846 8260B
Toluene	89	(46 - 147)			SW846 8260B
	93	(46 - 147)	8.2	(0-24)	SW846 8260B
1,1,1-Trichloroethane	71	(48 - 132)			SW846 8260B
	72	(48 - 132)	4.4	(0-57)	SW846 8260B
1,1,2-Trichloroethane	86	(58 - 128)			SW846 8260B
	87	(58 - 128)	3.6	(0-52)	SW846 8260B
Trichloroethene	67	(46 - 143)			SW846 8260B
	185 a,p	(46 - 143)	69	(0-23)	SW846 8260B
Vinyl chloride	87	(30 - 136)			SW846 8260B
	91	(30 - 136)	7.8	(0-80)	SW846 8260B
Xylenes (total)	79	(33 - 135)			SW846 8260B
	80	(33 - 135)	4.3	(0-78)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	82	(59 - 138)
	78	(59 - 138)
1,2-Dichloroethane-d4	94	(61 - 130)
	90	(61 - 130)
Toluene-d8	93	(60 - 143)
	92	(60 - 143)
4-Bromofluorobenzene	90	(47 - 158)
	88	(47 - 158)

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A5G130319 Work Order #...: HFENM1AD-MS Matrix.....: SO
MS Lot-Sample #: A5G130319-069 HFENM1AE-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>

NOTE(S) :

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a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A5G130319

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	ND	Work Order #: HFFLA1AA 10.0	%	MB Lot-Sample #: A5G140000-095 MCAWW 160.3 MOD	07/13-07/14/05	5195095
		Dilution Factor: 1				
Percent Solids	ND	Work Order #: HFFK11AA 10.0	%	MB Lot-Sample #: A5G140000-097 MCAWW 160.3 MOD	07/13-07/14/05	5195097
		Dilution Factor: 1				
Percent Solids	ND	Work Order #: HFFLD1AA 10.0	%	MB Lot-Sample #: A5G140000-101 MCAWW 160.3 MOD	07/13-07/14/05	5195101
		Dilution Factor: 1				
Percent Solids	ND	Work Order #: HFFLE1AA 10.0	%	MB Lot-Sample #: A5G140000-104 MCAWW 160.3 MOD	07/13-07/14/05	5195104
		Dilution Factor: 1				
Percent Solids	ND	Work Order #: HFFLF1AA 10.0	%	MB Lot-Sample #: A5G140000-106 MCAWW 160.3 MOD	07/13-07/14/05	5195106
		Dilution Factor: 1				

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEJ1-SMP
HFEJ1-DUP

Matrix.....: SO

Date Sampled....: 07/11/05 10:17 Date Received...: 07/13/05

% Moisture.....: 2.4

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.7	97.8	%	0.16	(0-20)	SD Lot-Sample #: A5G130319-010 MCAWW 160.3 MOD	07/13-07/14/05	5195095

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEKL-SMP
HFEKL-DUP

Matrix.....: SO

Date Sampled....: 07/11/05 12:52 Date Received...: 07/13/05

% Moisture.....: 2.5

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.5	97.9	%	0.33	(0-20)	SD Lot-Sample #: A5G130319-021 MCAWW 160.3 MOD	07/13-07/14/05	5195095
Dilution Factor: 1								

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEK9-SMP
HFEK9-DUP

Matrix.....: SO

Date Sampled....: 07/11/05 14:15 Date Received...: 07/13/05

% Moisture.....: 1.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	98.8	95.1	%	3.9	(0-20)	MCAWW 160.3 MOD	07/13-07/14/05	5195097

SD Lot-Sample #: A5G130319-032
Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEVW-SMP
HFEVW-DUP

Matrix.....: SOLID

Date Sampled....: 07/13/05 14:00 Date Received...: 07/13/05

% Moisture.....: 36

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	64.3	70.6	%	9.3	(0-20)	SD Lot-Sample #: A5G130347-002 MCAWW 160.3 MOD	07/13-07/14/05	5195097

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319 Work Order #....: HFEMT-SMP Matrix.....: SO

HFEMT-DUP

Date Sampled....: 07/12/05 08:05 Date Received...: 07/13/05

% Moisture.....: 1.7

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	98.3	98.2	%	0.081	(0-20)	SD Lot-Sample #: A5G130319-055 MCAWW 160.3 MOD	07/13-07/14/05	5195101

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEMX-SMP
HFEMX-DUP

Matrix.....: SO

Date Sampled...: 07/12/05 08:10

Date Received...: 07/13/05

% Moisture.....: 3.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	96.8	96.1	%	0.77	(0-20)	SD Lot-Sample #: A5G130319-057 MCAWW 160.3 MOD	07/13-07/14/05	5195101
Dilution Factor: 1								

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFENM-SMP
HFENM-DUP

Matrix.....: SO

Date Sampled....: 07/12/05 09:15 Date Received...: 07/13/05

% Moisture.....: 3.0

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.0	97.5	%	0.48	(0-20)	SD Lot-Sample #: A5G130319-069 MCAWW 160.3 MOD	07/13-07/14/05	5195104

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: A5G130319

Work Order #....: HFEN0-SMP
HFEN0-DUP

Matrix.....: SO

Date Sampled....: 07/12/05 09:37 Date Received...: 07/13/05

% Moisture.....: 3.1

PARAM RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids					SD Lot-Sample #: A5G130319-074		
96.9	97.4	%	0.58	(0-20)	MCAWW 160.3 MOD	07/13-07/14/05	5195104

Dilution Factor: 1

C

Matrix.....: SOLID

DUPLICATE

Dilution Factor: 1

(

Matrix.....: SOLID

% Moisture.....: 5.8

Dilution Factor: 1

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Client Information:

Company: CPLA	Report To: Kathy Shaw
Address: 19996 Skelton	Copy To: Bryant Miller
Plymouth, MI	Invoice To: Charles Kuntz
	P.O.:
Phone: 734 453-5123	Project Name: GM-Grand Rapids
Fax: 734 453-5201	Project Number: 173600-10
Email:	

PAGE 1 OF 2

Laboratory: STL - North Canton
Laboratory Location: North Canton, OH
Laboratory Contact: Denise Hefler
Requested Due Date: TAT: 2wK
QA/QC Requirements:

ID# Nº 01287
SSOW Ref. Code: E030005

Sample Identification:

Valid Matrix Codes:	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	HCl	H2SO4	HNO3	NaOH	Other: MeOH	Analysis and Method	Remarks/Lab ID
WG Groundwater WB Borehole Water WS Surface Water SO Soil SE Sediment See Back for Additional Codes												
50-173600-071105-DCN-409	50	7-11-05	955	2	1						TCL VOCs	
-410			957	2	1							
-411			1000	2	1							
-412			1002	2	1							
-413			1005	2	1							
-414			1007	2	1							
-415			1010	2	1							
-416			1012	2	1							
-417			1015	2	1							
-418			1017	5	2							
-419			1225	2	1							
-420			1230	2	1							
-421			1232	2	1							
-422			1235	2	1							
-423			1237	2	1							

TOTAL NUMBER OF CONTAINERS

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
2	2	CEA	7-12-05	1630	David e. Huss	7-13-05	9:30
IRBILL NO. 674106473760							
Sample Condition 3771							
Temp in °C							
Received on Ice	Y/N						
Sealed Cooler	Y/N						
Samples Intact	Y/N						

Additional Comments:

END OF BATCH

Sampler Name: David e. Huss
Sampler Signature: <i>[Signature]</i>
Date: 7-12-05

Client Information:

Company: CPA	Report To: K. Shann
Address: 1996 Sheldon	Copy To: B.M. Miller
Plymouth, MI	Invoice To: D. Stewart
	P.O.:
Site: 734 453-5123	Project Name: GM-G-Deposits
Cell: 734 453-5123	Project Number: 17340-13
Mail:	

PAGE 2 OF 7

Laboratory: STL-N. Canton
Laboratory Location: N. Canton OH
Laboratory Contact: D. Heckler
Requested Due Date:
QA/QC Requirements:
TAT: 2 wk

ID # **Nº 01288**

SSOW Ref. Code: **E030005**

Sample Identification:

Valid Matrix Codes:	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	HCl	H2SO4	HNO3	NaOH	Other: MeOH	Analysis and Method	Remarks/Lab ID
WG: Groundwater WB: Borehole Water WS: Surface Water SO: Soil SE: Sediment See Back for Additional Codes												
58-173 6007105-DCH-429	58	7-11-05	1240	2							TCL VOCs	
-425			1242	2								
-426			1245	2								
-427			1247	2								
-428			1250	2								
-429			1252	2								
-430			1315	2								
-431			1317	2								
-432			1320	2								
-433			1322	2								
-434			1325	2								
-435			1327	2								
-436			1330	2								
-437			1335	2								
-438			1337	2								

TOTAL NUMBER OF CONTAINERS

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FED EX	2	CPA	7-12-05	1630	David C. Rues	7/13/05	9:32

Sample Condition

Temp in C	
Received on Ice	Y/N
Cooled Cooler	Y/N
Samples Intact	Y/N

Additional Comments:

END OF BATCH

Sampler Name: David C. Rues
Sampler Signature: [Signature]
Date: 7-12-05

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Client Information:

Company: CH2A	Report To: L. Shaws
Address: 14496 Skelton	Copy To: B. M. 114
Phychem-IL, MS	Invoice To: D. Stewart
P.O.:	
Job: 7344535123	Project Name: CH2A-0-Rep. 0
C: 7344535201	Project Number: 173600-10
Mail:	

PAGE 3 OF 7

Laboratory: STL-N. Canton
Laboratory Location: N. Canton, OH
Laboratory Contact: D. Hecker
Requested Due Date:
QA/QC Requirements:
TAT: 2.5K

ID # **No 01289**

SSON Ref Code: **E030005**

Sample Identification:

Sample Identification	Valid Matrix Codes: W/G Groundwater W/B Borehole Water W/S Surface Water S/O Soil S/F Sediment See Back for Additional Codes	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	Preservative				Other: meOH	Analysis and Method	Remarks/Lab ID	
							HCl	H2SO4	HNO3	NaOH				
SO-173606-071105-De2-439		50	7-11-05	1340	2						3	TCL VOCs		ms/msd
	-440			1415	2									
	-444			1420	2									
	-442			1425	2									
	-443			1427	2									
	-444			1430	2									
	-445			1432	2									
	-446			1435	2									
	-447			1440	2									
	-448			1442	2									
	-449			1445	2									
	-450			1520	2									
	-451			1522	2									
	-452			1535	2									
	-453			1530	2									

TOTAL NUMBER OF CONTAINERS

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FEDEX	2	CH2A	7/20/05	1630	David C. Evans	7/20/05	9:38

Sample Condition

emp in C	Y / N
ceived on Ice	Y / N
aled Cooler	Y / N
amples Intact	Y / N

Additional Comments:

END OF BATCH

Sampler Name: David C. Evans
Sampler Signature: <i>[Signature]</i>
Date: 7-12-05

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Client Information:

Company: <u>CPA</u>	Report To: <u>K. Shaw</u>
Address: <u>14496 Skeldar</u>	Copy To: <u>B. Miller</u>
<u>Plymouth, MI</u>	Invoice To: <u>D. Stewart</u>
	P.O.:
Phone: <u>734 453 5123</u>	Project Name: <u>GM-Cr Repids</u>
Fax: <u>734 453 5201</u>	Project Number: <u>17360-10</u>
Email:	

PAGE 6 OF 7

Laboratory: <u>SP-N. Canton</u>
Laboratory Location: <u>N. Canton, OH</u>
Laboratory Contact: <u>D. Heckler</u>
Requested Due Date: <u>TAT: 2 w/c</u>
QA/QC Requirements:

ID # Nº 01283

SSOW Ref. Code: E030005

Sample Identification:

Valid Matrix Codes: W/G Groundwater W/B Borehole Water W/S Surface Water SO Soil SE Sediment See Back for Additional Codes	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	HCl	H2SO4	HNO3	NaOH	Other: <u>MeOH</u>	Analysis and Method	Remarks/Lab ID
SO-17360-071205-DCR-489	50	7-12-05	942	2	1							
-485			945	2	1						X	
-486			950	2	1						X	
-487			952	2	1						X	
-488			955	2	1						X	
-489			957	2	1						X	
-490			1000	2	1						X	
-491			1105	2	1						X	
-492			1107	2	1						X	
-493			1110	2	1						X	
-494			1112	2	1						X	
-495			1115	2	1						X	
-496			1117	2	1						X	
-497			1120	2	1						X	
-498			1125	2	1						X	

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
<u>COOL</u>	<u>2</u>	<u>ALCANA</u>	<u>7-12-05</u>	<u>1630</u>	<u>Wanda Miller</u>	<u>7/18/05</u>	<u>9:30</u>
IRBIL NO.							

Sample Condition	Temp in °C	Received on Ice	Calcd Cooler	Samples Intact
		Y/N	Y/N	Y/N

Additional Comments:

END OF BATCH-1

Sampler Name: <u>David C. Buser</u>
Sampler Signature: <u>[Signature]</u>
Date: <u>7-12-05</u>

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately:

375

STL Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: A-130319

Client: CEA

Project: Sand Rapids

Quote#: _____

Cooler Received on: 7/13/05

Opened on: 7/13/05

by: Diana Mites
 (Signature)

Fedx ☒ Client Drop Off ☐ UPS ☐ DHL ☐ FAS ☐ Other: _____

STL Cooler No# back Foam Box ☐ Client Cooler ☐ Other ☒

1. Were custody seals on the outside of the cooler? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒

If YES, Quantity _____

Were the custody seals signed and dated?

Yes ☒ No ☐ NA ☐

2. Shipper's packing slip attached to this form?

Yes ☒ No ☐ NA ☐

3. Did custody papers accompany the samples? Yes ☐ No ☒

Relinquished by client? Yes ☐ No ☒

4. Did you sign the custody papers in the appropriate place?

Yes ☐ No ☐

5. Packing material used: Bubble Wrap ☒ Foam ☒ None ☐

Other: _____

6. Cooler temperature upon receipt _____ °C (see back of form for multiple coolers/temp)

METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H₂O Slurry ☐

COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)?

Yes ☒ No ☐

8. Could all bottle labels and/or tags be reconciled with the COC?

Yes ☒ No ☐

9. Were samples at the correct pH? (record below/on back)

Yes ☐ No ☐ NA ☒

10. Were correct bottles used for the tests indicated?

Yes ☒ No ☐

11. Were air bubbles >6 mm in any VOA vials?

Yes ☐ No ☐ NA ☒

12. Sufficient quantity received to perform indicated analyses?

Yes ☒ No ☐

Contacted PM _____ Date: _____ by: _____ via Voice Mail ☐ Verbal ☐ Other ☐

Concerning: _____

1. CHAIN OF CUSTODY

The following discrepancies occurred:

2. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

3. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in sample receiving to meet recommended pH level(s). Nitric Acid Lot # 051105-HNO₃; Sulfuric Acid Lot # 102804-H₂SO₄; Sodium Hydroxide Lot # -041305 -NaOH; Hydrochloric Acid Lot # 100504-HCl; Sodium Hydroxide and Zinc Acetate Lot # 071604-CH₃COO₂ZN/NaOH

Sample(s) _____ were received with bubble > 6 mm in diameter (cc: PM)

4. Other (see below or back)

Client ID	pH	Date	Initials

STL Cooler Receipt Form/Narrative North Canton Facility			
<u>Client ID</u>	<u>pH</u>	<u>Date</u>	<u>Initials</u>
<u>Cooler</u>	<u>Temp</u>	<u>Method</u>	<u>Coolant</u>
M = 117 M = 041	3.6 °C 2.2 °C	IR I	ICE I
<u>Discrepancies Cont.</u>			

END OF REPORT

ATTACHMENT C
DATA VALIDATION MEMORANDUMS



**CONESTOGA-ROVERS
& ASSOCIATES**

14496 Sheldon Road, Suite #200
Plymouth, Michigan 48170
Telephone: (734) 453-5123 Fax: (734) 453-5201
www.CRAworld.com

MEMORANDUM

TO: Gary Klepper REF. NO.: 17360-09
FROM: Kathy Shaw /tl/44/Det *[initials]* DATE: October 20, 2004
RE: Data Quality Assessment and Validation
Investigative Soil Borings
GM Grand Rapids Site – Grand Rapids, Michigan

The following details a quality assessment and validation of the analytical data resulting from the July 14 and 15, 2004, collection of 55 soil samples from the GM Grand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories, Inc in North Canton, Ohio (STL) in accordance with Method 8260B, SW-846, from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", 3rd Edition and Promulgated Updates, November 1986. The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP).¹

Sample Quantitation

The laboratory reported detected concentrations of volatile organic compounds (VOC), below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J". These concentrations should be qualified as estimated (J) values unless otherwise qualified in this memorandum.

Holding Time Period and Sample Analysis

The holding time periods for VOC analysis is 48 hours until sample preservation and 14 days from sample collection until completion of analysis. The samples, as indicated by the sample collection, extraction and analysis dates on the chain-of-custody forms and analytical reports provided by STL, were prepared and analyzed within the required holding time periods.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The samples presented in Table 2 should be qualified due to laboratory contamination. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

¹ Application of quality assurance criteria was consistent with "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999.

Laboratory Control Sample / Laboratory Control Sample Duplicate Analysis

The laboratory control sample and laboratory control sample duplicate (LCS/LCSD) analyses serve as a monitor of the overall performance in all steps of the sample analysis. The LCS percent recoveries were within the laboratory control limits, indicating that an acceptable level of overall performance was achieved.

Laboratory precision was verified by the relative percent difference (RPD) of the LCS/LCSD when a matrix spike/matrix spike duplicate was not analyzed. The RPDs were within the laboratory control limits, indicating that an acceptable level of overall laboratory precision was achieved.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the organic analyses was monitored by assessing the results of surrogate compound percent recoveries. The surrogate recovery acceptance criteria was met for all samples.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

**SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Sample Identification</i>	<i>Sample Location</i>	<i>Sample Depth ft-bgs</i>	<i>Matrix</i>	<i>Parameter</i>
CRA SDG: G-13				
	STL Lot No.: A4G150200			
S-17360-071404-DCR-078	SB3-04	0'-2'	Soil	TCL VOC
S-17360-071404-DCR-079	SB3-04	2'-4'	Soil	TCL VOC
S-17360-071404-DCR-080	SB3-04	4'-6'	Soil	TCL VOC
S-17360-071404-DCR-081	SB3-04	6'-8'	Soil	TCL VOC
S-17360-071404-DCR-082	SB3-04	8'-10'	Soil	TCL VOC
S-17360-071404-DCR-083	SB3-04	10'-12'	Soil	TCL VOC
S-17360-071404-DCR-084	SB3-04	12'-14'	Soil	TCL VOC
S-17360-071404-DCR-085	SB3-04	14'-16'	Soil	TCL VOC
S-17360-071404-DCR-086	SB3-04	16'-18'	Soil	TCL VOC
S-17360-071404-DCR-087	SB3-04	18'-20'	Soil	TCL VOC
S-17360-071404-DCR-088	SB3-04	20'-22'	Soil	TCL VOC
S-17360-071404-DCR-089	SB2-04	0'-2'	Soil	TCL VOC
S-17360-071404-DCR-090	SB2-04	2'-4'	Soil	TCL VOC
S-17360-071404-DCR-091	SB2-04	4'-6'	Soil	TCL VOC
S-17360-071404-DCR-092	SB2-04	6'-8'	Soil	TCL VOC
S-17360-071404-DCR-093	SB2-04	8'-10'	Soil	TCL VOC
S-17360-071404-DCR-094	SB2-04	10'-12'	Soil	TCL VOC
S-17360-071404-DCR-095	SB2-04	12'-14'	Soil	TCL VOC
S-17360-071404-DCR-096	SB2-04	14'-16'	Soil	TCL VOC
S-17360-071404-DCR-097	SB2-04	16'-18'	Soil	TCL VOC
S-17360-071404-DCR-098	SB2-04	18'-20'	Soil	TCL VOC
S-17360-071404-DCR-099	SB2-04	20'-22'	Soil	TCL VOC
CRA SDG: G-14				
	STL Lot No.: A4G160169			
S-17360-071504-DCR-100	SB5-04	0'-2'	Soil	TCL VOC
S-17360-071504-DCR-101	SB5-04	2'-4'	Soil	TCL VOC
S-17360-071504-DCR-102	SB5-04	4'-6'	Soil	TCL VOC
S-17360-071504-DCR-103	SB5-04	6'-8'	Soil	TCL VOC
S-17360-071504-DCR-104	SB5-04	8'-10'	Soil	TCL VOC
S-17360-071504-DCR-105	SB5-04	10'-12'	Soil	TCL VOC
S-17360-071504-DCR-106	SB5-04	12'-14'	Soil	TCL VOC
S-17360-071504-DCR-107	SB5-04	14'-16'	Soil	TCL VOC
S-17360-071504-DCR-108	SB5-04	16'-18'	Soil	TCL VOC
S-17360-071504-DCR-109	SB5-04	18'-20'	Soil	TCL VOC
S-17360-071504-DCR-110	SB5-04	20'-22'	Soil	TCL VOC
S-17360-071504-DCR-111	SB4-04	0'-2'	Soil	TCL VOC

TABLE 1

**SAMPLE SUMMARY
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Sample Identification</i>	<i>Sample Location</i>	<i>Sample Depth ft-bgs</i>	<i>Matrix</i>	<i>Parameter</i>
CRA SDG: G-14 (Cont'd)	STL Lot No.: A4G160169			
S-17360-071504-DCR-112	SB4-04	2'-4'	Soil	TCL VOC
S-17360-071504-DCR-113	SB4-04	4'-6'	Soil	TCL VOC
S-17360-071504-DCR-114	SB4-04	6'-8'	Soil	TCL VOC
S-17360-071504-DCR-115	SB4-04	8'-10'	Soil	TCL VOC
S-17360-071504-DCR-116	SB4-04	10'-12'	Soil	TCL VOC
S-17360-071504-DCR-117	SB4-04	12'-14'	Soil	TCL VOC
S-17360-071504-DCR-118	SB4-04	14'-16'	Soil	TCL VOC
S-17360-071504-DCR-119	SB4-04	16'-18'	Soil	TCL VOC
S-17360-071504-DCR-120	SB4-04	18'-20'	Soil	TCL VOC
S-17360-071504-DCR-121	SB4-04	20'-22'	Soil	TCL VOC
S-17360-071504-DCR-122	SB1-04	0'-2'	Soil	TCL VOC
S-17360-071504-DCR-123	SB1-04	2'-4'	Soil	TCL VOC
S-17360-071504-DCR-124	SB1-04	4'-6'	Soil	TCL VOC
S-17360-071504-DCR-125	SB1-04	6'-8'	Soil	TCL VOC
S-17360-071504-DCR-126	SB1-04	8'-10'	Soil	TCL VOC
S-17360-071504-DCR-127	SB1-04	10'-12'	Soil	TCL VOC
S-17360-071504-DCR-128	SB1-04	12'-14'	Soil	TCL VOC
S-17360-071504-DCR-129	SB1-04	14'-16'	Soil	TCL VOC
S-17360-071504-DCR-130	SB1-04	16'-18'	Soil	TCL VOC
S-17360-071504-DCR-131	SB1-04	18'-20'	Soil	TCL VOC
S-17360-071504-DCR-132	SB1-04	20'-22'	Soil	TCL VOC

TCL - Target Compound List
VOC - Volatile Organic Compounds

TABLE 2
SUMMARY OF QUALIFIED SAMPLE DATA DUE TO
METHOD BLANK CONTAMINATION
GM GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

<i>Analysis</i>	<i>Parameter</i>	<i>Associated Samples</i>	<i>Qualified Sample Result¹</i>
TCL VOC (µg/L)	Chloromethane	S-17360-071404-DCR-078	ND (540) U
		S-17360-071404-DCR-079	ND (320) U
		S-17360-071404-DCR-081	ND (400) U
		S-17360-071404-DCR-082	ND (270) U
		S-17360-071404-DCR-083	ND (260) U
		S-17360-071404-DCR-084	ND (250) U
		S-17360-071404-DCR-085	ND (260) U
		S-17360-071404-DCR-086	ND (290) U
		S-17360-071404-DCR-087	ND (270) U
		S-17360-071404-DCR-088	ND (260) U
		S-17360-071404-DCR-090	ND (290) U
		S-17360-071404-DCR-095	ND (270) U
		S-17360-071404-DCR-096	ND (290) U
		S-17360-071504-DCR-102	ND (330) U
		S-17360-071504-DCR-107	ND (280) U
		S-17360-071504-DCR-124	ND (280) U
		S-17360-071504-DCR-128	ND (290) U

¹ The analyte should be qualified for the listed samples as:

ND () U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit in parenthesis.



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MEMORANDUM

TO:	Gary Klepper	REF. NO.:	17360
FROM:	Kathy Shaw /tl/1/GM <i>KMS</i>	DATE:	August 15, 2005
RE:	Data Quality Assessment and Validation 2005 Soil Investigation General Motors Grand Rapids Site – Grand Rapids, Michigan	SSOW:	17307-030005

The following details a quality assessment and validation of the analytical data resulting from the July 11 and 12, 2005, collection of 90 soil, and three (3) quality control samples from the General Motors Grand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories, Inc. in North Canton, Ohio (STL) in accordance with the methodologies presented in Table 2.

The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP). Application of quality assurance criteria was consistent with following guidance documents:

- i. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999; and
- ii. "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1994.

These guidelines are collectively referred to as "NFGs" in this Memorandum.

The following elements are addressed in this memorandum with qualification if necessary in the identified tables:

	Data Review Element	Qualification Table
1	Sample Quantitation	NA
2	Sample Preservation and Holding Times	NA
3	Method Blank Samples	Table 3
5	Surrogate Compounds – Organic Analyses	NA
6	Matrix Spike/Matrix Spike Duplicate Analyses	Table 4
7	Laboratory Control Sample Analysis/Laboratory Control Duplicate	Table 5
8	Field Quality Assurance/Quality Control	NA

Sample Quantitation

The laboratory reported detected concentrations of volatile organic compounds (VOC), below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J", these concentrations should be qualified as estimated (J) values unless qualified otherwise in this memorandum.

Sample Preservation and Holding Times

Sample holding time periods and preservation requirements are presented in Table 3. The samples were prepared and/or analyzed with the specified holding time periods. The samples were shipped and maintained in accordance with the samples preservation requirements.

Method Blank Samples

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

The samples presented in Table 3 should be qualified due to laboratory contamination. The laboratory flagged the organic concentrations with a "B", which may be disregarded. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

Surrogate Compounds – Organic Analyses

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. Surrogate percent recoveries are reviewed against the laboratory developed control limits provided in the analytical report. The surrogate recovery acceptance criteria were met for all samples.

Matrix Spike/Matrix Spike Duplicate Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory. The samples selected for MS/MSD analysis are identified in Table 1.

The samples that should be qualified due to violation of MS/MSD percent recovery criteria are outlined in Table 4. The MS/MSD percent recoveries and associated RPD acceptance criteria were met in the remaining sample analyses.

Laboratory Control Sample/Laboratory Control Duplicate Analysis

The laboratory control sample and laboratory control duplicate (LCS/LCD) analyses serve as a monitor of the overall performance in all steps of the sample analysis and are analyzed with each sample batch. The LCS/LCD percent recoveries were evaluated against method and laboratory established control limits.

The LCS/LCD percent recoveries were within the laboratory control limits or did not warrant qualification, indicating that an acceptable level of overall performance was achieved with the exception of samples presented with qualifiers in Table 5.

Laboratory precision was verified by the RPD of the LCS/LCD when a matrix spike/matrix spike duplicate was not analyzed. The RPDs were within the laboratory control limits, indicating that an acceptable level of overall laboratory precision was achieved.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of two (2) field duplicate sample sets and one (1) trip blank sample.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. The RPDs associated with these duplicate samples must be less than 100 percent for soil samples. Table 6 presents the RPDs of detected analytes in duplicate sample sets. The data indicate that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during aqueous sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. No target analytes were reported as detected in the trip blank sample.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision based on the provided information and may be used with the qualifications noted.

TABLE 1

**SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN**

Sample Identification		Sample Location		Sample Depth		Matrix	QC Sample	Parameter
				Start (ft bgs)	End (ft bgs)			
CRA SDG: 17307-030005		STL Lot No.: A5G130319						
SO-17360-071105-DCR-409		SB13-05		0	2	Soil		TCL VOC X
SO-17360-071105-DCR-410		SB13-05		2	4	Soil		TCL VOC X
SO-17360-071105-DCR-411		SB13-05		4	6	Soil		TCL VOC X
SO-17360-071105-DCR-412		SB13-05		6	8	Soil		TCL VOC X
SO-17360-071105-DCR-413		SB13-05		8	10	Soil		TCL VOC X
SO-17360-071105-DCR-414		SB13-05		10	12	Soil		TCL VOC X
SO-17360-071105-DCR-415		SB13-05		12	14	Soil		TCL VOC X
SO-17360-071105-DCR-416		SB13-05		14	16	Soil		TCL VOC X
SO-17360-071105-DCR-417		SB13-05		16	18	Soil		TCL VOC X
SO-17360-071105-DCR-418		SB13-05		18	20	Soil	MS/MSD	TCL VOC X
SO-17360-071105-DCR-419		SB6-05		0	2	Soil		TCL VOC X
SO-17360-071105-DCR-420		SB6-05		2	4	Soil		TCL VOC X
SO-17360-071105-DCR-421		SB6-05		4	6	Soil		TCL VOC X
SO-17360-071105-DCR-422		SB6-05		6	8	Soil		TCL VOC X
SO-17360-071105-DCR-423		SB6-05		8	10	Soil		TCL VOC X
SO-17360-071105-DCR-424		SB6-05		10	12	Soil		TCL VOC X
SO-17360-071105-DCR-425		SB6-05		12	14	Soil		TCL VOC X
SO-17360-071105-DCR-426		SB6-05		14	16	Soil		TCL VOC X
SO-17360-071105-DCR-427		SB6-05		16	18	Soil		TCL VOC X
SO-17360-071105-DCR-428		SB6-05		18	20	Soil	Duplicate (423)	TCL VOC X
SO-17360-071105-DCR-429		SB6-05		8	10	Soil		TCL VOC X
SO-17360-071105-DCR-430		SB9-05		0	2	Soil		TCL VOC X
SO-17360-071105-DCR-431		SB9-05		2	4	Soil		TCL VOC X
SO-17360-071105-DCR-432		SB9-05		4	6	Soil		TCL VOC X
SO-17360-071105-DCR-433		SB9-05		6	8	Soil		TCL VOC X

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Sample Identification		Sample Location	Sample Depth		Matrix	QC Sample	Parameter
			Start (ft bgs)	End (ft bgs)			
CRA SDG: 17307-030005		STL Lot No.: A5G130319					
SO-17360-071105-DCR-434	SB9-05		8	10	Soil		X
SO-17360-071105-DCR-435	SB9-05		10	12	Soil		X
SO-17360-071105-DCR-436	SB9-05		12	14	Soil		X
SO-17360-071105-DCR-437	SB9-05		14	16	Soil		X
SO-17360-071105-DCR-438	SB9-05		16	18	Soil		X
SO-17360-071105-DCR-439	SB9-05		18	20	Soil		X
SO-17360-071105-DCR-440	SB12-05		0	2	Soil	MS/MSD	X
SO-17360-071105-DCR-441	SB12-05		2	4	Soil		X
SO-17360-071105-DCR-442	SB12-05		4	6	Soil		X
SO-17360-071105-DCR-443	SB12-05		6	8	Soil		X
SO-17360-071105-DCR-444	SB12-05		8	10	Soil		X
SO-17360-071105-DCR-445	SB12-05		10	12	Soil		X
SO-17360-071105-DCR-446	SB12-05		12	14	Soil		X
SO-17360-071105-DCR-447	SB12-05		14	16	Soil		X
SO-17360-071105-DCR-448	SB12-05		16	18	Soil		X
SO-17360-071105-DCR-449	SB12-05		18	20	Soil		X
SO-17360-071105-DCR-450	SB7-05		0	2	Soil	X	
SO-17360-071105-DCR-451	SB7-05		2	4	Soil	X	
SO-17360-071105-DCR-452	SB7-05		4	6	Soil	X	
SO-17360-071105-DCR-453	SB7-05		6	8	Soil	X	
SO-17360-071105-DCR-454	SB7-05		8	10	Soil	X	
SO-17360-071105-DCR-455	SB7-05		10	12	Soil	X	
SO-17360-071105-DCR-456	SB7-05		12	14	Soil	X	
SO-17360-071105-DCR-457	SB7-05		14	16	Soil	X	
SO-17360-071105-DCR-458	SB7-05		16	18	Soil	X	

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Sample Identification	Sample Location	Sample Depth		Matrix	QC Sample	Parameter
		Start (ft bgs)	End (ft bgs)			
STL Lot No.: A5G130319						
CRA SDG: 17307-030005						
SO-17360-071105-DCR-459	SB7-05	18	20	Soil		TCL VOC
SO-17360-071205-DCR-460	SB14-05	0	2	Soil		X
SO-17360-071205-DCR-461	SB14-05	2	4	Soil		X
SO-17360-071205-DCR-462	SB14-05	4	6	Soil		X
SO-17360-071205-DCR-463	SB14-05	6	8	Soil		X
SO-17360-071205-DCR-464	SB14-05	8	10	Soil		X
SO-17360-071205-DCR-465	SB14-05	10	12	Soil		X
SO-17360-071205-DCR-466	SB14-05	12	14	Soil		X
SO-17360-071205-DCR-467	SB14-05	14	16	Soil		X
SO-17360-071205-DCR-468	SB14-05	14	16	Soil	Duplicate (467)	X
SO-17360-071205-DCR-469	SB14-05	16	18	Soil		X
SO-17360-071205-DCR-470	SB14-05	18	20	Soil		X
SO-17360-071205-DCR-471	SB8-05	0	2	Soil		X
SO-17360-071205-DCR-472	SB8-05	2	4	Soil		X
SO-17360-071205-DCR-473	SB8-05	4	6	Soil		X
SO-17360-071205-DCR-474	SB8-05	6	8	Soil		X
SO-17360-071205-DCR-475	SB8-05	8	10	Soil		X
SO-17360-071205-DCR-476	SB8-05	10	12	Soil		X
SO-17360-071205-DCR-477	SB8-05	12	14	Soil	MS/MSD	X
SO-17360-071205-DCR-478	SB8-05	14	16	Soil		X
SO-17360-071205-DCR-479	SB8-05	16	18	Soil		X
SO-17360-071205-DCR-480	SB8-05	18	20	Soil		X
SO-17360-071205-DCR-481	SB10-05	0	2	Soil		X
SO-17360-071205-DCR-482	SB10-05	2	4	Soil		X
SO-17360-071205-DCR-483	SB10-05	4	6	Soil		X

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Sample Identification	Sample Location	Sample Depth Start (ft bgs) End (ft bgs)		Matrix	QC Sample	Parameter
CRA SDG: 17307-030005	STL Lot No.: A5G130319					
SO-17360-071205-DCR-484	SB10-05	6	8	Soil		TCL VOC X
SO-17360-071205-DCR-485	SB10-05	8	10	Soil		TCL VOC X
SO-17360-071205-DCR-486	SB10-05	10	12	Soil		TCL VOC X
SO-17360-071205-DCR-487	SB10-05	12	14	Soil		TCL VOC X
SO-17360-071205-DCR-488	SB10-05	14	16	Soil		TCL VOC X
SO-17360-071205-DCR-489	SB10-05	16	18	Soil		TCL VOC X
SO-17360-071205-DCR-490	SB10-05	18	20	Soil		TCL VOC X
SO-17360-071205-DCR-491	SB11-05	0	2	Soil		TCL VOC X
SO-17360-071205-DCR-492	SB11-05	2	4	Soil		TCL VOC X
SO-17360-071205-DCR-493	SB11-05	4	6	Soil		TCL VOC X
SO-17360-071205-DCR-494	SB11-05	6	8	Soil		TCL VOC X
SO-17360-071205-DCR-495	SB11-05	8	10	Soil		TCL VOC X
SO-17360-071205-DCR-496	SB11-05	10	12	Soil		TCL VOC X
SO-17360-071205-DCR-497	SB11-05	12	14	Soil		TCL VOC X
SO-17360-071205-DCR-498	SB11-05	14	16	Soil		TCL VOC X
SO-17360-071205-DCR-499	SB11-05	16	18	Soil		TCL VOC X
SO-17360-071205-DCR-500	SB11-05	18	20	Soil		TCL VOC X
TB-17360-071205-DCR-501	--	--	--	Methanol	Trip Blank	TCL VOC X

TCL - Target Compound List
VOC - Volatile Organic Compounds
QC - Quality Control
MS/MSD - Matrix Spike /Matrix Spike Duplicate

TABLE 2

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Method</i>	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i>
TCL VOC	SW-846 8260B	Soil	- 48 hours from sample collection to preservation - 14 days from sample preservation to completion of analysis	Iced, 4 ± 2° C

TABLE 3

**SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

Parameter	Analysis Date	Analyte	Blank Result	Sample ID	Sample Result	Units	Qualified Result
TCL VOC	07/18/05	Acetone	340	SO-17360-071105-DCR-409	360 J	µg/kg	550 U
				SO-17360-071105-DCR-410	380 J	µg/kg	590 U
				SO-17360-071105-DCR-411	330 J	µg/kg	560 U
				SO-17360-071105-DCR-412	350 J	µg/kg	600 U
				SO-17360-071105-DCR-413	390 J	µg/kg	600 U
				SO-17360-071105-DCR-414	350 J	µg/kg	580 U
				SO-17360-071105-DCR-415	370 J	µg/kg	600 U
				SO-17360-071105-DCR-416	340 J	µg/kg	590 U
				SO-17360-071105-DCR-417	420 J	µg/kg	590 U
				SO-17360-071105-DCR-418	330 J	µg/kg	600 U
				SO-17360-071105-DCR-419	400 J	µg/kg	600 U
				SO-17360-071105-DCR-420	390 J	µg/kg	610 U
				SO-17360-071105-DCR-421	370 J	µg/kg	570 U
				SO-17360-071105-DCR-422	370 J	µg/kg	570 U
				SO-17360-071105-DCR-423	350 J	µg/kg	560 U
				SO-17360-071105-DCR-424	460 J	µg/kg	720 U
				SO-17360-071105-DCR-425	330 J	µg/kg	570 U
SO-17360-071105-DCR-426	480 J	µg/kg	790 U				
SO-17360-071105-DCR-427	350 J	µg/kg	600 U				
TCL VOC	07/18/05	Bromomethane	60	SO-17360-071105-DCR-422	29 J	µg/kg	190 U
TCL VOC	07/18/05	Chloromethane	14	SO-17360-071105-DCR-410	11 J	µg/kg	200 U
				SO-17360-071105-DCR-411	11 J	µg/kg	190 U
				SO-17360-071105-DCR-412	10 J	µg/kg	200 U
				SO-17360-071105-DCR-413	10 J	µg/kg	200 U
				SO-17360-071105-DCR-414	9.5 J	µg/kg	190 U
				SO-17360-071105-DCR-415	10 J	µg/kg	200 U
				SO-17360-071105-DCR-416	11 J	µg/kg	200 U
				SO-17360-071105-DCR-417	9.9 J	µg/kg	200 U

TABLE 3

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	Analysis Date	Analyte	Blank Result	Sample ID	Sample Result	Units	Qualified Result
TCL VOC	07/18/05	Chloromethane	14	SO-17360-071105-DCR-418	10 J	µg/kg	200 U
				SO-17360-071105-DCR-419	8.3 J	µg/kg	200 U
				SO-17360-071105-DCR-421	7.3 J	µg/kg	190 U
				SO-17360-071105-DCR-422	7.1 J	µg/kg	190 U
				SO-17360-071105-DCR-423	8.0 J	µg/kg	190 U
				SO-17360-071105-DCR-424	9.7 J	µg/kg	240 U
				SO-17360-071105-DCR-425	9.2 J	µg/kg	190 U
				SO-17360-071105-DCR-427	8.5 J	µg/kg	200 U
TCL VOC	07/18/05	Acetone	320	SO-17360-071105-DCR-428	370 J	µg/kg	630 U
				SO-17360-071105-DCR-429	360 J	µg/kg	590 U
				SO-17360-071105-DCR-430	350 J	µg/kg	570 U
				SO-17360-071105-DCR-431	430 J	µg/kg	600 U
				SO-17360-071105-DCR-432	500 J	µg/kg	620 U
				SO-17360-071105-DCR-433	420 J	µg/kg	590 U
				SO-17360-071105-DCR-434	350 J	µg/kg	580 U
				SO-17360-071105-DCR-435	360 J	µg/kg	590 U
				SO-17360-071105-DCR-436	330 J	µg/kg	580 U
				SO-17360-071105-DCR-437	340 J	µg/kg	550 U
				SO-17360-071105-DCR-438	350 J	µg/kg	560 U
				SO-17360-071105-DCR-439	370 J	µg/kg	570 U
				SO-17360-071105-DCR-440	370 J	µg/kg	620 U
				SO-17360-071105-DCR-442	360 J	µg/kg	560 U
				SO-17360-071105-DCR-443	370 J	µg/kg	590 U
				SO-17360-071105-DCR-444	350 J	µg/kg	600 U
				SO-17360-071105-DCR-445	390 J	µg/kg	590 U
				SO-17360-071105-DCR-446	370 J	µg/kg	570 U
				SO-17360-071105-DCR-447	390 J	µg/kg	590 U

TABLE 3

Page 3 of 5

**SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Sample Result</i>	<i>Units</i>	<i>Qualified Result</i>
TCL VOC	07/19/05	Acetone	410	SO-17360-071105-DCR-448	280 J	µg/kg	550 U
				SO-17360-071105-DCR-449	340 J	µg/kg	570 U
				SO-17360-071105-DCR-450	350 J	µg/kg	600 U
				SO-17360-071105-DCR-451	240 J	µg/kg	1100 U
				SO-17360-071105-DCR-452	410 J	µg/kg	580 U
				SO-17360-071105-DCR-453	370 J	µg/kg	550 U
				SO-17360-071105-DCR-454	380 J	µg/kg	580 U
				SO-17360-071105-DCR-455	370 J	µg/kg	610 U
				SO-17360-071105-DCR-456	330 J	µg/kg	580 U
				SO-17360-071105-DCR-457	380 J	µg/kg	670 U
				SO-17360-071105-DCR-458	460 J	µg/kg	780 U
				SO-17360-071105-DCR-459	360 J	µg/kg	610 U
				SO-17360-071205-DCR-460	380 J	µg/kg	600 U
				SO-17360-071205-DCR-461	440 J	µg/kg	710 U
				SO-17360-071205-DCR-462	390 J	µg/kg	630 U
				SO-17360-071205-DCR-463	360 J	µg/kg	590 U
				SO-17360-071205-DCR-464	370 J	µg/kg	590 U
				SO-17360-071205-DCR-465	400 J	µg/kg	640 U
				SO-17360-071205-DCR-466	340 J	µg/kg	570 U
TCL VOC	07/19/05	Chloromethane	9.4	SO-17360-071105-DCR-441	24 J	µg/kg	800 U
				SO-17360-071105-DCR-448	7.4 J	µg/kg	180 U
				SO-17360-071105-DCR-449	7.3 J	µg/kg	190 U
				SO-17360-071105-DCR-450	7.1 J	µg/kg	200 U
				SO-17360-071105-DCR-452	5.5 J	µg/kg	190 U
				SO-17360-071105-DCR-453	5.7 J	µg/kg	180 U
				SO-17360-071105-DCR-456	5.4 J	µg/kg	190 U
				SO-17360-071105-DCR-458	8.9 J	µg/kg	260 U
				SO-17360-071105-DCR-459	6.3 J	µg/kg	200 U
				SO-17360-071205-DCR-460	5.9 J	µg/kg	200 U

TABLE 3

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Sample Result</i>	<i>Units</i>	<i>Qualified Result</i>
TCL VOC	07/19/05	Chloromethane	9.4	SO-17360-071205-DCR-463	5.7 J	µg/kg	200 U
				SO-17360-071205-DCR-464	5.4 J	µg/kg	200 U
				SO-17360-071205-DCR-465	6.1 J	µg/kg	210 U
TCL VOC	07/20/05	Acetone	330	SO-17360-071205-DCR-467	310 J	µg/kg	560 U
				SO-17360-071205-DCR-468	390 J	µg/kg	670 U
				SO-17360-071205-DCR-469	330 J	µg/kg	550 U
				SO-17360-071205-DCR-470	330 J	µg/kg	600 U
				SO-17360-071205-DCR-472	320 J	µg/kg	600 U
				SO-17360-071205-DCR-473	410 J	µg/kg	590 U
				SO-17360-071205-DCR-474	390 J	µg/kg	580 U
				SO-17360-071205-DCR-475	350 J	µg/kg	600 U
				SO-17360-071205-DCR-477	470 J	µg/kg	690 U
				SO-17360-071205-DCR-478	390 J	µg/kg	600 U
				SO-17360-071205-DCR-479	400 J	µg/kg	710 U
				SO-17360-071205-DCR-480	280 J	µg/kg	550 U
				SO-17360-071205-DCR-481	380 J	µg/kg	550 U
				SO-17360-071205-DCR-482	340 J	µg/kg	560 U
				SO-17360-071205-DCR-483	370 J	µg/kg	620 U
				SO-17360-071205-DCR-484	350 J	µg/kg	570 U
				SO-17360-071205-DCR-485	370 J	µg/kg	570 U
				SO-17360-071205-DCR-486	360 J	µg/kg	610 U
TCL VOC	07/20/05	Chloromethane	8.8	SO-17360-071205-DCR-467	5.6 J	µg/kg	190 U
				SO-17360-071205-DCR-469	5.5 J	µg/kg	180 U
				SO-17360-071205-DCR-472	7.9 J	µg/kg	200 U
				SO-17360-071205-DCR-473	6.9 J	µg/kg	200 U
				SO-17360-071205-DCR-474	6.5 J	µg/kg	190 U
				SO-17360-071205-DCR-475	6.3 J	µg/kg	200 U
				SO-17360-071205-DCR-477	8.0 J	µg/kg	230 U

TABLE 3

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Analysis Date</i>	<i>Analyte</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Sample Result</i>	<i>Units</i>	<i>Qualified Result</i>
TCL VOC	07/20/05	Chloromethane	8.8	SO-17360-071205-DCR-481	5.3 J	µg/kg	180 U
				SO-17360-071205-DCR-482	5.7 J	µg/kg	190 U
				SO-17360-071205-DCR-483	6.0 J	µg/kg	210 U
				SO-17360-071205-DCR-484	5.4 J	µg/kg	190 U
				SO-17360-071205-DCR-486	6.6 J	µg/kg	200 U
TCL VOC	07/21/05	Acetone	320	SO-17360-071205-DCR-487	280 J	µg/kg	590 U
				SO-17360-071205-DCR-488	290 J	µg/kg	600 U
				SO-17360-071205-DCR-489	340 J	µg/kg	590 U
				SO-17360-071205-DCR-490	310 J	µg/kg	620 U
				SO-17360-071205-DCR-491	320 J	µg/kg	600 U
				SO-17360-071205-DCR-492	270 J	µg/kg	570 U
				SO-17360-071205-DCR-493	290 J	µg/kg	580 U
				SO-17360-071205-DCR-494	320 J	µg/kg	590 U
				SO-17360-071205-DCR-495	310 J	µg/kg	600 U
				SO-17360-071205-DCR-498	320 J	µg/kg	590 U
TCL VOC	07/21/05	Chloromethane	11	TB-17360-071205-DCR-501	320 J	µg/kg	600 U
				SO-17360-071205-DCR-488	8.2 J	µg/kg	200 U
				SO-17360-071205-DCR-489	7.0 J	µg/kg	200 U
				SO-17360-071205-DCR-490	8.2 J	µg/kg	210 U
				SO-17360-071205-DCR-492	6.0 J	µg/kg	190 U
				SO-17360-071205-DCR-495	6.2 J	µg/kg	200 U
				SO-17360-071205-DCR-498	5.9 J	µg/kg	200 U
				TB-17360-071205-DCR-501	6.7 J	µg/kg	200 U

Notes:

- U - Qualified as Not Detected
 UJ - Estimated Report Limit

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

Parameter	Associated Sample ID	Analyte	MS Recovery (percent)	MSD Recovery (percent)	RPD	Control Limits Recovery (percent)	RPD (percent)	Sample Result	Units	Qualifier
TCL VOC	SO-17360-071105-DCR-418	Bromodichloromethane	41	46	4.9	47-131	51	80 U	µg/kg	UJ
TCL VOC	SO-17360-071105-DCR-440	Dibromochloromethane Trichloroethene	43 594	44 37	15 36	44-135 46-143	61 23	41 U 2200	µg/kg µg/kg	UJ J
TCL VOC	SO-17360-071205-DCR-477	Acetone Bromodichloromethane Trichloroethene	17 45 67	0.74 47 85	6.9 6.3 69	10-200 47-131 46-143	66 51 23	690 U 92 U 100	µg/kg µg/kg µg/kg	UJ UJ J

Notes:

- J - Estimated Concentration
 UJ - Estimated Report Limit
 U - Not present at or above the associated value

TABLE 6

**SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Compound</i>	<i>LCS Date</i>	<i>Associated Sample ID</i>	<i>LCS %Rec</i>	<i>LCD %Rec</i>	<i>RPD (percent)</i>	<i>Control Limits %Rec %RPD</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>
TCL VOC	Bromodichloromethane	7/18/05	SO-17360-071105-DCR-409	75	69	8.0	72-125 30	74 U	µg/kg	UJ
			SO-17360-071105-DCR-410					78 U	µg/kg	UJ
			SO-17360-071105-DCR-411					74 U	µg/kg	UJ
			SO-17360-071105-DCR-412					80 U	µg/kg	UJ
			SO-17360-071105-DCR-413					80 U	µg/kg	UJ
			SO-17360-071105-DCR-414					78 U	µg/kg	UJ
			SO-17360-071105-DCR-415					80 U	µg/kg	UJ
			SO-17360-071105-DCR-416					79 U	µg/kg	UJ
			SO-17360-071105-DCR-417					79 U	µg/kg	UJ
			SO-17360-071105-DCR-418					80 U	µg/kg	UJ
			SO-17360-071105-DCR-419					80 U	µg/kg	UJ
			SO-17360-071105-DCR-420					81 U	µg/kg	UJ
			SO-17360-071105-DCR-421					76 U	µg/kg	UJ
			SO-17360-071105-DCR-422					76 U	µg/kg	UJ
			SO-17360-071105-DCR-423					75 U	µg/kg	UJ
			SO-17360-071105-DCR-424					96 U	µg/kg	UJ
			SO-17360-071105-DCR-425					76 U	µg/kg	UJ
			SO-17360-071105-DCR-426					110 U	µg/kg	UJ
			SO-17360-071105-DCR-427					80 U	µg/kg	UJ
TCL VOC	trans-1,3-Dichloropropene	7/18/05	SO-17360-071105-DCR-409	65	69	6.8	67-123 30	37 U	µg/kg	UJ
			SO-17360-071105-DCR-410					39 U	µg/kg	UJ
			SO-17360-071105-DCR-411					37 U	µg/kg	UJ
			SO-17360-071105-DCR-412					40 U	µg/kg	UJ
			SO-17360-071105-DCR-413					40 U	µg/kg	UJ
			SO-17360-071105-DCR-414					39 U	µg/kg	UJ
			SO-17360-071105-DCR-415					40 U	µg/kg	UJ
			SO-17360-071105-DCR-416					40 U	µg/kg	UJ
			SO-17360-071105-DCR-417					40 U	µg/kg	UJ
			SO-17360-071105-DCR-418					40 U	µg/kg	UJ
			SO-17360-071105-DCR-419					40 U	µg/kg	UJ
			SO-17360-071105-DCR-420					40 U	µg/kg	UJ
			SO-17360-071105-DCR-421					38 U	µg/kg	UJ
			SO-17360-071105-DCR-422					38 U	µg/kg	UJ
			SO-17360-071105-DCR-423					38 U	µg/kg	UJ
			SO-17360-071105-DCR-424					48 U	µg/kg	UJ
			SO-17360-071105-DCR-425					38 U	µg/kg	UJ

TABLE 6

Page 2 of 5

**SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Compound</i>	<i>LCS Date</i>	<i>Associated Sample ID</i>	<i>LCS %Rec</i>	<i>LCD %Rec</i>	<i>RPD (percent)</i>	<i>Control Limits %Rec %RPD</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>
TCL VOC	trans-1,3-Dichloropropene	7/18/05	SO-17360-071105-DCR-426					53 U	µg/kg	UJ
			SO-17360-071105-DCR-427					40 U	µg/kg	UJ
TCL VOC	Bromodichloromethane	7/19/05	SO-17360-071105-DCR-441	71	63	12	72-125	320 U	µg/kg	UJ
			SO-17360-071105-DCR-448					74 U	µg/kg	UJ
			SO-17360-071105-DCR-449					76 U	µg/kg	UJ
			SO-17360-071105-DCR-450					80 U	µg/kg	UJ
			SO-17360-071105-DCR-451					150 U	µg/kg	UJ
			SO-17360-071105-DCR-452					78 U	µg/kg	UJ
			SO-17360-071105-DCR-453					74 U	µg/kg	UJ
			SO-17360-071105-DCR-454					78 U	µg/kg	UJ
			SO-17360-071105-DCR-455					82 U	µg/kg	UJ
			SO-17360-071105-DCR-456					77 U	µg/kg	UJ
			SO-17360-071105-DCR-457					89 U	µg/kg	UJ
			SO-17360-071105-DCR-458					100 U	µg/kg	UJ
			SO-17360-071105-DCR-459					81 U	µg/kg	UJ
			SO-17360-071205-DCR-460					80 U	µg/kg	UJ
			SO-17360-071205-DCR-461					95 U	µg/kg	UJ
			SO-17360-071205-DCR-462					84 U	µg/kg	UJ
TCL VOC	Bromodichloromethane	7/20/05	SO-17360-071205-DCR-463					79 U	µg/kg	UJ
			SO-17360-071205-DCR-464					79 U	µg/kg	UJ
			SO-17360-071205-DCR-465					85 U	µg/kg	UJ
			SO-17360-071205-DCR-466					76 U	µg/kg	UJ
			SO-17360-071205-DCR-467	74	62	18	72-125	74 U	µg/kg	UJ
			SO-17360-071205-DCR-468					90 U	µg/kg	UJ
			SO-17360-071205-DCR-469					74 U	µg/kg	UJ
			SO-17360-071205-DCR-470					80 U	µg/kg	UJ
			SO-17360-071205-DCR-471					2700 U	µg/kg	UJ
			SO-17360-071205-DCR-472					80 U	µg/kg	UJ
			SO-17360-071205-DCR-473					78 U	µg/kg	UJ
			SO-17360-071205-DCR-474					78 U	µg/kg	UJ
			SO-17360-071205-DCR-475					80 U	µg/kg	UJ
			SO-17360-071205-DCR-476					300 U	µg/kg	UJ
			SO-17360-071205-DCR-477					92 U	µg/kg	UJ
			SO-17360-071205-DCR-478					80 U	µg/kg	UJ
			SO-17360-071205-DCR-479					95 U	µg/kg	UJ

TABLE 6

**SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Compound</i>	<i>LCS Date</i>	<i>Associated Sample ID</i>	<i>LCS %Rec</i>	<i>LCD %Rec</i>	<i>RPD (percent)</i>	<i>Control Limits %Rec %RPD</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>
TCL VOC	Bromodichloromethane	7/20/05	SO-17360-071205-DCR-480					74 U	µg/kg	UJ
			SO-17360-071205-DCR-481					74 U	µg/kg	UJ
			SO-17360-071205-DCR-482					75 U	µg/kg	UJ
			SO-17360-071205-DCR-483					82 U	µg/kg	UJ
			SO-17360-071205-DCR-484					76 U	µg/kg	UJ
			SO-17360-071205-DCR-485					76 U	µg/kg	UJ
			SO-17360-071205-DCR-486					82 U	µg/kg	UJ
TCL VOC	cis-1,3-Dichloropropene	7/20/05	SO-17360-071205-DCR-467	66	66	0.54	71-125	37 U	µg/kg	UJ
			SO-17360-071205-DCR-468					45 U	µg/kg	UJ
			SO-17360-071205-DCR-469					37 U	µg/kg	UJ
			SO-17360-071205-DCR-470					40 U	µg/kg	UJ
			SO-17360-071205-DCR-471					1300 U	µg/kg	UJ
			SO-17360-071205-DCR-472					40 U	µg/kg	UJ
			SO-17360-071205-DCR-473					39 U	µg/kg	UJ
			SO-17360-071205-DCR-474					39 U	µg/kg	UJ
			SO-17360-071205-DCR-475					40 U	µg/kg	UJ
			SO-17360-071205-DCR-476					150 U	µg/kg	UJ
			SO-17360-071205-DCR-477					46 U	µg/kg	UJ
			SO-17360-071205-DCR-478					40 U	µg/kg	UJ
			SO-17360-071205-DCR-479					48 U	µg/kg	UJ
			SO-17360-071205-DCR-480					37 U	µg/kg	UJ
			SO-17360-071205-DCR-481					37 U	µg/kg	UJ
			SO-17360-071205-DCR-482					38 U	µg/kg	UJ
			SO-17360-071205-DCR-483					41 U	µg/kg	UJ
			SO-17360-071205-DCR-484					38 U	µg/kg	UJ
			SO-17360-071205-DCR-485					38 U	µg/kg	UJ
			SO-17360-071205-DCR-486					41 U	µg/kg	UJ
TCL VOC	trans-1,3-Dichloropropene	7/20/05	SO-17360-071205-DCR-467	63	62	1.7	67-125	37 U	µg/kg	UJ
			SO-17360-071205-DCR-468					45 U	µg/kg	UJ
			SO-17360-071205-DCR-469					37 U	µg/kg	UJ
			SO-17360-071205-DCR-470					40 U	µg/kg	UJ
			SO-17360-071205-DCR-471					1300 U	µg/kg	UJ
			SO-17360-071205-DCR-472					40 U	µg/kg	UJ
			SO-17360-071205-DCR-473					39 U	µg/kg	UJ
			SO-17360-071205-DCR-474					39 U	µg/kg	UJ

TABLE 6

**SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Compound</i>	<i>LCS Date</i>	<i>Associated Sample ID</i>	<i>LCS %Rec</i>	<i>LCD %Rec</i>	<i>RPD (percent)</i>	<i>Control Limits %Rec %RPD</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>
TCL VOC	trans-1,3-Dichloropropene	7/20/05	SO-17360-071205-DCR-475					40 U	µg/kg	UJ
			SO-17360-071205-DCR-476					150 U	µg/kg	UJ
			SO-17360-071205-DCR-477					46 U	µg/kg	UJ
			SO-17360-071205-DCR-478					40 U	µg/kg	UJ
			SO-17360-071205-DCR-479					48 U	µg/kg	UJ
			SO-17360-071205-DCR-480					37 U	µg/kg	UJ
			SO-17360-071205-DCR-481					37 U	µg/kg	UJ
			SO-17360-071205-DCR-482					38 U	µg/kg	UJ
			SO-17360-071205-DCR-483					41 U	µg/kg	UJ
			SO-17360-071205-DCR-484					38 U	µg/kg	UJ
			SO-17360-071205-DCR-485					38 U	µg/kg	UJ
			SO-17360-071205-DCR-486					41 U	µg/kg	UJ
			SO-17360-071205-DCR-487					79 U	µg/kg	UJ
			SO-17360-071205-DCR-488				30	80 U	µg/kg	UJ
			SO-17360-071205-DCR-489			17	72-125	79 U	µg/kg	UJ
			SO-17360-071205-DCR-490					82 U	µg/kg	UJ
TCL VOC	Bromodichloromethane	7/21/05	SO-17360-071205-DCR-491					80 U	µg/kg	UJ
			SO-17360-071205-DCR-492					76 U	µg/kg	UJ
			SO-17360-071205-DCR-493					78 U	µg/kg	UJ
			SO-17360-071205-DCR-494					79 U	µg/kg	UJ
			SO-17360-071205-DCR-495					80 U	µg/kg	UJ
			SO-17360-071205-DCR-496					3700 U	µg/kg	UJ
			SO-17360-071205-DCR-497					300 U	µg/kg	UJ
			SO-17360-071205-DCR-498					78 U	µg/kg	UJ
			SO-17360-071205-DCR-499					2000 U	µg/kg	UJ
			SO-17360-071205-DCR-500					480 U	µg/kg	UJ
			TB-17360-071205-DCR-501					80 U	µg/kg	UJ
			SO-17360-071205-DCR-487					40 U	µg/kg	UJ
			SO-17360-071205-DCR-488				30	40 U	µg/kg	UJ
			SO-17360-071205-DCR-489			5.3	71-125	40 U	µg/kg	UJ
			SO-17360-071205-DCR-490					41 U	µg/kg	UJ
TCL VOC	cis-1,3-Dichloropropene	7/21/05	SO-17360-071205-DCR-491					40 U	µg/kg	UJ
			SO-17360-071205-DCR-492					38 U	µg/kg	UJ
			SO-17360-071205-DCR-493					39 U	µg/kg	UJ
			SO-17360-071205-DCR-494					40 U	µg/kg	UJ

TABLE 6

**SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN**

<i>Parameter</i>	<i>Compound</i>	<i>LCS Date</i>	<i>Associated Sample ID</i>	<i>LCS %Rec</i>	<i>LCD %Rec</i>	<i>RPD (percent)</i>	<i>Control Limits %Rec %RPD</i>	<i>Sample Results</i>	<i>Units</i>	<i>Qualifier</i>
TCL VOC	cis-1,3-Dichloropropene	7/21/05	SO-17360-071205-DCR-495					40 U	µg/kg	UJ
			SO-17360-071205-DCR-496					1900 U	µg/kg	UJ
			SO-17360-071205-DCR-497					150 U	µg/kg	UJ
			SO-17360-071205-DCR-498					39 U	µg/kg	UJ
			SO-17360-071205-DCR-499					1000 U	µg/kg	UJ
			SO-17360-071205-DCR-500					240 U	µg/kg	UJ
			TB-17360-071205-DCR-501					40 U	µg/kg	UJ

Notes:

- J - Estimated Concentration
- UJ - Estimated Report Limit
- R - Rejected
- U - Not present at or above the associated value

TABLE 7

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SET
GENERAL MOTORS GRAND RAPIDS SITE
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Original Sample ID</i>	<i>Original Result</i>	<i>Duplicate Sample ID</i>	<i>Duplicate Result</i>	<i>RPD</i>	<i>Units</i>
TCL VOC	Trichloroethene	SO-17360-071205-DCR-467	19 J	SO-17360-071205-DCR-468	18 J	5.4	µg/L

Notes:

RPD Relative Percent Difference
J - Estimated Concentration



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MEMORANDUM

TO:	Gary Klepper	REF. NO.:	17360
FROM:	Kathy Shaw/lo/1/CT 	DATE:	January 31, 2006
RE:	Data Quality Assessment and Validation Second Soil Investigation General Motors Grand Rapids Site - Grand Rapids, Michigan	SSOW:	17307-030008

The following details a quality assessment and validation of the analytical data resulting from the December 3, 2005, collection of 40 soil and three (3) quality control samples from the General Motors Grand Rapids Site in Grand Rapids, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Severn Trent Laboratories, Inc. in North Canton, Ohio (STL) in accordance with the methodologies presented in Table 2.

The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP). Application of quality assurance criteria was consistent with following guidance documents:

- i. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999;

These guidelines are collectively referred to as "NFGs" in this Memorandum.

The following elements are addressed in this memorandum with qualification if necessary in the identified tables:

	Data Review Element	Qualification Table
1	Sample Quantitation	NA
2	Sample Preservation and Holding Times	NA
3	Method Blank Samples	Table 3
4	Surrogate Compounds – Organic Analyses	NA
5	Matrix Spike/Matrix Spike Duplicate Analyses	NA
6	Laboratory Control Sample Analysis/Laboratory Control Duplicate	Table 4
7	Field Quality Assurance/Quality Control	NA

Sample Quantitation

The laboratory reported detected concentrations of volatile organic compounds (VOC), below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J"; these concentrations should be qualified as estimated (J) values unless qualified otherwise in this memorandum.

Sample Preservation and Holding Times

Sample holding time periods and preservation requirements are presented in Table 2. The samples were prepared and/or analyzed within the specified holding time periods. The samples were shipped and maintained in accordance with the sample preservation requirements.

Method Blank Samples

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

The samples presented in Table 3 should be qualified due to laboratory contamination. The laboratory flagged these concentrations with a "B" which may be disregarded. The remaining method blank samples were reported to be free from detectable levels of target analytes, indicating no additional laboratory-attributable contamination occurred.

Surrogate Compounds – Organic Analyses

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. Surrogate percent recoveries are reviewed against the laboratory developed control limits provided in the analytical report. The surrogate recovery acceptance criteria were met for all samples.

Matrix Spike/Matrix Spike Duplicate Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory. The sample selected for MS/MSD analysis is identified in Table 1. The MS/MSD percent recoveries and associated RPD acceptance criteria were met.

Laboratory Control Sample/Laboratory Control Duplicate Analysis

The laboratory control sample and laboratory control duplicate (LCS/LCD) analyses serve as a monitor of the overall performance in all steps of the sample analysis and are analyzed with each sample batch. The LCS/LCD percent recoveries were evaluated against method and laboratory established control limits.

The LCS/LCD percent recoveries were within the laboratory control limits or did not warrant qualification, indicating that an acceptable level of overall performance was achieved with the exception of samples presented with qualifiers in Table 4.

Laboratory precision was verified by the relative percent difference (RPD) of the LCS/LCD when a matrix spike/matrix spike duplicate was not analyzed. The RPDs were within the laboratory control limits, indicating that an acceptable level of overall laboratory precision was achieved.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of, two (2) field duplicate sample sets and one (1) trip blank sample.

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. The RPDs associated with these duplicate samples must be less than 100 percent for soil samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is two times the RL value for soil samples. Table 5 presents the RPDs of detected analytes in the duplicate sample sets. The data indicate that an adequate level of precision was achieved for the sampling event.

To monitor potential cross-contamination of VOC during sample transportation and storage, a trip blank was submitted to the laboratory for VOC analysis with each shipping cooler containing multiple samples. No target analyte were reported as detected in the trip blank sample.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision based on the provided information and may be used with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SECOND SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Sample Identification	Sample Location	Sample Depth		Matrix	QC Sample	Parameter
		Start ft-bgs	End ft-bgs			
SO-17360-120305-DCR-508	SB16-05	0	2	Soil	Duplicate (508)	TCL VOC
SO-17360-120305-DCR-509	SB16-05	0	2	Soil		X
SO-17360-120305-DCR-510	SB16-05	2	4	Soil		X
SO-17360-120305-DCR-511	SB16-05	4	6	Soil		X
SO-17360-120305-DCR-512	SB16-05	6	8	Soil		X
SO-17360-120305-DCR-513	SB16-05	8	10	Soil		X
SO-17360-120305-DCR-514	SB16-05	10	12	Soil		X
SO-17360-120305-DCR-515	SB16-05	12	14	Soil		X
SO-17360-120305-DCR-516	SB16-05	14	16	Soil		X
SO-17360-120305-DCR-517	SB16-05	16	18	Soil		X
SO-17360-120305-DCR-518	SB16-05	18	20	Soil	MS/MSD	X
SO-17360-120305-DCR-519	SB17-05	0	2	Soil		X
SO-17360-120305-DCR-520	SB17-05	2	4	Soil		X
SO-17360-120305-DCR-521	SB17-05	4	6	Soil		X
SO-17360-120305-DCR-522	SB17-05	6	8	Soil		X
SO-17360-120305-DCR-523	SB17-05	8	10	Soil		X
SO-17360-120305-DCR-524	SB17-05	10	12	Soil		X
SO-17360-120305-DCR-525	SB17-05	12	14	Soil		X
SO-17360-120305-DCR-526	SB17-05	14	16	Soil		X
SO-17360-120305-DCR-527	SB17-05	16	18	Soil		X
SO-17360-120305-DCR-528	SB17-05	18	20	Soil	Duplicate (534)	X
SO-17360-120305-DCR-529	SB18-05	0	2	Soil		X
SO-17360-120305-DCR-530	SB18-05	2	4	Soil		X
SO-17360-120305-DCR-531	SB18-05	4	6	Soil		X
SO-17360-120305-DCR-532	SB18-05	6	8	Soil		X
SO-17360-120305-DCR-533	SB18-05	8	10	Soil		X
SO-17360-120305-DCR-534	SB18-05	10	12	Soil		X
SO-17360-120305-DCR-535	SB18-05	10	12	Soil		X

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
2005 SECOND SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Sample Identification	Sample Location	Sample Depth		Matrix	QC Sample	Parameter
		Start ft-bgs	End ft-bgs			
SO-17360-120305-DCR-536	SB18-05	12	14	Soil		TCL
SO-17360-120305-DCR-537	SB18-05	14	16	Soil		X
SO-17360-120305-DCR-538	SB18-05	16	18	Soil		X
SO-17360-120305-DCR-539	SB18-05	18	20	Soil		X
SO-17360-120305-DCR-540	SB15-05	0	2	Soil		X
SO-17360-120305-DCR-541	SB15-05	2	4	Soil		X
SO-17360-120305-DCR-542	SB15-05	4	6	Soil		X
SO-17360-120305-DCR-543	SB15-05	6	8	Soil		X
SO-17360-120305-DCR-544	SB15-05	8	10	Soil		X
SO-17360-120305-DCR-545	SB15-05	10	12	Soil		X
SO-17360-120305-DCR-546	SB15-05	12	14	Soil		X
SO-17360-120305-DCR-547	SB15-05	14	16	Soil		X
SO-17360-120305-DCR-548	SB15-05	16	18	Soil		X
SO-17360-120305-DCR-549	SB15-05	18	20	Soil		X
TB-17360-120305-DCR-550	--	--	--	MeOH	Trip Blank	X

TCL - Target Compound List
VOC - Volatile Organic Compounds
MEOH - Methanol
QC - Quality Control
MS/MSD - Matrix Spike / Matrix Spike Duplicate

TABLE 2

Page 1 of 1

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
2005 SECOND SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Method</i>	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i>
TCL VOC	SW-846 8260B	Soil	- 48 hours from sample collection to preservation - 14 days from sample preservation to completion of analysis	Iced, $4 \pm 2^{\circ} \text{C}$

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", 3rd Edition, and Promulgated updates, November 1986

TABLE 3

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
2005 SECOND SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

Parameter	Analysis Date	Analyte	Blank Result	Sample ID	Sample Result	Units	Qualified Result
TCL VOC	12/12/05	Acetone	100	SO-17360-120305-DCR-518	110 J	µg/kg	660 U
				SO-17360-120305-DCR-519	110 J	µg/kg	650 U
				SO-17360-120305-DCR-520	120 J	µg/kg	640 U
				SO-17360-120305-DCR-521	100 J	µg/kg	630 U
				SO-17360-120305-DCR-522	180 J	µg/kg	660 U
				SO-17360-120305-DCR-523	100 J	µg/kg	600 U
				SO-17360-120305-DCR-524	120 J	µg/kg	700 U
				SO-17360-120305-DCR-525	130 J	µg/kg	680 U
				SO-17360-120305-DCR-527	130 J	µg/kg	580 U
				SO-17360-120305-DCR-508	110 J	µg/kg	650 U
				SO-17360-120305-DCR-510	150 J	µg/kg	630 U
				SO-17360-120305-DCR-511	120 J	µg/kg	720 U
				SO-17360-120305-DCR-512	140 J	µg/kg	630 U
				SO-17360-120305-DCR-513	120 J	µg/kg	650 U
				SO-17360-120305-DCR-514	110 J	µg/kg	670 U
				SO-17360-120305-DCR-515	170 J	µg/kg	680 U
				SO-17360-120305-DCR-516	160 J	µg/kg	710 U

Notes:

U - Qualified as Not Detected
J - Estimated Concentration

TABLE 4

SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS
 2005 SECOND SOIL INVESTIGATION
 GENERAL MOTORS GRAND RAPIDS MFD
 GRAND RAPIDS, MICHIGAN

Parameter	Compound	LCS Date	Associated Sample ID	LCS %Rec	LCD %Rec	RPD (percent)	Control Limits %Rec %RPD	Sample Results	Units	Qualifier
TCL VOC	Acetone	12/12/05	SO-17360-120305-DCR-528	51	47	7.5	58-130 30	670 U	µg/kg	UJ
			SO-17360-120305-DCR-529					640 U	µg/kg	UJ
			SO-17360-120305-DCR-530					620 U	µg/kg	UJ
			SO-17360-120305-DCR-531					640 U	µg/kg	UJ
			SO-17360-120305-DCR-532					630 U	µg/kg	UJ
			SO-17360-120305-DCR-533					690 U	µg/kg	UJ
			SO-17360-120305-DCR-534					610 U	µg/kg	UJ
			SO-17360-120305-DCR-535					690 U	µg/kg	UJ
			SO-17360-120305-DCR-536					630 U	µg/kg	UJ
			SO-17360-120305-DCR-537					640 U	µg/kg	UJ
			SO-17360-120305-DCR-538					640 U	µg/kg	UJ
			SO-17360-120305-DCR-539					670 U	µg/kg	UJ
			SO-17360-120305-DCR-540					650 U	µg/kg	UJ
			SO-17360-120305-DCR-541					630 U	µg/kg	UJ
			SO-17360-120305-DCR-542					660 U	µg/kg	UJ
			SO-17360-120305-DCR-543					640 U	µg/kg	UJ
			SO-17360-120305-DCR-544					720 U	µg/kg	UJ
			SO-17360-120305-DCR-545					2000 U	µg/kg	UJ
			SO-17360-120305-DCR-546					690 U	µg/kg	UJ
			SO-17360-120305-DCR-547					630 U	µg/kg	UJ

Notes:

UJ - Estimated Report Limit

U - Not present at or above the associated value

TABLE 5

SUMMARY OF DETECTED ANALYTES IN FIELD DUPLICATE SAMPLE SET
2005 SECOND SOIL INVESTIGATION
GENERAL MOTORS GRAND RAPIDS MFD
GRAND RAPIDS, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Original Sample ID</i>	<i>Original Result</i>	<i>Duplicate Sample ID</i>	<i>Duplicate Result</i>	<i>RPD</i>	<i>Units</i>
TCL VOC	Trichloroethene	SO-17360-120305-DCR-508	1200	SO-17360-120305-DCR-509	740	47	µg/kg

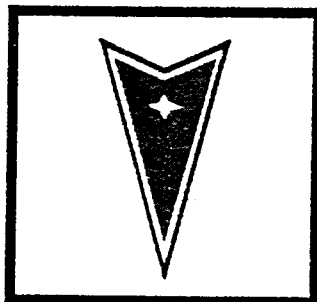
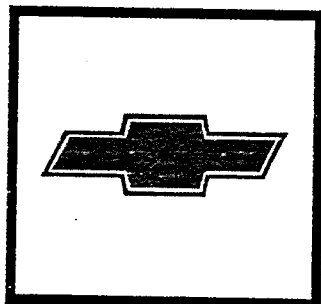
Notes:

RPD Relative Percent Difference

Report of . . .

TCE Emission Testing

performed for . . .



**General Motors Corporation
CPC Group**

Grand Rapids, Michigan

on the . . .

Soil Vapor Extraction System Exhaust

*September 21, 1989
21099*

EDI Engineering & Science

Environmental Engineering, Geology, Biology and Chemistry
a subsidiary of W.W. Engineering & Science

Grand Rapids, Michigan (616) 942-9300

Livonia, Michigan (313) 691-0520



SOURCE EMISSION TESTING
at
GENERAL MOTORS - CPC
GRAND RAPIDS, MICHIGAN
SOIL VAPOR EXTRACTION SYSTEM EXHAUST
DATE: 9/21/89

EDI Engineering & Science

5555 Glenwood Hills Pkwy, S.E.; GRAND RAPIDS, MI 49508; (616) 942-9600

INTRODUCTION

EDI Engineering & Science was retained by the General Motors Corporation to conduct trichloroethylene (TCE) emission testing on the soil vapor vacuum extraction system located at their CPC facility in Grand Rapids, Michigan. The purpose of the testing was to determine compliance with the special conditions of the MDNR permit to install No. 92-88.

The testing was performed by R. Scott Cargill and Dan J. Madden of EDI on September 21, 1989. Assisting in the test was Mr. Don Veltman of CPC.

TABLE 1

TCE EMISSION RESULTS
 SOIL VAPOR EXTRACTION SYSTEM EXHAUST
 GENERAL MOTORS - CPC
 GRAND RAPIDS, MI
 SEPTEMBER 21, 1989

<u>Sample</u>	<u>Time</u>	<u>Air Flow Rate⁽¹⁾ DSCFM</u>	<u>Temp. °F</u>	<u>% Moisture</u>	<u>TCE Concentrations Mg/M³</u>
1	14:40- 15:40	109	91	2.92	N.D. ⁽²⁾
2	15:44- 16:44				N.D.
3	16:45- 17:45				N.D.

(1) Standard temperature and pressure = 70°F and 29.92 in. Hg.

(2) Non detected at a detection limit of 0.0017 mg/m³.

EDI Engineering & Science

SUMMARY OF EXHAUST GAS PARAMETERS

COMPANY NAME: GENERAL MOTORS - CPC

TEST DATE: 9/21/89

COMPANY LOCATION: GRAND RAPIDS, MICHIGAN

SOURCE NAME: SOIL VAPOR EXTRACTION SYSTEM EXHAUST

SAMPLING STAFF: CARGILL / MADDEN

SAMPLE NUMBER	1
G1. STACK RADIUS, inches	2.0
G2. AREA OF STACK, sq. ft.	0.09
G3. BAROMETRIC PRESSURE, in. HG.	29.34
G4. STATIC PRESSURE IN STACK, in. H2O	0.04
G5. STACK GAS TEMPERATURE, deg. F	91
G6. AVG. SQRT VELOCITY PRESSURE OF POINTS SAMPLED	0.387
G7. PERCENT MOISTURE AT TEST LOCATION	2.92
G8. PERCENT MOISTURE BEFORE COLLECTOR	2.92
G9. DRY GAS COMPOSITION: % OXYGEN	20.90
% CARBON DIOXIDE	0.00
% CARBON MONOXIDE	0.00
% NITROGEN	79.10
G10. PERCENT EXCESS AIR AT TEST LOCATION	
DENSITY AND MOLECULAR WEIGHT OF STACK GAS:	
G11. DRY, @ STP, lbs./cu.ft.	0.0746
G12. WET, @ STP, lbs./cu.ft.	0.0737
G13. WET, @ STACK CONDITIONS, lbs./cu.ft.	0.0696
G14. MOLECULAR WEIGHT, DRY, @ STP, lbs./mole	28.84
G15. AVERAGE GAS VELOCITY, feet/min.	1368
STACK GAS FLOW RATE:	
G16. STACK CONDITIONS, ACFM	119
G17. STANDARD CONDITIONS, SCFM	113
G18. STANDARD CONDITIONS, DRY SCFM	109

STANDARD TEMPERATURE AND PRESSURE (STP) = 29.92 inches HG, 70 deg. F

DISCUSSION OF RESULTS

The results for the TCE emission sampling are found in Table 1. TCE was non detected at a detection limit of 0.0017 mg/m^3 for all three samples. The detection limit is well below the established emission limit of 16.0 mg/m^3 .

SOURCE DESCRIPTION

The source tested was the exhaust of the soil vapor vacuum extraction system. Soil vapor is taken from a 20 foot deep well and passed through a knock out drum then a carbon absorption unit before being emitted to the atmosphere through a four inch I.D. exhaust duct.

SAMPLING PROTOCOL

Sampling was conducted on the four inch I.D. exhaust duct at a distance well beyond the optimum location of eight stack diameters downstream and two stack diameters upstream as stated in U.S. EPA Method 1. The sampling and analysis were performed in accordance with U.S. EPA Reference Method 18. Three one hour samples were collected on the exhaust using carbo-trap sorbent tubes. The TCE was recovered in the laboratory by thermal desorption and analyzed using gas chromatography. Exhaust gas parameters were determined by U.S. EPA Reference Methods 1-4. All quality control and quality assurance requirements prescribed in the methods were incorporated in the sampling and analysis.

This report was prepared by:



David D. Engelhardt
Senior Specialist
Air Quality Services

APPENDIX A

FIELD DATA

EDI Engineering & Science

PITOT TRAVERSE DATA

COMPANY NAME: GENERAL MOTORS - CPC

TEST DATE: 9/21/89

COMPANY LOCATION: GRAND RAPIDS, MICHIGAN

SOURCE NAME: SOIL VAPOR EXTRACTION SYSTEM EXHAUST

SAMPLING STAFF: CARGILL / MADDEN

RUN NUMBER:	1	% CARBON DIOXIDE:	0
STACK RADIUS, in.:	2	% OXYGEN:	20.9
GAS TEMPERATURE, Deg F:	91	% CARBON MONOXIDE:	0
STATIC PRESSURE, in. H2O:	.04	PITOT FACTOR:	.85
BAROMETRIC PRESSURE:	29.34		

PT. #	POINT LOCATION,	VELOCITY PRESSURE, INCHES OF WATER	
	INCHES		PORT
1	1.00	0.15	
2	3.00	0.15	



Field Data Sheet

Date: 9/21/89

Client: CPC Grand Rapids

Project #: _____

Barometric Pressure: 29.34

Ambient Temperature: 87°F

91°F Stack
79°F WB

[illegible]

Date: 9/21/89
Client: CPC Grand Rapids
Project No: _____

Programable Pump Calibration Record

Barometric Pressure 29.34 Temperature °F 76. Desired Flow Rate cc/min 100/50

Pump Number	Flow Rate cc/min	Average Flow Rate cc/min
SKC #1	1. 110.32	
	2. 103.45	
	3. 98.68	
	4. 49.50	
	5. 101.2	
*SKC #4	1. 108.2	103.51 Actual 100.37 STP
	2. 105.34	
	3. 102.61	
	4. 99.28	
	5. 102.1	
SKC #3	1. 60.3	
	2. 52.35	
	3. 48.61	
	4. 52.68	
	5. 51.72	
SKC #2	1. 45.94	
	2. 50.50	
	3. 45.35	
	4. 49.86	
	5. 50.21	
	1.	
	2.	
	3.	
	4.	
	5.	

6.022

APPENDIX B
CALCULATIONS

TCE CALCULATION

$$\text{ug/l} = \text{mg/m}^3$$

$$\text{Detection Limit: } .01 \text{ ug/6.02 l} = 0.0017 \text{ mg/m}^3$$

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CALCULATION FORMULAS

MOISTURE TRAIN CALCULATIONS:

- M1. BAROMETRIC PRESSURE, inches of Mercury
- M2. DURATION OF SAMPLE, minutes
- M3. METER CALIBRATION FACTOR
- M4. AVERAGE METER TEMPERATURE, degrees F
- M5. AVERAGE METER PRESSURE, inches of water
- M6. METER VOLUME, ACTUAL, cubic feet
- M7. METER VOLUME, STP, cubic feet

$$M7 = M3 * M6 * \frac{530}{M4 + 460} * \frac{M1 + .07355 * M5}{29.92}$$

- M8. LIQUID VOLUME OF WATER CONDENSED, milliliters
- M9. VAPOR VOLUME OF WATER CONDENSED, @ STP, cubic feet

$$M9 = M8 * 0.0474$$

- M10. TOTAL GAS SAMPLED, @ STP, cubic feet

$$M10 = M7 + M9$$

- M11. PERCENT MOISTURE

$$M11 = \frac{M9}{M10} * 100$$

EXHAUST GAS CALCULATIONS:

- G1. STACK DIMENSIONS, inches
- G2. AREA OF STACK, square feet

$$G2 \text{ (ROUND)} = \frac{3.14159 * (DIA/2)^2}{144}$$

$$G2 \text{ (RECT.)} = \frac{WIDTH * LENGTH}{144}$$

- G3. BAROMETRIC PRESSURE, inches of Mercury
- G4. STATIC PRESSURE IN STACK, inches of water
- G5. STACK GAS TEMPERATURE, degrees F
- G6. AVG. SQRT VELOCITY PRESSURE OF POINTS SAMPLED
- G7. PERCENT MOISTURE AT TEST LOCATION

$$G7 = \frac{P13}{P14} * 100$$

EDI Engineering & Science

CALCULATION FORMULAS CONTINUED

G8. PERCENT MOISTURE BEFORE COLLECTOR

G9. DRY GAS COMPOSITION, %O₂, %CO₂, %CO, %N₂

G10. PERCENT EXCESS AIR AT TEST LOCATION

$$G10 = 100 * \frac{\%O_2 - 0.5 * \%CO}{.264 * \%N_2 - \%O_2 + .5 * \%CO}$$

G11. DENSITY, DRY, @STP, lbs./cu. ft.

$$G11 = \frac{.0827 * \%O_2 + .1137 * \%CO_2 + (\%CO + \%N_2) * .0724}{100}$$

G12. DENSITY, WET, @STP, lbs./cu. ft.

$$G12 = G11 * \frac{100 - G7}{100} + .0465 * \frac{G7}{100}$$

G13. DENSITY, WET, @ STACK CONDITIONS, lbs./cu. ft.

$$G13 = G12 * \frac{530}{G5 + 460} * \frac{G3 + .07355 * G4}{29.92}$$

G14. MOLECULAR WEIGHT, DRY, lbs./mole

$$G14 = G11 * 386.9$$

G15. AVERAGE GAS VELOCITY, feet/minute

$$G15 = P5 * G6 * \frac{1096}{\text{SQRT}(G13)}$$

G16. STACK GAS FLOW RATE, ACFM

$$G16 = G2 * G15$$

G17. STACK GAS FLOW RATE, SCFM

$$G17 = G16 * \frac{530}{G5 + 460} * \frac{G3 + .07355 * G4}{29.92}$$

G18. STACK GAS FLOW RATE, DRY, DSCFM

$$G18 = G17 * \frac{100 - G7}{100}$$

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CALCULATION FORMULAS CONTINUED

PARTICULATE TRAIN CALCULATIONS:

P1. NUMBER OF POINTS SAMPLED

P2. DURATION OF SAMPLE, minutes

P3. NOZZLE DIAMETER, inches

P4. NOZZLE AREA, square feet

$$P4 = \frac{3.14159 * (P3/2)^2}{144}$$

P5. PITOT CALIBRATION FACTOR

P6. METER CALIBRATION FACTOR

P7. AVERAGE FILTER TEMPERATURE, degrees F

P8. AVERAGE METER TEMPERATURE, degrees F

P9. AVERAGE METER PRESSURE, inches of water

P10. METER VOLUME, ACTUAL, cubic feet

P11. METER VOLUME, @ STP, cubic feet

$$P11 = P10 * P6 * \frac{530}{P8 + 460} * \frac{G3 + .07355 * P9}{29.92}$$

P12. LIQUID VOLUME OF WATER CONDENSED, milliliters

P13. VAPOR VOLUME OF WATER CONDENSED, @ STP, cubic feet

$$P13 = P12 * 0.0474$$

P14. TOTAL GAS SAMPLED, @ STP, cubic feet

$$P14 = P11 + P13$$

P15. WEIGHT OF GAS SAMPLED, DRY, pounds

$$P15 = P11 * G11$$

P16. WEIGHT OF GAS SAMPLED, WET, pounds

$$P16 = P14 * G12$$

P17. PERCENT ISOKINETICS

$$P17 = \frac{100 * 29.92 * (G5 + 460) * P14}{530 * (G3 + .07355 * G4) * P2 * P4 * G15}$$

EDI Engineering & Science

CALCULATION FORMULAS CONTINUED

CONCENTRATION CONVERSION FACTORS:

P18. 50 % EXCESS AIR, AFER COLLECTOR

$$P18 = \frac{G14 + 18 * G7 / (100 - G7)}{.1826 * \%N2 - 2.0592 * \%O2 + G14 + 18 * G7 / (100 - G7)}$$

P19. 50 % EXCESS AIR, BEFORE COLLECTOR

$$P19 = \frac{G14 + 18 * G7 / (100 - G7)}{.1826 * \%N2 - 2.0592 * \%O2 + G14 + 18 * G8 / (100 - G8)}$$

P20. MOISTURE BEFORE COLLECTOR

$$P20 = \frac{G14 + 18 * G7 / (100 - G7)}{G14 + 18 * G8 / (100 - G8)}$$

PARTICULATE EMISSION CALCULATIONS:

E1. TOTAL WEIGHT PARTICULATE COLLECTED, grams

E2. LBS. PARTICULATE/1000 LBS. GAS, ACTUAL

$$E2 = E1 * \frac{1000}{454 * P16}$$

E3. LBS. PARTICULATE/1000 LBS. GAS, DRY

$$E3 = E2 * P20$$

E4. LBS. PARTICULATE/1000 LBS. GAS, WET, 50% EA

$$E4 = E2 * P18$$

E5. LBS. PARTICULATE/1000 LBS. GAS, DRY, 50% EA

$$E5 = E2 * P19$$

E6. GRAINS/DRY STANDARD CUBIC FOOT

$$E6 = \frac{E1 * 7000 * 100}{454 * P14 * (100 - G7)}$$

E7. POUNDS/HOUR

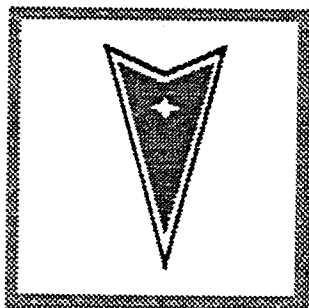
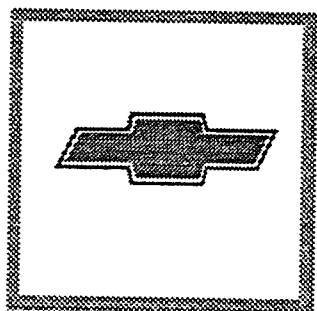
$$E7 = \frac{G17 * G12 * 1000 * E1 * .06}{454 * P16}$$

E8. POUNDS/MILLION BTU

$$E8 = \frac{E7}{\text{CAPACITY, MM BTU/HR}}$$

TCE Remediation Monitoring Program

for



General Motors Corporation
CPC Group

Grand Rapids, Michigan

March, 1989

21099

EDI Engineering & Science

Environmental Engineering, Geology, Biology and Chemistry

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1.0 GROUND WATER MONITORING

1.1 INTRODUCTION

A plume of dissolved trichloroethylene (TCE) extends to the north property line of the General Motors Corporation/CPC Group Metal Fabrication Plant in Wyoming, Michigan. The soils below the floor also have residuals of TCE. In previous hydrogeological investigations by EDI the source was identified in the plant at Column T-27 where a parts cleaner leaked TCE. This equipment was removed from the plant in 1979.

A series of monitoring wells have been installed; and a monitoring program has been initiated. In addition, a monitoring well at Column X-10, and a purge well near 86-3 will be installed during 1989. Monitoring of these new wells will begin when they are completed in the summer of 1989.

The individual components of the ground water monitoring program are described in this chapter. The location and construction of the sampling sites which form this ground water monitoring system are described in Section 1.2. These sites include monitoring wells screened in an unconfined aquifer. The constituents which will be monitored at each of these sampling sites is presented in Section 1.3 and the frequency of this monitoring is described in Section 1.4. Section 1.5 through 1.8 present a detailed discussion of the sampling, analysis and documentation procedures which will be used in this monitoring program; Section 1.9 pertains to the reporting. Surface water sampling in Cole Drain is described in Section 2.

1.2 GROUND WATER MONITORING SITES

1.2.1 Monitoring Well Locations

To evaluate the progress of the clean up, the monitoring program includes monitoring the concentration of TCE in the groundwater surrounding the source area and the plume. In order to determine the direction of ground water flow and the effect of the purge wells, the elevation of the water table will be measured in 22 monitoring wells and 2 purge wells. The wells which will be used to monitor these tasks are listed in Table 1; their locations are shown on Figure 1; and the well logs are included in Appendix 1.

North of the Metal Fabrication plant property, ground water flows from the southeast to the northwest in the area east of Cole Drain and from the southwest to the northeast in the area west of Cole Drain (Figure 2). As determined from previous sampling and water

level data, the ground water eventually discharges into Cole Drain. Monitor well 87-2 is located upgradient and will be used to collect samples which are representative of the ground water before it flows under the source area. The monitoring well to be installed at Column X-10 (monitoring to begin in the summer of 1989) will be placed in the zone of highest TCE concentration and will provide advance notice of the trend to be expected in the North Lot Line Purge Well.

1.2.2 Monitoring Well Construction

Six monitoring wells 85-1, 85-2, 85-3, 85-5B, 85-6, 85-7 were installed in November and December of 1985. The wells were drilled using hollow stem augers; all of these wells were completed with 2-inch diameter galvanized steel casings attached to 2-inch diameter, #10 slot, wire-wrapped stainless steel screens. The screens were partially submerged below the water table so that floatable hydrocarbons could be detected and the thickness measured. The wells were backfilled with natural soils and bentonite; and cement grout was placed around the wells at the surface.

Three additional monitoring wells were installed in April and May of 1986. Monitoring wells 86-1 and 86-2 were installed using flights of hollow stem augers; 86-3 required a combination of hollow stem augers and mud rotary drilling methods. The well casing for 86-1 is a 2-inch diameter galvanized casing with a 2-inch diameter, #10 slot, 10-foot long stainless steel screen which was positioned so that it intercepted the water table. Wells 86-2 and 86-3 are also 2-inch diameter casings with 2-inch diameter, #10 slot, 5-foot long stainless steel screens. Monitoring well 86-2 was converted to a purge well in 1989.

Monitoring wells 87-1, 87-2, 87-4, 87-5, 87-8 and 87-9 were installed in January 1987 using flights of hollow stem augers. Wells 87-1, 87-2, and 87-4 are constructed of 2-inch diameter galvanized casings and 2-inch diameter, #7 slot, 3-foot stainless steel screens. Each of these wells has an upper section with 10 feet of stainless steel screen in the soils above the water table with a 1-foot connector in the middle. At each well the formation was allowed to collapse around the screens and the borings were backfilled with natural soils to the surface. The wells were completed with flush-mount caps cemented into the floor of the plant, level with the cement and below the wood block. Well 87-5 is constructed of 4-inch diameter galvanized casing with a 4-inch diameter, #10 slot, stainless steel screen. This screen has two sections with a 1-foot connector in the middle. The upper section, 10 feet in length, is located in the soils above the water table and 10 to 20 feet below the floor level. The lower 10 feet of the screen is set near

the bottom of the aquifer. The boring was backfilled with natural soils to the surface. Well 87-5 was completed with a standard cap below grade, inside a 12-inch diameter steel ring and cover, set level with the concrete floor. Monitoring wells 87-8 and 87-9 are constructed of 2-inch diameter galvanized casings and 2-inch diameter, #7 slot, 3-foot long stainless steel screens. At these wells the formation was allowed to collapse around the screens, and the boring was backfilled to the surface with natural soils and bentonite.

Monitoring wells 87-10, 87-11 and 87-13 were installed in October 1987 and monitoring wells 88-1, 88-2, 88-3 and 88-4 were installed in March and April 1988. All of these wells, except 87-10, were drilled using flights of hollow stem augers. 87-10 was drilled using hollow stem augers and mud rotary drilling techniques. The wells are constructed with 2-inch diameter galvanized steel casings attached to 3-foot long, 2-inch diameter, #7 slot wire-wrapped stainless steel screens. Monitoring wells 87-10, 87-11 and 87-13 were set within the most contaminated interval at 29 to 32, 30 to 33 and 40 to 43 feet respectively; wells 88-1, 88-2, 88-3 and 88-4 were set at 27 to 30, 26 to 29, 27 to 30 and 18 to 21 feet below the ground surface. The monitoring wells were backfilled with natural soils around the screen and a mixture of natural soils and bentonite up to or near the surface.

Unless otherwise noted, all of the monitoring wells described above have flush mount caps placed at the surface, internally locking caps and cement around the ground level portion of the caps.

1.3 CONSTITUENTS TO BE MONITORED

The unconfined aquifer under the Metal Fabrication Plant will be monitored for trichloroethylene and the cis and trans isomers of 1,2-dichloroethylene (Table 2, set A) in the monitoring wells which are indicated with an "A" indicated in Table 1. Ground water samples from six of these wells, indicated with a "B" in Table 1, will also be analyzed for 1,1-dichloroethylene and vinyl chloride (Table 2, set B) during the fourth quarter. Beginning in the summer of 1989, the discharge from the purge well to be installed in the North Lot Line (PW disch) will be monitored for trichloroethylene and the cis and trans isomers of 1,2-dichloroethylene (Table 2, set A) and during the fourth quarter the discharge will also be monitored for 1,1-dichloroethylene and vinyl chloride (Table 2, set B). In addition, purge well 86-2 and MW at X-10 will be analyzed for trichloroethylene (Table 2, set C).

1.4 SAMPLING FREQUENCY

Ground water will be sampled monthly in triplicate (three containers per site per sampling event) from purge well 86-2, from the monitoring well to be installed at Column X-10, and from the new North Lot Purge Well (monitoring to begin Summer 1989). A treated discharge sample from purge well 86-2 will also be sampled monthly. One of the three samples from each of these wells will be analyzed as discussed in Section 1-3. Monitoring wells listed in Table 1 and indicated with an "A" will be sampled in triplicate on a quarterly basis, but only one of the three samples will be analyzed. On a monthly basis, water levels will be measured in monitoring and purge wells labelled with an "X"; and the presence and thickness of oil will be monitored in wells labelled with an "O", as indicated in Table 1.

1.5 SAMPLE COLLECTION

The procedures used to sample water can control the quality of the data produced in a monitoring program. Muska and others, (1986) performed a field evaluation of ground water monitoring devices for volatile organic compounds and showed that "by using careful and reproducible procedures, overall sampling variability is low regardless of (the) sampling device (used)."

Following the sample collection procedures described in this section will generate samples and data which are representative of the actual conditions which exist on the site at the time of the sampling. These procedures are also designed to supply sufficient documentation of the sample collection procedures so that future uses of the data can reevaluate the sample collection procedures. The method used to collect the water samples and the field data will be discussed first, followed by the methods used to document the actual methods used in the field.

1.5.1 Measurement of Static Water Level

Static water levels will be measured in monitoring wells using an electric tape or a chalked steel tape. The distance from the top of the casing (T.O.C) to the static water level will be measured to within 0.01 foot. The elevation of the static water level is calculated by subtracting the distance from the T.O.C. to the static water level from the elevation of the T.O.C. The elevations of the top of the casing on the monitoring wells are listed in Table 3. Well 86-2 was converted to a purge well as discussed in Section 1.2. Water levels in the purge well will be measured with an air flow tube, which was

installed adjacent to the pump suction line in the well casing. The tube extends below the water table. Air will be injected into the tube and a gauge attached to the tube will indicate the static water level to within 0.1 foot. Water levels will be measured prior to purging any well to assure they are not affected by the withdrawal of ground water during the purging activity. The device used to measure the water levels will be washed with distilled water after each measurement. However, in the wells which have floating oil product, the device will be washed with alconox and rinsed with distilled water after each measurement.

1.5.2 Sampling Equipment

Wells are sampled using Teflon or stainless steel bailers with polypropylene rope. Clear acrylic bailers will be used in wells in which the thickness of floating oil product will be measured.

1.5.3 Well Evacuation

All monitoring wells will be purged of three casing volumes prior to the collection of a ground water sample. The purge volume will be calculated using the following equation:

$$V = 3 \pi r^2 [(well\ depth\ in\ feet) - (depth\ to\ water\ in\ feet)],$$

where V = purge volume

$$\pi = 3.1416$$

r = radius of the well

For a 2-inch diameter well this simplifies to:

$$V(gal) = 0.49[(well\ depth\ in\ feet) - (depth\ to\ water\ in\ feet)]$$

and for a 4-inch diameter well this simplifies to

$$V(gal) = 1.96[(well\ depth\ in\ feet) - (depth\ to\ water\ in\ feet)]$$

The bailers are cleaned with alconox and distilled water between wells.

1.5.4 Sample Withdrawal

Ground water will be withdrawn from each of the monitoring wells using Teflon or

stainless steel bailers as described in Section 1.5.2. The bailers will be gently lowered into the water; and samples will be collected by gently pouring the water into glass vials, filled just to overflowing, ensuring that no air bubbles pass through the sample as the vial is being filled. Each vial will be sealed with a clean Teflon-lined septa and cap so that no headspace or entrapped air bubbles are present in the sample. Ground water will also be collected from purge well 86-2. The material being sampled will be allowed to run for several minutes to ensure that the sample is representative of the material to be analyzed. The samples will be poured and sealed in glass vials as described above. Sample preservation and shipment are discussed in Section 1.6.

1.5.5 Sample Blanks

During each quarterly and monthly sampling event, one trip blank and one field blank will be analyzed for each parameter. When the sample bottles are prepared prior to shipment to the field, two glass vials will be filled with deionized water, and labeled "trip blank". The trip blank will be transported to the field and sent to the laboratory for analysis along with the other sample bottles to evaluate possible sample contamination from the sample bottles, shipping methods, or laboratory analyses. One field blank will be analyzed to ensure that sampling methods have not affected the quality of the samples and that equipment has been adequately cleaned. The field blank will be filled with deionized water in the field, labeled "field blank" and sent to the laboratory for analysis along with the other sample bottles.

In the laboratory, the trip and field blanks will be analyzed for the same parameters as the samples. The presence of any contaminant in the trip blank will be noted and attributed to sample contamination; and the presence of any contaminant in the field blank will be noted and attributed to sampling methods or equipment. This data will not be used to correct the concentrations in other samples.

1.5.6 Documentation of Sample Collection

The sampling equipment and procedures described in the previous sections are designed to generate data which is representative of the ground water under the Metal Fabrication Plant and the surrounding area. To properly use this data to evaluate the progress of the clean-up of the ground water and soils, the actual procedures used in the field to collect the samples must be documented. As a result, future users of the data can review and reevaluate any possible bias introduced by these procedures. The documentation procedures which will be used are described below.

Customized field data entry forms will be used to assure that the sampling procedures are thoroughly documented. The initial field data entry forms are included in Appendix 2. These forms are designed both to provide thorough documentation and to aid in the efficient performance of the sampling event. For instance, space is provided to calculate purge volumes from the static water levels, providing both documentation and a convenient worksheet in the field.

It is impossible to include all of the modifications in a monitoring program necessary for any type of field condition; likewise, field samplers may be confronted with field conditions which make it impossible to follow the designed sample collection procedures. If this occurs, the field sampler will note these changes on the field data entry form so that the forms always represent the actual procedures used during the sample collection. When the field sampler completes a sampling event she/he will have filled in all of the information on the field data entry forms and will have noted any deviations from the sample procedures. The field sampler will then sign the forms; and the forms will be kept as documentation of the actual sampling procedures used.

1.6 SAMPLE PRESERVATION, SHIPMENT AND ANALYTICAL PROCEDURES

Complete and unequivocal preservation of samples is practically impossible. Preservation techniques are used to retard the chemical and biological changes that may take place after a sample is taken from its parent source. Samples collected in this detection monitoring program will be placed in coolers immediately upon collection and then transported to the appropriate analytical laboratory where they will be stored at 40C until analysis. Ground water samples will be preserved according to the Friday, October 26, 1984 Federal Register, Volume 49, #209, 43260. Samples for the analysis of volatile organic compounds will be collected in a triplicate, 40-ml glass vials and sealed with Teflon-lined caps. No preservative is required, but samples will be kept cool at 40C. All volatiles will be analyzed within 14 days (the maximum holding time,) using method 624 as referenced in the July 1982 USEPA-600/4-82-057.

1.7 CHAIN OF CUSTODY

A chain-of-custody procedure will be established to document the possession and handling of individual samples from the field collection activities through laboratory analysis. This program will include sample identification labels, field data entry forms which contain field sampling observations and data (see Section 1.5.6), chain-of-custody records which include documentation of sample receiving and transportation, and

laboratory logbooks which include information about the analyses of the sample in the laboratory. The chain-of-custody form used at EDI Engineering & Science is in Appendix 3. The chain-of-custody program used by the ASI laboratory performing a portion of the analyses will be at least as thorough.

1.8 QA/QC PROCEDURES

The analytical procedures which will be used are outlined above. These analytical procedures include the method detection limits which will be used in reporting the data (Table 2).

The quality assurance/quality control program for the laboratory at EDI Engineering and Science is presented in Appendix 3. The quality assurance/quality control program for the ASI laboratory which performs a portion of the analyses will be at least as thorough.

1.9 REPORTING

EDI will submit quarterly reports to the CPC Group Metal Fabrication Plant, 45 days after the quarterly sampling event, for submittal to the Michigan Department of Natural Resources (MDNR) 60 days after the quarterly sampling event. These reports will include a summary of the analyses of the constituents listed in Table 2, a contour map of the water elevations from locations listed in Table 1 and a brief interpretation of the data. In addition, the water quality data will be summarized and the progress of the monitoring plan evaluated on an annual basis.

1.10 REFERENCES FOR SECTION 1

Federal Register, October 26,; 1984. Vol. 49, #209, p. 43260.

Muska, C.F., W.P. Colven, V.D. Jones, J.T. Scogin, B.B Looney, and V. Price, Jr., 1986. "Field Evaluation of Ground Water Sampling Devices for Volatile Organic Compounds" in *Proceedings of the Sixth National Symposium and Exposition on Aquifer Restoration and Ground Water Monitoring*. National Water Well Association, Dublin, Ohio. p. 235-246.

USEPA-600/4-82-057, July 1982. "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater".

2.0 SURFACE WATER MONITORING (COLE DRAIN)

2.1 SURFACE WATER SAMPLING LOCATIONS

In addition to thoroughly monitoring the ground water, the monitoring program activities will include surface water sampling in Cole Drain from three locations along the area being monitored. Samples of the surface water will be collected at the sampling points listed in Table 1 and shown on Figure 1.

2.2 SURFACE WATER SAMPLING PLAN

The surface water sampling plan is summarized in Table 1. Surface samples from Cole Drain will be collected quarterly in triplicate and one of the three samples from each site will be analyzed for parameters listed in Table 2, set A.

Currently, Cole Drain does not dry up during any time of the year. If conditions change so that Cole Drain does dry up during sampling periods, samples will be collected after a 24-hour, 0.5 inch rainfall.

2.3 SURFACE WATER SAMPLE COLLECTION

2.3.1 Measurement of Water Level

The water level in Cole Drain will be measured monthly using an electric tape or a chalked steel tape. The distance from the top of the culvert to the water will be measured to within 0.01 foot. The elevation of the water level is calculated by subtracting the distance from the top of the culvert to the water level in Cole Drain from the elevation of the top of the culvert. The elevations of the fixed datum at each Cole Drain Location are listed in Table 3.

2.3.2 Sample Withdrawal

Grab samples will be collected at each of the surface water sampling sites listed in Table 1. The sampling bottles will be used to collect the surface water samples, so no sampling equipment or decontamination procedures are required.

2.3.3 Sample Preservation, Shipment and Analysis

Sample preservation, shipment and analysis procedures are described in Section 1.6 and 1.8. The chain-of-custody program which will be followed is described in Section 1.7.

2.4 REPORTING

The data from the surface water monitoring will be reported to the MDNR as a part of the quarterly reports discussed in section 1.9.

3.0 SOIL VAPOR RECOVERY MONITORING

3.1 SOIL VAPOR MONITORING LOCATIONS

A soil vapor extraction system, with carbon adsorption treatment of the effluent, has been installed at monitoring well 87-3 at Column T-26 (Figure 1) to remove TCE from the soil. An air flow reading will also be taken each month to verify that pressure in the vacuum well remains steady.

Furthermore, pressure will be monitored at four additional sites near 87-3 to verify that the vapor extraction system is working effectively. The probe locations are shown on Figure 4.

Well 87-3 was installed in January 1987 and is constructed of 4 inch diameter galvanized casing and 20-foot long, #10 slot stainless steel screen. The boring was backfilled with natural soils. The well was completed with a standard cap below grade inside a 12-inch diameter steel ring and cover, set level with the concrete floor. A schematic diagram of the system is shown in Figure 3; and the well log is included in Appendix 1.

The pressure monitoring probes P1, P3, P4, and P5, which are located near 87-3, are 1/2-inch diameter, black carbon pipes with 3/32-inch diameter perforations on the lower 8 inches of the pipe. The probe, which has a tapered point, was driven into the soils; and the top of the probe was sealed into the floor. P1 is 10-feet long and P3, P4 and P5 are each 15 feet long. Pressure gauges were installed at the top of each probe and monitoring began in April of 1989. The pressure readings at the soil probes will enable EDI to verify that flow soil vapor is toward well 87-3.

3.2 SOIL VAPOR RECOVERY SAMPLING PLAN

The soil vapor recovery sampling plan is summarized in Table 1. Air samples will be collected monthly from 87-3, beginning April 1989, and will be analyzed for TCE as listed in Table 2, set D. In addition, pressure readings and the air flow rate will be recorded each month at the locations discussed above.

3.3 SAMPLE WITHDRAWAL

Air samples will be collected from 87-3 at two different sample ports. The soil vapor will be collected at the influent sample port and the treated discharge will be collected at the effluent sample port. The cap on the air sample tube will be removed just prior to sampling. Calibrated air flow is drawn from the sample port into sorbent air sample tubes containing a charcoal coconut base.

3.4 SAMPLE PRESERVATION AND SHIPMENT

Air samples collected in this monitoring program will be kept at room temperature after collection. The samples will then be transported to the appropriate analytical laboratory as soon as possible where they will also be stored at 4°C until analysis. The charcoal tubes will be analyzed within 14 days.

TABLES

TABLE 1
MONITORING PROGRAM
WELLS AND SAMPLING SITES

Monitoring Sites	Monthly	Quarterly	Additional Annual	Monthly Water Level	Monthly Pressure Reading	Monthly Floating Oil
Monitoring Wells						
85-1				X		
85-2				X		
85-3				X		0
85-5B				X		0
85-6				X		0
85-7		A		X		
86-1				X		0
86-3		A	B	X		
87-1		A		X		
87-2		A		X		
87-4		A		X		
87-5		A		X		
87-8		A	B	X		
87-9		A	B	X		
87-10		A	B	X		
87-11		A	B	X		
87-13		A	B	X		
88-1				X		
88-2				X		
88-3				X		
88-4				X		
MW at X-10	C			X		
Vapor Well						
87-3/Soil vapor	D				X	
87-3/Treated vapor	D					
P1					X	
P3					X	
P4					X	
P5					X	
Purge Wells						
86-2/Pumped	C			X		
86-2/Treated	C					
PW disch	A		B	X		
Surface Water						
C-1		A		X		
C-2		A		X		
C-3		A				
C-4				X		

TABLE 2
MONITORING PARAMETERS

	Parameter	Expected Detection Limit*(ug/l)
A	1,2-Dichloroethylene**	2.0
	Trichloroethylene	2.0
B	1,1-Dichloroethylene	2.0
	Vinyl Chloride	10.0
C	Trichloroethylene (Water Analysis)	2.0
D	Trichloroethylene (Air Analysis)	
	charcoal tube	
	soil vapor	500
	treated vapor	1

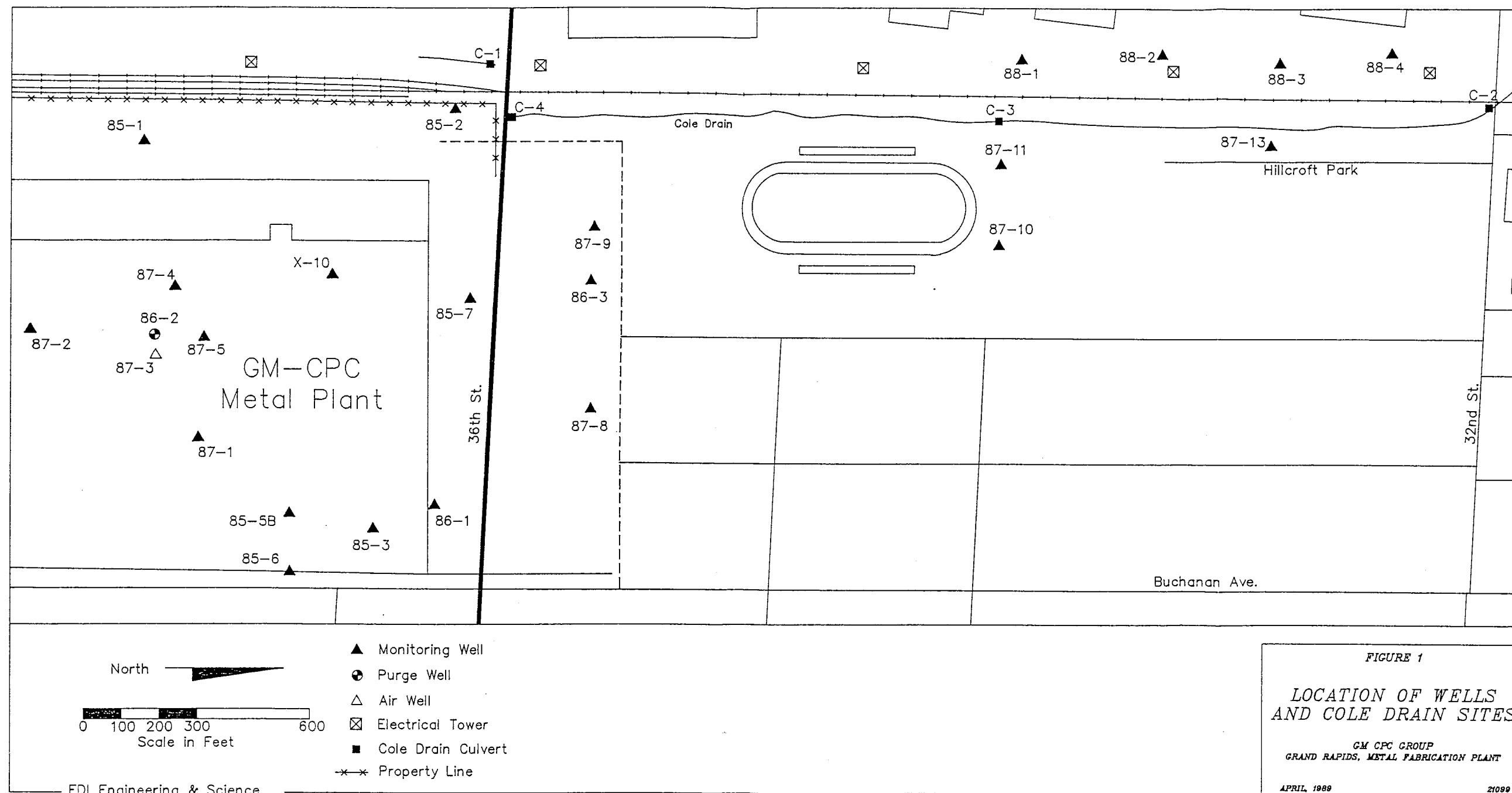
* Matrix interference is not expected, but it could cause the detection limit to increase.

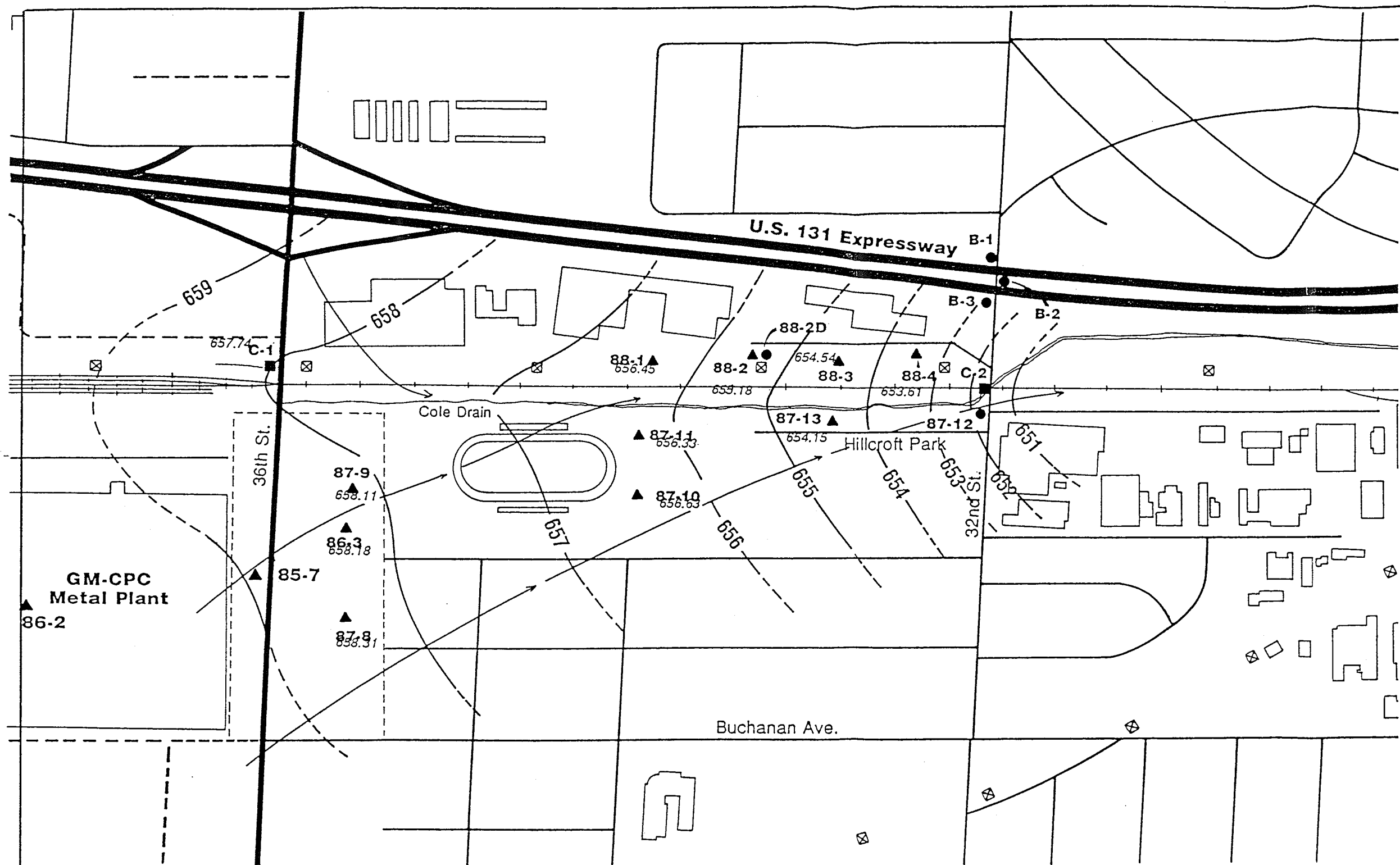
** Includes cis- and trans-1,2-dichloroethylene

TABLE 3
MONITORING WELL AND STAFF GAUGE ELEVATIONS

Well Site	Top of Casing (ft.)
85-1	675.61
85-2	672.22
85-3	681.11
85-5B	681.07
85-6	680.09
85-7	678.43
86-1	680.67
86-3	676.47
87-1	681.15
87-2	681.16
87-4	681.11
87-5	680.77
87-8	677.62
87-9	673.87
87-10	668.83
87-11	667.17
87-13	664.24
88-1	666.66
88-2	666.38
88-3	665.26
88-4	661.63
Vapor Well	
87-3	681.50
Purge Well	
86-2	681.12
Surface Site	Top Culvert (ft.)
C-1	663.20
C-2	657.02
C-4	664.45

FIGURES





LEGEND

- ▲ Monitoring Wells
- Culverts Used to Measure Water Levels in Cole Drain
- Soil Borings Drilled During this Investigation (87-12, 88-2D)
- Soil Borings Drilled for US-131 Expressway During the 1950's (B-1, B-2, B-3)
- ⊠ Electrical Towers

Direction of Groundwater Flow

Contour Interval = 1 ft.

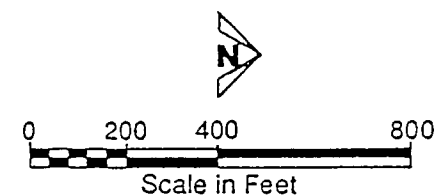
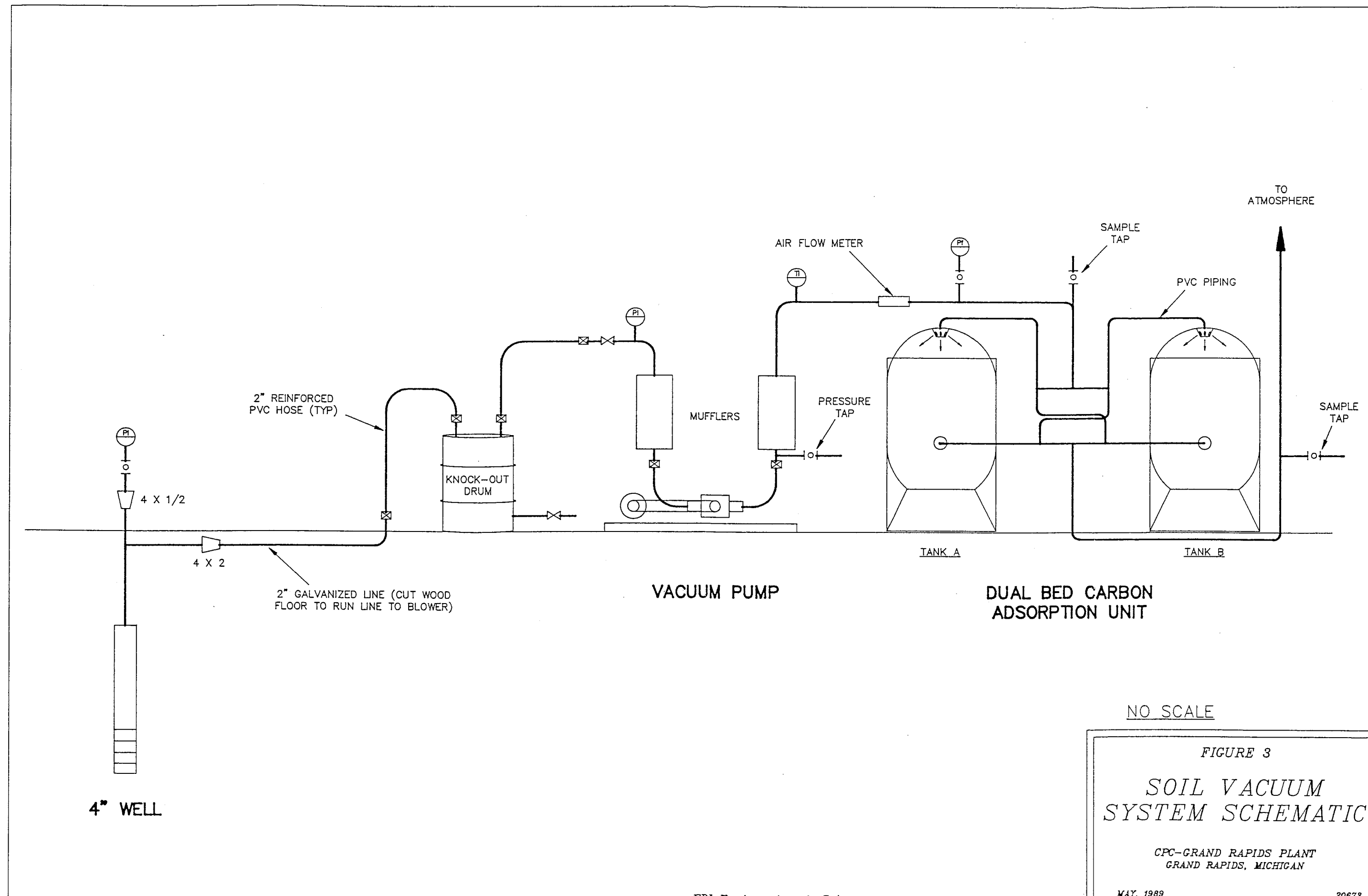
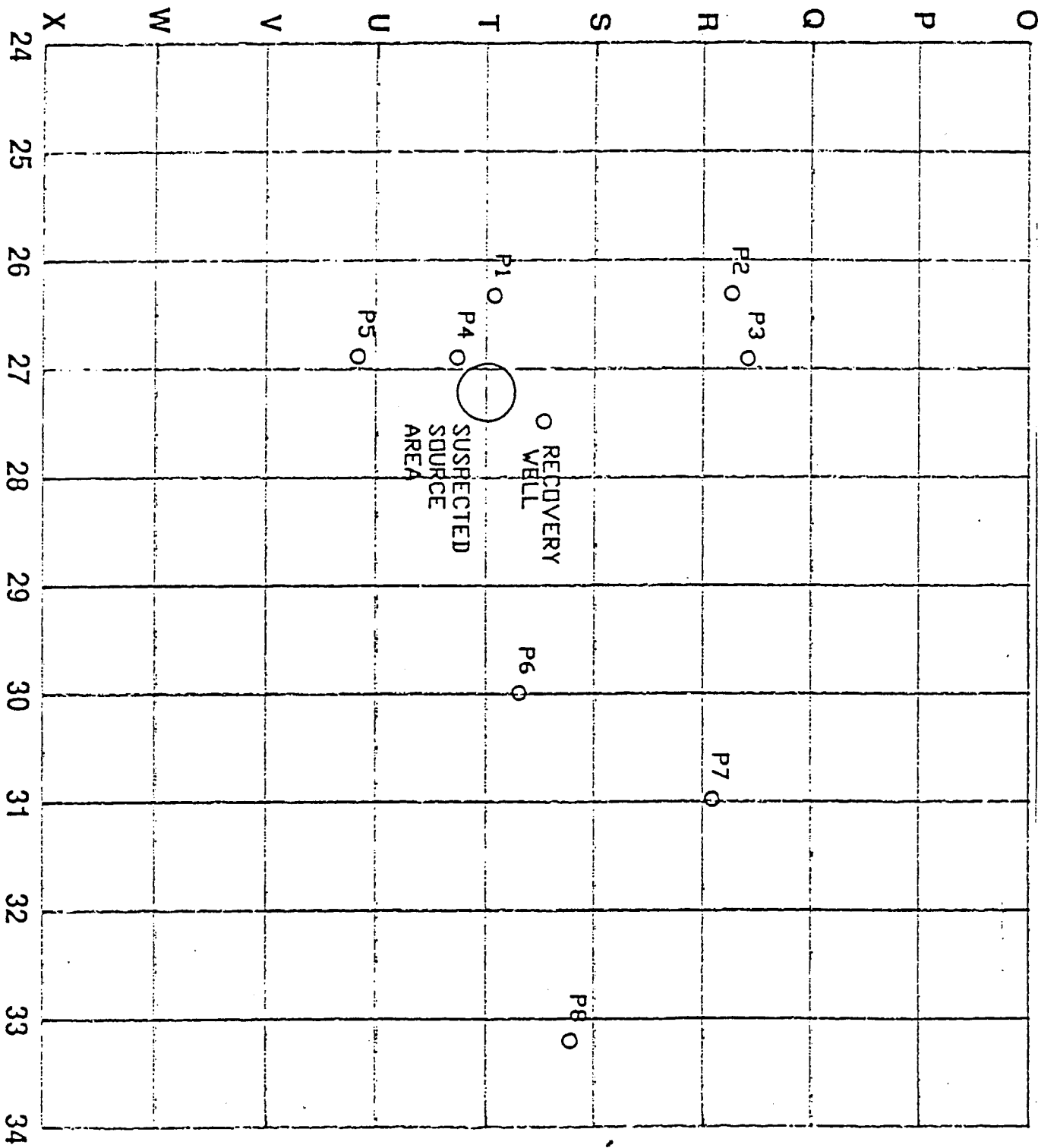


Figure 2

Water Table Contour Map April 7, 1988

General Motors Corporation/CPC Group
Grand Rapids, Michigan



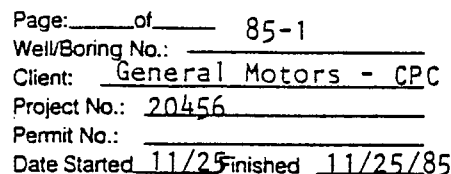


SCALE 1" = 50'

Figure 4
Soil Vapor Probe Location
General Motors Corp./CPC Group
Grand Rapids, Michigan
August, 1988

APPENDIX 1

WELL LOGS



Date Started 11/25 Finished 11/25/85

Contractor: Stearns Drilling
Address: Dutton, MI

Screen:
 Manufacturer: Johnson
 Material: Stainless Steel
 Model: 960
 Slot/Gauze: 10 Dia.: 2"
 Length: 5'
 Depth Set: 15.5' To: 20.5'

Location Sketch : SEE LOCATION MAP

Equipment: CME 45

Supervisor: D. Johnson
J. Venn

Drilling Method(s)	Depth
Hollow Stem	0-20'
Auger & Split Spoons	

Grouting/Seal

Depth	To	Material
0	20.5	Natural Soils
		and Benseal;
		Cement at Sur-
		face

Development: Bailor lowered
on rope; three casing
volumes removed.

Water Level: 16.28 Ft. Below: TQC
Measured On: 12/6/85

Casing

Dia.	Type	Depth Set
<u>2 1/2"</u>	<u>Galv.</u>	<u>0 To 15.5'</u>
		<u>To</u>

Elevation 675.9'

Casing: _____

Ground: _____

Ref. Pt.: _____

Remarks (include here, other data available)

Well has flush-mounted sealed metal cap with enclosed locking cap. Top of casing is cemented into concrete drive.

[illegible]

Well has flush-mounted sealed metal cap with enclosed locking cap. Top of casing is cemented into asphalt parking lot.

[illegible]



Page: _____ of _____ 85-3
Well/Boring No.: _____
Client: General Motors - CPC
Project No.: 20456
Permit No.: _____
Date Started 11/26 Finished 11/26/85

Well / Boring Log Sheet

County KENT	Township CITY OF WYOMING	Fraction NE 1/4 NW 1/4 NE 1/4	Section 24	T 6N	R 12W

Contractor: Stearns Drilling

Address: Dutton, MI

Equipment: CME 45

Supervisor: D. Johnson

Supervisor: J. Venn

Drilling Method(s)	Depth
Hollow Stem	0-30.0'
Auger & Split Spoons	

Grouting/Seal

Depth	To	Material
-0.3	30.3'	Natural Soils
		and Benseal;
		Cement at Sur-
		face

Development: Ball lowered
on rope; three casing
volumes removed.

Water Level: 21.19 Ft. Below: TQC
Measured On: 12/6/85

Screen:

Manufacturer: Johnson

Material: Stainless Steel

Model: 960

Slot/Gauze: 10 Dia.: 2"

Length: 10'

Depth Set: 20.3 To: 30.3'

Casing

Dia.	Type	Depth Set
2 1/2"	Galv.	-0.3 To 20.3
		To

Elevation

Casing: 681.4'

Ground: _____

Ref. Pt.: _____

Remarks (include here, other data available)

Well has flush-mounted sealed metal cap with enclosed locking cap. Top of casing is cemented into concrete floor.

[illegible]

Well has flush-mounted sealed metal cap with enclosed locking cap. Top of casing is cemented into concrete floor. This well was drilled after Well 85-5A was plugged and abandoned.

Remarks

[illegible]



Page: _____ of _____ 85-7
Well/Boring No.: _____
Client: General Motors - CPC
Project No.: 20456
Permit No.: _____
Date Started 11/27 Finished 11/27/85

Well / Boring Log Sheet

County KENT	Township CITY OF WYOMING	Fraction NE 1/4 NW 1/4 NE 1/4	Section 24	T 6N	R 12W

Contractor: Stearns Drilling

Address: Dutton, MI

Equipment: CME 45

Supervisor: D. Johnson

J. Venn

Drilling Method(s)	Depth
Hollow Stem	0-25'

Auger & Split Spoons

Grouting/Seal

Depth	To	Material
0	25.6'	Natural Soils

and Benseal;

Cement at Sur-
face

Development: Bailor lowered
on rope; three casing
volumes removed.

Water Level: 20.22 Ft. Below: TQC

Measured On: 12/6/85

Screen:

Manufacturer: Johnson

Material: Stainless Steel

Model: 960

Slot/Gauze: 10 Dia.: 2"

Length: 10

Depth Set: 20.6 To: 25.6'

Casting

Dia.	Type	Depth Set

211 Galy. 0 To 20.6

_____ To _____

Elevation

Casing: 678.7'

Ground:

Ref. Pt.:

Remarks (include here, other data available)

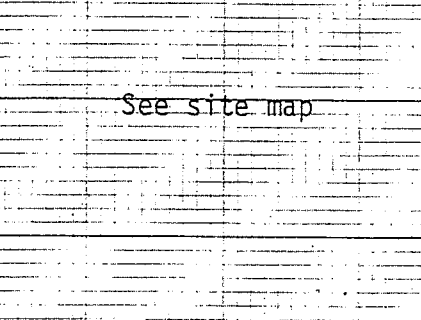
Well has flush-mounted sealed metal cap with enclosed locking cap. Top of casing is cemented into area of loose soil surrounding well.

[illegible]

Date Started 5/2 Finished 5/2/86

County	Township	Fraction	Section	T	R
Kent	City of Wyoming	$\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$	18	6N	12W

Screen:
 Manufacturer: Johnson
 Material: stainless steel
 Model: 960
 Slot/Gauze: 10-slot Dia.: 2"
 Length: 2 x 120 x 133
 Depth Set: 18.5' To: 29.0



See site map

Equipment: CME-45B

Supervisor: ELC

Drilling Method(s)	Depth
HSA	30'

Grouting/Seal		Material
Depth	To	
0	23.5	natural soils bentonite

Development: _____

Water Level: 23.5 Ft. Below: T0C
Measured On: _____

Casing

Dia.	Type	Depth Set
2"	galv.	0 To 18'
		To

Elevation
Casing: _____
Ground: _____
Ref. Pt.: _____

Remarks (include here, other data available)

No floating product reported

[illegible]

Well / Boring Log Sheet

County	Township	Fraction	Section	T	R
Kent	City of Wyoming	$\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$	18	6N	12W

Contractor: Stearns

Address: _____

Equipment: CME-45B

Supervisor: ELC

Drilling Method(s)	Depth
HSA	60.5

Grouting/Seal

Depth	To	Material
<u>0</u>	<u>23.0</u>	<u>natural soil</u>
		<u>and bentonite</u>
<u>23.0</u>	<u>60.5</u>	<u>natural soils</u>

Development: _____

Water Level: 23 Ft. Below: TOC

Measured On: 4-30-86

Screen:

Manufacturer: Johnson

Material: stainless steel

Model: 960

Slot/Gauze: 10-slot Dia.: 2"

Length: 2 x 60 x 72

Depth Set: 27.5 To: 32.5

Casing

Dia. Type Depth Set
2" galv. 0 To 27
 To

Elevation

Casing: _____

Ground:

Ref. Pt.: _____

Remarks (include here, other data available)

Water sample depths: 30-33'; 40-43'; 45-48'

No odor detected when drilling

Location Sketch

See site map

[illegible]

[illegible]

[illegible]

Date Started 1/19 Finished 1/20/87

[illegible]

Well / Boring Log Sheet

County	KENT	Township	CITY OF WYOMING	Fraction	$\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$	Section	18	T	6N	R	12W

Contractor: Stearns Drilling

Address: Dutton, MI

Equipment: CME 850

8" HSA

Supervisor: E. Culver

Drilling Method(s)	Depth

8" HSA 62"

12" HSA	54'

Grouting/Seal

Depth	To	Material
0.9	22.0	Nat'l Soils

Development: _____

Water Level: 22 Ft. Below:

Measured On: 1/22/87

Screen:

Manufacturer: Johnson

Material: stainless steel

Model: wire wound

Slot/Gauze: 10 slot Dia.: 4"

Length: 20.1

Depth Set: 8.5' To: 19.5'

39.5' 50.5'

Casing

Dia.	Type	Depth Set

4.11 Gálv. 0.0 To 8.5'

Elevation

Elevation 680.77'

Casing: 681.5
Ground:

Ground: _____
Ref. Pt: NGVD

Remarks (include here, other data available)

Temporary Wells Set @: 22 - 25' Bailed

31 - 34' Rod Pump

41 - 44¹ Rod Pump

51 - 54' Rod Pump

Samples Taken w/Teflon Bailer

DEVELOPMENT:

Bailed

Rod Pump

Rod Pump

Rod Pump

[illegible]

Well/Boring Log Sheet

County Kent	Township City of Wyoming	Fraction 1/4 NW 1/4 SE 1/4	Section 13	T 6N	R 12W

Contractor: Stearns Drilling
Address: Dutton, Mich
Equipment: CME 45
Roger/Dennis
Supervisor: Don Johnson

Screen
 Manufacturer: Johnson
 Material: Stainless Steel
 Model: wire wound
 Slot/Gauze: 7 Dia.: 2"
 Length: 3'
 Depth Set: 30' To: 33'

Date
Started: 10/2/87 Finished: 10/2/87

Elevation
Casing: 667.17
Ground: 667.47
Ref. Pt.: _____

Drilling Method(s)	Depth
Auger (HSA)	0.0-35'

Casing			
Dia.	Type	Depth Set	
2"	galv.	0.0	To 30'
			To

Water Level _____ Ft. Below _____
Measure On: _____

Grouting/Seal		
Depth	To	Material/Method

Location See location Map

Development Rod pumped for
20 minutes - until sediment free

Remarks (include here, other data available) Well equipped with flush-mount cap

[illegible]

County Kent	Township City of Wyoming	Fraction 1/4 NW 1/4 SE 1/4	Section 13	T 6N	R 12W

[illegible]

County Kent	Township City of Wyoming	Fraction 1/4 NE 1/4 SW1/4	Section 13	T 6N	R 12W

Elevation
Casing: 666.66
Ground: 666.95
Ref. Pt.: _____

Location See location Map

Remarks (include here, other data available) _____
 Temporary stainless steel screens set 12 to 13 feet, 22 to 23 feet and 29 to 32 feet
 12 to 13 foot sample: 50 gallons recovered (ditch pump)
 22 to 23 foot sample: 30 gallons recovered (ditch pump)
 29 to 32 foot sample: 40 gallons recovered (ditch pump)

[illegible]

County	Township	Fraction	Section	T	R
Kent	City of Wyoming	1/4 NE 1/4 SW1/4	13	6N	12W

Elevation
Casing: 666.38
Ground: 666.68
Ref. Pt.:

Water Level 11.32 Ft. Below TOC
Measure On: 4/5/88

Location See location Map

Remarks (include here, other data available) _____
 Temporary stainless steel screens set 12 to 15 feet, 22 to 25 feet and 30 to 31 feet
 12 to 15 foot sample: 40 gallons recovered (ditch pump)
 22 to 25 foot sample: 100 gallons recovered (ditch pump)
 30 to 31 foot sample: 50 gallons recovered (ditch pump)
 Well equipped with Flush-mount cap

[illegible]

County	Kent	Township	City of Wyoming	Fraction	1/4 NE 1/4 SW 1/4	Section	13	T	6N	R	12W

Elevation
Casing: 665.26
Ground: 665.55
Ref. Pt.:

Water Level 10.85 Ft. Below TOC
Measure On: 4/5/88

Location See location Map

Remarks (include here, other data available)
Temporary stainless steel screens set at 12 to 15 feet and 22 to 25 feet
12 to 15 foot sample: 45 gallons recovered (ditch pump)
22 to 25 foot sample: 50 gallons recovered (ditch pump)
30 to 31 foot sample: 50 gallons recovered (ditch pump)
Well equipped with flush-mount cap

[illegible]

County	Kent	Township	City of Wyoming	Fraction	1/4 NE 1/4 SW 1/4	Section	13	T	6N	R	12W

Elevation
Casing: 661.63
Ground: 661.92
Ref. Pt.:

Water Level 8.17 Ft. Below TOC
Measure On: 4/5/88

Location See location Map

Remarks (include here, other data available)

Temporary stainless steel screens set at 9 to 12 feet and 18 to 21 feet

9 to 12 foot sample: 30 gallons recovered (ditch pump)

18 to 21 foot sample: 40 gallons recovered (ditch pump)

Well equipped with flush-mount cap

[illegible]

APPENDIX 2
FIELD DATA ENTRY FORMS

Date
CPC
Monthly

36th STREET

Signature(s)

	WATER LEVEL	DEPTH TO WATER (ft.)	CHECK- OIL PRESENT (Y/N)	DEPTH OF WELL (ft.)	LENGTH OF WATER (ft.)	THREE CASING VOLUMES (gal.)	VOLUME PURGED (gal.)	DATE PURGED	TIME PURGED	DATE SAMPLED	TIME SAMPLED	THREE VIALS FILLED (Y/N)
85-1	X											
85-2	X											
85-3	X0											
85-5B	X0											
85-6	X0											
85-7	X											
86-1	X0											
PW86-2	X											
86-3	X											
87-1	X											
87-2	X											
87-4	X											
87-5	X											
87-8	X											
87-9	X											
87-10	X											
87-11	X											
87-13	X											
88-1	X											
88-2	X											
88-3	X											
88-4	X											
MW @ X-10	X											
PWdisch	X											
C-1/S36th	X											
C-2/32nd	X											
C-3/34th												
C-4/N36th	X											
FIELD BLANK												
TRIP BLANK												
Pressure readings (in.)												
P1	P3	P4	P5	87-3								

Date		Signatures												
CPC 36th STREET		QUARTERLY SAMPLE	WATER LEVEL	DEPTH TO WATER (ft.)	CHECK- OIL PRESENT (Y/N)	DEPTH OF WELL (ft.)	LENGTH OF WATER (ft.)	THREE CASING VOLUMES (gal.)	VOLUME PURGED (gal.)	DATE PURGED	TIME PURGED	DATE SAMPLED	TIME SAMPLED	THREE VIALS FILLED (Y/N)
85-1			X											
85-2			X											
85-3			X0											
85-5B			X0											
85-6			X0											
85-7		X	X											
86-1			X0											
PW86-2			X											
86-3		X	X											
87-1		X	X											
87-2		X	X											
87-4		X	X											
87-5		X	X											
87-8		X	X											
87-9		X	X											
87-10		X	X											
87-11		X	X											
87-13		X	X											
88-1			X											
88-2			X											
88-3			X											
88-4			X											
MW @ X10		X	X											
PWdisch		X	X											
C-1/S36th		X	X											
C-2/32nd		X	X											
C-3/34th		X	X											
C-4/N36th			X											
FIELD BLANK														
TRIP BLANK														
Pressure readings (in.)														
P1					P4		P5		87-3					

APPENDIX 3

QUALITY ASSURANCE/QUALITY CONTROL
FOR THE EDI ENGINEERING & SCIENCE LABORATORY

EDI ENGINEERING & SCIENCE
ANALYTICAL SERVICES DIVISION

QUALITY ASSURANCE/QUALITY CONTROL MANUAL

EDI ANALYTICAL SERVICES DIVISION
QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES MANUAL

TABLE OF CONTENTS

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3.0 Facilities and Equipment	10 - 15
4.0 Analytical Methodologies	16 - 17
5.0 Method Certification	18 - 20
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7.0 Document Control, Flow, Storage	24 - 33
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9.0 Data Handling, Reporting, Recordkeeping and Validation	52 - 60
10.0 General QC Practices	61 - 64

1.0 THE PURPOSE OF THE MANUAL

The purpose of this manual is to specify procedures and technical requirements to be used by the EDI Engineering & Science chemistry laboratories to assure that the data generated by the laboratory is accurate, reproducible and timely. This manual provides the chemistry laboratory a quality control plan which is to be used by every individual involved in the analytical efforts at EDI. This manual conforms to and is an extension of the EDI Quality Control Manual. If a conflict should arise, the EDI Corporate Quality Control Manual shall take precedence.

1.1 THE NEED FOR ANALYTICAL QUALITY CONTROL

There is a growing importance attached to the measurement of the concentration of any contaminant in water, effluents, and solid samples. As with any type of measurement the results of the methods utilized to measure the concentrations of these contaminants generally differ from the true concentration, i.e. all results are subject to error. Many experimental studies have shown that errors can arise which are as large as a 50 percent variations from the true value, and in fact, may vary between laboratories. Inaccurate analytical results restrict the ability of the analyst and the recipient of the data to draw valid conclusions and usually lead to false or misleading conclusions. Examples of common problems which arise during an analytical effort are as follows:

- A. Results, which are compared between two or more laboratories, are in error relative to each other.
- B. Results are to be used to decide if a water quality standard has been observed especially as the level of the analysis approaches the detection level.
- C. The analytical method, such as GCMS analysis, is only semi-quantitative in nature and, therefore, relative errors are anticipated between equivalent laboratories and even equivalent instruments.

- D. An inappropriate test procedure has been used to determine the analyte, resulting in values that do not represent the true sample concentration, i.e. direct aspiration of a turbid sample.

There is also increasing concern about the control of these errors being expressed at the local, the national and the international levels. The concern centers around the need to have a maximum amount of valid information obtained in a cost effective manner. In order to control errors, it is necessary to be able to measure the magnitude of these errors. This manual identifies the activities that are involved in the measurement and control of error. EDI considers analytical quality control of great importance, and requires that it be a primary feature in any analytical effort. The EDI requirements for analytical quality control are in concert with the quality control needs and demands of other organizations, such as the Environmental Protection Agency, the Michigan Department of Natural Resources, various state regulatory agencies, and such organizations as may need to insure their product quality.

Approximately twenty to thirty percent of all the available effort for routine analysis is absorbed in the execution of quality control requirements. It is often argued that the extent of this effort is too great with respect to routine laboratories and their need to be profitable in their operation. The argument therefore claims that extensive quality control is an impractical expectation for a routine laboratory. However, the corporate policy at EDI demands that the appropriate level of quality control be applied to all analytical effort at EDI, regardless of the sample lot.

In the total effort, it is preferable to obtain twenty to thirty percent fewer results of known accuracy for each analytical batch than it is to obtain larger numbers of results of undefined accuracy. Due to the fact that all analytical procedures are subject to errors derived from many sources, it is not reasonable to assume that quality control is unnecessary with a "good" analyst. However, even a "good" analyst may not have an adequate idea of his (her) accuracy. Multiple studies by the EPA, both within laboratories and between laboratories, has shown this reasoning to be generally unsound.

2.0 QUALITY ASSURANCE ORGANIZATION AND RESPONSIBILITIES

2.1 Objective of the QA Program at EDI

The purpose of the quality control program is to continuously monitor error, both random and systematic, which inhibits the production of reliable and defensive analytical data. Error is inherent in any analytical routine, even with the most rigorous controls, and thus, a good QC program addresses not only the basic control techniques but also statistical means of measuring precision and accuracy and the confidence limits on these measurements.

The purpose of this manual is to specify the procedures, records, Chain-of-Command, and technical requirements which will be adhered to by the laboratories of EDI. This manual conforms to and is an extension of the EDI Quality Assurance Manual and as such, gives final authority to the Corporate QA Manager.

2.2 Organization

Quality control at EDI begins with the bench analyst and moves up through the Chain of Command ultimately residing at the level of the President. A QC program which is administered only at the upper levels of management is doomed to failure and is unfair to the bench level analyst who needs a means by which he can observe the quality of his work. Quality Control is a two way program at EDI where directives from management are as important as suggestions and assistance from the bench analyst.

2.2.1 QC Chain of Command Flow Chart

The following flow chart represents both the QA Chain of Command (solid line) and the Administrative Chain of Command (dotted). The flow chart represents the philosophy of EDI relative to the interaction of QC and production. Although the QC Coordinator reports to the Director of Analytical Services in the supervisory Chain-of-Command, his responsibilities for quality control require that

he answer to the Corporate QC officer. The QC coordinator acts as an immediate record keeper, QC administrator and liason to the lab manager.

However, when a question relative to the quality of analytical data arises, the QA coordinator, in conjunction with the Corporate QC Officer, has the right to prevent data dissemination. In cases of conflict, the Corporate QC Officer has final authority except when a compromise or directive is issued by the Chief Operating Officer or the President.

2.2.2 Responsibilities and Objectives of the Corporate QA Manager

2.2.2.1 Objectives

- o To develop and implement a Company wide quality assurance program
- o To assist management with the integration of individual quality assurance programs into all operations
- o To establish an attitude that focuses on defining causes of nonconformance and eliminating them
- o To assist managers in defining performance requirements

2.2.2.2 Responsibilities

The EDI Quality Assurance Manager (QAM) is responsible for developing and administering the EDI QA program. The QAM will conduct laboratory program audits and take appropriate action as necessary. This staff member will serve as the final authority in all laboratory QA programs. In addition, the QAM will serve as an arbitrator and final authority in all QA/QC problems which might arise in the

laboratory. A formal audit will be performed on the individual laboratories at least once per year by the QAM. The results of this audit will be submitted to the President. Prior to implementation, all QA/QC manuals and programs will be reviewed and approved by the QAM.

2.2.3 Responsibilities of the Laboratory QC Coordinator

- 2.2.3.1 To monitor the Quality Assurance activities in the laboratory insuring adherence to all policies and procedures.
- 2.2.3.2 To identify problem areas and help in recommending improvement and changes.
- 2.2.3.3 To keep abreast of changing development in analytical QC particularly requirements set by regulatory agencies.
- 2.2.3.4 To arrange or produce random blind control samples.
- 2.2.3.5 To approve all laboratory data prior to recording such data for report generation purposes.
- 2.2.3.6 To maintain QC on all analytical activities and update control limits in a timely manner.
- 2.2.3.7 Maintain balance and controlled temperature apparatus record books on a daily basis and insure that such records are maintained on every piece of equipment.
- 2.2.3.8 To assure that bottle preparation, approval and storage meet established criteria.

2.2.4 Responsibilities of the Sample Coordinator

A full position description of the Sample Coordinator can be found in the "EDI Log-in Manual".

- o To insure that all samples received at EDI are properly preserved, split, logged-in, and stored in agreement with the log-in manual.
- o To insure that all COC shipments are handled according to established procedures including storage, sample tracking and completion of files.
- o To insure that all project sheets and subsequent paperwork is completed and filed.
- o To insure that labile samples are distributed in a timely manner.
- o To cooperate with the QC coordinator in introducing blind samples.

2.2.5 Responsibilities of the Analytical Staff

- o To insure that all records are generated and recorded on a daily basis.
- o To insure that the following bench level QC requirements are met.
- o To fill out lab notebooks daily is required.
- o To provide for QC on every batch of samples at a minimum of
 - 10% duplicate
 - 10% blanks
 - 10% matrix spike
 - method spikes, at least one per set of samples
- o To insure that instruments are calibrated prior to initiating any analysis and that no analyses are started unless calibration has been satisfactorily completed.

- o To insure that every batch of analyses meets established QC guidelines or is reanalyzed automatically.

- o To inform the lab manager of any reoccurring problems or systematic trends which may effect quality.

2.2.6 Responsibilities of the Laboratory Supervisor

- o To insure that sufficient competent staff is available to administer QC.

- o To insure that all participating analysts are certified in the test they are performing.

- o To insure that effective training and orientation takes place for every new analyst.

- o To insure that all QC procedures, directives or project oriented requirements are met.

- o To review all preliminary reports and approve them prior to the generation of a final report.

- o To interface with the QC coordinator and corporate QC Manager on a routine and consistent basis.

- o To take responsibility for immediate solutions to QC problems which may slow or stop production.

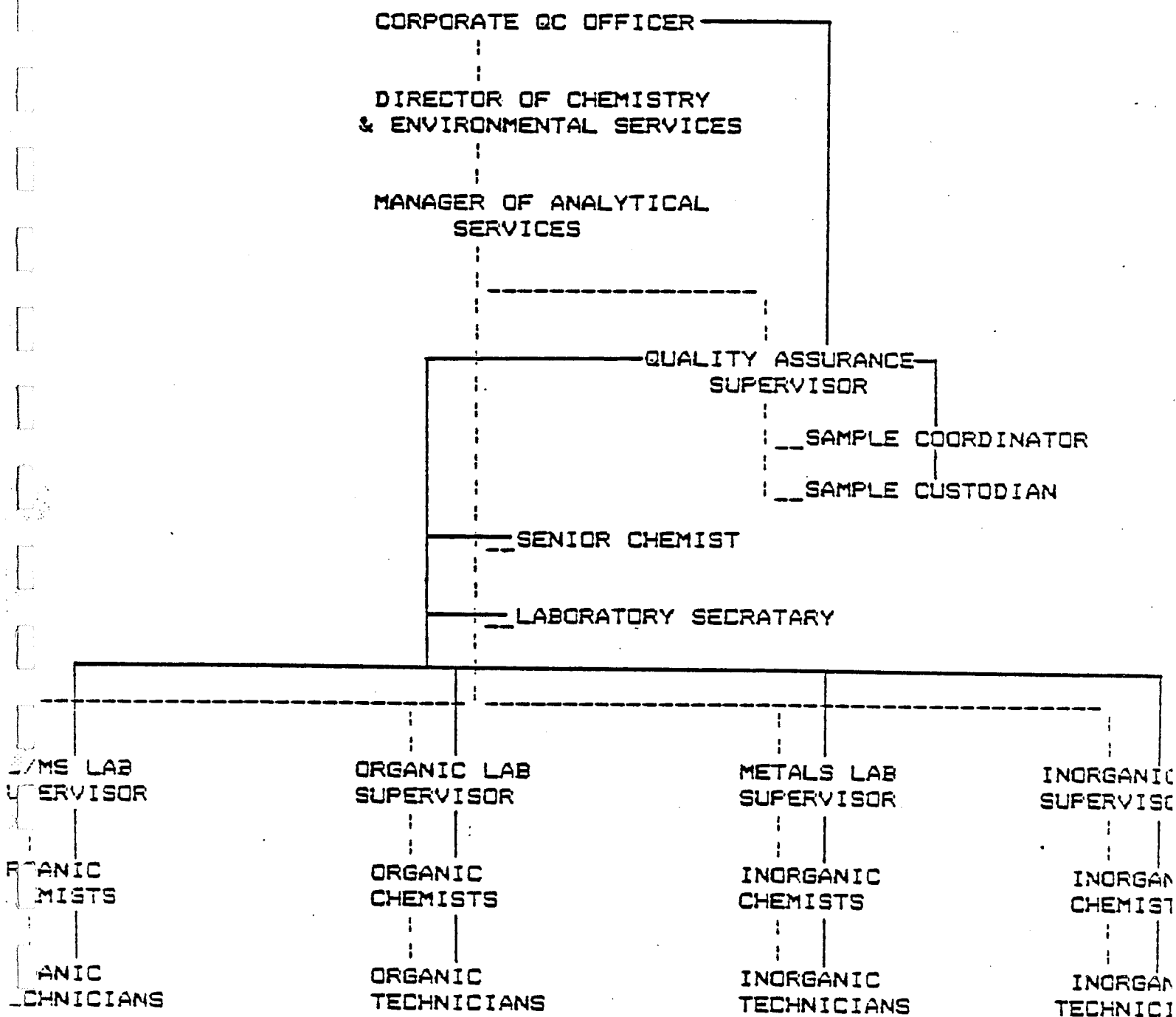
2.2.7 Responsibilities of the Data Coordinator

The Data Coordinator's (DC) responsibilities are:

- o To enter all data generated into the appropriate records.

- o To insure that the QC Coordinator has signed the data forms (bench sheets prior to entry).
- o To inform the QC Coordinator when a project is complete and ready for a preliminary report.
- o To provide corrections to all reports from preliminary report feedback.

QUALITY CONTROL CHAIN OF COMMAND FLOW CHART



ADMINISTRATIVE FLOW = _____

QUALITY CONTROL FLOW = _____

3.0 FACILITIES AND EQUIPMENT

- 3.1 The physical plant layout diagram is enclosed. The approximate square footage allocated to each analysis area is presented as well as the number of personnel normally working in each area. A listing of equipment presently utilized by EDI is also enclosed.
- 3.2 The quality of the analytical instrumentation utilized by EDI is of great importance considering its ultimate effect on data quality. The following guidelines exist for the procurement of analytical instrumentation:

3.2.1 Equipment Need

An equipment need is identified by the Lab Manager or the Director of Environmental Services as a result of:

- o New Contractural Effort
- o Regulatory Changes
- o Normal Upgrade/Replacement
- o Capacity Improvements

3.2.2 Procurement Procedure

The performance specifications defined by the need are used to identify prospective equipment suppliers. The Lab Manager mails the performance specifications to the prospective equipment suppliers. Those suppliers able to meet the performance specifications are asked to provide a quotation for the purchase or lease of the equipment. An evaluation of the quotations is made by the Lab Manager with consideration given to such items as: equipment ease of use, degree of automation, specification compliance, potential for computerization, price and space requirements.

A written recommendation by the Lab Manager is presented to the Director of Environmental Services and the Quality Assurance Office for their review and comment.

A final recommendation by the Director of Environmental Services is made to the President of EDI and the Corporate Quality Assurance Officer. The final approval is granted based on the assurance of complying with all regulatory and corporate guidelines for the generation of the highest quality data.

3.3 Chemical Procurement and Inventory Procedure

All reagent specifications are dictated by the EPA/APHA or NIOSH approved analytical methods. These reagent specifications are identified and maintained on the chemical inventory index card system. The chemical inventory index card system assures the order of chemical use and minimizes the possibility of exceeding their useful shelf life. The addition of a new method or a change in an existing method that requires a corresponding addition or change in a reagent used for that method will be identified by the Lab Area Supervisor or Group Leader. The Supervisor or Group Leader will prepare the chemical inventory index.

All reagent specifications, available vendors and amount(s) received are recorded on the chemical inventory index cards.

All chemical reagents are received by the sample coordinator. The sample coordinator notifies a designated laboratory aid that a delivery has arrived. The aid opens the shipping package and compares the packing slip with the contents. Discrepancies are identified to the Lab Manager. The materials receipt is identified and recorded on the chemical inventory. The materials are then inventoried on the chemical inventory index. The index system identifies the amount(s) received and when. When the last bottle/container of the chemical remains, the chemical is placed on an open order sheet located in the lab.

The group leader/supervisor for that lab area is responsible for picking up the chemical open order sheet each week and preparing a purchase order. The purchase order is approved by the Lab Manager and a typed purchase order is issued to the approved vendor that has been previously identified as being able to supply the specified material. The receipt of the new order initiates the inventory system activities.

3.4 Preventative Maintenance

Every analytical instrument has a separate maintenance log book as identified in the Document Control Section No. 7.3.9. The required maintenance activities have been developed by the Lab Manager and each Group Leader/Area Supervisor. The maintenance activities comply with manufacturer specifications and working experience requirements.

Each maintenance log book contains a table indicating the frequency and type of maintenance required. The maintenance activity is documented each day or as the frequency requirements dictate.

Analysts are assigned the responsibility of maintaining various instruments or equipment in their respective laboratory areas. The Group Leader or Area Supervisor is responsible for checking the maintenance log books each week and signing off as checked. The Quality Assurance Officer is notified of any deviations or lack of maintenance activity performance, and corrective actions are taken.

EQUIPMENT

ANALYTICAL AREA	EQUIPMENT/ INSTRUMENT NAME	MANUFACTURER	MODEL NO.
Wet Chemistry	Analytical Balance	Mettler	AE163
	Auto-analyzer	Alpkem (refurbished Technicon	
	Beckman pH meter	Beckman-Altex	070
	Spectrophotometer	Hitachi	100-40
	Conductivity Meter	HACH	portable
	Dri-Block-digestor	Tecam	DB-3H
Atomic Absorption	Atomic absorption	Varian	AA-575
	Spectrophotometer	Perkin-Elmer	5000
Gas Chromatography	Analytical balance	Mettler	AE 163
	Gas Chromatograph #1	Varian	3700
	Gas Chromatograph #2	Varian	3760
	Gas Chromatograph #3	Varian	3760
	Gas Chromatograph #4	Varian	3400
	Integrators (3)	Varian	4270
	Chart recorder (2)	Various	
GC/MS Spectrometry	Gas chromatography/ Mass spectrometer	Finnegan MAT	OWA 20B
	Gas chromatography/ Mass spectrometer	Finnegan MAT	OWA 20B
	Nine Track Magnetic Tape System	Data General	6021

PHYSICAL PLANT

Laboratory Name and Address: EDI ENGINEERING & SCIENCE
611 Cascade West Parkway S.E.
Grand Rapids, MI 49506

Name of Laboratory Manager: John P. Dullaghan

Describe or attach a drawing of the laboratory layout, indicating the general areas of analysis, the space allotted to each and the number of personnel generally assigned to each area.

ANALYSIS	SPACE ALLOTTED, FT ²	NUMBER OF PERSONNEL
MICROBIOLOGY	Approx. 30	1
WET CHEMISTRY	" 970	5
ATOMIC ABSORPTION/EMISSION	" 300	1
GAS CHROMATOGRAPHY (GC)	" 380	3
GC/MASS SPECTROMETRY	" 500	3
SAMPLE RECEPTION	" 100	1
ADMINISTRATIVE (TYPING, ETC.)	" 400	4
STORAGE (CYLINDERS, WASTES)	" 400	1

4.0 ANALYTICAL METHODOLOGIES

4.1 Methods Utilized

The EDI Laboratory maintains and updated reference volumes of approved analytical methodologies for environmental and non-environmental analysis. A responsibility of the Lab Manager and the Director of Environmental Services is to continually seek and review regulatory method changes and their impact on current laboratory practices. The most commonly referenced materials include:

- o "Methods for Chemical Analysis of Water and Wastes" EPA-600/4-79-020 revised March 1972.
- o "Manual of Analytical Procedures" NIOSH, Volumes 1 & 2, Third Edition Feb., 1984.
- o Standard Methods for the Evaluation of Water and Wastewater, APHA, AWWA, WPCF 1980.
- o "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA 600/4-79-019, March 1979.
- o "Physical and Chemical Methods for the Evaluation of Solid Waste" EPA-SW846 Second Edition, 1982.
- o "Guidelines Establishing Test Procedures for the Analysis of Pollutants" Proposed Regulations. CFR December 3, 1979; updated Oct. 26, 1984.

4.2 Method Calibration and Operating Procedures

All methods utilized by EDI have been certified in accordance with the specifications outlined in the Method Certification Section No. 5.0.

A standard operating procedure manual exists for all analytical procedures. The S.O.P's include specific calibration procedures that must be followed by an analyst prior to conducting sample analysis. The analyst is

required to perform and document the calibration procedure. The calibration activity is identified by each analyst in their lab notebooks. The actual standards utilized and resulting measurements are found in each instrument log book. It is the responsibility of each analyst to document all calibration and operating procedures utilized, in their personal log books as well as in the instrument log books. The area group leaders and/or supervisors review this information each week when they sign off indicating the information has been reviewed. It is the responsibility of the group leaders and/or supervisors to notify the Quality Assurance Officer when deviations occur so that corrective actions can be taken. The corrective action will be to identify whether the information is simply missing (not entered) and to have it recorded or if the calibration has not been performed, to not release data generated that day and require those samples to be rerun.

5.0 METHOD CERTIFICATION

All methods used by EDI which were not developed by EDI will be certified prior to their use. Method Certification is contiguous with the certification of the analyst and requires essentially the same analytical program. Method certification is necessary in order to establish detection limits, method application limits and criteria for control limits. In most cases, detection limits and recoveries stated in a method are obtained under ideal conditions and do not reflect real world solutions, e.e. silty well water and industrial effluent versus a drinking water supply. Method certification falls into 2 categories: 1) Methods being employed for the first time and 2) Methods which are to replace currently certified methods (replacement methods). In either case, analysis of client sample may not proceed until certification has occurred.

5.1 Method Certification

5.1.1 Linear Range

The first step in certifying a method is to establish the linear range (operating range) of the method. A method may be used only over the range in which it is linear. Some methods do not have linear ranges but curves from which results are calculated. For the moment we will ignore methods with curves. A linear range must be established independent of the method data since instruments can effect the range. Standards and multiple detections will be used for establishing the linear range. For example, a range of 1 to 1000 has 3 decades (3 orders of magnitude or 10^3). Therefore, a range of 1 to 1000 requires 11 levels of test standards (.5, 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000). Notice that each decade follows the 0.5x to 10x rule, i.e. the area 10 to 100 is covered by 5, 10, 20, 50 and 100. The range to be attempted is dependent on the method, the instrument and the analytical supervisor. If the responses show linearity, the range has been established. If,

however, a curve develops or there appear to be two linear ranges, the standards must be repeated including additional levels to verify the status of the questionable area.

5.1.2 Working Curves

Some methods operate from a curve response, i.e. sodium by emission spectroscopy. The method will indicate the working curve which must be verified. The method with working curves requires a full curve each time an analysis is to be performed.

5.1.3 The Generation of the Method Detection Limit

The method detection limit (MDL) is defined as the minimum concentration of a substance that can be identified, measured and reported with 99% confidence that the analyte concentration is greater than zero and determined from analysis of a sample in a given matrix containing analyte.

Scope and Application

This procedure is designed for applicability to a wide variety of sample types ranging from reagent (blank) water containing analyte to wastewater containing analyte. The MDL for an analytical procedure may vary as a function of sample type. The procedure requires a complete, specific and well defined analytical method. It is essential that all sample processing steps of the analytical method be included in the determination of the method detection limit.

The MDL obtained by this procedure is used to judge the significance of single measurement of a future sample.

The MDL procedure was designed for applicability to a broad variety of physical and chemical methods. To accomplish this, the procedure was made device or instrument independent.

Procedure

1. Make an estimate of the detection limit using one of the following:
 - (a) The concentration value that corresponds to an instrument signal/noise ratio in the range of 2.5 to 5. if the criteria for qualitative identification of the analyte is based upon pattern recognition techniques, the least abundant signal necessary to achieve identification must be considered in making the estimate (PCB).
 - (b) The concentration value that corresponds to three times the standard deviation of replicate instrumental measurements for the analyte in reagent water.
 - (c) The concentration value that corresponds to the region of the standard curve where there is a significant change in sensitivity at low analyte concentrations i.e. a break in the slope of the standard curve.
 - (d) The concentration value that corresponds to known instrumental limitations.

It is recognized that the experience of the analyst is important to this process. However, the analyst must include the above considerations in the estimate of the detection limit.

2. Prepare reagent (blank) water that is as free of analyte as possible. Reagent or interference free water is defined as a water sample in which analyte and interferent concentrations are not detected at the method detection limit of each analyte of interest. Interferences are defined as systematic errors in the measured analytical signal of an established procedure caused by the presence of interfering species (interferent). The interferent concentration is presupposed to be normally distributed in representative samples of a given matrix.

3. (a) If the MDL is to be determined in reagent water (blank) prepare a laboratory standard (analyte in reagent water) at a concentration which is at least equal to or in the same concentration range as the estimated MDL (Recommend between 1 and 5 times the estimated MDL) Proceed to Step 4.
- (b) If the MDL is to be determined in another sample matrix, analyze the sample. If the measured level of the analyte is in the recommended range of one to five times the estimated MDL proceed to Step 4.
- If the measured level of analyte is greater than five times the estimated MDL, add a known amount of analyte to bring the concentration of analyte to between one and five times the MDL in the case where an interference is coanalyzed with the analyte.
- If the measured level of analyte is greater than five times the estimated MDL there are two options:
- (1) Obtain another sample of lower level of analyte in same matrix if possible.
 - (2) The sample may be used as is for determining the MDL if the analyte level does not exceed 20 times the MDL of the analyte in reagent water. The variance of the analytical method changes as in the analyte concentration increases from the MDL, hence the MDL determined under these circumstances may not truly reflect method variance at lower analyte concentrations.
4. (a) Take a minimum of seven aliquots of the sample to be used to calculate the MDL and process each through the entire analytical method. Make all computations according to the defined method with final results in the method reporting units. If blank measurements are required to calculate the measured level of analyte, obtain separate blank measurements for each sample aliquot analyzed. The average blank measurement is subtracted from the respective sample measurements.

(b) It may be economically and technically desirable to evaluate the estimated MDL before proceeding with 4a. This will: (1) prevent repeating this entire procedure when the costs of analyses are high and (2) insure that the procedure is being conducted at the correct concentration. It is quite possible that an incorrect MDL can be calculated from data obtained at many times the real MDL even though the background concentration of analyte is less than five times the calculated MDL. To insure that the estimate of the MDL is a good estimate, it is necessary to determine that a lower concentration of analyte will not result in a significantly lower MDL. Take two aliquots of the sample to be used to calculate the MDL and process each through the entire method, including blank measurements as described above in 4a. Evaluate these data:

- (1) If these measurements indicate the sample is in the desirable range for determining the MDL, take five additional aliquots and proceed. Use all seven measurements to calculate the MDL.
- (2) If these measurements indicate the sample is not in the correct range, reestimate the MDL, obtain new sample as in 3 and repeat either 4a or 4b.

5. Calculate the variance (S^2) and standard deviation (S) of the replicate measurements, as follows:

$$S^2 = \frac{1}{n-1} \left[\sum_{i=1}^n X_i^2 - \frac{(\sum_{i=1}^n X_i)^2}{n} \right]$$

$$S = \sqrt{S^2}$$

where the x_i $i = 1$ to n are the analytical results in the final method reporting units obtained from the n sample aliquots and

$\sum X_i^2$ refers to the sum of the X values from $i = 1$ to n .

6. (a) Compute the MDL as follows:

$$MDL = t_{(n-1), 1-\alpha=.99} \cdot S$$

where:

MDL - the method detection

$t_{(n-1), 1-\alpha=.99}$ = the students' t value appropriate for a 99% confidence level and a standard deviation estimate with $n-1$ degrees of freedom. See Table.

S = standard deviation of the replicate analyses.

- (b) The 95% confidence limits for the MDL derived in 6a are computed according to the following equations derived from percentiles of the chi square over degrees of freedom distribution (χ^2/df) and calculated as follows:

$$MDL_{LCI} = 0.69 MDL$$

$$MDL_{UCI} = 1.92 MDL$$

where MDL_{LCI} and MDL_{UCI} are the lower and upper 95% confidence limits respectively based on seven aliquots.

7. Optional iterative procedure to verify the reasonableness of the estimated MDL and calculated MDL of subsequent MDL determinations.

- (a) If this is the initial attempt to compute MDL based on the estimated MDL in Step 1, take the MDL as calculated in Step 6, spike in the matrix at the calculated MDL and proceed through the procedure starting with Step 4.

- (b) If the current MDL determination is an iteration of the MDL procedure for which the spiking level does not permit qualitative identification, report the MDL as that concentration between the current spike level and the previous spike level which allows qualitative identification.
- (c) If the current MDL determination is an iteration of the MDL procedure and the spiking level allows qualitative identification, use S^2 from the current MDL calculation and S^2 from the previous MDL calculation to compute the F ratio.

$$\text{if } \frac{S_A^2}{S_B^2} < 3.05$$

then compute the pooled standard deviation by the following equation:

$$\text{Spooled} = \left[\frac{6S_A^2 + 6S_B^2}{12} \right]^{1/2}$$

if $\frac{S_A^2}{S_B^2} > 3.05$, respoke at the last calculated MDL and process the samples through the procedure starting with step 4.

- (c) Use the Spooled as calculated in 7b to compute the final MDL according to the following equation:

$$\text{MDL} = 2.681 (\text{Spooled})$$

where 2.681 is equal to $t_{(12, 1-\alpha=.99)}$

- (d) The 95% confidence limits for MDL derived in 7c are computed according to the following equations derived from percentiles of the chi squared over degrees of freedom distribution.

$$MDL_{lcl} = 0.72 \text{ MDL}$$

$$MDL_{uc1} = 1.65 \text{ MDL}$$

where LCL and UCL are the lower and upper 95% confidence limits respectively based on 14 aliquots.

Reporting

The analytical method used must be specifically identified by number or title and the MDL for each analyte expressed in the appropriate method reporting units, if the analytical method permits options which affect the method detection limit these conditions must be specified with the MDL value. The sample matrix used to determine the MDL must also be identified with the MDL value. Report the mean analyte level with the MDL if a laboratory standard or a sample that contained a known amount analyte was used for this determination, report the mean recovery, and indicate if the MDL determination was iterated.

If the level of the analyte in the sample matrix exceeds 10 times the MDL of the analyte in reagent water, do not report a value for the MDL

Reference

Glaser, J.A. Foerst, D.L. McKee, G.D. Quave, S.A. and Budde, W.L. "Trace Analysis for Wastewater, "Environmental Science and Technology, 15, 1426 (1981)

Table of Students t Values at the 99 Percent Confidence Level

Number of Replicates	Degrees of Freedom ($n-1$)	$t_{(n-1), 1-\alpha=99}$
7	6	3.143
8	7	2.998

Table of Students' t Values at the 99 Percent Confidence Level (Cont'd)

Number of Replicates	Degrees of Freedom ($n-1$)	$t_{(n-1), 1-\alpha=.99}$
9	8	2.896
10	9	2.821
11	10	2.764
16	15	2.602
21	20	2.528
26	25	2.485
31	30	2.457
61	60	2.390
		2.326

5.1.4 Method Spikes

Method spikes will be carried out over 2 separate days at the specified levels including blanks and calibration standards. The data obtained at the 2x or 5x level (for each certified range) will be used to establish a mean and standard deviation for initial control charts. Once this data has been generated and approved by the analytical manager, the method has preliminary certification and is ready for application to real world samples. These control limits will be updated with every batch of samples until 30 numbers have been developed to establish reliable control limits. After 30 data points the DC will provide updated control limits with each additional 20 numbers.

5.2 Replacement Method Certification

When a new method is to be employed (where a new method is defined as including a new instrument method, i.e. flame vs flameless AA or Hall vs ECD), the method must be certified prior to its use on client samples.

Certification follows the procedures described in Sections 5.1. The results of these tests are important but are not necessarily compared to the current method. The detection limit may change and the work range may change but if they meet the needs of the lab, these changes are to be ignored. One may elect to utilize a t-test analysis to identify the method differences as being significant or not.

5.2.1 Comparison by the t-Test

One sample will be analyzed a minimum of 4 times by each method. The results will be subject to a t-test analyses. If the t-test indicates statistical correlation, regardless of the correlation coefficient, the new method is certified. If the t-test fails, refer to Section 5.2.2 below.

5.2.2 Decisions on Certification

The purpose of a new method is to improve accuracy, precision and efficiency. Efficiency is of no consequence if a method is imprecise and inaccurate, and therefore, is not a consideration in certifying new methods. However, a new method may fail the t-test because it is more accurate and/or more precise. Careful consideration and more analyses may be necessary with a new method by the analytical manager and supervisor.

6.0 ANALYST TRAINING AND CERTIFICATION

6.1 Rational

Consistent with requirements by the EPA and other regulatory agencies for analyst training and certification programs, EDI has a strict policy relative to the training and certification of analysts prior to their involvement in the analysis of client samples. The program is necessary in order to maintain continuity in all analytical programs and to insure the integrity of all data.

6.2 Training

The supervisor is responsible for training all new personnel. This training will be in conjunction with the group (workstation) and group leader if applicable. Training will include, but not be limited to, EDI QC requirements, paperwork flow, lab safety and organizational structure. In addition, the new analyst will be given copies of the QC manual, log-in manual and methodologies which the analyst will be required to read. Training in the methods to be used will be initiated prior to analyst certification.

6.3 Certification

Each new EDI analyst will be required to receive certification on all methods which he is to perform. Certification insures that the analyst can meet EDI detection limits and quality control limits as established for the method. Certification includes two parts, both of which must be completed satisfactorily.

6.3.1 Method Spikes

Analysis of spiked lab pure water at the levels of 0.5x, 1.0x, 2.0x, 5.0x and 10x where x is the established detection limit. This will include 2 blanks and a duplicated spike at 2.0x or 5.0x and will occur on 2 separate days. The data, where the duplicated

results are averaged. These results must match current EDI Schwart control chart limits. Additional parameters such as consistent instrument calibration curves will be evaluated.

6.3.2 Check Sample Analysis

The analyst will test a known blind check sample in duplicate including a blank. All the data must fall within established control limits for the parameters.

6.3.3 Current Analysts Training

The EDI analyst, who is assigned a new method, must complete the certification program for the methods as outlined above prior to performing analyses on client samples.

6.4 Recertification

All EDI analysts will recertify on all their respective methods when required or demonstrated by two method spike performance failures following the procedures set forth in Section 6.3.1. The results must meet previous data, assuming that the same methods are employed.

6.5 Performance Audits

The Analytical Manager, in cooperation with the Data Coordinator and Corporate QC Manager, will perform individual audits on all aspects of the operation biannually. These audits will include recertification data, control limits, all levels of records and laboratory performance on all check samples and instituted blind QC samples. A report of the audit results including recommendations will be forwarded to the President of EDI.

7.0 DOCUMENT CONTROL, FLOW AND STORAGE

7.1 Purpose

The paperwork trail must be designed to insure that after the issuance of a report, anyone - a client, a lawyer or the President of EDI - can track a single sample result back through EDI records to the origin of the standards used in calibration and the identity of the person who prepared the sample bottles.

7.2 Paperwork Flow

As shown in Figure 1, "Flow Diagram" the paperwork trail is eventually the same for routine work as it is for samples under Chain-of-Custody. The general axiom is that a COC procedure is doomed to failure without a pre-existing scheme of tight sample and analytical control available as a routine measure. This contention, however, is only of minimal consequence with respect to the need for detailed records. The records trail can provide the following:

- o Answers to questions of analytical integrity for results which are 2 months or two years old.
- o Assistance in finding and solving random and systematic problems.
- o Assistance in preventing long term degradation of analytical integrity.
- o Assistance in insuring continuity of analytical effort despite personnel and mechanical changes.

7.3 Document Requirements

The following subsection identifies all documents which are generated during the course of any project:

7.3.1 Project Sheets

Every sample or group of samples which enter the EDI facility must be accompanied by the appropriate project sheet which has been properly filled out and provided to the Sample Coordinator (SC). The SC may not log-in samples for which there are not project sheets or for which there the project sheet is incomplete. An example project sheet is attached as Figure 2.

7.3.2 New Project Approval Form

Projects which require testing or analyses not routinely provided at EDI must have prior approval on a "EDI Project Approval Form" and commitment from the Analytical Manager and the head of the appropriate analytical group(s). For the project manager's purpose, the approval forms insure that the analytical testing area has received notification and will be prepared. For the analytical managers purpose, proper notification has been received and sufficient time has been allotted for preparation and development. Projects requiring rush turn around on modified methods must be approved as well. An example of a New Project Approval Form is attached as Figure 3.

7.3.3 Problem Project Sheets

When the Sample Coordinator (SC) identifies a problem with a sample shipment or project sheet, a Problem Project Sheet will be initialed and sent to the project manager for resolution. See Figure 4.

7.3.4 Chain-of-Custody Forms

There are three forms for Chain-of-Custody samples. All three

forms must be properly completed and included in the project file for each and every COC project.

7.3.4.1 COC Shipping Record

The shipping record must be received in the shipping container with every COC shipment. The form attached as Figure 5 is identical to the form used by the EPA. This form will be used by EDI field samplers and returned with the samples. Other forms of a similar nature may be used by other clients. However, the information required on the EDI form must be present on any other client form or they run the risk of their COC being rejected as a continuous trackable COC event.

7.3.4.2 COC Project Log-in Form

This form, attached as Figure 6, is to be used for the receipt of any COC shipment regardless of the origin of the shipping record. COC projects which have poor or nonexistent shipping records will be logged-in (with notification of the deficiency to the Project Manager) and this form will be completed. The form is completed by the Sample Coordinator and placed immediately in the COC Project File.

7.3.4.3 COC Sample Control Record

This form is used as a record of the movement of COC samples in and out of the COC locked storage. The analyst signs samples in and out each time a sample(s) is removed for any analysis. A copy of the form is attached as Figure 7. After all analyses are complete, the Sample Coordinator files the form in the COC project file.

7.3.5 Work Sheets/Project Sheets

Work sheets are the analytical assignment forms generated by the computer or the lab manager within 24 hours after log-in for each project or group of projects. The work sheets are divided into work stations, i.e. the analytes for which one or more analysts has sole responsibility. In many cases, the work sheets will have an entry position for the results of each analyses for each sample. In either case, the work sheet, upon completion of all analyses, will be turned into the appropriate supervisor with the proper bench sheets attached. Unless specifically advised, data will not be accepted on any form other than the project approval form sheets.

7.3.6 Bench Sheets

The analysis of every analyte or group of analytes needed, i.e. VOA's requires a specific bench sheet which includes all results from the analysis of a group of samples. There are specific bench sheets for each analyte including specific requirements for their use. Examples of each bench sheet, can be found in Figures 8, 9 and 10.

7.3.7 Lab Notebooks

The lab notebooks are the daily records of all activities of an analyst, or group of analysts, working in the lab. The notebooks will be bound and paginated. The notebook will be cleanly labeled on the inside cover with the date issued, the analyst's name, and the date completed. There are several specific rules which will be follows:

- o All entries are in ink
- o There are no erasures, obliterations, or white outs allowed

- o Corrections are single lined and initialed
- o A new page is started each day or with every batch of samples
- o Empty space is covered with a Z and signed and dated across the obtuse line
- o Any and all work, observations and errors are noted
- o Problem areas identified

When the instrument has just been repaired, a lamp changed, new column installed, detector repaired, or changed in any other manner, the log will also contain:

- o A comment relative to the change or repair
- o Reference page number to the Instrument Maintenance Log

The organic log books will also contain the following information relative to GC and GCMS oven and column conditions UNLESS they are exactly as specified in the referenced method which then will be commented on as such:

- o column used (packing, diameter, length, type)
- o capillary as split or splitless
- o current type and flow
- o make up flow if appropriate
- o oven temperature and program if appropriate
- o injector temperature

- o detector temperature

- o ion chamber voltage (GCMS)

7.3.9 Instrument Maintenance Log

The instrument maintenance log is a bound and paginated log which is used to track potential maintenance problems. The log is used every time the instrument is used but may contain several entries on one page. Entries on days where calibrations are correct may be as simple as "calibration met requirements". Anytime the instrument is repaired or modified in any way, the event must be noted with all specifics, including what was done, by whom, and why. A two detector GC has one log tracking, two detectors.

7.3.10 Oven, Refrigerator and Freezer Temperature Logs

Each oven, insulator or furnace, plus all cold storage devices, will have their temperatures checked and recorded daily, or at a minimum, 5 days a week. Each device will have a thermometer in place or a temperature recorder in-place which will be checked by the Data Coordinator. A bound log book with 31 entries will be used to record all entries for each device upon which the DC will record the date and temperature and will initial the entry. The DC will have an NBS thermometer which will move between devices to act as a QC check for the primary temperature device. The log will include the second temperature when measured monthly.

7.3.11 Balance Logs

An Area Analyst will check all balances in the laboratory every day (or at least 5 days a week) using NBS class S weights. The analyst

will record each day's reading in a log developed to handle every balance. A balance which fails to meet criteria will be removed from service until repaired. The DC will insure that every balance is serviced and calibrated annually recording such service in the log.

7.3.12 Standard Record Books

Every standard used in the laboratory must be labeled and the label will possess the following information:

- The analyte or analytes contained in the standard
- The concentration
- The solvent
- The preservative, i.e. nitric acid
- The date made
- The Standard Reference Number

The last item, Standard Reference Number, is the identified standard and dilution sequence no. taken from the Standard Record Book in which the standard solution data is recorded.

All standards (including dilutions) will be recorded in a Standard Record Book assigned to the work station. Two record books will be used, each of which has a different purpose. The record books are subtitled as follows:

7.3.12.1 Stock Standards Log

This book contains standards starting with the identification of the starting material. One standard and/or standard mix with it's corresponding dilutions are identified.

7.3.12.2 Working Standards Log

A working standard reference number is assigned and the corresponding dilutions are identified.

7.3.13 Control Charts

Each analytical method will require at least one control chart. Some tests may involve several control charts, i.e. duplicate, matrix spikes and method spikes. The QC coordinator will supply the limits to be used to the work station involved. Every data point generated with every analytical batch will be plotted on the chart. Every out-of-control data point will be noted and an action indicated as to the disposition of the data. Completed control charts will be turned in to the DC for permanent change.

7.3.14 Preliminary Reports

After all data has been entered for a project, the computer will flag a project ready for a preliminary report. The report will be identical to the final report in content except for the following:

- o Preliminary Report will be reviewed and corrected if necessary on each page in large type.

- o Comments necessary to the project will be printed under each sample or at the end of the report.

The DC will print the preliminary report and issue a copy along with the project file to the lab supervisor for review and corrections. The supervisor will sign off on the preliminary report after including comments, if appropriate, indicating that corrections are necessary. Afterwards, the supervisor(s) will pass the preliminary report to the QC Supervisor (QC) who will review and correct the report including a signature and comment. The QC will return the preliminary report and file to the DC. The DC will make all corrections as required and review report structure for completeness. If no corrections are required, the DC will sign and date the preliminary report and place it in the Project File. The DC will then print a Final Report. When corrections are necessary, the DC will execute all corrections and indicate such changes on the initial preliminary, which is then filed in the project file. A new preliminary is then printed and issued for review.

7.3.15 Final Report

After the preliminary report has been corrected and cleared all reviews, the DC will manually alter the computer flag and print a Final Report which will be placed in the project file folder and forwarded to the AM for approval. Space will be provided on the c.d.c. project file folder for the signatures of the Analytical Manager, the Corporate QC Manager and the Project Manager, all of whom are thus certifying that the report is complete, correct and defensible. The DC will then arrange for delivery of the final report.

7.3.16 Project Files

The Project File is the comprehensive record of every project completed at EDI. A project file initially consists of a file folder set up by the Lab Secretary (LC) at the time of log-in. Chain-of-Custody projects will be stored in a locked COC file with strict limited access while routine project files are stored in a separate nominally limited access file. The LS will be responsible for including the following in the project file:

- Project Sheets
- Project Approval Sheets (if applicable)
- Problem Project Sheets
- Chain-of-Custody Forms (3 each)
- All correspondence or documents received with the samples

The Lab Secretary (LS) will be responsible for the inclusion of the following:

- Preliminary Reports
- Separate Report Papers, i.e. Field Reports (if applicable)
- Final Report
- Any additional paperwork which may follow the report

All project files are stored for a period of 4 years.

8.0 INTRODUCTION

All samples received at the EDI Engineering and Sciences must be logged in before any work is performed on the samples. This procedural requirement is specific not only to the chemistry lab, but the micorbiological laboratory. The purpose of the log-in procedure, including sequential numbers assigned to all samples received in the facility, is to insure that EDI has a means by which samples can be tracked, data can be stored, and quality control can be tracked for any sequence of events during a particular analytical period. In handling projects in this manner, EDI, or the client, can insure a consistent and documented sequence of events under any analytical situation.

Management acknowledges that there are situations in which log-in of samples will be difficult due to rapid turn around requirements for particular compounds that may decompose or volatilize. An example of this kind of analysis is the total coliform samples which can be anticipated and for which holding times are short. The project approval form discussed within this manual will make it possible to preassign project numbers to samples arriving at the facility. Should a secondary mode of operation be necessary for the receipt of such samples, a mechanism will be developed between the sample coordinator and the Quality Assurance Supervisor. Any deviation from the standard log-in procedures detailed herein will be at the discretion of the laboratory supervisor or the laboratory manager. The execution of the log-in procedures for Chain-of-Custody samples (see Section 8.8) is extremely crucial. Samples, that have been designated for Chain-of-Custody by a client, possess the potential of involvement in litigation or other legal situations., i.e. standards development or patents. By breaking Chain-of-Custody requirements, all results are invalid for such purposes.

8.1 PROJECT INFORMATION

All information relative to a specific project must be recorded on a project approved form by the manager responsible for that project prior to

the receipt and log-in of samples. Projects, and therefore samples which are not routine to the EDI laboratory, must have prior approval via the New Project Approval Form before samples may be received.

8.2 NEW PROJECT APPROVAL

The project approval form include the following information:

- * Client name, address, and client contact personnel
- * Anticipated due date of the report (i.e. report in client hands by _____)
- * Compound names or computer test codes or group computer test code
- * Project and sample comments
- * Contract number or purchase order for project
- * Instructions relative to the proper completion of the project
- * Pricing information relative to the proper completion of the project
- * Chain-of-custody requirements
- * Specific report requirements
- * Additional requirements such as rush, hazardous, labile

8.3 NEW PROJECT APPROVAL

If a new project will require support from the analytical facilities, that project must be approved by the laboratory supervisors and the laboratory manager prior to project pricing and sample receipt. Routine samples are those samples and analyses which are continuously processed by EDI, such as priority pollutant samples, microbiological samples, and drinking water samples.

Projects which are non-routine are those that may require special testing, or which request parameters not routinely run within the laboratory, special holding times, or rush turn around. Non-routine projects will require that a New Project Approval Form be completed which includes the signatures of all the parties involved with the project. For example, if specific physical testing is necessary, the supervisor of the physical testing facility and the laboratory manager will have to sign off

on the form thereby agreeing, not only to the project content, but for the turn around, the report requirements, the detection limits and the quality control reports that may be necessary to properly carry out the project requirements. Projects and/or samples arriving at EDI which are non-routine in nature, and for which there is no signed Project Approval Form, will not be processed. In this case, the manager responsible for the non-routine project will be advised of the problem and will then explain to the client why the delay is necessary for the execution of testing before proceeding to obtain the necessary approvals. The Project Approval Form must be completed and signed by all parties prior to the start of log-in.

8.4 SAMPLE RECEIPT

8.4.1 Introduction

All samples will be received at the EDI facilities by the Sample Coordinator (SC). The job description for the Sample Coordinator is attached as Figure 11. It will be the responsibility of the SC to determine: a) whether or not the proper project sheet is available for the arriving samples; b) whether or not the samples require chain of custody; c) whether or not the samples are labile in nature and require immediate attention; d) the manner in which those samples will be split, preserved and stored or routed. It is the objective of the SC to insure that the receipt of all samples is consistent with the requirements of the EDI Manual and that all pertinent information relative to those samples is recorded. This information may be used in client reports, communicated to the laboratory or to the client and, in some cases, reported to a legal authority relative to Chain-of-Custody samples.

8.4.2 Examination of Shipping Container

Immediately upon receipt of a sample shipment at EDI, the SC will examine the shipping container (the container may be a box, a cooler, a styrofoam container, etc.) to ascertain and document the

condition of the samples and to process Chain-of-Custody papers, where appropriate. The SC will record the condition of the shipping container, the identification of the shipper, the presence or absence of any seals on the container (if it is Chain-of-Custody), and the labeling which may include special instructions prior to opening the container. If the shipping container is damaged, a report will be sent immediately to the shipper and the lab supervisor (see Section 8.15.2, Problem Project Sheet).

8.4.3 Carrier Sign Off for Chain-of-Custody Container

Should the SC identify the shipping container as being a Chain-of-Custody container, the SC will attempt to have the carrier's representative sign off on the Chain-of-Custody papers which should be available either on the outside of the shipping container, or immediately inside. An example of a Chain-of-Custody record is attached as Figure 5. In the event that the carrier's representative is unwilling to cooperate in this fashion, the SC will identify, in the proper position on the Chain-of-Custody document, the shipment number, the date of receipt, and sign off, attaching a copy of the shipping log for that particular container.

8.5 EXAMINATION OF CONTAINER CONTENTS

Unless the shipping container contents are marked "hazardous" the SC will proceed to open the sample container. If the SC had not previously identified the project sheet appropriate for these samples, the SC will attempt to ascertain immediately the origin of the samples found in this container and obtain the appropriate project sheet. If a project sheet is not found, the SC will lock up the samples and notify the lab manager as described in Section 2.0. The SC will identify whether or not all the samples have arrived intact, whether or not the labels are intact and attached properly, and whether or not the samples have leaked in any fashion. The SC will also identify any shipping instructions, field instructions, or any other materials that may be present in the shipping container.

8.5.1 Chain-of-Custody Shipments

Should the SC identify the shipping container as a Chain-of-Custody project, the SC will immediately follow the procedure outlined in Section 4.0, "Chain-of-Custody Samples".

8.6 PROJECT VERIFICATION

The sample coordinator, having opened the shipping container and examined all the samples, will verify that the project sheet matches the samples, the number of samples received is consistent with the project sheet, and that the requirements identified on the project sheet are consistent with any paperwork obtained which will include the project sheet and any other documents in the sample container. The project files will be kept by the SC in a locked filing cabinet. If all required project information is not complete, the SC will fill out a Problem Project Sheet (see Section 5.2) and turn it over to the Project Manager.

8.7 LABILE SAMPLE DISTRIBUTION

Should the SC identify labile samples within the shipping container, (i.e. coliforms or nitrites) for which there is a very short holding time and a need to rapidly move the samples into the laboratory, the SC will make every effort to immediately log-in those samples. Should log-in be delayed, the SC will coordinate with the responsible analytical group in order to move the samples into analysis. The coordinated effort will include means by which the SC can label the samples after log-in and insure that the results correlate with the proper samples. The SC will provide computer generated sample identification to the responsible analytical group. It will be the responsibility of the SC, once labile samples have been distributed to the laboratory to insure that those samples are properly logged in and that they are labeled with properly sequenced numbers. The agreement that is made between the SC and the appropriate laboratory manager or laboratory supervisor will be based on the premise that the SC understands that he/she is ultimately responsible and will be held accountable for any samples that are lost in such a

movement. Consequently, the SC will find the samples that are labile and apply the necessary labels.

If a shipping container is labeled "Hazardous", the SC will immediately notify the laboratory supervisor who will determine the extent of hazard and/or the manner in which the samples will be handled. The supervisor will involve the laboratory manager as needed in resolving questions of hazardous samples.

Figure 11

POSITION DESCRIPTION FOR SAMPLE COORDINATOR

General

The Sample Coordinator (SC) is responsible for the receipt, log-in, and storage of all client samples at EDI. The SC is responsible for the receipt, storage and custody of all Chain-of-Custody (COC) samples including distribution of COC samples to lab personnel per EDI COC procedures (section 4.0, EDI Log-in Procedure). In order to ensure the successful analyses of samples, it is critical that the SC obtain and communicate to Project Manager, lab supervisors, and lab personnel, all information necessary for the processing interpretation and reporting of all samples analyzed.

Qualifications

High School Diploma and a minimum of 2 years of college or equivalent. A knowledge of chemistry and testing procedures helpful. Excellent verbal, written and organization skills, including a propensity for detail necessary for successful completion of job.

Reporting Relationships

The SC will report to the laboratory manager. The SC will communicate closely with the Director and Project Managers to obtain project information.

Specific Responsibilities

The SC's duties and responsibilities shall include, but not be limited to:

1. Sample receipt.
2. Insuring that COC sample receipt includes shipper's signature on COC forms.
3. Inspection of sample shipping containers for presence/absence and condition of:
 - a) custody seals, locks, "evidence tape", etc.
 - b) container breakage and/or container integrity
4. Recording conditions of both shipping containers and sample containers (bottles, jars, cans, etc.) in appropriate logbooks or on appropriate forms.
5. Signing appropriate documents shipped with samples (i.e., Chain-of-Custody record(s)).
6. Verifying and recording agreement or non-agreement of information on sample documents (i.e., separate tags, Chain-of-Custody records, traffic reports, airbills, etc.) on appropriate forms and on the EDI project sheet.
7. Initiating the sample and project log-in procedures on appropriate laboratory documents and according to the EDI Log-in Procedures document, including the initiation of project files with sample control records.
8. Marking or labeling samples with laboratory sample numbers, as appropriate.
9. Placing samples and spent samples into appropriate storage and/or secure areas.
10. Controlling access to samples in storage and assuring that laboratory operating procedures are followed when samples are removed from and returned to storage.
11. Monitoring storage conditions for proper sample preservation such as refrigeration temperature and prevention of cross-contamination.
12. Returning shipping containers to the proper client or licensed disposal facility.

13. Providing for the splitting of samples into required aliquots, including preservation for each working station.

8.8 CHAIN-OF-CUSTODY SAMPLES

8.8.1 Continuance of Log-In Procedures for Chain-of-Custody Samples

All samples in the possession of EDI under Chain-of-Custody (COC) procedures must be traceable from the time the samples are received at the EDI door (or collected by EDI staff) until results are reported and sample disposition has been determined from the client. For any samples that may be collected during enforcement investigations, under litigatory requirements, or evidentiary in nature, Chain-of-Custody procedures are required.

8.8.2 Examination of Container Contents

Although Section 8.4.2 under Sample Receipt discusses the thorough examination of container contents, the proper examination of a container which is involved in a Chain-of-Custody procedure is even more important. For example, should the sample labels be mismarked or a particular sample to somewhat strange in nature, it is necessary to note all observations and deviations from the project sheet. It is better to be overly observant than to allow possible anomalies to go unnoticed. It is the SC's responsibility to examine whether or not each of the sample containers are individually sealed, whether those seals are intact, whether a sampler's initials are on the seals, and whether or not the paperwork matches the contents of the package. In addition, the SC must note whether or not all the dates and times are consistent, and whether or not the sample description on the paper work matches the description on the sample container.

8.9 PROJECT VERIFICATION

In the same manner in which the examination of the container contents is critical to a COC project, the verification of the project is equally important. These project verification steps include not only the need to follow the requirements identified in Section 8.6, but also thorough examination of all aspects of the project and the consistency of all the paper work involved with those particular samples in that shipping container. It is also important that the SC place in the COC project file: the shipping document; a signed Chain-of-Custody document including the sign off from the shipper's representative (See Section 8.4.3); a copy of the project sheet; a copy of the Project Approval Form is appropriate; a copy of the filed sampling report if appropriate; and originals of all paperwork received for the project. The COC project file is kept in locked storage in the possession of the SC.

8.10 CHAIN-OF-CUSTODY LOG-IN

The log-in procedure identified in section 8.15 titled "Log-in", is followed in the same manner for Chain-of-Custody samples with a few modifications. Those areas which are changed are addressed in the following sections:

- SAMPLE STORAGE
- PROJECT FILES
- LABORATORY ACCESS
- DATA STORAGE

8.11 CHAIN-OF-CUSTODY SAMPLE STORAGE

All samples received under Chain-of-Custody procedures will be kept under locked storage and will be distributed for analysis to the laboratory only when the analyst has signed for the samples on the form shown in Figure 7. The SC or a designated representative will provide access to COC storage. Records of movement of all COC samples within the lab facility must be recorded.

8.12 CHAIN-OF-CUSTODY PROJECT FILES

All Chain-of-Custody project files will be kept in a project folder in a locked cabinet with all related documents and paperwork relative to those files.

8.13 MAINTENANCE OF LAB CUSTODY

Laboratory custody must be consistent with all the Chain-of-Custody requirements from the beginning of sampling to the final report. To this end, every analyst requiring access to the Chain-of-Custody samples will go to the SC for access to the COC locked sample storage. The SC will insure that the analyst signs for the receipt of all COC samples on the form shown in Figure 7 and that the analyst returns and signs in those same samples on the same day for which they were signed out. This documentation, after the completion of all analyses, will be placed in the locked Chain-of-Custody project file by the SC.

8.13.1 Sample Custodian

The COC sample custodian at EDI will be designated as the Sample Coordinator (SC). The SC is responsible for following the COC requirements outlined in these procedures for all samples received at EDI.

8.13.2 Lab Custodial Responsibilities

It will be the responsibility of every analyst signing for a Chain-of-Custody sample or samples to insure that; a) these samples are kept in a minimum access facility; b) they are within their possession during the particular period during which they are being analyzed; and c) the analyst returns those samples to the Chain-of-Custody lock-up in the manner prescribed. The analyst will sign out and return the samples to COC lock-up on the same day. The analyst will be using the SC as the sample custodian for all COC samples. Due to the legal implications for the client of breaking the COC procedures and possibility of legal action that could be

taken against EDI, errors in the execution of Chain-of-Custody procedures will not be tolerated.

8.14 CHAIN-OF-CUSTODY SAMPLE DISPOSAL

All samples received for COC procedures will be stored in the EDI COC lock-up facilities until a final report is issued. It will be the responsibility of the Project Manager, in cooperation with the SC, to obtain information from the client relative to the length of time the COC samples will be stored. It is anticipated that for long term storage, i.e. more than 30 days, the client will reimburse EDI in an appropriate rate for keeping completed samples under Chain-of-Custody procedures. No Chain-of-Custody samples may be discarded until written permission is received from the client relative to disposal of those samples.

8.15 LOG-IN

8.15.1 Introduction

After the SC has inspected the shipping containers, the project sheets, the samples and any documentation required in Sections 8.4 and 8.8, the SC will insure that all pertinent information is entered on the project sheet. There are specific areas of the project sheet that are to be completed by the SC, i.e., date and time received. The EDI project sheet is included as Figure 2.

Minimum information required for log-in include:

- * Client's name and Client contact, as well as client #, is assigned.
- * The due date
- * The analytical test or test codes or group tests
- * Specific project comments
- * Contract requirements
- * Contract number

- * Pricing if necessary
- * The approval for for non-routine projects
- * Chain-of-Custody, if required
- * Specific report requirements

8.15.2 Project Problems

If any of the information identified in sub-section 8.15.1 is missing, the SC will immediately notify the Project Manager, via a Problem Project Sheet, (Figure 4) of the discrepancy. The Project Manager will make all reasonable efforts to insure that the answers are provided to the SC immediately.

Simple Project Sheet deficiencies such as client number, extra comments, or the contract number, should not prevent log-in. The SC will proceed with log-in addressing the unknowns as subjects that must be changed or modified once the information is received. It is the responsibility of the SC to log-in all samples as received at EDI whenever possible.

8.15.3 Samples on Hold

When there is a considerable amount of inadequate information on a project sheet, i.e. a missing test, or broken samples, the entire project will be placed on hold until the information is available or the corrective actions have been taken to insure that NSF is not held responsible for a poorly handled project. The SC will notify the Project Manager via a Problem Project Sheet as to the hold status of the project and the reasons for the hold. The Project Manager will make every attempt to quickly identify the necessary actions that will be taken for those samples or the remaining samples for that project. The Project Manager may approve log-in of the remaining samples for a portion of the project in order to insure that the project progresses. Projects that are placed on hold will be locked in a "project hold" area, (like the Chain-of-Custody sample storage area) so that those samples are not lost or confused within the system. The SC will insure that those

samples are retrieved and logged in as soon as the appropriate changes have been made and the samples are freed for log-in.

8.15.4 Handling Labile Samples

All samples received by the SC that are labile in nature, i.e. coliforms, need to be logged into the facility in a very rapid fashion in order that they may be attended to within the analytical holding time. The most labile of all samples are the microbiological samples, which must be forwarded to the micro lab as soon as possible. The SC and the Project Managers responsible for micro work will attempt to insure that appropriate information is available to the SC in order that the SC can assign numbers for all labile samples. These numbers can be assigned in advance and samples may be logged into the system as soon as they are received. Samples such as nitrites, which are labile but have a somewhat longer holding time, will usually be logged into the system like normal samples. However, slow shipment or other problems may require the lab to initiate the analyses immediately. In such a case, assuming a project sheet was initiated in advance of sample receipt, the SC can assign laboratory in an expedient fashion. The SC will make all efforts to insure that samples move through the laboratory in a timely fashion when holding times are of utmost importance to the proper completion of the analytical requirements.

8.16 COMPUTER LOG-IN

It is anticipated that all samples received at EDI will be logged on to the computer by the SC. The computer assigns a sequential number to every sample. Additional codes such as the month and the year of the samples may be added in front of the sequential number for continuous identification of these samples. The SC will have the computer generate these sequential numbers for each sample in every project. A project identifier will be printed on the labels which are attached to every sample and every aliquot of a sample.

8.17 SAMPLE SPLITTING FOR THE CHEMICAL LABORATORY

The EDI Project Manager will attempt to insure that all samples received at the EDI facility are received in the appropriate containers with the correct preservatives (Samples which must be split at log-in are subject to added error). The labels and the appropriate preservatives are identified in the EDI Quality Control Manual and attached as a supplement to this section in Appendix I.

8.17.1 Bottles and Preservative Requirements

The EDI analytical facility has a series of bottle and preservative requirements that must be met before the log-in of samples into the laboratory. In the event that EDI is unable to provide sample bottles, or circumstances prevent the splitting of samples in the field, the SC will provide sample splitting services. These services will include taking the sample as received and subsampling it into the appropriate bottle and preservative requirements as set forward on the attached list of bottle and preservative requirements.

8.17.2 Inorganic Samples

The SC will insure that sufficient sample volume is available before initiating the splitting of a sample. If uncertain, the SC will involve the inorganic lab lead in order to insure that all areas of the lab have sufficient samples. In the event that sufficient samples does not exist, the SC will identify the sample as a problem and will notify the Project Manager immediately for resolution. The sample will be logged in only after a resolution has been reached.

8.17.3 Organic Analysis

When a bulk sample arrives for organic/inorganic analysis and sufficient sample exists, the SC will transfer the sample to the

organic preparation supervisor who will split the organic aliquots and return all aliquots to the SC. The remaining sample will then be returned to the SC who will split off the inorganic aliquots into the proper preserved containers.

8.17.4 Solid Samples Splitting

When solid samples, such as sediment or soil, are to be received at EDI, every attempt will be made by the Project Manager and field sampling personnel to insure that two samples are provided as replicates for the appropriate tests. One of these samples will be assigned to the organic facility; the other will be assigned to the inorganics facility. If only one sample is received and if organic analyses are required, the organics preparation chemist will be responsible for the initial splitting of the sample. Solid samples will be made homogenous by either one or all of the following manners:

- * Stirring especially when volatile organic analytes are required
- * Air Drying and Grinding
- * Particle separation (Sieving)
- * Quartering by ASTM Procedures

The lead organic chemist and the SC are responsible for the decisions on how a solid sample will be split. Problems or concerns which may arise on a solid sample will be addressed to the Project Manager and the laboratory manager for resolution. After the organic portions have been removed or split, the remaining sample will be provided to the inorganic facilities for any further splitting they deem necessary.

8.18 SAMPLE LABELING

All samples received at the EDI facility will be labeled by the SC at the time of log-in. These labels will include information such as the requested sample number, the client number if supplied, the contract, the

EDI project number, and/or the client. It is anticipated that sequential sample labels will be provided by the computer after the SC has logged the project into the computer.

8.19 DISTRIBUTION AND STORAGE

Logged samples will be taken by the SC to the appropriate walk-in cooler for cold storage or to the room temperature storage area indicated for metals.

COC samples are stored as set forth in Section 4.0.

8.20 PROJECT FILES

8.20.1 Routine Project Files

The SC will obtain a manila folder and label that manila folder with the name and number of the project. The folder will indicate the EDI project number, the EDI contract number, and Chain-of-Custody if applicable. With the agreement of the laboratory supervisor (lead), the project manager, and the laboratory manager, a particular project folder may include a series of projects logged in under sequential numbers. An example would be a daily log-in for the same project for a week or month before a new project folder is generated. It is, however, the responsibility of the SC to insure that all logged projects are filled in a project file folder.

8.20.2 Chain-of-Custody File Folder

The SC, upon logging in any Chain-of-Custody project, will provide the same type of manila folder project file, as discussed in Section 5.7.1, for each project. However, the project folder will be maintained in the locked Chain-of-Custody file and cabinet and will be kept by the sample coordinator.

8.21 SAMPLE STORAGE

8.21.2 Non Chain-of-Custody Storage

The SC, after completing all the log-in processes of various samples connected with a particular project, will store the samples in the designated areas in the EDI laboratory.

- * Routine Water and Solid Samples: Samples which need to be refrigerated will be stored in the walk in facility designated for all routine water and soil samples.
- * Routine Volatile Water and Solid Samples: All these samples will be placed in the designated VOA refrigerator located within the analytical facility. No other samples or standards may be stored in the VOA refrigerator.
- * Routine Water and Solid Samples for Metal Parameters: The preserved water samples and solid samples, which are not preserved, may be stored on shelves designated for the metals analysis.
- * Odoriferous and Hazardous Samples: These samples will be stored in a hooded facility within the laboratory which is designated for odoriferous and hazardous samples. These samples will be identified to the lab personnel and noted on the log-in procedures in order to insure that the lab personnel are aware of the problems with these samples.

8.22 CHAIN-OF-CUSTODY SAMPLE STORAGE

All samples that are involved as physical evidence in a legal procedure or simply identified as Chain-of-Custody will be handled under certain procedural safeguards. These safeguards have been tentatively identified in section 4.0 but for purposes or reiteration are again addressed below:

NOTE: For any legal proceedings, the court must be shown that the laboratory is a secured area, that all samples have been stored in a secured fashion, and samples can be accounted for at all times.

8.22.1 Chain-of-Custody Water and Solid Samples

All samples of this nature will be stored within the locked cabinets in the designated walk-in cooler for routine samples. Keyed access is available only through the SC.

All samples received for metals analysis under Chain-of-Custody procedures, whether they be liquid or solids(s), will be stored in a locked cabinet which does not need to be in the walk-in facility. Such a cabinet will be designated and placed by the inorganic lab supervisor.

8.22.2 Water and Soil Samples for Metals

8.23 GENERAL LAB SECURITY

Access to the EDI lab will be handled in a secured fashion restricting entrance only to those people designated as having access to the laboratory facilities. Restricted access applies to all areas in which samples are stored or analysis takes place. It will be the responsibility of all the analysts, as well as the supervisors and the SC, to insure that the safeguards employed, including locked doors and limited access, are followed and maintained at all times.

9.0 DATA HANDLING, REPORTING, RECORDKEEPING AND VALIDATION

There are two significant aspects of any analytical procedure:

- A. The selection and use of a method appropriate for the analyte and matrix
- B. The collection, control and interpretation of the data generated.

Encompassing these two components is the Quality Assurance program. The QA program provides means by which method selection can be validated, the method can be controlled and the appropriate data generated, displayed and reduced.

The following sections deal with error, data handling, data validation, data reporting and data recordkeeping.

9.1 ERROR: IT'S NATURE AND SIMPLE STATISTICAL CONCEPTS

9.1.1 Random Errors

Repeated analysis of identical aliquots of a homogeneous sample does not give a series of equivalent results. The results will differ among themselves and they will be more or less scattered about some value. The scatter can be attributed to random error, so named because the prediction of the sign or magnitude of the error of any particular result is not possible at the time of analysis.

One therefore, says that each result must have an uncertainty attached to it, and can be regarded only as an estimate of the true value. Generally that estimate will differ from the true value. Random errors are caused by uncontrolled and/or uncontrollable random variations in factors which affect analytical results, i.e.

variations in the volumes of the reagents added, variations in the concentrations of reagents, variations in the time allotted for the chemical analysis, a contaminated glassware, poor quality reagents, instrumental fluctuations. Among the various texts that are available discussing errors, the terms repeatability, reproducibility and precision have been used to denote the scatter of results. The term "precision" will be used throughout this manual and is the most common term used for random error in this country and especially by the EPA.

Precision does improve as the scatter among results becomes smaller. All analytical results have random error present which necessitates statistical techniques to evaluate the results and to provide correct inferences of the true value of the result.

9.2 SYSTEMATIC ERRORS

Systematic errors are indicated by the tendency of results to be greater or smaller than, the true value. It is necessary to take care in exactly defining systematic error because the analysis is also subject to random error. The mean of n analytical results on the same sample approaches a definite value u as the number of results increases indefinitely. When u differs from the true value τ results are said to be subject to systematic error of the magnitude B , wherein B is equal u minus τ . Bias is the term used synonymously with systematic error and will be used in that fashion throughout this manual. Analytical methods, which are subject to interferences from substances present in the sample, or methods that only recover a fraction of the material present are an example of systematic error.

It is impractical to make an indefinitely large number of analysis on a single sample in order to determine the true value of u is known. At the same time a practically obtained value for a sample that is based on minimal analysis is subject to random error, so that the experimental estimates of bias will also be subject to random error. Therefore, statistical techniques are also required when bias is to be estimated.

The basic difference between random and systematic error is that, in principal, the latter may be predicted so that a correction can be made to eliminate its effect. An example of this allowance can be accounted for in the effect of fluoride in the determination of aluminum by absorbance measurements. This effect is overcome by adding to the calibration standards an amount of fluoride equal to the fluoride content of the sample. The added fluoride in the calibration standards then eliminates the systematic error of fluoride interference. However, it must be recognized that the complete elimination of systematic error may require such detailed knowledge of the properties of the sample that the correction of the analytical system is impractical and would in fact increase the amount of random error. Thus, in all applications where unbiased results are necessary, the approach to be used is to devise and use analytical systems capable of giving results which have negligible systematic error.

9.3 TOTAL ERROR

Some analysts use the term accuracy to denote only systematic error. The term accuracy as applied in this manual will denote total error of the results. In other words, accuracy represents the combined systematic and random error of the results and, therefore, the accuracy of an analysis improves as the total error becomes smaller. For the purposes of visually seeing random and systematic error, Figure 6-1 should be referred to for any easy identification of the various types of error.

9.4 STATISTICAL TECHNIQUES

Statistical techniques are essential to the measurement of analytical error. This manual and this section recognize that many analysts have had little experience with statistical technique. This section is, therefore, written in such a way as to explain simple but basic concepts of the statistical approach and to describe the particular techniques most commonly required in dealing with analytical errors. There are a large number of text books dealing with statistics and this particular section does not attempt to replace these books. The intention is merely to

present the essential aspects in the simplest manner possible. Certain approximations have been used when considered appropriate and no previous knowledge of statistics has been assumed. Should the analyst be interested in consulting additional texts for a more rigorous and detailed treatment of the subject, he is referred to the references at the end of section 9.0.

Analysts who are unfamiliar with statistical approach, may find this section on first glance rather complicated. In order to understand statistics for the QC function, it is important not to be put off by the first impression.

The fundamental statistical concepts are essentially simple and equivalent to the intuitive common sense, or perhaps scientific approach, adopted by any good analyst.

9.4.1 Random Error Distribution

If the results from the analysis of numerous aliquots of a homogeneous sample are plotted on a histogram, it is generally found that the proportion of the results deviating from the mean increased, i.e., as the deviation of the results from the mean grows broader. In other words, the probability of obtaining a random error of a given size decreases as the size of the error increases. The basis of statistical techniques is to quantitatively estimate the probabilities of errors of different sizes so that one can deduce the probable random error of a particular analytical result. If the analyst were to increase the number of analysis of a single sample indefinitely, and the size of the intervals used for plotting the histogram were decreased, the latter would tend to smooth the curve. This limiting curve is the frequency distribution of results and defines a relationship between the magnitude of the result and the probability of obtaining such a value. Throughout this manual, it will be assumed that the analytical results follow the normal distribution which is defined by the following equation:

$$p(x) = \mu \pm \sigma$$

Where: μ = the mean of all the conceptionally infinite number of results.

σ = the standard deviation of results

$p(x)$ = the probability density which is interpreted by noting that the probability of obtaining a result between the values a & b is the area of the curve between those values.

and this interval can be evaluated given the equation for $P(X)$.

The peak of this distribution curve occurs at $x=u$, the theoretically perfect mean established by an infinite number of results. The width (which is indicated by the scatter results) is determined solely by the standard deviation of the test. For example, 95% of the area under the curve, i.e. 95% of all results, is enclosed within the limits plus or minus 1.96. Such properties allow limits for the uncertainty of an individual analytical result to be calculated. Taking the current discussion, for example, on no more than 5 occasions in one hundred will the result differ from the mean u be more than 1.96. Thus, an analyst may attach to a result limits that define the range in which the true mean is expected to lie. The statement, $R-1.96$ is less than u which is less than $R+1.96$, is an accurate statement on 95% of all occasions. "R" in this particular case would stand for the result. By referring to texts on statistics, there are statistical tables which included a tabulation of areas enclosed between specific limits as an analyst might want to define them. It should be noted that the distribution is always symmetrical about the mean. In other words, if one is using the 1.96 levels 5% of the results will be outside of the range of $u \pm 1.96$, but only 2.5% of all results will exceed $u + 1.96$ and 2.5% of the results will be less than $u - 1.96$.

Focusing this into a discussion more pertinent to the laboratory and, perhaps more viable with respect to occurrences within the laboratory, let us discuss the rare exception in which an analyst is taking 20 tests on a particular sample using the 1.96 level. Considering that 5% of the results will lie outside that level, the analyst has 1 chance in 20 of missing the true value outside the stated confidence range. At the same time one can decrease this chance by increasing the allowable range. For instance, if the range is $R = \pm 2.58$ the results will be included on 99% of the occasions or 99% of the tests. However, by increasing the confidence limit, one is also increasing the uncertainty in the true value. In this case, uncertainty can be decreased by taking the mean of several analytical results or by decreasing the value.

These statistical concepts allow valuable quantification of the random error of an analytical result and emphasize that decisions, based on the significance of the result, have some risk of being wrong. Knowledge of the standard deviation, of the results is, therefore, vital in reaching objective decisions. Use of the standard deviation will be explained in the following sections dealing with data handling and validation.

9.4.2 Data Handling, Reporting, Recordkeeping

A flow diagram, Figure 1, delineates the original and procedural steps in data generation.

The initiation of an analysis starts with the completion of a project approval form. The information is computer entered. The computer entry internally creates a report form and inventories the analysis by parameter or compound. The computer entry function of all analytical work requests is a shared responsibility of the sample coordinator and data coordinator. A copy of the analysis request form is manually inserted into a three ring binder notebook

for laboratory reference use. The maintenance of the laboratory job reference notebook is a responsibility of the sample coordinator. The group leader/supervisors requests from the data coordinator (D.C.), the computer generated analytical bench sheets for a given parameter each morning or the prior day. The samples and parameters testing sequence is dictated by a weekly work schedule. The weekly work schedule is developed manually each week by the group leaders/area supervisors and approved each week by the laboratory manager. The schedule is developed from a computer printout that inventories and ages by project job or parameter. Contractual due dates and sample holding times are the compliance criteria by which all schedules are judged.

The bench sheets examples are shown in Figure 8, 9, 10,. The bench sheets identify to an analyst the proper samples to analyze that day. The analyst lab notebook and the bench sheets constitute the two raw data reporting locations. The content of the laboratory notebook is defined in an earlier section, 7.3.7. The analyst completes the benchsheet information, attaches a drawn calibration curve and follows the analytical sample sequence identified in section 10.0. The analyst identifies which sample(s) were utilized for precision and accuracy determinations. The analyst will assess the data set as being in control or not. The assessment will be described in the data validation section to follow. The analyst will submit to respective group leaders or supervisors all of the abovementioned data and a written statement that the data set is in control for their review. An approved data set is signed off and the group leaders/supervisors transfer the approved data to all appropriate worksheets in the laboratory job reference notebook. The bench sheets and calibration curves are permanently stored. The last entry into the worksheet constitutes a completed project subject to computer generation of a preliminary report. The group leader/supervisors provide the DC with the approved worksheets for computer entry and preliminary report generation. The remaining activities related to preliminary report, final report generation and review and project filing are identified in this manual under sections 7.3.14, 7.3.15 and 7.3.16 respectively.

9.5 DATA VALIDATION

The data validation process includes a set of computerized and manual checks at various appropriate levels of the measurement process.

The data validation process starts with the laboratory analyst. The analyst verify in their lab notebook that all method specific operational parameters are utilized or met. This information is specifically documented in all instrument logbooks. The analyst then verifies that the calibration of the equipment is linear and documents this in the instrument logbooks. If the operating parameters of a particular method are modified, it should be written in the analyst lab notebook and approved via signature by the group leader/supervisor in the lab notebook. A non-calibrated system must be identified by the analyst and corrections made to achieve calibration prior to sample analysis.

The generation of sample data by an analyst will include the generation of quality control data for each sample set. The monitoring of method blanks, sample spikes, method spikes and sample duplicate analysis is accomplished by the utilization of Schwart Quality Control Charts. All quality control data is entered on the precision and accuracy data summary form, Figure 11a. The analyst computes the data precision and accuracy and compares the computed value to the acceptance intervals identifies on the form for that parameter, method, and matrix. The computed value will be determined in control if it lies within the acceptance interval. If the computed value is deemed out-of-control the data set is not submitted for supervisor approval but is brought immediately to the attention of the supervisor and quality assurance officer that an out-of-control condition exists. Jointly, a review is conducted to determine the cause(s) and conduct corrective action. The data set is rerun once the corrective actions have taken place and the new data reviewed as stated above.

The DC receives all the completed precision and accuracy data summary forms and enters the data into the laboratory quality control computer system. The system produces summary reports each day of all quality control data generated for review by the quality assurance officer. The

computer system also generates all Schwart Control Charts for method blanks, method spikes, sample duplicates and sample spikes. The charts are permanently maintained and reviewed each week by the group leader/-supervisor and the quality assurance officer. The weekly generated charts provide an accurate review of all recently (last 30) qc data points and allows the monitoring of data trends or other anomalies to the system.

10.0 GENERAL QUALITY CONTROL PRACTICES

The Quality Assurance/Quality Control practices at EDI are based on several of the following government guidelines:

- o "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" EPA 600/4-79-019, March 3, 1979
- o The Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act (Federal Register, Dec. 3, 1979, updated on October 26, 1984.)
- o Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples" EPA 600/8-80-038 June 1980.
- o ASTM

The quality control procedures used during analysis are described below and do conform with sample control and document control requirements described for the EPA Contract Lab Program (CLP). The specific sample and document control practices employed at EDI may be found in the appropriate sections of this manual identified as Sample Control (section 8.0) and Document Control (section 7.0).

The procedures described here will deal with the analytical quality control techniques. The quality control checks routinely performed during sample analysis include method blank analysis to identify potential method interferences, reagent blank analysis to establish analyte levels, duplicate analysis to establish analytical precision, spiked and blank analysis to determine analytical accuracy. The frequency of these quality assurance checks are defined in the EPA CLP and result in the following analytical run sequence:

Method Blank
Reagent Blank
Standard

Sample #1

#2

#3

#4

#5

#6

Spiked Blank

Sample #7

#8

#9

#10

Sample Duplicate #10

Sample #11

Sample Spiked #11

Sample #12

Any high level concentrations of analyte will be followed by a method blank. The exact analytical sequence is left to the discretion of the analyst.

10.1 The level of laboratory quality assurance effort for routine analytical services (RAS) provided by EDI is specified in Table 1. The quality assurance level of effort for the Contract Lab Program (CLP) is specified in the protocol document and will be complied with.

10.2 ACCURACY, PRECISION AND SENSITIVITY OF ANALYSES

The fundamental QA objective with impacting accuracy, precision and sensitivity of laboratory analytical data is to achieve the QC acceptance criteria of the analytical protocols. The accuracy and precision requirements for routine analytical services (RAS) for organic and inorganics are shown in Tables 2 and 3, respectively. These QC control limits should be completely met without any outliers.

These limits are three (3) standard deviations from the mean and reflect control limit criteria established and utilized on Schwart Control Charts for precision and accuracy.

The standard operating procedures that would lead to an outlier being identified and the resulting corrective actions is described in section 9.0, Data Reporting, Validation and Handling. In general, if an out-of-control result occurs the analyst will identify it as such and report the occurrence to the Group Leader and/or Area Supervisor. The Group Leader and/or Area Supervisor will review the data with the analyst to identify the problem, implement a corrective action(s) and then re-analyze the sample(s). The Group Leader and/or Area Supervisor will report the out-of-control occurrence to the Quality Assurance Officer that day in writing. The corrective action(s) will be identified in the analyst notebook and in writing to the QA Supervisor. The QA Supervisor will review the Schwart Chart later that day or the next day to identify a successful corrective action via a new in-control data point for the same data set. The sensitivities required for RAS analyses are the method detection limits shown in Tables 4 and 5.

The accuracy and precision requirements for Chain-of-Custody (C.O.C.) samples from the CLP-HSL are specified in the protocols. The sensitivities required for Hazardous Substance List (HSL) analysis of organic compounds will be the EDI operational detection limits, shown in Table 6. Table 7 indicates HSL analyses for inorganic compounds as identified in the CLP. The sensitivity for these compounds is based upon the EDI operational detection limits as shown on the table.

TABLE 1

QA LEVEL OF EFFORT FOR ROUTINE ANALYTICAL SERVICES

PARAMETER	METHOD BLANKS	SPIKES OR SURROGATES	LAB DUPLICATES	REFERENCE SAMPLES
ase/Neutral/Acid ompounds	One per set of samples or a minimum of 1 in 10	Surrogates added to each sample and matrix/method spikes added to one sample per set	A minimum of 1 in 15	Quarterly
olatiles	One per day or 8-hour shift	Surrogates added to each sample and matrix/method spikes added to one sample per set	A minimum of 1 in 15	Quarterly
esticides & PCBs	One per set of samples or a minimum of 1 in 10	Matrix/method spike per set of samples or a minimum of 1 in 10	A minimum of 1 in 10	Quarterly
etals	One per 10 samples or each set	One matrix spike per 10 samples; one method spike per set	One per 10 samples	Quarterly
yanide	One per analytical run or at least one per day	One matrix spike per 10 samples; one method spike per set	One per analytical run or at least one per set-up	Quarterly
lkalinity	One per set of samples	NA	One per set of samples or at least one per 10 samples	Quarterly
hloride	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples	Quarterly
luoride	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly
ulfate	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly
monia Nitrogen	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly

Table 1 (Continued)

QA LEVEL OF EFFORT FOR ROUTINE ANALYTICAL SERVICES

<u>PARAMETER</u>	<u>METHOD BLANKS</u>	<u>SPIKES OR SURROGATES</u>	<u>LAB DUPLICATES</u>	<u>REFERENCES SAMPLES</u>
TKN	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly
Nitrate and Nitrite	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly
TOC	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly
Total Phosphorus	One per set of samples	One matrix spike per 10 samples; one method spike per set	One per set of samples or at least one per 10 samples	Quarterly

TABLE 2

ACCURACY AND PRECISION CRITERIA FOR ORGANICS FROM RAS

PARAMETER	AUDIT	COMPOUNDS	CONTROL LIMITS
Volatiles			
	Method Blank	---	d.l.
	Matrix Spike Duplicate Precision	---	
	Surrogate Spike Recovery	D-1,2-dichloroethane D ₆ -benzene Dioethylbenzene	<17% RPD (95% CI) 70-115% 70-115% 70-115%
	Method Spike Recovery	benzene 1,2-dichloroethane 1,1,1-trichloroethane trans-1,2-dichloroethane trans-1,2-dichloropropene cis-1,2-dichloropropene ethyl benzene toluene 1,1,2,2-tetrachloroethane bromoform	37-151% 49-155% 52-162% 49-155% 17-183% 0-227% 37-162% 47-162% 46-157% 45-170%
esticides & PCBs	Method Blank	---	d.l.
	Sample Duplicate	---	34% RPD (95% CI at level >1 ppb)
	Method Spike Recovery (normal pesticide analysis is run)	endrin lindane dieldrin aldrin 4,4-DDD 4,4-DDT endosulfan II endosulfan sulfate	69-119% 62-118% 20-136% 50-166% 10-145% 10-203% --- 10-100%

Table 2 (Continued)

ACCURACY AND PRECISION CRITERIA FOR ORGANICS FROM RAS

PARAMETER	AUDIT	COMPOUNDS	CONTROL LIMITS
Base/Neutral/Acid Compounds	Method Blank	4,4 -DDE heptachlor chlordane	10-136% 10-192% 65-129%
	Method Blank	---	d.l.
	Surrogate Spike Recovery	Pentafluorophenol 2-fluorophenol 2,4,6-tribromophenol D-nitrobenzene 2-fluorobiphenyl decafluorobiphenyl	<38% RPD (95% CI) 10-86% 10-103% 43-105% 29-107% 25-119% 42-112%
Method Spike Recovery	Method Spike Recovery	phenol 2-chlorophenol 1,4-dichlorobenzene benzyl alcohol n-nitrosodipropylamine 1,2,4-trichlorobenzene 4-chloraniline p-chloro-a-cresol acenaphthene 2,4-dinitrotoluene 4-nitrophenol pentachlorophenol Di-n-butyl phthalate pyrene 1,3-dichlorobenzene 2,6-dinitrotoluene	10-121% 23-134% 20-124% 10-124% 10-127% 22-147% 10-100% 10-130% 47-145% 39-139% 10-132% 14-176% 1 -118% 52-115% 10-172% 50-158%

TABLE 3

ACCURACY AND PRECISION CRITERIA FOR INORGANICS FROM RAS

<u>PARAMETER</u>	<u>AUDIT</u>	<u>CONTROL LIMITS</u>
Metals and Other Inorganics	Method Blank	$\pm$ d.l.
	Sample Duplicates	$\pm$ d.l. or $\pm$ 10% RPD
	Method Spikes	85-115%

NOTE: RPD = relative percent difference

TABLE 4
OPERATING DETECTION LIMITS FOR ORGANICS FROM RAS

<u>Pesticides and PCBs</u>		
<u>CAS NO.</u>	<u>COMPOUND</u>	<u>OPERATING DETECTION LIMIT (ug/L)</u>
319-85-7	β -BHC	0.1
319-84-6	α -BHC	0.1
319-86-8	δ -BHC	0.1
76-44-8	heptachlor	0.1
58-89-9	γ -BHC (Lindane)	0.1
309-00-2	aldrin	0.1
1024-57-3	heptachlor epoxide	0.1
959-98-8	endosulfan I	0.1
72-55-9	4,4 -DDE	0.1
60-57-1	dieldrin	0.1
72-20-8	endrin	0.1
72-54-8	4,4 -DDD	0.1
33212-65-9	endosulfan II	0.1
50-29-3	4,4 -DDT	0.1
57-74-9	chlordan	0.1
8001-35-2	toxaphene	1.0
72-43-5	methoxychlor	1.0
8001-35-2	aroclor 1016	1.0
11097-69-1	aroclor 1242	1.0
11096-82-5	aroclor 1248	1.0
11104-28-2	aroclor 1254	1.0
12674-11-2	aroclor 1260	1.0

TABLE 4 (Continued)

Base/Neutral and Acid Extractable Compounds

<u>CAS NO.</u>	<u>COMPOUND</u>	<u>OPERATING DETECTION LIMIT (ug/L)</u>
62-53-3	aniline	5
111-44-4	bis (2-chloroethyl) ether	4
108-95-2	phenol	2
95-57-8	2-chlorophenol	2
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	3
95-50-1	1,2-dichlorobenzene	3
100-51-6	benzyl alcohol	10
118-60-1	bis (2-chloroisopropyl) ether	1
95-48-7	2-methylphenol	5
67-72-1	hexachloroethane	7
621-64-7	N-nitrosodipropylamine	4
98-95-3	nitrobenzene	4
108-39-4	4-methylphenol	5
78-59-1	isophorone	2
88-75-5	2-nitrophenol	5
105-67-9	2,4-dimethylphenol	3
11-91-1	bis (2-chloroethoxy) methane	4
120-83-2	2,4-dichlorophenol	3
120-82-1	1,2,4-trichlorobenzene	3
91-20-3	naphthalene	1
106-47-8	4-chloroaniline	5
87-68-3	hexachlorobutadiene	5
65-85-0	benzoic acid	50
91-57-6	2-methylnaphthalene	1
59-50-7	p-chloro-m-cresol	4
77-47-4	hexachlorocyclopentadiene	10
95-95-4	2,4,5-trichlorophenol	5
88-06-2	2,4,6-trichlorophenol	5
91-58-7	2-chloronaphthalene	2
208-96-8	acenaphthylene	1
131-11-3	dimethyl phthalate	2
606-20-2	2,6-dinitrotoluene	9
83-32-9	acenaphthene	2
99-09-2	3-nitroaniline	50
132-64-9	dibenzofuran	10
51-28-5	2,4-dinitrophenol	50.0
121-14-2	2,4-dinitrotoluene	10
86-73-7	fluorene	1
100-02-7	4-nitrophenol	15
7005-72-3	4-chlorophenyl phenyl ether	3
84-66-2	diethyl phthalate	2
534-52-1	4,6-dinitro-2-methylphenol	10

TABLE 4 (Continued)

CAS NO.	COMPOUND	OPERATING DETECTION LIMIT (ug/L)
122-66-7	1,2-diphenylhydrazine (azobenzene)	1
86-30-6	N-nitrosodiphenylamine (diphenylamine)	2
100-01-6	4-nitroaniline	50
101-55-3	4-bromophenyl phenyl ether	7
118-74-1	hexachlorobenzene	5
87-86-5	pentachlorophenol	20
85-01-8	phenanthrene	1
120-12-7	anthracene	1
84-72-2	di-n-butyl phthalate	1
206-44-0	fluoranthene	1
129-00-0	pyrene	1
85-68-7	butyl benzene phthalate	3
218-01-9	chrysene	5
56-55-3	benzo(a)anthracene	5
117-81-7	bis (2-ethylehexyl) phthalate	2
117-84-0	di-n-octyl-phthalate	2
205-99-2	benzo(b)fluoranthene	5
207-08-9	benzo(k)fluoranthene	5
50-32-8	benzo(a)pyrene	5
193-39-5	ideno(1,2,3-cd)pyrene	10
53-70-3	dibenzo(a,h)anthracene	10
191-24-3	benzo(ghi)perylene	10
92-87-5	benzidine	50
91-94-1	3,3-dichlorobenzidine	20
	octachlorocyclopentene	10

TABLE 4 (Continued)

<u>Volatile Compounds</u>		
<u>CAS NO.</u>	<u>COMPOUND</u>	<u>OPERATING DETECTION LIMIT (ug/L)</u>
74-87-3	chloromethane	10
74-83-9	bromomethane	10
75-01-4	vinyl chloride	10
75-00-3	chloroethane	10
75-09-2	methylene chloride	2
107-02-8	acrolein	15
67-64-1	acetone	10
107-13-1	acrylonitrile	15
75-15-0	carbendisulfide	1
75-35-4	1,1-dichloroethane	1
75-34-3	1,1-dichloroethane	2
156-60-5	trans-1,2-dichloroethene	2
67-66-3	chloroform	2
78-93-3	2-butanone	10
107-06-2	1,2-dichloroethane	2
71-55-6	1,1,1-trichloroethane	2
56-23-5	carbon tetrachloride	2
108-05-4	vinyl acetate	10
75-27-4	bromodichloromethane	2
78-87-5	1,2-dichloropropane	3
10061-02-6	trans-1,3-dichloropropane	4
79-01-6	trichloroethene	2
71-43-2	benzene	1
124-48-1	chlorodibromomethane	3
79-00-5	1,1,2-trichloroethane	3
10061-01-05	cis-1,3-dichloropropene	4
110-75-8	2-chloroethylvinyl ether	10
75-25-2	bromoform	15
108-10-1	4-methyl-2-pentanone	5
519-78-6	2-hexane	100
127-18-4	tetrachloroethene	2
79-34-5	1,1,2,2-tetrachloroethane	2
108-88-3	toluene	1
108-90-7	chlorobenzene	1
100-41-4	ethylbenzene	1
100-42-5	styrene	10
	m-xylene	10
95-47-6	o-xylene, p-xylene	10

TABLE 5

OPERATING DETECTION LIMITS FOR INORGANICS FROM RAS

PARAMETER	DETECTION LIMIT (ug/L)
Aluminum	250
Chromium	10
Barium	250
Beryllium	10
Cobalt	10
Copper	10
Iron	10
Nickel	10
Manganese	10
Zinc	20
Boron	500
Vanadium	100
Silver	10
Arsenic	2
Antimony	100
Selenium	2
Thallium	50
Mercury	0.2
Tin	500
Cadmium	10
Lead	20
Cyanide	10
Alkalinity (CaCO ₃)	1000
Chloride	1000
Fluoride	200
Sulfate	5000
Ammonia Nitrogen	50
TKN	1000
Nitrate and Nitrite	50
TOC	5000
Total Phosphorus	10

Other inorganic detection limits can be provided when requested.

TABLE 6

METHOD DETECTION LIMITS FOR ORGANICS FROM CLP

VOLATILES	CAS NO.	DETECTION LIMITS*	
		LOW WATER ^a ug/L	LOW SOIL/SEDIMENT ug/Kg
Chloromethane	74-87-3	10	10
Bromomethane	74-83-9	10	10
Vinyl Chloride	75-01-4	10	10
Chloromethane	75-00-3	10	10
Methylene Chloride	75-09-2	5	5
Acetone	67-64-1	10	10
Carbon Disulfide	75-15-0	5	5
1,1-Dichloroethane	75-35-4	5	5
1,1-Dichloroethane	75-35-3	5	5
trans-1,2-Dichloroethene	156-60-5	5	5
Chloroform	67-66-3	5	5
1,2-Dichloroethane	107-06-2	5	5
2-Butanone	78-93-3	10	10
1,1,1-Trichloroethane	71-55-6	5	5
Carbon Tetrachloride	56-23-5	5	5
Vinyl Acetate	108-05-4	10	10
Bromodichloromethane	75-27-4	5	5
1,1,2,2-Tetrachloroethane	79-34-5	5	5
1,2-Dichloropropane	78-87-5	5	5
trans-1,3-Dichloropropene	10061-02-6	5	5
Trichloroethene	79-01-6	5	5
Dibromochloromethane	124-48-1	5	5
1,1,2-Trichloroethane	79-00-5	5	5
Benzene	71-43-2	5	5
cis-1,3-Dichloropropene	10061-01-5	5	5
2-Chloroethyl Vinyl Ether	100-75-8	10	10
Bromoform	75-25-2	5	5
2-Hexane	591-78-6	10	10
4-Methyl-2-pentanone	108-10-1	10	10
Tetrachloroethene	127-18-4	5	5
Toluene	108-88-3	5	5
Chlorobenzene	108-90-7	5	5
Ethyl Benzene	100-41-4	5	5
Styrene	100-42-5	5	5
Total Xylenes		5	5

^a Medium Water Contract Required Detection Limits (CRDL) for Volatile HSL Compounds are 100 Times the Individual Low Water CRDL.

^b Medium Soil/Sediment Contract Required Detection Limits (CRDL) for Volatile HSL Compounds are 100 Times the Individual Low Soil/Sediment CRDL.

Table 6 (Continued)

SEMI-VOLATILES	CAS NO.	DETECTION LIMITS*	
		LOW WATER ^c ug/L	LOW SOIL/SEDIMENT ^d ug/Kg
N-Nitrosodimethylamine	62-75-9	10	330
Phenol	108-95-2	10	330
Aniline	62-53-3	10	330
bis(2-Chloroethyl) ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
Benzyl Alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl) ether	39638-32-9	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-Dipropylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic Acid	65-85-0	50	330
bis(2-Chloroethoxy) methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	330
4-Chloro-3-methylphenol (para-chloro-meta-cresol)	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethyl Phthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330

^c Medium Water Contract Required Detection Limits (CRDL) for Semi-Volatile HSL Compounds are 100 Times the Individual Low Water CRDL.

^d Medium Soil/Sediment Contract Required Detection Limits (CRDL) for Semi-Volatile HSL Compounds are 60 Times the Individual Low Soil/Sediment CRDL.

Table 6 (Continued)

SEMI-VOLATILES	CAS NO.	DETECTION LIMITS*	
		LOW WATER ^c ug/L	LOW SOIL/SEDIMENT ug/Kg
2,6-Dinitrotoluene	606-20-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenol Phenyl ether	7005-72-3	10	330
Fluorene	86-73-7	10	330
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl Phenyl ether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	300
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Benzidine	92-87-5	100	1600
Pyrene	129-00-0	10	330
Butyl Benzyl Phthalate	85-68-7	10	330
3,3 -Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
bis(2-ethylehexyl)phthalate	117-81-7	10	330
Chrysene	218-01-9	10	330
Di-n-octyl Phthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

^c Medium Water Contract Required Detection Limits (CRDL) for Semi-Volatile HSL Compounds are 100 Times the Individual Low Water CRDL.

^d Medium Soil/Sediment Contract Required Detection Limits (CRDL) for Semi-Volatile HSL Compounds are 60 Times the Individual Low Soil/Sediment CRDL.

Table 6 (Continued)

PESTICIDES	CAS NO.	DETECTION LIMITS*	
		LOW WATER ^e ug/L	LOW SOIL/SEDIMENT ^f ug/Kg
alpha-BHC	319-84-6	0.05	2.0
beta-BHC	319-85-7	0.05	2.0
delta-BHC	319-86-8	0.05	2.0
gamma-BHC (Lindane)	58-89-9	0.05	2.0
Heptachlor	76-44-8	0.05	2.0
Aldrin	309-00-2	0.05	2.0
Heptachlor Epoxide	1024-57-3	0.05	2.0
Endosulfan I	959-98-8	0.05	2.0
Dieldrin	60-57-1	0.10	4.0
4,4 -DDE	72-55-9	0.10	4.0
Endrin	72-20-8	0.10	4.0
Endosulfan II	33213-65-9	0.10	4.0
4,4 -DDD	72-54-8	0.10	4.0
Endrin Aldehyde	7421-93-4	0.10	4.0
Endosulfan Sulfate	1031-07-8	0.10	4.0
4,4 -DDT	50-20-3	0.10	4.0
Endrin Ketone	53494-70-5	0.10	4.0
Methoxychlor	72-43-5	0.5	20.0
Chlordane	57-74-9	0.5	20.0
Toxaphene	8001-35-2	1.0	40.0
Aroclor 1016	12674-11-2	0.5	20.0
Aroclor 1221	11104-28-2	0.5	20.0
Aroclor 1232	11141-16-5	0.5	20.0
Aroclor 1242	53469-21-9	0.5	20.0
Aroclor 1248	12672-29-6	0.5	20.0
Aroclor 1254	11097-69-1	1.0	40.0
Aroclor 1260	11096-82-5	1.0	40.0

^e Medium Water Contract Required Detection Limits (CRDL) for Pesticide HSL Compounds are 100 Times the Individual Low Water CRDL.

^f Medium Soil/Sediment Contract Required Detection Limits (CRDL) for Pesticide HSL Compounds are 60 Times the Individual Low Soil/Sediment CRDL.

*Detection limits listed for soil/sediment are based on net weight. The detection limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, as required by the contract, will be higher.

Specific detection limits are highly matrix dependent. The detection limits listed herein are provided for guidance and may not always be achievable.

TABLE 7

METHOD DETECTION LIMITS FOR INORGANICS FROM CLP

ELEMENT	CONTRACT REQUIRED DETECTION LEVEL ^{1,2}
	(ug/L)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Cyanide	10
Iron	100
Lead	5
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Sodium	5000
Thallium	10
Tin	40
Vanadium	50
Zinc	20

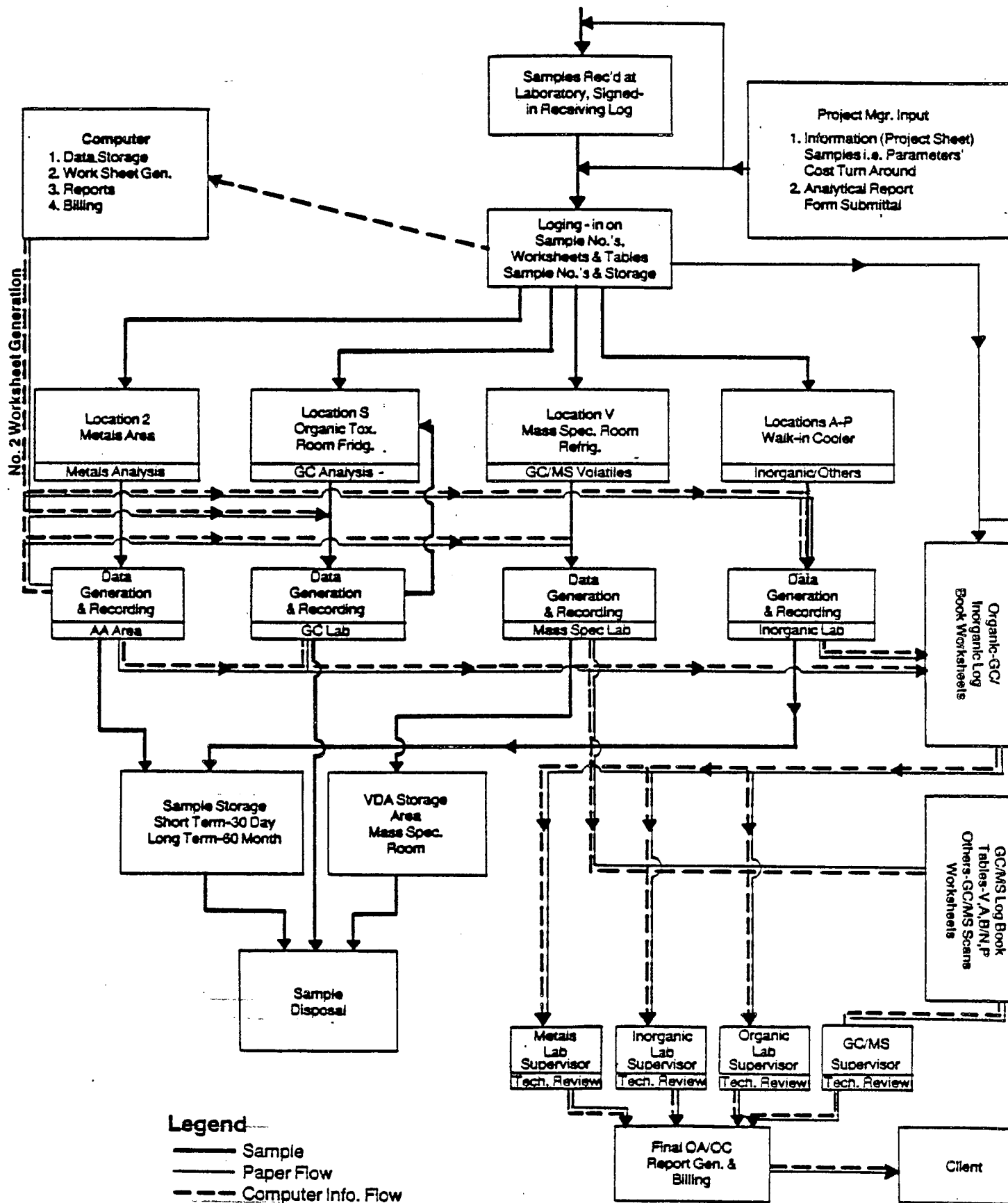
-
- 1: Any analytical method specified in SOW Exhibit D may be utilized as long the documented instrument or method detection limits meet the Contract Required Detection Level (CRDL) requirements. Higher detection levels may only be used in the following circumstance:

If the sample concentration exceed two times the detection limit of the instrument or method in use, the value may be reported even though the instrument or detection limit may not equal the contract required detection level.

- 2: These CDRL are the instrument detection limits obtained in pure water that must be met using the procedure in Exhibit E. The detection limits for samples may be considerably higher depending on the sample matrix.

Sample & Document Flow Diagram

Figure 1



Analytical Services Project Sheet

A	To be completed prior to submittal	Pg.	of

Client Name: _____ Date of Request: _____

Project No. _____ Samples will arrive on/about: _____

Project Manager _____ Number of Samples _____ Turnaround _____

Job Description: _____

Quality Control RAS ☐ SAS ☐ CLP ☐ COC: Field ☐ Lab ☐ None ☐

B	To be completed at sample log-in	C	Laboratory processing record

Sampled By: _____ Client No.: _____ Job No.: _____

Sample Locations: _____ Lab Project Manager: _____

Invoice Amt: _____ Factor: _____

Date Sampled: _____ Time: _____ am/pm Analyst: _____

Date Received: _____ Time: _____ am pm Date Analysis Completed _____ am ☐ pm ☐

Received By: _____ Quality Control Review By: _____

Date Logged In: _____ By _____ Date Reported to Office: _____

Worksheet: _____ Shelf Letter: _____ Date of Final Report: _____

D	Data: List parameters requested prior to submittal

[illegible]

E Comments: _____

Scheduled Laboratory Completion Date:

Route To:

From:

Date:

EDI Laboratory New Project Approval Form

Request for Budget: _____

Request for Work: _____

Client Information

Name: _____

Address: _____

Billing Address: _____

Client Contact: _____

Phone Number: _____

LCS

or

CCS

Quotation No.: _____

P.O. Number: _____

Contract No.: _____

Lab Project No.: _____

CCS Project No.: _____

Project Information

Project Description: _____

Site/Sample Hazards: _____

Sample Disposal Instructions: _____

Health Hazard	Flammability Hazard
Contact Hazard	Reactivity Hazard

4 Extreme

3 Serious

2 Moderate

1 Slight

0 Minimal

Sample Storage: Short Term (30 Days) _____, Long Term (90 Days) _____, Other _____

Sample Containers: please ship ☐ will pick up ☐ not required ☐
when: _____ carrier: _____

Turnaround: (3 weeks) _____ (2 weeks) _____ (1 week) _____ (48-72 hrs) _____ (< 24 hrs) _____

Frequency of sample receipt: weekly _____ monthly _____ quarterly _____ one time _____ other _____

Samples Scheduled to Arrive: _____ am ☐ pm ☐

Contract Dates: beginning _____ ending _____

Project Analytical Cost

Cost/Sample: _____ X Number of Samples _____ X Turnaround Factor _____ = _____

Other Costs (sampling) _____

Project Cost: _____

Project Acceptance *(project manager & area supervisors must sign and return to the laboratory manager)*

Name: _____ Date: _____ Name: _____ Date: _____

1. _____ 3. _____

2. _____ 4. _____

Internal Use Only:

	\$ Amount	O	\$ Amount	M	\$ Amount	S	\$ Amount

ROUTE TO: _____

DATE: _____

TIME: _____

EDI LABORATORY PROBLEM PROJECT REPORT

SAMPLES RECEIVED ON _____ AT _____ AM/PM FROM: _____
AND DESCRIBED AS _____ WERE RECEIVED HAVING THE
FOLLOWING DEFICIENCIES.

REQUEST FORM - ABSCENT/INCOMPLETE	☐
CHAIN-OF-CUSTODY - ABSCENT/INCOMPLETE	☐
CHAIN-OF-CUSTODY - DOES NOT MATCH SAMPLE TAGS	☐
SAMPLE BOTTLES - BROKEN	☐
SAMPLES ABSCENT - QUAN. DOES NOT MATCH REQUEST FORM	☐
SAMPLE BOTTLES - INCORRECT FOR ANALYSIS	☐
SAMPLE PRESERVATIVES - INCORRECT FOR ANALYSIS	☐
SAMPLE VOLUMES - INCORRECT FOR ANALYSIS	☐
SAMPLE TAGS - WRONG I.D./ABSCENT	☐
FIELD FORMS - ABSCENT/INCOMPLETE	☐
CUSTODY SEALS - ABSCENT/NOT INTACTED	☐
SMO FORMS - ABSCENT	☐
NON-ROUTINE PROJECT - NO PRIOR APPROVAL	☐

THE SAMPLES IN QUESTION WILL BE _____ PROCESSED AS IS _____ PLACED ON HOLD _____
UNTIL THE CORRECTIVE ACTIONS OR DIRECTIVES ARE ISSUED.

THANK YOU
EDI LABORATORY
SAMPLE COORDINATOR

Chain of Custody Record

date: _____

case number _____
airbill # _____

listed/not listed on-COC

present/absent

[illegible]

remarks: (condition of shipment) _____

[illegible]

SAMPLE COORDINATOR_____

FIGURE 8

EDI SPECTROPHOTOMETRIC WORKSHEET

PARAMETER: MBAS-SURFACTANTS

METHOD:

DATE:

ANALYST:

[illegible]

QUALITY CONTROL DATA SUMMARY

PROJECT	QCSAMPLE / CLIENT	SAMPLE#	INSTRUMENT READING	DILUTION FACTOR	TEST RESULT	DUPLICATE RESULT	SPIKE RESULT	SPIKE QUANTITY	% RECOVERY / DIFFERENCE
99991	METHOD SPIKE EPA ERA					- - -			
99991	METHOD BLANK					- - -		- - -	
	MATRIX SPIKE/					- - -			
	DUPLICATE/					- - -		- - -	

FIGURE 9

EDI GRAVIMETRIC BENCH SHEET

T/5b TS- (A-B) X1000

MIS OF SAMPLE

A=WT. OF DISH+DRY RESIDUE
B=WT. OF DISH

PARAMETER: RESIDUE, NONFILTERABLE
METHOD:
DATE:
ANALYST:

PROJECT	CLIENT	WRK#	SAMPLE #	I.D.	DISH + RESIDUE	DISH WEIGHT	MLS OF SAMPLE	REPORTED CONC.
25229	BOC GROUP - LANSING	3	65699					
25229	"	7	65702					
25229	"	11	65706					
25229	"	11	65707					
25229	"	11	65708					
25229	"	15	65709					
25229	"	15	65710					
25229	"	15	65711					
25229	"	15	65712					
25229	"	19	65713					

QUALITY CONTROL DATA SUMMARY

PROJECT	SAMPLE / CLIENT		DISH +	DISH	MLS OF	TEST	DUPLICATE	SPIKE	SPIKE	RECOVERY /
		SAMPLE#	RESIDUE	WEIGHT	SAMPLE	RESULT	RESULT	RESULT	QUANTITY	DIFFERENCE
99991	METHOD SPIKE EPA ERA						- - - -			
99991	METHOD BLANK						- - - -	- - - -	- - - -	- - - -
	MATRIX SPIKE/						- - - -			
	DUPLICATE						- - - -	- - - -	- - - -	- - - -

EDI ENGINEERING & SCIENCE
QA/QC
PRECISION/ACCURACY
DATA SUMMARY

PARAMETER: _____ MATRIX TYPE: _____

METHOD: _____ UNIT OF MEASURE: _____

CLASS: _____

ACCEPTANCE INTERVALS: MEAN = _____ S.D. = _____

Upper & Lower Warning Limits = $\pm 2\sigma$ _____ = _____

Upper & Lower Control Limits = $\pm 3\sigma$ =

[illegible]

STANDARD OPERATING PROCEDURE

Sample Container, Cleaning Procedure Prior to Sampling:

TYPE	SIZE (ml)	ANALYSIS	CLEANING PROCEDURE
Plastic	125	Unspecified	D.I. Rinse
	250	Unspecified	D.I. Rinse
	500	Radiological	D.I. Rinse
	1000	Metals	HNO ₃ , Rinse + D.I.
	1000	Cyanides	NaOH Rinse + D.I.
	1000	General Inorganics	D.I. Rinse
	1000	Nutrients	H ₂ SO ₄ Rinse + D.I.
Glass	125	Sulfide	D.I. Rinse
	125	TOC	D.I. Rinse + Bake*
	250	TOX	Solvent Rinse + Bake*
	500	Phenols	H ₂ SO ₄ Rinse + D.I.
	500	Organic	Solvent Rinse + Bake
	1000	Organic	Solvent Rinse + Bake
	40	VOA	D.I. + Bake or Purchase cleaned (Supelco)

2010 BULK UNLOAD AREA INVESTIGATION DATA REPORT

**FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN**

**Prepared For:
Motors Liquidation Company**

SEPTEMBER 2010

REF. NO. 017360 (23)

This report is printed on recycled paper.

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LIST OF ACRONYMS

AMSL	Above Mean Sea Level
bgs	Below Ground Surface
C _{sat}	Soil Saturation Concentration Screening Levels
COC	Chain of Custody
CRA	Conestoga-Rovers & Associates
DCC	Direct Contact Criteria
DOT	Department of Transportation
DWPC	Drinking Water Protection Criteria
GCPC	Groundwater Contact Protection Criteria
GSIP	Groundwater Surface Water Interface Protection Criteria
MDEQ	Michigan Department of Environmental Quality
MDNRE	Michigan Department of Natural Resources and Environment
MLC	Motors Liquidation Company
NGS	National Geographic Survey
NPDES	National Pollutant Discharge Elimination System
PCBs	Polychlorinated Biphenyls
PID	Photoionization Detector
PNAs	Polynuclear Aromatic Compounds
PPE	Personal Protective Equipment
PSIC	Particulate Soil Inhalation Criteria
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RRD	Remediation and Redevelopment Division
Site	Subject Property
SOW	Scope of Work
SVIIC	Soil Volatilization to Indoor Air Inhalation Criteria
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TAT	Turnaround-Time
TCLP	Toxicity Characteristic Leaching Procedure
TestAmerica	TestAmerica Laboratories, Inc.
USCS	Unified Soil Classification System
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
VSIC	Volatile Soil Inhalation Criteria
Work Plan	2008 Bulk Unload Area Work Plan
WWTP	Wastewater Treatment Plan

1.0 INTRODUCTION

1.1 PURPOSE

Conestoga-Rovers & Associates (CRA) was retained by Motors Liquidation Company (MLC) to conduct an investigation in the bulk unload area at the former Grand Rapids Metal Plant property located at 300 36th Street in Wyoming, Michigan (Site). The investigation was conducted in accordance with the 2008 Bulk Unload Area Investigation Work Plan (Work Plan) submitted to the Michigan Department of Environmental Quality (MDEQ) (currently known as the Michigan Department of Natural Resources and Environment (MDNRE)) on August 22, 2008. Figure 1.1 presents the Site location.

The purpose of this environmental investigation was to further evaluate and delineate impacts to soil above the Michigan Act 451, Part 201 (Part 201) Generic Residential and Commercial I (Residential) and Industrial and Commercial II, III, and IV (Industrial) Cleanup Criteria identified in the vicinity of the bulk unload area during previous investigations conducted in December 2005 and July 2007, respectively.

1.2 BACKGROUND AND HISTORY

The Site background is presented in the Work Plan submitted to the MDEQ on August 22, 2008. A Site plan is presented on Figure 1.2.

1.3 REPORT ORGANIZATION

The remainder of this report is presented in the following sections:

Section 2.0	Environmental Setting
Section 3.0	Scope of Work
Section 4.0	Results of Investigation
Section 5.0	Summary

2.0 ENVIRONMENTAL SETTING

2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

Kent County is situated in an area near the southwestern margin of the Michigan Basin. Marshall Sandstone bedrock crops out or is found at shallow depth and underlies all of Kent County with overlapping by the Michigan Formation. The Michigan Formation consists primarily of limestone, gypsum, and dolomite, interbedded with shale and sandstone. To the northeast, the Marshall Sandstone and Michigan Formation are progressively overlain by Bayport Limestone, Parma Sandstone, and then the Saginaw Formation. Overlying these rocks is a mass of glacial drift from the Wisconsinan Glacial stage consisting of moraines and former sand lake beds with thicknesses of less than ten feet to several hundred feet. The glacial drift is characterized by ranges of materials from coarse gravel to fine lacustrine clays. The outwash is underlain by a clay layer that has been observed to generally slope to the west-northwest at a gradient of approximately 1 foot in 15 feet. Bedrock in the area of the Site is encountered at approximately 100 feet below graded surface (bgs).

Shallow groundwater in this area of Kent County is generally encountered at less than 20 feet bgs. Groundwater flow is influenced by local topography and surface water drainageways, such as creeks and streams.

Bedrock aquifers near the Site include, in descending order, the Bayport Limestone, the Michigan Formation, and the Marshall Sandstone. Elevated concentrations of naturally occurring sulfate, calcium, and bicarbonate limit the use of the Bayport Limestone aquifer as a drinking water supply. The Michigan Formation aquifer generally yields only small quantities of poor quality groundwater. The deepest regional aquifer, the Marshall Sandstone aquifer, provides large quantities of better quality groundwater. Groundwater flow in the Bayport Limestone bedrock aquifer in the area is generally uniform and to the southeast.

2.2 SITE GEOLOGY AND HYDROGEOLOGY

Information regarding the geologic conditions at the Site was collected during previous environmental investigations. Numerous soil borings were installed on other portions of the former Grand Rapids Metal Plant property in 1981 and 2007.

Based on the review of stratigraphic boring logs generated during previous investigations at the former Grand Rapids Metal Plant property, the glacial outwash,

consisting of sands and gravels, has been observed at varying depths between 40 and 90 feet bgs. The outwash is underlain by a clay layer that has been observed to generally slope to the west-northwest at a gradient of approximately 1-foot in 15 feet. Bedrock was not encountered during previous investigations conducted at the former Grand Rapids Metal Plant property. Based on a regional knowledge of geology, bedrock in the area of the Site is present at approximately 100 feet bgs. The upper bedrock consists of Bayport Limestone and the Michigan formation, which is underlain by Marshall Sandstone. The Michigan formation is approximately 100 feet thick, and consists of interbedded layers of shale, gypsum, and limestone.

Geologic information in the vicinity of the bulk unload area was obtained during previous investigations conducted on December 12, 2005 and July 10, 2007, respectively, and during this investigation. Based on observations during the investigations, soils in the bulk unload area consist of sand with trace silt to approximately 15 feet bgs (deepest boring installed in this area). Slag debris was generally observed between 0.5 and 4.5 feet bgs in the borings advanced during the 2007 and 2010 investigations along the northern and western portions of the area.

2.2.1 GROUNDWATER FLOW DIRECTION

Groundwater was encountered during historical environmental investigations completed on the former Grand Rapids Metal Plant property at approximately 20 feet bgs. Groundwater level measurements were recorded during the environmental investigations and during subsequent quarterly monitoring events. Historical groundwater elevation data indicates the approximate groundwater flow direction is to the north-northwest, towards Cole Drain.

Groundwater was not encountered during this or prior investigations conducted at the Site.

2.3 TOPOGRAPHY

According to the Grand Rapids West, Michigan United States Geological Survey (USGS) 7.5 minute quadrangle, the Site is located approximately 675 feet above mean sea level (AMSL), with regional elevations ranging from 650 to 690 feet AMSL. The Site and surrounding area display gently rolling to relatively flat topographical features, with local topography sloping towards Cole Drain and Plaster Creek.

2.4 HYDROLOGY

The stormwater retention pond for former Grand Rapids Metal Plant property is located to the west of the Site, which discharges to Cole Drain, under a National Pollutant Discharge Elimination System (NPDES) permit. There are no natural surface water bodies on the Site. The nearest natural surface water body to the Site is the Cole Drain, which is located to the west of the Site and flows north. Cole Drain discharges to Plaster Creek, which is part of the Grand River Drainage Basin, and ultimately discharges to Lake Michigan.

3.0 SCOPE OF WORK

The Scope of Work (SOW) for this investigation included the advancement of soil borings and the collection and analysis of soil samples. Investigation fieldwork adhered to the methods and procedures specified in the Work Plan and the Quality Assurance Project Plan (QAPP), which was submitted to the MDEQ under separate cover as an appendix to the 2008 Groundwater Investigation Work Plan, dated August 2008.

3.1 SUMMARY OF INVESTIGATION

Investigative activities included the advancement of seven soil borings and the collection and analysis of 41 soil samples. Soil boring locations are presented on Figure 3.1.

3.2 SUBSURFACE INVESTIGATION

3.2.1 SOIL BORING INSTALLATION/SOIL SAMPLE COLLECTION

Seven soil borings, SB34-10 through SB40-10, were advanced at the Site on April 20, 2010 and a total of 41 soil samples, including three Quality Assurance/Quality Control (QA/QC) samples, were collected to further evaluate and delineate impacts to soil in the vicinity of the bulk unload area. The borings were advanced north, west, and northwest of the 2007 boring locations. Additionally, one soil boring was advanced east of the 2007 boring locations in the former Oil Stores area of the plant. Stratigraphic soil boring logs are presented in Appendix A.

Soil borings were advanced utilizing direct push Geoprobe™ technology with continuous Macrocore sampling. The upper 5 feet of each boring was advanced using a hand-auger to ensure clearance of potential utility lines in the area. Soil samples were collected starting at the ground surface and continuing at 2-foot intervals until a terminal depth of 10 feet bgs. SB39-10, located inside the plant, was advanced to a terminal depth of 15 feet bgs to account for the change in elevation between the indoor and outdoor locations. A 5-foot long, 2-inch outside diameter stainless steel macrocore sampler was driven into the undisturbed material. Soil samples were described and classified according to the modified Unified Soil Classification System (USCS) by a CRA Geologist. Soil samples were field screened for visual/olfactory evidence of impact and with an 11.7 eV photoionization detector (PID).

One soil sample was collected for chemical analysis from each 2-foot interval, in addition to QA/QC samples. A total of 41 soil samples were collected for analysis of polynuclear aromatic compounds (PNAs), polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. A sample summary is presented in Table 3.1. The soil samples were collected consistent with the requirements set forth in the MDEQ Remediation and Redevelopment Division (RRD) Operational Memorandum No. 2 (October 22, 2004).

Collected samples were placed in pre-cleaned laboratory-provided containers, properly labeled, and shipped under chain-of-custody (COC) protocol via overnight courier to TestAmerica Laboratories, Inc. (TestAmerica) in North Canton, Ohio to be analyzed on a 2-week turnaround time (TAT).

3.2.2 BOREHOLE ABANDONMENT

Upon completion of soil sample collection, each borehole was abandoned by backfilling the annulus with bentonite chips to the ground surface. Asphalt and concrete surfaces were patched, as necessary.

Soil cuttings from all soil boring installations were containerized, labeled as to generation location, and characterized for off-Site disposal as described in Section 3.2.5.

3.2.3 SURVEYING

A survey of the Site was conducted for all new and previous soil boring locations. Horizontal coordinate locations for soil boring and reference features were produced in a local/arbitrary established datum point. Elevations of soil borings and reference features were established in the NAVD88 datum (Geoid 2003), based on a measurement of National Geographic Survey (NGS) Station Number NF0822. Elevations were established to the nearest 0.01-foot.

3.2.4 DECONTAMINATION AND CONTAINMENT PROCEDURES

Upon mobilization to the Site and prior to commencing drilling, the drill rig and all associated equipment were thoroughly cleaned using a high-pressure, low-volume steam wash and inspected by CRA field personnel. Before initiating drilling at each

subsequent location, the drill rod and all other non-disposable sampling and drilling equipment were decontaminated to prevent cross-contamination.

All non-disposable sampling equipment was decontaminated prior to each use by using an Alconox wash, a potable water rinse, a deionized water rinse, and was allowed to air dry.

All decontamination water was containerized in Department of Transportation (DOT) approved 55-gallon drums, visually examined and screened with a PID, properly labeled, characterized, sealed, and staged inside the plant prior to disposal as described in Section 3.2.5.

3.2.5 DISPOSITION OF INVESTIGATION-DERIVED WASTE

Soil cuttings generated during drilling were containerized in DOT-approved 55-gallon drums. Soil cuttings were labeled as to generation location and date, sealed, and staged inside the plant.

One waste characterization sample was collected from the 55-gallon drum containing soil cuttings from soil boring installation activities. The sample was submitted for laboratory analysis of Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP metals, corrosivity, and ignitibility. The soil sample collected for laboratory analysis was placed in a pre-cleaned laboratory-provided container, labeled, and shipped under COC protocol via overnight courier to TestAmerica in North Canton, Ohio to be analyzed on a 2-week TAT. Analytical results are presented in Appendix B. Soil cuttings generated during drilling in the bulk unload area were characterized as non-hazardous waste, based on analytical results for the waste characterization sample. Soil cuttings were subsequently disposed off-Site.

Decontamination water was containerized in DOT approved 55-gallon drums. All decontamination water was properly labeled, sealed and staged in DOT approved 55-gallon drums.

One waste characterization sample was collected from the 55-gallon drum containing decontamination water for analysis of TCLP VOCs, TCLP SVOCs, TCLP metals, corrosivity, and ignitibility. Decontamination water was characterized as non-hazardous waste and discharged to the on-Site Wastewater Treatment Plant (WWTP).

All disposable sampling equipment and disposable personal protective equipment (PPE) were also containerized in DOT-approved 55-gallon drums and disposed off-Site as non-hazardous waste.

4.0 RESULTS OF INVESTIGATION

4.1 COMPARISON OF ANALYTICAL RESULTS

Analytical results for the soil samples were evaluated against the following Generic Residential and Industrial Cleanup Criteria and Screening Levels established in Part 7 of Administrative Rules, effective December 21, 2002, pursuant to Part 201, Environmental Remediation, 1994 Public Act 451 as amended (Part 201):

- Drinking Water Protection Criteria (DWPC)
- Groundwater Surface Water Interface Protection Criteria (GSIPC)
- Soil Volatilization to Indoor Air Inhalation Criteria (SVIIC)
- Volatile Soil Inhalation Criteria (VSIC)
- Particulate Soil Inhalation Criteria (PSIC)
- Direct Contact Criteria (DCC)
- Groundwater Contact Protection Criteria (GCPC)
- Soil Saturation Concentration Screening Levels (C_{sat})

Additionally, the Part 201 Cleanup Criteria for total chromium defaults to the criteria for hexavalent chromium in the absence of speciated (i.e., trivalent and hexavalent) chromium data. Therefore, select samples were subsequently analyzed for trivalent and hexavalent chromium to determine the nature of the chromium present in soil beneath the bulk unload area at the Site. Laboratory analytical results demonstrated that chromium predominately exists in the trivalent form.

In addition, based on the laboratory results for lead, the fine and coarse fractions were analyzed for select soil samples for comparison purposes.

A Sample Summary is presented in Table 3.1. Analytical results for soil samples compared to Part 201 Generic Residential and Industrial Cleanup Criteria are presented in Tables 4.1 and 4.2, respectively. Laboratory analytical results are presented in Appendix B. The data validation memorandum is presented in Appendix C.

4.2 RESULTS OF INVESTIGATION

Results of the April 2010 investigation identified the presence of PNAs and TAL metals in soil above Part 201 Generic Residential and/or Industrial Cleanup Criteria, as discussed below.

4.2.1 PNAs

Acenaphthene, fluorene, and naphthalene were detected above the Part 201 GSIPC in the soil sample collected from SB35-10 (4 to 6 feet bgs). Additionally, naphthalene was also detected above the Part 201 GSIPC in the sample collected from SB40-10 (0 to 2 feet bgs). Fluoranthene and phenanthrene were detected above the Part 201 GSIPC in the soil samples collected from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs), SB36-10 (2 to 4 feet bgs), and SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, 4 to 6 feet bgs, and 6 to 8 feet bgs).

Phenanthrene was also detected above the Part 201 Residential and Industrial DWPC, Infinite Source VSIC, Finite VSIC for 5 meter (m) source thickness, and Finite VSIC for 2 m source thickness in the soil sample collected from SB35-10 (4 to 6 feet bgs).

Benzo(b)fluoranthene, dibenz(a,h)anthracene, and/or benzo(a)anthracene were detected above the Part 201 Residential DCC in the soil samples collected from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs) and SB40-10 (0 to 2 feet bgs and 6 to 8 feet bgs). Benzo(b)fluoranthene, dibenz(a,h)anthracene, and benzo(a)anthracene also exceeded various Part 201 Industrial DCC in the soil sample collected from SB35-10 (4 to 6 feet bgs).

Benzo(a)pyrene was detected above the Part 201 Residential and Industrial DCC in the soil samples collected from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs) and SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, 4 to 6 feet bgs, and 6 to 8 feet bgs). Benzo(a)pyrene was detected above the Part 201 Residential DCC in the soil sample from SB36-10 (2 to 4 feet bgs).

Indeno(1,2,3-cd)pyrene was detected above the Part 201 Residential DCC in the soil sample collected from SB35-10 (4 to 6 feet bgs).

No other PNAs were detected in the soil samples collected from SB34-10 through SB40-10 at concentrations above the aforementioned Part 201 Cleanup Criteria.

4.2.2 METALS

Total chromium concentrations present in several samples collected from SB35-10, SB36-10, and SB40-10 exceeded Part 201 Residential and Industrial DWPC, and GSIPC, with direct comparison to the required hexavalent chromium criteria. Additionally, total chromium in some of those samples exceeded the Part 201 Residential and Industrial PSIC, and Residential DCC, with direct comparison to the required

hexavalent chromium criteria. Therefore, select samples were subsequently analyzed for trivalent and hexavalent chromium to further evaluate the nature of the chromium present in soil beneath the bulk unload area at the Site. Upon speciation, trivalent chromium did not exceed the Part 201 Residential or Industrial Cleanup Criteria in the select soil samples analyzed. Hexavalent chromium was detected above laboratory method detection limits, but below the Part 201 Residential and Industrial Cleanup Criteria in the soil samples collected from SB35-10 (4 to 6 feet bgs), SB36-10 (0 to 2 feet bgs and 2 to 3 feet bgs), SB39-10 (10 to 12 feet bgs), and SB40-10 (2 to 4 feet bgs and 4 to 6 feet bgs). Hexavalent chromium was present above Part 201 GSIPC in the sample from SB40-10 (0 to 2 feet bgs).

Based on review of initial laboratory analytical results for lead, five samples were further analyzed for lead in the fine fraction (less than 250 microns) and lead in the course fraction. Consistent with the requirements set forth in the MDEQ RRD Operational Memorandum No. 2, Evaluating Exposure Due to Lead in Soil, laboratory analytical results for lead in the fine fraction were compared to the Part 201 Residential and Industrial PSIC, and Residential and Industrial DCC. Lead in the fine fraction was present above the Part 201 Residential and Industrial DCC in the soil samples from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs) and SB40-10 (0 to 2 feet bgs). Lead in the fine fraction was also present above the Part 201 Residential, Commercial III, and Commercial IV DCC in the soil sample from SB40-10 (2 to 4 feet bgs). Lead in the fine fraction did not exceed the Part 201 Residential or Industrial PSIC in any of the soil samples analyzed.

Lead in the course fraction was compared to the Part 201 Residential and Industrial DCC and was identified to exceed the Part 201 Residential and Industrial DCC in the soil samples collected from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs) and SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs).

Total lead was calculated by the analytical laboratory from the fine and course fraction analyses for the applicable samples. It should be noted that calculated lead concentrations exceeded those initially identified by laboratory analysis and were, therefore; used in lieu of laboratory detected total lead concentrations when compared to criteria in order to delineate impacted soil by the most restrictive approach. Based on review of laboratory analytical and calculated data, total lead was present above the Part 201 Residential and Industrial DWPC and DCC in the soil samples collected from SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs) and SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs).

Arsenic was present above the Part 201 Residential DCC in the soil samples collected from SB36-10 (2 to 4 feet bgs) and SB40-10 (0 to 2 feet bgs) but below the Part 201 Industrial and Commercial II, III, and IV DCC. Arsenic was also present above the Part 201 Residential and Industrial DWPC in the following samples: SB34-10 (2 to 4 feet bgs), SB35-10 (2 to 4 feet bgs), SB36-10 (2 to 4 feet bgs), and SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs).

The following other metals were present above the Part 201 Residential and Industrial DWPC and/or GSIPC: antimony (SB36-10 [4 to 6 feet bgs], SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs)), cadmium (SB40-10 (0 to 2 feet bgs)), cobalt (SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs), SB36-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs), SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs)), copper (SB35-10 (4 to 6 feet bgs), SB36-10 (2 to 4 feet bgs), SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs)), iron (SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs), SB36-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs), SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, 4 to 6 feet bgs, and 6 to 8 feet bgs)), magnesium (Part 201 Residential DWPC only) (SB35-10 (4 to 6 feet bgs), SB39-10 (0 to 2 feet bgs, 2 to 4 feet bgs, 4 to 6 feet bgs, 6 to 8 feet bgs, and 8 to 10 feet bgs), SB40-10 (0 to 2 and 4 to 6 feet bgs)), manganese (SB35-10 (4 to 6 feet bgs), SB36-10 (0 to 2 feet bgs and 2 to 4 feet bgs), SB40-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs)), mercury (SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs), nickel (SB35-10 (2 to 4 feet bgs and 4 to 6 feet bgs), SB36-10 (0 to 2 feet bgs, 2 to 4 feet bgs, and 4 to 6 feet bgs), SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs)), selenium (SB36-10 (0 to 2 feet bgs), SB38-10 (8 to 10 feet bgs), SB40-10 (0 to 2 feet bgs and 6 to 8 feet bgs)), silver (SB36-10 (4 to 6 feet bgs), SB40-10 (0 to 2 feet bgs)), sodium (SB40-10 (6 to 8 feet bgs), and zinc (SB40-10 (0 to 2 feet bgs and 2 to 4 feet bgs))).

No other TAL metals were detected in the soil samples collected from SB34-10 through SB40-10 at concentrations above the aforementioned Part 201 Cleanup Criteria.

4.2.3 PCBs

No PCBs were detected in the soil samples collected from SB34-10 through SB40-10 at concentrations above the aforementioned Part 201 Cleanup Criteria.

4.3 ANALYTICAL DATA VALIDATION RESULTS SUMMARY

Soil samples were submitted under COC protocol to TestAmerica in North Canton, Ohio. All samples were analyzed using EPA approved methods set forth in "Test

Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition and Promulgated Update, November 1986.

The laboratory analytical data was reviewed by a CRA chemist to determine the quality and validity of the analytical data resulting from the collection and analysis of the soil samples. The laboratory analytical data is presented in Appendix B for the soil samples. The data validation memorandum is presented in Appendix C.

The data validation was performed in accordance with the requirements of the State of Michigan, as identified in the Site-specific QAPP and as approved by MDEQ. Data precision and accuracy meets all accepted standards and the data contained within this report is appropriate for use and without significant anomalies, with the qualifications noted, for the purposes of this investigation.

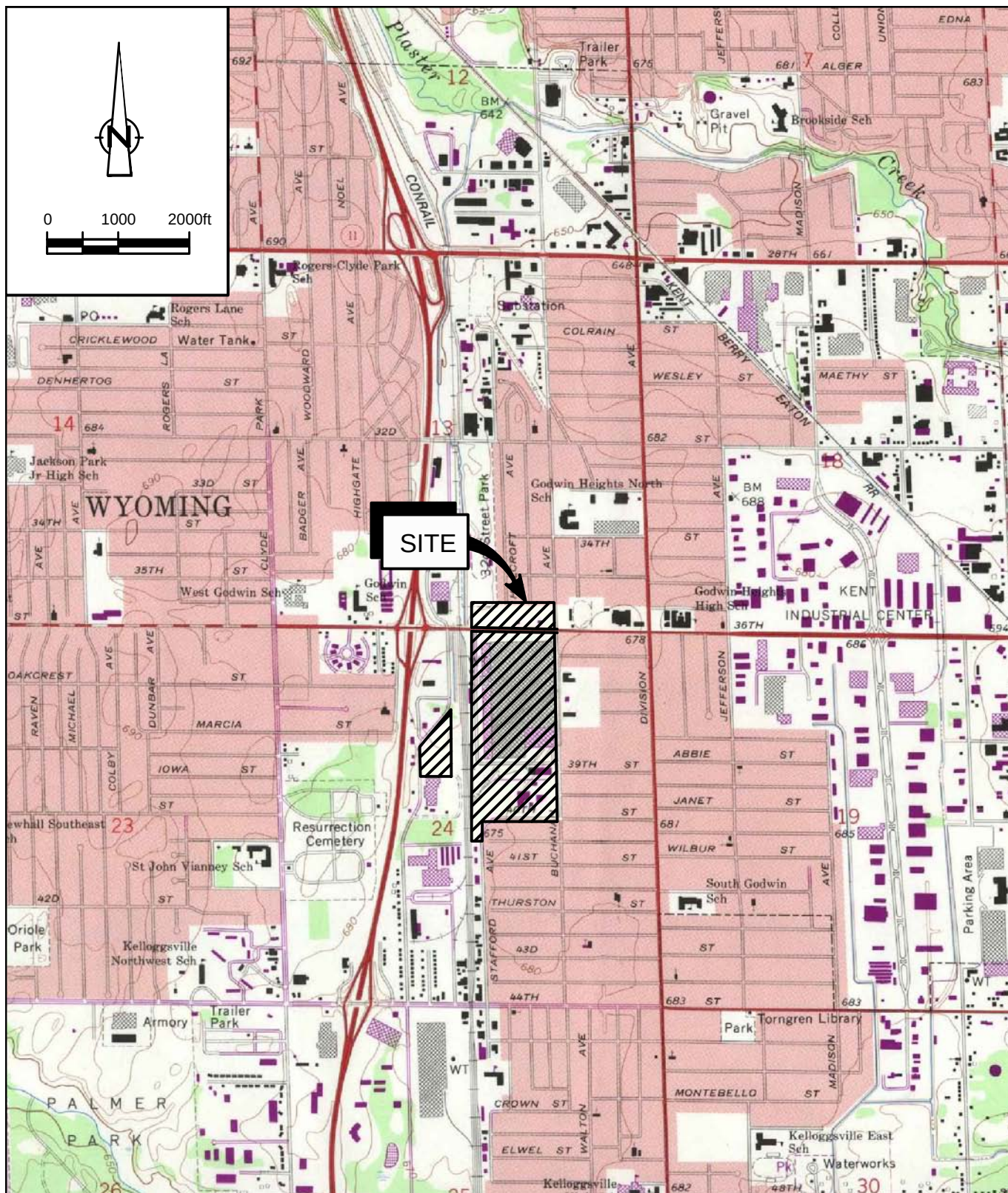
5.0 SUMMARY

5.1 CONCLUSIONS AND RECOMMENDATIONS

Analytical results identified that TAL metals and PNAs were detected in soil samples at concentrations above the Part 201 Generic Residential and/or Industrial Cleanup Criteria; however, no exceedances of the Part 201 Generic Residential and/or Industrial Cleanup Criteria have been identified in the 8 to 10-foot interval with the exception of selenium in one location, and the majority of the impacted area appears to be limited to the 2 to 6-foot interval. Based on the analytical results, the horizontal extent of impacted soil has not been delineated to Part 201 Generic Residential and Industrial Cleanup Criteria.

Proposed activities for further evaluation of this area will be provided under separate cover in a Site-Wide Investigation Work Plan.

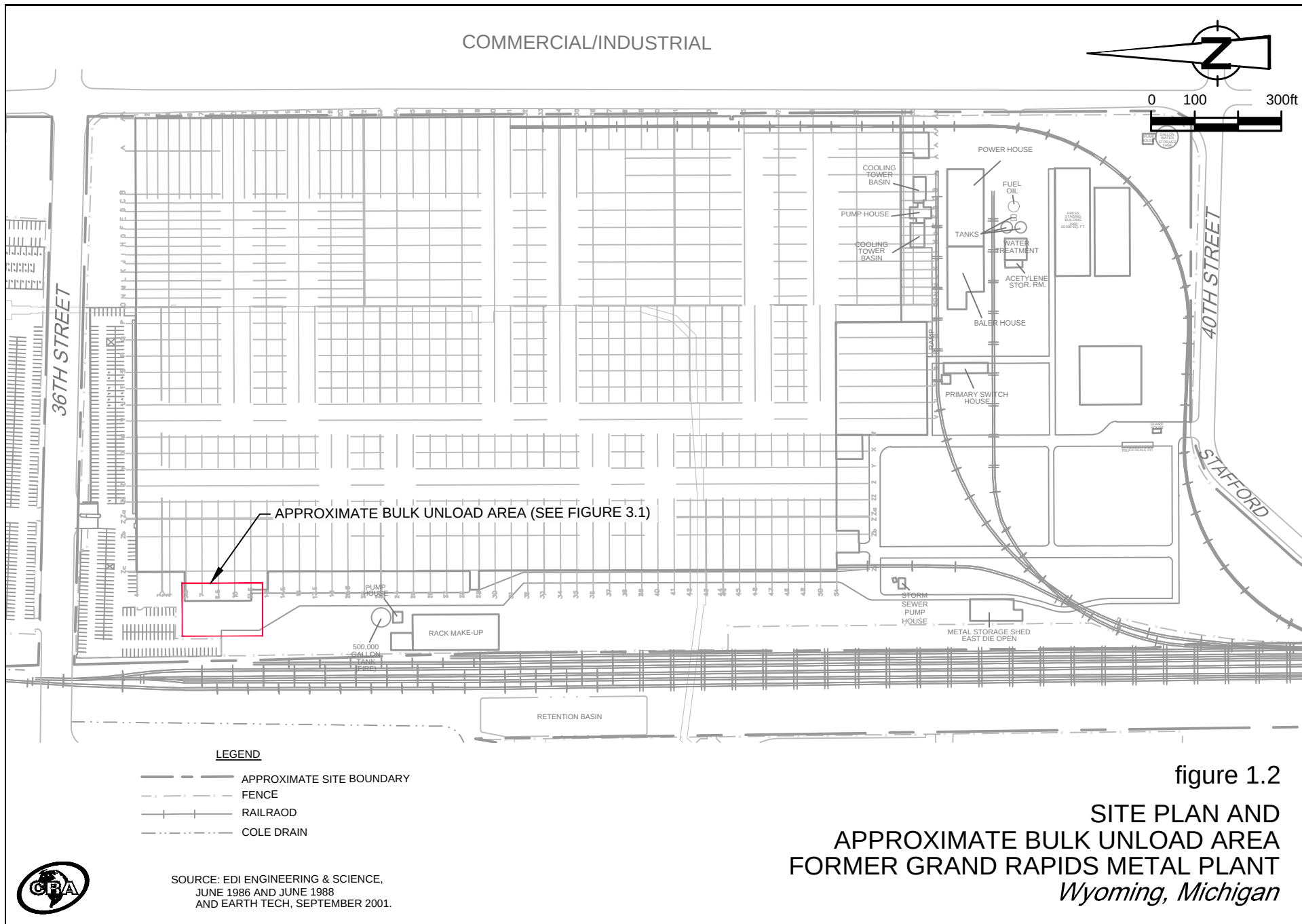
FIGURES

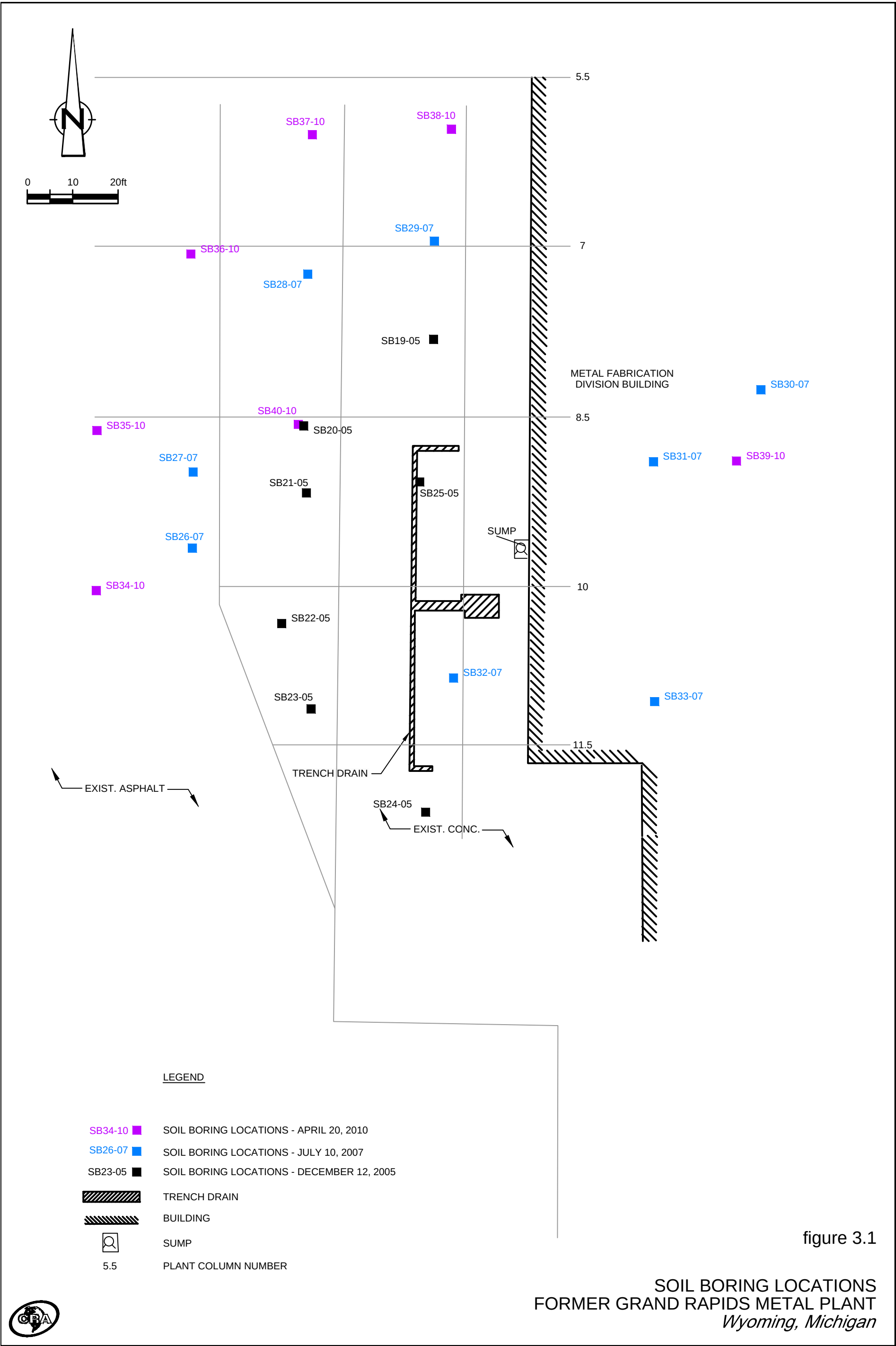


SOURCE: USGS QUADRANGLE MAP;
GRAND RAPIDS WEST, MICHIGAN



figure 1.1
SITE LOCATION
FORMER GRAND RAPIDS METAL PLANT
Wyoming, Michigan





[illegible]

	40001001 (0-21)	40002001 (22-35)	40003001 (36-49)	40004001 (50-63)	40005001 (64-77)
age	2.7	0.66	2.1	3.3	5.7
sex	36.2	36.2	36.2	36.2	36.2
	7.7	6.9	6.9	16	16
	53.8	15	15	29	5
	5.6	32	2	1.6	2
	49.8	25.8	32.8	59.6	5.7
	2.7	1.1	2.1	3.3	5.7
	16	6.4	5.9	9.7	5.7
	5.9	16	2.9	1.6	2
	25.8	15.8	25.8	41.8	5.7
total	27.8	5.8	5.8	1.6	0.21
sex	36.2	36.2	36.2	36.2	36.2
	39.6	1.1	0.43	0	0.29
	47.8	1.1	0.43	0	0.29
	47.1	109	52	-	-
	37.1	109	52	-	-
	10.6	33.1	36.1	13.6	1.4
	63.6	30.6	25.6	13.6	1.4
	-	-	-	-	-
total	1346	757	757	-	-
	1346	757	757	-	-
	1346	757	757	-	-
	0.42	0.1	0.24	0.083	0.043
	268.2	16.7	16.7	16.7	16.7
	0.001	0.28	1.6	0.79	0.23
	13.9	1.6	0.097	0.093	0.093
	15.9	15.9	8.4	15.9	15.9
	819.02	288.2	288.2	10.47	8.0

Year	Total U.S. Population (Millions)	Population 65+ (Millions)
1980	215	25
1985	225	28
1990	235	32
1995	245	36
2000	255	40
2005	265	45
2010	275	58.35
2015	285	65
2020	335	75

[illegible][illegible]

5836-10

	12/22/2008 (0-2) R -0.05	12/15/2008 (0-4) R -0.05	12/10/2008 (0-4) R -0.05	12/03/2008 (0-8) R -0.05	12/03/2008 (0-20) R -0.05
calcaneus	0.20	0.20	1.4	1.4	0.20
quadriceps	0.047	0.047	1.4	1.4	0.20
patella	0.042	0.042	1.4	1.4	0.20
triceps	0.072	0.072	1.4	1.4	0.20
quadriceps	0.023	0.023	1.4	1.4	0.20
triceps	0.072	0.072	1.4	1.4	0.20
2-3 cervical	0.28	0.30	1.4	1.4	0.20
2-3 cervical	0.023	0.023	1.4	1.4	0.20
triceps	0.042	0.036	1.4	1.4	0.20
triceps	0.12	0.12	1.4	1.4	0.20
triceps	2.9	3.2	0.72	1.8	0.94
um	88.0	143	9.1	94	7.5
um	0.16	0.37	0.087	0.087	0.087
um VI (neovision)	15.1	10.9	9.1	92	6.2
um VI (neovision)	24.8	17.5	2.9	3.0	2.6
calculated fraction					
new fraction					
calcaneus	0.045	0.045	0.043	0.044	0.044
um	0.64	0.64	0.64	0.64	0.64
um	0.43	0.46	0.43	0.44	0.44

SEB2-05	12/1/2005 (4-21) mg/g	12/1/2005 (4-21) mg/g	12/1/2005 (8-10) mg/g	12/1/2005 (8-10) mg/g
Wt%				
Acenaphthene	0.28 U	0.28 U	0.28 U	0.28 U
Benzo(a)anthracene	0.015 U	0.28 U	0.28 U	0.28 U
Benzo(a)pyrene	0.025 U	0.28 U	0.28 U	0.28 U
Benzo(b)fluoranthene	0.04 U	0.28 U	0.28 U	0.28 U
Benzo(k)fluoranthene	0.28 U	0.28 U	0.28 U	0.28 U
Chrysene	0.04 U	0.28 U	0.28 U	0.28 U
Fluorene	0.28 U	0.28 U	0.28 U	0.28 U
Phenanthrene	0.015 U	0.28 U	0.28 U	0.28 U
2,3-Dibenzophenanthrene	0.015 U	0.28 U	0.28 U	0.28 U
Benzo(e)pyrene	0.03 U	0.28 U	0.28 U	0.28 U
Perylene	0.03 U	0.28 U	0.28 U	0.28 U
Wt%				
Acidic	-	-	-	-
Alkaline	1.5	3	0.42	0.42
Barium	33.6	5.7	1.2	1.2
Calcium	0.13	0.05 U	0.04 U	0.04 U
Chromium	-	-	-	-
Chromium VI (hexavalent)	-	-	-	-
Chromium VI (hexavalent)	6.3	6.3	1.2	1.2
Cobalt	-	-	-	-
Copper	-	-	-	-
Lead	7.6	2.0	1.2	1.2

[illegible][illegible]

Benzene/fluoranthene	0.271	0.28
Benzene/naphthalene	0.271	0.30
Fluoranthene	0.271	0.28
Fluorene	0.271	0.30
Indolene(1,2,3-cy)pyrene	0.271	0.30
Naphthalene	0.271	0.28
Phenanthrene	0.271	0.30
Methane		
Acetylene	0.17103	0.17
Acetyric	1.9	1.9
Boron	6.9	12.3
Calcium	0.06310	0.064
Chromium	4.12	4.6
Chromium III (hexavalent)		
Chromium VI (hexavalent)		
Cobalt	1.8	3.5
Copper	49.2	7.1
Lead	5.7	6.4
Lead - calculated total		
Lead - coarse fraction		
Lead - fine fraction		
Magnesium	1.92	1.48
Mercury	0.0410	0.042
Nickel	1.8	4.9
Selenium	0.171	0.17
Silver	0.06310	0.064
Vanadium	6.1	6.2
Zinc	15.6	14.3

0.4	20.0	6.0	8.2	Benzothiofuranthene Dibenz(a,h)anthracene Fluoranthene Fluorene Indene(1,2,3-cd)pyrene Naphthalene Phenanthrene Pyrene Anthracene Acenaphthene Anthracene Benzo(a)pyrene Cadmium Chromium Chromium III (trivalent) Chromium VI (hexavalent) Cobalt Copper Lead Lead - calculated total Lead - volatile fraction Lead - fine fraction Mercury Nickel Selenium Silver Vanadium Zinc

[illegible][illegible]

27 U	0.062	0.063	0.062	0.28 U	0.28 U
27 U	0.27 U	0.023	0.28 U	0.28 U	0.28 U
27 U	0.024	0.063	0.002	0.28 U	0.28 U
27 U	0.023	0.023	0.28 U	0.28 U	0.28 U
27 U	0.023	0.12 U	0.06 U	0.28 U	0.28 U
27 U	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U
21 U	1.3	1.5	2.1	0.62 U	0.73 U
12 U	9.3	8.0	27.7	11.6	35.8
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-
-	-	-	-	-	-
2.2	1.8	1.8	2.4	1.5	1.4
0.063 U	0.002 U	0.002 U	1.5	0.065 U	0.084 U
5.5	5.1	-	12.8	4.8	4.4
2.2	1.8	-	26.3	-	-
2.2	1.8	1.8	2.4	1.5	1.4
7.8	4.7	4.0	13.7	0.05 U	0.04 U
6.4	6.0	6.4	-	1.5	1.7
-	-	-	-	-	-

* TOTAL CHROMIUM NOT COMPARED TO PART 201 CRITERIA WHERE SPECIATED CHROMIUM DATA IS AVAILABLE

SCALE VERIFICATION	
THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.	
	

DRAWING STATUS		
Status	Date	Initial

201 RESIDENTIAL EXCEEDANCES IN SOIL
WYOMING, MICHIGAN
FORMER GRAND RAPIDS METAL PLANT

 CONESTOGA-ROVERS & ASSOCIATES		
Licence: _____		
Manager: _____	Reviewed By: _____	Date: _____

J.Q.	L.C.	SEPTEMBER 2010	
1:10	Project N ^o : 017360-T02	Report N ^o : 023	Drawing N ^o : figure 4.1

TABLES

TABLE 3.1

SAMPLE SUMMARY
2010 BULK UNLOAD AREA INVESTIGATION
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Sample Identification</i>	<i>Sample Location</i>	<i>Sample Depth (ft bgs)</i>	<i>Sample Matrix</i>	<i>QA/QC</i>	<i>Analysis</i>
SO-17360-042010-DR-001	SB39-10	0 - 2	Soil	MS/MSD	TAL metals, PCBs and PNAs
SO-17360-042010-DR-002	SB39-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-003	SB39-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-004	SB39-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-005	SB39-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-006	SB39-10	10 - 12	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-007	SB39-10	12 - 14	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-008	SB39-10	14 - 15	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-009	SB38-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-010	SB38-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-011	SB38-10	2 - 4	Soil	Duplicate	TAL metals, PCBs and PNAs
SO-17360-042010-DR-012	SB38-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-013	SB38-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-014	SB38-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-015	SB37-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-016	SB37-10	0 - 2	Soil	Duplicate	TAL metals, PCBs and PNAs
SO-17360-042010-DR-017	SB37-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-018	SB37-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-019	SB37-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-020	SB37-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-021	SB36-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-022	SB36-10	0 - 2	Soil	Duplicate	TAL metals, PCBs and PNAs
SO-17360-042010-DR-023	SB36-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-024	SB36-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-025	SB36-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-026	SB36-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-027	SB40-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-028	SB40-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-029	SB40-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-030	SB40-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-031	SB40-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-032	SB35-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-033	SB35-10	2 - 4	Soil	MS/MSD	TAL metals, PCBs and PNAs
SO-17360-042010-DR-034	SB35-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-035	SB35-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-036	SB35-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-037	SB34-10	0 - 2	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-038	SB34-10	2 - 4	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-039	SB34-10	4 - 6	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-040	SB34-10	6 - 8	Soil		TAL metals, PCBs and PNAs
SO-17360-042010-DR-041	SB34-10	8 - 10	Soil		TAL metals, PCBs and PNAs
SO-17360-042110-DR-042	Soil Drum 4	--	Soil		TCLP Metals, TCLP VOCs, TCLP SVOCs, CI

Notes:

PCB - Polychlorinated biphenyls

PNA - Polynuclear Aromatic Compounds

TAL - Target Analyte List Metals

TCLP - Toxicity Control Leachate Procedure

VOC - Volatile Organic Compounds

SVOC - Semi Volatile Organic Compounds

CI - Corrosivity and Ignitability

QA/QC - Quality Assurance/Quality Control

MS/MSD - Matrix Spike/Matrix Spike Duplicate

ft bgs - feet below ground surface

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB34-10		SB34-10		SB34-10		SB34-10		SB34-10		SB35-10	
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-037	SO-17360-4/20/10-DR-038	SO-17360-4/20/10-DR-039	SO-17360-4/20/10-DR-040	SO-17360-4/20/10-DR-041	SO-17360-4/20/10-DR-042							
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010							
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(0-2) ft BGS							
Sample Type:	Units	a	b	c	d	e	f	g	h	i	j	k												
PNAs																								
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.13 J	0.96 J	0.31 J	2.9 U	1.1 U	0.096 J						
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	1.1 U	1.4 U	1.6 U	2.9 U	1.1 U	1.2 U						
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	1.1 U	1.4 U	1.6 U	2.9 U	1.1 U	1.2 U							
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	67000000	230000	NA	0.062 J	1.4 U	1.6 U	2.9 U	1.1 U	1.2 U							
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	20	NA	0.31 J	0.087 J	1.6 U	2.9 U	1.1 U	0.095 J							
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	1500	2	NA	0.31 J	0.084 J	1.6 U	2.9 U	1.1 U	0.079 J							
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	20	NA	0.5 J	0.14 J	1.6 U	2.9 U	1.1 U	0.14 J							
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	800000	2500	NA	0.26 J	0.12 J	1.6 U	2.9 U	1.1 U	0.077 J							
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	200	NA	0.16 J	0.047 J	1.6 U	2.9 U	1.1 U	0.043 J							
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	2000	NA	0.39 J	0.17 J	1.6 U	2.9 U	1.1 U	0.15 J							
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	2	NA	0.073 J	1.4 U	1.6 U	2.9 U	1.1 U	1.2 U							
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	9300000	46000	NA	0.46 J	0.13 J	1.6 U	2.9 U	1.1 U	0.15 J							
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	9300000	27000	NA	1.1 U	1.4 U	1.6 U	2.9 U	1.1 U	1.2 U							
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	20	NA	0.19 J	0.059 J	1.6 U	2.9 U	1.1 U	0.05 J							
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	200000	16000	NA	0.076 J	0.63 J	0.21 J	2.9 U	1.1 U	0.039 J							
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	6700	1600	NA	0.27 J	0.4 J	0.12 J	2.9 U	1.1 U	0.2 J							
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	6700000	29000	NA	0.38 J	0.11 J	1.6 U	2.9 U	1.1 U	0.12 J							
PCBs																								
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.32 U	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ	0.32 UJ	0.29 U	0.28 U	0.31 U						

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB34-10		SB34-10		SB34-10		SB34-10		SB34-10		SB35-10	
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-037	SO-17360-4/20/10-DR-038	SO-17360-4/20/10-DR-039	SO-17360-4/20/10-DR-040	SO-17360-4/20/10-DR-041	SO-17360-4/20/10-DR-041	SO-17360-4/20/10-DR-041	SO-17360-4/20/10-DR-032					
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010					
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(8-10) ft BGS	(8-10) ft BGS	(0-2) ft BGS					
Sample Type:	Units	a	b	c	d	e	f	g	h	i	j	k												
<u>Metals</u>																								
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	3340	2720	3230	2490	2120		1850					
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	0.17 UJ	0.17 UJ	0.19 UJ	0.18 UJ	0.17 UJ		0.19 UJ					
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	3.1 J	5.9 J ^b	3.4 J	2.2 J	1.2		4.9 J					
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	29.7	30.0	22.5	9.3	6.6		92.9					
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.17 U	0.17 U	0.19 U	0.18 U	0.17 U		0.43					
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.11	0.12	0.13	0.089 U	0.086 U		0.094 U					
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7130 J	6520 J	2470 J	563 J	4290 J		1390 J					
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	6.0	6.1	4.7	5.1	6.1		6.7					
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	--	--	--	--	--		--					
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	--	--	--	--	--		--					
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	2.9	2.3	1.1	1.4	2.2		5.0					
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	9.1	14.5	3.0	1.5	4.4		20.3					
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	6370	6120	2090	3420	3290		5240					
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	9.8	16.4	3.2	1.8	1.9		9.8					
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	--		--					
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	--		--					
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	--		--					
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	2080	3670	808	828	3020 J		311					
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	143	107	17.3	25.9	37.5		33.9					
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.043 U	0.043 U	0.048 U	0.045 U	0.043 U		0.047 U					
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	5.8 J	5.2 J	3.2 J	4.0 J	5.1		15.1 J					
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	172 J	204 J	126 J	117 J	174 J		164 J					
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.20 J	0.31 J	0.32 J	0.18 J	0.28 J		0.41 J					
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.086 U	0.086 U	0.066 J	0.089 U	0.086 U		0.042 J					
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	575	683	1250	629	277		290					
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.086 U	0.15	0.096 U	0.089 U	0.086 U		0.094 U					
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	10.4	8.6	5.5	7.4	8.4		7.8					
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	15.2 J	14.1 J	22.1 J	6.0 J	8.5 J		43.8 J					

General Chemistry

Total solids	%												93.5	92.9	83.1	89.6	92.8	85.4

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB35-10		SB35-10		SB35-10		SB35-10		SB36-10		SB36-10	
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-033	SO-17360-4/20/10-DR-034	SO-17360-4/20/10-DR-035	SO-17360-4/20/10-DR-036	SO-17360-4/20/10-DR-021	SO-17360-4/20/10-DR-022							
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010							
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(0-2) ft BGS	(0-2) ft BGS							
Sample Type:	Units	a	b	c	d	e	f	g	h	i	j	k					Duplicate							
PNAs																								
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.46 J	2.2 J	0.3 U	0.29 U	0.076 J	0.068 J						
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	1.6 J	18 J ^c	0.3 U	0.29 U	0.03 J	0.019 J						
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	0.84 J	62 U	0.3 U	0.29 U	0.0099 J	0.009 J							
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	67000000	230000	NA	5.6 J	36 J	0.3 U	0.29 U	0.079 J	0.047 J							
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	23 ^j	100 ⁱ	0.03 J	0.0085 J	0.32	0.22 J						
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	23 ^j	91 ⁱ	0.025 J	0.29 U	0.31	0.22 J						
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	34 ⁱ	130 ⁱ	0.038 J	0.01 J	0.62	0.47						
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	16	61 J	0.015 J	0.29 U	0.28 J	0.23 J						
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	11 J	42 J	0.013 J	0.29 U	0.17 J	0.12 J						
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	25	110	0.032 J	0.008 J	0.43	0.31						
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	5.2 J ⁱ	18 J ^j	0.3 U	0.29 U	0.084 J	0.064 J						
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	41 ^c	250 ^c	0.043 J	0.016 J	0.71	0.43						
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	2 J	17 J ^c	0.3 U	0.29 U	0.032 J	0.017 J						
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	14	53 J ^j	0.013 J	0.29 U	0.24 J	0.2 J						
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.81 J	4 J ^c	0.3 U	0.29 U	0.046 J	0.043 J						
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	22 ^c	180 ^{bcdgfh}	0.029 J	0.012 J	0.46	0.27 J						
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	31	180	0.035 J	0.013 J	0.53	0.34						
PCBs																								
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.3 U	0.31 U	0.3 U	0.29 U	0.29 U	0.28 U						

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾											SB35-10		SB35-10		SB35-10		SB35-10		SB36-10		SB36-10	
Sample Identification:		Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-033	SO-17360-4/20/10-DR-034	SO-17360-4/20/10-DR-035	SO-17360-4/20/10-DR-036	SO-17360-4/20/10-DR-021	SO-17360-4/20/10-DR-022						
Sample Date:		Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010					
Sample Depth:		Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(0-2) ft BGS	(0-2) ft BGS						
Sample Type:		Units	a	b	c	d	e	f	g	h	i	j	k						Duplicate					
Metals																								
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	1770	4270	2610	2080	2730	2940						
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	0.43 J	0.97 J	0.18 UJ	0.17 UJ	0.59 J	0.60 J						
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	6.5 J ^b	3.7 J	2.0 J	0.68 J	5.8 J	5.2 J						
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	68.7	49.8	8.8	5.7	72.6	74.6						
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.18 U	0.19 U	0.18 U	0.17 U	0.18 U	0.17 U						
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.27	0.45	0.090 U	0.087 U	0.12	0.13						
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2620 J	78000 J	788 J	602 J	15100 J	16100 J						
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	244	919	6.7	4.7	862	424 ^{bci}						
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	244	917	--	--	861	--						
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	0.90 U	1.2	--	--	1.5	--						
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	10.4 ^{bc}	10.3 ^{bc}	1.7	1.2	13.6 ^{bc}	17.6 ^{bc}						
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	43.2	165 ^c	2.4	3.4	68.6	60.0						
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	12700 ^b	30900 ^b	3580	3100	14600 ^b	12100 ^b						
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	382	4750	3.4	1.6	42.5	44.1						
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	760 ^j	5440 ^j	--	--	42.7	--						
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	1350 ^j	9210 ^j	--	--	83.0	--						
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	862 ^{bi}	5720 ^{bci}	--	--	54.7	--						
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	745	14300 ^b	1000	524	3240	4100						
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	315	813 ^{bc}	25.6	15.6	795 ^{bc}	593 ^{bc}						
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.045 U	0.047 U	0.018 J	0.043 U	0.044 U	0.043 U						
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	169 J ^{bc}	535 J ^{bc}	4.6 J	3.2 J	477 J ^{bc}	246 J ^{bc}						
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	135 J	417 J	229 J	115 J	273 J	286 J						
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.40 J	0.20 J	0.17 J	0.30 J	0.44 J ^c	0.39 J						
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.11	0.33	0.090 U	0.087 U	0.23	0.17						
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	452	1120	446	210	1220	1160						
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.097 U	0.47 U	0.090 U	0.087 U	0.097 U	0.088 U						
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	12.4	13.4	9.2	5.4	10.8	11.3						
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	38.2 J	49.4 J	6.6 J	5.5 J	69.2 J	67.2 J						

General Chemistry

Total solids	%												88.5 / 99.0 / 98.2	97.9 / 85.7 / 95.2	89.3	92.4	99.2 / 98.3 / 90.3	92.8

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB36-10	SB36-10	SB36-10	SB36-10	SB37-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-023	SO-17360-4/20/10-DR-024	SO-17360-4/20/10-DR-025	SO-17360-4/20/10-DR-026	SO-17360-4/20/10-DR-015	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(0-2) ft BGS	
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>PNAs</u>																	
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.1 J	0.2 J	0.29 U	0.28 U	5.5 U
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	0.53 J	0.054 J	0.29 U	0.28 U	5.5 U
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	NA	3.6 U	1.1 U	0.29 U	0.28 U	5.5 U
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	1400000	67000000	230000	NA	1.5 J	0.12 J	0.29 U	0.28 U	5.5 U
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	5.3	0.32 J	0.29 U	0.28 U	5.5 U
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	4.9 ^j	0.3 J	0.29 U	0.28 U	5.5 U
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	8	0.46 J	0.29 U	0.28 U	5.5 U
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	4.1	0.24 J	0.29 U	0.28 U	5.5 U
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	2.5 J	0.11 J	0.29 U	0.28 U	5.5 U
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	5.9	0.35 J	0.29 U	0.28 U	5.5 U
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	1.1 J	0.048 J	0.29 U	0.28 U	5.5 U
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	14 ^e	0.8 J	0.29 U	0.28 U	5.5 U
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	0.54 J	0.048 J	0.29 U	0.28 U	5.5 U
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	3.6	0.2 J	0.29 U	0.28 U	5.5 U
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.13 J	0.13 J	0.29 U	0.28 U	5.5 U
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	6.9 ^e	0.5 J	0.29 U	0.28 U	5.5 U
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	8.4	0.63 J	0.29 U	0.28 U	5.5 U
<u>PCBs</u>																	
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB36-10		SB36-10		SB36-10		SB36-10		SB37-10	
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-023	SO-17360-4/20/10-DR-024	SO-17360-4/20/10-DR-025	SO-17360-4/20/10-DR-026	SO-17360-4/20/10-DR-015						
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010						
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	(0-2) ft BGS						
Sample Type:																						
	Units	a	b	c	d	e	f	g	h	i	j	k										
<u>Metals</u>																						
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	1120	373	2840	1320	487					
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	2.2 J	5.0 J ^b	0.17 UJ	0.17 UJ	1.5 J					
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	8.3 J ^{bj}	1.4 J	0.76 J	0.47 J	1.2 J					
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	36.0	8.0	15.2	3.1	6.4					
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U					
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.43 U	0.23	0.087 U	0.085 U	0.083 U					
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13500 J	742 J	417 J	253 J	4200					
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	2540	233	5.4	3.7	12.0					
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	2540	233	--	--	--					
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	1.4	0.84 U	--	--	--					
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	268 ^{bc}	7.0 ^{bc}	1.5	1.0	0.93					
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	122 ^c	13.2	1.0	1.0	6.0					
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	122000 ^b	15200 ^b	2650	1670	3730					
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	173	37.6	2.5	1.4	14.9					
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	--					
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	--					
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	--					
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	2960	165	794	565	830					
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	1040 ^{bc}	221	22.3	14.9	46.0					
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.043 U	0.042 U	0.044 U	0.043 U	0.041 U					
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	5540 J ^{bc}	216 J ^{bc}	3.2 J	2.3 J	9.0					
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	138 J	418 U	168 J	107 J	58.4 J					
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.12 J	0.17 UJ	0.14 J	0.10 J	0.17 UJ					
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.84	2.1 ^c	0.087 U	0.085 U	0.083 U					
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	428	359	726	460	320					
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.086 U	0.084 U	0.087 U	0.085 U	0.083 U					
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	33.4	2.1	8.0	5.4	1.7					
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	27.8 J	11.7 J	6.4 J	3.0 U	10.2					

General Chemistry

Total solids	%												92.6	95.7	91.8	93.9	96.7

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB37-10	SB37-10	SB37-10	SB37-10	SB37-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-016	SO-17360-4/20/10-DR-017	SO-17360-4/20/10-DR-018	SO-17360-4/20/10-DR-019	SO-17360-4/20/10-DR-020	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	
Sample Type:												Duplicate					
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>PNA</u> s																	
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	5.4 U	0.011 J	0.0082 J	0.29 U	0.28 U
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.28 U
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	1400000	67000000	230000	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.28 U
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	5.4 U	0.012 J	0.008 J	0.29 U	0.28 U
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	5.4 U	0.0085 J	0.009 J	0.29 U	0.28 U
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	5.4 U	0.019 J	0.016 J	0.29 U	0.28 U
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	5.4 U	0.012 J	0.0086 J	0.29 U	0.28 U
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	5.4 U	0.0087 J	0.29 U	0.29 U	0.28 U
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	5.4 U	0.021 J	0.014 J	0.29 U	0.28 U
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.28 U
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	5.4 U	0.018 J	0.017 J	0.29 U	0.28 U
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.28 U
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	5.4 U	0.0081 J	0.0077 J	0.29 U	0.28 U
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	5.4 U	0.29 U	0.29 U	0.29 U	0.28 U
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	5.4 U	0.019 J	0.01 J	0.29 U	0.28 U
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	5.4 U	0.013 J	0.011 J	0.29 U	0.28 U
<u>PCB</u> s																	
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.29 U	0.29 U	0.28 U

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB37-10	SB37-10	SB37-10	SB37-10	SB37-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-016	SO-17360-4/20/10-DR-017	SO-17360-4/20/10-DR-018	SO-17360-4/20/10-DR-019	SO-17360-4/20/10-DR-020	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS	
Sample Type:												Duplicate					
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>Metals</u>																	
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	343	1150	3230	3940	2380
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	1.5 J	0.34 J	0.17 UJ	0.18 UJ	0.17 UJ
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	1.2 J	1.7 J	1.2 J	1.1 J	1.4 J
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	4.5	57.4	20.3	7.1	4.7
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.16 U	0.18 U	0.17 U	0.18 U	0.17 U
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.082 U	0.098 U	0.18	0.088 U	0.085 U
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4310	7150	413 J	272 J	310 J
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	16.1	11.1	3.4	4.8	6.0
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	16.1	--	--	--	--
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	0.82 U	--	--	--	--
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	0.72	3.4	1.1	2.0	2.2
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	6.3	13.0	1.3	0.88 U	2.1
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	5310	5330	3840	4030	5000
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	13.9	10.9	4.6	1.9	1.8
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	--
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	--
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	--
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	1080	1910	320	545	860
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	69.0	60.5	28.9	19.3	32.5
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.041 U	0.044 U	0.019 J	0.044 U	0.042 U
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	8.9	15.6	8.5	3.2	3.9
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46.7 J	128 J	132 J	115 J	130 J
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.16 UJ	0.15 J	0.16 J	0.17 J	0.11 J
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.082 U	0.22	0.087 U	0.088 U	0.085 U
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	315	416	546	583	241
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.082 U	0.088 U	0.087 U	0.088 U	0.085 U
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	1.3	5.5	6.9	7.7	9.8
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	9.3	18.6	11.0	6.7	7.8

General Chemistry

Total solids	%												97.2	90.8	91.9	91.1	94.6

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB38-10	SB38-10	SB38-10	SB38-10	SB38-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-009	SO-17360-4/20/10-DR-010	SO-17360-4/20/10-DR-011	SO-17360-4/20/10-DR-012	SO-17360-4/20/10-DR-013	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k			Duplicate		
<u>PNA</u> s																	
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.28 U	0.011 J	0.0098 J	0.28 U	0.28 U
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	1400000	67000000	230000	NA	0.0089 J	0.011 J	0.012 J	0.28 U	0.28 U
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.035 J	0.046 J	0.048 J	0.28 U	0.28 U
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	0.035 J	0.052 J	0.052 J	0.28 U	0.28 U
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	0.05 J	0.073 J	0.073 J	0.28 U	0.28 U
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	0.029 J	0.048 J	0.048 J	0.28 U	0.28 U
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	0.019 J	0.033 J	0.03 J	0.28 U	0.28 U
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	0.044 J	0.064 J	0.061 J	0.28 U	0.28 U
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	0.075 J	0.11 J	0.11 J	0.28 U	0.28 U
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.023 J	0.035 J	0.035 J	0.28 U	0.28 U
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.28 U	0.0092 J	0.28 U	0.28 U	0.28 U
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	0.033 J	0.052 J	0.052 J	0.28 U	0.28 U
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	0.058 J	0.079 J	0.081 J	0.28 U	0.28 U
<u>PCB</u> s																	
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB38-10	SB38-10	SB38-10	SB38-10	SB38-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-009	SO-17360-4/20/10-DR-010	SO-17360-4/20/10-DR-011	SO-17360-4/20/10-DR-012	SO-17360-4/20/10-DR-013	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(0-2) ft BGS	(2-4) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k			Duplicate		
Metals																	
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	994	2050	1760	3910	2540
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	0.17 UJ	0.17 UJ	0.18 J	0.17 UJ	0.17 UJ
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	1.0 J	1.3 J	1.4 J	1.0 J	1.2 J
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	4.5	10.2	9.9	7.3	7.2
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.084 U	0.53	0.41	0.11 U	0.084 U
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12300	8330	7450	249 J	300 J
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	3.2	11.4	8.6	4.0	4.3
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	--	--	--	--	--
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	--	--	--	--	--
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	1.1	2.0	1.8	1.6	1.7
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	3.2	13.3	7.1	1.1	1.2
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	2500	5050	5150	3830	3550
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	2.9	10.5	12.3	2.2	1.7
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	--
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	--
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	--
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	4880	2100	1780	496	728
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	55.8	91.8	85.4	18.6	24.9
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.042 U	0.042 U	0.042 U	0.043 U	0.042 U
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	3.5	16.6	15.6	3.6	3.5
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	163 J	120 J	104 J	104 J	93.5 J
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.097 J	0.14 J	0.12 J	0.17 UJ	0.11 J
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.084 U	0.81	0.67	0.086 U	0.084 U
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	545	1550	1500	924	442
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.084 U	0.085 U	0.085 U	0.086 U	0.084 U
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	3.9	5.0	4.1	6.7	6.7
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	11.0	21.0	23.1	6.4	5.9

General Chemistry

Total solids	%												95.4	94.5	94.2	93.2	95.7

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB38-10	SB39-10	SB39-10	SB39-10	SB39-10
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-014	SO-17360-4/20/10-DR-001	SO-17360-4/20/10-DR-002	SO-17360-4/20/10-DR-003	SO-17360-4/20/10-DR-004	
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010	
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(8-10) ft BGS	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>PNA</u> s																	
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.27 U
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	1400000	67000000	230000	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.28 U	5.4 U	0.023 J	2.7 U	0.02 J
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	0.28 U	5.4 U	0.025 J	2.7 U	0.021 J
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	0.28 U	5.4 U	0.035 J	2.7 U	0.032 J
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	0.28 U	5.4 U	0.026 J	2.7 U	0.019 J
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	0.28 U	5.4 U	0.014 J	2.7 U	0.0095 J
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	0.28 U	5.4 U	0.028 J	2.7 U	0.026 J
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	0.28 U	5.4 U	0.047 J	2.7 U	0.046 J
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.28 U	5.4 U	0.018 J	2.7 U	0.014 J
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	0.28 U	5.4 U	0.019 J	2.7 U	0.022 J
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	0.28 U	5.4 U	0.036 J	2.7 U	0.036 J
<u>PCB</u> s																	
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾											SB38-10		SB39-10		SB39-10		SB39-10		SB39-10	
Sample Identification:		Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-014	SO-17360-4/20/10-DR-001	SO-17360-4/20/10-DR-002	SO-17360-4/20/10-DR-003	SO-17360-4/20/10-DR-004					
Sample Date:		Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010					
Sample Depth:		Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(8-10) ft BGS	(0-2) ft BGS	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS					
Sample Type:																						
	Units	a	b	c	d	e	f	g	h	i	j	k										
Metals																						
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	2650	2230	2190	2080	1880					
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	0.17 UJ	0.16 UJ	0.18 UJ	0.17 UJ	0.16 UJ					
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	1.7 J	1.8 J	1.9 J	2.1 J	1.5 J					
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	6.7	14.3	12.7	12.9	9.3					
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.17 U	0.16 U	0.18 U	0.17 U	0.16 U					
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.085 U	0.077 J	0.088 U	0.083 U	0.082 U					
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	421 J	46900	33800	44700	25600					
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	6.3	5.8	5.7	5.5	5.3					
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	--	--	--	--	--					
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	--	--	--	--	--					
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	2.9	2.2	2.2	2.2	1.8					
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	4.4	10.2	7.5	7.8	4.7					
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	5630	4710	5090	5270	4110					
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	2.7	7.0	6.9	6.0	6.4					
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	--					
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	--					
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	--					
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	1100	14600 ^b	8270 ^b	13000 ^b	9640 ^b					
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	68.4	147	145	194	108					
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.043 U	0.041 U	0.044 U	0.041 U	0.041 U					
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	5.7	5.5	5.3	6.1	4.0					
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	225 J	418	285 J	283 J	232 J					
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.60 J ^c	0.15 J	0.17 J	0.17 J	0.13 J					
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.085 U	0.63	0.088 U	0.083 U	0.72					
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	1220	104	88.1 U	75.5 J	82.1 U					
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.085 U	0.082 U	0.088 U	0.083 U	0.082 U					
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	9.2	6.8	8.0	7.3	6.3					
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	10.6	14.8	14.1	15.2	13.8					

General Chemistry

Total solids	%												93.7	97.3	90.8	96.8	97.4

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.

(2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.

ft BGS - feet below ground surface

mg/kg - milligrams per kilogram

U - Not present at or above the associated value.

J - Estimated concentration.

UJ - Estimated reporting limit.

* Calculated GSI

PCB - Polychlorinated biphenyl

PNA - Polynuclear aromatic compound

ID - Insufficient data to develop criteria.

NLV - Not likely to volatilize

NLL - Not likely to leach

NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾											SB39-10	SB39-10	SB39-10	SB39-10	SB40-10
Sample Identification:		Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-005	SO-17360-4/20/10-DR-006	SO-17360-4/20/10-DR-007	SO-17360-4/20/10-DR-008	SO-17360-4/20/10-DR-027
Sample Date:		Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010
Sample Depth:		Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(8-10) ft BGS	(10-12) ft BGS	(12-14) ft BGS	(14-15) ft BGS	(0-2) ft BGS
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>PNA</u> s																	
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	ID	8100	NA	0.27 U	0.099 J	0.28 U	0.28 U	1 J
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	NA	0.013 J	0.29 U	0.28 U	0.28 U	2 J
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2200	2300000	1600	NA	0.27 U	0.29 U	0.28 U	0.28 U	2.9 J
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	1400000	67000000	230000	NA	0.034 J	0.29 U	0.28 U	0.28 U	6.7 J
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.11 J	0.038 J	0.28 U	0.28 U	30 ^j
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	0.11 J	0.039 J	0.28 U	0.28 U	27 ^j
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	20	NA	0.15 J	0.076 J	0.28 U	0.28 U	42 ^j
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	0.075 J	0.04 J	0.28 U	0.28 U	20
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	0.05 J	0.019 J	0.28 U	0.28 U	13 J
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2000	NA	0.13 J	0.063 J	0.28 U	0.28 U	30
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	0.015 J	0.29 U	0.28 U	0.28 U	5.6 J ^j
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	0.3	0.087 J	0.28 U	0.28 U	53 ^c
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	0.011 J	0.29 U	0.28 U	0.28 U	2.7 J
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	0.061 J	0.032 J	0.28 U	0.28 U	16
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.27 U	0.063 J	0.28 U	0.28 U	1.5 J ^c
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	0.12 J	0.086 J	0.28 U	0.28 U	25 ^c
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	0.21 J	0.06 J	0.28 U	0.28 U	37
<u>PCB</u> s																	
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.29 U	0.28 U	0.28 U	0.58 U

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾											SB39-10	SB39-10	SB39-10	SB39-10	SB40-10
Sample Identification:		Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-005	SO-17360-4/20/10-DR-006	SO-17360-4/20/10-DR-007	SO-17360-4/20/10-DR-008	SO-17360-4/20/10-DR-027
Sample Date:		Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010	4/20/2010
Sample Depth:		Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(8-10) ft BGS	(10-12) ft BGS	(12-14) ft BGS	(14-15) ft BGS	(0-2) ft BGS
Sample Type:																	
	Units	a	b	c	d	e	f	g	h	i	j	k					
<u>Metals</u>																	
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	1780	2810	3510	2310	3580
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	0.16 UJ	0.14 J	0.17 UJ	0.17 UJ	27.8 J ^b
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	1.5 J	2.1 J	0.62 J	0.73 J	11.4 J ^{bj}
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	8.0	27.7	11.6	10.6	329
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.16 U	0.17 U	0.17 U	0.18 U	0.18 U
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	0.082 U	1.1	0.085 U	0.084 U	3.9 ^c
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24000	13900	518	311 J	29400 J
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	4.2	13.1	4.8	4.4	475
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	--	12.8	--	--	471
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	--	0.38 J	--	--	3.7 ^c
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	1.8	2.4	1.5	1.4	15.6 ^{bc}
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	4.0	13.7	0.85 U	0.84 U	613 ^c
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	3510	4760	3610	3280	61600 ^b
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	4.0	18.2	1.9	1.7	976
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	--	--	--	--	1130 ^j
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	--	--	--	--	1260 ^j
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	--	--	--	--	1140 ^{bj}
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	8810 ^b	2110	693	612	9200 ^b
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	105	106	22.5	20.0	914 ^{bc}
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.041 U	0.043 U	0.042 U	0.042 U	0.42 ^c
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	3.5	11.9	3.1	2.7	268 J ^{bc}
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	194 J	153 J	104 J	88.4 J	463 J
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.16 J	0.16 J	0.11 J	0.17 UJ	0.91 J ^c
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.082 U	0.086 U	0.085 U	0.084 U	1.3 ^c
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	82.2 U	86.5 U	84.8 U	84.1 U	1380
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.082 U	0.086 U	0.085 U	0.084 U	0.23
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	6.0	8.2	7.1	6.7	15.8
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	11.0	26.2	6.5	4.9	819 J ^c

General Chemistry

Total solids	%												97.4	92.5	94.4	95.1	91.1 / 97.4 / 98.3

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.

(2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.

ft BGS - feet below ground surface

mg/kg - milligrams per kilogram

U - Not present at or above the associated value.

J - Estimated concentration.

UJ - Estimated reporting limit.

* Calculated GSI

PCB - Polychlorinated biphenyl

PNA - Polynuclear aromatic compound

ID - Insufficient data to develop criteria.

NLV - Not likely to volatilize

NLL - Not likely to leach

NA - Not applicable

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:	Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾												SB40-10		SB40-10		SB40-10		SB40-10	
Sample Identification:	Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-028	SO-17360-4/20/10-DR-029	SO-17360-4/20/10-DR-030	SO-17360-4/20/10-DR-031					
Sample Date:	Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010					
Sample Depth:	Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS					
Sample Type:	Units	a	b	c	d	e	g	h	i	j	k									
<u>PNA</u> s																				
2-Methylnaphthalene	mg/kg	NA	57	ID	5500	ID	ID	ID	ID	8100	NA	0.55 J	0.21 J	17 U	5.7 U					
Acenaphthene	mg/kg	NA	300	4.4	970	190000	81000	81000	81000	14000000	41000	0.65 J	2.1 J	3.5 J	5.7 U					
Acenaphthylene	mg/kg	NA	5.9	ID	440	1600	2200	2200	2300000	1600	NA	1.3 J	7.1 U	17 U	5.7 U					
Anthracene	mg/kg	NA	41	ID	41	1000000	1400000	1400000	67000000	230000	NA	2.7 J	5.2 J	9.1 J	5.7 U					
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	20	NA	12	12	20	5.7 U					
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1500	2	NA	9.9 ^j	11 ⁱ	18 ⁱ					
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	20	NA	15	15	25 ⁱ	5.7 U					
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	800000	2500	NA	7.7	7.6	11 J					
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	200	NA	5.9 J	6 J	8.6 J					
Chrysene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	2000	NA	NA	11	13	21					
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2	NA	2 J	1.6 J	2.7 ^j					
Fluoranthene	mg/kg	NA	730	5.5	730	1000000	740000	740000	740000	9300000	46000	NA	21 ^c	32 ^c	59 ^c					
Fluorene	mg/kg	NA	390	5.3	890	580000	130000	130000	130000	9300000	27000	NA	1.1 J	2.4 J	3.9 J					
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20	NA	6.4 J	5.9 J	9.7 J					
Naphthalene	mg/kg	NA	35	0.87	2100	250	300	300	300	200000	16000	NA	0.78 J	7.1 U	17 U					
Phenanthrene	mg/kg	NA	56	5.3	1100	2800	160	160	160	6700	1600	NA	11 ^c	25 ^c	41 ^c					
Pyrene	mg/kg	NA	480	ID	480	1000000	650000	650000	650000	6700000	29000	NA	14	26	37					
<u>PCB</u> s																				
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.33 U					

TABLE 4.1

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO RESIDENTIAL AND COMMERCIAL I CLEANUP CRITERIA
FORMER GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Residential and Commercial I Cleanup Criteria ⁽¹⁾											SB40-10		SB40-10		SB40-10		SB40-10	
Sample Identification:		Statewide	Drinking	Groundwater	Groundwater	Soil Volatilization	Infinite Source	Finite VSIC for	Finite VSIC for	Particulate	Direct	Soil Saturation	SO-17360-4/20/10-DR-028	SO-17360-4/20/10-DR-029	SO-17360-4/20/10-DR-030	SO-17360-4/20/10-DR-031				
Sample Date:		Default	Water	Surface Water	Contact	to Indoor Air	Volatile Soil	5 Meter Source	2 Meter Source	Soil Inhalation	Contact	Concentration	4/20/2010	4/20/2010	4/20/2010	4/20/2010				
Sample Depth:		Background	Protection	Interface Protection	Protection	Inhalation	Inhalation	Thickness	Thickness			Screening	(2-4) ft BGS	(4-6) ft BGS	(6-8) ft BGS	(8-10) ft BGS				
Sample Type:																				
	Units	a	b	c	d	e	f	g	h	i	j	k								
Metals																				
Aluminum	mg/kg	6900	1	NA	1000000	NLV	NLV	NLV	NLV	ID	50000	NA	3110	2840	4540	1910				
Antimony	mg/kg	NA	4.3	94	49000	NLV	NLV	NLV	NLV	13000	180	NA	5.8 J ^b	1.8 J	0.20 UJ	0.17 UJ				
Arsenic	mg/kg	5.8	4.6	70	2000	NLV	NLV	NLV	NLV	720	7.6	NA	7.4 J ^b	6.2 J ^b	2.1 J	0.43 J				
Barium	mg/kg	75	1300	440 *	1000000	NLV	NLV	NLV	NLV	330000	37000	NA	92.0	67.3	16.1	6.0				
Beryllium	mg/kg	NA	51	84 *	1000000	NLV	NLV	NLV	NLV	1300	410	NA	0.18 U	0.17 U	0.20 U	0.17 U				
Cadmium	mg/kg	1.2	6	3.0 *	230000	NLV	NLV	NLV	NLV	1700	550	NA	1.1	0.43 U	0.29	0.087 U				
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31200 J	51900 J	8480 J	564 J				
Chromium ⁽²⁾	mg/kg	18	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	170	53.4	11.5	4.7				
Chromium III (trivalent)	mg/kg	18	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	330000	790000	NA	169	52.6	--	--				
Chromium VI (hexavalent)	mg/kg	NA	30	3.3	140000	NLV	NLV	NLV	NLV	260	2500	NA	1.1	0.78 J	--	--				
Cobalt	mg/kg	6.8	0.8	2	48000	NLV	NLV	NLV	NLV	13000	2600	NA	33.1 ^{bc}	9.2 ^{bc}	1.9	1.4				
Copper	mg/kg	32	5800	73 *	1000000	NLV	NLV	NLV	NLV	130000	20000	NA	240 ^c	75.9 ^c	13.6	2.3				
Iron	mg/kg	12000	6	NA	1000000	NLV	NLV	NLV	NLV	ID	160000	NA	68500 ^b	84000 ^b	12200 ^b	2010				
Lead - total	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	576	37.3	10.4	1.8				
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	NA	786 ^j	--	--	--				
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	100000	400	NA	578 ^j	--	--	--				
Lead - total (calculated by fine/coarse fraction)	mg/kg	21	700	2500 *	ID	NLV	NLV	NLV	NLV	100000	400	NA	757 ^{bj}	--	--	--				
Magnesium	mg/kg	NA	8000	NA	1000000	NLV	NLV	NLV	NLV	6700000	1000000	NA	4540	8450 ^b	1400	716				
Manganese	mg/kg	440	1	55 *	180000	NLV	NLV	NLV	NLV	3300	25000	NA	717 ^{bc}	740 ^{bc}	114	18.5				
Mercury	mg/kg	0.13	1.7	0.1	47	48	52	52	52	20000	160	NA	0.28 ^c	0.024 J	0.028 J	0.043 U				
Nickel	mg/kg	20	100	76 *	1000000	NLV	NLV	NLV	NLV	13000	40000	NA	141 J ^{bc}	61.7 J	11.6 J	3.2 J				
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	305 J	373 J	412 J	204 J				
Selenium	mg/kg	0.41	4	0.4	78000	NLV	NLV	NLV	NLV	130000	2600	NA	0.28 J	0.16 J	0.76 J ^c	0.21 J				
Silver	mg/kg	1	4.5	0.1	200000	NLV	NLV	NLV	NLV	6700	2500	NA	0.25	0.097	0.029 J	0.087 U				
Sodium	mg/kg	NA	2500	NA	1000000	NLV	NLV	NLV	NLV	ID	1000000	NA	892	672	2670 ^b	280				
Thallium	mg/kg	NA	2.3	4.2	15000	NLV	NLV	NLV	NLV	ID	35	NA	0.089 U	0.086 U	0.10 U	0.087 U				
Vanadium	mg/kg	NA	72	190	1000000	NLV	NLV	NLV	NLV	ID	750	NA	12.0	8.4	10.2	6.8				
Zinc	mg/kg	47	2400	170 *	1000000	NLV	NLV	NLV	NLV	ID	170000	NA	260 J ^c	105 J	52.4 J	8.0 J				

General Chemistry

Total solids	%												97.3 / 98.3 / 90.1	93.0	79.5	92.4

Notes:

- (1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.
- (2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.
- ft BGS - feet below ground surface
- mg/kg - milligrams per kilogram
- U - Not present at or above the associated value.
- J - Estimated concentration.
- UJ - Estimated reporting limit.
- * Calculated GSI
- PCB - Polychlorinated biphenyl
- PNA - Polynuclear aromatic compound
- ID - Insufficient data to develop criteria.
- NLV - Not likely to volatilize
- NLL - Not likely to leach
- NA - Not applicable

TABLE 4.2

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO INDUSTRIAL AND COMMERCIAL II, III, AND IV GENERIC CLEANUP CRITERIA
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Industrial and Commercial II, III, IV Generic Cleanup Criteria ⁽¹⁾													SB34-10	SB34-10	SB34-10	SB34-10	SB34-10	SB35-10	SB35-10	SB35-10	SB35-10	SB36-10								
Sample Identification:	Statewide Default Background	Residential Drinking Water Protection	Industrial and Commercial Drinking Water	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation	Direct Contact Industrial and Commercial II	Direct Contact Commercial III	Direct Contact Commercial IV	Soil Saturation Concentration Screening	SO-17360-4/20/10-DR-037 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-038 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-039 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-040 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-041 4/20/2010 (8-10) ft BGS	SO-17360-4/20/10-DR-032 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-033 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-034 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-035 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-036 4/20/2010 (8-10) ft BGS	SO-17360-4/20/10-DR-036 4/20/2010 (8-10) ft BGS	SO-17360-4/20/10-DR-021 4/20/2010 (0-2) ft BGS						
Sample Depth	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n																	
Sample Type:																																
PNA s																																
2-Methylnaphthalene	mg/kg	NA	57	170	ID	5500	ID	ID	ID	ID	26000	37000	31000	NA	0.13 J	0.96 J					0.096 J	0.46 J	2.2 J		0.3 U	0.29 U	0.076 J					
Acenaphthene	mg/kg	NA	300	880	4.4	970	350000	97000	97000	620000	130000	180000	150000	NA	1.1 U	1.4 U					1.2 U	1.6 J	18 J ^d		0.3 U	0.29 U	0.03 J					
Acenaphthylene	mg/kg	NA	5.9	17	ID	440	3000	2700	2700	1000000	5200	7200	6100	NA	1.1 U	1.4 U					1.2 U	0.84 J	62 U		0.3 U	0.29 U	0.0099 J					
Anthracene	mg/kg	NA	41	41	ID	41	1000000	1600000	1600000	29000000	730000	1000000	860000	NA	0.062 J	1.4 U					1.2 U	5.6 J	36 J		0.3 U	0.29 U	0.079 J					
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	ID	80	160	110	NA	0.31 J	0.087 J					0.095 J	23	100 ^k		0.03 J	0.0085 J	0.32					
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	1900	8	16	11	NA	0.31 J	0.084 J					0.079 J	23 ^{kin}	91 ^{kin}		0.025 J	0.29 U	0.31					
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	80	160	110	NA	0.5 J	0.14 J					0.14 J	34	130 ^{kin}		0.038 J	0.01 J	0.62					
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	350000	7000	14000	9500	NA	0.26 J	0.12 J					0.077 J	16	61 J		0.015 J	0.29 U	0.28 J					
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	ID	800	1600	1100	NA	0.16 J	0.047 J					0.043 J	11 J	42 J		0.013 J	0.29 U	0.17 J					
Chrysene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	8000	16000	11000	NA	0.39 J	0.17 J					0.15 J	25	110		0.052 J	0.008 J	0.43					
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	8	16	11	NA	0.073 J	1.4 U					1.2 U	5.2 J	18 J ^{kin}		0.3 U	0.29 U	0.084 J					
Fluoranthene	mg/kg	NA	730	730	5.5	730	1000000	890000	880000	880000	4100000	130000	240000	170000	NA	0.46 J	0.13 J					0.15 J	41 ^d	250 ^d		0.043 J	0.016 J	0.71				
Fluorene	mg/kg	NA	390	890	5.3	890	1000000	150000	150000	87000	4100000	87000	120000	100000	NA	1.1 U	1.4 U					1.2 U	2 J	17 J ^d		0.3 U	0.29 U	0.032 J				
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	ID	80	160	110	NA	0.19 J	0.059 J					0.05 J	14	53 J		0.013 J	0.29 U	0.24 J					
Naphthalene	mg/kg	NA	35	100	0.87	2100	470	350	350	88000	52000	72000	61000	NA	0.076 J	0.63 J					0.039 J	0.81 J	4 J ^d		0.3 U	0.29 U	0.046 J					
Phenanthrene	mg/kg	NA	56	160	5.3	1100	5100	190	190	2900	5200	7200	6100	NA	0.27 J	0.4 J					0.2 J	22 ^d	180 ^{bd}		0.029 J	0.012 J	0.46					
Pyrene	mg/kg	NA	480	480	ID	480	1000000	780000	780000	2900000	84000	150000	110000	NA	0.38 J	0.11 J					0.12 J	31	180		0.035 J	0.013 J	0.53					
PCB s																																
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ	0.28 UJ			0.32 UJ		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1252 (PCB-1232)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1242 (PCB-1242)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1248 (PCB-1248)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1254 (PCB-1254)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Aroclor-1260 (PCB-1260)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U			0.32 U		0.29 U	0.28 U		0.31 U		0.3 U	0.29 U	0.29 U				
Total PCBs	mg/kg	NA	NLL	NLL	NLL	NLL	16000	810	28000	28000	6500	16	33	22	NA	ND	ND			ND		ND		0.04 J		ND		ND	ND			
Metals																																
Aluminum	mg/kg	6900	1	1	NA	1000000	NLV	NLV	NLV	ID	370000	410000	390000	NA	3340	2720			3230		2490		2120		1850		1770	4270	2610	2080	2730	
Antimony	mg/kg	NA	4.3	4.3	94	49000	NLV	NLV	NLV	NLV	5900	670	730	700	NA	0.17 UJ	0.17 UJ			0.19 UJ		0.18 UJ		0.17 UJ		0.19 UJ		0.43 J	0.97 J	0.18 UJ	0.17 UJ	0.59 J
Arsenic	mg/kg	5.8	4.6	4.6	70	2000	NLV	NLV	NLV	NLV	910	37	46	41	NA	3.1 J	5.9 J ^{bc}			3.4 J		2.2 J		1.2		4.9 J		6.5 J ^{bc}	3.7 J	2.0 J	0.68 J	5.8 J
Barium	mg/kg	75	1300	1300	440 *	1000000	NLV	NLV	NLV	NLV	150000	130000	150000	140000	NA	29.7	30.0			22.5		9.3		68.7		92.9		68.7	49.8	8.8	72.6	5.7
Beryllium	mg/kg	NA	51	51	84 *	1000000	NLV	NLV	NLV	NLV	590	1600	1600	1600	NA	0.17 U	0.17 U			0.19 U		0.18 U		0.17 U		0.43		0.18 U	0.19 U	0.18 U	0.17 U	0.18 U
Cadmium	mg/kg	1.2	6	6	3.0 *	230000	NLV	NLV	NLV	NLV	2200	2100	2100	2100	NA	0.11	0.12			0.13		0.089 U		0.086 U		0.094 U		0.27	0.45	0.090 U	0.087 U	0.12
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7130 J	6520 J			2470 J		563 J		4290 J		788 J		2620 J	78000 J	788 J	602 J	15100 J	
Chromium ⁽²⁾	mg/kg	18	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	6.0	6.1			4.7		5.1 J		6.7		6.7		244	919	6.7	4.7	862
Chromium III (trivalent)	mg/kg	18	1000000	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	150000	1000000	100000	100000	NA	--	--			--		--		--		--		244	917	--	--	861
Chromium VI (hexavalent)	mg/kg	NA	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	--	--			--		--		--		--		0.90 U	1.2	--	--	1.5
Cobalt	mg/kg	6.8	0.8	2	2	48000	NLV	NLV	NLV	NLV	5900	9000	10000	10000	NA	2.9	2.3			1.1		1.4		2.2		5.0		10.4 ^{bd}	10.3 ^{bd}	1.7	1.2	13.6 ^{bd}
Copper	mg/kg	32	5800	5800	73 *	1000000	NLV	NLV	NLV	NLV	59000	73000	79000	76000	NA	9.1	14.5			3.0		1.5		4.4		20.3		43.2	165 ^d	2.4	3.4	68.6
Iron	mg/kg	12000	6	6	NA	1000000	NLV	NLV	NLV	NLV	ID	580000	620000	600000	NA	6370	6120			2090		3420		3290		5240		12700 ^{bc}	30900 ^{bc}	3580	3100	14600 ^{bc}
Lead - total	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	9.8	16.4			3.2		1.8		1.9		9.8		382	4750	3.4	1.6	42.5
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	900	400	400	NA	--	--			--		--		--		--		760 ^{kin}	5440 ^{kin}	--	--	42.7
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	44000	900	400	400	NA	--	--			--		--		--		--		1350 ^{kin}	9210 ^{kin}	--	--	83.0
Lead - total (calculated by fin mg/kg)	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	--	--			--		--		--		--		862 ^{bcin}	5720 ^{bcin}	--	--	54.7
Magnesium	mg/kg	NA	8000	22000	NA	1000000	NLV	NLV	NLV	NLV	2900000	1000000	1000000	1000000	NA	2080	3670			808		828		3020 J		311		745	14300 ^b	1000	524	3240
Manganese	mg/kg	440	1	1	55 *	180000	NLV	NLV	NLV	NLV	1500	90000	98000	94000	NA	143	107			17.3		25.9		33.9		25.6		315	813 ^{bd}	15.6	15.6	795 ^{bd}
Mercury	mg/kg	0.13	1.7	1.7	0.1	47	89	62	62	62	8800	580	620	600	NA	0.043 U	0.043 U			0.045 U		0.045 U		0.047 U		0.018 J		0.045 U	0.047 U	0.018 J	0.043 U	0.044 U
Nickel	mg/kg	20	100	100	76 *	1000000	NLV	NLV	NLV	NLV	16000	150000	160000	150000	NA	5.8 J	5.2 J			3.2 J		4.0 J		5.1		15.1 J		169 J ^{bd}	535 J ^{bd}	4.6 J	3.2 J	477 J ^{bd}
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	172 J	204 J			126 J		117 J		174 J		164 J		135 J	417 J	229 J	115 J	273 J	
Selenium	mg/kg	0.41	4	4	0.4	78000	NLV	NLV	NLV	NLV	59000	9600	10000	10000	NA	0.20 J	0.31 J			0.32 J		0.18 J		0.28 J		0.41 J		0.40 J	0.20 J	0.17 J	0.30 J	0

[illegible]

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended.

(2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.

TABLE 4.2

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO INDUSTRIAL AND COMMERCIAL II, III, AND IV GENERIC CLEANUP CRITERIA
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

		Michigan Act 451, Part 201 Industrial and Commercial II, III, IV Generic Cleanup Criteria ⁽¹⁾														SB36-10		SB36-10		SB36-10		SB36-10		SB36-10		SB37-10		SB37-10		SB37-10		SB37-10		SB37-10	
Sample Location: Sample Identification: Sample Date: Sample Depth: Sample Type:		Statewide Default Background	Residential Drinking Water Protection	Industrial and Commercial Drinking Water	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatiles Soil Inhalation	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation	Direct Contact Industrial and Commercial II	Direct Contact Commercial III	Direct Contact Commercial IV	Soil Saturation Concentration Screening	SO-17360-4/20/10-DR-022 4/20/2010 (0-2) ft BGS Duplicate	SO-17360-4/20/10-DR-023 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-024 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-025 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-026 4/20/2010 (8-10) ft BGS	SO-17360-4/20/10-DR-015 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-016 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-017 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-018 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-019 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-020 4/20/2010 (8-10) ft BGS									
	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n																				
PNAs																																			
2-Methylnaphthalene	mg/kg	NA	57	170	ID	5500	ID	ID	ID	ID	ID	26000	37000	31000	NA	0.068 J	0.1 J	0.2 J	0.29 U	0.28 U	5.5 U	5.4 U	0.011 J	0.0082 J		0.29 U	0.28 U								
Acenaphthene	mg/kg	NA	300	880	4.4	970	350000	97000	97000	620000	130000	180000	150000	NA	0.019 J	0.053 J	0.5 J	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U							
Acenaphthylene	mg/kg	NA	5.9	17	ID	440	3000	2700	2700	1000000	5200	7200	6100	NA	0.009 J	3.6 U	1.1 U	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U							
Anthracene	mg/kg	NA	41	41	ID	41	1000000	1600000	1600000	29000000	730000	1000000	860000	NA	0.047 J	1.5 J	0.12 J	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U							
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	80	160	110	NA	0.22 J	5.3	0.32 J	0.29 U	0.28 U	5.5 U	5.4 U	0.012 J	0.008 J		0.29 U	0.28 U								
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1900	8	16	11	NA	0.22 J	4.9	0.3 J	0.29 U	0.28 U	5.5 U	5.4 U	0.0085 J	0.009 J		0.29 U	0.28 U								
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	80	160	110	NA	0.47	8	0.46 J	0.29 U	0.28 U	5.5 U	5.4 U	0.016 J	0.016 J		0.29 U	0.28 U								
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	350000	7000	14000	9500	NA	0.23 J	4.1	0.24 J	0.29 U	0.28 U	5.5 U	5.4 U	0.012 J	0.0086 J		0.29 U	0.28 U								
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	800	1600	1100	NA	0.12 J	2.5 J	0.11 J	0.29 U	0.28 U	5.5 U	5.4 U	0.0087 J	0.0087 J		0.29 U	0.28 U								
Chrysene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	8000	16000	11000	NA	0.31	5.9	0.35 J	0.29 U	0.28 U	5.5 U	5.4 U	0.021 J	0.014 J		0.29 U	0.28 U								
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	8	16	11	NA	0.064 J	1.1 J	0.048 J	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U								
Fluoranthene	mg/kg	NA	730	730	5.5	730	1000000	890000	880000	880000	4100000	130000	240000	170000	NA	0.43	14 ^d	0.8 J	0.29 U	0.28 U	5.5 U	5.4 U	0.018 J	0.017 J		0.29 U	0.28 U								
Fluorene	mg/kg	NA	390	890	5.3	890	1000000	150000	150000	4100000	87000	120000	100000	NA	0.017 J	0.54 J	0.048 J	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U							
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	80	160	110	NA	0.2 J	3.6	0.2 J	0.29 U	0.28 U	5.5 U	5.4 U	0.0081 J	0.0077 J		0.29 U	0.28 U								
Naphthalene	mg/kg	NA	35	100	0.87	2100	470	350	350	350	88000	52000	72000	61000	NA	0.043 J	0.13 J	0.13 J	0.29 U	0.28 U	5.5 U	5.4 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U								
Phenanthrene	mg/kg	NA	56	160	5.3	1100	5100	190	190	190	2900	5200	7200	6100	NA	0.27 J	6.9 ^d	0.5 J	0.29 U	0.28 U	5.5 U	5.4 U	0.019 J	0.01 J		0.29 U	0.28 U								
Pyrene	mg/kg	NA	480	480	ID	480	1000000	780000	780000	780000	2900000	84000	150000	110000	NA	0.34	8.4	0.63 J	0.29 U	0.28 U	5.5 U	5.4 U	0.013 J	0.011 J		0.29 U	0.28 U								
PCBs																																			
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1232 (PCB-1232)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1242 (PCB-1242)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1248 (PCB-1248)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1254 (PCB-1254)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Aroclor-1260 (PCB-1260)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.57 U	0.28 U	0.29 U	0.28 U	0.27 U	0.27 U	0.29 U	0.29 U		0.29 U	0.29 U	0.28 U							
Total PCBs	mg/kg	NA	NLL	NLL	NLL	NLL	16000	810	28000	28000	6500	16	33	22	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND							
Metals																																			
Aluminum	mg/kg	6900	1	1	NA	1000000	NLV	NLV	NLV	NLV	ID	370000	410000	390000	NA	2940	1120	373	2840	1320	487	343	1150	3230	3940		2380								
Antimony	mg/kg	NA	4.3	4.3	94	49000	NLV	NLV	NLV	NLV	5900	670	730	700	NA	0.60 J	2.2 J	5.0 J ^{bc}	0.17 UJ	0.34 J	1.5 J	1.5 J	0.34 J	0.17 UJ		0.17 UJ									
Arsenic	mg/kg	5.8	4.6	4.6	70	2000	NLV	NLV	NLV	NLV	910	37	46	41	NA	5.2 J	8.3 J ^{bc}	1.4 J	0.76 J	0.47 J	1.2 J	1.2 J	1.7 J	1.2 J		1.1 J									
Barium	mg/kg	75	1300	1300	440 *	1000000	NLV	NLV	NLV	NLV	150000	130000	150000	140000	NA	74.6	36.0	8.0	15.2	3.1	6.4	4.5	57.4	20.3		7.1									
Beryllium	mg/kg	NA	51	51	84 *	1000000	NLV	NLV	NLV	NLV	590	1600	1600	1600	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U	0.18 U	0.17 U		0.17 U									
Cadmium	mg/kg	1.2	6	6	3.0 *	23000	NLV	NLV	NLV	NLV	2200	2100	2100	2100	NA	0.13	0.43 U	0.23	0.087 U	0.085 U	0.088 U	0.088 U	0.088 U	0.088 U		0.088 U									
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16100 J	13500 J	742 J	417 J	253 J	4200	4310	7150	413 J		272 J									
Chromium ⁽²⁾	mg/kg	18	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	424 ^{bcd}	2540	233	5.4	3.7	12.0	16.1	11.1	3.4		4.8									
Chromium III (trivalent)	mg/kg	18	1000000	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	150000	1000000	100000	100000	NA	--	2540	233	--	--	--	16.1	--	--	--		--								
Chromium VI (hexavalent)	mg/kg	NA	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	--	1.4	0.84 U	--	--	--	0.82 U	--	--	--		--								
Cobalt	mg/kg	6.8	0.8	2	2	48000	NLV	NLV	NLV	NLV	5900	9000	10000	10000	NA	17.6 ^{bcd}	268 ^{bcd}	7.0 ^{bcd}	1.5	1.0	0.93	0.72	3.4	1.1		2.0									
Copper	mg/kg	32	5800	5800	73 *	1000000	NLV	NLV	NLV	NLV	59000	73000	79000	76000	NA	60.0	122 ^d	13.2	1.0	1.0	6.0	6.3	13.0	1.3		0.88 U									
Iron	mg/kg	12000	6	6	NA	1000000	NLV	NLV	NLV	NLV	ID	580000	620000	60000	NA	12100 ^{bc}	122000 ^{bc}	15200 ^{bc}	2650	1670	3730	5310	3840		4030										
Lead - total	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	44.1	173	37.6	2.5	1.4	14.9	13.9	10.9	4.6		1.9									
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	900	400	400	NA	--	--	--	--	--	--	--	--	--	--		--								
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	44000	900	400	400	NA	--	--	--	--	--	--	--	--	--	--		--								
Lead - total (calculated by fin)	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	--	--	--	--	--	--	--	--	--	--	--		--							
Magnesium	mg/kg	NA	8000	22000	NA	1000000	NLV	NLV	NLV	NLV	2900000	1000000	1000000	1000000	NA	4100	2960	165	794	565	830	1080	1910	320		545									
Manganese	mg/kg	440	1	1	55 *	180000	NLV	NLV	NLV	NLV	1500	90000	98000	94000	NA	593 ^{bcd}	1040 ^{bcd}	221	22.3	14.9	46.0	69.0	60.5	28.9		32.5									
Mercury	mg/kg	0.13	1.7	1.7	0.1	47	89	62	62	62	8800	580	620	600	NA	0.043 U	0.043 U	0.042 U	0.044 U	0.043 U	0.041 U	0.041 U	0.044 U		0.019 J										
Nickel	mg/kg	20	100	100	76 *	1000000	NLV	NLV	NLV	NLV	16000	150000	160000	150000	NA	246 J ^{bcd}	5540 J ^{bcd}	216 J ^{bcd}	3.2 J	2.3 J	8.9	15.6	8.9	3.2		3.9									
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	286 J	138 J	418 U	168 J	107 J	58.4 J	46.7 J	132 J	115 J		130 J									
Selenium	mg/kg	0.41	4	4	0.4	78000	NLV	NLV	NLV	NLV	59000	9600	10000	10000	NA	0.39 J	0.12 J	0.17 UJ	0.14 J	0.10 J	0.17 UJ	0.16 UJ	0.15 J	0.16 J		0.17 J									
Silver	mg/kg	1	4.5	13	0.1	20000	NLV	NLV	NLV	NLV	2900	9000	9800	9400	NA	0.17	0.84	2.1 ^d	0.087 U	0.085 U	0.087 U	0.087 U	0.087												

General Chemistry

Total solids

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 1/23/2006, pursuant to 1994 PA 451 as amended

(2) Cleanup criteria for total chromium defaults to the more restrictive hexavalent chromium criteria in the absence of speciated chromium data. Select soil samples were analyzed for speciated chromium; therefore, the total chromium criteria is not applicable where speciated chromium data is available. Where applicable refer to the trivalent and hexavalent chromium data for cleanup criteria exceedances.

ft BGS - feet below ground

surface

mg/kg - milligrams per kilogram

U - Not

J - Estimated concentration.

UJ - Estimated reporting line

* Calculated GSI

PNA - Polynucleotide

ID - Insufficient data to develop

NLV - Not likely to volatilize

NLL - Not likely to leach

NA - Not applicable

TABLE 4.2

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO INDUSTRIAL AND COMMERCIAL II, III, AND IV GENERIC CLEANUP CRITERIA
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Michigan Act 451, Part 201 Industrial and Commercial II, III, IV Generic Cleanup Criteria ⁽¹⁾																SB38-10		SB38-10		SB38-10		SB38-10		SB38-10		SB38-10		SB39-10		SB39-10		SB39-10		SB39-10		SB39-10	
Sample Location: Sample Identification: Sample Date: Sample Depth: Sample Type:	Statewide Default Background	Residential Drinking Water Protection	Industrial and Commercial Drinking Water	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation	Direct Contact Industrial and Commercial II	Direct Contact Commercial III	Direct Contact Commercial IV	Soil Saturation Concentration Screening	SO-17360-4/20/10-DR-009 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-010 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-011 4/20/2010 (2-4) ft BGS Duplicate	SO-17360-4/20/10-DR-012 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-013 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-014 4/20/2010 (8-10) ft BGS	SO-17360-4/20/10-DR-001 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-002 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-003 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-004 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-005 4/20/2010 (8-10) ft BGS												
Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n																							
PNAs																																					
2-Methylnaphthalene	mg/kg	NA	57	170	ID	5500	ID	ID	ID	ID	26000	37000	31000	NA	0.28 U	0.011 J	0.0098 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.27 U	0.013 J											
Acenaphthene	mg/kg	NA	300	880	4.4	970	350000	97000	97000	6200000	130000	180000	150000	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.013 J												
Acenaphthylene	mg/kg	NA	5.9	17	ID	440	3000	2700	2700	1000000	5200	7200	6100	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.013 J												
Anthracene	mg/kg	NA	41	41	ID	41	1000000	1600000	1600000	29000000	730000	1000000	860000	NA	0.0089 J	0.011 J	0.012 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.034 J												
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	80	160	110	NA	0.035 J	0.046 J	0.048 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.11 J											
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	8	16	11	NA	0.035 J	0.052 J	0.052 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.11 J											
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	80	160	110	NA	0.05 J	0.073 J	0.073 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.15 J												
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	350000	7000	14000	9500	NA	0.029 J	0.048 J	0.048 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.075 J											
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	800	1600	1100	NA	0.019 J	0.033 J	0.033 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.095 J											
Chrysene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	8000	16000	11000	NA	0.044 J	0.064 J	0.061 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.13 J												
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	8	16	11	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.015 J												
Fluoranthene	mg/kg	NA	730	730	5.5	730	1000000	890000	880000	880000	4100000	130000	240000	170000	NA	0.075 J	0.11 J	0.11 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.3											
Fluorene	mg/kg	NA	390	890	5.3	890	1000000	150000	150000	150000	4100000	87000	120000	100000	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.011 J												
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	80	160	110	NA	0.023 J	0.035 J	0.035 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.061 J											
Naphthalene	mg/kg	NA	35	100	0.87	2100	470	350	350	88000	52000	72000	61000	NA	0.28 U	0.0092 J	0.28 U	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.27 U												
Phenanthrene	mg/kg	NA	56	160	5.3	1100	5100	190	190	2900	5200	7200	6100	NA	0.033 J	0.052 J	0.052 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.12 J												
Pyrene	mg/kg	NA	480	480	ID	480	1000000	780000	780000	780000	2900000	84000	150000	110000	NA	0.058 J	0.079 J	0.081 J	0.28 U	0.28 U	0.28 U	5.4 U	0.29 U	2.7 U	0.27 U	0.21 J											
PCBs																																					
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1232 (PCB-1232)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1242 (PCB-1242)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1248 (PCB-1248)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1254 (PCB-1254)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.028 J	0.022 J	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Aroclor-1260 (PCB-1260)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.27 U	0.29 U	0.27 U	0.27 U	0.27 U	0.27 U											
Total PCBs	mg/kg	NA	NLL	NLL	NLL	NLL	16000	810	28000	28000	6500	16	33	22	NA	ND	0.028 J	0.022 J	ND	ND	ND	ND	ND	ND	ND	ND	ND										
Metals																																					
Aluminum	mg/kg	6900	1	1	NA	1000000	NLV	NLV	NLV	NLV	ID	370000	410000	390000	NA	994	2050	1760	3910	2540	2650	2230	2190	2080	1880	1780											
Antimony	mg/kg	NA	4.3	4.3	94	49000	NLV	NLV	NLV	NLV	5900	670	730	700	NA	0.17 UJ	0.17 UJ	0.18 J	0.17 UJ	0.17 UJ	0.16 UJ	0.18 UJ	0.17 UJ	0.16 UJ	0.16 UJ	0.16 UJ											
Arsenic	mg/kg	5.8	4.6	4.6	70	2000	NLV	NLV	NLV	NLV	910	37	46	41	NA	1.0 J	1.3 J	1.4 J	1.0 J	1.2 J	1.7 J	1.8 J	1.9 J	2.1 J	1.5 J	1.5 J											
Barium	mg/kg	75	1300	1300	440 *	1000000	NLV	NLV	NLV	NLV	150000	130000	150000	140000	NA	4.5	10.2	9.9	7.3	7.2	14.3	12.7	14.3	12.9	9.3	8.0											
Beryllium	mg/kg	NA	51	51	84 *	1000000	NLV	NLV	NLV	NLV	590	1600	1600	1600	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.16 U	0.18 U	0.17 U	0.16 U	0.16 U	0.16 U											
Cadmium	mg/kg	1.2	6	6	3.0 *	230000	NLV	NLV	NLV	NLV	2200	2100	2100	2100	NA	0.084 U	0.53	0.41	0.11 U	0.084 U	0.085 U	0.088 U	0.083 U	0.082 U	0.082 U	0.082 U											
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12300	8330	7450	249 J	300 J	421 J	46900	33800	44700	25600	24000												
Chromium ⁽²⁾	mg/kg	18	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	3.2	11.4	8.6	4.0	4.3	6.3	5.8	5.7	5.5	5.3	4.2											
Chromium III (trivalent)	mg/kg	18	1000000	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	150000	1000000	100000	100000	NA	--	--	--	--	--	--	--	--	--	--	--	--										
Chromium VI (hexavalent)	mg/kg	NA	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	--	--	--	--	--	--	--	--	--	--	--	--										
Cobalt	mg/kg	6.8	0.8	2	2	48000	NLV	NLV	NLV	NLV	5900	9000	10000	10000	NA	1.1	2.0	1.8	1.6	1.7	2.9	2.2	2.2	2.2	1.8	1.8											
Copper	mg/kg	32	5800	5800	73 *	1000000	NLV	NLV	NLV	NLV	59000	73000	79000	76000	NA	3.2	13.3	7.1	1.1	1.2	4.4	10.2	7.5	7.8	4.7	4.0											
Iron	mg/kg	12000	6	6	NA	1000000	NLV	NLV	NLV	NLV	ID	580000	620000	600000	NA	2500	5050	3150	3830	3550	5630	4710	5090	5270	4110	3510											
Lead - total	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	2.9	10.5	12.3	2.2	1.7	2.7	7.0	6.9	6.0	6.4	4.0											
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	900	400	400	NA	--	--	--	--	--	--	--	--	--	--	--	--										
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	44000																										

TABLE 4.2

SUMMARY OF ANALYTICAL RESULTS IN SOIL SAMPLES COMPARED TO INDUSTRIAL AND COMMERCIAL II, III, AND IV GENERIC CLEANUP CRITERIA
GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Michigan Act 451, Part 201 Industrial and Commercial II, III, IV Generic Cleanup Criteria ⁽¹⁾																SB39-10	SB39-10	SB39-10	SB40-10	SB40-10	SB40-10	SB40-10	SB40-10	SB40-10
Sample Location: Sample Identification: Sample Date: Sample Depth: Sample Type:	Statewide Default Background	Residential Drinking Water Protection	Industrial and Commercial Drinking Water	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Soil Volatilization to Indoor Air Inhalation	Infinite Source Volatile Soil Inhalation	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation	Direct Contact Industrial and Commercial II	Direct Contact Commercial III	Direct Contact Commercial IV	Soil Saturation Concentration Screening	SO-17360-4/20/10-DR-006 4/20/2010 (10-12) ft BGS	SO-17360-4/20/10-DR-007 4/20/2010 (12-14) ft BGS	SO-17360-4/20/10-DR-008 4/20/2010 (14-15) ft BGS	SO-17360-4/20/10-DR-027 4/20/2010 (0-2) ft BGS	SO-17360-4/20/10-DR-028 4/20/2010 (2-4) ft BGS	SO-17360-4/20/10-DR-029 4/20/2010 (4-6) ft BGS	SO-17360-4/20/10-DR-030 4/20/2010 (6-8) ft BGS	SO-17360-4/20/10-DR-031 4/20/2010 (8-10) ft BGS		
Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n										
PNAs																								
2-Methylnaphthalene	mg/kg	NA	57	170	ID	5500	ID	ID	ID	ID	26000	37000	31000	NA	0.099 J	0.28 U	0.28 U	1 J	0.55 J	0.21 J	17 U	5.7 U		
Acenaphthene	mg/kg	NA	300	880	4.4	970	350000	97000	97000	6200000	130000	180000	150000	NA	0.29 U	0.28 U	0.28 U	2 J	0.65 J	2.1 J	3.5 J	5.7 U		
Acenaphthylene	mg/kg	NA	5.9	17	ID	440	3000	2700	2700	1000000	5200	7200	6100	NA	0.29 U	0.28 U	0.28 U	2.9 J	1.3 J	7.1 U	17 U	5.7 U		
Anthracene	mg/kg	NA	41	41	ID	41	1000000	1600000	1600000	29000000	730000	1000000	860000	NA	0.29 U	0.28 U	0.28 U	6.7 J	2.7 J	5.2 J	9.1 J	5.7 U		
Benzo(a)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	80	160	110	NA	0.038 J	0.28 U	0.28 U	30	12	12	20	5.7 U	
Benzo(a)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1900	8	16	11	NA	0.039 J	0.28 U	0.28 U	27 ^{kin}	9.9 ^k	11 ^k	18 ^{kin}	5.7 U	
Benzo(b)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	80	160	110	NA	0.076 J	0.28 U	0.28 U	42	15	15	25	5.7 U	
Benzo(g,h,i)perylene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	350000	7000	14000	9500	NA	0.04 J	0.28 U	0.28 U	20	7.7	7.6	11 J	5.7 U	
Benzo(k)fluoranthene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	800	1600	1100	NA	0.019 J	0.28 U	0.28 U	13 J	5.9 J	6 J	8.6 J	5.7 U	
Chrysene	mg/kg	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	8000	16000	11000	NA	0.063 J	0.28 U	0.28 U	30	11	13	21	5.7 U	
Dibenz(a,h)anthracene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	8	16	11	NA	0.29 U	0.28 U	0.28 U	5.6 J	2 J	1.6 J	2.7 J	5.7 U	
Fluoranthene	mg/kg	NA	730	730	5.5	730	1000000	890000	880000	4100000	130000	240000	170000	NA	0.087 J	0.28 U	0.28 U	53 ^d	21 ^d	32 ^d	59 ^d	5.7 U		
Fluorene	mg/kg	NA	390	890	5.3	890	1000000	150000	150000	4100000	87000	120000	100000	NA	0.29 U	0.28 U	0.28 U	2.7 J	1.1 J	2.4 J	3.9 J	5.7 U		
Indeno(1,2,3-cd)pyrene	mg/kg	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	ID	80	160	110	NA	0.032 J	0.28 U	0.28 U	16	6.4 J	5.9 J	9.7 J	5.7 U		
Naphthalene	mg/kg	NA	35	100	0.87	2100	470	350	350	88000	52000	72000	61000	NA	0.063 J	0.28 U	0.28 U	1.5 J ^d	0.78 J	7.1 U	17 U	5.7 U		
Phenanthrene	mg/kg	NA	56	160	5.3	1100	5100	190	190	2900	5200	7200	6100	NA	0.086 J	0.28 U	0.28 U	25 ^d	11 ^d	25 ^d	41 ^d	5.7 U		
Pyrene	mg/kg	NA	480	480	ID	480	1000000	780000	780000	2900000	84000	150000	110000	NA	0.06 J	0.28 U	0.28 U	37	14	26	37	5.7 U		
PCBs																								
Aroclor-1016 (PCB-1016)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1221 (PCB-1221)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1232 (PCB-1232)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1242 (PCB-1242)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1248 (PCB-1248)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1254 (PCB-1254)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Aroclor-1260 (PCB-1260)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 U	0.28 U	0.28 U	0.58 U	0.29 U	0.28 U	0.33 U	0.29 U		
Total PCBs	mg/kg	NA	NLL	NLL	NLL	NLL	16000	810	28000	28000	6500	16	33	22	NA	ND	ND	ND	ND	ND	ND	ND	ND	
Metals																								
Aluminum	mg/kg	6900	1	1	NA	1000000	NLV	NLV	NLV	NLV	ID	370000	410000	390000	NA	2810	3510	2310	3580	3110	2840	4540	1910	
Antimony	mg/kg	NA	4.3	4.3	94	49000	NLV	NLV	NLV	NLV	5900	670	730	700	NA	0.14 J	0.17 UJ	0.17 UJ	27.8 J ^{bc}	5.8 J ^{bc}	1.8 J	0.20 UJ	0.17 UJ	
Arsenic	mg/kg	5.8	4.6	4.6	70	2000	NLV	NLV	NLV	NLV	910	37	46	41	NA	2.1 J	0.62 J	0.73 J	11.4 J ^{bc}	7.4 J ^{bc}	6.2 J ^{bc}	2.1 J	0.43 J	
Barium	mg/kg	75	1300	1300	440 *	1000000	NLV	NLV	NLV	NLV	150000	130000	150000	140000	NA	329	11.6	10.6	329	92.0	67.3	16.1	6.0	
Beryllium	mg/kg	NA	51	51	84 *	1000000	NLV	NLV	NLV	NLV	590	1600	1600	1600	NA	0.17 U	0.17 U	0.17 U	0.18 U	0.18 U	0.17 U	0.20 U	0.17 U	
Cadmium	mg/kg	1.2	6	6	3.0 *	230000	NLV	NLV	NLV	NLV	2200	2100	2100	2100	NA	1.1	0.085 U	0.084 U	3.9 ^d	1.1	0.43 U	0.29	0.087 U	
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19000	518	311 J	29400 J	31200 J	51900 J	8480 J	564 J		
Chromium ⁽²⁾	mg/kg	18	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	13.1	4.8	4.4	475	170	53.4	11.5	4.7	
Chromium III (trivalent)	mg/kg	18	1000000	1000000	1000000 *	1000000	NLV	NLV	NLV	NLV	150000	1000000	100000	100000	NA	12.8	--	--	471	169	52.6	--	--	
Chromium VI (hexavalent)	mg/kg	NA	30	30	3.3	140000	NLV	NLV	NLV	NLV	240	9200	10000	9600	NA	0.38 J	--	--	3.7 ^d	1.1	0.78 J	--	--	
Cobalt	mg/kg	6.8	0.8	2	2	48000	NLV	NLV	NLV	NLV	5900	9000	10000	10000	NA	2.4	1.5	1.4	15.6 ^{bc,d}	33.1 ^{bc,d}	9.2 ^{bc,d}	1.9	1.4	
Copper	mg/kg	32	5800	5800	73 *	1000000	NLV	NLV	NLV	NLV	59000	73000	79000	76000	NA	13.7	0.85 U	0.84 U	613 ^d	240 ^d	75.9 ^d	13.6	2.3	
Iron	mg/kg	12000	6	6	NA	1000000	NLV	NLV	NLV	NLV	ID	580000	620000	600000	NA	4760	3610	3280	61600 ^{bc}	68500 ^{bc}	84000 ^{bc}	12200 ^{bc}	2010	
Lead - total	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	18.2	1.9	1.7	976	576	37.3	10.4	1.8	
Lead - coarse fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	900	400	400	NA	--	--	--	1130 ^{kin}	786 ^{im}	--	--	--	
Lead - fine fraction	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44000	900	400	400	NA	--	--	--	1260 ^{kin}	578 ^{im}	--	--	--
Lead - total (calculated by fin)	mg/kg	21	700	700	2500 *	ID	NLV	NLV	NLV	NLV	44000	900	400	400	NA	--	--	--	1140 ^{bc,kin}	757 ^{bc,im}	--	--	--	
Magnesium	mg/kg	NA	8000	22000	NA	1000000	NLV	NLV	NLV	NLV	2900000	1000000	1000000	1000000	NA	2110	693	612	9200 ^b	4540	8450 ^b	1400	716	
Manganese	mg/kg	440	1	1	55 *	180000	NLV	NLV	NLV	NLV	1500	90000	98000	94000	NA	106	22.5	20.0	914 ^{bc,d}	717 ^{bc,d}	740 ^{bc,d}	114	18.5	
Mercury	mg/kg	0.13	1.7	1.7	0.1	47	89	62	62	62	8800	580	620	600	NA	0.043 U	0.042 U	0.042 U	0.42 ^d	0.28 ^d	0.024 J	0.028 J	0.043 U	
Nickel	mg/kg	20	100	100	76 *	1000000	NLV	NLV	NLV	NLV	16000	150000	160000	150000	NA	11.9	3.1	2.7	268 J ^{bc,d}	141 J ^{bc,d}	61.7 J	11.6 J	3.2 J	
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	153 J	104 J	88.4 J	463 J	305 J	373 J	412 J	204 J		
Selenium	mg/kg	0.41	4	4	0.4	78000	NLV	NLV	NLV	NLV	59000	9600	10000	10000	NA	0.16 J	0.11 J	0.17						

APPENDIX A
STRATIGRAPHIC BORING LOGS



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

PROJECT NUMBER: 017360

CLIENT: MOTORS LIQUIDATION COMPANY

LOCATION: WYOMING, MI

HOLE DESIGNATION: MW18-10

DATE COMPLETED: April 19, 2010

DRILLING METHOD: GEOPROBE/HSA

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	WOOD BLOCK FLOOR	0.30						
	CONCRETE	1.00	CONCRETE					0.2
2	SP-SAND, trace silt and fine subrounded gravel, compact, fine grained, poorly graded, light brown, moist		BENTONITE GROUT	1MC		75		0.3
4	- with fine gravel at 2.0ft BGS		2" PVC WELL CASING					0.4
6	- trace fine gravel, dark brown at 3.5ft BGS			2MC		85		0.4
8	- brown at 4.0ft BGS							
10	- fine to coarse grained at 6.0ft BGS							
12	- fine grained, no gravel at 8.5ft BGS							
14	- light brown at 9.5ft BGS							
16	NO RECOVERY	10.00	BENTONITE CHIPS	3MC		0		-
18								-
20	SP-SAND, with fine gravel, trace silt, compact, fine to coarse grained, poorly graded, brown, moist	15.00						0.4
22	- trace fine gravel at 17.0ft BGS		2" PVC WELL SCREEN	4MC		80		0.8
24	- with fine gravel at 17.8ft BGS							13.1
26	- with fine to coarse gravel at 19.0ft BGS		SAND PACK	5MC		80		3.1
28	- strong petroleum-like odor, gray, moist to wet at 20.0ft BGS							
30	- wet at 21.0ft BGS							
32	SM-SAND, with silt, compact, fine grained, poorly graded, gray, wet, strong petroleum-like odor	23.00						
34	- brown-gray at 23.6ft BGS							
36	- brown at 24.2ft BGS	26.00						
38	END OF BOREHOLE @ 26.0ft BGS							

WELL DETAILS
Screened Interval:
16.00 to 26.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
2.00 to 10.00ft BGS
Material: BENTONITE GROUT
Sand Pack:
14.00 to 26.00ft BGS
Material: SAND PACK

Seal:
10.00 to 14.00ft BGS
Material: BENTONITE CHIPS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

HOLE DESIGNATION: SB34-10

PROJECT NUMBER: 017360

DATE COMPLETED: April 20, 2010

CLIENT: MOTORS LIQUIDATION COMPANY

DRILLING METHOD: GEOPROBE/HAND AUGER

LOCATION: WYOMING, MI

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	ASPHALT	0.50	CONCRETE	1HA 0-2' -037		100		0.0
2	SM-SAND, with silt, trace fine gravel, compact, fine to coarse grained, poorly graded, dark brown, moist, trace slag debris - fine grained, rust brown at 3.0ft BGS		2-1/2" BOREHOLE	2HA 2-4' -038		100		0.0
4	- brown and dark brown at 5.0ft BGS		BACKFILLED WITH BENTONITE CHIPS	4-6' -039				0.0
6	- brown at 6.0ft BGS			6-8' -040 3MC		75		0.0
8	SP-SAND, trace silt and fine gravel, compact, fine to medium grained, poorly graded, brown, moist	8.00		8-10' -041				0.0
10	END OF BOREHOLE @ 10.0ft BGS	10.00						
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

HOLE DESIGNATION: SB35-10

PROJECT NUMBER: 017360

DATE COMPLETED: April 20, 2010

CLIENT: MOTORS LIQUIDATION COMPANY

DRILLING METHOD: GEOPROBE/HAND AUGER

LOCATION: WYOMING, MI

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	ASPHALT	0.50	CONCRETE	1HA 0-2' -032		100		0.0
2	SLAG DEBRIS, fine sand to coarse gravel size, compact, dark brown to black, moist		2-1/2" BOREHOLE	2HA 2-4' -033		100		0.0
4	SP-SAND, with fine gravel, trace silt, compact, fine to coarse grained, poorly graded, brown, gray and rust brown, moist, with concrete debris	4.20	BACKFILLED WITH BENTONITE CHIPS	4-6' -034				1.7
6	SP-SAND, trace silt, compact, fine grained, poorly graded, brown, moist	6.00		6-8' -035 3MC		70		0.0
8	- fine to medium grained at 8.0ft BGS			8-10' -036				0.0
10	- rust brown at 9.5ft BGS							
	END OF BOREHOLE @ 10.0ft BGS	10.00						
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

HOLE DESIGNATION: SB36-10

PROJECT NUMBER: 017360

DATE COMPLETED: April 20, 2010

CLIENT: MOTORS LIQUIDATION COMPANY

DRILLING METHOD: GEOPROBE/HAND AUGER

LOCATION: WYOMING, MI

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	CONCRETE		CONCRETE					
2	SM/GM-SAND AND GRAVEL, with silt, compact, fine to coarse sand, fine gravel, poorly graded, dark brown to black, with slag debris	1.00	2-1/2" BOREHOLE	1HA 0-2' -021 -022		100		0.4
4	SM-SAND, with silt, compact, fine grained, poorly graded, orange brown, moist - light brown at 4.5ft BGS - 0.1' Ø piece of slag at 5.0ft BGS - brown at 5.1ft BGS	3.50	BACKFILLED WITH BENTONITE CHIPS	2HA 2-4' -023		100		0.2
6				4-6' -024				0.0
8	SP-SAND, trace silt and fine gravel, compact, fine to coarse grained, poorly graded, light brown, moist	7.80		6-8' -025 3MC		75		0.0
10	END OF BOREHOLE @ 10.0ft BGS	10.00		8-10' -026				0.0
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28								
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32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

HOLE DESIGNATION: SB37-10

PROJECT NUMBER: 017360

DATE COMPLETED: April 20, 2010

CLIENT: MOTORS LIQUIDATION COMPANY

DRILLING METHOD: GEOPROBE/HAND AUGER

LOCATION: WYOMING, MI

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	CONCRETE		CONCRETE					
2	SM-SAND, with silt, compact, fine grained, poorly graded, brown, moist - brown at 1.4ft BGS - with slag debris at 2.5ft BGS	1.00 3.00	2-1/2" BOREHOLE	1HA 0-2' -015 -016		100		0.2
4	SLAG DEBRIS, fine sand to coarse gravel size, compact, dark brown to black, moist	4.20	BACKFILLED WITH BENTONITE CHIPS	2HA 2-4' -017		100		0.6
6	SM-SAND, with silt, compact, fine grained, poorly graded, orange brown, moist - brown at 7.5ft BGS	8.50		4-6' -018		75		0.2
8	SP-SAND, trace silt and fine gravel, compact, fine to coarse grained, poorly graded, light brown, moist	10.00		6-8' -019 3MC				0.2
10	END OF BOREHOLE @ 10.0ft BGS			8-10' -020				0.3
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

HOLE DESIGNATION: SB38-10

PROJECT NUMBER: 017360

DATE COMPLETED: April 20, 2010

CLIENT: MOTORS LIQUIDATION COMPANY

DRILLING METHOD: GEOPROBE/HAND AUGER

LOCATION: WYOMING, MI

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
	CONCRETE		CONCRETE					
2	SM-SAND, with silt, compact, fine grained, poorly graded, brown, moist - dark brown, with slag debris at 2.5ft BGS - light brown, trace slag debris at 3.0ft BGS - dark brown at 3.5ft BGS - orange brown, no slag debris at 5.0ft BGS	1.00	2-1/2" BOREHOLE	1HA 0-2' -009		100		0.0
4				2HA 2-4' -010 -011		100		0.0
6			BACKFILLED WITH BENTONITE CHIPS	4-6' -012				0.0
8		8.50		6-8' -013 3MC		70		0.0
10	SP-SAND, trace silt and fine gravel, compact, fine to coarse grained, poorly graded, light brown, moist	10.00		8-10' -014				0.0
	END OF BOREHOLE @ 10.0ft BGS							
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NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

PROJECT NUMBER: 017360

CLIENT: MOTORS LIQUIDATION COMPANY

LOCATION: WYOMING, MI

HOLE DESIGNATION: SB39-10

DATE COMPLETED: April 20, 2010

DRILLING METHOD: GEOPROBE/HAND AUGER

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	P/D (ppm)
2	CONCRETE	0.60	CONCRETE	1HA 0-2' -001		100		0.1
4	SP-SAND, trace silt and fine gravel, compact, fine grained, poorly graded, brown, moist		2-1/2" BOREHOLE	2HA 2-4' -002		100		0.2
6			BACKFILLED WITH BENTONITE CHIPS	4-6' -003				0.2
8				6-8' -004 3MC		70		0.2
10	- fine to coarse grained, medium brown at 10.0ft BGS			8-10' -005				0.3
12	- dark brown at 11.0ft BGS			10-12' -006				0.2
14	- fine grained, medium brown at 12.0ft BGS			4MC 12-14' -007		70		0.5
16	- brown at 14.0ft BGS	15.00		14-15' -008				0.2
16	END OF BOREHOLE @ 15.0ft BGS							
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32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: MLC-GRAND RAPIDS

PROJECT NUMBER: 017360

CLIENT: MOTORS LIQUIDATION COMPANY

LOCATION: WYOMING, MI

HOLE DESIGNATION: SB40-10

DATE COMPLETED: April 20, 2010

DRILLING METHOD: GEOPROBE/HAND AUGER

FIELD PERSONNEL: D. RIVERS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	CONCRETE		CONCRETE					
2	SM-SAND, with silt, trace fine gravel, compact, fine to coarse grained, dark brown to black, moist	1.00	2-1/2" BOREHOLE	1HA 0-2' -027		100		0.0
4	- 0.2' concrete debris seam at 2.6ft BGS			2HA 2-4' -028		100		0.0
6	- rust brown, fine to medium grained at 4.0ft BGS		BACKFILLED WITH BENTONITE CHIPS	4-6' -029				0.0
8	- dark brown to black, slight tar-like odor at 6.5ft BGS	8.00		3MC 6-8' -030		80		0.0
10	- brown at 7.5ft BGS	10.00		8-10' -031				0.0
	SP-SAND, trace silt, compact, fine grained, poorly graded, brown-gray, moist							
	- fine to medium grained, brown at 9.0ft BGS							
	END OF BOREHOLE @ 10.0ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 017360WIN.GPJ CRA CORP-SPANISH.GDT 9/21/10

APPENDIX B

LABORATORY ANALYTICAL RESULTS

ANALYTICAL REPORT

REVISED

PROJECT NO. 17360-10

GM GR SSOW# E030018

Lot #: A0D210499

Paul Wiseman

**Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170**

TESTAMERICA LABORATORIES, INC.



Denise D. Heckler
Project Manager
denise.heckler@testamericainc.com

Approved for release.
Denise D. Heckler
Project Manager
6/14/2010 1:56 PM

June 14, 2010

TestAmerica Laboratories, Inc.

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 www.testamericainc.com



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CASE NARRATIVE

CASE NARRATIVE

A0D210499

The following report contains the analytical results for forty-one solid samples submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the GM GR SSOW# E030018 Site, project number 17360-10. The samples were received April 21, 2010, according to documented sample acceptance procedures. On May 17, 2010, CRA requested hexavalent chromium analysis and fractionated lead analysis on select samples. Also, select sample IDs were adjusted. A revised chain of custody was not provided.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 1.6 and 2.4°C.

GC/MS SEMIVOLATILES

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for SO-17630-4/20/10-DR-029 and SO-17630-4/20/10-DR-033 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 0119047 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Sample(s) SO-17630-4/20/10-DR-001, SO-17630-4/20/10-DR-003, SO-17630-4/20/10-DR-015, SO-17630-4/20/10-DR-016, SO-17630-4/20/10-DR-024, SO-17630-4/20/10-DR-031, SO-17630-4/20/10-DR-032, SO-17630-4/20/10-DR-037, SO-17630-4/20/10-DR-038, SO-17630-4/20/10-DR-039, SO-17630-4/20/10-DR-040, and SO-17630-4/20/10-DR-041 had elevated reporting limits due to matrix interferences.

The blank associated with QC batch 0125291 had naphthalene contamination in excess of acceptance criteria with relation to sample SO-17630-4/20/10-DR-029. Upon re-extraction and reanalysis all QC met acceptance criteria, however, sample-holding times had been exceeded. Both sets of data have been reported.

CASE NARRATIVE (continued)

POLYCHLORINATED BIPHENYLS-8082

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 0115056 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The reporting limits are elevated due to matrix interference that routine clean up techniques could not remove, for samples SO-17630-4/20/10-DR-023 and SO-17630-4/20/10-DR-027.

Surrogate recoveries were outside criteria, since the method criterion is that one of two surrogate compounds must meet acceptance criteria, nor corrective action was required for sample S-17630-4/20/10-DR-035.

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

Serial dilution of a sample in this lot indicates that physical and chemical interferences were present. Refer to the sample report pages for the affected analytes flagged with "E".

The sample(s) had elevated reporting limits due to matrix interferences. Refer to the sample report pages for the affected analyte(s) flagged with "G".

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes for SO-17630-4/20/10-DR-001, SO-17630-4/20/10-DR-033 and SO-17630-4/20/10-DR-041 due to the sample concentration reading greater than four times the spike amount. See the Matrix Spike Report for the affected analytes which will be flagged with "NC, MSB".

CASE NARRATIVE (continued)

METALS (cont)

The matrix spike/matrix spike duplicate(s) for SO-17630-4/20/10-DR-001, SO-17630-4/20/10-DR-033, SO-17360-4/20/10-DR-021(FINE), and SO-17630-4/20/10-DR-041 had RPD's and recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

Some reporting limits are lower than our standard reporting limit (SRL) but are supported by the laboratory's MDL and/or IDLs; however, there are no standards in the calibration curve low enough to support these values(s). The continuing calibration blanks and method blanks may not support the lower RL.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,
ARMY, USDA Soil Permit

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-001 04/20/10 08:05 001				
Silver	0.63	0.082	mg/kg	SW846 6020
Arsenic	1.8	0.082	mg/kg	SW846 6020
Selenium	0.15 B	0.16	mg/kg	SW846 6020
Thallium	0.053 B, J	0.082	mg/kg	SW846 6020
Zinc	14.8 J	0.82	mg/kg	SW846 6020
Aluminum	2230	16.4	mg/kg	SW846 6010B
Barium	14.3 J	0.82	mg/kg	SW846 6010B
Calcium	46900 J	411	mg/kg	SW846 6010B
Cadmium	0.077 B	0.082	mg/kg	SW846 6010B
Cobalt	2.2	0.41	mg/kg	SW846 6010B
Chromium	5.8	0.82	mg/kg	SW846 6010B
Copper	10.2	0.82	mg/kg	SW846 6010B
Iron	4710	8.2	mg/kg	SW846 6010B
Potassium	418	411	mg/kg	SW846 6010B
Magnesium	14600 J	82.2	mg/kg	SW846 6010B
Manganese	147	0.82	mg/kg	SW846 6010B
Sodium	104	82.2	mg/kg	SW846 6010B
Nickel	5.5	0.82	mg/kg	SW846 6010B
Lead	7.0	0.25	mg/kg	SW846 6010B
Vanadium	6.8	0.82	mg/kg	SW846 6010B
Percent Solids	97.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-002 04/20/10 08:25 002				
Silver	0.054 B	0.088	mg/kg	SW846 6020
Arsenic	1.9	0.088	mg/kg	SW846 6020
Selenium	0.17 B	0.18	mg/kg	SW846 6020
Thallium	0.062 B, J	0.088	mg/kg	SW846 6020
Zinc	14.1 J	0.88	mg/kg	SW846 6020
Aluminum	2190	17.6	mg/kg	SW846 6010B
Barium	12.7 J	0.88	mg/kg	SW846 6010B
Calcium	33800 J	440	mg/kg	SW846 6010B
Cadmium	0.055 B	0.088	mg/kg	SW846 6010B
Cobalt	2.2	0.44	mg/kg	SW846 6010B
Chromium	5.7	0.88	mg/kg	SW846 6010B
Copper	7.5	0.88	mg/kg	SW846 6010B
Iron	5090	8.8	mg/kg	SW846 6010B
Potassium	285 B	440	mg/kg	SW846 6010B
Magnesium	8270 J	88.1	mg/kg	SW846 6010B
Manganese	145	0.88	mg/kg	SW846 6010B
Nickel	5.3	0.88	mg/kg	SW846 6010B
Lead	6.9	0.26	mg/kg	SW846 6010B
Vanadium	8.0	0.88	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-002 04/20/10 08:25 002				
Benzo(a)anthracene	23 J	290	ug/kg	SW846 8270C
Benzo(a)pyrene	25 J	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	35 J	290	ug/kg	SW846 8270C
Benzo(ghi)perylene	26 J	290	ug/kg	SW846 8270C
Benzo(k)fluoranthene	14 J	290	ug/kg	SW846 8270C
Chrysene	28 J	290	ug/kg	SW846 8270C
Fluoranthene	47 J	290	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	18 J	290	ug/kg	SW846 8270C
Phenanthrene	19 J	290	ug/kg	SW846 8270C
Pyrene	36 J	290	ug/kg	SW846 8270C
Percent Solids	90.8	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-003 04/20/10 08:35 003				
Silver	0.048 B	0.083	mg/kg	SW846 6020
Arsenic	2.1	0.083	mg/kg	SW846 6020
Selenium	0.17	0.17	mg/kg	SW846 6020
Thallium	0.048 B, J	0.083	mg/kg	SW846 6020
Zinc	15.2 J	0.83	mg/kg	SW846 6020
Aluminum	2080	16.5	mg/kg	SW846 6010B
Barium	12.9 J	0.83	mg/kg	SW846 6010B
Calcium	44700 J	413	mg/kg	SW846 6010B
Cadmium	0.059 B	0.083	mg/kg	SW846 6010B
Cobalt	2.2	0.41	mg/kg	SW846 6010B
Chromium	5.5	0.83	mg/kg	SW846 6010B
Copper	7.8	0.83	mg/kg	SW846 6010B
Iron	5270	8.3	mg/kg	SW846 6010B
Potassium	283 B	413	mg/kg	SW846 6010B
Magnesium	13000 J	82.6	mg/kg	SW846 6010B
Manganese	194	0.83	mg/kg	SW846 6010B
Sodium	75.5 B	82.6	mg/kg	SW846 6010B
Nickel	6.1	0.83	mg/kg	SW846 6010B
Lead	6.0	0.25	mg/kg	SW846 6010B
Vanadium	7.3	0.83	mg/kg	SW846 6010B
Percent Solids	96.8	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-004 04/20/10 08:45 004				
Silver	0.72	0.082	mg/kg	SW846 6020
Arsenic	1.5	0.082	mg/kg	SW846 6020
Selenium	0.13 B	0.16	mg/kg	SW846 6020
Thallium	0.032 B, J	0.082	mg/kg	SW846 6020
Zinc	13.8 J	0.82	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-004 04/20/10 08:45 004				
Aluminum	1880	16.4	mg/kg	SW846 6010B
Barium	9.3 J	0.82	mg/kg	SW846 6010B
Calcium	25600 J	411	mg/kg	SW846 6010B
Cadmium	0.073 B	0.082	mg/kg	SW846 6010B
Cobalt	1.8	0.41	mg/kg	SW846 6010B
Chromium	5.3	0.82	mg/kg	SW846 6010B
Copper	4.7	0.82	mg/kg	SW846 6010B
Iron	4110	8.2	mg/kg	SW846 6010B
Potassium	232 B	411	mg/kg	SW846 6010B
Magnesium	9640 J	82.1	mg/kg	SW846 6010B
Manganese	108	0.82	mg/kg	SW846 6010B
Nickel	4.0	0.82	mg/kg	SW846 6010B
Lead	6.4	0.25	mg/kg	SW846 6010B
Vanadium	6.3	0.82	mg/kg	SW846 6010B
Benzo(a)anthracene	20 J	270	ug/kg	SW846 8270C
Benzo(a)pyrene	21 J	270	ug/kg	SW846 8270C
Benzo(b)fluoranthene	32 J	270	ug/kg	SW846 8270C
Benzo(ghi)perylene	19 J	270	ug/kg	SW846 8270C
Benzo(k)fluoranthene	9.5 J	270	ug/kg	SW846 8270C
Chrysene	26 J	270	ug/kg	SW846 8270C
Fluoranthene	46 J	270	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	14 J	270	ug/kg	SW846 8270C
Phenanthrene	22 J	270	ug/kg	SW846 8270C
Pyrene	36 J	270	ug/kg	SW846 8270C
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD

SO-17360-4/20/10-DR-005 04/20/10 08:47 005

Arsenic	1.5	0.082	mg/kg	SW846 6020
Selenium	0.16	0.16	mg/kg	SW846 6020
Thallium	0.029 B, J	0.082	mg/kg	SW846 6020
Zinc	11.0 J	0.82	mg/kg	SW846 6020
Aluminum	1780	16.4	mg/kg	SW846 6010B
Barium	8.0 J	0.82	mg/kg	SW846 6010B
Calcium	24000 J	411	mg/kg	SW846 6010B
Cadmium	0.042 B	0.082	mg/kg	SW846 6010B
Cobalt	1.8	0.41	mg/kg	SW846 6010B
Chromium	4.2	0.82	mg/kg	SW846 6010B
Copper	4.0	0.82	mg/kg	SW846 6010B
Iron	3510	8.2	mg/kg	SW846 6010B
Potassium	194 B	411	mg/kg	SW846 6010B
Magnesium	8810 J	82.2	mg/kg	SW846 6010B
Manganese	105	0.82	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-005 04/20/10 08:47 005				
Nickel	3.5	0.82	mg/kg	SW846 6010B
Lead	4.0	0.25	mg/kg	SW846 6010B
Vanadium	6.0	0.82	mg/kg	SW846 6010B
Acenaphthene	13 J	270	ug/kg	SW846 8270C
Anthracene	34 J	270	ug/kg	SW846 8270C
Benzo(a)anthracene	110 J	270	ug/kg	SW846 8270C
Benzo(a)pyrene	110 J	270	ug/kg	SW846 8270C
Benzo(b)fluoranthene	150 J	270	ug/kg	SW846 8270C
Benzo(ghi)perylene	75 J	270	ug/kg	SW846 8270C
Benzo(k)fluoranthene	50 J	270	ug/kg	SW846 8270C
Chrysene	130 J	270	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	15 J	270	ug/kg	SW846 8270C
Fluoranthene	300	270	ug/kg	SW846 8270C
Fluorene	11 J	270	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	61 J	270	ug/kg	SW846 8270C
Phenanthrene	120 J	270	ug/kg	SW846 8270C
Pyrene	210 J	270	ug/kg	SW846 8270C
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-006 04/20/10 08:50 006				
Trivalent Chromium	12.8	0.86	mg/kg	SW846 7196A
Silver	0.077 B	0.086	mg/kg	SW846 6020
Arsenic	2.1	0.086	mg/kg	SW846 6020
Antimony	0.14 B	0.17	mg/kg	SW846 6020
Selenium	0.16 B	0.17	mg/kg	SW846 6020
Thallium	0.052 B, J	0.086	mg/kg	SW846 6020
Zinc	26.2 J	0.86	mg/kg	SW846 6020
Aluminum	2810	17.3	mg/kg	SW846 6010B
Barium	27.7 J	0.86	mg/kg	SW846 6010B
Calcium	13900 J	432	mg/kg	SW846 6010B
Cadmium	1.1	0.086	mg/kg	SW846 6010B
Cobalt	2.4	0.43	mg/kg	SW846 6010B
Chromium	13.1	0.86	mg/kg	SW846 6010B
Copper	13.7	0.86	mg/kg	SW846 6010B
Iron	4760	8.6	mg/kg	SW846 6010B
Potassium	153 B	432	mg/kg	SW846 6010B
Magnesium	2110 J	86.5	mg/kg	SW846 6010B
Manganese	106	0.86	mg/kg	SW846 6010B
Nickel	11.9	0.86	mg/kg	SW846 6010B
Lead	18.2	0.26	mg/kg	SW846 6010B
Vanadium	8.2	0.86	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-006 04/20/10 08:50 006				
Benzo(a)anthracene	38 J	290	ug/kg	SW846 8270C
Benzo(a)pyrene	39 J	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	76 J	290	ug/kg	SW846 8270C
Benzo(ghi)perylene	40 J	290	ug/kg	SW846 8270C
Benzo(k)fluoranthene	19 J	290	ug/kg	SW846 8270C
Chrysene	63 J	290	ug/kg	SW846 8270C
Fluoranthene	87 J	290	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	32 J	290	ug/kg	SW846 8270C
2-Methylnaphthalene	99 J	290	ug/kg	SW846 8270C
Naphthalene	63 J	290	ug/kg	SW846 8270C
Phenanthrene	86 J	290	ug/kg	SW846 8270C
Pyrene	60 J	290	ug/kg	SW846 8270C
Hexavalent Chromium	0.38 B	0.86	mg/kg	SW846 7196A
Percent Solids	92.5	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-007 04/20/10 08:52 007				
Arsenic	0.62	0.085	mg/kg	SW846 6020
Selenium	0.11 B	0.17	mg/kg	SW846 6020
Thallium	0.033 B, J	0.085	mg/kg	SW846 6020
Zinc	6.5 J	0.85	mg/kg	SW846 6020
Aluminum	3510	17.0	mg/kg	SW846 6010B
Barium	11.6 J	0.85	mg/kg	SW846 6010B
Calcium	518 J	424	mg/kg	SW846 6010B
Cobalt	1.5	0.42	mg/kg	SW846 6010B
Chromium	4.8	0.85	mg/kg	SW846 6010B
Iron	3610	8.5	mg/kg	SW846 6010B
Potassium	104 B	424	mg/kg	SW846 6010B
Magnesium	693 J	84.8	mg/kg	SW846 6010B
Manganese	22.5	0.85	mg/kg	SW846 6010B
Nickel	3.1	0.85	mg/kg	SW846 6010B
Lead	1.9	0.25	mg/kg	SW846 6010B
Vanadium	7.1	0.85	mg/kg	SW846 6010B
Percent Solids	94.4	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-008 04/20/10 08:55 008				
Arsenic	0.73	0.084	mg/kg	SW846 6020
Thallium	0.021 B, J	0.084	mg/kg	SW846 6020
Zinc	4.9 J	0.84	mg/kg	SW846 6020
Aluminum	2310	16.8	mg/kg	SW846 6010B
Barium	10.6 J	0.84	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-008 04/20/10 08:55 008				
Calcium	311 B, J	420	mg/kg	SW846 6010B
Cobalt	1.4	0.42	mg/kg	SW846 6010B
Chromium	4.4	0.84	mg/kg	SW846 6010B
Iron	3280	8.4	mg/kg	SW846 6010B
Potassium	88.4 B	420	mg/kg	SW846 6010B
Magnesium	612 J	84.1	mg/kg	SW846 6010B
Manganese	20.0	0.84	mg/kg	SW846 6010B
Nickel	2.7	0.84	mg/kg	SW846 6010B
Lead	1.7	0.25	mg/kg	SW846 6010B
Vanadium	6.7	0.84	mg/kg	SW846 6010B
Percent Solids	95.1	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-009 04/20/10 09:25 009				
Arsenic	1.0	0.084	mg/kg	SW846 6020
Selenium	0.097 B	0.17	mg/kg	SW846 6020
Thallium	0.018 B, J	0.084	mg/kg	SW846 6020
Zinc	11.0 J	0.84	mg/kg	SW846 6020
Aluminum	994	16.8	mg/kg	SW846 6010B
Barium	4.5 J	0.84	mg/kg	SW846 6010B
Calcium	12300 J	419	mg/kg	SW846 6010B
Cadmium	0.078 B	0.084	mg/kg	SW846 6010B
Cobalt	1.1	0.42	mg/kg	SW846 6010B
Chromium	3.2	0.84	mg/kg	SW846 6010B
Copper	3.2	0.84	mg/kg	SW846 6010B
Iron	2500	8.4	mg/kg	SW846 6010B
Potassium	163 B	419	mg/kg	SW846 6010B
Magnesium	4880 J	83.9	mg/kg	SW846 6010B
Manganese	55.8	0.84	mg/kg	SW846 6010B
Sodium	545	83.9	mg/kg	SW846 6010B
Nickel	3.5	0.84	mg/kg	SW846 6010B
Lead	2.9	0.25	mg/kg	SW846 6010B
Vanadium	3.9	0.84	mg/kg	SW846 6010B
Anthracene	8.9 J	280	ug/kg	SW846 8270C
Benzo(a)anthracene	35 J	280	ug/kg	SW846 8270C
Benzo(a)pyrene	35 J	280	ug/kg	SW846 8270C
Benzo(b)fluoranthene	50 J	280	ug/kg	SW846 8270C
Benzo(ghi)perylene	29 J	280	ug/kg	SW846 8270C
Benzo(k)fluoranthene	19 J	280	ug/kg	SW846 8270C
Chrysene	44 J	280	ug/kg	SW846 8270C
Fluoranthene	75 J	280	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	23 J	280	ug/kg	SW846 8270C
Phenanthrene	33 J	280	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-009 04/20/10 09:25 009				
Pyrene	58 J	280	ug/kg	SW846 8270C
Percent Solids	95.4	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-010 04/20/10 09:29 010				
Aroclor 1254	28 J	280	ug/kg	SW846 8082
Silver	0.81	0.085	mg/kg	SW846 6020
Arsenic	1.3	0.085	mg/kg	SW846 6020
Antimony	0.091 B	0.17	mg/kg	SW846 6020
Selenium	0.14 B	0.17	mg/kg	SW846 6020
Thallium	0.033 B, J	0.085	mg/kg	SW846 6020
Zinc	21.0 J	0.85	mg/kg	SW846 6020
Aluminum	2050	16.9	mg/kg	SW846 6010B
Barium	10.2 J	0.85	mg/kg	SW846 6010B
Calcium	8330 J	423	mg/kg	SW846 6010B
Cadmium	0.53	0.085	mg/kg	SW846 6010B
Cobalt	2.0	0.42	mg/kg	SW846 6010B
Chromium	11.4	0.85	mg/kg	SW846 6010B
Copper	13.3	0.85	mg/kg	SW846 6010B
Iron	5050	8.5	mg/kg	SW846 6010B
Potassium	120 B	423	mg/kg	SW846 6010B
Magnesium	2100 J	84.7	mg/kg	SW846 6010B
Manganese	91.8	0.85	mg/kg	SW846 6010B
Sodium	1550	84.7	mg/kg	SW846 6010B
Nickel	16.6	0.85	mg/kg	SW846 6010B
Lead	10.5	0.25	mg/kg	SW846 6010B
Vanadium	5.0	0.85	mg/kg	SW846 6010B
Anthracene	11 J	280	ug/kg	SW846 8270C
Benzo(a)anthracene	46 J	280	ug/kg	SW846 8270C
Benzo(a)pyrene	52 J	280	ug/kg	SW846 8270C
Benzo(b)fluoranthene	73 J	280	ug/kg	SW846 8270C
Benzo(ghi)perylene	48 J	280	ug/kg	SW846 8270C
Benzo(k)fluoranthene	33 J	280	ug/kg	SW846 8270C
Chrysene	64 J	280	ug/kg	SW846 8270C
Fluoranthene	110 J	280	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	35 J	280	ug/kg	SW846 8270C
2-Methylnaphthalene	11 J	280	ug/kg	SW846 8270C
Naphthalene	9.2 J	280	ug/kg	SW846 8270C
Phenanthrene	52 J	280	ug/kg	SW846 8270C
Pyrene	79 J	280	ug/kg	SW846 8270C
Percent Solids	94.5	10.0	%	MCAWW 160.3 MOD

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-011 04/20/10 09:30 011				
Aroclor 1254	22 J	280	ug/kg	SW846 8082
Silver	0.67	0.085	mg/kg	SW846 6020
Arsenic	1.4	0.085	mg/kg	SW846 6020
Antimony	0.18	0.17	mg/kg	SW846 6020
Selenium	0.12 B	0.17	mg/kg	SW846 6020
Thallium	0.030 B, J	0.085	mg/kg	SW846 6020
Zinc	23.1 J	0.85	mg/kg	SW846 6020
Aluminum	1760	17.0	mg/kg	SW846 6010B
Barium	9.9 J	0.85	mg/kg	SW846 6010B
Calcium	7450 J	425	mg/kg	SW846 6010B
Cadmium	0.41	0.085	mg/kg	SW846 6010B
Cobalt	1.8	0.42	mg/kg	SW846 6010B
Chromium	8.6	0.85	mg/kg	SW846 6010B
Copper	7.1	0.85	mg/kg	SW846 6010B
Iron	5150	8.5	mg/kg	SW846 6010B
Potassium	104 B	425	mg/kg	SW846 6010B
Magnesium	1780 J	84.9	mg/kg	SW846 6010B
Manganese	85.4	0.85	mg/kg	SW846 6010B
Sodium	1500	84.9	mg/kg	SW846 6010B
Nickel	15.6	0.85	mg/kg	SW846 6010B
Lead	12.3	0.25	mg/kg	SW846 6010B
Vanadium	4.1	0.85	mg/kg	SW846 6010B
Anthracene	12 J	280	ug/kg	SW846 8270C
Benzo(a)anthracene	48 J	280	ug/kg	SW846 8270C
Benzo(a)pyrene	52 J	280	ug/kg	SW846 8270C
Benzo(b)fluoranthene	73 J	280	ug/kg	SW846 8270C
Benzo(ghi)perylene	48 J	280	ug/kg	SW846 8270C
Benzo(k)fluoranthene	30 J	280	ug/kg	SW846 8270C
Chrysene	61 J	280	ug/kg	SW846 8270C
Fluoranthene	110 J	280	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	35 J	280	ug/kg	SW846 8270C
2-Methylnaphthalene	9.8 J	280	ug/kg	SW846 8270C
Phenanthrene	52 J	280	ug/kg	SW846 8270C
Pyrene	81 J	280	ug/kg	SW846 8270C
Percent Solids	94.2	10.0	%	MCAWW 160.3 MOD

SO-17360-4/20/10-DR-012 04/20/10 09:40 012

Silver	0.024 B	0.086	mg/kg	SW846 6020
Arsenic	1.0	0.086	mg/kg	SW846 6020
Thallium	0.031 B, J	0.086	mg/kg	SW846 6020
Zinc	6.4 J	0.86	mg/kg	SW846 6020
Aluminum	3910	17.2	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-012 04/20/10 09:40 012				
Barium	7.3 J	0.86	mg/kg	SW846 6010B
Calcium	249 B, J	429	mg/kg	SW846 6010B
Cadmium	0.11	0.086	mg/kg	SW846 6010B
Cobalt	1.6	0.43	mg/kg	SW846 6010B
Chromium	4.0	0.86	mg/kg	SW846 6010B
Copper	1.1	0.86	mg/kg	SW846 6010B
Iron	3830	8.6	mg/kg	SW846 6010B
Potassium	104 B	429	mg/kg	SW846 6010B
Magnesium	496 J	85.9	mg/kg	SW846 6010B
Manganese	18.6	0.86	mg/kg	SW846 6010B
Sodium	924	85.9	mg/kg	SW846 6010B
Nickel	3.6	0.86	mg/kg	SW846 6010B
Lead	2.2	0.26	mg/kg	SW846 6010B
Vanadium	6.7	0.86	mg/kg	SW846 6010B
Percent Solids	93.2	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-013 04/20/10 09:42 013				
Arsenic	1.2	0.084	mg/kg	SW846 6020
Selenium	0.11 B	0.17	mg/kg	SW846 6020
Thallium	0.020 B, J	0.084	mg/kg	SW846 6020
Zinc	5.9 J	0.84	mg/kg	SW846 6020
Aluminum	2540	16.7	mg/kg	SW846 6010B
Barium	7.2 J	0.84	mg/kg	SW846 6010B
Calcium	300 B, J	418	mg/kg	SW846 6010B
Cadmium	0.055 B	0.084	mg/kg	SW846 6010B
Cobalt	1.7	0.42	mg/kg	SW846 6010B
Chromium	4.3	0.84	mg/kg	SW846 6010B
Copper	1.2	0.84	mg/kg	SW846 6010B
Iron	3550	8.4	mg/kg	SW846 6010B
Potassium	93.5 B	418	mg/kg	SW846 6010B
Magnesium	728 J	83.6	mg/kg	SW846 6010B
Manganese	24.9	0.84	mg/kg	SW846 6010B
Sodium	442	83.6	mg/kg	SW846 6010B
Nickel	3.5	0.84	mg/kg	SW846 6010B
Lead	1.7	0.25	mg/kg	SW846 6010B
Vanadium	6.7	0.84	mg/kg	SW846 6010B
Percent Solids	95.7	10.0	%	MCAWW 160.3 MOD

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-014 04/20/10 09:45 014				
Arsenic	1.7	0.085	mg/kg	SW846 6020
Selenium	0.60	0.17	mg/kg	SW846 6020
Thallium	0.029 B, J	0.085	mg/kg	SW846 6020
Zinc	10.6 J	0.85	mg/kg	SW846 6020
Aluminum	2650	17.1	mg/kg	SW846 6010B
Barium	6.7 J	0.85	mg/kg	SW846 6010B
Calcium	421 B, J	427	mg/kg	SW846 6010B
Cobalt	2.9	0.43	mg/kg	SW846 6010B
Chromium	6.3	0.85	mg/kg	SW846 6010B
Copper	4.4	0.85	mg/kg	SW846 6010B
Iron	5630	8.5	mg/kg	SW846 6010B
Potassium	225 B	427	mg/kg	SW846 6010B
Magnesium	1100 J	85.4	mg/kg	SW846 6010B
Manganese	68.4	0.85	mg/kg	SW846 6010B
Sodium	1220	85.4	mg/kg	SW846 6010B
Nickel	5.7	0.85	mg/kg	SW846 6010B
Lead	2.7	0.26	mg/kg	SW846 6010B
Vanadium	9.2	0.85	mg/kg	SW846 6010B
Percent Solids	93.7	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-015 04/20/10 09:55 015				
Silver	0.080 B	0.083	mg/kg	SW846 6020
Arsenic	1.2	0.083	mg/kg	SW846 6020
Antimony	1.5	0.17	mg/kg	SW846 6020
Thallium	0.023 B, J	0.083	mg/kg	SW846 6020
Zinc	10.2 J	0.83	mg/kg	SW846 6020
Aluminum	487	16.5	mg/kg	SW846 6010B
Barium	6.4 J	0.83	mg/kg	SW846 6010B
Calcium	4200 J	414	mg/kg	SW846 6010B
Cobalt	0.93	0.41	mg/kg	SW846 6010B
Chromium	12.0	0.83	mg/kg	SW846 6010B
Copper	6.0	0.83	mg/kg	SW846 6010B
Iron	3730	8.3	mg/kg	SW846 6010B
Potassium	58.4 B	414	mg/kg	SW846 6010B
Magnesium	830 J	82.7	mg/kg	SW846 6010B
Manganese	46.0	0.83	mg/kg	SW846 6010B
Sodium	320	82.7	mg/kg	SW846 6010B
Nickel	9.0	0.83	mg/kg	SW846 6010B
Lead	14.9	0.25	mg/kg	SW846 6010B
Vanadium	1.7	0.83	mg/kg	SW846 6010B
Percent Solids	96.7	10.0	%	MCAWW 160.3 MOD

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-016 04/20/10 09:55 016				
Trivalent Chromium	16.1	0.82	mg/kg	SW846 7196A
Silver	0.056 B	0.082	mg/kg	SW846 6020
Arsenic	1.2	0.082	mg/kg	SW846 6020
Antimony	1.5	0.16	mg/kg	SW846 6020
Thallium	0.028 B, J	0.082	mg/kg	SW846 6020
Zinc	9.3 J	0.82	mg/kg	SW846 6020
Aluminum	343	16.5	mg/kg	SW846 6010B
Barium	4.5 J	0.82	mg/kg	SW846 6010B
Calcium	4310 J	412	mg/kg	SW846 6010B
Cobalt	0.72	0.41	mg/kg	SW846 6010B
Chromium	16.1	0.82	mg/kg	SW846 6010B
Copper	6.3	0.82	mg/kg	SW846 6010B
Iron	5310	8.2	mg/kg	SW846 6010B
Potassium	46.7 B	412	mg/kg	SW846 6010B
Magnesium	1080 J	82.3	mg/kg	SW846 6010B
Manganese	69.0	0.82	mg/kg	SW846 6010B
Sodium	315	82.3	mg/kg	SW846 6010B
Nickel	8.9	0.82	mg/kg	SW846 6010B
Lead	13.9	0.25	mg/kg	SW846 6010B
Vanadium	1.3	0.82	mg/kg	SW846 6010B
Percent Solids	97.2	10.0	%	MCAWW 160.3 MOD

SO-17360-4/20/10-DR-017 04/20/10 09:57 017

Silver	0.22	0.088	mg/kg	SW846 6020
Arsenic	1.7	0.088	mg/kg	SW846 6020
Antimony	0.34	0.18	mg/kg	SW846 6020
Selenium	0.15 B	0.18	mg/kg	SW846 6020
Thallium	0.032 B, J	0.088	mg/kg	SW846 6020
Zinc	18.6 J	0.88	mg/kg	SW846 6020
Aluminum	1150	17.6	mg/kg	SW846 6010B
Barium	57.4 J	0.88	mg/kg	SW846 6010B
Calcium	7150 J	441	mg/kg	SW846 6010B
Cadmium	0.098	0.088	mg/kg	SW846 6010B
Cobalt	3.4	0.44	mg/kg	SW846 6010B
Chromium	11.1	0.88	mg/kg	SW846 6010B
Copper	13.0	0.88	mg/kg	SW846 6010B
Iron	5330	8.8	mg/kg	SW846 6010B
Potassium	128 B	441	mg/kg	SW846 6010B
Magnesium	1910 J	88.1	mg/kg	SW846 6010B
Manganese	60.5	0.88	mg/kg	SW846 6010B
Sodium	416	88.1	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-017 04/20/10 09:57 017				
Nickel	15.6	0.88	mg/kg	SW846 6010B
Lead	10.9	0.26	mg/kg	SW846 6010B
Vanadium	5.5	0.88	mg/kg	SW846 6010B
Benzo(a)anthracene	12 J	290	ug/kg	SW846 8270C
Benzo(a)pyrene	8.5 J	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	19 J	290	ug/kg	SW846 8270C
Benzo(ghi)perylene	12 J	290	ug/kg	SW846 8270C
Benzo(k)fluoranthene	8.7 J	290	ug/kg	SW846 8270C
Chrysene	21 J	290	ug/kg	SW846 8270C
Fluoranthene	18 J	290	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	8.1 J	290	ug/kg	SW846 8270C
2-Methylnaphthalene	11 J	290	ug/kg	SW846 8270C
Phenanthrene	19 J	290	ug/kg	SW846 8270C
Pyrene	13 J	290	ug/kg	SW846 8270C
Percent Solids	90.8	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-018 04/20/10 10:00 018				
Arsenic	1.2	0.087	mg/kg	SW846 6020
Antimony	0.036 B	0.17	mg/kg	SW846 6020
Selenium	0.16 B	0.17	mg/kg	SW846 6020
Thallium	0.065 B, J	0.087	mg/kg	SW846 6020
Zinc	11.0 J	0.87	mg/kg	SW846 6020
Mercury	0.019 B	0.044	mg/kg	SW846 7471A
Aluminum	3230	17.4	mg/kg	SW846 6010B
Barium	20.3 J	0.87	mg/kg	SW846 6010B
Calcium	413 B, J	435	mg/kg	SW846 6010B
Cadmium	0.18	0.087	mg/kg	SW846 6010B
Cobalt	1.1	0.44	mg/kg	SW846 6010B
Chromium	3.4	0.87	mg/kg	SW846 6010B
Copper	1.3	0.87	mg/kg	SW846 6010B
Iron	3840	8.7	mg/kg	SW846 6010B
Potassium	132 B	435	mg/kg	SW846 6010B
Magnesium	320 J	87.0	mg/kg	SW846 6010B
Manganese	28.9	0.87	mg/kg	SW846 6010B
Sodium	546	87.0	mg/kg	SW846 6010B
Nickel	8.5	0.87	mg/kg	SW846 6010B
Lead	4.6	0.26	mg/kg	SW846 6010B
Vanadium	6.9	0.87	mg/kg	SW846 6010B
Benzo(a)anthracene	8.0 J	290	ug/kg	SW846 8270C
Benzo(a)pyrene	9.0 J	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	16 J	290	ug/kg	SW846 8270C
Benzo(ghi)perylene	8.6 J	290	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-018 04/20/10 10:00 018				
Chrysene	14 J	290	ug/kg	SW846 8270C
Fluoranthene	17 J	290	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	7.7 J	290	ug/kg	SW846 8270C
2-Methylnaphthalene	8.2 J	290	ug/kg	SW846 8270C
Phenanthrene	10 J	290	ug/kg	SW846 8270C
Pyrene	11 J	290	ug/kg	SW846 8270C
Percent Solids	91.9	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-019 04/20/10 10:02 019				
Arsenic	1.1	0.088	mg/kg	SW846 6020
Selenium	0.17 B	0.18	mg/kg	SW846 6020
Thallium	0.029 B, J	0.088	mg/kg	SW846 6020
Zinc	6.7 J	0.88	mg/kg	SW846 6020
Aluminum	3940	17.6	mg/kg	SW846 6010B
Barium	7.1 J	0.88	mg/kg	SW846 6010B
Calcium	272 B, J	439	mg/kg	SW846 6010B
Cobalt	2.0	0.44	mg/kg	SW846 6010B
Chromium	4.8	0.88	mg/kg	SW846 6010B
Iron	4030	8.8	mg/kg	SW846 6010B
Potassium	115 B	439	mg/kg	SW846 6010B
Magnesium	545 J	87.9	mg/kg	SW846 6010B
Manganese	19.3	0.88	mg/kg	SW846 6010B
Sodium	583	87.9	mg/kg	SW846 6010B
Nickel	3.2	0.88	mg/kg	SW846 6010B
Lead	1.9	0.26	mg/kg	SW846 6010B
Vanadium	7.7	0.88	mg/kg	SW846 6010B
Percent Solids	91.1	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-020 04/20/10 10:05 020				
Arsenic	1.4	0.085	mg/kg	SW846 6020
Selenium	0.11 B	0.17	mg/kg	SW846 6020
Thallium	0.017 B, J	0.085	mg/kg	SW846 6020
Zinc	7.8 J	0.85	mg/kg	SW846 6020
Aluminum	2380	16.9	mg/kg	SW846 6010B
Barium	4.7 J	0.85	mg/kg	SW846 6010B
Calcium	310 B, J	423	mg/kg	SW846 6010B
Cadmium	0.045 B	0.085	mg/kg	SW846 6010B
Cobalt	2.2	0.42	mg/kg	SW846 6010B
Chromium	6.0	0.85	mg/kg	SW846 6010B
Copper	2.1	0.85	mg/kg	SW846 6010B
Iron	5000	8.5	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-020 04/20/10 10:05 020				
Potassium	130 B	423	mg/kg	SW846 6010B
Magnesium	860 J	84.5	mg/kg	SW846 6010B
Manganese	32.5	0.85	mg/kg	SW846 6010B
Sodium	241	84.5	mg/kg	SW846 6010B
Nickel	3.9	0.85	mg/kg	SW846 6010B
Lead	1.8	0.25	mg/kg	SW846 6010B
Vanadium	9.8	0.85	mg/kg	SW846 6010B
Percent Solids	94.6	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-021 04/20/10 10:20 021				
Trivalent Chromium	861	0.89	mg/kg	SW846 7196A
Silver	0.23	0.089	mg/kg	SW846 6020
Arsenic	5.8	0.089	mg/kg	SW846 6020
Antimony	0.59	0.18	mg/kg	SW846 6020
Selenium	0.44	0.18	mg/kg	SW846 6020
Thallium	0.097	0.089	mg/kg	SW846 6020
Zinc	69.2 J	0.89	mg/kg	SW846 6020
Aluminum	2730	17.7	mg/kg	SW846 6010B
Barium	72.6 J	0.89	mg/kg	SW846 6010B
Calcium	15100 J	443	mg/kg	SW846 6010B
Cadmium	0.12	0.089	mg/kg	SW846 6010B
Cobalt	13.6	0.44	mg/kg	SW846 6010B
Chromium	862	0.89	mg/kg	SW846 6010B
Copper	68.6	0.89	mg/kg	SW846 6010B
Iron	14600	8.9	mg/kg	SW846 6010B
Potassium	273 B, J	443	mg/kg	SW846 6010B
Magnesium	3240	88.6	mg/kg	SW846 6010B
Manganese	795	0.89	mg/kg	SW846 6010B
Sodium	1220	88.6	mg/kg	SW846 6010B
Nickel	477	0.89	mg/kg	SW846 6010B
Lead	42.5	0.27	mg/kg	SW846 6010B
Vanadium	10.8	0.89	mg/kg	SW846 6010B
Acenaphthene	30 J	290	ug/kg	SW846 8270C
Acenaphthylene	9.9 J	290	ug/kg	SW846 8270C
Anthracene	79 J	290	ug/kg	SW846 8270C
Benzo(a)anthracene	320	290	ug/kg	SW846 8270C
Benzo(a)pyrene	310	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	620	290	ug/kg	SW846 8270C
Benzo(ghi)perylene	280 J	290	ug/kg	SW846 8270C
Benzo(k)fluoranthene	170 J	290	ug/kg	SW846 8270C
Chrysene	430	290	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-021 04/20/10 10:20 021				
Dibenz(a,h)anthracene	84 J	290	ug/kg	SW846 8270C
Fluoranthene	710	290	ug/kg	SW846 8270C
Fluorene	32 J	290	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	240 J	290	ug/kg	SW846 8270C
2-Methylnaphthalene	76 J	290	ug/kg	SW846 8270C
Naphthalene	46 J	290	ug/kg	SW846 8270C
Phenanthrene	460	290	ug/kg	SW846 8270C
Pyrene	530	290	ug/kg	SW846 8270C
Hexavalent Chromium	1.5	0.89	mg/kg	SW846 7196A
Percent Solids	90.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-022 04/20/10 10:21 022				
Silver	0.17	0.086	mg/kg	SW846 6020
Arsenic	5.2	0.086	mg/kg	SW846 6020
Antimony	0.60	0.17	mg/kg	SW846 6020
Selenium	0.39	0.17	mg/kg	SW846 6020
Thallium	0.088	0.086	mg/kg	SW846 6020
Zinc	67.2 J	0.86	mg/kg	SW846 6020
Aluminum	2940	17.2	mg/kg	SW846 6010B
Barium	74.6 J	0.86	mg/kg	SW846 6010B
Calcium	16100 J	431	mg/kg	SW846 6010B
Cadmium	0.13	0.086	mg/kg	SW846 6010B
Cobalt	17.6	0.43	mg/kg	SW846 6010B
Chromium	424	0.86	mg/kg	SW846 6010B
Copper	60.0	0.86	mg/kg	SW846 6010B
Iron	12100	8.6	mg/kg	SW846 6010B
Potassium	286 B, J	431	mg/kg	SW846 6010B
Magnesium	4100	86.2	mg/kg	SW846 6010B
Manganese	593	0.86	mg/kg	SW846 6010B
Sodium	1160	86.2	mg/kg	SW846 6010B
Nickel	246	0.86	mg/kg	SW846 6010B
Lead	44.1	0.26	mg/kg	SW846 6010B
Vanadium	11.3	0.86	mg/kg	SW846 6010B
Acenaphthene	19 J	280	ug/kg	SW846 8270C
Acenaphthylene	9.0 J	280	ug/kg	SW846 8270C
Anthracene	47 J	280	ug/kg	SW846 8270C
Benzo(a)anthracene	220 J	280	ug/kg	SW846 8270C
Benzo(a)pyrene	220 J	280	ug/kg	SW846 8270C
Benzo(b)fluoranthene	470	280	ug/kg	SW846 8270C
Benzo(ghi)perylene	230 J	280	ug/kg	SW846 8270C
Benzo(k)fluoranthene	120 J	280	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-022 04/20/10 10:21 022				
Chrysene	310	280	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	64 J	280	ug/kg	SW846 8270C
Fluoranthene	430	280	ug/kg	SW846 8270C
Fluorene	17 J	280	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	200 J	280	ug/kg	SW846 8270C
2-Methylnaphthalene	68 J	280	ug/kg	SW846 8270C
Naphthalene	43 J	280	ug/kg	SW846 8270C
Phenanthrene	270 J	280	ug/kg	SW846 8270C
Pyrene	340	280	ug/kg	SW846 8270C
Percent Solids	92.8	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-023 04/20/10 10:22 023				
Trivalent Chromium	2540	0.86	mg/kg	SW846 7196A
Silver	0.84	0.086	mg/kg	SW846 6020
Arsenic	8.3	0.086	mg/kg	SW846 6020
Antimony	2.2	0.17	mg/kg	SW846 6020
Selenium	0.12 B	0.17	mg/kg	SW846 6020
Thallium	0.034 B	0.086	mg/kg	SW846 6020
Zinc	27.8 J	0.86	mg/kg	SW846 6020
Aluminum	1120	17.3	mg/kg	SW846 6010B
Barium	36.0 J	0.86	mg/kg	SW846 6010B
Calcium	13500 J	432	mg/kg	SW846 6010B
Cobalt	268	2.2	mg/kg	SW846 6010B
Chromium	2540	0.86	mg/kg	SW846 6010B
Copper	122	0.86	mg/kg	SW846 6010B
Iron	122000	43.2	mg/kg	SW846 6010B
Potassium	138 B, J	432	mg/kg	SW846 6010B
Magnesium	2960	86.4	mg/kg	SW846 6010B
Manganese	1040	4.3	mg/kg	SW846 6010B
Sodium	428	86.4	mg/kg	SW846 6010B
Nickel	5540	4.3	mg/kg	SW846 6010B
Lead	173	1.3	mg/kg	SW846 6010B
Vanadium	33.4	4.3	mg/kg	SW846 6010B
Acenaphthene	530 J	3600	ug/kg	SW846 8270C
Anthracene	1500 J	3600	ug/kg	SW846 8270C
Benzo(a)anthracene	5300	3600	ug/kg	SW846 8270C
Benzo(a)pyrene	4900	3600	ug/kg	SW846 8270C
Benzo(b)fluoranthene	8000	3600	ug/kg	SW846 8270C
Benzo(ghi)perylene	4100	3600	ug/kg	SW846 8270C
Benzo(k)fluoranthene	2500 J	3600	ug/kg	SW846 8270C
Chrysene	5900	3600	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-023 04/20/10 10:22 023				
Dibenz(a,h)anthracene	1100 J	3600	ug/kg	SW846 8270C
Fluoranthene	14000	3600	ug/kg	SW846 8270C
Fluorene	540 J	3600	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	3600	3600	ug/kg	SW846 8270C
2-Methylnaphthalene	100 J	3600	ug/kg	SW846 8270C
Naphthalene	130 J	3600	ug/kg	SW846 8270C
Phenanthrene	6900	3600	ug/kg	SW846 8270C
Pyrene	8400	3600	ug/kg	SW846 8270C
Hexavalent Chromium	1.4	0.86	mg/kg	SW846 7196A
Percent Solids	92.6	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-024 04/20/10 10:25 024				
Trivalent Chromium	233	0.84	mg/kg	SW846 7196A
Silver	2.1	0.084	mg/kg	SW846 6020
Arsenic	1.4	0.084	mg/kg	SW846 6020
Antimony	5.0	0.17	mg/kg	SW846 6020
Thallium	0.021 B	0.084	mg/kg	SW846 6020
Zinc	11.7 J	0.84	mg/kg	SW846 6020
Aluminum	373	16.7	mg/kg	SW846 6010B
Barium	8.0 J	0.84	mg/kg	SW846 6010B
Calcium	742 J	418	mg/kg	SW846 6010B
Cadmium	0.23	0.084	mg/kg	SW846 6010B
Cobalt	7.0	0.42	mg/kg	SW846 6010B
Chromium	233	0.84	mg/kg	SW846 6010B
Copper	13.2	0.84	mg/kg	SW846 6010B
Iron	15200	8.4	mg/kg	SW846 6010B
Potassium	32.5 B, J	418	mg/kg	SW846 6010B
Magnesium	165	83.6	mg/kg	SW846 6010B
Manganese	221	0.84	mg/kg	SW846 6010B
Sodium	359	83.6	mg/kg	SW846 6010B
Nickel	216	0.84	mg/kg	SW846 6010B
Lead	37.6	0.25	mg/kg	SW846 6010B
Vanadium	2.1	0.84	mg/kg	SW846 6010B
Acenaphthene	54 J	1100	ug/kg	SW846 8270C
Anthracene	120 J	1100	ug/kg	SW846 8270C
Benzo(a)anthracene	320 J	1100	ug/kg	SW846 8270C
Benzo(a)pyrene	300 J	1100	ug/kg	SW846 8270C
Benzo(b)fluoranthene	460 J	1100	ug/kg	SW846 8270C
Benzo(ghi)perylene	240 J	1100	ug/kg	SW846 8270C
Benzo(k)fluoranthene	110 J	1100	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-024 04/20/10 10:25 024				
Chrysene	350 J	1100	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	48 J	1100	ug/kg	SW846 8270C
Fluoranthene	800 J	1100	ug/kg	SW846 8270C
Fluorene	48 J	1100	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	200 J	1100	ug/kg	SW846 8270C
2-Methylnaphthalene	200 J	1100	ug/kg	SW846 8270C
Naphthalene	130 J	1100	ug/kg	SW846 8270C
Phenanthrene	500 J	1100	ug/kg	SW846 8270C
Pyrene	630 J	1100	ug/kg	SW846 8270C
Percent Solids	95.7	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-025 04/20/10 10:27 025				
Arsenic	0.76	0.087	mg/kg	SW846 6020
Selenium	0.14 B	0.17	mg/kg	SW846 6020
Thallium	0.045 B	0.087	mg/kg	SW846 6020
Zinc	6.4 J	0.87	mg/kg	SW846 6020
Aluminum	2840	17.4	mg/kg	SW846 6010B
Barium	15.2 J	0.87	mg/kg	SW846 6010B
Calcium	417 B, J	436	mg/kg	SW846 6010B
Cobalt	1.5	0.44	mg/kg	SW846 6010B
Chromium	5.4	0.87	mg/kg	SW846 6010B
Copper	1.0	0.87	mg/kg	SW846 6010B
Iron	2650	8.7	mg/kg	SW846 6010B
Potassium	168 B, J	436	mg/kg	SW846 6010B
Magnesium	794	87.1	mg/kg	SW846 6010B
Manganese	22.3	0.87	mg/kg	SW846 6010B
Sodium	726	87.1	mg/kg	SW846 6010B
Nickel	3.2	0.87	mg/kg	SW846 6010B
Lead	2.5	0.26	mg/kg	SW846 6010B
Vanadium	8.0	0.87	mg/kg	SW846 6010B
Percent Solids	91.8	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-026 04/20/10 10:30 026				
Arsenic	0.47	0.085	mg/kg	SW846 6020
Selenium	0.10 B	0.17	mg/kg	SW846 6020
Thallium	0.022 B	0.085	mg/kg	SW846 6020
Zinc	3.0 J	0.85	mg/kg	SW846 6020
Aluminum	1320	17.0	mg/kg	SW846 6010B
Barium	3.1 J	0.85	mg/kg	SW846 6010B
Calcium	253 B, J	426	mg/kg	SW846 6010B
Cobalt	1.0	0.43	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-026 04/20/10 10:30 026				
Chromium	3.7	0.85	mg/kg	SW846 6010B
Copper	1.0	0.85	mg/kg	SW846 6010B
Iron	1670	8.5	mg/kg	SW846 6010B
Potassium	107 B, J	426	mg/kg	SW846 6010B
Magnesium	565	85.2	mg/kg	SW846 6010B
Manganese	14.9	0.85	mg/kg	SW846 6010B
Sodium	460	85.2	mg/kg	SW846 6010B
Nickel	2.3	0.85	mg/kg	SW846 6010B
Lead	1.4	0.26	mg/kg	SW846 6010B
Vanadium	5.4	0.85	mg/kg	SW846 6010B
Percent Solids	93.9	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-027 04/20/10 10:35 027				
Trivalent Chromium	471	0.88	mg/kg	SW846 7196A
Silver	1.3	0.088	mg/kg	SW846 6020
Arsenic	11.4	0.088	mg/kg	SW846 6020
Antimony	27.8	0.18	mg/kg	SW846 6020
Selenium	0.91	0.18	mg/kg	SW846 6020
Thallium	0.23	0.088	mg/kg	SW846 6020
Zinc	819 J	0.88	mg/kg	SW846 6020
Mercury	0.42	0.044	mg/kg	SW846 7471A
Aluminum	3580	17.6	mg/kg	SW846 6010B
Barium	329 J	0.88	mg/kg	SW846 6010B
Calcium	29400 J	439	mg/kg	SW846 6010B
Cadmium	3.9	0.088	mg/kg	SW846 6010B
Cobalt	15.6	0.44	mg/kg	SW846 6010B
Chromium	475	0.88	mg/kg	SW846 6010B
Copper	613	0.88	mg/kg	SW846 6010B
Iron	61600	8.8	mg/kg	SW846 6010B
Potassium	463 J	439	mg/kg	SW846 6010B
Magnesium	9200	87.8	mg/kg	SW846 6010B
Manganese	914	0.88	mg/kg	SW846 6010B
Sodium	1380	87.8	mg/kg	SW846 6010B
Nickel	268	0.88	mg/kg	SW846 6010B
Lead	976	0.26	mg/kg	SW846 6010B
Vanadium	15.8	0.88	mg/kg	SW846 6010B
Acenaphthene	2000 J	14000	ug/kg	SW846 8270C
Acenaphthylene	2900 J	14000	ug/kg	SW846 8270C
Anthracene	6700 J	14000	ug/kg	SW846 8270C
Benzo(a)anthracene	30000	14000	ug/kg	SW846 8270C
Benzo(a)pyrene	27000	14000	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-027 04/20/10 10:35 027				
Benzo(b)fluoranthene	42000	14000	ug/kg	SW846 8270C
Benzo(ghi)perylene	20000	14000	ug/kg	SW846 8270C
Benzo(k)fluoranthene	13000 J	14000	ug/kg	SW846 8270C
Chrysene	30000	14000	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	5600 J	14000	ug/kg	SW846 8270C
Fluoranthene	53000	14000	ug/kg	SW846 8270C
Fluorene	2700 J	14000	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	16000	14000	ug/kg	SW846 8270C
2-Methylnaphthalene	1000 J	14000	ug/kg	SW846 8270C
Naphthalene	1500 J	14000	ug/kg	SW846 8270C
Phenanthrene	25000	14000	ug/kg	SW846 8270C
Pyrene	37000	14000	ug/kg	SW846 8270C
Hexavalent Chromium	3.7	0.88	mg/kg	SW846 7196A
Percent Solids	91.1	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-028 04/20/10 10:37 028				
Trivalent Chromium	169	0.89	mg/kg	SW846 7196A
Silver	0.25	0.089	mg/kg	SW846 6020
Arsenic	7.4	0.089	mg/kg	SW846 6020
Antimony	5.8	0.18	mg/kg	SW846 6020
Selenium	0.28	0.18	mg/kg	SW846 6020
Thallium	0.050 B	0.089	mg/kg	SW846 6020
Zinc	260 J	0.89	mg/kg	SW846 6020
Mercury	0.28	0.044	mg/kg	SW846 7471A
Aluminum	3110	17.8	mg/kg	SW846 6010B
Barium	92.0 J	0.89	mg/kg	SW846 6010B
Calcium	31200 J	444	mg/kg	SW846 6010B
Cadmium	1.1	0.44	mg/kg	SW846 6010B
Cobalt	33.1	0.44	mg/kg	SW846 6010B
Chromium	170	0.89	mg/kg	SW846 6010B
Copper	240	0.89	mg/kg	SW846 6010B
Iron	68500	44.4	mg/kg	SW846 6010B
Potassium	305 B, J	444	mg/kg	SW846 6010B
Magnesium	4540	88.8	mg/kg	SW846 6010B
Manganese	717	4.4	mg/kg	SW846 6010B
Sodium	892	88.8	mg/kg	SW846 6010B
Nickel	141	0.89	mg/kg	SW846 6010B
Lead	576	1.3	mg/kg	SW846 6010B
Vanadium	12.0	4.4	mg/kg	SW846 6010B
Acenaphthene	650 J	7300	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-028 04/20/10 10:37 028				
Acenaphthylene	1300 J	7300	ug/kg	SW846 8270C
Anthracene	2700 J	7300	ug/kg	SW846 8270C
Benzo(a)anthracene	12000	7300	ug/kg	SW846 8270C
Benzo(a)pyrene	9900	7300	ug/kg	SW846 8270C
Benzo(b)fluoranthene	15000	7300	ug/kg	SW846 8270C
Benzo(ghi)perylene	7700	7300	ug/kg	SW846 8270C
Benzo(k)fluoranthene	5900 J	7300	ug/kg	SW846 8270C
Chrysene	11000	7300	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	2000 J	7300	ug/kg	SW846 8270C
Fluoranthene	21000	7300	ug/kg	SW846 8270C
Fluorene	1100 J	7300	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	6400 J	7300	ug/kg	SW846 8270C
2-Methylnaphthalene	550 J	7300	ug/kg	SW846 8270C
Naphthalene	780 J	7300	ug/kg	SW846 8270C
Phenanthrene	11000	7300	ug/kg	SW846 8270C
Pyrene	14000	7300	ug/kg	SW846 8270C
Hexavalent Chromium	1.1	0.89	mg/kg	SW846 7196A
Percent Solids	90.1	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-029 04/20/10 10:40 029				
Trivalent Chromium	52.6	0.86	mg/kg	SW846 7196A
Silver	0.097	0.086	mg/kg	SW846 6020
Arsenic	6.2	0.086	mg/kg	SW846 6020
Antimony	1.8	0.17	mg/kg	SW846 6020
Selenium	0.16 B	0.17	mg/kg	SW846 6020
Thallium	0.034 B	0.086	mg/kg	SW846 6020
Zinc	105 J	0.86	mg/kg	SW846 6020
Mercury	0.024 B	0.043	mg/kg	SW846 7471A
Aluminum	2840	17.2	mg/kg	SW846 6010B
Barium	67.3 J	0.86	mg/kg	SW846 6010B
Calcium	51900 J	430	mg/kg	SW846 6010B
Cobalt	9.2	0.43	mg/kg	SW846 6010B
Chromium	53.4	0.86	mg/kg	SW846 6010B
Copper	75.9	0.86	mg/kg	SW846 6010B
Iron	84000	43.0	mg/kg	SW846 6010B
Potassium	373 B, J	430	mg/kg	SW846 6010B
Magnesium	8450	86.0	mg/kg	SW846 6010B
Manganese	740	4.3	mg/kg	SW846 6010B
Sodium	672	86.0	mg/kg	SW846 6010B
Nickel	61.7	0.86	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-029 04/20/10 10:40 029				
Lead	37.3	1.3	mg/kg	SW846 6010B
Vanadium	8.4	4.3	mg/kg	SW846 6010B
Acenaphthene	2100 J	7100	ug/kg	SW846 8270C
Anthracene	5200 J	7100	ug/kg	SW846 8270C
Benzo(a)anthracene	12000	7100	ug/kg	SW846 8270C
Benzo(a)pyrene	11000	7100	ug/kg	SW846 8270C
Acenaphthene	2300 J	7100	ug/kg	SW846 8270C
Benzo(b)fluoranthene	15000	7100	ug/kg	SW846 8270C
Benzo(ghi)perylene	7600	7100	ug/kg	SW846 8270C
Benzo(k)fluoranthene	6000 J	7100	ug/kg	SW846 8270C
Chrysene	13000	7100	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	1600 J	7100	ug/kg	SW846 8270C
Fluoranthene	32000	7100	ug/kg	SW846 8270C
Fluorene	2400 J	7100	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	5900 J	7100	ug/kg	SW846 8270C
2-Methylnaphthalene	210 J	7100	ug/kg	SW846 8270C
Anthracene	5800 J	7100	ug/kg	SW846 8270C
Naphthalene	420 J, B	7100	ug/kg	SW846 8270C
Phenanthrene	25000	7100	ug/kg	SW846 8270C
Pyrene	26000	7100	ug/kg	SW846 8270C
Benzo(a)anthracene	10000	7100	ug/kg	SW846 8270C
Benzo(b)fluoranthene	12000	7100	ug/kg	SW846 8270C
Benzo(k)fluoranthene	5200 J	7100	ug/kg	SW846 8270C
Benzo(ghi)perylene	5800 J	7100	ug/kg	SW846 8270C
Benzo(a)pyrene	9000	7100	ug/kg	SW846 8270C
Chrysene	12000	7100	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	1500 J	7100	ug/kg	SW846 8270C
Fluoranthene	31000	7100	ug/kg	SW846 8270C
Fluorene	2600 J	7100	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	4700 J	7100	ug/kg	SW846 8270C
2-Methylnaphthalene	200 J	7100	ug/kg	SW846 8270C
Naphthalene	440 J	7100	ug/kg	SW846 8270C
Phenanthrene	24000	7100	ug/kg	SW846 8270C
Pyrene	22000	7100	ug/kg	SW846 8270C
Hexavalent Chromium	0.78 B	0.86	mg/kg	SW846 7196A
Percent Solids	93.0	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-030 04/20/10 10:42 030				
Silver	0.029 B	0.10	mg/kg	SW846 6020
Arsenic	2.1	0.10	mg/kg	SW846 6020
Antimony	0.086 B	0.20	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-030 04/20/10 10:42 030				
Selenium	0.76	0.20	mg/kg	SW846 6020
Thallium	0.066 B	0.10	mg/kg	SW846 6020
Zinc	52.4 J	1.0	mg/kg	SW846 6020
Mercury	0.028 B	0.050	mg/kg	SW846 7471A
Aluminum	4540	20.1	mg/kg	SW846 6010B
Barium	16.1 J	1.0	mg/kg	SW846 6010B
Beryllium	0.12 B	0.20	mg/kg	SW846 6010B
Calcium	8480 J	503	mg/kg	SW846 6010B
Cadmium	0.29	0.10	mg/kg	SW846 6010B
Cobalt	1.9	0.50	mg/kg	SW846 6010B
Chromium	11.5	1.0	mg/kg	SW846 6010B
Copper	13.6	1.0	mg/kg	SW846 6010B
Iron	12200	10.1	mg/kg	SW846 6010B
Potassium	412 B, J	503	mg/kg	SW846 6010B
Magnesium	1400	101	mg/kg	SW846 6010B
Manganese	114	1.0	mg/kg	SW846 6010B
Sodium	2670	101	mg/kg	SW846 6010B
Nickel	11.6	1.0	mg/kg	SW846 6010B
Lead	10.4	0.30	mg/kg	SW846 6010B
Vanadium	10.2	1.0	mg/kg	SW846 6010B
Acenaphthene	3500 J	17000	ug/kg	SW846 8270C
Anthracene	9100 J	17000	ug/kg	SW846 8270C
Benzo(a)anthracene	20000	17000	ug/kg	SW846 8270C
Benzo(a)pyrene	18000	17000	ug/kg	SW846 8270C
Benzo(b)fluoranthene	25000	17000	ug/kg	SW846 8270C
Benzo(ghi)perylene	11000 J	17000	ug/kg	SW846 8270C
Benzo(k)fluoranthene	8600 J	17000	ug/kg	SW846 8270C
Chrysene	21000	17000	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	2700 J	17000	ug/kg	SW846 8270C
Fluoranthene	59000	17000	ug/kg	SW846 8270C
Fluorene	3900 J	17000	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	9700 J	17000	ug/kg	SW846 8270C
Phenanthrene	41000	17000	ug/kg	SW846 8270C
Pyrene	37000	17000	ug/kg	SW846 8270C
Percent Solids	79.5	10.0	%	MCAWW 160.3 MOD

SO-17360-4/20/10-DR-031 04/20/10 10:45 031

Arsenic	0.43	0.087	mg/kg	SW846 6020
Selenium	0.21	0.17	mg/kg	SW846 6020
Thallium	0.027 B	0.087	mg/kg	SW846 6020
Zinc	8.0 J	0.87	mg/kg	SW846 6020
Aluminum	1910	17.3	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-031 04/20/10 10:45 031				
Barium	6.0 J	0.87	mg/kg	SW846 6010B
Calcium	564 J	433	mg/kg	SW846 6010B
Cobalt	1.4	0.43	mg/kg	SW846 6010B
Chromium	4.7	0.87	mg/kg	SW846 6010B
Copper	2.3	0.87	mg/kg	SW846 6010B
Iron	2010	8.7	mg/kg	SW846 6010B
Potassium	204 B, J	433	mg/kg	SW846 6010B
Magnesium	716	86.6	mg/kg	SW846 6010B
Manganese	18.5	0.87	mg/kg	SW846 6010B
Sodium	280	86.6	mg/kg	SW846 6010B
Nickel	3.2	0.87	mg/kg	SW846 6010B
Lead	1.8	0.26	mg/kg	SW846 6010B
Vanadium	6.8	0.87	mg/kg	SW846 6010B
Percent Solids	92.4	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-032 04/20/10 11:15 032				
Silver	0.042 B	0.094	mg/kg	SW846 6020
Arsenic	4.9	0.094	mg/kg	SW846 6020
Antimony	0.14 B	0.19	mg/kg	SW846 6020
Selenium	0.41	0.19	mg/kg	SW846 6020
Thallium	0.049 B	0.094	mg/kg	SW846 6020
Zinc	43.8 J	0.94	mg/kg	SW846 6020
Aluminum	1850	18.7	mg/kg	SW846 6010B
Barium	92.9 J	0.94	mg/kg	SW846 6010B
Beryllium	0.43	0.19	mg/kg	SW846 6010B
Calcium	1390 J	468	mg/kg	SW846 6010B
Cadmium	0.054 B	0.094	mg/kg	SW846 6010B
Cobalt	5.0	0.47	mg/kg	SW846 6010B
Chromium	6.7	0.94	mg/kg	SW846 6010B
Copper	20.3	0.94	mg/kg	SW846 6010B
Iron	5240	9.4	mg/kg	SW846 6010B
Potassium	164 B, J	468	mg/kg	SW846 6010B
Magnesium	311	93.7	mg/kg	SW846 6010B
Manganese	33.9	0.94	mg/kg	SW846 6010B
Sodium	290	93.7	mg/kg	SW846 6010B
Nickel	15.1	0.94	mg/kg	SW846 6010B
Lead	9.8	0.28	mg/kg	SW846 6010B
Vanadium	7.8	0.94	mg/kg	SW846 6010B
Benzo(a)anthracene	95 J	1200	ug/kg	SW846 8270C
Benzo(a)pyrene	79 J	1200	ug/kg	SW846 8270C
Benzo(b)fluoranthene	140 J	1200	ug/kg	SW846 8270C
Benzo(ghi)perylene	77 J	1200	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-032 04/20/10 11:15 032				
Benzo(k)fluoranthene	43 J	1200	ug/kg	SW846 8270C
Chrysene	150 J	1200	ug/kg	SW846 8270C
Fluoranthene	150 J	1200	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	50 J	1200	ug/kg	SW846 8270C
2-Methylnaphthalene	96 J	1200	ug/kg	SW846 8270C
Naphthalene	39 J	1200	ug/kg	SW846 8270C
Phenanthrene	200 J	1200	ug/kg	SW846 8270C
Pyrene	120 J	1200	ug/kg	SW846 8270C
Percent Solids	85.4	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-033 04/20/10 11:17 033				
Trivalent Chromium	244	0.90	mg/kg	SW846 7196A
Silver	0.11	0.090	mg/kg	SW846 6020
Arsenic	6.5	0.090	mg/kg	SW846 6020
Antimony	0.43	0.18	mg/kg	SW846 6020
Selenium	0.40	0.18	mg/kg	SW846 6020
Thallium	0.097	0.090	mg/kg	SW846 6020
Zinc	38.2 J	0.90	mg/kg	SW846 6020
Aluminum	1770	18.1	mg/kg	SW846 6010B
Barium	68.7 J	0.90	mg/kg	SW846 6010B
Calcium	2620 J	452	mg/kg	SW846 6010B
Cadmium	0.27	0.090	mg/kg	SW846 6010B
Cobalt	10.4	0.45	mg/kg	SW846 6010B
Chromium	244	0.90	mg/kg	SW846 6010B
Copper	43.2	0.90	mg/kg	SW846 6010B
Iron	12700	9.0	mg/kg	SW846 6010B
Potassium	135 B, J, E	452	mg/kg	SW846 6010B
Magnesium	745	90.4	mg/kg	SW846 6010B
Manganese	315	0.90	mg/kg	SW846 6010B
Sodium	452	90.4	mg/kg	SW846 6010B
Nickel	169	0.90	mg/kg	SW846 6010B
Lead	382	0.27	mg/kg	SW846 6010B
Vanadium	12.4	0.90	mg/kg	SW846 6010B
Acenaphthene	1600 J	12000	ug/kg	SW846 8270C
Acenaphthylene	840 J	12000	ug/kg	SW846 8270C
Anthracene	5600 J	12000	ug/kg	SW846 8270C
Benzo(a)anthracene	23000	12000	ug/kg	SW846 8270C
Benzo(a)pyrene	23000	12000	ug/kg	SW846 8270C
Benzo(b)fluoranthene	34000	12000	ug/kg	SW846 8270C
Benzo(ghi)perylene	16000	12000	ug/kg	SW846 8270C
Benzo(k)fluoranthene	11000 J	12000	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-033 04/20/10 11:17 033				
Chrysene	25000	12000	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	5200 J	12000	ug/kg	SW846 8270C
Fluoranthene	41000	12000	ug/kg	SW846 8270C
Fluorene	2000 J	12000	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	14000	12000	ug/kg	SW846 8270C
2-Methylnaphthalene	460 J	12000	ug/kg	SW846 8270C
Naphthalene	810 J	12000	ug/kg	SW846 8270C
Phenanthrene	22000	12000	ug/kg	SW846 8270C
Pyrene	31000	12000	ug/kg	SW846 8270C
Percent Solids	88.5	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-034 04/20/10 11:20 034				
Aroclor 1260	40 J	310	ug/kg	SW846 8082
Trivalent Chromium	917	0.93	mg/kg	SW846 7196A
Silver	0.33	0.093	mg/kg	SW846 6020
Arsenic	3.7	0.093	mg/kg	SW846 6020
Antimony	0.97	0.93	mg/kg	SW846 6020
Selenium	0.20	0.19	mg/kg	SW846 6020
Thallium	0.089 B, G	0.47	mg/kg	SW846 6020
Zinc	49.4 J	0.93	mg/kg	SW846 6020
Aluminum	4270	18.7	mg/kg	SW846 6010B
Barium	49.8 J	0.93	mg/kg	SW846 6010B
Calcium	78000 J	2330	mg/kg	SW846 6010B
Cadmium	0.45	0.093	mg/kg	SW846 6010B
Cobalt	10.3	0.47	mg/kg	SW846 6010B
Chromium	919	0.93	mg/kg	SW846 6010B
Copper	165	0.93	mg/kg	SW846 6010B
Iron	30900	9.3	mg/kg	SW846 6010B
Potassium	417 B, J	467	mg/kg	SW846 6010B
Magnesium	14300	93.4	mg/kg	SW846 6010B
Manganese	813	0.93	mg/kg	SW846 6010B
Sodium	1120	93.4	mg/kg	SW846 6010B
Nickel	535	0.93	mg/kg	SW846 6010B
Lead	4750	1.4	mg/kg	SW846 6010B
Vanadium	13.4	0.93	mg/kg	SW846 6010B
Acenaphthene	18000 J	62000	ug/kg	SW846 8270C
Anthracene	36000 J	62000	ug/kg	SW846 8270C
Benzo(a)anthracene	100000	62000	ug/kg	SW846 8270C
Benzo(a)pyrene	91000	62000	ug/kg	SW846 8270C
Benzo(b)fluoranthene	130000	62000	ug/kg	SW846 8270C
Benzo(ghi)perylene	61000 J	62000	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-034 04/20/10 11:20 034				
Benzo(k)fluoranthene	42000 J	62000	ug/kg	SW846 8270C
Chrysene	110000	62000	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	18000 J	62000	ug/kg	SW846 8270C
Fluoranthene	250000	62000	ug/kg	SW846 8270C
Fluorene	17000 J	62000	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	53000 J	62000	ug/kg	SW846 8270C
2-Methylnaphthalene	2200 J	62000	ug/kg	SW846 8270C
Naphthalene	4000 J	62000	ug/kg	SW846 8270C
Phenanthrene	180000	62000	ug/kg	SW846 8270C
Pyrene	180000	62000	ug/kg	SW846 8270C
Hexavalent Chromium	1.2	0.93	mg/kg	SW846 7196A
Percent Solids	85.7	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-035 04/20/10 11:22 035				
Arsenic	2.0	0.090	mg/kg	SW846 6020
Selenium	0.17 B	0.18	mg/kg	SW846 6020
Thallium	0.044 B	0.090	mg/kg	SW846 6020
Zinc	6.6 J	0.90	mg/kg	SW846 6020
Mercury	0.018 B	0.045	mg/kg	SW846 7471A
Aluminum	2610	17.9	mg/kg	SW846 6010B
Barium	8.8 J	0.90	mg/kg	SW846 6010B
Calcium	788 J	448	mg/kg	SW846 6010B
Cobalt	1.7	0.45	mg/kg	SW846 6010B
Chromium	6.7	0.90	mg/kg	SW846 6010B
Copper	2.4	0.90	mg/kg	SW846 6010B
Iron	3580	9.0	mg/kg	SW846 6010B
Potassium	229 B, J	448	mg/kg	SW846 6010B
Magnesium	1000	89.6	mg/kg	SW846 6010B
Manganese	25.6	0.90	mg/kg	SW846 6010B
Sodium	446	89.6	mg/kg	SW846 6010B
Nickel	4.6	0.90	mg/kg	SW846 6010B
Lead	3.4	0.27	mg/kg	SW846 6010B
Vanadium	9.2	0.90	mg/kg	SW846 6010B
Benzo(a)anthracene	30 J	300	ug/kg	SW846 8270C
Benzo(a)pyrene	25 J	300	ug/kg	SW846 8270C
Benzo(b)fluoranthene	38 J	300	ug/kg	SW846 8270C
Benzo(ghi)perylene	15 J	300	ug/kg	SW846 8270C
Benzo(k)fluoranthene	13 J	300	ug/kg	SW846 8270C
Chrysene	32 J	300	ug/kg	SW846 8270C
Fluoranthene	43 J	300	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	13 J	300	ug/kg	SW846 8270C

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-035 04/20/10 11:22 035				
Phenanthrene	29 J	300	ug/kg	SW846 8270C
Pyrene	35 J	300	ug/kg	SW846 8270C
Percent Solids	89.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-036 04/20/10 11:25 036				
Arsenic	0.68	0.087	mg/kg	SW846 6020
Selenium	0.30	0.17	mg/kg	SW846 6020
Thallium	0.039 B	0.087	mg/kg	SW846 6020
Zinc	5.5 J	0.87	mg/kg	SW846 6020
Aluminum	2080	17.3	mg/kg	SW846 6010B
Barium	5.7 J	0.87	mg/kg	SW846 6010B
Calcium	602 J	433	mg/kg	SW846 6010B
Cobalt	1.2	0.43	mg/kg	SW846 6010B
Chromium	4.7	0.87	mg/kg	SW846 6010B
Copper	3.4	0.87	mg/kg	SW846 6010B
Iron	3100	8.7	mg/kg	SW846 6010B
Potassium	115 B, J	433	mg/kg	SW846 6010B
Magnesium	524	86.6	mg/kg	SW846 6010B
Manganese	15.6	0.87	mg/kg	SW846 6010B
Sodium	210	86.6	mg/kg	SW846 6010B
Nickel	3.2	0.87	mg/kg	SW846 6010B
Lead	1.6	0.26	mg/kg	SW846 6010B
Vanadium	5.4	0.87	mg/kg	SW846 6010B
Benzo(a)anthracene	8.5 J	290	ug/kg	SW846 8270C
Benzo(b)fluoranthene	10 J	290	ug/kg	SW846 8270C
Chrysene	8.0 J	290	ug/kg	SW846 8270C
Fluoranthene	16 J	290	ug/kg	SW846 8270C
Phenanthrene	12 J	290	ug/kg	SW846 8270C
Pyrene	13 J	290	ug/kg	SW846 8270C
Percent Solids	92.4	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-037 04/20/10 11:35 037				
Silver	0.025 B	0.086	mg/kg	SW846 6020
Arsenic	3.1	0.086	mg/kg	SW846 6020
Antimony	0.059 B	0.17	mg/kg	SW846 6020
Selenium	0.20	0.17	mg/kg	SW846 6020
Thallium	0.081 B	0.086	mg/kg	SW846 6020
Zinc	15.2 J	0.86	mg/kg	SW846 6020
Aluminum	3340	17.1	mg/kg	SW846 6010B
Barium	29.7 J	0.86	mg/kg	SW846 6010B
Calcium	7130 J	428	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-037 04/20/10 11:35 037				
Cadmium	0.11	0.086	mg/kg	SW846 6010B
Cobalt	2.9	0.43	mg/kg	SW846 6010B
Chromium	6.0	0.86	mg/kg	SW846 6010B
Copper	9.1	0.86	mg/kg	SW846 6010B
Iron	6370	8.6	mg/kg	SW846 6010B
Potassium	172 B, J	428	mg/kg	SW846 6010B
Magnesium	2080	85.6	mg/kg	SW846 6010B
Manganese	143	0.86	mg/kg	SW846 6010B
Sodium	575	85.6	mg/kg	SW846 6010B
Nickel	5.8	0.86	mg/kg	SW846 6010B
Lead	9.8	0.26	mg/kg	SW846 6010B
Vanadium	10.4	0.86	mg/kg	SW846 6010B
Anthracene	62 J	1100	ug/kg	SW846 8270C
Benzo(a)anthracene	310 J	1100	ug/kg	SW846 8270C
Benzo(a)pyrene	310 J	1100	ug/kg	SW846 8270C
Benzo(b)fluoranthene	500 J	1100	ug/kg	SW846 8270C
Benzo(ghi)perylene	260 J	1100	ug/kg	SW846 8270C
Benzo(k)fluoranthene	160 J	1100	ug/kg	SW846 8270C
Chrysene	390 J	1100	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	73 J	1100	ug/kg	SW846 8270C
Fluoranthene	460 J	1100	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	190 J	1100	ug/kg	SW846 8270C
2-Methylnaphthalene	130 J	1100	ug/kg	SW846 8270C
Naphthalene	76 J	1100	ug/kg	SW846 8270C
Phenanthrene	270 J	1100	ug/kg	SW846 8270C
Pyrene	380 J	1100	ug/kg	SW846 8270C
Percent Solids	93.5	10.0	%	MCAWW 160.3 MOD

SO-17360-4/20/10-DR-038 04/20/10 11:39 038

Silver	0.029 B	0.086	mg/kg	SW846 6020
Arsenic	5.9	0.086	mg/kg	SW846 6020
Antimony	0.13 B	0.17	mg/kg	SW846 6020
Selenium	0.31	0.17	mg/kg	SW846 6020
Thallium	0.15	0.086	mg/kg	SW846 6020
Zinc	14.1 J	0.86	mg/kg	SW846 6020
Aluminum	2720	17.2	mg/kg	SW846 6010B
Barium	30.0 J	0.86	mg/kg	SW846 6010B
Calcium	6520 J	431	mg/kg	SW846 6010B
Cadmium	0.12	0.086	mg/kg	SW846 6010B
Cobalt	2.3	0.43	mg/kg	SW846 6010B
Chromium	6.1	0.86	mg/kg	SW846 6010B
Copper	14.5	0.86	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-038 04/20/10 11:39 038				
Iron	6120	8.6	mg/kg	SW846 6010B
Potassium	204 B, J	431	mg/kg	SW846 6010B
Magnesium	3670	86.1	mg/kg	SW846 6010B
Manganese	107	0.86	mg/kg	SW846 6010B
Sodium	683	86.1	mg/kg	SW846 6010B
Nickel	5.2	0.86	mg/kg	SW846 6010B
Lead	16.4	0.26	mg/kg	SW846 6010B
Vanadium	8.6	0.86	mg/kg	SW846 6010B
Benzo(a)anthracene	87 J	1400	ug/kg	SW846 8270C
Benzo(a)pyrene	84 J	1400	ug/kg	SW846 8270C
Benzo(b)fluoranthene	140 J	1400	ug/kg	SW846 8270C
Benzo(ghi)perylene	120 J	1400	ug/kg	SW846 8270C
Benzo(k)fluoranthene	47 J	1400	ug/kg	SW846 8270C
Chrysene	170 J	1400	ug/kg	SW846 8270C
Fluoranthene	130 J	1400	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	59 J	1400	ug/kg	SW846 8270C
2-Methylnaphthalene	960 J	1400	ug/kg	SW846 8270C
Naphthalene	630 J	1400	ug/kg	SW846 8270C
Phenanthrene	400 J	1400	ug/kg	SW846 8270C
Pyrene	110 J	1400	ug/kg	SW846 8270C
Percent Solids	92.9	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-039 04/20/10 11:40 039				
Silver	0.066 B	0.096	mg/kg	SW846 6020
Arsenic	3.4	0.096	mg/kg	SW846 6020
Selenium	0.32	0.19	mg/kg	SW846 6020
Thallium	0.090 B	0.096	mg/kg	SW846 6020
Zinc	22.1 J	0.96	mg/kg	SW846 6020
Aluminum	3230	19.3	mg/kg	SW846 6010B
Barium	22.5 J	0.96	mg/kg	SW846 6010B
Beryllium	0.059 B	0.19	mg/kg	SW846 6010B
Calcium	2470 J	481	mg/kg	SW846 6010B
Cadmium	0.13	0.096	mg/kg	SW846 6010B
Cobalt	1.1	0.48	mg/kg	SW846 6010B
Chromium	4.7	0.96	mg/kg	SW846 6010B
Copper	3.0	0.96	mg/kg	SW846 6010B
Iron	2090	9.6	mg/kg	SW846 6010B
Potassium	126 B, J	481	mg/kg	SW846 6010B
Magnesium	808	96.3	mg/kg	SW846 6010B
Manganese	17.3	0.96	mg/kg	SW846 6010B
Sodium	1250	96.3	mg/kg	SW846 6010B
Nickel	3.2	0.96	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SO-17360-4/20/10-DR-039 04/20/10 11:40 039				
Lead	3.2	0.29	mg/kg	SW846 6010B
Vanadium	5.5	0.96	mg/kg	SW846 6010B
2-Methylnaphthalene	310 J	1600	ug/kg	SW846 8270C
Naphthalene	210 J	1600	ug/kg	SW846 8270C
Phenanthrene	120 J	1600	ug/kg	SW846 8270C
Percent Solids	83.1	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-040 04/20/10 11:42 040				
Arsenic	2.2	0.089	mg/kg	SW846 6020
Selenium	0.18	0.18	mg/kg	SW846 6020
Thallium	0.045 B	0.089	mg/kg	SW846 6020
Zinc	6.0 J	0.89	mg/kg	SW846 6020
Aluminum	2490	17.9	mg/kg	SW846 6010B
Barium	9.3 J	0.89	mg/kg	SW846 6010B
Calcium	563 J	447	mg/kg	SW846 6010B
Cobalt	1.4	0.45	mg/kg	SW846 6010B
Chromium	5.1	0.89	mg/kg	SW846 6010B
Copper	1.5	0.89	mg/kg	SW846 6010B
Iron	3420	8.9	mg/kg	SW846 6010B
Potassium	117 B, J	447	mg/kg	SW846 6010B
Magnesium	828	89.3	mg/kg	SW846 6010B
Manganese	25.9	0.89	mg/kg	SW846 6010B
Sodium	629	89.3	mg/kg	SW846 6010B
Nickel	4.0	0.89	mg/kg	SW846 6010B
Lead	1.8	0.27	mg/kg	SW846 6010B
Vanadium	7.4	0.89	mg/kg	SW846 6010B
Percent Solids	89.6	10.0	%	MCAWW 160.3 MOD
SO-17360-4/20/10-DR-041 04/20/10 11:45 041				
Arsenic	1.2	0.086	mg/kg	SW846 6020
Antimony	0.031 B	0.17	mg/kg	SW846 6020
Selenium	0.28	0.17	mg/kg	SW846 6020
Thallium	0.041 B	0.086	mg/kg	SW846 6020
Zinc	8.5	0.86	mg/kg	SW846 6020
Aluminum	2120	17.2	mg/kg	SW846 6010B
Barium	6.6 J	0.86	mg/kg	SW846 6010B
Calcium	4290 J	431	mg/kg	SW846 6010B
Cobalt	2.2	0.43	mg/kg	SW846 6010B
Chromium	6.1	0.86	mg/kg	SW846 6010B
Copper	4.4	0.86	mg/kg	SW846 6010B
Iron	3290	8.6	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-041 04/20/10 11:45 041				
Potassium	174 B	431	mg/kg	SW846 6010B
Magnesium	3020 J	86.2	mg/kg	SW846 6010B
Manganese	37.5 J	0.86	mg/kg	SW846 6010B
Sodium	277	86.2	mg/kg	SW846 6010B
Nickel	5.1	0.86	mg/kg	SW846 6010B
Lead	1.9	0.26	mg/kg	SW846 6010B
Vanadium	8.4	0.86	mg/kg	SW846 6010B
Percent Solids	92.8	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-021(CALC) 04/20/10 10:20 042				
Lead	54.7	0.24	mg/kg	SW846 6010B
S0-17360-4/20/10-DR-021(FINE) 04/20/10 10:20 043				
Lead	83.0	1.2	mg/kg	SW846 6010B
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-021(COARSE) 04/20/10 10:20 044				
Lead	42.7	1.2	mg/kg	SW846 6010B
Percent Solids	99.2	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-027(CALC) 04/20/10 10:35 045				
Lead	1140	0.24	mg/kg	SW846 6010B
S0-17360-4/20/10-DR-027(FINE) 04/20/10 10:35 046				
Lead	1260	1.2	mg/kg	SW846 6010B
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-027(COARSE) 04/20/10 10:35 047				
Lead	1130	1.2	mg/kg	SW846 6010B
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-028(CALC) 04/20/10 10:37 048				
Lead	757	0.24	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A0D210499

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-4/20/10-DR-028(FINE) 04/20/10 10:37 049				
Lead	578	1.2	mg/kg	SW846 6010B
Percent Solids	97.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-028(COARSE) 04/20/10 10:37 050				
Lead	786	1.2	mg/kg	SW846 6010B
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-033(CALC) 04/20/10 11:17 051				
Lead	862	0.24	mg/kg	SW846 6010B
S0-17360-4/20/10-DR-033(FINE) 04/20/10 11:17 052				
Lead	1350	1.2	mg/kg	SW846 6010B
Percent Solids	98.2	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-033(COARSE) 04/20/10 11:17 053				
Lead	760	1.2	mg/kg	SW846 6010B
Percent Solids	99.0	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-034(CALC) 04/20/10 11:20 054				
Lead	5720	0.24	mg/kg	SW846 6010B
S0-17360-4/20/10-DR-034(FINE) 04/20/10 11:20 055				
Lead	9210	5.0	mg/kg	SW846 6010B
Percent Solids	95.2	10.0	%	MCAWW 160.3 MOD
S0-17360-4/20/10-DR-034(COARSE) 04/20/10 11:20 056				
Lead	5440	1.2	mg/kg	SW846 6010B
Percent Solids	97.9	10.0	%	MCAWW 160.3 MOD

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A0D210499

PARAMETER	ANALYTICAL METHOD
Hexavalent Chromium	SW846 7196A
ICP-MS (6020)	SW846 6020
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
PCBs by SW-846 8082	SW846 8082
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Trivalent Chromium	SW846 7196A

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

SAMPLE SUMMARY

A0D210499

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L0ACP	001	SO-17360-4/20/10-DR-001	04/20/10	08:05
L0AC4	002	SO-17360-4/20/10-DR-002	04/20/10	08:25
L0AC7	003	SO-17360-4/20/10-DR-003	04/20/10	08:35
L0AC8	004	SO-17360-4/20/10-DR-004	04/20/10	08:45
L0AC9	005	SO-17360-4/20/10-DR-005	04/20/10	08:47
L0ADC	006	SO-17360-4/20/10-DR-006	04/20/10	08:50
L0ADD	007	SO-17360-4/20/10-DR-007	04/20/10	08:52
L0ADE	008	SO-17360-4/20/10-DR-008	04/20/10	08:55
L0ADF	009	SO-17360-4/20/10-DR-009	04/20/10	09:25
L0ADH	010	SO-17360-4/20/10-DR-010	04/20/10	09:29
L0ADK	011	SO-17360-4/20/10-DR-011	04/20/10	09:30
L0ADL	012	SO-17360-4/20/10-DR-012	04/20/10	09:40
L0ADM	013	SO-17360-4/20/10-DR-013	04/20/10	09:42
L0ADN	014	SO-17360-4/20/10-DR-014	04/20/10	09:45
L0ADP	015	SO-17360-4/20/10-DR-015	04/20/10	09:55
L0ADQ	016	SO-17360-4/20/10-DR-016	04/20/10	09:55
L0ADT	017	SO-17360-4/20/10-DR-017	04/20/10	09:57
L0ADV	018	SO-17360-4/20/10-DR-018	04/20/10	10:00
L0ADW	019	SO-17360-4/20/10-DR-019	04/20/10	10:02
L0ADX	020	SO-17360-4/20/10-DR-020	04/20/10	10:05
L0AD0	021	SO-17360-4/20/10-DR-021	04/20/10	10:20
L0AD1	022	SO-17360-4/20/10-DR-022	04/20/10	10:21
L0AD2	023	SO-17360-4/20/10-DR-023	04/20/10	10:22
L0AD4	024	SO-17360-4/20/10-DR-024	04/20/10	10:25
L0AD5	025	SO-17360-4/20/10-DR-025	04/20/10	10:27
L0AD6	026	SO-17360-4/20/10-DR-026	04/20/10	10:30
L0AD8	027	SO-17360-4/20/10-DR-027	04/20/10	10:35
L0AD9	028	SO-17360-4/20/10-DR-028	04/20/10	10:37
L0AEC	029	SO-17360-4/20/10-DR-029	04/20/10	10:40
L0AED	030	SO-17360-4/20/10-DR-030	04/20/10	10:42
L0AEE	031	SO-17360-4/20/10-DR-031	04/20/10	10:45
L0AEF	032	SO-17360-4/20/10-DR-032	04/20/10	11:15
L0AEG	033	SO-17360-4/20/10-DR-033	04/20/10	11:17
L0AEJ	034	SO-17360-4/20/10-DR-034	04/20/10	11:20
L0AEM	035	SO-17360-4/20/10-DR-035	04/20/10	11:22
L0AEN	036	SO-17360-4/20/10-DR-036	04/20/10	11:25

(Continued on next page)

SAMPLE SUMMARY

A0D210499

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L0AER	037	SO-17360-4/20/10-DR-037	04/20/10	11:35
L0AET	038	SO-17360-4/20/10-DR-038	04/20/10	11:39
L0AEW	039	SO-17360-4/20/10-DR-039	04/20/10	11:40
L0AEX	040	SO-17360-4/20/10-DR-040	04/20/10	11:42
L0AE0	041	SO-17360-4/20/10-DR-041	04/20/10	11:45
L1MK7	042	SO-17360-4/20/10-DR-021(CALC)	04/20/10	10:20
L1MLC	043	SO-17360-4/20/10-DR-021(FINE)	04/20/10	10:20
L1MLF	044	SO-17360-4/20/10-DR-021(COARSE)	04/20/10	10:20
L1MLJ	045	SO-17360-4/20/10-DR-027(CALC)	04/20/10	10:35
L1MLL	046	SO-17360-4/20/10-DR-027(FINE)	04/20/10	10:35
L1MLM	047	SO-17360-4/20/10-DR-027(COARSE)	04/20/10	10:35
L1MLP	048	SO-17360-4/20/10-DR-028(CALC)	04/20/10	10:37
L1MLT	049	SO-17360-4/20/10-DR-028(FINE)	04/20/10	10:37
L1MLW	050	SO-17360-4/20/10-DR-028(COARSE)	04/20/10	10:37
L1ML0	051	SO-17360-4/20/10-DR-033(CALC)	04/20/10	11:17
L1ML4	052	SO-17360-4/20/10-DR-033(FINE)	04/20/10	11:17
L1ML6	053	SO-17360-4/20/10-DR-033(COARSE)	04/20/10	11:17
L1ML7	054	SO-17360-4/20/10-DR-034(CALC)	04/20/10	11:20
L1ML9	055	SO-17360-4/20/10-DR-034(FINE)	04/20/10	11:20
L1MMC	056	SO-17360-4/20/10-DR-034(COARSE)	04/20/10	11:20

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SHIPPING AND RECEIVING DOCUMENTS

**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PAGE 1 OF 2

D#
No D 7519

SSOW Ref. Code:
EO 30018

Required Client Information:

Company: CRA, Inc.	Report To: P. Wiseman
Address: 14496 Sheldon Rd.	Copy To: L. Clark
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: GM-GP
Fax: 734-453-5201	Project Number: 17360-10
Email:	

Laboratory: Post & Amporka

Laboratory:	Test America
Laboratory Location:	North Canton, OH
Laboratory Contact:	Dennise Heckler
Requested Due Date:	TAT: 3 wks - STD
QA/QC Requirements:	X

Sample Identification:

[illegible]

SHIPMENT METHOI

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
Fed Ex	1	D Ruiz / CMF	4/20/15	1700	GL / M / JSC	4/21/15	0915
AIRBILL NO.	8694 4903 4932						
Sample Condition							

Sample Condition

Temp in C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

Additional Comments:
* Site-Specific TAL metals - Earth metals

Sampler Name:	D. Rivers
Sampler Signature:	

Date: _____

4/20/13

Distribution:

YELLOW - Receiving Laboratory Copy

PINK - Shipper GOLDENROD - Sampler Copy

REV: 016 0617



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information:

Company: CRA, Inc.	Report To: <i>P. Wiseman</i>
Address: 14496 Sheldon Rd.	Copy To: <i>C. Clark</i>
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: <i>Gm-SR</i>
Fax: 734-453-5201	Project Number: <i>17360-10</i>
Email:	

PAGE 2 OF 7

Laboratory: *Test America*
Laboratory Location: *North Canton, OH*
Laboratory Contact: *Denise Heller*
Requested Due Date: TAT: *3 wks -*
QA/QC Requirements: *8*

ID# N^o D 7602

SSOW Ref. Code

E030018

Sample Identification:

[illegible]

Sample Condition

Temp in °C	
Received on Ice	Y / N
Sealed Cooler	Y / N
Samples Intact	Y / N

Additional Comments:

- * Site-Specific TRL metals - Earth metals

Distribution:

WHITE - Fully Executed Copy

YELLOW - Receiving Laboratory Copy

PINK - Shipper GOLDENROD - Sampler Copy

REFERENCES

Sample Name:

Sampler Signature

Date: 11/15/11

North Canton

**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Required Client Information:

Company: CRA, Inc.	Report To: <i>P. Wiseman</i>
Address: 14496 Sheldon Rd.	Copy To: <i>L. Clark</i>
Suite 200	Invoice To:
Plymouth, MI 48170	P.O.:
Phone: 734-453-5123	Project Name: <i>GM-G2</i>
Fax: 734-453-5201	Project Number: <i>17360-10</i>
Email:	

PAGE 7 OF 7

Laboratory: Test America
Laboratory Location: North Canton, OH
Laboratory Contact: Denise Heckley
Requested Due Date: TAT: 2 wks - 5
QA/QC Requirements: 1

ID # N^o D 7603

SSOW Ref. Code:

E030018

Sample Identification:		Valid Matrix Codes:		Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	Preservative						Remarks/Lab ID
		WG Groundwater	WB Borehole Water						WS Surface Water	SO Soil	SE Sediment	See Back for Additional Codes	HCl	H2SO4	
1.	50-17360-4/20/10-DK-027	-028		50	4-20-10	10:35	1	X						X	PNA's PCB's Site-specific TALMs ms/msd
2.		-029				10:37	1	X						X	
3.		-030				10:40	1	X						X	
4.		-031				10:42	1	X						X	
5.		-032				10:45	1	X						X	
6.		-033				11:15	1	X						X	
7.		-034				11:17	2	X						X	
8.		-035				11:20	1	X						X	
9.		-036				11:22	1	X						X	
10.		-037				11:25	1	X						X	
11.		-038				11:35	1	X						X	
12.		-039				11:39	1	X						X	
13.		-040				11:40	1	X						X	
14.		-041				11:42	1	X						X	
15.						11:45	1	X						X	
TOTAL NUMBER OF CONTAINERS															

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
Fed Ex	1	DEUWA / CMA	4/29/10	1700	DEUWA / CMA	4/29/10	0815
AIRBILL NO.	8004 4903 4932						
Sample Condition							
Temp in C							
Received on Ice	Y / N						
Sealed Cooler	Y / N						
Samples Intact	Y / N						
Additional Comments:		* Site-specific TAL Metals - Earth metals					
Sampler Name:		D. Rivers					
Sampler Signature:							
Date:		4/20/10					

Additional Comments:
* Site-Spec

* Site-specific TAL Metals - Earth metals

Sampler Name: D. Rivers
Sampler Signature: 

Date: 4/20/10

North Canton

Distribution:

WHITE - Fully Executed Conv

YELLOW - Receiving Laboratory Conv

PINK - Shimmer

GOLDENROD - Sampler Conv

REF: 2014-04

TestAmerica Cooler Receipt Form/Narrative

 Lot Number: ADD 210 489
North Canton Facility

 Client CRA Project GM-GR By: [Signature]
 Cooler Received on 4/21/10 Opened on 4/21/10 (Signature)

 FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐
 TestAmerica Cooler # _____ Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other ☐

1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
 If YES, Quantity _____ Quantity Unsalvageable _____
 Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
 Were custody seals on the bottle(s)? Yes ☐ No ☒
 If YES, are there any exceptions? _____
 2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
 3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
 4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
 5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other _____
 6. Cooler temperature upon receipt _____ °C See back of form for multiple coolers/temps ☒
 METHOD: IR ☒ Other ☐
 COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
 7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
 8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
 9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
 10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
 11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒
 12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
 13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☐ No ☒
- Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
 Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 121709-HNO₃; Sulfuric Acid Lot# 121709-H₂SO₄; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

[illegible]

Discrepancies Cont'd:

GCMS SEMIVOLATILE DATA

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-001	Work Order #... : L0ACP1DL	Matrix..... : S0
Date Sampled... : 04/20/10 08:05	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 20	Initial Wgt/Vol: 30 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 2.7	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	5400	ug/kg	68
Acenaphthylene	ND	5400	ug/kg	68
Anthracene	ND	5400	ug/kg	68
Benzo(a)anthracene	ND	5400	ug/kg	68
Benzo(a)pyrene	ND	5400	ug/kg	68
Benzo(b)fluoranthene	ND	5400	ug/kg	68
Benzo(ghi)perylene	ND	5400	ug/kg	68
Benzo(k)fluoranthene	ND	5400	ug/kg	68
Chrysene	ND	5400	ug/kg	23
Dibenz(a,h)anthracene	ND	5400	ug/kg	68
Fluoranthene	ND	5400	ug/kg	68
Fluorene	ND	5400	ug/kg	68
Indeno(1,2,3-cd)pyrene	ND	5400	ug/kg	68
2-Methylnaphthalene	ND	5400	ug/kg	68
Naphthalene	ND	5400	ug/kg	68
Phenanthrene	ND	5400	ug/kg	68
Pyrene	ND	5400	ug/kg	68

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	82 DIL	(24 - 112)
2-Fluorobiphenyl	90 DIL	(34 - 110)
Terphenyl-d14	106 DIL	(41 - 119)
Phenol-d5	101 DIL	(28 - 110)
2-Fluorophenol	101 DIL	(26 - 110)
2,4,6-Tribromophenol	28 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-002	Work Order #... : L0AC41A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:25	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 05/03/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.02 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 9.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	23 J	290	ug/kg	3.6
Benzo(a)pyrene	25 J	290	ug/kg	3.6
Benzo(b)fluoranthene	35 J	290	ug/kg	3.6
Benzo(ghi)perylene	26 J	290	ug/kg	3.6
Benzo(k)fluoranthene	14 J	290	ug/kg	3.6
Chrysene	28 J	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	47 J	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	18 J	290	ug/kg	3.6
2-Methylnaphthalene	ND	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	19 J	290	ug/kg	3.6
Pyrene	36 J	290	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	62	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	75	(28 - 110)
2-Fluorophenol	82	(26 - 110)
2,4,6-Tribromophenol	52	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-003	Work Order #... : L0AC71A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:35	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 10	Initial Wgt/Vol: 30.01 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 3.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	2700	ug/kg	34
Acenaphthylene	ND	2700	ug/kg	34
Anthracene	ND	2700	ug/kg	34
Benzo(a)anthracene	ND	2700	ug/kg	34
Benzo(a)pyrene	ND	2700	ug/kg	34
Benzo(b)fluoranthene	ND	2700	ug/kg	34
Benzo(ghi)perylene	ND	2700	ug/kg	34
Benzo(k)fluoranthene	ND	2700	ug/kg	34
Chrysene	ND	2700	ug/kg	11
Dibenz(a,h)anthracene	ND	2700	ug/kg	34
Fluoranthene	ND	2700	ug/kg	34
Fluorene	ND	2700	ug/kg	34
Indeno(1,2,3-cd)pyrene	ND	2700	ug/kg	34
2-Methylnaphthalene	ND	2700	ug/kg	34
Naphthalene	ND	2700	ug/kg	34
Phenanthrene	ND	2700	ug/kg	34
Pyrene	ND	2700	ug/kg	34

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	66 DIL	(24 - 112)
2-Fluorobiphenyl	68 DIL	(34 - 110)
Terphenyl-d14	79 DIL	(41 - 119)
Phenol-d5	83 DIL	(28 - 110)
2-Fluorophenol	93 DIL	(26 - 110)
2,4,6-Tribromophenol	29 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-004	Work Order #... : L0AC81A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:45	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 05/03/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.01 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 2.6	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	270	ug/kg	3.4
Acenaphthylene	ND	270	ug/kg	3.4
Anthracene	ND	270	ug/kg	3.4
Benzo(a)anthracene	20 J	270	ug/kg	3.4
Benzo(a)pyrene	21 J	270	ug/kg	3.4
Benzo(b)fluoranthene	32 J	270	ug/kg	3.4
Benzo(ghi)perylene	19 J	270	ug/kg	3.4
Benzo(k)fluoranthene	9.5 J	270	ug/kg	3.4
Chrysene	26 J	270	ug/kg	1.1
Dibenz(a,h)anthracene	ND	270	ug/kg	3.4
Fluoranthene	46 J	270	ug/kg	3.4
Fluorene	ND	270	ug/kg	3.4
Indeno(1,2,3-cd)pyrene	14 J	270	ug/kg	3.4
2-Methylnaphthalene	ND	270	ug/kg	3.4
Naphthalene	ND	270	ug/kg	3.4
Phenanthrene	22 J	270	ug/kg	3.4
Pyrene	36 J	270	ug/kg	3.4

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	65	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	85	(28 - 110)
2-Fluorophenol	93	(26 - 110)
2,4,6-Tribromophenol	47	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-005	Work Order #... : L0AC91A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:47	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 05/03/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.09 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 2.6	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	13 J	270	ug/kg	3.4
Acenaphthylene	ND	270	ug/kg	3.4
Anthracene	34 J	270	ug/kg	3.4
Benzo(a)anthracene	110 J	270	ug/kg	3.4
Benzo(a)pyrene	110 J	270	ug/kg	3.4
Benzo(b)fluoranthene	150 J	270	ug/kg	3.4
Benzo(ghi)perylene	75 J	270	ug/kg	3.4
Benzo(k)fluoranthene	50 J	270	ug/kg	3.4
Chrysene	130 J	270	ug/kg	1.1
Dibenz(a,h)anthracene	15 J	270	ug/kg	3.4
Fluoranthene	300	270	ug/kg	3.4
Fluorene	11 J	270	ug/kg	3.4
Indeno(1,2,3-cd)pyrene	61 J	270	ug/kg	3.4
2-Methylnaphthalene	ND	270	ug/kg	3.4
Naphthalene	ND	270	ug/kg	3.4
Phenanthrene	120 J	270	ug/kg	3.4
Pyrene	210 J	270	ug/kg	3.4

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	61	(34 - 110)
Terphenyl-d14	83	(41 - 119)
Phenol-d5	76	(28 - 110)
2-Fluorophenol	84	(26 - 110)
2,4,6-Tribromophenol	24	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-006

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-006	Work Order #... : L0ADC1A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:50	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.08 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.5	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	38 J	290	ug/kg	3.6
Benzo(a)pyrene	39 J	290	ug/kg	3.6
Benzo(b)fluoranthene	76 J	290	ug/kg	3.6
Benzo(ghi)perylene	40 J	290	ug/kg	3.6
Benzo(k)fluoranthene	19 J	290	ug/kg	3.6
Chrysene	63 J	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	87 J	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	32 J	290	ug/kg	3.6
2-Methylnaphthalene	99 J	290	ug/kg	3.6
Naphthalene	63 J	290	ug/kg	3.6
Phenanthrene	86 J	290	ug/kg	3.6
Pyrene	60 J	290	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	68	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	78	(28 - 110)
2-Fluorophenol	79	(26 - 110)
2,4,6-Tribromophenol	61	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-007	Work Order #... : L0ADD1A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:52	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.06 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 5.6	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	51	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	77	(26 - 110)
2,4,6-Tribromophenol	26	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-008

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-008	Work Order #... : L0ADE1A3	Matrix..... : S0
Date Sampled... : 04/20/10 08:55	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.16 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 4.9	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	66	(24 - 112)
2-Fluorobiphenyl	57	(34 - 110)
Terphenyl-d14	84	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	78	(26 - 110)
2,4,6-Tribromophenol	17	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-009	Work Order #... : L0ADF1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:25	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 05/03/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.05 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 4.6	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	8.9 J	280	ug/kg	3.5
Benzo(a)anthracene	35 J	280	ug/kg	3.5
Benzo(a)pyrene	35 J	280	ug/kg	3.5
Benzo(b)fluoranthene	50 J	280	ug/kg	3.5
Benzo(ghi)perylene	29 J	280	ug/kg	3.5
Benzo(k)fluoranthene	19 J	280	ug/kg	3.5
Chrysene	44 J	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	75 J	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	23 J	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	33 J	280	ug/kg	3.5
Pyrene	58 J	280	ug/kg	3.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	71	(34 - 110)
Terphenyl-d14	82	(41 - 119)
Phenol-d5	85	(28 - 110)
2-Fluorophenol	85	(26 - 110)
2,4,6-Tribromophenol	23	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-010	Work Order #... : L0ADH1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:29	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.12 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 5.5	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	11 J	280	ug/kg	3.5
Benzo(a)anthracene	46 J	280	ug/kg	3.5
Benzo(a)pyrene	52 J	280	ug/kg	3.5
Benzo(b)fluoranthene	73 J	280	ug/kg	3.5
Benzo(ghi)perylene	48 J	280	ug/kg	3.5
Benzo(k)fluoranthene	33 J	280	ug/kg	3.5
Chrysene	64 J	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	110 J	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	35 J	280	ug/kg	3.5
2-Methylnaphthalene	11 J	280	ug/kg	3.5
Naphthalene	9.2 J	280	ug/kg	3.5
Phenanthrene	52 J	280	ug/kg	3.5
Pyrene	79 J	280	ug/kg	3.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(24 - 112)
2-Fluorobiphenyl	75	(34 - 110)
Terphenyl-d14	94	(41 - 119)
Phenol-d5	85	(28 - 110)
2-Fluorophenol	90	(26 - 110)
2,4,6-Tribromophenol	48	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-011	Work Order #... : L0ADK1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:30	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.05 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 5.8	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	12 J	280	ug/kg	3.5
Benzo(a)anthracene	48 J	280	ug/kg	3.5
Benzo(a)pyrene	52 J	280	ug/kg	3.5
Benzo(b)fluoranthene	73 J	280	ug/kg	3.5
Benzo(ghi)perylene	48 J	280	ug/kg	3.5
Benzo(k)fluoranthene	30 J	280	ug/kg	3.5
Chrysene	61 J	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	110 J	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	35 J	280	ug/kg	3.5
2-Methylnaphthalene	9.8 J	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	52 J	280	ug/kg	3.5
Pyrene	81 J	280	ug/kg	3.5

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(24 - 112)
2-Fluorobiphenyl	73	(34 - 110)
Terphenyl-d14	90	(41 - 119)
Phenol-d5	87	(28 - 110)
2-Fluorophenol	96	(26 - 110)
2,4,6-Tribromophenol	40	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-012	Work Order #... : L0ADL1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:40	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 6.8	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	69	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	87	(26 - 110)
2,4,6-Tribromophenol	38	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-013	Work Order #... : L0ADM1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:42	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.03 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 4.3	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.4
Acenaphthylene	ND	280	ug/kg	3.4
Anthracene	ND	280	ug/kg	3.4
Benzo(a)anthracene	ND	280	ug/kg	3.4
Benzo(a)pyrene	ND	280	ug/kg	3.4
Benzo(b)fluoranthene	ND	280	ug/kg	3.4
Benzo(ghi)perylene	ND	280	ug/kg	3.4
Benzo(k)fluoranthene	ND	280	ug/kg	3.4
Chrysene	ND	280	ug/kg	1.1
Dibenz(a,h)anthracene	ND	280	ug/kg	3.4
Fluoranthene	ND	280	ug/kg	3.4
Fluorene	ND	280	ug/kg	3.4
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.4
2-Methylnaphthalene	ND	280	ug/kg	3.4
Naphthalene	ND	280	ug/kg	3.4
Phenanthrene	ND	280	ug/kg	3.4
Pyrene	ND	280	ug/kg	3.4

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	75	(24 - 112)
2-Fluorobiphenyl	63	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	68	(28 - 110)
2-Fluorophenol	89	(26 - 110)
2,4,6-Tribromophenol	34	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-014	Work Order #... : L0ADN1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:45	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.2 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 6.4	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	71	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	95	(41 - 119)
Phenol-d5	68	(28 - 110)
2-Fluorophenol	84	(26 - 110)
2,4,6-Tribromophenol	29	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-015	Work Order #... : L0ADP1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:55	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 20	Initial Wgt/Vol: 30.01 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 3.3	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	5500	ug/kg	68
Acenaphthylene	ND	5500	ug/kg	68
Anthracene	ND	5500	ug/kg	68
Benzo(a)anthracene	ND	5500	ug/kg	68
Benzo(a)pyrene	ND	5500	ug/kg	68
Benzo(b)fluoranthene	ND	5500	ug/kg	68
Benzo(ghi)perylene	ND	5500	ug/kg	68
Benzo(k)fluoranthene	ND	5500	ug/kg	68
Chrysene	ND	5500	ug/kg	23
Dibenz(a,h)anthracene	ND	5500	ug/kg	68
Fluoranthene	ND	5500	ug/kg	68
Fluorene	ND	5500	ug/kg	68
Indeno(1,2,3-cd)pyrene	ND	5500	ug/kg	68
2-Methylnaphthalene	ND	5500	ug/kg	68
Naphthalene	ND	5500	ug/kg	68
Phenanthrene	ND	5500	ug/kg	68
Pyrene	ND	5500	ug/kg	68

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	71 DIL	(24 - 112)
2-Fluorobiphenyl	76 DIL	(34 - 110)
Terphenyl-d14	85 DIL	(41 - 119)
Phenol-d5	94 DIL	(28 - 110)
2-Fluorophenol	108 DIL	(26 - 110)
2,4,6-Tribromophenol	27 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-016

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-016	Work Order #... : L0ADQ1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:55	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 20	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 2.8	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	5400	ug/kg	68
Acenaphthylene	ND	5400	ug/kg	68
Anthracene	ND	5400	ug/kg	68
Benzo(a)anthracene	ND	5400	ug/kg	68
Benzo(a)pyrene	ND	5400	ug/kg	68
Benzo(b)fluoranthene	ND	5400	ug/kg	68
Benzo(ghi)perylene	ND	5400	ug/kg	68
Benzo(k)fluoranthene	ND	5400	ug/kg	68
Chrysene	ND	5400	ug/kg	23
Dibenz(a,h)anthracene	ND	5400	ug/kg	68
Fluoranthene	ND	5400	ug/kg	68
Fluorene	ND	5400	ug/kg	68
Indeno(1,2,3-cd)pyrene	ND	5400	ug/kg	68
2-Methylnaphthalene	ND	5400	ug/kg	68
Naphthalene	ND	5400	ug/kg	68
Phenanthrene	ND	5400	ug/kg	68
Pyrene	ND	5400	ug/kg	68

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	69 DIL	(24 - 112)
2-Fluorobiphenyl	77 DIL	(34 - 110)
Terphenyl-d14	82 DIL	(41 - 119)
Phenol-d5	83 DIL	(28 - 110)
2-Fluorophenol	103 DIL	(26 - 110)
2,4,6-Tribromophenol	20 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-017	Work Order #... : L0ADT1A3	Matrix..... : S0
Date Sampled... : 04/20/10 09:57	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.04 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 9.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	12 J	290	ug/kg	3.6
Benzo(a)pyrene	8.5 J	290	ug/kg	3.6
Benzo(b)fluoranthene	19 J	290	ug/kg	3.6
Benzo(ghi)perylene	12 J	290	ug/kg	3.6
Benzo(k)fluoranthene	8.7 J	290	ug/kg	3.6
Chrysene	21 J	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	18 J	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	8.1 J	290	ug/kg	3.6
2-Methylnaphthalene	11 J	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	19 J	290	ug/kg	3.6
Pyrene	13 J	290	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(24 - 112)
2-Fluorobiphenyl	70	(34 - 110)
Terphenyl-d14	89	(41 - 119)
Phenol-d5	78	(28 - 110)
2-Fluorophenol	89	(26 - 110)
2,4,6-Tribromophenol	46	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-018	Work Order #... : L0ADV1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:00	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 05/03/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.01 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 8.1	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	8.0 J	290	ug/kg	3.6
Benzo(a)pyrene	9.0 J	290	ug/kg	3.6
Benzo(b)fluoranthene	16 J	290	ug/kg	3.6
Benzo(ghi)perylene	8.6 J	290	ug/kg	3.6
Benzo(k)fluoranthene	ND	290	ug/kg	3.6
Chrysene	14 J	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	17 J	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	7.7 J	290	ug/kg	3.6
2-Methylnaphthalene	8.2 J	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	10 J	290	ug/kg	3.6
Pyrene	11 J	290	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	71	(24 - 112)
2-Fluorobiphenyl	68	(34 - 110)
Terphenyl-d14	79	(41 - 119)
Phenol-d5	87	(28 - 110)
2-Fluorophenol	93	(26 - 110)
2,4,6-Tribromophenol	45	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-019	Work Order #... : L0ADW1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:02	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.11 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 9.0	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	ND	290	ug/kg	3.6
Benzo(a)pyrene	ND	290	ug/kg	3.6
Benzo(b)fluoranthene	ND	290	ug/kg	3.6
Benzo(ghi)perylene	ND	290	ug/kg	3.6
Benzo(k)fluoranthene	ND	290	ug/kg	3.6
Chrysene	ND	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	ND	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	ND	290	ug/kg	3.6
2-Methylnaphthalene	ND	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	ND	290	ug/kg	3.6
Pyrene	ND	290	ug/kg	3.6

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	74	(24 - 112)
2-Fluorobiphenyl	69	(34 - 110)
Terphenyl-d14	93	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	93	(26 - 110)
2,4,6-Tribromophenol	39	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-020	Work Order #... : L0ADX1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:05	Date Received... : 04/21/10	
Prep Date..... : 04/27/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0117044		
Dilution Factor: 1	Initial Wgt/Vol: 30.06 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 5.4	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	83	(41 - 119)
Phenol-d5	55	(28 - 110)
2-Fluorophenol	74	(26 - 110)
2,4,6-Tribromophenol	21	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-021	Work Order #... : L0AD01A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:20	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 1	Initial Wgt/Vol: 30.08 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 9.7	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	30 J	290	ug/kg	3.7
Acenaphthylene	9.9 J	290	ug/kg	3.7
Anthracene	79 J	290	ug/kg	3.7
Benzo(a)anthracene	320	290	ug/kg	3.7
Benzo(a)pyrene	310	290	ug/kg	3.7
Benzo(b)fluoranthene	620	290	ug/kg	3.7
Benzo(ghi)perylene	280 J	290	ug/kg	3.7
Benzo(k)fluoranthene	170 J	290	ug/kg	3.7
Chrysene	430	290	ug/kg	1.2
Dibenz(a,h)anthracene	84 J	290	ug/kg	3.7
Fluoranthene	710	290	ug/kg	3.7
Fluorene	32 J	290	ug/kg	3.7
Indeno(1,2,3-cd)pyrene	240 J	290	ug/kg	3.7
2-Methylnaphthalene	76 J	290	ug/kg	3.7
Naphthalene	46 J	290	ug/kg	3.7
Phenanthrene	460	290	ug/kg	3.7
Pyrene	530	290	ug/kg	3.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	59	(34 - 110)
Terphenyl-d14	75	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	78	(26 - 110)
2,4,6-Tribromophenol	40	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-022	Work Order #... : L0AD11A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:21	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 1	Initial Wgt/Vol: 30.06 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	19 J	280	ug/kg	3.6
Acenaphthylene	9.0 J	280	ug/kg	3.6
Anthracene	47 J	280	ug/kg	3.6
Benzo(a)anthracene	220 J	280	ug/kg	3.6
Benzo(a)pyrene	220 J	280	ug/kg	3.6
Benzo(b)fluoranthene	470	280	ug/kg	3.6
Benzo(ghi)perylene	230 J	280	ug/kg	3.6
Benzo(k)fluoranthene	120 J	280	ug/kg	3.6
Chrysene	310	280	ug/kg	1.2
Dibenz(a,h)anthracene	64 J	280	ug/kg	3.6
Fluoranthene	430	280	ug/kg	3.6
Fluorene	17 J	280	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	200 J	280	ug/kg	3.6
2-Methylnaphthalene	68 J	280	ug/kg	3.6
Naphthalene	43 J	280	ug/kg	3.6
Phenanthrene	270 J	280	ug/kg	3.6
Pyrene	340	280	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	56	(24 - 112)
2-Fluorobiphenyl	60	(34 - 110)
Terphenyl-d14	75	(41 - 119)
Phenol-d5	71	(28 - 110)
2-Fluorophenol	78	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-023

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-023	Work Order #... : L0AD21A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:22	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 12.5	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.4	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	530 J	3600	ug/kg	45
Acenaphthylene	ND	3600	ug/kg	45
Anthracene	1500 J	3600	ug/kg	45
Benzo(a)anthracene	5300	3600	ug/kg	45
Benzo(a)pyrene	4900	3600	ug/kg	45
Benzo(b)fluoranthene	8000	3600	ug/kg	45
Benzo(ghi)perylene	4100	3600	ug/kg	45
Benzo(k)fluoranthene	2500 J	3600	ug/kg	45
Chrysene	5900	3600	ug/kg	15
Dibenz(a,h)anthracene	1100 J	3600	ug/kg	45
Fluoranthene	14000	3600	ug/kg	45
Fluorene	540 J	3600	ug/kg	45
Indeno(1,2,3-cd)pyrene	3600	3600	ug/kg	45
2-Methylnaphthalene	100 J	3600	ug/kg	45
Naphthalene	130 J	3600	ug/kg	45
Phenanthrene	6900	3600	ug/kg	45
Pyrene	8400	3600	ug/kg	45

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	50 DIL	(24 - 112)
2-Fluorobiphenyl	56 DIL	(34 - 110)
Terphenyl-d14	69 DIL	(41 - 119)
Phenol-d5	59 DIL	(28 - 110)
2-Fluorophenol	70 DIL	(26 - 110)
2,4,6-Tribromophenol	37 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-024

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-024	Work Order #... : L0AD41A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:25	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 4	Initial Wgt/Vol: 30.09 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 4.3	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	54 J	1100	ug/kg	14
Acenaphthylene	ND	1100	ug/kg	14
Anthracene	120 J	1100	ug/kg	14
Benzo(a)anthracene	320 J	1100	ug/kg	14
Benzo(a)pyrene	300 J	1100	ug/kg	14
Benzo(b)fluoranthene	460 J	1100	ug/kg	14
Benzo(ghi)perylene	240 J	1100	ug/kg	14
Benzo(k)fluoranthene	110 J	1100	ug/kg	14
Chrysene	350 J	1100	ug/kg	4.6
Dibenz(a,h)anthracene	48 J	1100	ug/kg	14
Fluoranthene	800 J	1100	ug/kg	14
Fluorene	48 J	1100	ug/kg	14
Indeno(1,2,3-cd)pyrene	200 J	1100	ug/kg	14
2-Methylnaphthalene	200 J	1100	ug/kg	14
Naphthalene	130 J	1100	ug/kg	14
Phenanthrene	500 J	1100	ug/kg	14
Pyrene	630 J	1100	ug/kg	14

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
Nitrobenzene-d5	45 DIL	(24 - 112)	
2-Fluorobiphenyl	53 DIL	(34 - 110)	
Terphenyl-d14	72 DIL	(41 - 119)	
Phenol-d5	55 DIL	(28 - 110)	
2-Fluorophenol	57 DIL	(26 - 110)	
2,4,6-Tribromophenol	39 DIL	(10 - 118)	

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-025	Work Order #... : L0AD51A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:27	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 05/05/10	
Prep Batch #... : 0118049		
Dilution Factor: 1	Initial Wgt/Vol: 30.08 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 8.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	ND	290	ug/kg	3.6
Benzo(a)pyrene	ND	290	ug/kg	3.6
Benzo(b)fluoranthene	ND	290	ug/kg	3.6
Benzo(ghi)perylene	ND	290	ug/kg	3.6
Benzo(k)fluoranthene	ND	290	ug/kg	3.6
Chrysene	ND	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	ND	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	ND	290	ug/kg	3.6
2-Methylnaphthalene	ND	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	ND	290	ug/kg	3.6
Pyrene	ND	290	ug/kg	3.6

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	66	(34 - 110)
Terphenyl-d14	86	(41 - 119)
Phenol-d5	70	(28 - 110)
2-Fluorophenol	74	(26 - 110)
2,4,6-Tribromophenol	45	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-026	Work Order #... : L0AD61A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:30	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 05/05/10	
Prep Batch #... : 0118049		
Dilution Factor: 1	Initial Wgt/Vol: 30.1 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 6.1	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	280	ug/kg	3.5
Acenaphthylene	ND	280	ug/kg	3.5
Anthracene	ND	280	ug/kg	3.5
Benzo(a)anthracene	ND	280	ug/kg	3.5
Benzo(a)pyrene	ND	280	ug/kg	3.5
Benzo(b)fluoranthene	ND	280	ug/kg	3.5
Benzo(ghi)perylene	ND	280	ug/kg	3.5
Benzo(k)fluoranthene	ND	280	ug/kg	3.5
Chrysene	ND	280	ug/kg	1.2
Dibenz(a,h)anthracene	ND	280	ug/kg	3.5
Fluoranthene	ND	280	ug/kg	3.5
Fluorene	ND	280	ug/kg	3.5
Indeno(1,2,3-cd)pyrene	ND	280	ug/kg	3.5
2-Methylnaphthalene	ND	280	ug/kg	3.5
Naphthalene	ND	280	ug/kg	3.5
Phenanthrene	ND	280	ug/kg	3.5
Pyrene	ND	280	ug/kg	3.5

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	68	(24 - 112)
2-Fluorobiphenyl	67	(34 - 110)
Terphenyl-d14	88	(41 - 119)
Phenol-d5	74	(28 - 110)
2-Fluorophenol	81	(26 - 110)
2,4,6-Tribromophenol	40	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-027	Work Order #... : L0AD81A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:35	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 50	Initial Wgt/Vol: 30.02 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 8.9	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	2000 J	14000	ug/kg	180
Acenaphthylene	2900 J	14000	ug/kg	180
Anthracene	6700 J	14000	ug/kg	180
Benzo(a)anthracene	30000	14000	ug/kg	180
Benzo(a)pyrene	27000	14000	ug/kg	180
Benzo(b)fluoranthene	42000	14000	ug/kg	180
Benzo(ghi)perylene	20000	14000	ug/kg	180
Benzo(k)fluoranthene	13000 J	14000	ug/kg	180
Chrysene	30000	14000	ug/kg	60
Dibenz(a,h)anthracene	5600 J	14000	ug/kg	180
Fluoranthene	53000	14000	ug/kg	180
Fluorene	2700 J	14000	ug/kg	180
Indeno(1,2,3-cd)pyrene	16000	14000	ug/kg	180
2-Methylnaphthalene	1000 J	14000	ug/kg	180
Naphthalene	1500 J	14000	ug/kg	180
Phenanthrene	25000	14000	ug/kg	180
Pyrene	37000	14000	ug/kg	180

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	0.0 DIL, *	(24 - 112)
2-Fluorobiphenyl	0.0 DIL, *	(34 - 110)
Terphenyl-d14	0.0 DIL, *	(41 - 119)
Phenol-d5	0.0 DIL, *	(28 - 110)
2-Fluorophenol	0.0 DIL, *	(26 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-028	Work Order #... : L0AD91A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:37	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 25	Initial Wgt/Vol: 30.19 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 9.9	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	650 J	7300	ug/kg	92
Acenaphthylene	1300 J	7300	ug/kg	92
Anthracene	2700 J	7300	ug/kg	92
Benzo(a)anthracene	12000	7300	ug/kg	92
Benzo(a)pyrene	9900	7300	ug/kg	92
Benzo(b)fluoranthene	15000	7300	ug/kg	92
Benzo(ghi)perylene	7700	7300	ug/kg	92
Benzo(k)fluoranthene	5900 J	7300	ug/kg	92
Chrysene	11000	7300	ug/kg	31
Dibenz(a,h)anthracene	2000 J	7300	ug/kg	92
Fluoranthene	21000	7300	ug/kg	92
Fluorene	1100 J	7300	ug/kg	92
Indeno(1,2,3-cd)pyrene	6400 J	7300	ug/kg	92
2-Methylnaphthalene	550 J	7300	ug/kg	92
Naphthalene	780 J	7300	ug/kg	92
Phenanthrene	11000	7300	ug/kg	92
Pyrene	14000	7300	ug/kg	92

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	54 DIL	(24 - 112)
2-Fluorobiphenyl	64 DIL	(34 - 110)
Terphenyl-d14	82 DIL	(41 - 119)
Phenol-d5	69 DIL	(28 - 110)
2-Fluorophenol	57 DIL	(26 - 110)
2,4,6-Tribromophenol	61 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-029	Work Order #... : L0AEC1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:40	Date Received... : 04/21/10	
Prep Date..... : 04/29/10	Analysis Date... : 05/04/10	
Prep Batch #... : 0119047		
Dilution Factor: 25	Initial Wgt/Vol: 30.11 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.0	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	2100 J	7100	ug/kg	89
Acenaphthylene	ND	7100	ug/kg	89
Anthracene	5200 J	7100	ug/kg	89
Benzo(a)anthracene	12000	7100	ug/kg	89
Benzo(a)pyrene	11000	7100	ug/kg	89
Benzo(b)fluoranthene	15000	7100	ug/kg	89
Benzo(ghi)perylene	7600	7100	ug/kg	89
Benzo(k)fluoranthene	6000 J	7100	ug/kg	89
Chrysene	13000	7100	ug/kg	30
Dibenz(a,h)anthracene	1600 J	7100	ug/kg	89
Fluoranthene	32000	7100	ug/kg	89
Fluorene	2400 J	7100	ug/kg	89
Indeno(1,2,3-cd)pyrene	5900 J	7100	ug/kg	89
2-Methylnaphthalene	210 J	7100	ug/kg	89
Naphthalene	420 J, B	7100	ug/kg	89
Phenanthrene	25000	7100	ug/kg	89
Pyrene	26000	7100	ug/kg	89

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
Nitrobenzene-d5	72 DIL	(24 - 112)	
2-Fluorobiphenyl	66 DIL	(34 - 110)	
Terphenyl-d14	84 DIL	(41 - 119)	
Phenol-d5	71 DIL	(28 - 110)	
2-Fluorophenol	72 DIL	(26 - 110)	
2,4,6-Tribromophenol	56 DIL	(10 - 118)	

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-029	Work Order #... : L0AEC2A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:40	Date Received... : 04/21/10	
Prep Date..... : 05/05/10	Analysis Date... : 05/06/10	
Prep Batch #... : 0125291		
Dilution Factor: 25	Initial Wgt/Vol: 30.01 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.0	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	2300 J	7100	ug/kg	89
Acenaphthylene	ND	7100	ug/kg	89
Anthracene	5800 J	7100	ug/kg	89
Benzo(a)anthracene	10000	7100	ug/kg	89
Benzo(b)fluoranthene	12000	7100	ug/kg	89
Benzo(k)fluoranthene	5200 J	7100	ug/kg	89
Benzo(ghi)perylene	5800 J	7100	ug/kg	89
Benzo(a)pyrene	9000	7100	ug/kg	89
Chrysene	12000	7100	ug/kg	30
Dibenz(a,h)anthracene	1500 J	7100	ug/kg	89
Fluoranthene	31000	7100	ug/kg	89
Fluorene	2600 J	7100	ug/kg	89
Indeno(1,2,3-cd)pyrene	4700 J	7100	ug/kg	89
2-Methylnaphthalene	200 J	7100	ug/kg	89
Naphthalene	440 J	7100	ug/kg	89
Phenanthrene	24000	7100	ug/kg	89
Pyrene	22000	7100	ug/kg	89

SURROGATE	PERCENT RECOVERY	RECOVERY	
		LIMITS	
Nitrobenzene-d5	67 DIL	(24 - 112)	
2-Fluorobiphenyl	72 DIL	(34 - 110)	
Terphenyl-d14	104 DIL	(41 - 119)	
Phenol-d5	62 DIL	(28 - 110)	
2-Fluorophenol	65 DIL	(26 - 110)	
2,4,6-Tribromophenol	32 DIL	(10 - 118)	

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-030	Work Order #... : L0AED1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:42	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 50	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 21	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	3500 J	17000	ug/kg	210
Acenaphthylene	ND	17000	ug/kg	210
Anthracene	9100 J	17000	ug/kg	210
Benzo(a)anthracene	20000	17000	ug/kg	210
Benzo(a)pyrene	18000	17000	ug/kg	210
Benzo(b)fluoranthene	25000	17000	ug/kg	210
Benzo(ghi)perylene	11000 J	17000	ug/kg	210
Benzo(k)fluoranthene	8600 J	17000	ug/kg	210
Chrysene	21000	17000	ug/kg	69
Dibenz(a,h)anthracene	2700 J	17000	ug/kg	210
Fluoranthene	59000	17000	ug/kg	210
Fluorene	3900 J	17000	ug/kg	210
Indeno(1,2,3-cd)pyrene	9700 J	17000	ug/kg	210
2-Methylnaphthalene	ND	17000	ug/kg	210
Naphthalene	ND	17000	ug/kg	210
Phenanthrene	41000	17000	ug/kg	210
Pyrene	37000	17000	ug/kg	210

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	0.0 DIL, *	(24 - 112)
2-Fluorobiphenyl	0.0 DIL, *	(34 - 110)
Terphenyl-d14	0.0 DIL, *	(41 - 119)
Phenol-d5	0.0 DIL, *	(28 - 110)
2-Fluorophenol	0.0 DIL, *	(26 - 110)
2,4,6-Tribromophenol	76 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-031	Work Order #... : L0AEE1A3	Matrix..... : S0
Date Sampled... : 04/20/10 10:45	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 20	Initial Wgt/Vol: 30.04 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.6	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	5700	ug/kg	71
Acenaphthylene	ND	5700	ug/kg	71
Anthracene	ND	5700	ug/kg	71
Benzo(a)anthracene	ND	5700	ug/kg	71
Benzo(a)pyrene	ND	5700	ug/kg	71
Benzo(b)fluoranthene	ND	5700	ug/kg	71
Benzo(ghi)perylene	ND	5700	ug/kg	71
Benzo(k)fluoranthene	ND	5700	ug/kg	71
Chrysene	ND	5700	ug/kg	24
Dibenz(a,h)anthracene	ND	5700	ug/kg	71
Fluoranthene	ND	5700	ug/kg	71
Fluorene	ND	5700	ug/kg	71
Indeno(1,2,3-cd)pyrene	ND	5700	ug/kg	71
2-Methylnaphthalene	ND	5700	ug/kg	71
Naphthalene	ND	5700	ug/kg	71
Phenanthrene	ND	5700	ug/kg	71
Pyrene	ND	5700	ug/kg	71

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	60 DIL	(24 - 112)
2-Fluorobiphenyl	67 DIL	(34 - 110)
Terphenyl-d14	87 DIL	(41 - 119)
Phenol-d5	69 DIL	(28 - 110)
2-Fluorophenol	69 DIL	(26 - 110)
2,4,6-Tribromophenol	70 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-032	Work Order #... : L0AEF1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:15	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 4	Initial Wgt/Vol: 30.09 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 15	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	1200	ug/kg	15
Acenaphthylene	ND	1200	ug/kg	15
Anthracene	ND	1200	ug/kg	15
Benzo(a)anthracene	95 J	1200	ug/kg	15
Benzo(a)pyrene	79 J	1200	ug/kg	15
Benzo(b)fluoranthene	140 J	1200	ug/kg	15
Benzo(ghi)perylene	77 J	1200	ug/kg	15
Benzo(k)fluoranthene	43 J	1200	ug/kg	15
Chrysene	150 J	1200	ug/kg	5.2
Dibenz(a,h)anthracene	ND	1200	ug/kg	15
Fluoranthene	150 J	1200	ug/kg	15
Fluorene	ND	1200	ug/kg	15
Indeno(1,2,3-cd)pyrene	50 J	1200	ug/kg	15
2-Methylnaphthalene	96 J	1200	ug/kg	15
Naphthalene	39 J	1200	ug/kg	15
Phenanthrene	200 J	1200	ug/kg	15
Pyrene	120 J	1200	ug/kg	15

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	43 DIL	(24 - 112)
2-Fluorobiphenyl	52 DIL	(34 - 110)
Terphenyl-d14	70 DIL	(41 - 119)
Phenol-d5	51 DIL	(28 - 110)
2-Fluorophenol	58 DIL	(26 - 110)
2,4,6-Tribromophenol	35 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-033	Work Order #... : L0AEG1DL	Matrix..... : S0
Date Sampled... : 04/20/10 11:17	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 40	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 11	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	1600 J	12000	ug/kg	150
Acenaphthylene	840 J	12000	ug/kg	150
Anthracene	5600 J	12000	ug/kg	150
Benzo(a)anthracene	23000	12000	ug/kg	150
Benzo(a)pyrene	23000	12000	ug/kg	150
Benzo(b)fluoranthene	34000	12000	ug/kg	150
Benzo(ghi)perylene	16000	12000	ug/kg	150
Benzo(k)fluoranthene	11000 J	12000	ug/kg	150
Chrysene	25000	12000	ug/kg	50
Dibenz(a,h)anthracene	5200 J	12000	ug/kg	150
Fluoranthene	41000	12000	ug/kg	150
Fluorene	2000 J	12000	ug/kg	150
Indeno(1,2,3-cd)pyrene	14000	12000	ug/kg	150
2-Methylnaphthalene	460 J	12000	ug/kg	150
Naphthalene	810 J	12000	ug/kg	150
Phenanthrene	22000	12000	ug/kg	150
Pyrene	31000	12000	ug/kg	150

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	0.0 DIL, *	(24 - 112)
2-Fluorobiphenyl	0.0 DIL, *	(34 - 110)
Terphenyl-d14	82 DIL	(41 - 119)
Phenol-d5	60 DIL	(28 - 110)
2-Fluorophenol	57 DIL	(26 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-034	Work Order #... : L0AEJ1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:20	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 200	Initial Wgt/Vol: 30.16 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 14	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	18000 J	62000	ug/kg	770
Acenaphthylene	ND	62000	ug/kg	770
Anthracene	36000 J	62000	ug/kg	770
Benzo(a)anthracene	100000	62000	ug/kg	770
Benzo(a)pyrene	91000	62000	ug/kg	770
Benzo(b)fluoranthene	130000	62000	ug/kg	770
Benzo(ghi)perylene	61000 J	62000	ug/kg	770
Benzo(k)fluoranthene	42000 J	62000	ug/kg	770
Chrysene	110000	62000	ug/kg	260
Dibenz(a,h)anthracene	18000 J	62000	ug/kg	770
Fluoranthene	250000	62000	ug/kg	770
Fluorene	17000 J	62000	ug/kg	770
Indeno(1,2,3-cd)pyrene	53000 J	62000	ug/kg	770
2-Methylnaphthalene	2200 J	62000	ug/kg	770
Naphthalene	4000 J	62000	ug/kg	770
Phenanthrene	180000	62000	ug/kg	770
Pyrene	180000	62000	ug/kg	770

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	0.0 DIL, *	(24 - 112)
2-Fluorobiphenyl	0.0 DIL, *	(34 - 110)
Terphenyl-d14	0.0 DIL, *	(41 - 119)
Phenol-d5	0.0 DIL, *	(28 - 110)
2-Fluorophenol	0.0 DIL, *	(26 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-035	Work Order #... : L0AEM1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:22	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 1	Initial Wgt/Vol: 30.16 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 11	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	300	ug/kg	3.7
Acenaphthylene	ND	300	ug/kg	3.7
Anthracene	ND	300	ug/kg	3.7
Benzo(a)anthracene	30 J	300	ug/kg	3.7
Benzo(a)pyrene	25 J	300	ug/kg	3.7
Benzo(b)fluoranthene	38 J	300	ug/kg	3.7
Benzo(ghi)perylene	15 J	300	ug/kg	3.7
Benzo(k)fluoranthene	13 J	300	ug/kg	3.7
Chrysene	32 J	300	ug/kg	1.2
Dibenz(a,h)anthracene	ND	300	ug/kg	3.7
Fluoranthene	43 J	300	ug/kg	3.7
Fluorene	ND	300	ug/kg	3.7
Indeno(1,2,3-cd)pyrene	13 J	300	ug/kg	3.7
2-Methylnaphthalene	ND	300	ug/kg	3.7
Naphthalene	ND	300	ug/kg	3.7
Phenanthrene	29 J	300	ug/kg	3.7
Pyrene	35 J	300	ug/kg	3.7

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	83	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	74	(26 - 110)
2,4,6-Tribromophenol	50	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

GC/MS Semivolatiles

Lot-Sample #....: A0D210499-036 Work Order #....: L0AEN1A3 Matrix.....: S0
 Date Sampled...: 04/20/10 11:25 Date Received...: 04/21/10
 Prep Date.....: 04/28/10 Analysis Date...: 04/30/10
 Prep Batch #....: 0118049
 Dilution Factor: 1 Initial Wgt/Vol: 30.06 g Final Wgt/Vol...: 2 mL
 % Moisture.....: 7.6 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acenaphthene	ND	290	ug/kg	3.6
Acenaphthylene	ND	290	ug/kg	3.6
Anthracene	ND	290	ug/kg	3.6
Benzo(a)anthracene	8.5 J	290	ug/kg	3.6
Benzo(a)pyrene	ND	290	ug/kg	3.6
Benzo(b)fluoranthene	10 J	290	ug/kg	3.6
Benzo(ghi)perylene	ND	290	ug/kg	3.6
Benzo(k)fluoranthene	ND	290	ug/kg	3.6
Chrysene	8.0 J	290	ug/kg	1.2
Dibenz(a,h)anthracene	ND	290	ug/kg	3.6
Fluoranthene	16 J	290	ug/kg	3.6
Fluorene	ND	290	ug/kg	3.6
Indeno(1,2,3-cd)pyrene	ND	290	ug/kg	3.6
2-Methylnaphthalene	ND	290	ug/kg	3.6
Naphthalene	ND	290	ug/kg	3.6
Phenanthrene	12 J	290	ug/kg	3.6
Pyrene	13 J	290	ug/kg	3.6

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	83	(41 - 119)
Phenol-d5	73	(28 - 110)
2-Fluorophenol	83	(26 - 110)
2,4,6-Tribromophenol	53	(10 - 118)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-037	Work Order #... : L0AER1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:35	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 4	Initial Wgt/Vol: 30.09 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 6.5	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	1100	ug/kg	14
Acenaphthylene	ND	1100	ug/kg	14
Anthracene	62 J	1100	ug/kg	14
Benzo(a)anthracene	310 J	1100	ug/kg	14
Benzo(a)pyrene	310 J	1100	ug/kg	14
Benzo(b)fluoranthene	500 J	1100	ug/kg	14
Benzo(ghi)perylene	260 J	1100	ug/kg	14
Benzo(k)fluoranthene	160 J	1100	ug/kg	14
Chrysene	390 J	1100	ug/kg	4.7
Dibenz(a,h)anthracene	73 J	1100	ug/kg	14
Fluoranthene	460 J	1100	ug/kg	14
Fluorene	ND	1100	ug/kg	14
Indeno(1,2,3-cd)pyrene	190 J	1100	ug/kg	14
2-Methylnaphthalene	130 J	1100	ug/kg	14
Naphthalene	76 J	1100	ug/kg	14
Phenanthrene	270 J	1100	ug/kg	14
Pyrene	380 J	1100	ug/kg	14

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	49 DIL	(24 - 112)
2-Fluorobiphenyl	59 DIL	(34 - 110)
Terphenyl-d14	78 DIL	(41 - 119)
Phenol-d5	60 DIL	(28 - 110)
2-Fluorophenol	66 DIL	(26 - 110)
2,4,6-Tribromophenol	40 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-038	Work Order #... : L0AET1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:39	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 5	Initial Wgt/Vol: 30.02 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 7.1	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	1400	ug/kg	18
Acenaphthylene	ND	1400	ug/kg	18
Anthracene	ND	1400	ug/kg	18
Benzo(a)anthracene	87 J	1400	ug/kg	18
Benzo(a)pyrene	84 J	1400	ug/kg	18
Benzo(b)fluoranthene	140 J	1400	ug/kg	18
Benzo(ghi)perylene	120 J	1400	ug/kg	18
Benzo(k)fluoranthene	47 J	1400	ug/kg	18
Chrysene	170 J	1400	ug/kg	5.9
Dibenz(a,h)anthracene	ND	1400	ug/kg	18
Fluoranthene	130 J	1400	ug/kg	18
Fluorene	ND	1400	ug/kg	18
Indeno(1,2,3-cd)pyrene	59 J	1400	ug/kg	18
2-Methylnaphthalene	960 J	1400	ug/kg	18
Naphthalene	630 J	1400	ug/kg	18
Phenanthrene	400 J	1400	ug/kg	18
Pyrene	110 J	1400	ug/kg	18

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	55 DIL	(24 - 112)
2-Fluorobiphenyl	63 DIL	(34 - 110)
Terphenyl-d14	80 DIL	(41 - 119)
Phenol-d5	65 DIL	(28 - 110)
2-Fluorophenol	71 DIL	(26 - 110)
2,4,6-Tribromophenol	51 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-039	Work Order #... : L0AEW1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:40	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 5	Initial Wgt/Vol: 30.02 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 17	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	1600	ug/kg	20
Acenaphthylene	ND	1600	ug/kg	20
Anthracene	ND	1600	ug/kg	20
Benzo(a)anthracene	ND	1600	ug/kg	20
Benzo(a)pyrene	ND	1600	ug/kg	20
Benzo(b)fluoranthene	ND	1600	ug/kg	20
Benzo(ghi)perylene	ND	1600	ug/kg	20
Benzo(k)fluoranthene	ND	1600	ug/kg	20
Chrysene	ND	1600	ug/kg	6.6
Dibenz(a,h)anthracene	ND	1600	ug/kg	20
Fluoranthene	ND	1600	ug/kg	20
Fluorene	ND	1600	ug/kg	20
Indeno(1,2,3-cd)pyrene	ND	1600	ug/kg	20
2-Methylnaphthalene	310 J	1600	ug/kg	20
Naphthalene	210 J	1600	ug/kg	20
Phenanthrene	120 J	1600	ug/kg	20
Pyrene	ND	1600	ug/kg	20

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	44 DIL	(24 - 112)
2-Fluorobiphenyl	61 DIL	(34 - 110)
Terphenyl-d14	78 DIL	(41 - 119)
Phenol-d5	52 DIL	(28 - 110)
2-Fluorophenol	64 DIL	(26 - 110)
2,4,6-Tribromophenol	68 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

GC/MS Semivolatiles

Lot-Sample #... : A0D210499-040	Work Order #... : L0AEX1A3	Matrix..... : S0
Date Sampled... : 04/20/10 11:42	Date Received... : 04/21/10	
Prep Date..... : 04/28/10	Analysis Date... : 04/30/10	
Prep Batch #... : 0118049		
Dilution Factor: 10	Initial Wgt/Vol: 30.04 g	Final Wgt/Vol...: 2 mL
% Moisture..... : 10	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	2900	ug/kg	37
Acenaphthylene	ND	2900	ug/kg	37
Anthracene	ND	2900	ug/kg	37
Benzo(a)anthracene	ND	2900	ug/kg	37
Benzo(a)pyrene	ND	2900	ug/kg	37
Benzo(b)fluoranthene	ND	2900	ug/kg	37
Benzo(ghi)perylene	ND	2900	ug/kg	37
Benzo(k)fluoranthene	ND	2900	ug/kg	37
Chrysene	ND	2900	ug/kg	12
Dibenz(a,h)anthracene	ND	2900	ug/kg	37
Fluoranthene	ND	2900	ug/kg	37
Fluorene	ND	2900	ug/kg	37
Indeno(1,2,3-cd)pyrene	ND	2900	ug/kg	37
2-Methylnaphthalene	ND	2900	ug/kg	37
Naphthalene	ND	2900	ug/kg	37
Phenanthrene	ND	2900	ug/kg	37
Pyrene	ND	2900	ug/kg	37

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	42 DIL	(24 - 112)
2-Fluorobiphenyl	59 DIL	(34 - 110)
Terphenyl-d14	76 DIL	(41 - 119)
Phenol-d5	48 DIL	(28 - 110)
2-Fluorophenol	60 DIL	(26 - 110)
2,4,6-Tribromophenol	45 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

GC/MS Semivolatiles

Lot-Sample #....: A0D210499-041	Work Order #....: L0AE02A3	Matrix.....: S0
Date Sampled...: 04/20/10 11:45	Date Received...: 04/21/10	
Prep Date.....: 05/03/10	Analysis Date...: 05/05/10	
Prep Batch #....: 0123071		
Dilution Factor: 4	Initial Wgt/Vol: 30.19 g	Final Wgt/Vol...: 2 mL
% Moisture.....: 7.2	Method.....: SW846 8270C	

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Acenaphthene	ND	1100	ug/kg	14
Acenaphthylene	ND	1100	ug/kg	14
Anthracene	ND	1100	ug/kg	14
Benzo(a)anthracene	ND	1100	ug/kg	14
Benzo(b)fluoranthene	ND	1100	ug/kg	14
Benzo(k)fluoranthene	ND	1100	ug/kg	14
Benzo(ghi)perylene	ND	1100	ug/kg	14
Benzo(a)pyrene	ND	1100	ug/kg	14
Chrysene	ND	1100	ug/kg	4.7
Dibenz(a,h)anthracene	ND	1100	ug/kg	14
Fluoranthene	ND	1100	ug/kg	14
Fluorene	ND	1100	ug/kg	14
Indeno(1,2,3-cd)pyrene	ND	1100	ug/kg	14
2-Methylnaphthalene	ND	1100	ug/kg	14
Naphthalene	ND	1100	ug/kg	14
Phenanthrene	ND	1100	ug/kg	14
Pyrene	ND	1100	ug/kg	14

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	44 DIL	(24 - 112)
2-Fluorobiphenyl	53 DIL	(34 - 110)
Terphenyl-d14	65 DIL	(41 - 119)
Phenol-d5	19 DIL, *	(28 - 110)
2-Fluorophenol	22 DIL, *	(26 - 110)
2,4,6-Tribromophenol	47 DIL	(10 - 118)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D270000-044

Work Order #...: L0J441AA

Matrix.....: SOLID

Analysis Date...: 04/29/10

Prep Date.....: 04/27/10

Final Wgt/Vol...: 2 mL

Dilution Factor: 1

Prep Batch #...: 0117044

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	260	ug/kg	SW846 8270C
Acenaphthylene	ND	260	ug/kg	SW846 8270C
Anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	260	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	260	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	260	ug/kg	SW846 8270C
Chrysene	ND	260	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	260	ug/kg	SW846 8270C
Fluoranthene	ND	260	ug/kg	SW846 8270C
Fluorene	ND	260	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	260	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	260	ug/kg	SW846 8270C
Naphthalene	ND	260	ug/kg	SW846 8270C
Phenanthrene	ND	260	ug/kg	SW846 8270C
Pyrene	ND	260	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	78	(24 - 112)
2-Fluorobiphenyl	73	(34 - 110)
Terphenyl-d14	97	(41 - 119)
Phenol-d5	83	(28 - 110)
2-Fluorophenol	93	(26 - 110)
2,4,6-Tribromophenol	25	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D280000-049

Work Order #...: L0L691AA

Matrix.....: SOLID

Analysis Date...: 05/05/10

Prep Date.....: 04/28/10

Final Wgt/Vol...: 2 mL

Dilution Factor: 1

Prep Batch #...: 0118049

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	260	ug/kg	SW846 8270C
Acenaphthylene	ND	260	ug/kg	SW846 8270C
Anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	260	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	260	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	260	ug/kg	SW846 8270C
Chrysene	ND	260	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	260	ug/kg	SW846 8270C
Fluoranthene	ND	260	ug/kg	SW846 8270C
Fluorene	ND	260	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	260	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	260	ug/kg	SW846 8270C
Naphthalene	ND	260	ug/kg	SW846 8270C
Phenanthrene	ND	260	ug/kg	SW846 8270C
Pyrene	ND	260	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(24 - 112)
2-Fluorobiphenyl	71	(34 - 110)
Terphenyl-d14	94	(41 - 119)
Phenol-d5	77	(28 - 110)
2-Fluorophenol	84	(26 - 110)
2,4,6-Tribromophenol	31	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D290000-047

Work Order #...: L0PAC1AA

Matrix.....: SOLID

Analysis Date...: 05/03/10

Prep Date.....: 04/29/10

Final Wgt/Vol...: 2 mL

Dilution Factor: 1

Prep Batch #...: 0119047

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	260	ug/kg	SW846 8270C
Acenaphthylene	ND	260	ug/kg	SW846 8270C
Anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	260	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	260	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	260	ug/kg	SW846 8270C
Chrysene	ND	260	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	260	ug/kg	SW846 8270C
Fluoranthene	ND	260	ug/kg	SW846 8270C
Fluorene	ND	260	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	260	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	260	ug/kg	SW846 8270C
Naphthalene	79 J	260	ug/kg	SW846 8270C
Phenanthrene	ND	260	ug/kg	SW846 8270C
Pyrene	ND	260	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	51	(24 - 112)
2-Fluorobiphenyl	51	(34 - 110)
Terphenyl-d14	76	(41 - 119)
Phenol-d5	55	(28 - 110)
2-Fluorophenol	58	(26 - 110)
2,4,6-Tribromophenol	39	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0E030000-071

Work Order #...: L0WJ31AA

Matrix.....: SOLID

Analysis Date...: 05/05/10

Prep Date.....: 05/03/10

Final Wgt/Vol...: 2 mL

Dilution Factor: 1

Prep Batch #...: 0123071

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	260	ug/kg	SW846 8270C
Acenaphthylene	ND	260	ug/kg	SW846 8270C
Anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	260	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	260	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	260	ug/kg	SW846 8270C
Chrysene	ND	260	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	260	ug/kg	SW846 8270C
Fluoranthene	ND	260	ug/kg	SW846 8270C
Fluorene	ND	260	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	260	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	260	ug/kg	SW846 8270C
Naphthalene	ND	260	ug/kg	SW846 8270C
Phenanthrene	ND	260	ug/kg	SW846 8270C
Pyrene	ND	260	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	51	(24 - 112)
2-Fluorobiphenyl	58	(34 - 110)
Terphenyl-d14	80	(41 - 119)
Phenol-d5	50	(28 - 110)
2-Fluorophenol	66	(26 - 110)
2,4,6-Tribromophenol	25	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0E050000-291

Work Order #...: L02LV1AA

Matrix.....: SOLID

Analysis Date...: 05/07/10

Prep Date.....: 05/05/10

Final Wgt/Vol...: 2 mL

Dilution Factor: 1

Prep Batch #...: 0125291

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	260	ug/kg	SW846 8270C
Acenaphthylene	ND	260	ug/kg	SW846 8270C
Anthracene	ND	260	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	260	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	260	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	260	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	260	ug/kg	SW846 8270C
Chrysene	ND	260	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	260	ug/kg	SW846 8270C
Fluoranthene	ND	260	ug/kg	SW846 8270C
Fluorene	ND	260	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	260	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	260	ug/kg	SW846 8270C
Naphthalene	ND	260	ug/kg	SW846 8270C
Phenanthrene	ND	260	ug/kg	SW846 8270C
Pyrene	ND	260	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	88	(24 - 112)
2-Fluorobiphenyl	83	(34 - 110)
Terphenyl-d14	113	(41 - 119)
Phenol-d5	97	(28 - 110)
2-Fluorophenol	104	(26 - 110)
2,4,6-Tribromophenol	86	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0J441AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D270000-044
Prep Date.....: 04/27/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0117044
Dilution Factor: 1 **Final Wgt/Vol...**: 2 mL
Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acenaphthene	670	530	ug/kg	79	SW846 8270C
Acenaphthylene	670	540	ug/kg	82	SW846 8270C
Anthracene	670	550	ug/kg	83	SW846 8270C
Benzo(a)anthracene	670	560	ug/kg	84	SW846 8270C
Benzo(a)pyrene	670	480	ug/kg	72	SW846 8270C
Benzo(b)fluoranthene	670	680	ug/kg	101	SW846 8270C
Benzo(ghi)perylene	670	580	ug/kg	86	SW846 8270C
Benzo(k)fluoranthene	670	500	ug/kg	74	SW846 8270C
Chrysene	670	590	ug/kg	88	SW846 8270C
Dibenz(a,h)anthracene	670	580	ug/kg	86	SW846 8270C
Fluoranthene	670	570	ug/kg	86	SW846 8270C
Fluorene	670	560	ug/kg	84	SW846 8270C
Indeno(1,2,3-cd)pyrene	670	570	ug/kg	86	SW846 8270C
2-Methylnaphthalene	670	560	ug/kg	84	SW846 8270C
Naphthalene	670	530	ug/kg	80	SW846 8270C
Phenanthrene	670	570	ug/kg	85	SW846 8270C
Pyrene	670	550	ug/kg	83	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	77	(24 - 112)
2-Fluorobiphenyl	75	(34 - 110)
Terphenyl-d14	90	(41 - 119)
Phenol-d5	81	(28 - 110)
2-Fluorophenol	89	(26 - 110)
2,4,6-Tribromophenol	55	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #....: A0D210499 Work Order #....: L0J441AC Matrix.....: SOLID
 LCS Lot-Sample#: A0D270000-044
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #....: 0117044
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	79	(46 - 110)	SW846 8270C
Acenaphthylene	82	(47 - 110)	SW846 8270C
Anthracene	83	(56 - 111)	SW846 8270C
Benzo(a)anthracene	84	(58 - 111)	SW846 8270C
Benzo(a)pyrene	72	(44 - 115)	SW846 8270C
Benzo(b)fluoranthene	101	(43 - 124)	SW846 8270C
Benzo(ghi)perylene	86	(44 - 120)	SW846 8270C
Benzo(k)fluoranthene	74	(38 - 122)	SW846 8270C
Chrysene	88	(56 - 111)	SW846 8270C
Dibenz(a,h)anthracene	86	(45 - 122)	SW846 8270C
Fluoranthene	86	(55 - 118)	SW846 8270C
Fluorene	84	(51 - 110)	SW846 8270C
Indeno(1,2,3-cd)pyrene	86	(45 - 121)	SW846 8270C
2-Methylnaphthalene	84	(46 - 110)	SW846 8270C
Naphthalene	80	(42 - 110)	SW846 8270C
Phenanthrene	85	(54 - 110)	SW846 8270C
Pyrene	83	(58 - 113)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	77	(24 - 112)
2-Fluorobiphenyl	75	(34 - 110)
Terphenyl-d14	90	(41 - 119)
Phenol-d5	81	(28 - 110)
2-Fluorophenol	89	(26 - 110)
2,4,6-Tribromophenol	55	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0L691AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D280000-049
Prep Date.....: 04/28/10 **Analysis Date...**: 05/05/10
Prep Batch #...: 0118049
Dilution Factor: 1 **Final Wgt/Vol...**: 2 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Acenaphthene	670	390	ug/kg	59	SW846 8270C
Acenaphthylene	670	410	ug/kg	62	SW846 8270C
Anthracene	670	440	ug/kg	65	SW846 8270C
Benzo(a)anthracene	670	450	ug/kg	68	SW846 8270C
Benzo(a)pyrene	670	430	ug/kg	64	SW846 8270C
Benzo(b)fluoranthene	670	500	ug/kg	75	SW846 8270C
Benzo(ghi)perylene	670	500	ug/kg	74	SW846 8270C
Benzo(k)fluoranthene	670	480	ug/kg	73	SW846 8270C
Chrysene	670	480	ug/kg	71	SW846 8270C
Dibenz(a,h)anthracene	670	530	ug/kg	79	SW846 8270C
Fluoranthene	670	470	ug/kg	70	SW846 8270C
Fluorene	670	410	ug/kg	62	SW846 8270C
Indeno(1,2,3-cd)pyrene	670	500	ug/kg	75	SW846 8270C
2-Methylnaphthalene	670	420	ug/kg	63	SW846 8270C
Naphthalene	670	400	ug/kg	61	SW846 8270C
Phenanthrene	670	430	ug/kg	64	SW846 8270C
Pyrene	670	460	ug/kg	70	SW846 8270C

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	41	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #....: A0D210499 Work Order #....: L0L691AC Matrix.....: SOLID
 LCS Lot-Sample#: A0D280000-049
 Prep Date.....: 04/28/10 Analysis Date...: 05/05/10
 Prep Batch #....: 0118049
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	59	(46 - 110)	SW846 8270C
Acenaphthylene	62	(47 - 110)	SW846 8270C
Anthracene	65	(56 - 111)	SW846 8270C
Benzo(a)anthracene	68	(58 - 111)	SW846 8270C
Benzo(a)pyrene	64	(44 - 115)	SW846 8270C
Benzo(b)fluoranthene	75	(43 - 124)	SW846 8270C
Benzo(ghi)perylene	74	(44 - 120)	SW846 8270C
Benzo(k)fluoranthene	73	(38 - 122)	SW846 8270C
Chrysene	71	(56 - 111)	SW846 8270C
Dibenz(a,h)anthracene	79	(45 - 122)	SW846 8270C
Fluoranthene	70	(55 - 118)	SW846 8270C
Fluorene	62	(51 - 110)	SW846 8270C
Indeno(1,2,3-cd)pyrene	75	(45 - 121)	SW846 8270C
2-Methylnaphthalene	63	(46 - 110)	SW846 8270C
Naphthalene	61	(42 - 110)	SW846 8270C
Phenanthrene	64	(54 - 110)	SW846 8270C
Pyrene	70	(58 - 113)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	62	(24 - 112)
2-Fluorobiphenyl	64	(34 - 110)
Terphenyl-d14	87	(41 - 119)
Phenol-d5	66	(28 - 110)
2-Fluorophenol	71	(26 - 110)
2,4,6-Tribromophenol	41	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0PAC1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D290000-047
Prep Date.....: 04/29/10 **Analysis Date...**: 05/03/10
Prep Batch #...: 0119047
Dilution Factor: 1 **Final Wgt/Vol...**: 2 mL
Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acenaphthene	670	380	ug/kg	57	SW846 8270C
Acenaphthylene	670	400	ug/kg	60	SW846 8270C
Anthracene	670	420	ug/kg	64	SW846 8270C
Benzo(a)anthracene	670	430	ug/kg	64	SW846 8270C
Benzo(a)pyrene	670	390	ug/kg	58	SW846 8270C
Benzo(b)fluoranthene	670	450	ug/kg	68	SW846 8270C
Benzo(ghi)perylene	670	440	ug/kg	66	SW846 8270C
Benzo(k)fluoranthene	670	450	ug/kg	67	SW846 8270C
Chrysene	670	430	ug/kg	65	SW846 8270C
Dibenz(a,h)anthracene	670	430	ug/kg	65	SW846 8270C
Fluoranthene	670	440	ug/kg	66	SW846 8270C
Fluorene	670	400	ug/kg	61	SW846 8270C
Indeno(1,2,3-cd)pyrene	670	440	ug/kg	66	SW846 8270C
2-Methylnaphthalene	670	400	ug/kg	61	SW846 8270C
Naphthalene	670	550	ug/kg	82	SW846 8270C
Phenanthrene	670	420	ug/kg	63	SW846 8270C
Pyrene	670	440	ug/kg	66	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	69	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	52	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #....: A0D210499 Work Order #....: L0PAC1AC Matrix.....: SOLID
 LCS Lot-Sample#: A0D290000-047
 Prep Date.....: 04/29/10 Analysis Date...: 05/03/10
 Prep Batch #....: 0119047
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	57	(46 - 110)	SW846 8270C
Acenaphthylene	60	(47 - 110)	SW846 8270C
Anthracene	64	(56 - 111)	SW846 8270C
Benzo(a)anthracene	64	(58 - 111)	SW846 8270C
Benzo(a)pyrene	58	(44 - 115)	SW846 8270C
Benzo(b)fluoranthene	68	(43 - 124)	SW846 8270C
Benzo(ghi)perylene	66	(44 - 120)	SW846 8270C
Benzo(k)fluoranthene	67	(38 - 122)	SW846 8270C
Chrysene	65	(56 - 111)	SW846 8270C
Dibenz(a,h)anthracene	65	(45 - 122)	SW846 8270C
Fluoranthene	66	(55 - 118)	SW846 8270C
Fluorene	61	(51 - 110)	SW846 8270C
Indeno(1,2,3-cd)pyrene	66	(45 - 121)	SW846 8270C
2-Methylnaphthalene	61	(46 - 110)	SW846 8270C
Naphthalene	82	(42 - 110)	SW846 8270C
Phenanthrene	63	(54 - 110)	SW846 8270C
Pyrene	66	(58 - 113)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(24 - 112)
2-Fluorobiphenyl	56	(34 - 110)
Terphenyl-d14	69	(41 - 119)
Phenol-d5	62	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	52	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #....: A0D210499 Work Order #....: L0WJ31AC Matrix.....: SOLID
 LCS Lot-Sample#: A0E030000-071
 Prep Date.....: 05/03/10 Analysis Date...: 05/05/10
 Prep Batch #....: 0123071
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acenaphthene	670	370	ug/kg	55	SW846 8270C
Acenaphthylene	670	390	ug/kg	58	SW846 8270C
Anthracene	670	400	ug/kg	60	SW846 8270C
Benzo(a)anthracene	670	420	ug/kg	63	SW846 8270C
Benzo(b)fluoranthene	670	490	ug/kg	74	SW846 8270C
Benzo(k)fluoranthene	670	400	ug/kg	60	SW846 8270C
Benzo(ghi)perylene	670	430	ug/kg	65	SW846 8270C
Benzo(a)pyrene	670	360	ug/kg	55	SW846 8270C
Chrysene	670	390	ug/kg	59	SW846 8270C
Dibenz(a,h)anthracene	670	430	ug/kg	64	SW846 8270C
Fluoranthene	670	420	ug/kg	63	SW846 8270C
Fluorene	670	400	ug/kg	60	SW846 8270C
Indeno(1,2,3-cd)pyrene	670	420	ug/kg	63	SW846 8270C
2-Methylnaphthalene	670	400	ug/kg	61	SW846 8270C
Naphthalene	670	370	ug/kg	56	SW846 8270C
Phenanthrene	670	390	ug/kg	59	SW846 8270C
Pyrene	670	400	ug/kg	60	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	57	(34 - 110)
Terphenyl-d14	71	(41 - 119)
Phenol-d5	57	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0WJ31AC Matrix.....: SOLID
 LCS Lot-Sample#: A0E030000-071
 Prep Date.....: 05/03/10 Analysis Date...: 05/05/10
 Prep Batch #...: 0123071
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	55	(46 - 110)	SW846 8270C
Acenaphthylene	58	(47 - 110)	SW846 8270C
Anthracene	60	(56 - 111)	SW846 8270C
Benzo(a)anthracene	63	(58 - 111)	SW846 8270C
Benzo(b)fluoranthene	74	(43 - 124)	SW846 8270C
Benzo(k)fluoranthene	60	(38 - 122)	SW846 8270C
Benzo(ghi)perylene	65	(44 - 120)	SW846 8270C
Benzo(a)pyrene	55	(44 - 115)	SW846 8270C
Chrysene	59	(56 - 111)	SW846 8270C
Dibenz(a,h)anthracene	64	(45 - 122)	SW846 8270C
Fluoranthene	63	(55 - 118)	SW846 8270C
Fluorene	60	(51 - 110)	SW846 8270C
Indeno(1,2,3-cd)pyrene	63	(45 - 121)	SW846 8270C
2-Methylnaphthalene	61	(46 - 110)	SW846 8270C
Naphthalene	56	(42 - 110)	SW846 8270C
Phenanthrene	59	(54 - 110)	SW846 8270C
Pyrene	60	(58 - 113)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	58	(24 - 112)
2-Fluorobiphenyl	57	(34 - 110)
Terphenyl-d14	71	(41 - 119)
Phenol-d5	57	(28 - 110)
2-Fluorophenol	63	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #....: A0D210499 Work Order #....: L02LV1AC Matrix.....: SOLID
 LCS Lot-Sample#: A0E050000-291
 Prep Date.....: 05/05/10 Analysis Date...: 05/06/10
 Prep Batch #....: 0125291
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Acenaphthene	670	640	ug/kg	96	SW846 8270C
Acenaphthylene	670	640	ug/kg	96	SW846 8270C
Anthracene	670	670	ug/kg	101	SW846 8270C
Benzo(a)anthracene	670	680	ug/kg	102	SW846 8270C
Benzo(b)fluoranthene	670	810	ug/kg	122	SW846 8270C
Benzo(k)fluoranthene	670	650	ug/kg	97	SW846 8270C
Benzo(ghi)perylene	670	710	ug/kg	106	SW846 8270C
Benzo(a)pyrene	670	600	ug/kg	90	SW846 8270C
Chrysene	670	680	ug/kg	102	SW846 8270C
Dibenz(a,h)anthracene	670	700	ug/kg	105	SW846 8270C
Fluoranthene	670	700	ug/kg	105	SW846 8270C
Fluorene	670	660	ug/kg	99	SW846 8270C
Indeno(1,2,3-cd)pyrene	670	720	ug/kg	108	SW846 8270C
2-Methylnaphthalene	670	670	ug/kg	101	SW846 8270C
Naphthalene	670	640	ug/kg	96	SW846 8270C
Phenanthrene	670	670	ug/kg	100	SW846 8270C
Pyrene	670	660	ug/kg	98	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	86	(24 - 112)
2-Fluorobiphenyl	83	(34 - 110)
Terphenyl-d14	104	(41 - 119)
Phenol-d5	91	(28 - 110)
2-Fluorophenol	96	(26 - 110)
2,4,6-Tribromophenol	87	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L02LV1AC Matrix.....: SOLID
 LCS Lot-Sample#: A0E050000-291
 Prep Date.....: 05/05/10 Analysis Date...: 05/06/10
 Prep Batch #...: 0125291
 Dilution Factor: 1 Final Wgt/Vol...: 2 mL
 Initial Wgt/Vol: 30 g

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	96	(46 - 110)	SW846 8270C
Acenaphthylene	96	(47 - 110)	SW846 8270C
Anthracene	101	(56 - 111)	SW846 8270C
Benzo(a)anthracene	102	(58 - 111)	SW846 8270C
Benzo(b)fluoranthene	122	(43 - 124)	SW846 8270C
Benzo(k)fluoranthene	97	(38 - 122)	SW846 8270C
Benzo(ghi)perylene	106	(44 - 120)	SW846 8270C
Benzo(a)pyrene	90	(44 - 115)	SW846 8270C
Chrysene	102	(56 - 111)	SW846 8270C
Dibenz(a,h)anthracene	105	(45 - 122)	SW846 8270C
Fluoranthene	105	(55 - 118)	SW846 8270C
Fluorene	99	(51 - 110)	SW846 8270C
Indeno(1,2,3-cd)pyrene	108	(45 - 121)	SW846 8270C
2-Methylnaphthalene	101	(46 - 110)	SW846 8270C
Naphthalene	96	(42 - 110)	SW846 8270C
Phenanthrene	100	(54 - 110)	SW846 8270C
Pyrene	98	(58 - 113)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	86	(24 - 112)
2-Fluorobiphenyl	83	(34 - 110)
Terphenyl-d14	104	(41 - 119)
Phenol-d5	91	(28 - 110)
2-Fluorophenol	96	(26 - 110)
2,4,6-Tribromophenol	87	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0ACP1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-001 L0ACP1D0-MSD
 Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10
 Prep Date.....: 04/27/10 Analysis Date...: 04/30/10
 Prep Batch #...: 0117044
 Dilution Factor: 20 Initial Wgt/Vol: 30 g Final Wgt/Vol...: 2 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	ND	690	610	ug/kg	89 DIL		SW846 8270C
	ND	680	580	ug/kg	85 DIL	5.7	SW846 8270C
Acenaphthylene	ND	690	620	ug/kg	90 DIL		SW846 8270C
	ND	680	550	ug/kg	81 DIL	11	SW846 8270C
Anthracene	ND	690	560	ug/kg	82 DIL		SW846 8270C
	ND	680	560	ug/kg	81 DIL	0.78	SW846 8270C
Benzo(a)anthracene	ND	690	580	ug/kg	85 DIL		SW846 8270C
	ND	680	540	ug/kg	80 DIL	6.4	SW846 8270C
Benzo(a)pyrene	ND	690	530	ug/kg	77 DIL		SW846 8270C
	ND	680	480	ug/kg	71 DIL	9.2	SW846 8270C
Benzo(b)fluoranthene	ND	690	590	ug/kg	85 DIL		SW846 8270C
	ND	680	530	ug/kg	78 DIL	9.9	SW846 8270C
Benzo(ghi)perylene	ND	690	650	ug/kg	95 DIL		SW846 8270C
	ND	680	580	ug/kg	85 DIL	11	SW846 8270C
Benzo(k)fluoranthene	ND	690	600	ug/kg	87 DIL		SW846 8270C
	ND	680	570	ug/kg	83 DIL	4.7	SW846 8270C
Chrysene	ND	690	690	ug/kg	101		SW846 8270C
	Qualifiers: DIL						
	ND	680	620	ug/kg	91 DIL	10	SW846 8270C
Dibenz(a,h)anthracene	ND	690	560	ug/kg	82 DIL		SW846 8270C
	ND	680	530	ug/kg	78 DIL	5.5	SW846 8270C
Fluoranthene	ND	690	700	ug/kg	102		SW846 8270C
	Qualifiers: DIL						
	ND	680	630	ug/kg	92 DIL	10	SW846 8270C
Fluorene	ND	690	610	ug/kg	88 DIL		SW846 8270C
	ND	680	570	ug/kg	84 DIL	5.8	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	690	600	ug/kg	87 DIL		SW846 8270C
	ND	680	560	ug/kg	82 DIL	6.5	SW846 8270C
2-Methylnaphthalene	ND	690	600	ug/kg	88 DIL		SW846 8270C
	ND	680	550	ug/kg	81 DIL	8.9	SW846 8270C
Naphthalene	ND	690	600	ug/kg	88 DIL		SW846 8270C
	ND	680	570	ug/kg	83 DIL	6.6	SW846 8270C
Phenanthrene	ND	690	660	ug/kg	97 DIL		SW846 8270C
	ND	680	600	ug/kg	88 DIL	10	SW846 8270C
Pyrene	ND	690	660	ug/kg	96 DIL		SW846 8270C
	ND	680	560	ug/kg	82 DIL	16	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MS Lot-Sample #: A0D210499-001

Work Order #...: L0ACP1DX-MS
L0ACP1D0-MSD

Matrix.....: S0

<u>SURROGATE</u>	PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>
Nitrobenzene-d5	83 DIL	(24 - 112)
	63 DIL	(24 - 112)
2-Fluorobiphenyl	92 DIL	(34 - 110)
	76 DIL	(34 - 110)
Terphenyl-d14	93 DIL	(41 - 119)
	82 DIL	(41 - 119)
Phenol-d5	90 DIL	(28 - 110)
	88 DIL	(28 - 110)
2-Fluorophenol	84 DIL	(26 - 110)
	72 DIL	(26 - 110)
2,4,6-Tribromophenol	0.0	(10 - 118)
	Qualifiers: DIL, *	
	0.0	(10 - 118)
	Qualifiers: DIL, *	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0ACP1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-001 L0ACP1D0-MSD
 Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10
 Prep Date.....: 04/27/10 Analysis Date...: 04/30/10
 Prep Batch #...: 0117044
 Dilution Factor: 20 Initial Wgt/Vol: 30 g Final Wgt/Vol...: 2 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	89 DIL	(10 - 200)			SW846 8270C
	85 DIL	(10 - 200)	5.7	(0-30)	SW846 8270C
Acenaphthylene	90 DIL	(10 - 200)			SW846 8270C
	81 DIL	(10 - 200)	11	(0-30)	SW846 8270C
Anthracene	82 DIL	(10 - 200)			SW846 8270C
	81 DIL	(10 - 200)	0.78	(0-30)	SW846 8270C
Benzo(a)anthracene	85 DIL	(10 - 200)			SW846 8270C
	80 DIL	(10 - 200)	6.4	(0-30)	SW846 8270C
Benzo(a)pyrene	77 DIL	(10 - 200)			SW846 8270C
	71 DIL	(10 - 200)	9.2	(0-30)	SW846 8270C
Benzo(b)fluoranthene	85 DIL	(10 - 200)			SW846 8270C
	78 DIL	(10 - 200)	9.9	(0-30)	SW846 8270C
Benzo(ghi)perylene	95 DIL	(10 - 200)			SW846 8270C
	85 DIL	(10 - 200)	11	(0-30)	SW846 8270C
Benzo(k)fluoranthene	87 DIL	(10 - 200)			SW846 8270C
	83 DIL	(10 - 200)	4.7	(0-30)	SW846 8270C
Chrysene	101 DIL	(10 - 200)			SW846 8270C
	91 DIL	(10 - 200)	10	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	82 DIL	(10 - 200)			SW846 8270C
	78 DIL	(10 - 200)	5.5	(0-30)	SW846 8270C
Fluoranthene	102 DIL	(10 - 200)			SW846 8270C
	92 DIL	(10 - 200)	10	(0-30)	SW846 8270C
Fluorene	88 DIL	(10 - 187)			SW846 8270C
	84 DIL	(10 - 187)	5.8	(0-30)	SW846 8270C
Indeno(1,2,3-cd)pyrene	87 DIL	(10 - 200)			SW846 8270C
	82 DIL	(10 - 200)	6.5	(0-30)	SW846 8270C
2-Methylnaphthalene	88 DIL	(10 - 200)			SW846 8270C
	81 DIL	(10 - 200)	8.9	(0-30)	SW846 8270C
Naphthalene	88 DIL	(10 - 200)			SW846 8270C
	83 DIL	(10 - 200)	6.6	(0-30)	SW846 8270C
Phenanthrene	97 DIL	(10 - 200)			SW846 8270C
	88 DIL	(10 - 200)	10	(0-30)	SW846 8270C
Pyrene	96 DIL	(10 - 200)			SW846 8270C
	82 DIL	(10 - 200)	16	(0-30)	SW846 8270C
<u>SURROGATE</u>		PERCENT RECOVERY		RECOVERY LIMITS	
Nitrobenzene-d5		83 DIL		(24 - 112)	
		63 DIL		(24 - 112)	

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MS Lot-Sample #: A0D210499-001

Work Order #...: L0ACP1DX-MS
L0ACP1D0-MSD

Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorobiphenyl	92 DIL	(34 - 110)
	76 DIL	(34 - 110)
Terphenyl-d14	93 DIL	(41 - 119)
	82 DIL	(41 - 119)
Phenol-d5	90 DIL	(28 - 110)
	88 DIL	(28 - 110)
2-Fluorophenol	84 DIL	(26 - 110)
	72 DIL	(26 - 110)
2,4,6-Tribromophenol	0.0	(10 - 118)
	Qualifiers: DIL, *	
	0.0	(10 - 118)
	Qualifiers: DIL, *	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEG1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-033 L0AEG1D0-MSD
 Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10
 Prep Date.....: 04/28/10 Analysis Date...: 04/30/10
 Prep Batch #...: 0118049
 Dilution Factor: 40 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 2 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	1600	750	1700	ug/kg	17 DIL		SW846 8270C
	1600	750	2000	ug/kg	48 DIL 12		SW846 8270C
Acenaphthylene	840	750	1000	ug/kg	27 DIL		SW846 8270C
	840	750	880	ug/kg	5.2	17	SW846 8270C
	Qualifiers: DIL,a						
Anthracene	5600	750	4600	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	5600	750	4900	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Benzo(a)anthracene	23000	750	18000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	23000	750	19000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Benzo(a)pyrene	23000	750	17000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	23000	750	17000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Benzo(b)fluoranthene	34000	750	24000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	34000	750	24000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Benzo(ghi)perylene	16000	750	13000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	16000	750	12000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Benzo(k)fluoranthene	11000	750	8800	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	11000	750	9600	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Chrysene	25000	750	19000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	25000	750	19000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Dibenz(a,h)anthracene	5200	750	4200	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	5200	750	4200	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Fluoranthene	41000	750	32000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	41000	750	33000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEG1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-033 L0AEG1D0-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Fluorene	2000	750	2200	ug/kg	32 DIL		SW846 8270C
	2000	750	2600	ug/kg	82 DIL	15	SW846 8270C
Indeno(1,2,3-cd)pyrene	14000	750	10000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	14000	750	11000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
2-Methylnaphthalene	460	750	920	ug/kg	61 DIL		SW846 8270C
	460	750	1200	ug/kg	91 DIL	22	SW846 8270C
Naphthalene	810	750	1300	ug/kg	61 DIL		SW846 8270C
	810	750	1900	ug/kg	147	41	SW846 8270C
	Qualifiers: DIL,p						
Phenanthrene	22000	750	18000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	22000	750	20000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						
Pyrene	31000	750	25000	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	31000	750	25000	ug/kg	0.0	0.0	SW846 8270C
	Qualifiers: DIL,a						

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0	(24 - 112)
	Qualifiers: DIL,*	
	0.0	(24 - 112)
	Qualifiers: DIL,*	
2-Fluorobiphenyl	0.0	(34 - 110)
	Qualifiers: DIL,*	
	0.0	(34 - 110)
	Qualifiers: DIL,*	
Terphenyl-d14	0.0	(41 - 119)
	Qualifiers: DIL,*	
	0.0	(41 - 119)
	Qualifiers: DIL,*	
Phenol-d5	59 DIL	(28 - 110)
	0.0	(28 - 110)
	Qualifiers: DIL,*	
2-Fluorophenol	0.0	(26 - 110)
	Qualifiers: DIL,*	
	0.0	(26 - 110)
	Qualifiers: DIL,*	

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEG1DX-MS Matrix.....: S0
MS Lot-Sample #: A0D210499-033 L0AEG1D0-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4,6-Tribromophenol	0.0	(10 - 118)
	Qualifiers: DIL, *	
	0.0	(10 - 118)
	Qualifiers: DIL, *	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEG1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-033 L0AEG1D0-MSD
 Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10
 Prep Date.....: 04/28/10 Analysis Date...: 04/30/10
 Prep Batch #...: 0118049
 Dilution Factor: 40 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 2 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	17 DIL	(10 - 200)			SW846 8270C
	48 DIL	(10 - 200)	12	(0-30)	SW846 8270C
Acenaphthylene	27 DIL	(10 - 200)			SW846 8270C
	5.2 DIL, a	(10 - 200)	17	(0-30)	SW846 8270C
Anthracene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Benzo(a)anthracene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Benzo(a)pyrene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Benzo(b)fluoranthene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Benzo(ghi)perylene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Benzo(k)fluoranthene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Chrysene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Fluoranthene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Fluorene	32 DIL	(10 - 187)			SW846 8270C
	82 DIL	(10 - 187)	15	(0-30)	SW846 8270C
Indeno(1,2,3-cd)pyrene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
2-Methylnaphthalene	61 DIL	(10 - 200)			SW846 8270C
	91 DIL	(10 - 200)	22	(0-30)	SW846 8270C
Naphthalene	61 DIL	(10 - 200)			SW846 8270C
	147 DIL, p	(10 - 200)	41	(0-30)	SW846 8270C
Phenanthrene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C
Pyrene	0.0 DIL, a	(10 - 200)			SW846 8270C
	0.0 DIL, a	(10 - 200)	0.0	(0-30)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0	(24 - 112)
	Qualifiers: DIL, *	
	0.0	(24 - 112)
	Qualifiers: DIL, *	

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEG1DX-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-033 L0AEG1D0-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorobiphenyl	0.0 Qualifiers: DIL, *	(34 - 110)
	0.0 Qualifiers: DIL, *	(34 - 110)
Terphenyl-d14	0.0 Qualifiers: DIL, *	(41 - 119)
	0.0 Qualifiers: DIL, *	(41 - 119)
Phenol-d5	59 DIL 0.0 Qualifiers: DIL, *	(28 - 110) (28 - 110)
2-Fluorophenol	0.0 Qualifiers: DIL, *	(26 - 110)
	0.0 Qualifiers: DIL, *	(26 - 110)
2,4,6-Tribromophenol	0.0 Qualifiers: DIL, *	(10 - 118)
	0.0 Qualifiers: DIL, *	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0M7G1F1-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D280492-001 L0M7G1F2-MSD
Date Sampled...: 04/26/10 12:30 **Date Received...**: 04/27/10
Prep Date.....: 04/29/10 **Analysis Date...**: 05/04/10
Prep Batch #...: 0119047
Dilution Factor: 6.66 **Initial Wgt/Vol:** 30.18 g **Final Wgt/Vol...**: 2 mL
% Moisture.....: 10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	400	740	1000	ug/kg	87 DIL		SW846 8270C
	400	740	1000	ug/kg	84 DIL	2.6	SW846 8270C
Acenaphthylene	610	740	1300	ug/kg	92 DIL		SW846 8270C
	610	740	1500	ug/kg	126	18	SW846 8270C
	Qualifiers: DIL						
Anthracene	510	740	1500	ug/kg	129		SW846 8270C
	Qualifiers: DIL						
	510	740	1300	ug/kg	107	12	SW846 8270C
	Qualifiers: DIL						
Benzo(a)anthracene	2700	740	3500	ug/kg	113		SW846 8270C
	Qualifiers: DIL						
	2700	740	3800	ug/kg	156	8.7	SW846 8270C
	Qualifiers: DIL						
Benzo(a)pyrene	3200	740	4100	ug/kg	119		SW846 8270C
	Qualifiers: DIL						
	3200	740	4700	ug/kg	202	14	SW846 8270C
	Qualifiers: DIL, a						
Benzo(b)fluoranthene	4700	740	5900	ug/kg	152		SW846 8270C
	Qualifiers: DIL						
	4700	740	6400	ug/kg	226	8.8	SW846 8270C
	Qualifiers: DIL, a						
Benzo(ghi)perylene	3300	740	4200	ug/kg	120		SW846 8270C
	Qualifiers: DIL						
	3300	740	4500	ug/kg	155	5.9	SW846 8270C
	Qualifiers: DIL						
Benzo(k)fluoranthene	1800	740	2500	ug/kg	97 DIL		SW846 8270C
	1800	740	2800	ug/kg	131	9.3	SW846 8270C
	Qualifiers: DIL						
Chrysene	3000	740	3900	ug/kg	131		SW846 8270C
	Qualifiers: DIL						
	3000	740	4300	ug/kg	177	8.4	SW846 8270C
	Qualifiers: DIL						
Dibenz(a,h)anthracene	580	740	1200	ug/kg	89 DIL		SW846 8270C
	580	740	1300	ug/kg	93 DIL	2.7	SW846 8270C
Fluoranthene	5700	740	7600	ug/kg	262		SW846 8270C
	Qualifiers: DIL, a						
	5700	740	8000	ug/kg	312	4.8	SW846 8270C
	Qualifiers: DIL, a						

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0M7G1F1-MS Matrix.....: SOLID
MS Lot-Sample #: A0D280492-001 L0M7G1F2-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Fluorene	260	740	870	ug/kg	83 DIL		SW846 8270C
	260	740	840	ug/kg	79 DIL	3.4	SW846 8270C
Indeno(1,2,3-cd)pyrene	2800	740	3500	ug/kg	103		SW846 8270C
	Qualifiers: DIL						
	2800	740	3800	ug/kg	138	7.0	SW846 8270C
	Qualifiers: DIL						
2-Methylnaphthalene	790	740	1300	ug/kg	71 DIL		SW846 8270C
	790	740	1200	ug/kg	60 DIL	6.5	SW846 8270C
Naphthalene	4300	740	4100	ug/kg	0.0		SW846 8270C
	Qualifiers: DIL,a						
	4300	740	5500	ug/kg	173	0.0	SW846 8270C
	Qualifiers: DIL						
Phenanthrene	2400	740	3400	ug/kg	137		SW846 8270C
	Qualifiers: DIL						
	2400	740	3400	ug/kg	141	0.89	SW846 8270C
	Qualifiers: DIL						
Pyrene	4900	740	6400	ug/kg	205		SW846 8270C
	Qualifiers: DIL,a						
	4900	740	6900	ug/kg	274	7.6	SW846 8270C
	Qualifiers: DIL,a						

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61 DIL	(24 - 112)
	51 DIL	(24 - 112)
2-Fluorobiphenyl	66 DIL	(34 - 110)
	60 DIL	(34 - 110)
Terphenyl-d14	84 DIL	(41 - 119)
	80 DIL	(41 - 119)
Phenol-d5	72 DIL	(28 - 110)
	58 DIL	(28 - 110)
2-Fluorophenol	65 DIL	(26 - 110)
	50 DIL	(26 - 110)
2,4,6-Tribromophenol	54 DIL	(10 - 118)
	53 DIL	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

a. Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0M7G1F1-MS Matrix.....: SOLID
 MS Lot-Sample #: A0D280492-001 L0M7G1F2-MSD
 Date Sampled...: 04/26/10 12:30 Date Received...: 04/27/10
 Prep Date.....: 04/29/10 Analysis Date...: 05/04/10
 Prep Batch #...: 0119047
 Dilution Factor: 6.66 Initial Wgt/Vol: 30.18 g Final Wgt/Vol...: 2 mL
 % Moisture.....: 10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	87 DIL	(10 - 200)			SW846 8270C
	84 DIL	(10 - 200)	2.6	(0-30)	SW846 8270C
Acenaphthylene	92 DIL	(10 - 200)			SW846 8270C
	126 DIL	(10 - 200)	18	(0-30)	SW846 8270C
Anthracene	129 DIL	(10 - 200)			SW846 8270C
	107 DIL	(10 - 200)	12	(0-30)	SW846 8270C
Benzo(a)anthracene	113 DIL	(10 - 200)			SW846 8270C
	156 DIL	(10 - 200)	8.7	(0-30)	SW846 8270C
Benzo(a)pyrene	119 DIL	(10 - 200)			SW846 8270C
	202 DIL, a	(10 - 200)	14	(0-30)	SW846 8270C
Benzo(b)fluoranthene	152 DIL	(10 - 200)			SW846 8270C
	226 DIL, a	(10 - 200)	8.8	(0-30)	SW846 8270C
Benzo(ghi)perylene	120 DIL	(10 - 200)			SW846 8270C
	155 DIL	(10 - 200)	5.9	(0-30)	SW846 8270C
Benzo(k)fluoranthene	97 DIL	(10 - 200)			SW846 8270C
	131 DIL	(10 - 200)	9.3	(0-30)	SW846 8270C
Chrysene	131 DIL	(10 - 200)			SW846 8270C
	177 DIL	(10 - 200)	8.4	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	89 DIL	(10 - 200)			SW846 8270C
	93 DIL	(10 - 200)	2.7	(0-30)	SW846 8270C
Fluoranthene	262 DIL, a	(10 - 200)			SW846 8270C
	312 DIL, a	(10 - 200)	4.8	(0-30)	SW846 8270C
Fluorene	83 DIL	(10 - 187)			SW846 8270C
	79 DIL	(10 - 187)	3.4	(0-30)	SW846 8270C
Indeno(1,2,3-cd)pyrene	103 DIL	(10 - 200)			SW846 8270C
	138 DIL	(10 - 200)	7.0	(0-30)	SW846 8270C
2-Methylnaphthalene	71 DIL	(10 - 200)			SW846 8270C
	60 DIL	(10 - 200)	6.5	(0-30)	SW846 8270C
Naphthalene	0.0 DIL, a	(10 - 200)			SW846 8270C
	173 DIL	(10 - 200)	0.0	(0-30)	SW846 8270C
Phenanthrene	137 DIL	(10 - 200)			SW846 8270C
	141 DIL	(10 - 200)	0.89	(0-30)	SW846 8270C
Pyrene	205 DIL, a	(10 - 200)			SW846 8270C
	274 DIL, a	(10 - 200)	7.6	(0-30)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	61 DIL	(24 - 112)
	51 DIL	(24 - 112)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0M7G1F1-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D280492-001 L0M7G1F2-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorobiphenyl	66 DIL	(34 - 110)
	60 DIL	(34 - 110)
Terphenyl-d14	84 DIL	(41 - 119)
	80 DIL	(41 - 119)
Phenol-d5	72 DIL	(28 - 110)
	58 DIL	(28 - 110)
2-Fluorophenol	65 DIL	(26 - 110)
	50 DIL	(26 - 110)
2,4,6-Tribromophenol	54 DIL	(10 - 118)
	53 DIL	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

a. Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0R821AL-MS Matrix.....: SOLID
 MS Lot-Sample #: A0D300489-001 L0R821AM-MSD
 Date Sampled...: 04/28/10 15:10 Date Received...: 04/30/10
 Prep Date.....: 05/03/10 Analysis Date...: 05/05/10
 Prep Batch #...: 0123071
 Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol...: 2 mL
 % Moisture.....: 22

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	ND	850	470	ug/kg	56		SW846 8270C
	ND	850	520	ug/kg	61	9.2	SW846 8270C
Acenaphthylene	ND	850	500	ug/kg	59		SW846 8270C
	ND	850	550	ug/kg	65	10	SW846 8270C
Anthracene	ND	850	530	ug/kg	62		SW846 8270C
	ND	850	600	ug/kg	70	12	SW846 8270C
Benzo(a)anthracene	ND	850	560	ug/kg	67		SW846 8270C
	ND	850	590	ug/kg	69	4.2	SW846 8270C
Benzo(b)fluoranthene	ND	850	610	ug/kg	72		SW846 8270C
	ND	850	730	ug/kg	86	18	SW846 8270C
Benzo(k)fluoranthene	ND	850	510	ug/kg	60		SW846 8270C
	ND	850	590	ug/kg	69	13	SW846 8270C
Benzo(ghi)perylene	ND	850	540	ug/kg	63		SW846 8270C
	ND	850	610	ug/kg	72	13	SW846 8270C
Benzo(a)pyrene	ND	850	450	ug/kg	54		SW846 8270C
	ND	850	530	ug/kg	62	14	SW846 8270C
Chrysene	ND	850	510	ug/kg	60		SW846 8270C
	ND	850	600	ug/kg	71	17	SW846 8270C
Dibenz(a,h)anthracene	ND	850	530	ug/kg	63		SW846 8270C
	ND	850	610	ug/kg	72	14	SW846 8270C
Fluoranthene	ND	850	540	ug/kg	64		SW846 8270C
	ND	850	640	ug/kg	75	17	SW846 8270C
Fluorene	ND	850	500	ug/kg	59		SW846 8270C
	ND	850	570	ug/kg	67	12	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	850	530	ug/kg	63		SW846 8270C
	ND	850	610	ug/kg	71	13	SW846 8270C
2-Methylnaphthalene	ND	850	530	ug/kg	63		SW846 8270C
	ND	850	550	ug/kg	65	3.3	SW846 8270C
Naphthalene	ND	850	500	ug/kg	60		SW846 8270C
	ND	850	520	ug/kg	61	3.0	SW846 8270C
Phenanthrene	ND	850	510	ug/kg	60		SW846 8270C
	ND	850	580	ug/kg	68	13	SW846 8270C
Pyrene	ND	850	500	ug/kg	59		SW846 8270C
	ND	850	560	ug/kg	66	11	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(24 - 112)
	51	(24 - 112)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0R821AL-MS Matrix.....: SOLID
MS Lot-Sample #: A0D300489-001 L0R821AM-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorobiphenyl	58	(34 - 110)
	64	(34 - 110)
Terphenyl-d14	71	(41 - 119)
	79	(41 - 119)
Phenol-d5	53	(28 - 110)
	54	(28 - 110)
2-Fluorophenol	56	(26 - 110)
	58	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)
	42	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0R821AL-MS Matrix.....: SOLID
 MS Lot-Sample #: A0D300489-001 L0R821AM-MSD
 Date Sampled...: 04/28/10 15:10 Date Received...: 04/30/10
 Prep Date.....: 05/03/10 Analysis Date...: 05/05/10
 Prep Batch #...: 0123071
 Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol...: 2 mL
 % Moisture.....: 22

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	56	(10 - 200)			SW846 8270C
	61	(10 - 200)	9.2	(0-30)	SW846 8270C
Acenaphthylene	59	(10 - 200)			SW846 8270C
	65	(10 - 200)	10	(0-30)	SW846 8270C
Anthracene	62	(10 - 200)			SW846 8270C
	70	(10 - 200)	12	(0-30)	SW846 8270C
Benzo(a)anthracene	67	(10 - 200)			SW846 8270C
	69	(10 - 200)	4.2	(0-30)	SW846 8270C
Benzo(b)fluoranthene	72	(10 - 200)			SW846 8270C
	86	(10 - 200)	18	(0-30)	SW846 8270C
Benzo(k)fluoranthene	60	(10 - 200)			SW846 8270C
	69	(10 - 200)	13	(0-30)	SW846 8270C
Benzo(ghi)perylene	63	(10 - 200)			SW846 8270C
	72	(10 - 200)	13	(0-30)	SW846 8270C
Benzo(a)pyrene	54	(10 - 200)			SW846 8270C
	62	(10 - 200)	14	(0-30)	SW846 8270C
Chrysene	60	(10 - 200)			SW846 8270C
	71	(10 - 200)	17	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	63	(10 - 200)			SW846 8270C
	72	(10 - 200)	14	(0-30)	SW846 8270C
Fluoranthene	64	(10 - 200)			SW846 8270C
	75	(10 - 200)	17	(0-30)	SW846 8270C
Fluorene	59	(10 - 187)			SW846 8270C
	67	(10 - 187)	12	(0-30)	SW846 8270C
Indeno(1,2,3-cd)pyrene	63	(10 - 200)			SW846 8270C
	71	(10 - 200)	13	(0-30)	SW846 8270C
2-Methylnaphthalene	63	(10 - 200)			SW846 8270C
	65	(10 - 200)	3.3	(0-30)	SW846 8270C
Naphthalene	60	(10 - 200)			SW846 8270C
	61	(10 - 200)	3.0	(0-30)	SW846 8270C
Phenanthrene	60	(10 - 200)			SW846 8270C
	68	(10 - 200)	13	(0-30)	SW846 8270C
Pyrene	59	(10 - 200)			SW846 8270C
	66	(10 - 200)	11	(0-30)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(24 - 112)
	51	(24 - 112)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0R821AL-MS Matrix.....: SOLID
MS Lot-Sample #: A0D300489-001 L0R821AM-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorobiphenyl	58	(34 - 110)
	64	(34 - 110)
Terphenyl-d14	71	(41 - 119)
	79	(41 - 119)
Phenol-d5	53	(28 - 110)
	54	(28 - 110)
2-Fluorophenol	56	(26 - 110)
	58	(26 - 110)
2,4,6-Tribromophenol	37	(10 - 118)
	42	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEC1A6-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-029 L0AEC1A7-MSD
 Date Sampled...: 04/20/10 10:40 Date Received...: 04/21/10
 Prep Date.....: 05/05/10 Analysis Date...: 05/06/10
 Prep Batch #...: 0125291
 Dilution Factor: 25 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 2 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Acenaphthene	2300	720	3100	ug/kg	116		SW846 8270C
	Qualifiers: DIL						
	2300	710	3600	ug/kg	176	13	SW846 8270C
	Qualifiers: DIL						
Acenaphthylene	ND	720	710	ug/kg	99	DIL	SW846 8270C
	ND	710	680	ug/kg	96	DIL 3.4	SW846 8270C
Anthracene	5800	720	6500	ug/kg	109		SW846 8270C
	Qualifiers: DIL						
	5800	710	7700	ug/kg	273	16	SW846 8270C
	Qualifiers: DIL,a						
Benzo(a)anthracene	10000	720	14000	ug/kg	493		SW846 8270C
	Qualifiers: DIL,a						
	10000	710	15000	ug/kg	683	9.4	SW846 8270C
	Qualifiers: DIL,a						
Benzo(b)fluoranthene	12000	720	17000	ug/kg	658		SW846 8270C
	Qualifiers: DIL,a						
	12000	710	18000	ug/kg	783	5.1	SW846 8270C
	Qualifiers: DIL,a						
Benzo(k)fluoranthene	5200	720	7300	ug/kg	285		SW846 8270C
	Qualifiers: DIL,a						
	5200	710	8300	ug/kg	434	14	SW846 8270C
	Qualifiers: DIL,a						
Benzo(ghi)perylene	5800	720	8600	ug/kg	389		SW846 8270C
	Qualifiers: DIL,a						
	5800	710	9600	ug/kg	523	10	SW846 8270C
	Qualifiers: DIL,a						
Benzo(a)pyrene	9000	720	12000	ug/kg	467		SW846 8270C
	Qualifiers: DIL,a						
	9000	710	13000	ug/kg	600	7.3	SW846 8270C
	Qualifiers: DIL,a						
Chrysene	12000	720	14000	ug/kg	298		SW846 8270C
	Qualifiers: DIL,a						
	12000	710	16000	ug/kg	543	12	SW846 8270C
	Qualifiers: DIL,a						
Dibenz(a,h)anthracene	1500	720	2300	ug/kg	100		SW846 8270C
	Qualifiers: DIL						
	1500	710	3100	ug/kg	223	32	SW846 8270C
	Qualifiers: DIL,a,p						
Fluoranthene	31000	720	38000	ug/kg	1030		SW846 8270C
	Qualifiers: DIL,a						
	31000	710	41000	ug/kg	1430	7.0	SW846 8270C
	Qualifiers: DIL,a						

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEC1A6-MS Matrix.....: S0
MS Lot-Sample #: A0D210499-029 L0AEC1A7-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Fluorene	2600	720	3400	ug/kg	106		SW846 8270C
	Qualifiers: DIL						
	2600	710	3800	ug/kg	170	13	SW846 8270C
	Qualifiers: DIL						
Indeno(1,2,3-cd)pyrene	4700	720	7000	ug/kg	319		SW846 8270C
	Qualifiers: DIL,a						
	4700	710	8800	ug/kg	566	22	SW846 8270C
	Qualifiers: DIL,a						
2-Methylnaphthalene	200	720	830	ug/kg	88 DIL		SW846 8270C
	200	710	880	ug/kg	96 DIL	6.0	SW846 8270C
Naphthalene	440	720	890	ug/kg	63 DIL		SW846 8270C
	440	710	930	ug/kg	70 DIL	5.2	SW846 8270C
Phenanthrene	24000	720	28000	ug/kg	553		SW846 8270C
	Qualifiers: DIL,a						
	24000	710	31000	ug/kg	928	9.1	SW846 8270C
	Qualifiers: DIL,a						
Pyrene	22000	720	26000	ug/kg	596		SW846 8270C
	Qualifiers: DIL,a						
	22000	710	30000	ug/kg	1170	14	SW846 8270C
	Qualifiers: DIL,a						

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76 DIL	(24 - 112)
	72 DIL	(24 - 112)
2-Fluorobiphenyl	79 DIL	(34 - 110)
	83 DIL	(34 - 110)
Terphenyl-d14	109 DIL	(41 - 119)
	105 DIL	(41 - 119)
Phenol-d5	69 DIL	(28 - 110)
	83 DIL	(28 - 110)
2-Fluorophenol	73 DIL	(26 - 110)
	79 DIL	(26 - 110)
2,4,6-Tribromophenol	27 DIL	(10 - 118)
	29 DIL	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499 Work Order #...: L0AEC1A6-MS Matrix.....: S0
 MS Lot-Sample #: A0D210499-029 L0AEC1A7-MSD
 Date Sampled...: 04/20/10 10:40 Date Received...: 04/21/10
 Prep Date.....: 05/05/10 Analysis Date...: 05/06/10
 Prep Batch #...: 0125291
 Dilution Factor: 25 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 2 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	116 DIL	(10 - 200)			SW846 8270C
	176 DIL	(10 - 200)	13	(0-30)	SW846 8270C
Acenaphthylene	99 DIL	(10 - 200)			SW846 8270C
	96 DIL	(10 - 200)	3.4	(0-30)	SW846 8270C
Anthracene	109 DIL	(10 - 200)			SW846 8270C
	273 DIL, a	(10 - 200)	16	(0-30)	SW846 8270C
Benzo(a)anthracene	493 DIL, a	(10 - 200)			SW846 8270C
	683 DIL, a	(10 - 200)	9.4	(0-30)	SW846 8270C
Benzo(b)fluoranthene	658 DIL, a	(10 - 200)			SW846 8270C
	783 DIL, a	(10 - 200)	5.1	(0-30)	SW846 8270C
Benzo(k)fluoranthene	285 DIL, a	(10 - 200)			SW846 8270C
	434 DIL, a	(10 - 200)	14	(0-30)	SW846 8270C
Benzo(ghi)perylene	389 DIL, a	(10 - 200)			SW846 8270C
	523 DIL, a	(10 - 200)	10	(0-30)	SW846 8270C
Benzo(a)pyrene	467 DIL, a	(10 - 200)			SW846 8270C
	600 DIL, a	(10 - 200)	7.3	(0-30)	SW846 8270C
Chrysene	298 DIL, a	(10 - 200)			SW846 8270C
	543 DIL, a	(10 - 200)	12	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	100 DIL	(10 - 200)			SW846 8270C
	223	(10 - 200)	32	(0-30)	SW846 8270C
	Qualifiers: DIL, a, p				
Fluoranthene	1030	(10 - 200)			SW846 8270C
	Qualifiers: DIL, a				
	1430	(10 - 200)	7.0	(0-30)	SW846 8270C
	Qualifiers: DIL, a				
Fluorene	106 DIL	(10 - 187)			SW846 8270C
	170 DIL	(10 - 187)	13	(0-30)	SW846 8270C
Indeno(1,2,3-cd)pyrene	319 DIL, a	(10 - 200)			SW846 8270C
	566 DIL, a	(10 - 200)	22	(0-30)	SW846 8270C
2-Methylnaphthalene	88 DIL	(10 - 200)			SW846 8270C
	96 DIL	(10 - 200)	6.0	(0-30)	SW846 8270C
Naphthalene	63 DIL	(10 - 200)			SW846 8270C
	70 DIL	(10 - 200)	5.2	(0-30)	SW846 8270C
Phenanthrene	553 DIL, a	(10 - 200)			SW846 8270C
	928 DIL, a	(10 - 200)	9.1	(0-30)	SW846 8270C
Pyrene	596 DIL, a	(10 - 200)			SW846 8270C
	1170	(10 - 200)	14	(0-30)	SW846 8270C
	Qualifiers: DIL, a				

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D210499
MS Lot-Sample #: A0D210499-029

Work Order #...: L0AEC1A6-MS
L0AEC1A7-MSD

Matrix.....: S0

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Nitrobenzene-d5	76 DIL	(24 - 112)
	72 DIL	(24 - 112)
2-Fluorobiphenyl	79 DIL	(34 - 110)
	83 DIL	(34 - 110)
Terphenyl-d14	109 DIL	(41 - 119)
	105 DIL	(41 - 119)
Phenol-d5	69 DIL	(28 - 110)
	83 DIL	(28 - 110)
2-Fluorophenol	73 DIL	(26 - 110)
	79 DIL	(26 - 110)
2,4,6-Tribromophenol	27 DIL	(10 - 118)
	29 DIL	(10 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

POLYCHLORINATED BIPHENYLS DATA

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

GC Semivolatiles

Lot-Sample #....: A0D210499-001 Work Order #....: L0ACP1DP Matrix.....: S0
Date Sampled....: 04/20/10 08:05 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.14 g Final Wgt/Vol...: 10 mL
% Moisture.....: 2.7 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	16
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	17
Aroclor 1254	ND	270	ug/kg	17
Aroclor 1260	ND	270	ug/kg	17
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	76	(10 - 196)		
Decachlorobiphenyl	86	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

GC Semivolatiles

Lot-Sample #....: A0D210499-002 Work Order #....: L0AC41A4 Matrix.....: S0
Date Sampled...: 04/20/10 08:25 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.15 g Final Wgt/Vol...: 10 mL
% Moisture.....: 9.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	82	(10 - 196)		
Decachlorobiphenyl	113	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

GC Semivolatiles

Lot-Sample #....: A0D210499-003 Work Order #....: L0AC71A4 Matrix.....: S0
Date Sampled...: 04/20/10 08:35 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30 g Final Wgt/Vol...: 10 mL
% Moisture.....: 3.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	17
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	18
Aroclor 1254	ND	270	ug/kg	18
Aroclor 1260	ND	270	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	79	(10 - 196)		
Decachlorobiphenyl	84	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

GC Semivolatiles

Lot-Sample #....: A0D210499-004 Work Order #....: L0AC81A4 Matrix.....: S0
Date Sampled....: 04/20/10 08:45 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 2.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	16
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	17
Aroclor 1254	ND	270	ug/kg	17
Aroclor 1260	ND	270	ug/kg	17
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	81	(10 - 196)		
Decachlorobiphenyl	103	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

GC Semivolatiles

Lot-Sample #....: A0D210499-005 Work Order #....: L0AC91A4 Matrix.....: S0
Date Sampled....: 04/20/10 08:47 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 2.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	16
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	17
Aroclor 1254	ND	270	ug/kg	17
Aroclor 1260	ND	270	ug/kg	17
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	79	(10 - 196)		
Decachlorobiphenyl	108	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-006

GC Semivolatiles

Lot-Sample #....: A0D210499-006 Work Order #....: L0ADC1A4 Matrix.....: S0
Date Sampled...: 04/20/10 08:50 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.5 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	17
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	18
Aroclor 1254	ND	290	ug/kg	18
Aroclor 1260	ND	290	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	79	(10 - 196)		
Decachlorobiphenyl	81	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

GC Semivolatiles

Lot-Sample #....: A0D210499-007 Work Order #....: L0ADD1A4 Matrix.....: S0
Date Sampled...: 04/20/10 08:52 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
% Moisture.....: 5.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	76	(10 - 196)		
Decachlorobiphenyl	88	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-008

GC Semivolatiles

Lot-Sample #....: A0D210499-008 Work Order #....: L0ADE1A4 Matrix.....: S0
Date Sampled...: 04/20/10 08:55 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
% Moisture.....: 4.9 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	70	(10 - 196)		
Decachlorobiphenyl	85	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

GC Semivolatiles

Lot-Sample #....: A0D210499-009 Work Order #....: L0ADF1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:25 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
% Moisture.....: 4.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	71	(10 - 196)		
Decachlorobiphenyl	86	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

GC Semivolatiles

Lot-Sample #...: A0D210499-010 **Work Order #...**: L0ADH1A4 **Matrix.....**: S0
Date Sampled...: 04/20/10 09:29 **Date Received...**: 04/21/10
Prep Date.....: 04/24/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0114011
Dilution Factor: 1 **Initial Wgt/Vol:** 30.16 g **Final Wgt/Vol...**: 10 mL
% Moisture.....: 5.5 **Method.....**: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	28 J	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	79	(10 - 196)
Decachlorobiphenyl	88	(10 - 199)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

GC Semivolatiles

Lot-Sample #....: A0D210499-011 Work Order #....: L0ADK1A4 Matrix.....: S0
 Date Sampled...: 04/20/10 09:30 Date Received...: 04/21/10
 Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
 Prep Batch #....: 0114011
 Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
 % Moisture.....: 5.8 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	22 J	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	80	(10 - 196)
Decachlorobiphenyl	81	(10 - 199)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

GC Semivolatiles

Lot-Sample #....: A0D210499-012 Work Order #....: L0ADL1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:40 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/29/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.14 g Final Wgt/Vol...: 10 mL
% Moisture.....: 6.8 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	23
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	84	(10 - 196)		
Decachlorobiphenyl	88	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

GC Semivolatiles

Lot-Sample #....: A0D210499-013 Work Order #....: L0ADM1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:42 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
% Moisture.....: 4.3 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	89	(10 - 196)		
Decachlorobiphenyl	89	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

GC Semivolatiles

Lot-Sample #....: A0D210499-014 Work Order #....: L0ADN1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:45 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 6.4 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	106	(10 - 196)		
Decachlorobiphenyl	96	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

GC Semivolatiles

Lot-Sample #....: A0D210499-015 Work Order #....: L0ADP1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:55 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.13 g Final Wgt/Vol...: 10 mL
% Moisture.....: 3.3 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	17
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	18
Aroclor 1254	ND	270	ug/kg	18
Aroclor 1260	ND	270	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	78	(10 - 196)		
Decachlorobiphenyl	85	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-016

GC Semivolatiles

Lot-Sample #....: A0D210499-016 Work Order #....: L0ADQ1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:55 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.01 g Final Wgt/Vol...: 10 mL
% Moisture.....: 2.8 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	270	ug/kg	22
Aroclor 1221	ND	270	ug/kg	16
Aroclor 1232	ND	270	ug/kg	14
Aroclor 1242	ND	270	ug/kg	13
Aroclor 1248	ND	270	ug/kg	17
Aroclor 1254	ND	270	ug/kg	17
Aroclor 1260	ND	270	ug/kg	17
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	79	(10 - 196)		
Decachlorobiphenyl	88	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

GC Semivolatiles

Lot-Sample #....: A0D210499-017 Work Order #....: L0ADT1A4 Matrix.....: S0
Date Sampled...: 04/20/10 09:57 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.13 g Final Wgt/Vol...: 10 mL
% Moisture.....: 9.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	76	(10 - 196)		
Decachlorobiphenyl	83	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

GC Semivolatiles

Lot-Sample #....: A0D210499-018 Work Order #....: L0ADV1A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:00 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.2 g Final Wgt/Vol...: 10 mL
% Moisture.....: 8.1 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	17
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	18
Aroclor 1254	ND	290	ug/kg	18
Aroclor 1260	ND	290	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	84	(10 - 196)		
Decachlorobiphenyl	91	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

GC Semivolatiles

Lot-Sample #....: A0D210499-019 Work Order #....: L0ADW1A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:02 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 9.0 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	69	(10 - 196)		
Decachlorobiphenyl	86	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

GC Semivolatiles

Lot-Sample #....: A0D210499-020 Work Order #....: L0ADX1A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:05 Date Received...: 04/21/10
Prep Date.....: 04/24/10 Analysis Date...: 04/30/10
Prep Batch #....: 0114011
Dilution Factor: 1 Initial Wgt/Vol: 30.17 g Final Wgt/Vol...: 10 mL
% Moisture.....: 5.4 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	96	(10 - 196)		
Decachlorobiphenyl	89	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021

GC Semivolatiles

Lot-Sample #....: A0D210499-021 Work Order #....: L0AD01A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.08 g Final Wgt/Vol...: 10 mL
% Moisture.....: 9.7 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	68	(10 - 196)		
Decachlorobiphenyl	71	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

GC Semivolatiles

Lot-Sample #....: A0D210499-022 Work Order #....: L0AD11A4 Matrix.....: S0
Date Sampled....: 04/20/10 10:21 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.05 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	23
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	71	(10 - 196)		
Decachlorobiphenyl	77	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-023

GC Semivolatiles

Lot-Sample #....: A0D210499-023 Work Order #....: L0AD21A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:22 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 2 Initial Wgt/Vol: 30.01 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.4 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	570	ug/kg	45
Aroclor 1221	ND	570	ug/kg	35
Aroclor 1232	ND	570	ug/kg	30
Aroclor 1242	ND	570	ug/kg	28
Aroclor 1248	ND	570	ug/kg	37
Aroclor 1254	ND	570	ug/kg	37
Aroclor 1260	ND	570	ug/kg	37
SURROGATE	PERCENT		RECOVERY	
	RECOVERY		LIMITS	
Tetrachloro-m-xylene	79		(10 - 196)	
Decachlorobiphenyl	133		(10 - 199)	

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-024

GC Semivolatiles

Lot-Sample #....: A0D210499-024 Work Order #....: L0AD41A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:25 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 10 mL
% Moisture.....: 4.3 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	76	(10 - 196)		
Decachlorobiphenyl	99	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

GC Semivolatiles

Lot-Sample #....: A0D210499-025 Work Order #....: L0AD51A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:27 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.13 g Final Wgt/Vol...: 10 mL
% Moisture.....: 8.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	17
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	70	(10 - 196)		
Decachlorobiphenyl	81	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

GC Semivolatiles

Lot-Sample #....: A0D210499-026 Work Order #....: L0AD61A4 Matrix.....: S0
Date Sampled....: 04/20/10 10:30 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.13 g Final Wgt/Vol...: 10 mL
% Moisture.....: 6.1 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	71	(10 - 196)		
Decachlorobiphenyl	79	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027

GC Semivolatiles

Lot-Sample #....: A0D210499-027 Work Order #....: L0AD81A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 2 Initial Wgt/Vol: 30.18 g Final Wgt/Vol...: 10 mL
% Moisture.....: 8.9 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	580	ug/kg	46
Aroclor 1221	ND	580	ug/kg	35
Aroclor 1232	ND	580	ug/kg	31
Aroclor 1242	ND	580	ug/kg	29
Aroclor 1248	ND	580	ug/kg	37
Aroclor 1254	ND	580	ug/kg	37
Aroclor 1260	ND	580	ug/kg	37
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	96	(10 - 196)		
Decachlorobiphenyl	194	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028

GC Semivolatiles

Lot-Sample #....: A0D210499-028 Work Order #....: L0AD91A4 Matrix.....: S0
Date Sampled....: 04/20/10 10:37 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.14 g Final Wgt/Vol...: 10 mL
% Moisture.....: 9.9 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	16
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	72	(10 - 196)		
Decachlorobiphenyl	138	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

GC Semivolatiles

Lot-Sample #....: A0D210499-029 Work Order #....: L0AEC1A4 Matrix.....: S0
Date Sampled....: 04/20/10 10:40 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.0 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	23
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	71	(10 - 196)		
Decachlorobiphenyl	64	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

GC Semivolatiles

Lot-Sample #....: A0D210499-030 Work Order #....: L0AED1A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:42 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.15 g Final Wgt/Vol...: 10 mL
% Moisture.....: 21 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	330	ug/kg	26
Aroclor 1221	ND	330	ug/kg	20
Aroclor 1232	ND	330	ug/kg	18
Aroclor 1242	ND	330	ug/kg	16
Aroclor 1248	ND	330	ug/kg	21
Aroclor 1254	ND	330	ug/kg	21
Aroclor 1260	ND	330	ug/kg	21
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	82	(10 - 196)		
Decachlorobiphenyl	91	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

GC Semivolatiles

Lot-Sample #....: A0D210499-031 Work Order #....: L0AEE1A4 Matrix.....: S0
Date Sampled...: 04/20/10 10:45 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.03 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	17
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	18
Aroclor 1254	ND	290	ug/kg	18
Aroclor 1260	ND	290	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	64	(10 - 196)		
Decachlorobiphenyl	61	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

GC Semivolatiles

Lot-Sample #....: A0D210499-032 Work Order #....: L0AEF1A4 Matrix.....: S0
Date Sampled...: 04/20/10 11:15 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.03 g Final Wgt/Vol...: 10 mL
% Moisture.....: 15 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	310	ug/kg	25
Aroclor 1221	ND	310	ug/kg	19
Aroclor 1232	ND	310	ug/kg	16
Aroclor 1242	ND	310	ug/kg	15
Aroclor 1248	ND	310	ug/kg	20
Aroclor 1254	ND	310	ug/kg	20
Aroclor 1260	ND	310	ug/kg	20
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	73	(10 - 196)		
Decachlorobiphenyl	65	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033

GC Semivolatiles

Lot-Sample #....: A0D210499-033 Work Order #....: L0AEG1DP Matrix.....: S0
Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.11 g Final Wgt/Vol...: 10 mL
% Moisture.....: 11 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	300	ug/kg	24
Aroclor 1221	ND	300	ug/kg	18
Aroclor 1232	ND	300	ug/kg	16
Aroclor 1242	ND	300	ug/kg	15
Aroclor 1248	ND	300	ug/kg	19
Aroclor 1254	ND	300	ug/kg	19
Aroclor 1260	ND	300	ug/kg	19
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	70	(10 - 196)		
Decachlorobiphenyl	104	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034

GC Semivolatiles

Lot-Sample #... : A0D210499-034	Work Order #... : L0AEJ1A4	Matrix..... : S0
Date Sampled... : 04/20/10 11:20	Date Received... : 04/21/10	
Prep Date..... : 04/26/10	Analysis Date... : 04/29/10	
Prep Batch #... : 0115055		
Dilution Factor: 1	Initial Wgt/Vol: 30.07 g	Final Wgt/Vol...: 10 mL
% Moisture..... : 14	Method..... : SW846 8082	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	310	ug/kg	25
Aroclor 1221	ND	310	ug/kg	19
Aroclor 1232	ND	310	ug/kg	16
Aroclor 1242	ND	310	ug/kg	15
Aroclor 1248	ND	310	ug/kg	20
Aroclor 1254	ND	310	ug/kg	20
Aroclor 1260	40 J	310	ug/kg	20

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	80	(10 - 196)
Decachlorobiphenyl	139	(10 - 199)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

GC Semivolatiles

Lot-Sample #....: A0D210499-035 Work Order #....: L0AEM1A4 Matrix.....: S0
Date Sampled....: 04/20/10 11:22 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.1 g Final Wgt/Vol...: 10 mL
% Moisture.....: 11 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	300	ug/kg	24
Aroclor 1221	ND	300	ug/kg	18
Aroclor 1232	ND	300	ug/kg	16
Aroclor 1242	ND	300	ug/kg	15
Aroclor 1248	ND	300	ug/kg	19
Aroclor 1254	ND	300	ug/kg	19
Aroclor 1260	ND	300	ug/kg	19
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	70	(10 - 196)		
Decachlorobiphenyl	331 *	(10 - 199)		

NOTE(S):

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

GC Semivolatiles

Lot-Sample #....: A0D210499-036 Work Order #....: L0AEN1A4 Matrix.....: S0
Date Sampled....: 04/20/10 11:25 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.07 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.6 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	17
Aroclor 1232	ND	290	ug/kg	15
Aroclor 1242	ND	290	ug/kg	14
Aroclor 1248	ND	290	ug/kg	18
Aroclor 1254	ND	290	ug/kg	18
Aroclor 1260	ND	290	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	75	(10 - 196)		
Decachlorobiphenyl	64	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

GC Semivolatiles

Lot-Sample #....: A0D210499-037 Work Order #....: L0AER1A4 Matrix.....: S0
Date Sampled...: 04/20/10 11:35 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.07 g Final Wgt/Vol...: 10 mL
% Moisture.....: 6.5 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	22
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	58	(10 - 196)		
Decachlorobiphenyl	92	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

GC Semivolatiles

Lot-Sample #....: A0D210499-038 Work Order #....: L0AET1A4 Matrix.....: S0
Date Sampled....: 04/20/10 11:39 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.02 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.1 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	23
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	48	(10 - 196)		
Decachlorobiphenyl	61	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

GC Semivolatiles

Lot-Sample #....: A0D210499-039 Work Order #....: L0AEW1A4 Matrix.....: S0
Date Sampled...: 04/20/10 11:40 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115055
Dilution Factor: 1 Initial Wgt/Vol: 30.09 g Final Wgt/Vol...: 10 mL
% Moisture.....: 17 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	320	ug/kg	25
Aroclor 1221	ND	320	ug/kg	19
Aroclor 1232	ND	320	ug/kg	17
Aroclor 1242	ND	320	ug/kg	16
Aroclor 1248	ND	320	ug/kg	20
Aroclor 1254	ND	320	ug/kg	20
Aroclor 1260	ND	320	ug/kg	20
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	54	(10 - 196)		
Decachlorobiphenyl	53	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

GC Semivolatiles

Lot-Sample #....: A0D210499-040 Work Order #....: L0AEX1A4 Matrix.....: S0
Date Sampled...: 04/20/10 11:42 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115056
Dilution Factor: 1 Initial Wgt/Vol: 30.07 g Final Wgt/Vol...: 10 mL
% Moisture.....: 10 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	290	ug/kg	23
Aroclor 1221	ND	290	ug/kg	18
Aroclor 1232	ND	290	ug/kg	16
Aroclor 1242	ND	290	ug/kg	15
Aroclor 1248	ND	290	ug/kg	19
Aroclor 1254	ND	290	ug/kg	19
Aroclor 1260	ND	290	ug/kg	19
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Tetrachloro-m-xylene	50	(10 - 196)		
Decachlorobiphenyl	45	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

GC Semivolatiles

Lot-Sample #....: A0D210499-041 Work Order #....: L0AE01A4 Matrix.....: S0
Date Sampled....: 04/20/10 11:45 Date Received...: 04/21/10
Prep Date.....: 04/26/10 Analysis Date...: 04/29/10
Prep Batch #....: 0115056
Dilution Factor: 1 Initial Wgt/Vol: 30.16 g Final Wgt/Vol...: 10 mL
% Moisture.....: 7.2 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
Aroclor 1016	ND	280	ug/kg	23
Aroclor 1221	ND	280	ug/kg	17
Aroclor 1232	ND	280	ug/kg	15
Aroclor 1242	ND	280	ug/kg	14
Aroclor 1248	ND	280	ug/kg	18
Aroclor 1254	ND	280	ug/kg	18
Aroclor 1260	ND	280	ug/kg	18
SURROGATE	PERCENT RECOVERY	RECOVERY		
		LIMITS		
Tetrachloro-m-xylene	76	(10 - 196)		
Decachlorobiphenyl	68	(10 - 199)		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D240000-011

Work Order #...: L0GJN1AA

Matrix.....: SOLID

Analysis Date...: 04/29/10

Prep Date.....: 04/24/10

Final Wgt/Vol...: 10 mL

Dilution Factor: 1

Prep Batch #...: 0114011

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Aroclor 1016	ND	260	ug/kg	SW846 8082
Aroclor 1221	ND	260	ug/kg	SW846 8082
Aroclor 1232	ND	260	ug/kg	SW846 8082
Aroclor 1242	ND	260	ug/kg	SW846 8082
Aroclor 1248	ND	260	ug/kg	SW846 8082
Aroclor 1254	ND	260	ug/kg	SW846 8082
Aroclor 1260	ND	260	ug/kg	SW846 8082
SURROGATE	PERCENT		RECOVERY	
	RECOVERY		LIMITS	
Tetrachloro-m-xylene	71		(10 - 196)	
Decachlorobiphenyl	85		(10 - 199)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D250000-055

Work Order #...: L0HPH1AA

Matrix.....: SOLID

Analysis Date...: 04/29/10

Prep Date.....: 04/26/10

Final Wgt/Vol...: 10 mL

Dilution Factor: 1

Prep Batch #...: 0115055

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Aroclor 1016	ND	260	ug/kg	SW846 8082
Aroclor 1221	ND	260	ug/kg	SW846 8082
Aroclor 1232	ND	260	ug/kg	SW846 8082
Aroclor 1242	ND	260	ug/kg	SW846 8082
Aroclor 1248	ND	260	ug/kg	SW846 8082
Aroclor 1254	ND	260	ug/kg	SW846 8082
Aroclor 1260	ND	260	ug/kg	SW846 8082
SURROGATE	PERCENT	RECOVERY		
	RECOVERY	LIMITS		
Tetrachloro-m-xylene	91	(10 - 196)		
Decachlorobiphenyl	92	(10 - 199)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A0D210499
MB Lot-Sample #: A0D250000-056

Work Order #...: L0HPJ1AA

Matrix.....: SOLID

Analysis Date...: 04/29/10

Prep Date.....: 04/26/10

Final Wgt/Vol...: 10 mL

Dilution Factor: 1

Prep Batch #...: 0115056

Initial Wgt/Vol: 30 g

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Aroclor 1016	ND	260	ug/kg	SW846 8082
Aroclor 1221	ND	260	ug/kg	SW846 8082
Aroclor 1232	ND	260	ug/kg	SW846 8082
Aroclor 1242	ND	260	ug/kg	SW846 8082
Aroclor 1248	ND	260	ug/kg	SW846 8082
Aroclor 1254	ND	260	ug/kg	SW846 8082
Aroclor 1260	ND	260	ug/kg	SW846 8082
SURROGATE	PERCENT		RECOVERY	
	RECOVERY		LIMITS	
Tetrachloro-m-xylene	72		(10 - 196)	
Decachlorobiphenyl	64		(10 - 199)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0GJN1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D240000-011
Prep Date.....: 04/24/10 **Analysis Date...**: 04/30/10
Prep Batch #...: 0114011
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Aroclor 1016	330	250	ug/kg	74	SW846 8082
Aroclor 1260	330	270	ug/kg	82	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	62	(10 - 196)
Decachlorobiphenyl	87	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0GJN1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D240000-011
Prep Date.....: 04/24/10 **Analysis Date...**: 04/30/10
Prep Batch #...: 0114011
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Aroclor 1016	74	(34 - 127)	SW846 8082
Aroclor 1260	82	(32 - 141)	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	62	(10 - 196)
Decachlorobiphenyl	87	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0HPH1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D250000-055
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115055
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Aroclor 1016	330	260	ug/kg	78	SW846 8082
Aroclor 1260	330	270	ug/kg	82	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	74	(10 - 196)
Decachlorobiphenyl	79	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0HPH1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D250000-055
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115055
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Aroclor 1016	78	(34 - 127)	SW846 8082
Aroclor 1260	82	(32 - 141)	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	74	(10 - 196)
Decachlorobiphenyl	79	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0HPJ1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D250000-056
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115056
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Aroclor 1016	330	210	ug/kg	64	SW846 8082
Aroclor 1260	330	220	ug/kg	65	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	79	(10 - 196)
Decachlorobiphenyl	67	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0HPJ1AC **Matrix.....**: SOLID
LCS Lot-Sample#: A0D250000-056
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115056
Dilution Factor: 1 **Final Wgt/Vol...**: 10 mL
Initial Wgt/Vol: 30 g

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Aroclor 1016	64	(34 - 127)	SW846 8082
Aroclor 1260	65	(32 - 141)	SW846 8082

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Tetrachloro-m-xylene	79	(10 - 196)
Decachlorobiphenyl	67	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0ACP1DU-MS **Matrix.....**: S0
MS Lot-Sample #: A0D210499-001 L0ACP1DV-MSD
Date Sampled...: 04/20/10 08:05 **Date Received...**: 04/21/10
Prep Date.....: 04/24/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0114011
Dilution Factor: 1 **Initial Wgt/Vol:** 30.09 g **Final Wgt/Vol...**: 10 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	ND	340	260	ug/kg	76		SW846 8082
	ND	340	270	ug/kg	80	5.5	SW846 8082
Aroclor 1260	ND	340	270	ug/kg	78		SW846 8082
	ND	340	280	ug/kg	82	5.7	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(10 - 196)
	80	(10 - 196)
Decachlorobiphenyl	79	(10 - 199)
	88	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0ACP1DU-MS **Matrix.....**: S0
MS Lot-Sample #: A0D210499-001 L0ACP1DV-MSD
Date Sampled...: 04/20/10 08:05 **Date Received...**: 04/21/10
Prep Date.....: 04/24/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0114011
Dilution Factor: 1 **Initial Wgt/Vol:** 30.09 g **Final Wgt/Vol...**: 10 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	76	(10 - 199)			SW846 8082
	80	(10 - 199)	5.5	(0-30)	SW846 8082
Aroclor 1260	78	(10 - 199)			SW846 8082
	82	(10 - 199)	5.7	(0-30)	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(10 - 196)
	80	(10 - 196)
Decachlorobiphenyl	79	(10 - 199)
	88	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0AEG1DU-MS **Matrix.....**: S0
MS Lot-Sample #: A0D210499-033 L0AEG1DV-MSD
Date Sampled...: 04/20/10 11:17 **Date Received...**: 04/21/10
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115055
Dilution Factor: 1 **Initial Wgt/Vol:** 30.04 g **Final Wgt/Vol...**: 10 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	ND	380	250	ug/kg	66		SW846 8082
	ND	380	260	ug/kg	70	5.5	SW846 8082
Aroclor 1260	ND	380	220	ug/kg	58		SW846 8082
	ND	380	230	ug/kg	62	6.5	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	67	(10 - 196)
	69	(10 - 196)
Decachlorobiphenyl	179	(10 - 199)
	167	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: L0AEG1DU-MS **Matrix.....**: S0
MS Lot-Sample #: A0D210499-033 L0AEG1DV-MSD
Date Sampled...: 04/20/10 11:17 **Date Received...**: 04/21/10
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115055
Dilution Factor: 1 **Initial Wgt/Vol:** 30.04 g **Final Wgt/Vol...**: 10 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	66	(10 - 199)			SW846 8082
	70	(10 - 199)	5.5	(0-30)	SW846 8082
Aroclor 1260	58	(10 - 199)			SW846 8082
	62	(10 - 199)	6.5	(0-30)	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	67	(10 - 196)
	69	(10 - 196)
Decachlorobiphenyl	179	(10 - 199)
	167	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: LX9M71AE-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D210439-001 LX9M71AF-MSD
Date Sampled...: 04/16/10 10:30 **Date Received...**: 04/21/10
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115056
Dilution Factor: 10 **Initial Wgt/Vol:** 30.04 g **Final Wgt/Vol...**: 10 mL
% Moisture.....: 6.7

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	ND	360	640	ug/kg	179		SW846 8082
		Qualifiers: DIL					
	ND	360	770	ug/kg	216	19	SW846 8082
		Qualifiers: DIL, a					
Aroclor 1260	ND	360	370	ug/kg	104		SW846 8082
		Qualifiers: DIL					
	ND	360	450	ug/kg	126	19	SW846 8082
		Qualifiers: DIL					

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81 DIL	(10 - 196)
	95 DIL	(10 - 196)
Decachlorobiphenyl	85 DIL	(10 - 199)
	107 DIL	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A0D210499 **Work Order #...**: LX9M71AE-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D210439-001 LX9M71AF-MSD
Date Sampled...: 04/16/10 10:30 **Date Received...**: 04/21/10
Prep Date.....: 04/26/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0115056
Dilution Factor: 10 **Initial Wgt/Vol:** 30.04 g **Final Wgt/Vol...**: 10 mL
% Moisture.....: 6.7

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	179 DIL	(10 - 199)			SW846 8082
	216 DIL, a	(10 - 199)	19	(0-30)	SW846 8082
Aroclor 1260	104 DIL	(10 - 199)			SW846 8082
	126 DIL	(10 - 199)	19	(0-30)	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81 DIL	(10 - 196)
	95 DIL	(10 - 196)
Decachlorobiphenyl	85 DIL	(10 - 199)
	107 DIL	(10 - 199)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

METALS DATA

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

TOTAL Metals

Lot-Sample #...: A0D210499-001

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

% Moisture.....: 2.7

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.63	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1C7
		Dilution Factor: 1		Analysis Time...: 20:12	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.016		
Aluminum	2230	16.4	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AA
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 9.9		
Arsenic	1.8	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1C1
		Dilution Factor: 1		Analysis Time...: 20:12	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.064		
Barium	14.3 J	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AE
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.073		
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AH
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.044		
Calcium	46900 J	411	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AP
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 16.4		
Cadmium	0.077 B	0.082	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AL
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.037		
Cobalt	2.2	0.41	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AT
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.16		
Chromium	5.8	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CT
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Copper	10.2	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1AW
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.76		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

TOTAL Metals

Lot-Sample #...: A0D210499-001

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	4710	8.2	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1A1
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.0		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0ACP1DH
		Dilution Factor: 1		Analysis Time...: 14:06	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.015		
Potassium	418	411	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CH
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.4		
Magnesium	14600 J	82.2	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1A7
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Manganese	147	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CA
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.076		
Sodium	104	82.2	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CL
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 67.9		
Nickel	5.5	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CE
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.28		
Lead	7.0	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1A4
		Dilution Factor: 1		Analysis Time...: 22:31	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1CW
		Dilution Factor: 1		Analysis Time...: 20:12	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.025		
Selenium	0.15 B	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1C4
		Dilution Factor: 1		Analysis Time...: 20:12	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.093		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

TOTAL Metals

Lot-Sample #...: A0D210499-001

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.053 B, J	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1DA
		Dilution Factor: 1		Analysis Time..: 20:12	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.013		
Vanadium	6.8	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0ACP1CP
		Dilution Factor: 1		Analysis Time..: 22:31	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.12		
Zinc	14.8 J	0.82	mg/kg	SW846 6020	04/22-04/26/10	L0ACP1DE
		Dilution Factor: 1		Analysis Time..: 20:12	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.45		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

TOTAL Metals

Lot-Sample #... A0D210499-002

Matrix..... S0

Date Sampled... 04/20/10 08:25 **Date Received...** 04/21/10

% Moisture..... 9.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	0.054 B	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AC41AP
		Dilution Factor: 1		Analysis Time... 20:27	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	2190	17.6	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AE
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.6		
Arsenic	1.9	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AC41AM
		Dilution Factor: 1		Analysis Time... 20:27	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.068		
Barium	12.7 J	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AF
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.078		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AG
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.047		
Calcium	33800 J	440	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AJ
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.6		
Cadmium	0.055 B	0.088	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AH
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.040		
Cobalt	2.2	0.44	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AK
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	5.7	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AW
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	7.5	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AL
		Dilution Factor: 1		Analysis Time... 23:08	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.81		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

TOTAL Metals

Lot-Sample #...: A0D210499-002

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5090	8.8	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AA
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Mercury	ND	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0AC41A2
		Dilution Factor: 1		Analysis Time...: 14:19	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.017		
Potassium	285 B	440	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AT
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.8		
Magnesium	8270 J	88.1	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AD
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.6		
Manganese	145	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AQ
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.081		
Sodium	ND	88.1	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AU
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 72.7		
Nickel	5.3	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AR
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.30		
Lead	6.9	0.26	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AC
		Dilution Factor: 1		Analysis Time...: 23:08	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Antimony	ND	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AC41AX
		Dilution Factor: 1		Analysis Time...: 20:27	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.17 B	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AC41AN
		Dilution Factor: 1		Analysis Time...: 20:27	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.099		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

TOTAL Metals

Lot-Sample #...: A0D210499-002

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.062 B, J	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AC41A0
		Dilution Factor: 1		Analysis Time..: 20:27	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	8.0	0.88	mg/kg	SW846 6010B	04/22-04/26/10	L0AC41AV
		Dilution Factor: 1		Analysis Time..: 23:08	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	14.1 J	0.88	mg/kg	SW846 6020	04/22-04/26/10	L0AC41A1
		Dilution Factor: 1		Analysis Time..: 20:27	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

TOTAL Metals

Lot-Sample #...: A0D210499-003

Matrix.....: S0

Date Sampled...: 04/20/10 08:35 Date Received...: 04/21/10

% Moisture.....: 3.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.048 B	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0AC71AP
		Dilution Factor: 1		Analysis Time...: 20:32	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	2080	16.5	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AE
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 9.9		
Arsenic	2.1	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0AC71AM
		Dilution Factor: 1		Analysis Time...: 20:32	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.064		
Barium	12.9 J	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AF
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.073		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AG
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.044		
Calcium	44700 J	413	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AJ
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 16.5		
Cadmium	0.059 B	0.083	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AH
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.037		
Cobalt	2.2	0.41	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AK
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	5.5	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AW
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Copper	7.8	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AL
		Dilution Factor: 1		Analysis Time...: 23:14	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.76		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

TOTAL Metals

Lot-Sample #...: A0D210499-003

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5270	8.3	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AA
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.1		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0AC71A2
		Dilution Factor: 1		Analysis Time... 14:28	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.015		
Potassium	283 B	413	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AT
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.4		
Magnesium	13000 J	82.6	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AD
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Manganese	194	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AQ
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.076		
Sodium	75.5 B	82.6	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AU
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 68.2		
Nickel	6.1	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AR
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	6.0	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AC
		Dilution Factor: 1		Analysis Time... 23:14	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AC71AX
		Dilution Factor: 1		Analysis Time... 20:32	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.17	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AC71AN
		Dilution Factor: 1		Analysis Time... 20:32	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.093		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

TOTAL Metals

Lot-Sample #...: A0D210499-003

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.048 B, J	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0AC71A0
		Dilution Factor: 1		Analysis Time..: 20:32	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.013		
Vanadium	7.3	0.83	mg/kg	SW846 6010B	04/22-04/26/10	L0AC71AV
		Dilution Factor: 1		Analysis Time..: 23:14	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.12		
Zinc	15.2 J	0.83	mg/kg	SW846 6020	04/22-04/26/10	L0AC71A1
		Dilution Factor: 1		Analysis Time..: 20:32	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.45		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

TOTAL Metals

Lot-Sample #... A0D210499-004

Matrix..... S0

Date Sampled... 04/20/10 08:45 **Date Received...** 04/21/10

% Moisture..... 2.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	0.72	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC81AP
		Dilution Factor: 1		Analysis Time... 20:37	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.016		
Aluminum	1880	16.4	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AE
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 9.9		
Arsenic	1.5	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC81AM
		Dilution Factor: 1		Analysis Time... 20:37	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.064		
Barium	9.3 J	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AF
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.073		
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AG
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.044		
Calcium	25600 J	411	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AJ
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.4		
Cadmium	0.073 B	0.082	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AH
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.037		
Cobalt	1.8	0.41	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AK
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.16		
Chromium	5.3	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AW
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	4.7	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AL
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.76		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

TOTAL Metals

Lot-Sample #...: A0D210499-004

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	4110	8.2	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AA
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.0		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0AC81A2
		Dilution Factor: 1		Analysis Time... 14:35	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.015		
Potassium	232 B	411	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AT
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.4		
Magnesium	9640 J	82.1	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AD
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Manganese	108	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AQ
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.076		
Sodium	ND	82.1	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AU
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 67.8		
Nickel	4.0	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AR
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	6.4	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AC
		Dilution Factor: 1		Analysis Time... 23:20	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AC81AX
		Dilution Factor: 1		Analysis Time... 20:37	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.13 B	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AC81AN
		Dilution Factor: 1		Analysis Time... 20:37	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.092		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

TOTAL Metals

Lot-Sample #...: A0D210499-004

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.032 B, J	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC81A0
		Dilution Factor: 1		Analysis Time...: 20:37	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.013		
Vanadium	6.3	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC81AV
		Dilution Factor: 1		Analysis Time...: 23:20	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.12		
Zinc	13.8 J	0.82	mg/kg	SW846 6020	04/22-04/26/10	L0AC81A1
		Dilution Factor: 1		Analysis Time...: 20:37	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.45		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

TOTAL Metals

Lot-Sample #...: A0D210499-005

Matrix.....: S0

Date Sampled...: 04/20/10 08:47 Date Received...: 04/21/10

% Moisture.....: 2.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	ND	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC91AP
		Dilution Factor: 1		Analysis Time...: 20:42	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.016		
Aluminum	1780	16.4	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AE
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 9.9		
Arsenic	1.5	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC91AM
		Dilution Factor: 1		Analysis Time...: 20:42	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.064		
Barium	8.0 J	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AF
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.073		
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AG
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.044		
Calcium	24000 J	411	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AJ
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 16.4		
Cadmium	0.042 B	0.082	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AH
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.037		
Cobalt	1.8	0.41	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AK
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.16		
Chromium	4.2	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AW
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Copper	4.0	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AL
		Dilution Factor: 1		Analysis Time...: 23:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.76		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

TOTAL Metals

Lot-Sample #...: A0D210499-005

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3510	8.2	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AA
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.0		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0AC91A2
		Dilution Factor: 1		Analysis Time... 14:23	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.015		
Potassium	194 B	411	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AT
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.4		
Magnesium	8810 J	82.2	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AD
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Manganese	105	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AQ
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.076		
Sodium	ND	82.2	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AU
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 67.8		
Nickel	3.5	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AR
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	4.0	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AC
		Dilution Factor: 1		Analysis Time... 23:26	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AC91AX
		Dilution Factor: 1		Analysis Time... 20:42	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.16	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AC91AN
		Dilution Factor: 1		Analysis Time... 20:42	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.092		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

TOTAL Metals

Lot-Sample #...: A0D210499-005

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.029 B, J	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0AC91A0
		Dilution Factor: 1		Analysis Time..: 20:42	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.013		
Vanadium	6.0	0.82	mg/kg	SW846 6010B	04/22-04/26/10	L0AC91AV
		Dilution Factor: 1		Analysis Time..: 23:26	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.12		
Zinc	11.0 J	0.82	mg/kg	SW846 6020	04/22-04/26/10	L0AC91A1
		Dilution Factor: 1		Analysis Time..: 20:42	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.45		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-006

TOTAL Metals

Lot-Sample #...: A0D210499-006

Matrix.....: S0

Date Sampled...: 04/20/10 08:50 Date Received...: 04/21/10

% Moisture.....: 7.5

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.077 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1AP
		Dilution Factor: 1		Analysis Time...: 21:02	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	2810	17.3	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AE
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 10.4		
Arsenic	2.1	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1AM
		Dilution Factor: 1		Analysis Time...: 21:02	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.067		
Barium	27.7 J	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AF
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AG
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.046		
Calcium	13900 J	432	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AJ
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 17.3		
Cadmium	1.1	0.086	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AH
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.039		
Cobalt	2.4	0.43	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AK
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	13.1	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AW
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.22		
Copper	13.7	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AL
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-006

TOTAL Metals

Lot-Sample #...: A0D210499-006

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	4760	8.6	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AA
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0ADC1A2
		Dilution Factor: 1		Analysis Time... 14:17	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	153 B	432	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AT
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	2110 J	86.5	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AD
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	106	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AQ
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.080		
Sodium	ND	86.5	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AU
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 71.3		
Nickel	11.9	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AR
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	18.2	0.26	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AC
		Dilution Factor: 1		Analysis Time... 23:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	0.14 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1AX
		Dilution Factor: 1		Analysis Time... 21:02	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.16 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1AN
		Dilution Factor: 1		Analysis Time... 21:02	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-006

TOTAL Metals

Lot-Sample #...: A0D210499-006

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.052 B, J	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1A0
		Dilution Factor: 1		Analysis Time...: 21:02	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	8.2	0.86	mg/kg	SW846 6010B	04/22-04/26/10	L0ADC1AV
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	26.2 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0ADC1A1
		Dilution Factor: 1		Analysis Time...: 21:02	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.48		
Prep Batch #...: 0141025						
Trivalent Chromium	12.8	0.86	mg/kg	SW846 7196A	04/22-04/26/10	L0ADC1A7
		Dilution Factor: 1		Analysis Time...: 23:33	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

TOTAL Metals

Lot-Sample #... A0D210499-007

Matrix..... S0

Date Sampled... 04/20/10 08:52 **Date Received...** 04/21/10

% Moisture..... 5.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1AP
		Dilution Factor: 1		Analysis Time... 21:07	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	3510	17.0	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AE
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.2		
Arsenic	0.62	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1AM
		Dilution Factor: 1		Analysis Time... 21:07	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	11.6 J	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AF
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.075		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AG
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	518 J	424	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AJ
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.0		
Cadmium	ND	0.085	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AH
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	1.5	0.42	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AK
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	4.8	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AW
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	ND	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AL
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.78		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

TOTAL Metals

Lot-Sample #...: A0D210499-007

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3610	8.5	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AA
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADD1A2
		Dilution Factor: 1		Analysis Time... 14:15	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	104 B	424	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AT
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.6		
Magnesium	693 J	84.8	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AD
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Manganese	22.5	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AQ
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.078		
Sodium	ND	84.8	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AU
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 70.0		
Nickel	3.1	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AR
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	1.9	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AC
		Dilution Factor: 1		Analysis Time... 23:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1AX
		Dilution Factor: 1		Analysis Time... 21:07	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.11 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1AN
		Dilution Factor: 1		Analysis Time... 21:07	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.095		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

TOTAL Metals

Lot-Sample #...: A0D210499-007

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.033 B, J	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1A0
		Dilution Factor: 1		Analysis Time..: 21:07	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	7.1	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADD1AV
		Dilution Factor: 1		Analysis Time..: 23:39	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	6.5 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0ADD1A1
		Dilution Factor: 1		Analysis Time..: 21:07	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-008

TOTAL Metals

Lot-Sample #...: A0D210499-008

Matrix.....: SO

Date Sampled...: 04/20/10 08:55 **Date Received...:** 04/21/10

% Moisture.....: 4.9

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	ND	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1AP
		Dilution Factor: 1		Analysis Time...: 21:11	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	2310	16.8	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AE
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.1		
Arsenic	0.73	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1AM
		Dilution Factor: 1		Analysis Time...: 21:11	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.065		
Barium	10.6 J	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AF
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.075		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AG
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.045		
Calcium	311 B, J	420	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AJ
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 16.8		
Cadmium	ND	0.084	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AH
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.038		
Cobalt	1.4	0.42	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AK
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	4.4	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AW
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.21		
Copper	ND	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AL
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.78		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-008

TOTAL Metals

Lot-Sample #...: A0D210499-008

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3280	8.4	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AA
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADE1A2
		Dilution Factor: 1		Analysis Time...: 14:27	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	88.4 B	420	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AT
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.5		
Magnesium	612 J	84.1	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AD
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Manganese	20.0	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AQ
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.078		
Sodium	ND	84.1	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AU
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 69.4		
Nickel	2.7	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AR
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.28		
Lead	1.7	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AC
		Dilution Factor: 1		Analysis Time...: 23:45	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1AX
		Dilution Factor: 1		Analysis Time...: 21:11	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.025		
Selenium	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1AN
		Dilution Factor: 1		Analysis Time...: 21:11	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.095		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-008

TOTAL Metals

Lot-Sample #...: A0D210499-008

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.021 B, J	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1A0
		Dilution Factor: 1		Analysis Time..: 21:11	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	6.7	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADE1AV
		Dilution Factor: 1		Analysis Time..: 23:45	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	4.9 J	0.84	mg/kg	SW846 6020	04/22-04/26/10	L0ADE1A1
		Dilution Factor: 1		Analysis Time..: 21:11	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.46		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

TOTAL Metals

Lot-Sample #... A0D210499-009

Matrix..... S0

Date Sampled... 04/20/10 09:25 **Date Received...** 04/21/10

% Moisture..... 4.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1AP
		Dilution Factor: 1		Analysis Time... 21:16	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	994	16.8	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AE
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.1		
Arsenic	1.0	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1AM
		Dilution Factor: 1		Analysis Time... 21:16	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.065		
Barium	4.5 J	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AF
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.074		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AG
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.045		
Calcium	12300 J	419	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AJ
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.8		
Cadmium	0.078 B	0.084	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AH
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	1.1	0.42	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AK
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	3.2	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AW
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	3.2	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AL
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.78		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

TOTAL Metals

Lot-Sample #...: A0D210499-009

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	2500	8.4	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AA
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.1		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADF1A2
		Dilution Factor: 1		Analysis Time... 14:29	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	163 B	419	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AT
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.5		
Magnesium	4880 J	83.9	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AD
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Manganese	55.8	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AQ
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.078		
Sodium	545	83.9	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AU
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 69.2		
Nickel	3.5	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AR
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	2.9	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AC
		Dilution Factor: 1		Analysis Time... 23:51	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1AX
		Dilution Factor: 1		Analysis Time... 21:16	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.097 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1AN
		Dilution Factor: 1		Analysis Time... 21:16	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.094		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

TOTAL Metals

Lot-Sample #...: A0D210499-009

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.018 B, J	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1A0
		Dilution Factor: 1		Analysis Time..: 21:16	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	3.9	0.84	mg/kg	SW846 6010B	04/22-04/26/10	L0ADF1AV
		Dilution Factor: 1		Analysis Time..: 23:51	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	11.0 J	0.84	mg/kg	SW846 6020	04/22-04/26/10	L0ADF1A1
		Dilution Factor: 1		Analysis Time..: 21:16	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.46		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

TOTAL Metals

Lot-Sample #... A0D210499-010

Matrix..... S0

Date Sampled... 04/20/10 09:29 **Date Received...** 04/21/10

% Moisture..... 5.5

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	0.81	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1AP
		Dilution Factor: 1		Analysis Time... 21:21	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2050	16.9	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AE
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.2		
Arsenic	1.3	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1AM
		Dilution Factor: 1		Analysis Time... 21:21	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	10.2 J	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AF
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.075		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AG
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	8330 J	423	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AJ
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.9		
Cadmium	0.53	0.085	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AH
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	2.0	0.42	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AK
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	11.4	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AW
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	13.3	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AL
		Dilution Factor: 1		Analysis Time... 23:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.78		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

TOTAL Metals

Lot-Sample #...: A0D210499-010

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5050	8.5	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AA
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADH1A2
		Dilution Factor: 1		Analysis Time...: 14:33	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	120 B	423	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AT
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.6		
Magnesium	2100 J	84.7	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AD
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Manganese	91.8	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AQ
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.078		
Sodium	1550	84.7	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AU
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 69.8		
Nickel	16.6	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AR
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	10.5	0.25	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AC
		Dilution Factor: 1		Analysis Time...: 23:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	0.091 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1AX
		Dilution Factor: 1		Analysis Time...: 21:21	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.025		
Selenium	0.14 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1AN
		Dilution Factor: 1		Analysis Time...: 21:21	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.095		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

TOTAL Metals

Lot-Sample #...: A0D210499-010

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.033 B, J	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1A0
		Dilution Factor: 1		Analysis Time..: 21:21	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	5.0	0.85	mg/kg	SW846 6010B	04/22-04/26/10	L0ADH1AV
		Dilution Factor: 1		Analysis Time..: 23:57	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	21.0 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0ADH1A1
		Dilution Factor: 1		Analysis Time..: 21:21	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

TOTAL Metals

Lot-Sample #... A0D210499-011

Matrix..... S0

Date Sampled... 04/20/10 09:30 **Date Received...** 04/21/10

% Moisture..... 5.8

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	0.67	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1AP
		Dilution Factor: 1		Analysis Time... 21:26	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	1760	17.0	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AE
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.2		
Arsenic	1.4	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1AM
		Dilution Factor: 1		Analysis Time... 21:26	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	9.9 J	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AF
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.075		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AG
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	7450 J	425	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AJ
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.0		
Cadmium	0.41	0.085	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AH
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	1.8	0.42	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AK
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	8.6	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AW
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	7.1	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AL
		Dilution Factor: 1		Analysis Time... 00:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.79		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

TOTAL Metals

Lot-Sample #...: A0D210499-011

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5150	8.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AA
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADK1A2
		Dilution Factor: 1		Analysis Time...: 14:30	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	104 B	425	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AT
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.6		
Magnesium	1780 J	84.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AD
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Manganese	85.4	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AQ
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.079		
Sodium	1500	84.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AU
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 70.1		
Nickel	15.6	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AR
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	12.3	0.25	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AC
		Dilution Factor: 1		Analysis Time...: 00:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	0.18	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1AX
		Dilution Factor: 1		Analysis Time...: 21:26	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.025		
Selenium	0.12 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1AN
		Dilution Factor: 1		Analysis Time...: 21:26	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.096		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

TOTAL Metals

Lot-Sample #...: A0D210499-011

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.030 B, J	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1A0
		Dilution Factor: 1		Analysis Time..: 21:26	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	4.1	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADK1AV
		Dilution Factor: 1		Analysis Time..: 00:03	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	23.1 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0ADK1A1
		Dilution Factor: 1		Analysis Time..: 21:26	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

TOTAL Metals

Lot-Sample #...: A0D210499-012

Matrix.....: S0

Date Sampled...: 04/20/10 09:40 Date Received...: 04/21/10

% Moisture.....: 6.8

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.024 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1AP
		Dilution Factor: 1		Analysis Time...: 21:31	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	3910	17.2	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AE
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 10.3		
Arsenic	1.0	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1AM
		Dilution Factor: 1		Analysis Time...: 21:31	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.067		
Barium	7.3 J	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AF
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AG
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.046		
Calcium	249 B, J	429	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AJ
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 17.2		
Cadmium	0.11	0.086	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AH
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.039		
Cobalt	1.6	0.43	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AK
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	4.0	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AW
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Copper	1.1	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AL
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.79		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

TOTAL Metals

Lot-Sample #...: A0D210499-012

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3830	8.6	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AA
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0ADL1A2
		Dilution Factor: 1		Analysis Time... 14:21	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	104 B	429	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AT
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	496 J	85.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AD
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	18.6	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AQ
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.079		
Sodium	924	85.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AU
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 70.8		
Nickel	3.6	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AR
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	2.2	0.26	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AC
		Dilution Factor: 1		Analysis Time... 00:22	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1AX
		Dilution Factor: 1		Analysis Time... 21:31	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1AN
		Dilution Factor: 1		Analysis Time... 21:31	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

TOTAL Metals

Lot-Sample #...: A0D210499-012

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.031 B, J	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1A0
		Dilution Factor: 1		Analysis Time...: 21:31	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	6.7	0.86	mg/kg	SW846 6010B	04/22-04/27/10	L0ADL1AV
		Dilution Factor: 1		Analysis Time...: 00:22	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	6.4 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0ADL1A1
		Dilution Factor: 1		Analysis Time...: 21:31	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

TOTAL Metals

Lot-Sample #... A0D210499-013

Matrix..... S0

Date Sampled... 04/20/10 09:42 **Date Received...** 04/21/10

% Moisture..... 4.3

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1AP
		Dilution Factor: 1		Analysis Time... 21:35	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2540	16.7	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AE
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.0		
Arsenic	1.2	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1AM
		Dilution Factor: 1		Analysis Time... 21:35	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.065		
Barium	7.2 J	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AF
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.074		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AG
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.045		
Calcium	300 B, J	418	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AJ
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.7		
Cadmium	0.055 B	0.084	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AH
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	1.7	0.42	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AK
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	4.3	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AW
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	1.2	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AL
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.77		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

TOTAL Metals

Lot-Sample #...: A0D210499-013

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3550	8.4	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AA
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.1		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADM1A2
		Dilution Factor: 1		Analysis Time... 14:22	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	93.5 B	418	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AT
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.5		
Magnesium	728 J	83.6	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AD
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Manganese	24.9	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AQ
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.077		
Sodium	442	83.6	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AU
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 69.0		
Nickel	3.5	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AR
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	1.7	0.25	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AC
		Dilution Factor: 1		Analysis Time... 00:28	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1AX
		Dilution Factor: 1		Analysis Time... 21:35	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.11 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1AN
		Dilution Factor: 1		Analysis Time... 21:35	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.094		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

TOTAL Metals

Lot-Sample #...: A0D210499-013

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.020 B, J	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1A0
		Dilution Factor: 1		Analysis Time..: 21:35	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	6.7	0.84	mg/kg	SW846 6010B	04/22-04/27/10	L0ADM1AV
		Dilution Factor: 1		Analysis Time..: 00:28	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	5.9 J	0.84	mg/kg	SW846 6020	04/22-04/26/10	L0ADM1A1
		Dilution Factor: 1		Analysis Time..: 21:35	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.46		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

TOTAL Metals

Lot-Sample #... A0D210499-014

Matrix..... S0

Date Sampled... 04/20/10 09:45 **Date Received...** 04/21/10

% Moisture..... 6.4

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1AP
		Dilution Factor: 1		Analysis Time... 21:40	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2650	17.1	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AE
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.3		
Arsenic	1.7	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1AM
		Dilution Factor: 1		Analysis Time... 21:40	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	6.7 J	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AF
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AG
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	421 B, J	427	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AJ
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.1		
Cadmium	ND	0.085	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AH
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	2.9	0.43	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AK
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	6.3	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AW
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	4.4	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AL
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.79		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

TOTAL Metals

Lot-Sample #...: A0D210499-014

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5630	8.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AA
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0ADN1A2
		Dilution Factor: 1		Analysis Time... 14:32	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	225 B	427	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AT
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.6		
Magnesium	1100 J	85.4	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AD
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Manganese	68.4	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AQ
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.079		
Sodium	1220	85.4	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AU
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 70.5		
Nickel	5.7	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AR
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	2.7	0.26	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AC
		Dilution Factor: 1		Analysis Time... 00:34	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1AX
		Dilution Factor: 1		Analysis Time... 21:40	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.60	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1AN
		Dilution Factor: 1		Analysis Time... 21:40	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.096		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

TOTAL Metals

Lot-Sample #...: A0D210499-014

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.029 B, J	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1A0
		Dilution Factor: 1		Analysis Time..: 21:40	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	9.2	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADN1AV
		Dilution Factor: 1		Analysis Time..: 00:34	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	10.6 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0ADN1A1
		Dilution Factor: 1		Analysis Time..: 21:40	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

TOTAL Metals

Lot-Sample #... A0D210499-015

Matrix..... S0

Date Sampled... 04/20/10 09:55 **Date Received...** 04/21/10

% Moisture..... 3.3

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	0.080 B	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1AP
		Dilution Factor: 1		Analysis Time... 21:45	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	487	16.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AE
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 9.9		
Arsenic	1.2	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1AM
		Dilution Factor: 1		Analysis Time... 21:45	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.064		
Barium	6.4 J	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AF
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.073		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AG
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.044		
Calcium	4200 J	414	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AJ
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.5		
Cadmium	ND	0.083	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AH
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.037		
Cobalt	0.93	0.41	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AK
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	12.0	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AW
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	6.0	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AL
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.77		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

TOTAL Metals

Lot-Sample #...: A0D210499-015

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3730	8.3	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AA
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.1		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0ADP1A2
		Dilution Factor: 1		Analysis Time... 14:18	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	58.4 B	414	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AT
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.4		
Magnesium	830 J	82.7	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AD
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Manganese	46.0	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AQ
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.077		
Sodium	320	82.7	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AU
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 68.2		
Nickel	9.0	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AR
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	14.9	0.25	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AC
		Dilution Factor: 1		Analysis Time... 00:40	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	1.5	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1AX
		Dilution Factor: 1		Analysis Time... 21:45	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1AN
		Dilution Factor: 1		Analysis Time... 21:45	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.093		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

TOTAL Metals

Lot-Sample #...: A0D210499-015

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.023 B, J	0.083	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1A0
		Dilution Factor: 1		Analysis Time..: 21:45	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.013		
Vanadium	1.7	0.83	mg/kg	SW846 6010B	04/22-04/27/10	L0ADP1AV
		Dilution Factor: 1		Analysis Time..: 00:40	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.12		
Zinc	10.2 J	0.83	mg/kg	SW846 6020	04/22-04/26/10	L0ADP1A1
		Dilution Factor: 1		Analysis Time..: 21:45	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.45		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-016

TOTAL Metals

Lot-Sample #...: A0D210499-016

Matrix.....: S0

Date Sampled...: 04/20/10 09:55 **Date Received...:** 04/21/10

% Moisture.....: 2.8

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.056 B	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1AP
		Dilution Factor: 1		Analysis Time...: 22:00	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.016		
Aluminum	343	16.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AE
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 9.9		
Arsenic	1.2	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1AM
		Dilution Factor: 1		Analysis Time...: 22:00	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.064		
Barium	4.5 J	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AF
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.073		
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AG
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.044		
Calcium	4310 J	412	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AJ
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 16.5		
Cadmium	ND	0.082	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AH
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.037		
Cobalt	0.72	0.41	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AK
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.16		
Chromium	16.1	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AW
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Copper	6.3	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AL
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.76		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-016

TOTAL Metals

Lot-Sample #...: A0D210499-016

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5310	8.2	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AA
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.0		
Mercury	ND	0.041	mg/kg	SW846 7471A	04/22-04/23/10	L0ADQ1A2
		Dilution Factor: 1		Analysis Time... 14:14	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.015		
Potassium	46.7 B	412	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AT
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.4		
Magnesium	1080 J	82.3	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AD
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Manganese	69.0	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AQ
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.076		
Sodium	315	82.3	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AU
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 67.9		
Nickel	8.9	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AR
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	13.9	0.25	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AC
		Dilution Factor: 1		Analysis Time... 00:47	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	1.5	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1AX
		Dilution Factor: 1		Analysis Time... 22:00	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1AN
		Dilution Factor: 1		Analysis Time... 22:00	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.093		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-016

TOTAL Metals

Lot-Sample #...: A0D210499-016

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.028 B, J	0.082	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1A0
		Dilution Factor: 1		Analysis Time...: 22:00	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.013		
Vanadium	1.3	0.82	mg/kg	SW846 6010B	04/22-04/27/10	L0ADQ1AV
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.12		
Zinc	9.3 J	0.82	mg/kg	SW846 6020	04/22-04/26/10	L0ADQ1A1
		Dilution Factor: 1		Analysis Time...: 22:00	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.45		
Prep Batch #...: 0141025						
Trivalent Chromium	16.1	0.82	mg/kg	SW846 7196A	04/22-04/27/10	L0ADQ1A7
		Dilution Factor: 1		Analysis Time...: 00:47	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

TOTAL Metals

Lot-Sample #...: A0D210499-017

Matrix.....: S0

Date Sampled...: 04/20/10 09:57 **Date Received...:** 04/21/10

% Moisture.....: 9.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112021						
Silver	0.22	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1AP
		Dilution Factor: 1		Analysis Time...: 22:05	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.018		
Aluminum	1150	17.6	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AE
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 10.6		
Arsenic	1.7	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1AM
		Dilution Factor: 1		Analysis Time...: 22:05	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.068		
Barium	57.4 J	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AF
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.078		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AG
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.047		
Calcium	7150 J	441	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AJ
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 17.6		
Cadmium	0.098	0.088	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AH
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.040		
Cobalt	3.4	0.44	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AK
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.18		
Chromium	11.1	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AW
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.22		
Copper	13.0	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AL
		Dilution Factor: 1		Analysis Time...: 00:53	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.82		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

TOTAL Metals

Lot-Sample #...: A0D210499-017

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5330	8.8	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AA
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Mercury	ND	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0ADT1A2
		Dilution Factor: 1		Analysis Time... 14:37	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.017		
Potassium	128 B	441	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AT
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.8		
Magnesium	1910 J	88.1	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AD
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.6		
Manganese	60.5	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AQ
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.082		
Sodium	416	88.1	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AU
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 72.7		
Nickel	15.6	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AR
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.30		
Lead	10.9	0.26	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AC
		Dilution Factor: 1		Analysis Time... 00:53	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	0.34	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1AX
		Dilution Factor: 1		Analysis Time... 22:05	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.15 B	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1AN
		Dilution Factor: 1		Analysis Time... 22:05	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.099		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

TOTAL Metals

Lot-Sample #...: A0D210499-017

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.032 B, J	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1A0
		Dilution Factor: 1		Analysis Time..: 22:05	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	5.5	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADT1AV
		Dilution Factor: 1		Analysis Time..: 00:53	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	18.6 J	0.88	mg/kg	SW846 6020	04/22-04/26/10	L0ADT1A1
		Dilution Factor: 1		Analysis Time..: 22:05	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

TOTAL Metals

Lot-Sample #... A0D210499-018

Matrix..... S0

Date Sampled... 04/20/10 10:00 **Date Received...** 04/21/10

% Moisture..... 8.1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1AP
		Dilution Factor: 1		Analysis Time... 22:10	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	3230	17.4	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AE
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.4		
Arsenic	1.2	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1AM
		Dilution Factor: 1		Analysis Time... 22:10	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.067		
Barium	20.3 J	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AF
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AG
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.047		
Calcium	413 B, J	435	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AJ
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.4		
Cadmium	0.18	0.087	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AH
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	1.1	0.44	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AK
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	3.4	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AW
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	1.3	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AL
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.81		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

TOTAL Metals

Lot-Sample #...: A0D210499-018

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3840	8.7	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AA
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	0.019 B	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0ADV1A2
		Dilution Factor: 1		Analysis Time... 14:12	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	132 B	435	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AT
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	320 J	87.0	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AD
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	28.9	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AQ
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.081		
Sodium	546	87.0	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AU
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 71.8		
Nickel	8.5	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AR
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	4.6	0.26	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AC
		Dilution Factor: 1		Analysis Time... 00:59	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	0.036 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1AX
		Dilution Factor: 1		Analysis Time... 22:10	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.16 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1AN
		Dilution Factor: 1		Analysis Time... 22:10	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.098		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

TOTAL Metals

Lot-Sample #...: A0D210499-018

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.065 B, J	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1A0
		Dilution Factor: 1		Analysis Time..: 22:10	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	6.9	0.87	mg/kg	SW846 6010B	04/22-04/27/10	L0ADV1AV
		Dilution Factor: 1		Analysis Time..: 00:59	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	11.0 J	0.87	mg/kg	SW846 6020	04/22-04/26/10	L0ADV1A1
		Dilution Factor: 1		Analysis Time..: 22:10	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

TOTAL Metals

Lot-Sample #... A0D210499-019

Matrix..... S0

Date Sampled... 04/20/10 10:02 **Date Received...** 04/21/10

% Moisture..... 9.0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1AP
		Dilution Factor: 1		Analysis Time... 22:14	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	3940	17.6	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AE
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.5		
Arsenic	1.1	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1AM
		Dilution Factor: 1		Analysis Time... 22:14	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.068		
Barium	7.1 J	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AF
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.078		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AG
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.047		
Calcium	272 B, J	439	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AJ
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.6		
Cadmium	ND	0.088	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AH
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.040		
Cobalt	2.0	0.44	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AK
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	4.8	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AW
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	ND	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AL
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.81		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

TOTAL Metals

Lot-Sample #...: A0D210499-019

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	4030	8.8	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AA
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Mercury	ND	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0ADW1A2
		Dilution Factor: 1		Analysis Time... 14:34	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	115 B	439	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AT
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.8		
Magnesium	545 J	87.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AD
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.6		
Manganese	19.3	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AQ
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.081		
Sodium	583	87.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AU
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 72.5		
Nickel	3.2	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AR
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.30		
Lead	1.9	0.26	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AC
		Dilution Factor: 1		Analysis Time... 01:05	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	ND	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1AX
		Dilution Factor: 1		Analysis Time... 22:14	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.17 B	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1AN
		Dilution Factor: 1		Analysis Time... 22:14	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.099		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

TOTAL Metals

Lot-Sample #...: A0D210499-019

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.029 B, J	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1A0
		Dilution Factor: 1		Analysis Time..: 22:14	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	7.7	0.88	mg/kg	SW846 6010B	04/22-04/27/10	L0ADW1AV
		Dilution Factor: 1		Analysis Time..: 01:05	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	6.7 J	0.88	mg/kg	SW846 6020	04/22-04/26/10	L0ADW1A1
		Dilution Factor: 1		Analysis Time..: 22:14	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

TOTAL Metals

Lot-Sample #... A0D210499-020

Matrix..... S0

Date Sampled... 04/20/10 10:05 **Date Received...** 04/21/10

% Moisture..... 5.4

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112021						
Silver	ND	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1AP
		Dilution Factor: 1		Analysis Time... 22:19	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2380	16.9	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AE
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.1		
Arsenic	1.4	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1AM
		Dilution Factor: 1		Analysis Time... 22:19	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	4.7 J	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AF
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.075		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AG
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.045		
Calcium	310 B, J	423	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AJ
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 16.9		
Cadmium	0.045 B	0.085	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AH
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	2.2	0.42	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AK
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	6.0	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AW
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	2.1	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AL
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.78		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

TOTAL Metals

Lot-Sample #...: A0D210499-020

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5000	8.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AA
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.2		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0ADX1A2
		Dilution Factor: 1		Analysis Time... 14:16	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	130 B	423	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AT
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.6		
Magnesium	860 J	84.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AD
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Manganese	32.5	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AQ
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.078		
Sodium	241	84.5	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AU
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 69.7		
Nickel	3.9	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AR
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	1.8	0.25	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AC
		Dilution Factor: 1		Analysis Time... 01:11	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1AX
		Dilution Factor: 1		Analysis Time... 22:19	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	0.11 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1AN
		Dilution Factor: 1		Analysis Time... 22:19	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.095		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

TOTAL Metals

Lot-Sample #...: A0D210499-020

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.017 B, J	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1A0
		Dilution Factor: 1		Analysis Time..: 22:19	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	9.8	0.85	mg/kg	SW846 6010B	04/22-04/27/10	L0ADX1AV
		Dilution Factor: 1		Analysis Time..: 01:11	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	7.8 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0ADX1A1
		Dilution Factor: 1		Analysis Time..: 22:19	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.46		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021

TOTAL Metals

Lot-Sample #... A0D210499-021

Matrix..... S0

Date Sampled... 04/20/10 10:20 **Date Received...** 04/21/10

% Moisture..... 9.7

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.23	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD01AP
		Dilution Factor: 1		Analysis Time... 17:22	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	2730	17.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AE
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.6		
Arsenic	5.8	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD01AM
		Dilution Factor: 1		Analysis Time... 17:22	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.069		
Barium	72.6 J	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AF
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.079		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AG
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.048		
Calcium	15100 J	443	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AJ
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.7		
Cadmium	0.12	0.089	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AH
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.040		
Cobalt	13.6	0.44	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AK
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	862	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AW
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	68.6	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AL
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.82		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021

TOTAL Metals

Lot-Sample #...: A0D210499-021

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	14600	8.9	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AA
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.4		
Mercury	ND	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0AD01A2
		Dilution Factor: 1		Analysis Time... 14:57	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.017		
Potassium	273 B, J	443	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AT
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.9		
Magnesium	3240	88.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AD
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.6		
Manganese	795	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AQ
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.082		
Sodium	1220	88.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AU
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 73.1		
Nickel	477	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AR
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.30		
Lead	42.5	0.27	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AC
		Dilution Factor: 1		Analysis Time... 06:36	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	0.59	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD01AX
		Dilution Factor: 1		Analysis Time... 17:22	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.027		
Selenium	0.44	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD01AN
		Dilution Factor: 1		Analysis Time... 17:22	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.10		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021

TOTAL Metals

Lot-Sample #...: A0D210499-021

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.097	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD01A0
		Dilution Factor: 1		Analysis Time...: 17:22	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	10.8	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD01AV
		Dilution Factor: 1		Analysis Time...: 06:36	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	69.2 J	0.89	mg/kg	SW846 6020	04/22-04/26/10	L0AD01A1
		Dilution Factor: 1		Analysis Time...: 17:22	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.49		
Prep Batch #...: 0141025						
Trivalent Chromium	861	0.89	mg/kg	SW846 7196A	04/22-04/29/10	L0AD01A7
		Dilution Factor: 1		Analysis Time...: 06:36	Analyst ID.....: 000079	
		Instrument ID...: I5		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

TOTAL Metals

Lot-Sample #...: A0D210499-022

Matrix.....: S0

Date Sampled...: 04/20/10 10:21 Date Received...: 04/21/10

% Moisture.....: 7.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	0.17	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD11AP
		Dilution Factor: 1		Analysis Time...: 17:27	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	2940	17.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AE
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 10.3		
Arsenic	5.2	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD11AM
		Dilution Factor: 1		Analysis Time...: 17:27	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.067		
Barium	74.6 J	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AF
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AG
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.046		
Calcium	16100 J	431	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AJ
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 17.2		
Cadmium	0.13	0.086	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AH
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.039		
Cobalt	17.6	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AK
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	424	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AW
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.22		
Copper	60.0	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AL
		Dilution Factor: 1		Analysis Time...: 06:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

TOTAL Metals

Lot-Sample #...: A0D210499-022

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	12100	8.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AA
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AD11A2
		Dilution Factor: 1		Analysis Time... 15:07	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	286 B, J	431	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AT
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	4100	86.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AD
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	593	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AQ
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.080		
Sodium	1160	86.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AU
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 71.1		
Nickel	246	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AR
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	44.1	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AC
		Dilution Factor: 1		Analysis Time... 06:43	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	0.60	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD11AX
		Dilution Factor: 1		Analysis Time... 17:27	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.39	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD11AN
		Dilution Factor: 1		Analysis Time... 17:27	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

TOTAL Metals

Lot-Sample #...: A0D210499-022

Matrix.....: S0

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Thallium	0.088	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD11A0
		Dilution Factor: 1		Analysis Time..: 17:27	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	11.3	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD11AV
		Dilution Factor: 1		Analysis Time..: 06:43	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	67.2 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0AD11A1
		Dilution Factor: 1		Analysis Time..: 17:27	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-023

TOTAL Metals

Lot-Sample #...: A0D210499-023

Matrix.....: S0

Date Sampled...: 04/20/10 10:22 **Date Received...:** 04/21/10

% Moisture.....: 7.4

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	0.84	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD21AP
		Dilution Factor: 1		Analysis Time...: 17:46	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	1120	17.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AE
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.4		
Arsenic	8.3	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD21AM
		Dilution Factor: 1		Analysis Time...: 17:46	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.067		
Barium	36.0 J	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AF
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AG
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.046		
Calcium	13500 J	432	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AJ
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 17.3		
Cadmium	ND G	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AH
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.19		
Cobalt	268	2.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AK
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.86		
Chromium	2540	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AW
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.22		
Copper	122	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AL
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-023

TOTAL Metals

Lot-Sample #...: A0D210499-023

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	122000	43.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AA
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 26.5		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AD21A2
		Dilution Factor: 1		Analysis Time...: 15:00	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	138 B, J	432	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AT
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.7		
Magnesium	2960	86.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AD
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Manganese	1040	4.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AQ
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.40		
Sodium	428	86.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AU
		Dilution Factor: 1		Analysis Time...: 06:49	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 71.3		
Nickel	5540	4.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AR
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 1.5		
Lead	173	1.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AC
		Dilution Factor: 5		Analysis Time...: 17:18	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 1.0		
Antimony	2.2	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD21AX
		Dilution Factor: 1		Analysis Time...: 17:46	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.12 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD21AN
		Dilution Factor: 1		Analysis Time...: 17:46	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-023

TOTAL Metals

Lot-Sample #...: A0D210499-023

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.034 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AD21A0
		Dilution Factor: 1		Analysis Time..: 17:46	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	33.4	4.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD21AV
		Dilution Factor: 5		Analysis Time..: 17:18	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.65		
Zinc	27.8 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0AD21A1
		Dilution Factor: 1		Analysis Time..: 17:46	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.48		
Prep Batch #...: 0141025						
Trivalent Chromium	2540	0.86	mg/kg	SW846 7196A	04/22-04/29/10	L0AD21A7
		Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-024

TOTAL Metals

Lot-Sample #...: A0D210499-024

Matrix.....: S0

Date Sampled...: 04/20/10 10:25 **Date Received...:** 04/21/10

% Moisture.....: 4.3

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	2.1	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0AD41AP
		Dilution Factor: 1		Analysis Time...: 17:51	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	373	16.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AE
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.0		
Arsenic	1.4	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0AD41AM
		Dilution Factor: 1		Analysis Time...: 17:51	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.065		
Barium	8.0 J	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AF
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.074		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AG
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.045		
Calcium	742 J	418	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AJ
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 16.7		
Cadmium	0.23	0.084	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AH
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.038		
Cobalt	7.0	0.42	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AK
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	233	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AW
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.21		
Copper	13.2	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AL
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.77		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-024

TOTAL Metals

Lot-Sample #...: A0D210499-024

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	15200	8.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AA
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.1		
Mercury	ND	0.042	mg/kg	SW846 7471A	04/22-04/23/10	L0AD41A2
		Dilution Factor: 1		Analysis Time... 14:49	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	32.5 B, J	418	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AT
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.5		
Magnesium	165	83.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AD
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Manganese	221	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AQ
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.077		
Sodium	359	83.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AU
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 69.0		
Nickel	216	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AR
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.28		
Lead	37.6	0.25	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AC
		Dilution Factor: 1		Analysis Time... 06:55	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.20		
Antimony	5.0	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD41AX
		Dilution Factor: 1		Analysis Time... 17:51	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.025		
Selenium	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD41AN
		Dilution Factor: 1		Analysis Time... 17:51	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.094		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-024

TOTAL Metals

Lot-Sample #...: A0D210499-024

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.021 B	0.084	mg/kg	SW846 6020	04/22-04/26/10	L0AD41A0
		Dilution Factor: 1		Analysis Time...: 17:51	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	2.1	0.84	mg/kg	SW846 6010B	04/22-04/29/10	L0AD41AV
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	11.7 J	0.84	mg/kg	SW846 6020	04/22-04/26/10	L0AD41A1
		Dilution Factor: 1		Analysis Time...: 17:51	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.46		
Prep Batch #...: 0141025						
Trivalent Chromium	233	0.84	mg/kg	SW846 7196A	04/22-04/29/10	L0AD41A8
		Dilution Factor: 1		Analysis Time...: 06:55	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

TOTAL Metals

Lot-Sample #... A0D210499-025

Matrix..... S0

Date Sampled... 04/20/10 10:27 **Date Received...** 04/21/10

% Moisture..... 8.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	ND	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AD51AP
		Dilution Factor: 1		Analysis Time... 17:56	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2840	17.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AE
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.5		
Arsenic	0.76	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AD51AM
		Dilution Factor: 1		Analysis Time... 17:56	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.068		
Barium	15.2 J	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AF
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AG
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.047		
Calcium	417 B, J	436	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AJ
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.4		
Cadmium	ND	0.087	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AH
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	1.5	0.44	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AK
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	5.4	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AW
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	1.0	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AL
		Dilution Factor: 1		Analysis Time... 07:01	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.81		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

TOTAL Metals

Lot-Sample #...: A0D210499-025

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	2650	8.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AA
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.3		
Mercury	ND	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0AD51A2
		Dilution Factor: 1		Analysis Time...: 14:59	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	168 B, J	436	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AT
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.8		
Magnesium	794	87.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AD
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.6		
Manganese	22.3	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AQ
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.081		
Sodium	726	87.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AU
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 71.9		
Nickel	3.2	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AR
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	2.5	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AC
		Dilution Factor: 1		Analysis Time...: 07:01	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD51AX
		Dilution Factor: 1		Analysis Time...: 17:56	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.14 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD51AN
		Dilution Factor: 1		Analysis Time...: 17:56	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.098		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

TOTAL Metals

Lot-Sample #...: A0D210499-025

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.045 B	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AD51A0
		Dilution Factor: 1		Analysis Time..: 17:56	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	8.0	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AD51AV
		Dilution Factor: 1		Analysis Time..: 07:01	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	6.4 J	0.87	mg/kg	SW846 6020	04/22-04/26/10	L0AD51A1
		Dilution Factor: 1		Analysis Time..: 17:56	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

TOTAL Metals

Lot-Sample #... A0D210499-026

Matrix..... S0

Date Sampled... 04/20/10 10:30 **Date Received...** 04/21/10

% Moisture..... 6.1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	ND	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0AD61AP
		Dilution Factor: 1		Analysis Time... 18:01	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	1320	17.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AE
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.2		
Arsenic	0.47	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0AD61AM
		Dilution Factor: 1		Analysis Time... 18:01	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	3.1 J	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AF
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AG
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	253 B, J	426	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AJ
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.0		
Cadmium	ND	0.085	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AH
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.038		
Cobalt	1.0	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AK
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	3.7	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AW
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	1.0	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AL
		Dilution Factor: 1		Analysis Time... 07:07	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.79		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

TOTAL Metals

Lot-Sample #...: A0D210499-026

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	1670	8.5	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AA
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AD61A2
		Dilution Factor: 1		Analysis Time...: 15:01	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	107 B, J	426	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AT
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.6		
Magnesium	565	85.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AD
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Manganese	14.9	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AQ
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.079		
Sodium	460	85.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AU
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 70.3		
Nickel	2.3	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AR
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	1.4	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AC
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD61AX
		Dilution Factor: 1		Analysis Time...: 18:01	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.10 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AD61AN
		Dilution Factor: 1		Analysis Time...: 18:01	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.096		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

TOTAL Metals

Lot-Sample #...: A0D210499-026

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.022 B	0.085	mg/kg	SW846 6020	04/22-04/26/10	L0AD61A0
		Dilution Factor: 1		Analysis Time...: 18:01	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	5.4	0.85	mg/kg	SW846 6010B	04/22-04/29/10	L0AD61AV
		Dilution Factor: 1		Analysis Time...: 07:07	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	3.0 J	0.85	mg/kg	SW846 6020	04/22-04/26/10	L0AD61A1
		Dilution Factor: 1		Analysis Time...: 18:01	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027

TOTAL Metals

Lot-Sample #...: A0D210499-027

Matrix.....: S0

Date Sampled...: 04/20/10 10:35 **Date Received...:** 04/21/10

% Moisture.....: 8.9

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	1.3	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AD81AP
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.018		
Aluminum	3580	17.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AE
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.5		
Arsenic	11.4	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AD81AM
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.068		
Barium	329 J	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AF
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.078		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AG
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.047		
Calcium	29400 J	439	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AJ
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 17.6		
Cadmium	3.9	0.088	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AH
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.040		
Cobalt	15.6	0.44	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AK
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.18		
Chromium	475	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AW
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.22		
Copper	613	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AL
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.81		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027

TOTAL Metals

Lot-Sample #...: A0D210499-027

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	61600	8.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AA
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.4		
Mercury	0.42	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0AD81A2
		Dilution Factor: 1		Analysis Time...: 15:03	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	463 J	439	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AT
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.8		
Magnesium	9200	87.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AD
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.6		
Manganese	914	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AQ
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.081		
Sodium	1380	87.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AU
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 72.5		
Nickel	268	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AR
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.30		
Lead	976	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AC
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Antimony	27.8	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD81AX
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.91	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD81AN
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.099		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027

TOTAL Metals

Lot-Sample #...: A0D210499-027

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.23	0.088	mg/kg	SW846 6020	04/22-04/26/10	L0AD81A0
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	15.8	0.88	mg/kg	SW846 6010B	04/22-04/29/10	L0AD81AV
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	819 J	0.88	mg/kg	SW846 6020	04/22-04/26/10	L0AD81A1
		Dilution Factor: 1		Analysis Time...: 18:06	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.48		
Prep Batch #...: 0141025						
Trivalent Chromium	471	0.88	mg/kg	SW846 7196A	04/22-04/29/10	L0AD81A7
		Dilution Factor: 1		Analysis Time...: 07:13	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028

TOTAL Metals

Lot-Sample #... A0D210499-028

Matrix..... S0

Date Sampled... 04/20/10 10:37 **Date Received...** 04/21/10

% Moisture..... 9.9

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.25	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD91AP
		Dilution Factor: 1		Analysis Time... 18:10	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	3110	17.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AE
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.7		
Arsenic	7.4	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD91AM
		Dilution Factor: 1		Analysis Time... 18:10	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.069		
Barium	92.0 J	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AF
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.079		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AG
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.048		
Calcium	31200 J	444	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AJ
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.8		
Cadmium	1.1	0.44	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AH
		Dilution Factor: 5		Analysis Time... 17:24	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.20		
Cobalt	33.1	0.44	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AK
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	170	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AW
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	240	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AL
		Dilution Factor: 1		Analysis Time... 07:19	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.82		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028

TOTAL Metals

Lot-Sample #...: A0D210499-028

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	68500	44.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AA
		Dilution Factor: 5		Analysis Time...: 17:24	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 27.2		
Mercury	0.28	0.044	mg/kg	SW846 7471A	04/22-04/23/10	L0AD91A2
		Dilution Factor: 1		Analysis Time...: 14:47	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.017		
Potassium	305 B, J	444	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AT
		Dilution Factor: 1		Analysis Time...: 07:19	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.9		
Magnesium	4540	88.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AD
		Dilution Factor: 1		Analysis Time...: 07:19	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.7		
Manganese	717	4.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AQ
		Dilution Factor: 5		Analysis Time...: 17:24	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.41		
Sodium	892	88.8	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AU
		Dilution Factor: 1		Analysis Time...: 07:19	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 73.2		
Nickel	141	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AR
		Dilution Factor: 1		Analysis Time...: 07:19	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.30		
Lead	576	1.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AC
		Dilution Factor: 5		Analysis Time...: 17:24	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 1.1		
Antimony	5.8	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD91AX
		Dilution Factor: 1		Analysis Time...: 18:10	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.027		
Selenium	0.28	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AD91AN
		Dilution Factor: 1		Analysis Time...: 18:10	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.10		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028

TOTAL Metals

Lot-Sample #...: A0D210499-028

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.050 B	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AD91A0
		Dilution Factor: 1		Analysis Time..: 18:10	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	12.0	4.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AD91AV
		Dilution Factor: 5		Analysis Time..: 17:24	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.67		
Zinc	260 J	0.89	mg/kg	SW846 6020	04/22-04/26/10	L0AD91A1
		Dilution Factor: 1		Analysis Time..: 18:10	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.49		
Prep Batch #...: 0141025						
Trivalent Chromium	169	0.89	mg/kg	SW846 7196A	04/22-04/29/10	L0AD91A7
		Dilution Factor: 1		Analysis Time..: 07:19	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

TOTAL Metals

Lot-Sample #... A0D210499-029

Matrix..... S0

Date Sampled... 04/20/10 10:40 **Date Received...** 04/21/10

% Moisture..... 7.0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.097	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1AP
		Dilution Factor: 1		Analysis Time... 18:15	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2840	17.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AE
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.3		
Arsenic	6.2	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1AM
		Dilution Factor: 1		Analysis Time... 18:15	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.067		
Barium	67.3 J	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AF
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AG
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	51900 J	430	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AJ
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.2		
Cadmium	ND G	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AH
		Dilution Factor: 5		Analysis Time... 17:43	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.19		
Cobalt	9.2	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AK
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	53.4	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AW
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	75.9	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AL
		Dilution Factor: 1		Analysis Time... 07:25	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

TOTAL Metals

Lot-Sample #...: A0D210499-029

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	84000	43.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AA
		Dilution Factor: 5		Analysis Time...: 17:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 26.3		
Mercury	0.024 B	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AEC1A2
		Dilution Factor: 1		Analysis Time...: 14:50	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	373 B, J	430	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AT
		Dilution Factor: 1		Analysis Time...: 07:25	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.7		
Magnesium	8450	86.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AD
		Dilution Factor: 1		Analysis Time...: 07:25	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Manganese	740	4.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AQ
		Dilution Factor: 5		Analysis Time...: 17:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.40		
Sodium	672	86.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AU
		Dilution Factor: 1		Analysis Time...: 07:25	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 70.9		
Nickel	61.7	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AR
		Dilution Factor: 1		Analysis Time...: 07:25	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	37.3	1.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AC
		Dilution Factor: 5		Analysis Time...: 17:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 1.0		
Antimony	1.8	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1AX
		Dilution Factor: 1		Analysis Time...: 18:15	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.16 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1AN
		Dilution Factor: 1		Analysis Time...: 18:15	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-029

TOTAL Metals

Lot-Sample #...: A0D210499-029

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.034 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1A0
		Dilution Factor: 1		Analysis Time...: 18:15	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	8.4	4.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEC1AV
		Dilution Factor: 5		Analysis Time...: 17:43	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.64		
Zinc	105 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0AEC1A1
		Dilution Factor: 1		Analysis Time...: 18:15	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.47		
Prep Batch #...: 0141025						
Trivalent Chromium	52.6	0.86	mg/kg	SW846 7196A	04/22-04/29/10	L0AEC1A9
		Dilution Factor: 1		Analysis Time...: 07:25	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

TOTAL Metals

Lot-Sample #... A0D210499-030

Matrix..... S0

Date Sampled... 04/20/10 10:42 **Date Received...** 04/21/10

% Moisture..... 21

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.029 B	0.10	mg/kg	SW846 6020	04/22-04/26/10	L0AED1AP
		Dilution Factor: 1		Analysis Time... 18:20	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.020		
Aluminum	4540	20.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AE
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 12.1		
Arsenic	2.1	0.10	mg/kg	SW846 6020	04/22-04/26/10	L0AED1AM
		Dilution Factor: 1		Analysis Time... 18:20	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.078		
Barium	16.1 J	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AF
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.089		
Beryllium	0.12 B	0.20	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AG
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.054		
Calcium	8480 J	503	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AJ
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 20.1		
Cadmium	0.29	0.10	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AH
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.045		
Cobalt	1.9	0.50	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AK
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.20		
Chromium	11.5	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AW
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.25		
Copper	13.6	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AL
		Dilution Factor: 1		Analysis Time... 07:44	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.93		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

TOTAL Metals

Lot-Sample #...: A0D210499-030

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	12200	10.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AA
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.2		
Mercury	0.028 B	0.050	mg/kg	SW846 7471A	04/22-04/23/10	L0AED1A2
		Dilution Factor: 1		Analysis Time...: 14:56	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.019		
Potassium	412 B, J	503	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AT
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 7.8		
Magnesium	1400	101	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AD
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.4		
Manganese	114	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AQ
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.093		
Sodium	2670	101	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AU
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 83.1		
Nickel	11.6	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AR
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.34		
Lead	10.4	0.30	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AC
		Dilution Factor: 1		Analysis Time...: 07:44	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.24		
Antimony	0.086 B	0.20	mg/kg	SW846 6020	04/22-04/26/10	L0AED1AX
		Dilution Factor: 1		Analysis Time...: 18:20	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.030		
Selenium	0.76	0.20	mg/kg	SW846 6020	04/22-04/26/10	L0AED1AN
		Dilution Factor: 1		Analysis Time...: 18:20	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.11		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

TOTAL Metals

Lot-Sample #...: A0D210499-030

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.066 B	0.10	mg/kg	SW846 6020	04/22-04/26/10	L0AED1A0
		Dilution Factor: 1		Analysis Time..: 18:20	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.016		
Vanadium	10.2	1.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AED1AV
		Dilution Factor: 1		Analysis Time..: 07:44	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.15		
Zinc	52.4 J	1.0	mg/kg	SW846 6020	04/22-04/26/10	L0AED1A1
		Dilution Factor: 1		Analysis Time..: 18:20	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.55		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

TOTAL Metals

Lot-Sample #... A0D210499-031

Matrix..... S0

Date Sampled... 04/20/10 10:45 **Date Received...** 04/21/10

% Moisture..... 7.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	ND	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1AP
		Dilution Factor: 1		Analysis Time... 18:25	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	1910	17.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AE
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.4		
Arsenic	0.43	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1AM
		Dilution Factor: 1		Analysis Time... 18:25	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.067		
Barium	6.0 J	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AF
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AG
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.047		
Calcium	564 J	433	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AJ
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.3		
Cadmium	ND	0.087	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AH
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	1.4	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AK
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	4.7	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AW
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	2.3	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AL
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

TOTAL Metals

Lot-Sample #...: A0D210499-031

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	2010	8.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AA
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AEE1A2
		Dilution Factor: 1		Analysis Time... 15:11	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	204 B, J	433	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AT
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	716	86.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AD
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	18.5	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AQ
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.080		
Sodium	280	86.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AU
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 71.4		
Nickel	3.2	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AR
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	1.8	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AC
		Dilution Factor: 1		Analysis Time... 07:50	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1AX
		Dilution Factor: 1		Analysis Time... 18:25	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.21	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1AN
		Dilution Factor: 1		Analysis Time... 18:25	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

TOTAL Metals

Lot-Sample #...: A0D210499-031

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.027 B	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1A0
		Dilution Factor: 1		Analysis Time...: 18:25	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	6.8	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEE1AV
		Dilution Factor: 1		Analysis Time...: 07:50	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	8.0 J	0.87	mg/kg	SW846 6020	04/22-04/26/10	L0AEE1A1
		Dilution Factor: 1		Analysis Time...: 18:25	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

TOTAL Metals

Lot-Sample #... A0D210499-032

Matrix..... S0

Date Sampled... 04/20/10 11:15 **Date Received...** 04/21/10

% Moisture..... 15

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.042 B	0.094	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1AP
		Dilution Factor: 1		Analysis Time... 18:30	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.019		
Aluminum	1850	18.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AE
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 11.2		
Arsenic	4.9	0.094	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1AM
		Dilution Factor: 1		Analysis Time... 18:30	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.073		
Barium	92.9 J	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AF
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.083		
Beryllium	0.43	0.19	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AG
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.050		
Calcium	1390 J	468	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AJ
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 18.7		
Cadmium	0.054 B	0.094	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AH
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.042		
Cobalt	5.0	0.47	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AK
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.19		
Chromium	6.7	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AW
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.23		
Copper	20.3	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AL
		Dilution Factor: 1		Analysis Time... 07:56	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.87		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

TOTAL Metals

Lot-Sample #...: A0D210499-032

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	5240	9.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AA
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.7		
Mercury	ND	0.047	mg/kg	SW846 7471A	04/22-04/23/10	L0AEF1A2
		Dilution Factor: 1		Analysis Time...: 15:04	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.018		
Potassium	164 B, J	468	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AT
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 7.3		
Magnesium	311	93.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AD
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.0		
Manganese	33.9	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AQ
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.087		
Sodium	290	93.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AU
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 77.3		
Nickel	15.1	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AR
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.32		
Lead	9.8	0.28	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AC
		Dilution Factor: 1		Analysis Time...: 07:56	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.22		
Antimony	0.14 B	0.19	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1AX
		Dilution Factor: 1		Analysis Time...: 18:30	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.028		
Selenium	0.41	0.19	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1AN
		Dilution Factor: 1		Analysis Time...: 18:30	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.11		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

TOTAL Metals

Lot-Sample #...: A0D210499-032

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.049 B	0.094	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1A0
		Dilution Factor: 1		Analysis Time..: 18:30	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.015		
Vanadium	7.8	0.94	mg/kg	SW846 6010B	04/22-04/29/10	L0AEF1AV
		Dilution Factor: 1		Analysis Time..: 07:56	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.14		
Zinc	43.8 J	0.94	mg/kg	SW846 6020	04/22-04/26/10	L0AEF1A1
		Dilution Factor: 1		Analysis Time..: 18:30	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.52		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033

TOTAL Metals

Lot-Sample #... A0D210499-033

Matrix..... S0

Date Sampled... 04/20/10 11:17 **Date Received...** 04/21/10

% Moisture..... 11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.11	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1CH
		Dilution Factor: 1		Analysis Time... 19:04	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	1770	18.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AL
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.8		
Arsenic	6.5	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1CA
		Dilution Factor: 1		Analysis Time... 19:04	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.070		
Barium	68.7 J	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AP
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.080		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AT
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.049		
Calcium	2620 J	452	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1A1
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 18.1		
Cadmium	0.27	0.090	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AW
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.041		
Cobalt	10.4	0.45	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1A4
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	244	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1C4
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.23		
Copper	43.2	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1A7
		Dilution Factor: 1		Analysis Time... 08:02	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.84		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033

TOTAL Metals

Lot-Sample #...: A0D210499-033

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	12700	9.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AA
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Mercury	ND	0.045	mg/kg	SW846 7471A	04/22-04/23/10	L0AEG1DH
		Dilution Factor: 1		Analysis Time...: 14:43	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.017		
Potassium	135 B, J, E	452	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1CT
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 7.0		
Magnesium	745	90.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AH
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.8		
Manganese	315	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1CL
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.084		
Sodium	452	90.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1CW
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 74.6		
Nickel	169	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1CP
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.31		
Lead	382	0.27	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1AE
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Antimony	0.43	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1C7
		Dilution Factor: 1		Analysis Time...: 19:04	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.027		
Selenium	0.40	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1CE
		Dilution Factor: 1		Analysis Time...: 19:04	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.10		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033

TOTAL Metals

Lot-Sample #...: A0D210499-033

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.097	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1DA
		Dilution Factor: 1		Analysis Time...: 19:04	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.015		
Vanadium	12.4	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEG1C1
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		
Zinc	38.2 J	0.90	mg/kg	SW846 6020	04/22-04/26/10	L0AEG1DE
		Dilution Factor: 1		Analysis Time...: 19:04	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.50		
Prep Batch #...: 0141025						
Trivalent Chromium	244	0.90	mg/kg	SW846 7196A	04/22-04/29/10	L0AEG1D4
		Dilution Factor: 1		Analysis Time...: 08:02	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.15		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

E Matrix interference.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034

TOTAL Metals

Lot-Sample #...: A0D210499-034

Matrix.....: S0

Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10

% Moisture.....: 14

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	0.33	0.093	mg/kg	SW846 6020	04/22-04/26/10	L0AEJ1AP
		Dilution Factor: 1		Analysis Time...: 19:19	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.019		
Aluminum	4270	18.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AE
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 11.2		
Arsenic	3.7	0.093	mg/kg	SW846 6020	04/22-04/26/10	L0AEJ1AM
		Dilution Factor: 1		Analysis Time...: 19:19	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.072		
Barium	49.8 J	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AF
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.083		
Beryllium	ND	0.19	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AG
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.050		
Calcium	78000 J	2330	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AJ
		Dilution Factor: 5		Analysis Time...: 17:49	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 93.4		
Cadmium	0.45	0.093	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AH
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.042		
Cobalt	10.3	0.47	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AK
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.19		
Chromium	919	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AW
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.23		
Copper	165	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AL
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.86		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034

TOTAL Metals

Lot-Sample #...: A0D210499-034

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	30900	9.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AA
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.7		
Mercury	ND	0.047	mg/kg	SW846 7471A	04/22-04/23/10	L0AEJ1A2
		Dilution Factor: 1		Analysis Time...: 14:52	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.018		
Potassium	417 B, J	467	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AT
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 7.2		
Magnesium	14300	93.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AD
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.0		
Manganese	813	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AQ
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.086		
Sodium	1120	93.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AU
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 77.0		
Nickel	535	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AR
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.32		
Lead	4750	1.4	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AC
		Dilution Factor: 5		Analysis Time...: 17:49	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 1.1		
Antimony	0.97	0.93	mg/kg	SW846 6020	04/22-04/27/10	L0AEJ1AX
		Dilution Factor: 5		Analysis Time...: 07:49	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.14		
Selenium	0.20	0.19	mg/kg	SW846 6020	04/22-04/26/10	L0AEJ1AN
		Dilution Factor: 1		Analysis Time...: 19:19	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.11		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034

TOTAL Metals

Lot-Sample #...: A0D210499-034

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.089 B,G	0.47	mg/kg	SW846 6020	04/22-04/27/10	L0AEJ1A0
		Dilution Factor: 5		Analysis Time...: 07:49	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.076		
Vanadium	13.4	0.93	mg/kg	SW846 6010B	04/22-04/29/10	L0AEJ1AV
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.14		
Zinc	49.4 J	0.93	mg/kg	SW846 6020	04/22-04/26/10	L0AEJ1A1
		Dilution Factor: 1		Analysis Time...: 19:19	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.51		
Prep Batch #...: 0141025						
Trivalent Chromium	917	0.93	mg/kg	SW846 7196A	04/22-04/29/10	L0AEJ1A7
		Dilution Factor: 1		Analysis Time...: 08:26	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.15		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

TOTAL Metals

Lot-Sample #... A0D210499-035

Matrix..... S0

Date Sampled... 04/20/10 11:22 **Date Received...** 04/21/10

% Moisture..... 11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	ND	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1AP
		Dilution Factor: 1		Analysis Time... 19:24	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.018		
Aluminum	2610	17.9	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AE
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.8		
Arsenic	2.0	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1AM
		Dilution Factor: 1		Analysis Time... 19:24	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.069		
Barium	8.8 J	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AF
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.080		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AG
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.048		
Calcium	788 J	448	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AJ
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.9		
Cadmium	ND	0.090	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AH
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.040		
Cobalt	1.7	0.45	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AK
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.18		
Chromium	6.7	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AW
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	2.4	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AL
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.83		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

TOTAL Metals

Lot-Sample #...: A0D210499-035

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3580	9.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AA
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Mercury	0.018 B	0.045	mg/kg	SW846 7471A	04/22-04/23/10	L0AEM1A2
		Dilution Factor: 1		Analysis Time... 14:51	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.017		
Potassium	229 B, J	448	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AT
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.9		
Magnesium	1000	89.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AD
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.7		
Manganese	25.6	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AQ
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.083		
Sodium	446	89.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AU
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 73.9		
Nickel	4.6	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AR
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.30		
Lead	3.4	0.27	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AC
		Dilution Factor: 1		Analysis Time... 08:33	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	ND	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1AX
		Dilution Factor: 1		Analysis Time... 19:24	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.027		
Selenium	0.17 B	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1AN
		Dilution Factor: 1		Analysis Time... 19:24	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.10		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

TOTAL Metals

Lot-Sample #...: A0D210499-035

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.044 B	0.090	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1A0
		Dilution Factor: 1		Analysis Time..: 19:24	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.015		
Vanadium	9.2	0.90	mg/kg	SW846 6010B	04/22-04/29/10	L0AEM1AV
		Dilution Factor: 1		Analysis Time..: 08:33	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	6.6 J	0.90	mg/kg	SW846 6020	04/22-04/26/10	L0AEM1A1
		Dilution Factor: 1		Analysis Time..: 19:24	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.49		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

TOTAL Metals

Lot-Sample #...: A0D210499-036

Matrix.....: S0

Date Sampled...: 04/20/10 11:25 **Date Received...:** 04/21/10

% Moisture.....: 7.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	ND	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1AP
		Dilution Factor: 1		Analysis Time...: 19:29	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.017		
Aluminum	2080	17.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AE
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.4		
Arsenic	0.68	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1AM
		Dilution Factor: 1		Analysis Time...: 19:29	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.067		
Barium	5.7 J	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AF
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AG
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.047		
Calcium	602 J	433	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AJ
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 17.3		
Cadmium	ND	0.087	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AH
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.039		
Cobalt	1.2	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AK
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.17		
Chromium	4.7	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AW
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.22		
Copper	3.4	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AL
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

TOTAL Metals

Lot-Sample #...: A0D210499-036

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3100	8.7	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AA
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AEN1A2
		Dilution Factor: 1		Analysis Time... 15:14	Analyst ID.....: 001576	
		Instrument ID... H1		MDL.....: 0.016		
Potassium	115 B, J	433	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AT
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 6.7		
Magnesium	524	86.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AD
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 5.5		
Manganese	15.6	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AQ
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.080		
Sodium	210	86.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AU
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 71.4		
Nickel	3.2	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AR
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.29		
Lead	1.6	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AC
		Dilution Factor: 1		Analysis Time... 08:39	Analyst ID.....: 000079	
		Instrument ID... I6		MDL.....: 0.21		
Antimony	ND	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1AX
		Dilution Factor: 1		Analysis Time... 19:29	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.026		
Selenium	0.30	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1AN
		Dilution Factor: 1		Analysis Time... 19:29	Analyst ID.....: 001637	
		Instrument ID... I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

TOTAL Metals

Lot-Sample #...: A0D210499-036

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.039 B	0.087	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1A0
		Dilution Factor: 1		Analysis Time...: 19:29	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	5.4	0.87	mg/kg	SW846 6010B	04/22-04/29/10	L0AEN1AV
		Dilution Factor: 1		Analysis Time...: 08:39	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	5.5 J	0.87	mg/kg	SW846 6020	04/22-04/26/10	L0AEN1A1
		Dilution Factor: 1		Analysis Time...: 19:29	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.48		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

TOTAL Metals

Lot-Sample #... A0D210499-037

Matrix..... S0

Date Sampled... 04/20/10 11:35 **Date Received...** 04/21/10

% Moisture..... 6.5

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.025 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AER1AP
		Dilution Factor: 1		Analysis Time... 19:34	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	3340	17.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AE
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.3		
Arsenic	3.1	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AER1AM
		Dilution Factor: 1		Analysis Time... 19:34	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.066		
Barium	29.7 J	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AF
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AG
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	7130 J	428	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AJ
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.1		
Cadmium	0.11	0.086	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AH
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	2.9	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AK
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	6.0	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AW
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.21		
Copper	9.1	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AL
		Dilution Factor: 1		Analysis Time... 08:57	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.79		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

TOTAL Metals

Lot-Sample #...: A0D210499-037

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	6370	8.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AA
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.2		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AER1A2
		Dilution Factor: 1		Analysis Time...: 14:48	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	172 B, J	428	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AT
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.6		
Magnesium	2080	85.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AD
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Manganese	143	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AQ
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.079		
Sodium	575	85.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AU
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 70.6		
Nickel	5.8	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AR
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	9.8	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AC
		Dilution Factor: 1		Analysis Time...: 08:57	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	0.059 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AER1AX
		Dilution Factor: 1		Analysis Time...: 19:34	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.20	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AER1AN
		Dilution Factor: 1		Analysis Time...: 19:34	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.096		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

TOTAL Metals

Lot-Sample #...: A0D210499-037

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.081 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AER1A0
		Dilution Factor: 1		Analysis Time..: 19:34	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	10.4	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AER1AV
		Dilution Factor: 1		Analysis Time..: 08:57	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	15.2 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0AER1A1
		Dilution Factor: 1		Analysis Time..: 19:34	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

TOTAL Metals

Lot-Sample #... A0D210499-038

Matrix..... S0

Date Sampled... 04/20/10 11:39 **Date Received...** 04/21/10

% Moisture..... 7.1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.029 B	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AET1AP
		Dilution Factor: 1		Analysis Time... 19:39	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2720	17.2	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AE
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.3		
Arsenic	5.9	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AET1AM
		Dilution Factor: 1		Analysis Time... 19:39	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.067		
Barium	30.0 J	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AF
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.076		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AG
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	6520 J	431	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AJ
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.2		
Cadmium	0.12	0.086	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AH
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	2.3	0.43	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AK
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	6.1	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AW
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	14.5	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AL
		Dilution Factor: 1		Analysis Time... 09:03	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

TOTAL Metals

Lot-Sample #...: A0D210499-038

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	6120	8.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AA
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AET1A2
		Dilution Factor: 1		Analysis Time...: 15:12	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	204 B, J	431	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AT
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.7		
Magnesium	3670	86.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AD
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Manganese	107	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AQ
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.080		
Sodium	683	86.1	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AU
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 71.1		
Nickel	5.2	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AR
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	16.4	0.26	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AC
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	0.13 B	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AET1AX
		Dilution Factor: 1		Analysis Time...: 19:39	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.31	0.17	mg/kg	SW846 6020	04/22-04/26/10	L0AET1AN
		Dilution Factor: 1		Analysis Time...: 19:39	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

TOTAL Metals

Lot-Sample #...: A0D210499-038

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.15	0.086	mg/kg	SW846 6020	04/22-04/26/10	L0AET1A0
		Dilution Factor: 1		Analysis Time...: 19:39	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.014		
Vanadium	8.6	0.86	mg/kg	SW846 6010B	04/22-04/29/10	L0AET1AV
		Dilution Factor: 1		Analysis Time...: 09:03	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.13		
Zinc	14.1 J	0.86	mg/kg	SW846 6020	04/22-04/26/10	L0AET1A1
		Dilution Factor: 1		Analysis Time...: 19:39	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

TOTAL Metals

Lot-Sample #... A0D210499-039

Matrix..... S0

Date Sampled... 04/20/10 11:40 **Date Received...** 04/21/10

% Moisture..... 17

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112024						
Silver	0.066 B	0.096	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1AP
		Dilution Factor: 1		Analysis Time... 19:43	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.019		
Aluminum	3230	19.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AE
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 11.6		
Arsenic	3.4	0.096	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1AM
		Dilution Factor: 1		Analysis Time... 19:43	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.075		
Barium	22.5 J	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AF
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.085		
Beryllium	0.059 B	0.19	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AG
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.052		
Calcium	2470 J	481	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AJ
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 19.3		
Cadmium	0.13	0.096	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AH
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.043		
Cobalt	1.1	0.48	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AK
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.19		
Chromium	4.7	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AW
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.24		
Copper	3.0	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AL
		Dilution Factor: 1		Analysis Time... 09:09	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.89		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

TOTAL Metals

Lot-Sample #...: A0D210499-039

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	2090	9.6	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AA
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.9		
Mercury	ND	0.048	mg/kg	SW846 7471A	04/22-04/23/10	L0AEW1A2
		Dilution Factor: 1		Analysis Time...: 15:05	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.018		
Potassium	126 B, J	481	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AT
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 7.5		
Magnesium	808	96.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AD
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.1		
Manganese	17.3	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AQ
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.089		
Sodium	1250	96.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AU
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 79.4		
Nickel	3.2	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AR
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.32		
Lead	3.2	0.29	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AC
		Dilution Factor: 1		Analysis Time...: 09:09	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.23		
Antimony	ND	0.19	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1AX
		Dilution Factor: 1		Analysis Time...: 19:43	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.029		
Selenium	0.32	0.19	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1AN
		Dilution Factor: 1		Analysis Time...: 19:43	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.11		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

TOTAL Metals

Lot-Sample #...: A0D210499-039

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.090 B	0.096	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1A0
		Dilution Factor: 1		Analysis Time..: 19:43	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.016		
Vanadium	5.5	0.96	mg/kg	SW846 6010B	04/22-04/29/10	L0AEW1AV
		Dilution Factor: 1		Analysis Time..: 09:09	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.14		
Zinc	22.1 J	0.96	mg/kg	SW846 6020	04/22-04/26/10	L0AEW1A1
		Dilution Factor: 1		Analysis Time..: 19:43	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.53		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

TOTAL Metals

Lot-Sample #...: A0D210499-040

Matrix.....: S0

Date Sampled...: 04/20/10 11:42 **Date Received...:** 04/21/10

% Moisture.....: 10

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 0112024						
Silver	ND	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1AP
		Dilution Factor: 1		Analysis Time...: 19:48	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.018		
Aluminum	2490	17.9	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AE
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 10.7		
Arsenic	2.2	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1AM
		Dilution Factor: 1		Analysis Time...: 19:48	Analyst ID.....:	001637
		Instrument ID...: I8		MDL.....: 0.069		
Barium	9.3 J	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AF
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.079		
Beryllium	ND	0.18	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AG
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.048		
Calcium	563 J	447	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AJ
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 17.9		
Cadmium	ND	0.089	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AH
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.040		
Cobalt	1.4	0.45	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AK
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.18		
Chromium	5.1	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AW
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.22		
Copper	1.5	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AL
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....:	000079
		Instrument ID...: I6		MDL.....: 0.83		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

TOTAL Metals

Lot-Sample #...: A0D210499-040

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3420	8.9	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AA
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Mercury	ND	0.045	mg/kg	SW846 7471A	04/22-04/23/10	L0AEX1A2
		Dilution Factor: 1		Analysis Time...: 15:06	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.017		
Potassium	117 B, J	447	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AT
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.9		
Magnesium	828	89.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AD
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.7		
Manganese	25.9	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AQ
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.083		
Sodium	629	89.3	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AU
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 73.7		
Nickel	4.0	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AR
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.30		
Lead	1.8	0.27	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AC
		Dilution Factor: 1		Analysis Time...: 09:15	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.21		
Antimony	ND	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1AX
		Dilution Factor: 1		Analysis Time...: 19:48	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.027		
Selenium	0.18	0.18	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1AN
		Dilution Factor: 1		Analysis Time...: 19:48	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.10		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

TOTAL Metals

Lot-Sample #...: A0D210499-040

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.045 B	0.089	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1A0
		Dilution Factor: 1		Analysis Time..: 19:48	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.015		
Vanadium	7.4	0.89	mg/kg	SW846 6010B	04/22-04/29/10	L0AEX1AV
		Dilution Factor: 1		Analysis Time..: 09:15	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	6.0 J	0.89	mg/kg	SW846 6020	04/22-04/26/10	L0AEX1A1
		Dilution Factor: 1		Analysis Time..: 19:48	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.49		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

TOTAL Metals

Lot-Sample #... A0D210499-041

Matrix..... S0

Date Sampled... 04/20/10 11:45 **Date Received...** 04/21/10

% Moisture..... 7.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... 0112020						
Silver	ND	0.086	mg/kg	SW846 6020	04/22-04/23/10	L0AE01AP
		Dilution Factor: 1		Analysis Time... 16:08	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.017		
Aluminum	2120	17.2	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AE
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 10.3		
Arsenic	1.2	0.086	mg/kg	SW846 6020	04/22-04/23/10	L0AE01AM
		Dilution Factor: 1		Analysis Time... 16:08	Analyst ID.....	001637
		Instrument ID... I8		MDL..... 0.067		
Barium	6.6 J	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AF
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.077		
Beryllium	ND	0.17	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AG
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.046		
Calcium	4290 J	431	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AJ
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 17.2		
Cadmium	ND	0.086	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AH
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.039		
Cobalt	2.2	0.43	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AK
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.17		
Chromium	6.1	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AW
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.22		
Copper	4.4	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AL
		Dilution Factor: 1		Analysis Time... 19:51	Analyst ID.....	000079
		Instrument ID... I6		MDL..... 0.80		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

TOTAL Metals

Lot-Sample #...: A0D210499-041

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Iron	3290	8.6	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AA
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.3		
Mercury	ND	0.043	mg/kg	SW846 7471A	04/22-04/23/10	L0AE01A2
		Dilution Factor: 1		Analysis Time...: 13:15	Analyst ID.....: 001576	
		Instrument ID...: H1		MDL.....: 0.016		
Potassium	174 B	431	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AT
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 6.7		
Magnesium	3020 J	86.2	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AD
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 5.5		
Manganese	37.5 J	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AQ
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.080		
Sodium	277	86.2	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AU
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 71.1		
Nickel	5.1	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AR
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.29		
Lead	1.9	0.26	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AC
		Dilution Factor: 1		Analysis Time...: 19:51	Analyst ID.....: 000079	
		Instrument ID...: I6		MDL.....: 0.20		
Antimony	0.031 B	0.17	mg/kg	SW846 6020	04/22-04/23/10	L0AE01AX
		Dilution Factor: 1		Analysis Time...: 16:08	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.026		
Selenium	0.28	0.17	mg/kg	SW846 6020	04/22-04/23/10	L0AE01AN
		Dilution Factor: 1		Analysis Time...: 16:08	Analyst ID.....: 001637	
		Instrument ID...: I8		MDL.....: 0.097		

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Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

TOTAL Metals

Lot-Sample #...: A0D210499-041

Matrix.....: S0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	0.041 B	0.086	mg/kg	SW846 6020	04/22-04/23/10	L0AE01A0
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.014		
Vanadium	8.4	0.86	mg/kg	SW846 6010B	04/22-04/23/10	L0AE01AV
		Dilution Factor: 1		Analysis Time..: 19:51	Analyst ID.....: 000079	
		Instrument ID..: I6		MDL.....: 0.13		
Zinc	8.5	0.86	mg/kg	SW846 6020	04/22-04/23/10	L0AE01A1
		Dilution Factor: 1		Analysis Time..: 16:08	Analyst ID.....: 001637	
		Instrument ID..: I8		MDL.....: 0.47		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021(CALC)

TOTAL Metals

Lot-Sample #...: A0D210499-042

Matrix.....: S0

Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10

% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0139051						
Lead	54.7	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1MK71AA
		Dilution Factor: 1		Analysis Time...: 00:00	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.19		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021(FINE)

TOTAL Metals

Lot-Sample #...: A0D210499-043

Matrix.....: S0

Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10

% Moisture.....: 1.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	83.0	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLC1AA
		Dilution Factor: 5		Analysis Time...: 14:47	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.97		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021(COARSE)

TOTAL Metals

Lot-Sample #...: A0D210499-044

Matrix.....: S0

Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10

% Moisture.....: 0.85

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	42.7	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLF1AA
		Dilution Factor: 5		Analysis Time...: 15:05	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.96		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027(CALC)

TOTAL Metals

Lot-Sample #...: A0D210499-045

Matrix.....: S0

Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10

% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...:	0139051					
Lead	1140	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1MLJ1AA
		Dilution Factor: 1		Analysis Time...: 00:00	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.19		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027(FINE)

TOTAL Metals

Lot-Sample #...: A0D210499-046

Matrix.....: S0

Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10

% Moisture.....: 2.6

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	1260	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLL1AA
		Dilution Factor: 5		Analysis Time...: 15:12	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.98		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027(COARSE)

TOTAL Metals

Lot-Sample #...: A0D210499-047

Matrix.....: S0

Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10

% Moisture.....: 1.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	1130	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLM1AA
		Dilution Factor: 5		Analysis Time...: 15:18	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.97		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028(CALC)

TOTAL Metals

Lot-Sample #...: A0D210499-048

Matrix.....: S0

Date Sampled...: 04/20/10 10:37 Date Received...: 04/21/10

% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0139051						
Lead	757	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1MLP1AA
		Dilution Factor: 1		Analysis Time...: 00:00	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.19		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028(FINE)

TOTAL Metals

Lot-Sample #...: A0D210499-049

Matrix.....: S0

Date Sampled...: 04/20/10 10:37 Date Received...: 04/21/10

% Moisture.....: 2.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	578	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLT1AA
		Dilution Factor: 5		Analysis Time...: 15:24	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.98		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028(COARSE)

TOTAL Metals

Lot-Sample #...: A0D210499-050

Matrix.....: S0

Date Sampled...: 04/20/10 10:37 Date Received...: 04/21/10

% Moisture.....: 1.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	786	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MLW1AA
		Dilution Factor: 5		Analysis Time...: 15:42	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.97		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033(CALC)

TOTAL Metals

Lot-Sample #...: A0D210499-051

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0139051						
Lead	862	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1ML01AA
		Dilution Factor: 1		Analysis Time...: 00:00	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.19		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033(FINE)

TOTAL Metals

Lot-Sample #...: A0D210499-052

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

% Moisture.....: 1.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	1350	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1ML41AA
		Dilution Factor: 5		Analysis Time...: 15:48	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.97		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033(COARSE)

TOTAL Metals

Lot-Sample #...: A0D210499-053

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

% Moisture.....: 0.98

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	760	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1ML61AA
		Dilution Factor: 5		Analysis Time...: 15:55	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.96		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034(CALC)

TOTAL Metals

Lot-Sample #...: A0D210499-054

Matrix.....: S0

Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10

% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0139051						
Lead	5720	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1ML71AA
		Dilution Factor: 1		Analysis Time...: 00:00	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.19		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034(FINE)

TOTAL Metals

Lot-Sample #...: A0D210499-055

Matrix.....: S0

Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10

% Moisture.....: 4.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	9210	5.0	mg/kg	SW846 6010B	05/19-05/21/10	L1ML91AA
		Dilution Factor: 20		Analysis Time...: 06:58	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 4.0		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034(COARSE)

TOTAL Metals

Lot-Sample #...: A0D210499-056

Matrix.....: S0

Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10

% Moisture.....: 2.1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	0139052					
Lead	5440	1.2	mg/kg	SW846 6010B	05/19-05/20/10	L1MMC1AA
		Dilution Factor: 5		Analysis Time...: 16:07	Analyst ID.....: 001637	
		Instrument ID...: I6		MDL.....: 0.97		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D220000-020 Prep Batch #...: 0112020						
Aluminum	ND	16.0	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AE
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/23/10	L0AW61AX
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	
Arsenic	ND	0.080	mg/kg	SW846 6020	04/22-04/23/10	L0AW61AM
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	
Barium	0.17 B	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AF
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Beryllium	0.048 B	0.16	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AG
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Cadmium	ND	0.080	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AH
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Calcium	21.2 B	400	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AJ
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Chromium	ND	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AW
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Cobalt	ND	0.40	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AK
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Copper	ND	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AL
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Iron	ND	8.0	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AA
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Lead	ND	0.24	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AC
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Magnesium	7.5 B	80.0	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AD
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Manganese	0.16 B	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AQ
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Mercury	ND	0.040	mg/kg	SW846 7471A	04/22-04/23/10	L0AW61A2
		Dilution Factor: 1				
		Analysis Time...: 13:13		Analyst ID.....: 001576	Instrument ID...: H1	
Nickel	ND	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AR
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Potassium	ND	400	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AT
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Selenium	ND	0.16	mg/kg	SW846 6020	04/22-04/23/10	L0AW61AN
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	
Silver	ND	0.080	mg/kg	SW846 6020	04/22-04/23/10	L0AW61AP
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	
Sodium	ND	80.0	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AU
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Thallium	ND	0.080	mg/kg	SW846 6020	04/22-04/23/10	L0AW61A0
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	
Vanadium	ND	0.80	mg/kg	SW846 6010B	04/22-04/23/10	L0AW61AV
		Dilution Factor: 1				
		Analysis Time...: 19:02		Analyst ID.....: 000079	Instrument ID...: I6	
Zinc	ND	0.80	mg/kg	SW846 6020	04/22-04/23/10	L0AW61A1
		Dilution Factor: 1				
		Analysis Time...: 15:46		Analyst ID.....: 001637	Instrument ID...: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D220000-021 Prep Batch #...: 0112021						
Aluminum	ND	16.0	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AA
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AW81AU
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	
Arsenic	ND	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AW81AV
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	
Barium	0.15 B	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AC
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AD
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Cadmium	ND	0.080	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AE
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Calcium	28.9 B	400	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AF
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Chromium	ND	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AT
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Cobalt	ND	0.40	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AG
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Copper	ND	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AH
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Iron	ND	8.0	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AJ
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Lead	ND	0.24	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AK
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Magnesium	6.3 B	80.0	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AL
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Manganese	ND	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AM
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Mercury	ND	0.040	mg/kg	SW846 7471A	04/22-04/23/10	L0AW81A2
		Dilution Factor: 1				
		Analysis Time...: 14:04		Analyst ID.....: 001576	Instrument ID...: H1	
Nickel	ND	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AN
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Potassium	ND	400	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AP
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Selenium	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AW81AW
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	
Silver	ND	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AW81AX
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	
Sodium	ND	80.0	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AQ
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Thallium	0.014 B	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AW81A0
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	
Vanadium	ND	0.80	mg/kg	SW846 6010B	04/22-04/26/10	L0AW81AR
		Dilution Factor: 1				
		Analysis Time...: 22:19		Analyst ID.....: 000079	Instrument ID...: I6	
Zinc	0.44 B	0.80	mg/kg	SW846 6020	04/22-04/26/10	L0AW81A1
		Dilution Factor: 1				
		Analysis Time...: 20:03		Analyst ID.....: 001637	Instrument ID...: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D220000-024 Prep Batch #...: 0112024						
Aluminum	ND	16.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AE
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Antimony	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1AX
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	
Arsenic	ND	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1AM
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	
Barium	0.11 B	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AF
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Beryllium	ND	0.16	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AG
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Cadmium	ND	0.080	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AH
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Calcium	19.1 B	400	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AJ
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Chromium	ND	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AW
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Cobalt	ND	0.40	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AK
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Copper	ND	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AL
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Iron	ND	8.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AA
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Lead	ND	0.24	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AC
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Magnesium	ND	80.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AD
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Manganese	ND	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AQ
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Mercury	ND	0.040	mg/kg	SW846 7471A	04/22-04/23/10	L0AXE1A2
		Dilution Factor: 1				
		Analysis Time...: 14:38		Analyst ID.....: 001576	Instrument ID...: H1	
Nickel	ND	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AR
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Potassium	14.4 B	400	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AT
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Selenium	ND	0.16	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1AN
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	
Silver	ND	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1AP
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	
Sodium	ND	80.0	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AU
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Thallium	ND	0.080	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1A0
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	
Vanadium	ND	0.80	mg/kg	SW846 6010B	04/22-04/29/10	L0AXE1AV
		Dilution Factor: 1				
		Analysis Time...: 06:12		Analyst ID.....: 000079	Instrument ID...: I6	
Zinc	0.77 B	0.80	mg/kg	SW846 6020	04/22-04/26/10	L0AXE1A1
		Dilution Factor: 1				
		Analysis Time...: 17:12		Analyst ID.....: 001637	Instrument ID...: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0E190000-052 Prep Batch #... 0139052						
Lead	ND	0.24	mg/kg	SW846 6010B	05/19-05/20/10	L1PE11AA
Dilution Factor: 1						
Analysis Time...: 14:35 Analyst ID.....: 001637 Instrument ID...: I6						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A0D220000-020 Prep Batch #...: 0112020							
Iron	100	104	mg/kg	104	SW846 6010B	04/22-04/23/10	L0AW61A3
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Lead	50.0	48.5	mg/kg	97	SW846 6010B	04/22-04/23/10	L0AW61A4
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Magnesium	5000	4880	mg/kg	98	SW846 6010B	04/22-04/23/10	L0AW61A5
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Aluminum	200	192	mg/kg	96	SW846 6010B	04/22-04/23/10	L0AW61A6
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Barium	200	196	mg/kg	98	SW846 6010B	04/22-04/23/10	L0AW61A7
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Beryllium	5.0	4.7	mg/kg	94	SW846 6010B	04/22-04/23/10	L0AW61A8
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Cadmium	5.0	4.8	mg/kg	95	SW846 6010B	04/22-04/23/10	L0AW61A9
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Calcium	5000	4870	mg/kg	97	SW846 6010B	04/22-04/23/10	L0AW61CA
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Cobalt	50.0	47.9	mg/kg	96	SW846 6010B	04/22-04/23/10	L0AW61CC
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				
Copper	25.0	25.0	mg/kg	100	SW846 6010B	04/22-04/23/10	L0AW61CD
			Dilution Factor: 1		Analysis Time..: 19:09		Analyst ID.....: 000079
			Instrument ID..: I6				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Arsenic	10.0	8.1	mg/kg	81	SW846 6020	04/22-04/23/10	L0AW61CE
			Dilution Factor: 1		Analysis Time... 15:51		Analyst ID.....: 001637
			Instrument ID... I8				
Selenium	10.0	7.9	mg/kg	79	SW846 6020	04/22-04/23/10	L0AW61CF
			Dilution Factor: 1		Analysis Time... 15:51		Analyst ID.....: 001637
			Instrument ID... I8				
Silver	10.0	9.3	mg/kg	93	SW846 6020	04/22-04/23/10	L0AW61CG
			Dilution Factor: 1		Analysis Time... 15:51		Analyst ID.....: 001637
			Instrument ID... I8				
Manganese	50.0	48.8	mg/kg	98	SW846 6010B	04/22-04/23/10	L0AW61CH
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Nickel	50.0	48.9	mg/kg	98	SW846 6010B	04/22-04/23/10	L0AW61CJ
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Potassium	5000	4940	mg/kg	99	SW846 6010B	04/22-04/23/10	L0AW61CK
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Sodium	5000	4900	mg/kg	98	SW846 6010B	04/22-04/23/10	L0AW61CL
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Vanadium	50.0	48.0	mg/kg	96	SW846 6010B	04/22-04/23/10	L0AW61CM
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Chromium	20.0	19.5	mg/kg	97	SW846 6010B	04/22-04/23/10	L0AW61CN
			Dilution Factor: 1		Analysis Time... 19:09		Analyst ID.....: 000079
			Instrument ID... I6				
Antimony	10.0	8.6	mg/kg	86	SW846 6020	04/22-04/23/10	L0AW61CP
			Dilution Factor: 1		Analysis Time... 15:51		Analyst ID.....: 001637
			Instrument ID... I8				
Thallium	10.0	8.9	mg/kg	89	SW846 6020	04/22-04/23/10	L0AW61CQ
			Dilution Factor: 1		Analysis Time... 15:51		Analyst ID.....: 001637
			Instrument ID... I8				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Zinc	10.0	8.8	mg/kg	88	SW846 6020	04/22-04/23/10	L0AW61CR
			Dilution Factor: 1		Analysis Time...: 15:51	Analyst ID.....: 001637	
			Instrument ID...: I8				
Mercury	0.83	0.84	mg/kg	101	SW846 7471A	04/22-04/23/10	L0AW61CT
			Dilution Factor: 1		Analysis Time...: 13:14	Analyst ID.....: 001576	
			Instrument ID...: H1				
LCS Lot-Sample#: A0D220000-021 Prep Batch #...: 0112021							
Aluminum	200	191	mg/kg	96	SW846 6010B	04/22-04/26/10	L0AW81A3
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Barium	200	190	mg/kg	95	SW846 6010B	04/22-04/26/10	L0AW81A4
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Beryllium	5.0	4.8	mg/kg	96	SW846 6010B	04/22-04/26/10	L0AW81A5
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Cadmium	5.0	4.9	mg/kg	98	SW846 6010B	04/22-04/26/10	L0AW81A6
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Calcium	5000	4930	mg/kg	99	SW846 6010B	04/22-04/26/10	L0AW81A7
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Cobalt	50.0	49.1	mg/kg	98	SW846 6010B	04/22-04/26/10	L0AW81A8
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Copper	25.0	24.0	mg/kg	96	SW846 6010B	04/22-04/26/10	L0AW81A9
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Iron	100	103	mg/kg	103	SW846 6010B	04/22-04/26/10	L0AW81CA
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Lead	50.0	48.8	mg/kg	98	SW846 6010B	04/22-04/26/10	L0AW81CC
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Magnesium	5000	4880	mg/kg	98	SW846 6010B	04/22-04/26/10	L0AW81CD
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Manganese	50.0	49.3	mg/kg	99	SW846 6010B	04/22-04/26/10	L0AW81CE
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Nickel	50.0	48.7	mg/kg	97	SW846 6010B	04/22-04/26/10	L0AW81CF
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Potassium	5000	4810	mg/kg	96	SW846 6010B	04/22-04/26/10	L0AW81CG
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Sodium	5000	4700	mg/kg	94	SW846 6010B	04/22-04/26/10	L0AW81CH
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Vanadium	50.0	47.7	mg/kg	95	SW846 6010B	04/22-04/26/10	L0AW81CJ
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Chromium	20.0	19.6	mg/kg	98	SW846 6010B	04/22-04/26/10	L0AW81CK
			Dilution Factor: 1		Analysis Time...: 22:25	Analyst ID.....: 000079	
			Instrument ID...: I6				
Antimony	10.0	8.7	mg/kg	87	SW846 6020	04/22-04/26/10	L0AW81CL
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				
Arsenic	10.0	7.6	mg/kg	76	SW846 6020	04/22-04/26/10	L0AW81CM
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				
Selenium	10.0	6.9	mg/kg	69	SW846 6020	04/22-04/26/10	L0AW81CN
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				
Silver	10.0	9.8	mg/kg	98	SW846 6020	04/22-04/26/10	L0AW81CP
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Thallium	10.0	8.7	mg/kg	87	SW846 6020	04/22-04/26/10	L0AW81CQ
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				
Zinc	10.0	8.4	mg/kg	84	SW846 6020	04/22-04/26/10	L0AW81CR
			Dilution Factor: 1		Analysis Time...: 20:08	Analyst ID.....: 001637	
			Instrument ID...: I8				
Mercury	0.83	0.84	mg/kg	101	SW846 7471A	04/22-04/23/10	L0AW81CT
			Dilution Factor: 1		Analysis Time...: 14:05	Analyst ID.....: 001576	
			Instrument ID...: H1				

LCS Lot-Sample#: A0D220000-024 Prep Batch #...: 0112024

Iron	100	108	mg/kg	108	SW846 6010B	04/22-04/29/10	L0AXE1A3
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Lead	50.0	49.2	mg/kg	98	SW846 6010B	04/22-04/29/10	L0AXE1A4
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Magnesium	5000	5030	mg/kg	101	SW846 6010B	04/22-04/29/10	L0AXE1A5
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Aluminum	200	188	mg/kg	94	SW846 6010B	04/22-04/29/10	L0AXE1A6
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Barium	200	188	mg/kg	94	SW846 6010B	04/22-04/29/10	L0AXE1A7
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Beryllium	5.0	4.9	mg/kg	97	SW846 6010B	04/22-04/29/10	L0AXE1A8
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Cadmium	5.0	4.9	mg/kg	98	SW846 6010B	04/22-04/29/10	L0AXE1A9
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				
Calcium	5000	5060	mg/kg	101	SW846 6010B	04/22-04/29/10	L0AXE1CA
			Dilution Factor: 1		Analysis Time...: 06:30	Analyst ID.....: 000079	
			Instrument ID...: I6				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	50.0	49.5	mg/kg	99	SW846 6010B	04/22-04/29/10	L0AXE1CC
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Copper	25.0	24.5	mg/kg	98	SW846 6010B	04/22-04/29/10	L0AXE1CD
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Arsenic	10.0	7.5	mg/kg	75	SW846 6020	04/22-04/26/10	L0AXE1CE
			Dilution Factor: 1		Analysis Time... 17:17	Analyst ID.....	001637
			Instrument ID... I8				
Selenium	10.0	7.0	mg/kg	70	SW846 6020	04/22-04/26/10	L0AXE1CF
			Dilution Factor: 1		Analysis Time... 17:17	Analyst ID.....	001637
			Instrument ID... I8				
Silver	10.0	9.8	mg/kg	98	SW846 6020	04/22-04/26/10	L0AXE1CG
			Dilution Factor: 1		Analysis Time... 17:17	Analyst ID.....	001637
			Instrument ID... I8				
Manganese	50.0	49.8	mg/kg	100	SW846 6010B	04/22-04/29/10	L0AXE1CH
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Nickel	50.0	49.5	mg/kg	99	SW846 6010B	04/22-04/29/10	L0AXE1CJ
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Potassium	5000	4790	mg/kg	96	SW846 6010B	04/22-04/29/10	L0AXE1CK
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Sodium	5000	4730	mg/kg	95	SW846 6010B	04/22-04/29/10	L0AXE1CL
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Vanadium	50.0	48.5	mg/kg	97	SW846 6010B	04/22-04/29/10	L0AXE1CM
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				
Chromium	20.0	20.1	mg/kg	101	SW846 6010B	04/22-04/29/10	L0AXE1CN
			Dilution Factor: 1		Analysis Time... 06:30	Analyst ID.....	000079
			Instrument ID... I6				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Antimony	10.0	8.7	mg/kg	87	SW846 6020	04/22-04/26/10	L0AXE1CP
			Dilution Factor: 1		Analysis Time..: 17:17	Analyst ID.....: 001637	
			Instrument ID...: I8				
Thallium	10.0	8.8	mg/kg	88	SW846 6020	04/22-04/26/10	L0AXE1CQ
			Dilution Factor: 1		Analysis Time..: 17:17	Analyst ID.....: 001637	
			Instrument ID...: I8				
Zinc	10.0	8.3	mg/kg	83	SW846 6020	04/22-04/26/10	L0AXE1CR
			Dilution Factor: 1		Analysis Time..: 17:17	Analyst ID.....: 001637	
			Instrument ID...: I8				
Mercury	0.83	0.84	mg/kg	101	SW846 7471A	04/22-04/23/10	L0AXE1CT
			Dilution Factor: 1		Analysis Time..: 14:42	Analyst ID.....: 001576	
			Instrument ID...: H1				

LCS Lot-Sample#: A0E190000-052 Prep Batch #...: 0139052

Lead	50.0	52.0	mg/kg	104	SW846 6010B	05/19-05/20/10	L1PE11AC
			Dilution Factor: 1		Analysis Time..: 14:41	Analyst ID.....: 001637	
			Instrument ID...: I6				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#: A0D220000-020 Prep Batch #... : 0112020					
Iron	104	(73 - 137)	SW846 6010B	04/22-04/23/10	L0AW61A3
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Lead	97	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A4
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Magnesium	98	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A5
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Aluminum	96	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A6
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Barium	98	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A7
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Beryllium	94	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A8
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Cadmium	95	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61A9
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Calcium	97	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CA
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Cobalt	96	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CC
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			
Copper	100	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CD
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID..: I6			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Arsenic	81	(73 - 110)	SW846 6020	04/22-04/23/10	L0AW61CE
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			
Selenium	79	(65 - 110)	SW846 6020	04/22-04/23/10	L0AW61CF
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			
Silver	93	(60 - 114)	SW846 6020	04/22-04/23/10	L0AW61CG
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			
Manganese	98	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CH
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Nickel	98	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CJ
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Potassium	99	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CK
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Sodium	98	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CL
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Vanadium	96	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CM
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Chromium	97	(80 - 120)	SW846 6010B	04/22-04/23/10	L0AW61CN
		Dilution Factor: 1	Analysis Time..: 19:09	Analyst ID.....: 000079	
		Instrument ID...: I6			
Antimony	86	(68 - 113)	SW846 6020	04/22-04/23/10	L0AW61CP
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			
Thallium	89	(71 - 110)	SW846 6020	04/22-04/23/10	L0AW61CQ
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Zinc	88	(72 - 113)	SW846 6020	04/22-04/23/10	L0AW61CR
		Dilution Factor: 1	Analysis Time..: 15:51	Analyst ID.....: 001637	
		Instrument ID...: I8			
Mercury	101	(73 - 121)	SW846 7471A	04/22-04/23/10	L0AW61CT
		Dilution Factor: 1	Analysis Time..: 13:14	Analyst ID.....: 001576	
		Instrument ID...: H1			
LCS Lot-Sample#: A0D220000-021 Prep Batch #...: 0112021					
Aluminum	96	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A3
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Barium	95	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A4
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Beryllium	96	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A5
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Cadmium	98	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A6
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Calcium	99	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A7
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Cobalt	98	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A8
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Copper	96	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81A9
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Iron	103	(73 - 137)	SW846 6010B	04/22-04/26/10	L0AW81CA
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Lead	98	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CC
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Magnesium	98	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CD
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Manganese	99	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CE
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Nickel	97	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CF
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Potassium	96	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CG
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Sodium	94	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CH
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Vanadium	95	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CJ
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Chromium	98	(80 - 120)	SW846 6010B	04/22-04/26/10	L0AW81CK
		Dilution Factor: 1	Analysis Time..: 22:25	Analyst ID.....: 000079	
		Instrument ID...: I6			
Antimony	87	(68 - 113)	SW846 6020	04/22-04/26/10	L0AW81CL
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID...: I8			
Arsenic	76	(73 - 110)	SW846 6020	04/22-04/26/10	L0AW81CM
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID...: I8			
Selenium	69	(65 - 110)	SW846 6020	04/22-04/26/10	L0AW81CN
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID...: I8			
Silver	98	(60 - 114)	SW846 6020	04/22-04/26/10	L0AW81CP
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID...: I8			

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Thallium	87	(71 - 110)	SW846 6020	04/22-04/26/10	L0AW81CQ
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID..: I8			
Zinc	84	(72 - 113)	SW846 6020	04/22-04/26/10	L0AW81CR
		Dilution Factor: 1	Analysis Time..: 20:08	Analyst ID.....: 001637	
		Instrument ID..: I8			
Mercury	101	(73 - 121)	SW846 7471A	04/22-04/23/10	L0AW81CT
		Dilution Factor: 1	Analysis Time..: 14:05	Analyst ID.....: 001576	
		Instrument ID..: H1			
LCS Lot-Sample#: A0D220000-024 Prep Batch #...: 0112024					
Iron	108	(73 - 137)	SW846 6010B	04/22-04/29/10	L0AXE1A3
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Lead	98	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A4
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Magnesium	101	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A5
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Aluminum	94	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A6
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Barium	94	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A7
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Beryllium	97	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A8
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Cadmium	98	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1A9
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Calcium	101	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CA
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Cobalt	99	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CC
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Copper	98	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CD
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Arsenic	75	(73 - 110)	SW846 6020	04/22-04/26/10	L0AXE1CE
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID..: I8			
Selenium	70	(65 - 110)	SW846 6020	04/22-04/26/10	L0AXE1CF
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID..: I8			
Silver	98	(60 - 114)	SW846 6020	04/22-04/26/10	L0AXE1CG
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID..: I8			
Manganese	100	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CH
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Nickel	99	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CJ
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Potassium	96	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CK
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Sodium	95	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CL
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Vanadium	97	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CM
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			
Chromium	101	(80 - 120)	SW846 6010B	04/22-04/29/10	L0AXE1CN
		Dilution Factor: 1	Analysis Time..: 06:30	Analyst ID.....: 000079	
		Instrument ID..: I6			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Antimony	87	(68 - 113)	SW846 6020	04/22-04/26/10	L0AXE1CP
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID...: I8			
Thallium	88	(71 - 110)	SW846 6020	04/22-04/26/10	L0AXE1CQ
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID...: I8			
Zinc	83	(72 - 113)	SW846 6020	04/22-04/26/10	L0AXE1CR
		Dilution Factor: 1	Analysis Time..: 17:17	Analyst ID.....: 001637	
		Instrument ID...: I8			
Mercury	101	(73 - 121)	SW846 7471A	04/22-04/23/10	L0AXE1CT
		Dilution Factor: 1	Analysis Time..: 14:42	Analyst ID.....: 001576	
		Instrument ID...: H1			
LCS Lot-Sample#:	A0E190000-052	Prep Batch #...:	0139052		
Lead	104	(80 - 120)	SW846 6010B	05/19-05/20/10	L1PE11AC
		Dilution Factor: 1	Analysis Time..: 14:41	Analyst ID.....: 001637	
		Instrument ID...: I6			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-041 Prep Batch #...: 0112020									
Aluminum									
	2120	216	3050	mg/kg			SW846 6010B	04/22-04/23/10	L0AE01CD
			Qualifiers: NC,MSB						
	2120	216	2150	mg/kg			SW846 6010B	04/22-04/23/10	L0AE01CE
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6		Analyst ID.....: 000079		
Antimony									
	0.031	10.8	6.3 N	mg/kg	58		SW846 6020	04/22-04/23/10	L0AE01DF
	0.031	10.8	6.6 N	mg/kg	61	4.0	SW846 6020	04/22-04/23/10	L0AE01DG
			Dilution Factor: 10						
			Analysis Time...: 16:30		Instrument ID...: I8		Analyst ID.....: 001637		
Arsenic									
	1.2	10.8	10.0	mg/kg	82		SW846 6020	04/22-04/27/10	L0AE01CU
	1.2	10.8	9.7	mg/kg	79	3.3	SW846 6020	04/22-04/27/10	L0AE01CV
			Dilution Factor: 1						
			Analysis Time...: 00:12		Instrument ID...: I8		Analyst ID.....: 001637		
Barium									
	6.6	216	211	mg/kg	95		SW846 6010B	04/22-04/23/10	L0AE01CF
	6.6	216	206	mg/kg	93	2.2	SW846 6010B	04/22-04/23/10	L0AE01CG
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6		Analyst ID.....: 000079		
Beryllium									
	ND	5.4	4.8	mg/kg	88		SW846 6010B	04/22-04/23/10	L0AE01CH
	ND	5.4	4.7	mg/kg	87	1.2	SW846 6010B	04/22-04/23/10	L0AE01CJ
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6		Analyst ID.....: 000079		
Cadmium									
	ND	5.4	5.0	mg/kg	92		SW846 6010B	04/22-04/23/10	L0AE01CK
	ND	5.4	4.9	mg/kg	91	2.0	SW846 6010B	04/22-04/23/10	L0AE01CL
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6		Analyst ID.....: 000079		
Calcium									
	4290	5390	8220 N	mg/kg	73		SW846 6010B	04/22-04/23/10	L0AE01CM
	4290	5390	15900	mg/kg	216	64	SW846 6010B	04/22-04/23/10	L0AE01CN
			Qualifiers: N,*						
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6		Analyst ID.....: 000079		

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Chromium									
	6.1	21.6	27.7	mg/kg	100		SW846 6010B	04/22-04/23/10	L0AE01DD
	6.1	21.6	26.5	mg/kg	94	4.4	SW846 6010B	04/22-04/23/10	L0AE01DE
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Cobalt									
	2.2	53.9	52.3	mg/kg	93		SW846 6010B	04/22-04/23/10	L0AE01CP
	2.2	53.9	50.7	mg/kg	90	3.1	SW846 6010B	04/22-04/23/10	L0AE01CQ
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Copper									
	4.4	26.9	30.5	mg/kg	97		SW846 6010B	04/22-04/23/10	L0AE01CR
	4.4	26.9	29.4	mg/kg	93	3.7	SW846 6010B	04/22-04/23/10	L0AE01CT
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Iron									
	3290	108	3960	mg/kg			SW846 6010B	04/22-04/23/10	L0AE01A6
Qualifiers: NC,MSB									
	3290	108	2820	mg/kg			SW846 6010B	04/22-04/23/10	L0AE01A7
Qualifiers: NC,MSB									
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Lead									
	1.9	53.9	52.4	mg/kg	94		SW846 6010B	04/22-04/23/10	L0AE01A8
	1.9	53.9	50.5	mg/kg	90	3.7	SW846 6010B	04/22-04/23/10	L0AE01A9
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Magnesium									
	3020	5390	7600	mg/kg	85		SW846 6010B	04/22-04/23/10	L0AE01CA
	3020	5390	12100	mg/kg	169	46	SW846 6010B	04/22-04/23/10	L0AE01CC
Qualifiers: N,*									
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Manganese									
	37.5	53.9	95.8	mg/kg	108		SW846 6010B	04/22-04/23/10	L0AE01C2
	37.5	53.9	78.0	mg/kg	75	20	SW846 6010B	04/22-04/23/10	L0AE01C3
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Mercury									
	ND	0.18	0.18	mg/kg	100		SW846 7471A	04/22-04/23/10	L0AE01DM
	ND	0.18	0.18	mg/kg	98	1.3	SW846 7471A	04/22-04/23/10	L0AE01DN
Dilution Factor: 1									
Analysis Time...: 13:17 Instrument ID...: H1 Analyst ID.....: 001576									
Nickel									
	5.1	53.9	56.8	mg/kg	96		SW846 6010B	04/22-04/23/10	L0AE01C4
	5.1	53.9	54.3	mg/kg	91	4.5	SW846 6010B	04/22-04/23/10	L0AE01C5
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Potassium									
	174	5390	5440	mg/kg	98		SW846 6010B	04/22-04/23/10	L0AE01C6
	174	5390	5260	mg/kg	94	3.2	SW846 6010B	04/22-04/23/10	L0AE01C7
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Selenium									
	0.28	10.8	9.2	mg/kg	83		SW846 6020	04/22-04/23/10	L0AE01CW
	0.28	10.8	9.4	mg/kg	84	1.4	SW846 6020	04/22-04/23/10	L0AE01CX
Dilution Factor: 10									
Analysis Time...: 16:30 Instrument ID...: I8 Analyst ID.....: 001637									
Silver									
	ND	10.8	10.0	mg/kg	93		SW846 6020	04/22-04/23/10	L0AE01C0
	ND	10.8	9.9	mg/kg	92	0.87	SW846 6020	04/22-04/23/10	L0AE01C1
Dilution Factor: 10									
Analysis Time...: 16:30 Instrument ID...: I8 Analyst ID.....: 001637									
Sodium									
	277	5390	5360	mg/kg	94		SW846 6010B	04/22-04/23/10	L0AE01C8
	277	5390	5270	mg/kg	93	1.8	SW846 6010B	04/22-04/23/10	L0AE01C9
Dilution Factor: 1									
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079									
Thallium									
	0.041	10.8	9.2	mg/kg	85		SW846 6020	04/22-04/23/10	L0AE01DH
	0.041	10.8	9.0	mg/kg	83	2.0	SW846 6020	04/22-04/23/10	L0AE01DJ
Dilution Factor: 10									
Analysis Time...: 16:30 Instrument ID...: I8 Analyst ID.....: 001637									

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Vanadium									
	8.4	53.9	59.3	mg/kg	95		SW846 6010B	04/22-04/23/10	L0AE01DA
	8.4	53.9	57.3	mg/kg	91	3.4	SW846 6010B	04/22-04/23/10	L0AE01DC
			Dilution Factor: 1						
			Analysis Time...: 20:16		Instrument ID...: I6			Analyst ID.....: 000079	
Zinc									
	8.5	10.8	27.9	mg/kg	180		SW846 6020	04/22-04/23/10	L0AE01DK
	8.5	10.8	27.2	mg/kg	174	2.7	SW846 6020	04/22-04/23/10	L0AE01DL
			Dilution Factor: 10						
			Analysis Time...: 16:30		Instrument ID...: I8			Analyst ID.....: 001637	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-041 Prep Batch #...: 0112020						
Aluminum	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CD
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/23/10	L0AE01CE
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						
Antimony	58 N	(75 - 125)		SW846 6020	04/22-04/23/10	L0AE01DF
	61 N	(75 - 125)	4.0 (0-20)	SW846 6020	04/22-04/23/10	L0AE01DG
Dilution Factor: 10						
Analysis Time...: 16:30 Instrument ID...: I8 Analyst ID.....: 001637						
Arsenic	82	(23 - 131)		SW846 6020	04/22-04/27/10	L0AE01CU
	79	(23 - 131)	3.3 (0-20)	SW846 6020	04/22-04/27/10	L0AE01CV
Dilution Factor: 1						
Analysis Time...: 00:12 Instrument ID...: I8 Analyst ID.....: 001637						
Barium	95	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CF
	93	(75 - 125)	2.2 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CG
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						
Beryllium	88	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CH
	87	(75 - 125)	1.2 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CJ
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						
Cadmium	92	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CK
	91	(75 - 125)	2.0 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CL
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						
Calcium	73 N	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CM
	216 N, *	(75 - 125)	64 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CN
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						
Chromium	100	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01DD
	94	(75 - 125)	4.4 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01DE
Dilution Factor: 1						
Analysis Time...: 20:16 Instrument ID...: I6 Analyst ID.....: 000079						

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	93	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CP
	90	(75 - 125)	3.1 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CQ
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Copper	97	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CR
	93	(75 - 125)	3.7 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CT
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Iron	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01A6
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/23/10	L0AE01A7
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Lead	94	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01A8
	90	(75 - 125)	3.7 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01A9
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Magnesium	85	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01CA
	169 N, *	(75 - 125)	46 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01CC
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Manganese	108	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01C2
	75	(75 - 125)	20 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01C3
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Mercury	100	(11 - 192)		SW846 7471A	04/22-04/23/10	L0AE01DM
	98	(11 - 192)	1.3 (0-20)	SW846 7471A	04/22-04/23/10	L0AE01DN
		Dilution Factor: 1				
		Analysis Time...: 13:17		Instrument ID...: H1	Analyst ID.....: 001576	
Nickel	96	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01C4
	91	(75 - 125)	4.5 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01C5
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Potassium	98	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01C6
	94	(75 - 125)	3.2 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01C7
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Selenium	83	(39 - 116)		SW846 6020	04/22-04/23/10	L0AE01CW
	84	(39 - 116)	1.4 (0-20)	SW846 6020	04/22-04/23/10	L0AE01CX
		Dilution Factor: 10				
		Analysis Time...: 16:30		Instrument ID...: I8	Analyst ID.....: 001637	
Silver	93	(75 - 125)		SW846 6020	04/22-04/23/10	L0AE01C0
	92	(75 - 125)	0.87 (0-20)	SW846 6020	04/22-04/23/10	L0AE01C1
		Dilution Factor: 10				
		Analysis Time...: 16:30		Instrument ID...: I8	Analyst ID.....: 001637	
Sodium	94	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01C8
	93	(75 - 125)	1.8 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01C9
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Thallium	85	(62 - 110)		SW846 6020	04/22-04/23/10	L0AE01DH
	83	(62 - 110)	2.0 (0-20)	SW846 6020	04/22-04/23/10	L0AE01DJ
		Dilution Factor: 10				
		Analysis Time...: 16:30		Instrument ID...: I8	Analyst ID.....: 001637	
Vanadium	95	(75 - 125)		SW846 6010B	04/22-04/23/10	L0AE01DA
	91	(75 - 125)	3.4 (0-20)	SW846 6010B	04/22-04/23/10	L0AE01DC
		Dilution Factor: 1				
		Analysis Time...: 20:16		Instrument ID...: I6	Analyst ID.....: 000079	
Zinc	180	(10 - 199)		SW846 6020	04/22-04/23/10	L0AE01DK
	174	(10 - 199)	2.7 (0-20)	SW846 6020	04/22-04/23/10	L0AE01DL
		Dilution Factor: 10				
		Analysis Time...: 16:30		Instrument ID...: I8	Analyst ID.....: 001637	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-001 Prep Batch #...: 0112021									
Aluminum									
	2230	206	2960	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1AC
			Qualifiers: NC,MSB						
	2230	206	3610	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1AD
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079		
Antimony									
	ND	10.3	4.9 N	mg/kg	47		SW846 6020	04/22-04/26/10	L0ACP1CX
	ND	10.3	4.9 N	mg/kg	47	0.19	SW846 6020	04/22-04/26/10	L0ACP1C0
			Dilution Factor: 1						
			Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637		
Arsenic									
	1.8	10.3	11.0	mg/kg	89		SW846 6020	04/22-04/26/10	L0ACP1C2
	1.8	10.3	10.4	mg/kg	83	5.7	SW846 6020	04/22-04/26/10	L0ACP1C3
			Dilution Factor: 1						
			Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637		
Barium									
	14.3	206	211	mg/kg	96		SW846 6010B	04/22-04/26/10	L0ACP1AF
	14.3	206	214	mg/kg	97	1.7	SW846 6010B	04/22-04/26/10	L0ACP1AG
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079		
Beryllium									
	ND	5.1	4.6	mg/kg	90		SW846 6010B	04/22-04/26/10	L0ACP1AJ
	ND	5.1	4.7	mg/kg	92	2.5	SW846 6010B	04/22-04/26/10	L0ACP1AK
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079		
Cadmium									
	0.077	5.1	4.8	mg/kg	92		SW846 6010B	04/22-04/26/10	L0ACP1AM
	0.077	5.1	4.9	mg/kg	94	1.8	SW846 6010B	04/22-04/26/10	L0ACP1AN
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079		
Calcium									
	46900	5140	46600	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1AQ
			Qualifiers: NC,MSB						
	46900	5140	49800	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1AR
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079		

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Chromium	5.8	20.6	26.1	mg/kg	98		SW846 6010B	04/22-04/26/10	L0ACP1CU
	5.8	20.6	28.2	mg/kg	109	7.7	SW846 6010B	04/22-04/26/10	L0ACP1CV
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Cobalt	2.2	51.4	51.0	mg/kg	95		SW846 6010B	04/22-04/26/10	L0ACP1AU
	2.2	51.4	52.3	mg/kg	98	2.6	SW846 6010B	04/22-04/26/10	L0ACP1AV
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Copper	10.2	25.7	31.8	mg/kg	84		SW846 6010B	04/22-04/26/10	L0ACP1AX
	10.2	25.7	31.7	mg/kg	84	0.31	SW846 6010B	04/22-04/26/10	L0ACP1A0
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Iron	4710	103	5300	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1A2
Qualifiers: NC,MSB									
	4710	103	6090	mg/kg			SW846 6010B	04/22-04/26/10	L0ACP1A3
Qualifiers: NC,MSB									
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Lead	7.0	51.4	56.5	mg/kg	96		SW846 6010B	04/22-04/26/10	L0ACP1A5
	7.0	51.4	56.0	mg/kg	95	0.91	SW846 6010B	04/22-04/26/10	L0ACP1A6
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Magnesium	14600	5140	18800	mg/kg	81		SW846 6010B	04/22-04/26/10	L0ACP1A8
	14600	5140	15300	N mg/kg	14	20	SW846 6010B	04/22-04/26/10	L0ACP1A9
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Manganese	147	51.4	206	mg/kg	114		SW846 6010B	04/22-04/26/10	L0ACP1CC
	147	51.4	207	mg/kg	116	0.50	SW846 6010B	04/22-04/26/10	L0ACP1CD
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Mercury									
	ND	0.17	0.20	mg/kg	114		SW846 7471A	04/22-04/23/10	L0ACP1DJ
	ND	0.17	0.20	mg/kg	115	0.17	SW846 7471A	04/22-04/23/10	L0ACP1DK
Dilution Factor: 1									
Analysis Time...: 14:07 Instrument ID...: H1 Analyst ID.....: 001576									
Nickel									
	5.5	51.4	53.2	mg/kg	93		SW846 6010B	04/22-04/26/10	L0ACP1CF
	5.5	51.4	55.3	mg/kg	97	3.8	SW846 6010B	04/22-04/26/10	L0ACP1CG
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Potassium									
	418	5140	5780	mg/kg	104		SW846 6010B	04/22-04/26/10	L0ACP1CJ
	418	5140	5830	mg/kg	105	0.94	SW846 6010B	04/22-04/26/10	L0ACP1CK
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Selenium									
	0.15	10.3	8.6	mg/kg	82		SW846 6020	04/22-04/26/10	L0ACP1C5
	0.15	10.3	8.3	mg/kg	79	3.4	SW846 6020	04/22-04/26/10	L0ACP1C6
Dilution Factor: 1									
Analysis Time...: 20:17 Instrument ID...: I8 Analyst ID.....: 001637									
Silver									
	0.63	10.3	9.4	mg/kg	85		SW846 6020	04/22-04/26/10	L0ACP1C8
	0.63	10.3	9.0	mg/kg	81	4.4	SW846 6020	04/22-04/26/10	L0ACP1C9
Dilution Factor: 1									
Analysis Time...: 20:17 Instrument ID...: I8 Analyst ID.....: 001637									
Sodium									
	104	5140	4950	mg/kg	94		SW846 6010B	04/22-04/26/10	L0ACP1CM
	104	5140	4970	mg/kg	95	0.36	SW846 6010B	04/22-04/26/10	L0ACP1CN
Dilution Factor: 1									
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079									
Thallium									
	0.053	10.3	9.4	mg/kg	91		SW846 6020	04/22-04/26/10	L0ACP1DC
	0.053	10.3	9.3	mg/kg	90	0.50	SW846 6020	04/22-04/26/10	L0ACP1DD
Dilution Factor: 1									
Analysis Time...: 20:17 Instrument ID...: I8 Analyst ID.....: 001637									

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Vanadium									
	6.8	51.4	56.7	mg/kg	97		SW846 6010B	04/22-04/26/10	L0ACP1CQ
	6.8	51.4	58.9	mg/kg	101	3.8	SW846 6010B	04/22-04/26/10	L0ACP1CR
			Dilution Factor: 1						
			Analysis Time...: 22:43		Instrument ID...: I6			Analyst ID.....: 000079	
Zinc									
	14.8	10.3	25.5	mg/kg	104		SW846 6020	04/22-04/26/10	L0ACP1DF
	14.8	10.3	24.7	mg/kg	96	3.2	SW846 6020	04/22-04/26/10	L0ACP1DG
			Dilution Factor: 1						
			Analysis Time...: 20:17		Instrument ID...: I8			Analyst ID.....: 001637	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-001 Prep Batch #...: 0112021						
Aluminum	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AC
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AD
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	
Antimony	47 N	(75 - 125)		SW846 6020	04/22-04/26/10	L0ACP1CX
	47 N	(75 - 125)	0.19 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1C0
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8	Analyst ID.....: 001637	
Arsenic	89	(23 - 131)		SW846 6020	04/22-04/26/10	L0ACP1C2
	83	(23 - 131)	5.7 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1C3
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8	Analyst ID.....: 001637	
Barium	96	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AF
	97	(75 - 125)	1.7 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AG
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	
Beryllium	90	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AJ
	92	(75 - 125)	2.5 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AK
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	
Cadmium	92	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AM
	94	(75 - 125)	1.8 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AN
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	
Calcium	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AQ
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AR
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	
Chromium	98	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CU
	109	(75 - 125)	7.7 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CV
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6	Analyst ID.....: 000079	

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	95	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AU
	98	(75 - 125)	2.6 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1AV
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Copper	84	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1AX
	84	(75 - 125)	0.31 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1A0
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Iron	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1A2
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/26/10	L0ACP1A3
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Lead	96	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1A5
	95	(75 - 125)	0.91 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1A6
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Magnesium	81	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1A8
	14 N	(75 - 125)	20 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1A9
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Manganese	114	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CC
	116	(75 - 125)	0.50 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CD
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Mercury	114	(11 - 192)		SW846 7471A	04/22-04/23/10	L0ACP1DJ
	115	(11 - 192)	0.17 (0-20)	SW846 7471A	04/22-04/23/10	L0ACP1DK
Dilution Factor: 1						
Analysis Time...: 14:07 Instrument ID...: H1 Analyst ID.....: 001576						
Nickel	93	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CF
	97	(75 - 125)	3.8 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CG
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						
Potassium	104	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CJ
	105	(75 - 125)	0.94 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CK
Dilution Factor: 1						
Analysis Time...: 22:43 Instrument ID...: I6 Analyst ID.....: 000079						

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Selenium	82	(39 - 116)		SW846 6020	04/22-04/26/10	L0ACP1C5
	79	(39 - 116)	3.4 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1C6
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637
Silver	85	(75 - 125)		SW846 6020	04/22-04/26/10	L0ACP1C8
	81	(75 - 125)	4.4 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1C9
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637
Sodium	94	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CM
	95	(75 - 125)	0.36 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CN
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079
Thallium	91	(62 - 110)		SW846 6020	04/22-04/26/10	L0ACP1DC
	90	(62 - 110)	0.50 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1DD
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637
Vanadium	97	(75 - 125)		SW846 6010B	04/22-04/26/10	L0ACP1CQ
	101	(75 - 125)	3.8 (0-20)	SW846 6010B	04/22-04/26/10	L0ACP1CR
		Dilution Factor: 1				
		Analysis Time...: 22:43		Instrument ID...: I6		Analyst ID.....: 000079
Zinc	104	(10 - 199)		SW846 6020	04/22-04/26/10	L0ACP1DF
	96	(10 - 199)	3.2 (0-20)	SW846 6020	04/22-04/26/10	L0ACP1DG
		Dilution Factor: 1				
		Analysis Time...: 20:17		Instrument ID...: I8		Analyst ID.....: 001637

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-033 Prep Batch #...: 0112024									
Aluminum									
	1770	226	2750	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AM
			Qualifiers: NC,MSB						
	1770	226	2260	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AN
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Antimony									
	0.43	11.3	7.3 N	mg/kg	61		SW846 6020	04/22-04/26/10	L0AEG1C8
	0.43	11.3	7.6 N	mg/kg	63	4.2	SW846 6020	04/22-04/26/10	L0AEG1C9
			Dilution Factor: 1						
			Analysis Time...: 19:09		Instrument ID...: I8		Analyst ID.....: 001637		
Arsenic									
	6.5	11.3	16.1	mg/kg	85		SW846 6020	04/22-04/26/10	L0AEG1CC
	6.5	11.3	16.5	mg/kg	89	2.5	SW846 6020	04/22-04/26/10	L0AEG1CD
			Dilution Factor: 1						
			Analysis Time...: 19:09		Instrument ID...: I8		Analyst ID.....: 001637		
Barium									
	68.7	226	287	mg/kg	97		SW846 6010B	04/22-04/29/10	L0AEG1AQ
	68.7	226	279	mg/kg	93	3.1	SW846 6010B	04/22-04/29/10	L0AEG1AR
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Beryllium									
	ND	5.6	4.6	mg/kg	82		SW846 6010B	04/22-04/29/10	L0AEG1AU
	ND	5.6	5.1	mg/kg	91	11	SW846 6010B	04/22-04/29/10	L0AEG1AV
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Cadmium									
	0.27	5.6	5.7	mg/kg	95		SW846 6010B	04/22-04/29/10	L0AEG1AX
	0.27	5.6	5.7	mg/kg	96	0.74	SW846 6010B	04/22-04/29/10	L0AEG1A0
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Calcium									
	2620	5650	10100 N	mg/kg	132		SW846 6010B	04/22-04/29/10	L0AEG1A2
	2620	5650	11000 N	mg/kg	148	8.5	SW846 6010B	04/22-04/29/10	L0AEG1A3
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Chromium	244	22.6	493	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1C5
			Qualifiers: NC,MSB						
	244	22.6	393	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1C6
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Cobalt	10.4	56.5	67.5	mg/kg	101		SW846 6010B	04/22-04/29/10	L0AEG1A5
	10.4	56.5	65.6	mg/kg	98	2.9	SW846 6010B	04/22-04/29/10	L0AEG1A6
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Copper	43.2	28.2	89.4 N	mg/kg	163		SW846 6010B	04/22-04/29/10	L0AEG1A8
	43.2	28.2	72.2 *	mg/kg	102	21	SW846 6010B	04/22-04/29/10	L0AEG1A9
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Iron	12700	113	14800	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AC
			Qualifiers: NC,MSB						
	12700	113	10300	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AD
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Lead	382	56.5	574	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AF
			Qualifiers: NC,MSB						
	382	56.5	821	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1AG
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Magnesium	745	5650	6730	mg/kg	106		SW846 6010B	04/22-04/29/10	L0AEG1AJ
	745	5650	7370	mg/kg	117	9.2	SW846 6010B	04/22-04/29/10	L0AEG1AK
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	315	56.5	768	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1CM
			Qualifiers: NC,MSB						
	315	56.5	577	mg/kg			SW846 6010B	04/22-04/29/10	L0AEG1CN
			Qualifiers: NC,MSB						
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Mercury	ND	0.19	0.18	mg/kg	97		SW846 7471A	04/22-04/23/10	L0AEG1DJ
	ND	0.19	0.19	mg/kg	102	5.7	SW846 7471A	04/22-04/23/10	L0AEG1DK
			Dilution Factor: 1						
			Analysis Time...: 14:44		Instrument ID...: H1		Analyst ID.....: 001576		
Nickel	169	56.5	337 N	mg/kg	299		SW846 6010B	04/22-04/29/10	L0AEG1CQ
	169	56.5	260 N, *	mg/kg	161	26	SW846 6010B	04/22-04/29/10	L0AEG1CR
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Potassium	135	5650	5800	mg/kg	100		SW846 6010B	04/22-04/29/10	L0AEG1CU
	135	5650	5920	mg/kg	102	2.0	SW846 6010B	04/22-04/29/10	L0AEG1CV
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		
Selenium	0.40	11.3	9.1	mg/kg	77		SW846 6020	04/22-04/26/10	L0AEG1CF
	0.40	11.3	9.2	mg/kg	78	1.2	SW846 6020	04/22-04/26/10	L0AEG1CG
			Dilution Factor: 1						
			Analysis Time...: 19:09		Instrument ID...: I8		Analyst ID.....: 001637		
Silver	0.11	11.3	10.5	mg/kg	92		SW846 6020	04/22-04/26/10	L0AEG1CJ
	0.11	11.3	10.8	mg/kg	94	2.6	SW846 6020	04/22-04/26/10	L0AEG1CK
			Dilution Factor: 1						
			Analysis Time...: 19:09		Instrument ID...: I8		Analyst ID.....: 001637		
Sodium	452	5650	5740	mg/kg	94		SW846 6010B	04/22-04/29/10	L0AEG1CX
	452	5650	5830	mg/kg	95	1.5	SW846 6010B	04/22-04/29/10	L0AEG1C0
			Dilution Factor: 1						
			Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079		

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Thallium									
	0.097	11.3	9.2	mg/kg	80		SW846 6020	04/22-04/26/10	L0AEG1DC
	0.097	11.3	9.0	mg/kg	79	1.9	SW846 6020	04/22-04/26/10	L0AEG1DD
Dilution Factor: 1									
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637									
Vanadium									
	12.4	56.5	66.1	mg/kg	95		SW846 6010B	04/22-04/29/10	L0AEG1C2
	12.4	56.5	67.4	mg/kg	97	1.9	SW846 6010B	04/22-04/29/10	L0AEG1C3
Dilution Factor: 1									
Analysis Time...: 08:14 Instrument ID...: I6 Analyst ID.....: 000079									
Zinc									
	38.2	11.3	54.6	mg/kg	146		SW846 6020	04/22-04/26/10	L0AEG1DF
	38.2	11.3	57.8	mg/kg	173	5.6	SW846 6020	04/22-04/26/10	L0AEG1DG
Dilution Factor: 1									
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637									

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D210499-033 Prep Batch #...: 0112024						
Aluminum	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1AM
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AN
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	
Antimony	61 N	(75 - 125)		SW846 6020	04/22-04/26/10	L0AEG1C8
	63 N	(75 - 125)	4.2 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1C9
		Dilution Factor: 1				
		Analysis Time...: 19:09		Instrument ID...: I8	Analyst ID.....: 001637	
Arsenic	85	(23 - 131)		SW846 6020	04/22-04/26/10	L0AEG1CC
	89	(23 - 131)	2.5 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1CD
		Dilution Factor: 1				
		Analysis Time...: 19:09		Instrument ID...: I8	Analyst ID.....: 001637	
Barium	97	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1AQ
	93	(75 - 125)	3.1 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AR
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	
Beryllium	82	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1AU
	91	(75 - 125)	11 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AV
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	
Cadmium	95	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1AX
	96	(75 - 125)	0.74 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1A0
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	
Calcium	132 N	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1A2
	148 N	(75 - 125)	8.5 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1A3
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	
Chromium	NC,MSB	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1C5
	NC,MSB	(75 - 125)	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1C6
		Dilution Factor: 1				
		Analysis Time...: 08:14		Instrument ID...: I6	Analyst ID.....: 000079	

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	101	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1A5
	98	(75 - 125)	2.9	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1A6
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Copper	163 N	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1A8
	102 *	(75 - 125)	21	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1A9
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Iron	NC,MSB	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1AC
	NC,MSB	(75 - 125)		(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AD
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Lead	NC,MSB	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1AF
	NC,MSB	(75 - 125)		(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AG
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Magnesium	106	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1AJ
	117	(75 - 125)	9.2	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1AK
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Manganese	NC,MSB	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1CM
	NC,MSB	(75 - 125)		(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1CN
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Mercury	97	(11 - 192)			SW846 7471A	04/22-04/23/10	L0AEG1DJ
	102	(11 - 192)	5.7	(0-20)	SW846 7471A	04/22-04/23/10	L0AEG1DK
		Dilution Factor: 1					
		Analysis Time...: 14:44		Instrument ID...: H1		Analyst ID.....: 001576	
Nickel	299 N	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1CQ
	161 N, *	(75 - 125)	26	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1CR
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	
Potassium	100	(75 - 125)			SW846 6010B	04/22-04/29/10	L0AEG1CU
	102	(75 - 125)	2.0	(0-20)	SW846 6010B	04/22-04/29/10	L0AEG1CV
		Dilution Factor: 1					
		Analysis Time...: 08:14		Instrument ID...: I6		Analyst ID.....: 000079	

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Selenium	77	(39 - 116)		SW846 6020	04/22-04/26/10	L0AEG1CF
	78	(39 - 116)	1.2 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1CG
Dilution Factor: 1						
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637						
Silver	92	(75 - 125)		SW846 6020	04/22-04/26/10	L0AEG1CJ
	94	(75 - 125)	2.6 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1CK
Dilution Factor: 1						
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637						
Sodium	94	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1CX
	95	(75 - 125)	1.5 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1C0
Dilution Factor: 1						
Analysis Time...: 08:14 Instrument ID...: I6 Analyst ID.....: 000079						
Thallium	80	(62 - 110)		SW846 6020	04/22-04/26/10	L0AEG1DC
	79	(62 - 110)	1.9 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1DD
Dilution Factor: 1						
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637						
Vanadium	95	(75 - 125)		SW846 6010B	04/22-04/29/10	L0AEG1C2
	97	(75 - 125)	1.9 (0-20)	SW846 6010B	04/22-04/29/10	L0AEG1C3
Dilution Factor: 1						
Analysis Time...: 08:14 Instrument ID...: I6 Analyst ID.....: 000079						
Zinc	146	(10 - 199)		SW846 6020	04/22-04/26/10	L0AEG1DF
	173	(10 - 199)	5.6 (0-20)	SW846 6020	04/22-04/26/10	L0AEG1DG
Dilution Factor: 1						
Analysis Time...: 19:09 Instrument ID...: I8 Analyst ID.....: 001637						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #

MS Lot-Sample #: A0D210499-043 Prep Batch #...: 0139052

Lead

83.0	50.9	153	N	mg/kg	138		SW846 6010B	05/19-05/20/10	L1MLC1AD
83.0	50.9	138		mg/kg	108	11	SW846 6010B	05/19-05/20/10	L1MLC1AE

Dilution Factor: 5

Analysis Time...: 14:53

Instrument ID...: I6

Analyst ID.....: 001637

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A0D210499

Matrix.....: S0

Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #

MS Lot-Sample #: A0D210499-043 Prep Batch #...: 0139052

Lead	138 N	(75 - 125)			SW846 6010B	05/19-05/20/10	L1MLC1AD
	108	(75 - 125) 11	(0-20)		SW846 6010B	05/19-05/20/10	L1MLC1AE

Dilution Factor: 5

Analysis Time...: 14:53

Instrument ID...: I6

Analyst ID.....: 001637

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

GENERAL CHEMISTRY DATA

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-001

General Chemistry

Lot-Sample #...: A0D210499-001 Work Order #...: L0ACP Matrix.....: S0
Date Sampled...: 04/20/10 08:05 Date Received...: 04/21/10
% Moisture.....: 2.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.3	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-002

General Chemistry

Lot-Sample #...: A0D210499-002 Work Order #...: L0AC4 Matrix.....: S0
Date Sampled...: 04/20/10 08:25 Date Received...: 04/21/10
% Moisture.....: 9.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	90.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-003

General Chemistry

Lot-Sample #...: A0D210499-003 Work Order #...: L0AC7 Matrix.....: S0
Date Sampled...: 04/20/10 08:35 Date Received...: 04/21/10
% Moisture.....: 3.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	96.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-004

General Chemistry

Lot-Sample #...: A0D210499-004 Work Order #...: L0AC8 Matrix.....: S0
Date Sampled...: 04/20/10 08:45 Date Received...: 04/21/10
% Moisture.....: 2.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-005

General Chemistry

Lot-Sample #...: A0D210499-005 Work Order #...: L0AC9 Matrix.....: S0
Date Sampled...: 04/20/10 08:47 Date Received...: 04/21/10
% Moisture.....: 2.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-007

General Chemistry

Lot-Sample #...: A0D210499-007 Work Order #...: L0ADD Matrix.....: S0
Date Sampled...: 04/20/10 08:52 Date Received...: 04/21/10
% Moisture.....: 5.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	94.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-008

General Chemistry

Lot-Sample #...: A0D210499-008 Work Order #...: L0ADE Matrix.....: S0
Date Sampled...: 04/20/10 08:55 Date Received...: 04/21/10
% Moisture.....: 4.9

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	95.1	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-009

General Chemistry

Lot-Sample #...: A0D210499-009 Work Order #...: L0ADF Matrix.....: S0
Date Sampled...: 04/20/10 09:25 Date Received...: 04/21/10
% Moisture.....: 4.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	95.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-010

General Chemistry

Lot-Sample #...: A0D210499-010 Work Order #...: L0ADH Matrix.....: S0
Date Sampled...: 04/20/10 09:29 Date Received...: 04/21/10
% Moisture.....: 5.5

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	94.5	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-011

General Chemistry

Lot-Sample #...: A0D210499-011 Work Order #...: L0ADK Matrix.....: S0
Date Sampled...: 04/20/10 09:30 Date Received...: 04/21/10
% Moisture.....: 5.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	94.2	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-012

General Chemistry

Lot-Sample #...: A0D210499-012 Work Order #...: L0ADL Matrix.....: S0
Date Sampled...: 04/20/10 09:40 Date Received...: 04/21/10
% Moisture.....: 6.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	93.2	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-013

General Chemistry

Lot-Sample #...: A0D210499-013 Work Order #...: L0ADM Matrix.....: S0
Date Sampled...: 04/20/10 09:42 Date Received...: 04/21/10
% Moisture.....: 4.3

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	95.7	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-014

General Chemistry

Lot-Sample #...: A0D210499-014 Work Order #...: L0ADN Matrix.....: S0
Date Sampled...: 04/20/10 09:45 Date Received...: 04/21/10
% Moisture.....: 6.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	93.7	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-015

General Chemistry

Lot-Sample #...: A0D210499-015 Work Order #...: L0ADP Matrix.....: S0
Date Sampled...: 04/20/10 09:55 Date Received...: 04/21/10
% Moisture.....: 3.3

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	96.7	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-016

General Chemistry

Lot-Sample #....: A0D210499-016 Work Order #....: L0ADQ Matrix.....: SO
Date Sampled....: 04/20/10 09:55 Date Received...: 04/21/10
% Moisture.....: 2.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.82	mg/kg	SW846 7196A	05/20-05/25/10	0145066
		Dilution Factor: 1		MDL.....: 0.28		
Percent Solids	97.2	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-017

General Chemistry

Lot-Sample #...: A0D210499-017 Work Order #...: L0ADT Matrix.....: S0
Date Sampled...: 04/20/10 09:57 Date Received...: 04/21/10
% Moisture.....: 9.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	90.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-018

General Chemistry

Lot-Sample #...: A0D210499-018 Work Order #...: L0ADV Matrix.....: S0
Date Sampled...: 04/20/10 10:00 Date Received...: 04/21/10
% Moisture.....: 8.1

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	91.9	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-019

General Chemistry

Lot-Sample #...: A0D210499-019 Work Order #...: L0ADW Matrix.....: S0
Date Sampled...: 04/20/10 10:02 Date Received...: 04/21/10
% Moisture.....: 9.0

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	91.1	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-020

General Chemistry

Lot-Sample #...: A0D210499-020 Work Order #...: L0ADX Matrix.....: S0
Date Sampled...: 04/20/10 10:05 Date Received...: 04/21/10
% Moisture.....: 5.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	94.6	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-022

General Chemistry

Lot-Sample #...: A0D210499-022 Work Order #...: L0AD1 Matrix.....: S0
Date Sampled...: 04/20/10 10:21 Date Received...: 04/21/10
% Moisture.....: 7.2

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	92.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-024

General Chemistry

Lot-Sample #....: A0D210499-024 Work Order #....: L0AD4 Matrix.....: SO
Date Sampled....: 04/20/10 10:25 Date Received...: 04/21/10
% Moisture.....: 4.3

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.84	mg/kg	SW846 7196A	05/20-05/25/10	0145066
		Dilution Factor: 1		MDL.....: 0.28		
Percent Solids	95.7	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-025

General Chemistry

Lot-Sample #...: A0D210499-025 Work Order #...: L0AD5 Matrix.....: S0
Date Sampled...: 04/20/10 10:27 Date Received...: 04/21/10
% Moisture.....: 8.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	91.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-026

General Chemistry

Lot-Sample #...: A0D210499-026 Work Order #...: L0AD6 Matrix.....: S0
Date Sampled...: 04/20/10 10:30 Date Received...: 04/21/10
% Moisture.....: 6.1

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	93.9	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-030

General Chemistry

Lot-Sample #...: A0D210499-030 Work Order #...: L0AED Matrix.....: S0
Date Sampled...: 04/20/10 10:42 Date Received...: 04/21/10
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	79.5	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-031

General Chemistry

Lot-Sample #...: A0D210499-031 Work Order #...: L0AEE Matrix.....: S0
Date Sampled...: 04/20/10 10:45 Date Received...: 04/21/10
% Moisture.....: 7.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	92.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-032

General Chemistry

Lot-Sample #...: A0D210499-032 Work Order #...: L0AEF Matrix.....: S0
Date Sampled...: 04/20/10 11:15 Date Received...: 04/21/10
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	85.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-033

General Chemistry

Lot-Sample #....: A0D210499-033 Work Order #....: L0AEG Matrix.....: SO
Date Sampled....: 04/20/10 11:17 Date Received...: 04/21/10
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.90	mg/kg	SW846 7196A	05/20-05/25/10	0145066
		Dilution Factor: 1		MDL.....: 0.31		
Percent Solids	88.5	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-035

General Chemistry

Lot-Sample #...: A0D210499-035 Work Order #...: L0AEM Matrix.....: S0
Date Sampled...: 04/20/10 11:22 Date Received...: 04/21/10
% Moisture.....: 11

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	89.3	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-036

General Chemistry

Lot-Sample #...: A0D210499-036 Work Order #...: L0AEN Matrix.....: S0
Date Sampled...: 04/20/10 11:25 Date Received...: 04/21/10
% Moisture.....: 7.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	92.4	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-037

General Chemistry

Lot-Sample #...: A0D210499-037 Work Order #...: L0AER Matrix.....: S0
Date Sampled...: 04/20/10 11:35 Date Received...: 04/21/10
% Moisture.....: 6.5

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	93.5	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-038

General Chemistry

Lot-Sample #...: A0D210499-038 Work Order #...: L0AET Matrix.....: S0
Date Sampled...: 04/20/10 11:39 Date Received...: 04/21/10
% Moisture.....: 7.1

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	92.9	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-039

General Chemistry

Lot-Sample #...: A0D210499-039 Work Order #...: L0AEW Matrix.....: S0
Date Sampled...: 04/20/10 11:40 Date Received...: 04/21/10
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	83.1	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-040

General Chemistry

Lot-Sample #...: A0D210499-040 Work Order #...: L0AEX Matrix.....: S0
Date Sampled...: 04/20/10 11:42 Date Received...: 04/21/10
% Moisture.....: 10

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	89.6	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-041

General Chemistry

Lot-Sample #...: A0D210499-041 Work Order #...: L0AE0 Matrix.....: S0
Date Sampled...: 04/20/10 11:45 Date Received...: 04/21/10
% Moisture.....: 7.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	92.8	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116271
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021(FINE)

General Chemistry

Lot-Sample #...: A0D210499-043 Work Order #...: L1MLC Matrix.....: S0
Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10
% Moisture.....: 1.7

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-021(COARSE)

General Chemistry

Lot-Sample #...: A0D210499-044 Work Order #...: L1MLF Matrix.....: S0
Date Sampled...: 04/20/10 10:20 Date Received...: 04/21/10
% Moisture.....: 0.85

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	99.2	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-027(FINE)

General Chemistry

Lot-Sample #...: A0D210499-046 Work Order #...: L1MLL Matrix.....: S0
Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10
% Moisture.....: 2.6

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Percent Solids	97.4	10.0	%	MCAWW 160.3 MOD	05/27-05/28/10	0147159
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-027(COARSE)

General Chemistry

Lot-Sample #...: A0D210499-047 Work Order #...: L1MLM Matrix.....: S0
Date Sampled...: 04/20/10 10:35 Date Received...: 04/21/10
% Moisture.....: 1.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028(FINE)

General Chemistry

Lot-Sample #...: A0D210499-049 Work Order #...: L1MLT Matrix.....: S0
Date Sampled...: 04/20/10 10:37 Date Received...: 04/21/10
% Moisture.....: 2.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.3	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-028(COARSE)

General Chemistry

Lot-Sample #...: A0D210499-050 Work Order #...: L1MLW Matrix.....: S0
Date Sampled...: 04/20/10 10:37 Date Received...: 04/21/10
% Moisture.....: 1.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	98.3	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033(FINE)

General Chemistry

Lot-Sample #...: A0D210499-052 Work Order #...: L1ML4 Matrix.....: S0
Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10
% Moisture.....: 1.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	98.2	10.0	%	MCAWW 160.3 MOD	05/27-05/28/10	0147159
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-033(COARSE)

General Chemistry

Lot-Sample #...: A0D210499-053 Work Order #...: L1ML6 Matrix.....: S0
Date Sampled...: 04/20/10 11:17 Date Received...: 04/21/10
% Moisture.....: 0.98

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	99.0	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-4/20/10-DR-034(FINE)

General Chemistry

Lot-Sample #...: A0D210499-055 Work Order #...: L1ML9 Matrix.....: S0
Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10
% Moisture.....: 4.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	95.2	10.0	%	MCAWW 160.3 MOD	05/27-05/28/10	0147159
		Dilution Factor: 1		MDL.....: 10.0		

Conestoga-Rovers & Associates, Inc.

Client Sample ID: SO-17360-4/20/10-DR-034(COARSE)

General Chemistry

Lot-Sample #...: A0D210499-056 Work Order #...: L1MMC Matrix.....: SO
Date Sampled...: 04/20/10 11:20 Date Received...: 04/21/10
% Moisture.....: 2.1

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.9	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Dilution Factor: 1		MDL.....: 10.0		

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.80	mg/kg	SW846 7196A	05/20-05/25/10	0145066
		Work Order #: L11L41AA MB Lot-Sample #: A0E250000-066				
		Dilution Factor: 1				
Percent Solids	ND	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116271
		Work Order #: L0JDL1AA MB Lot-Sample #: A0D260000-271				
		Dilution Factor: 1				
Percent Solids	ND	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116274
		Work Order #: L0JDN1AA MB Lot-Sample #: A0D260000-274				
		Dilution Factor: 1				
Percent Solids	ND	10.0	%	MCAWW 160.3 MOD	04/26-04/27/10	0116275
		Work Order #: L0JDP1AA MB Lot-Sample #: A0D260000-275				
		Dilution Factor: 1				
Percent Solids	ND	10.0	%	MCAWW 160.3 MOD	05/19-05/20/10	0139219
		Work Order #: L1QTW1AA MB Lot-Sample #: A0E190000-219				
		Dilution Factor: 1				
Percent Solids	ND	10.0	%	MCAWW 160.3 MOD	05/27-05/28/10	0147159
		Work Order #: L16R21AA MB Lot-Sample #: A0E270000-159				
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D210499

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	20.0	21.4	mg/kg	107	SW846 7196A	05/20-05/25/10	0145066

Work Order #: L11L41AC LCS Lot-Sample#: A0E250000-066
Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Hexavalent Chromium	107	(80 - 120)	SW846 7196A	05/20-05/25/10	0145066
		Dilution Factor: 1			

Work Order #: L11L41AC LCS Lot-Sample#: A0E250000-066

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L0AE0-SMP
L0AE0-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 11:45

Date Received...: 04/21/10

% Moisture.....: 7.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	92.8	92.8	%	0.019	(0-20)	SD Lot-Sample #: A0D210499-041 MCAWW 160.3 MOD	04/26-04/27/10	0116271

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L0ACP-SMP
L0ACP-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 08:05

Date Received...: 04/21/10

% Moisture.....: 2.7

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.3	97.0	%	0.23	(0-20)	SD Lot-Sample #: A0D210499-001 MCAWW 160.3 MOD	04/26-04/27/10	0116274

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L0ADX-SMP
L0ADX-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 10:05

Date Received...: 04/21/10

% Moisture.....: 5.4

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	94.6	94.7	%	0.11	(0-20)	SD Lot-Sample #: A0D210499-020 MCAWW 160.3 MOD	04/26-04/27/10	0116274

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L0AD4-SMP
L0AD4-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 10:25

Date Received...: 04/21/10

% Moisture.....: 4.3

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	95.7	94.6	%	1.1	(0-20)	SD Lot-Sample #: A0D210499-024 MCAWW 160.3 MOD	04/26-04/27/10	0116275

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L0AEG-SMP
L0AEG-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 11:17

Date Received...: 04/21/10

% Moisture.....: 11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	88.5	88.3	%	0.29	(0-20)	SD Lot-Sample #: A0D210499-033 MCAWW 160.3 MOD	04/26-04/27/10	0116275

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L1MMC-SMP
L1MMC-DUP

Matrix.....: S0

Date Sampled...: 04/20/10 11:20

Date Received...: 04/21/10

% Moisture.....: 2.1

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	97.9	98.2	%	0.24	(0-20)	SD Lot-Sample #: A0D210499-056 MCAWW 160.3 MOD	05/19-05/20/10	0139219

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L1NXF-SMP
L1NXF-DUP

Matrix.....: SOLID

Date Sampled...: 04/15/10

Date Received...: 05/11/10

% Moisture.....: 0.61

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	99.4	99.1	%	0.28	(0-20)	SD Lot-Sample #: A0E180564-005 MCAWW 160.3 MOD	05/19-05/20/10	0139219

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L12TX-SMP
L12TX-DUP

Matrix.....: SOLID

Date Sampled...: 05/21/10

Date Received...: 05/25/10

% Moisture.....: 3.5

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	96.5	96.1	%	0.44	(0-20)	SD Lot-Sample #: A0E250558-006 MCAWW 160.3 MOD	05/27-05/28/10	0147159

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D210499

Work Order #...: L12VH-SMP
L12VH-DUP

Matrix.....: SOLID

Date Sampled...: 05/20/10

Date Received...: 05/25/10

% Moisture.....: 4.6

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	95.4	95.2	%	0.14	(0-20)	SD Lot-Sample #: A0E250565-007 MCAWW 160.3 MOD	05/27-05/28/10	0147159

Dilution Factor: 1

END OF REPORT

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS SSOW# E030019

Lot #: A0D230525

Paul Wiseman

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TESTAMERICA LABORATORIES, INC.



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May 06, 2010

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CASE NARRATIVE

A0D230525

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids SSOW# E030019 Site, project number 17360. The sample was received April 23, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the reporting limit.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.2°C.

See TestAmerica's Cooler Receipt Form for additional information.

Sample GW-17360-042110-DR-044 was received in the laboratory after the holding time for Corrosivity (water) had expired. The sample was collected on 4/21/10 and was received in the laboratory on 4/23/10.

GC/MS VOLATILES

The analytical results met the requirements of the laboratory's QA/QC program.

GC/MS SEMIVOLATILES

The analytical results met the requirements of the laboratory's QA/QC program.

METALS

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,
ARMY, USDA Soil Permit

EXECUTIVE SUMMARY - Detection Highlights

A0D230525

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
GW-17360-042110-DR-044 04/21/10 13:00 001				
Flashpoint	>180		deg F	SW846 1010
Corrosivity	7.2		No Units	SW846 9045A

ANALYTICAL METHODS SUMMARY

A0D230525

PARAMETER	ANALYTICAL METHOD
Corrosivity	SW846 9045A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A0D230525

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L0FKR	001	GW-17360-042110-DR-044	04/21/10	13:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: GW-17360-042110-DR-044

TCLP GC/MS Volatiles

Lot-Sample #....: A0D230525-001 Work Order #....: L0FKR1AA Matrix.....: WG
Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10
Leach Date.....: 04/26/10 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
Leach Batch #...: P011601 Prep Batch #....: 0118368
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Benzene	ND	0.025	mg/L
2-Butanone (MEK)	ND	0.25	mg/L
Carbon tetrachloride	ND	0.025	mg/L
Chlorobenzene	ND	0.025	mg/L
Chloroform	ND	0.025	mg/L
1,2-Dichloroethane	ND	0.025	mg/L
1,1-Dichloroethylene	ND	0.025	mg/L
Tetrachloroethylene	ND	0.025	mg/L
Trichloroethylene	ND	0.025	mg/L
Vinyl chloride	ND	0.025	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Dibromofluoromethane	113	(86 - 125)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	104	(90 - 122)
4-Bromofluorobenzene	94	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: GW-17360-042110-DR-044

TCLP GC/MS Semivolatiles

Lot-Sample #...: A0D230525-001 Work Order #...: L0FKR1AC Matrix.....: WG
Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10
Leach Date.....: 04/23/10 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
Leach Batch #...: P011602 Prep Batch #...: 0117028
Dilution Factor: 1
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
o-Cresol	ND	0.0040	mg/L
m-Cresol & p-Cresol	ND	0.040	mg/L
1,4-Dichlorobenzene	ND	0.0040	mg/L
2,4-Dinitrotoluene	ND	0.020	mg/L
Hexachlorobenzene	ND	0.020	mg/L
Hexachlorobutadiene	ND	0.020	mg/L
Hexachloroethane	ND	0.020	mg/L
Nitrobenzene	ND	0.0040	mg/L
Pentachlorophenol	ND	0.040	mg/L
Pyridine	ND	0.020	mg/L
2,4,5-Trichloro-phenol	ND	0.020	mg/L
2,4,6-Trichloro-phenol	ND	0.020	mg/L

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Nitrobenzene-d5	63	(27 - 110)
2-Fluorobiphenyl	72	(20 - 110)
Terphenyl-d14	87	(44 - 110)
Phenol-d5	39	(10 - 110)
2-Fluorophenol	55	(10 - 110)
2,4,6-Tribromophenol	50	(28 - 110)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: GW-17360-042110-DR-044

TCLP Metals

Lot-Sample #...: A0D230525-001

Matrix.....: WG

Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10

Leach Date.....: 04/23/10 Leach Batch #...: P011602

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0117020						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AG
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AH
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AJ
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AK
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AL
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AM
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0FKR1AN
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0FKR1AF
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: GW-17360-042110-DR-044

General Chemistry

Lot-Sample #...: A0D230525-001 Work Order #...: L0FKR Matrix.....: WG
Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Corrosivity	7.2		No Units	SW846 9045A	04/23/10	0113385
			Dilution Factor: 1			
Flashpoint	>180		deg F	SW846 1010	05/04/10	0124414
			Dilution Factor: 1			

QUALITY CONTROL SECTION

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230525
 MB Lot-Sample #: A0D260000-063
 Leach Date.....: 04/26/10
 Leach Batch #...: P011601
 Dilution Factor: 1

Work Order #...: L0HWK1AA
 Prep Date.....: 04/28/10
 Prep Batch #...: 0118368

Matrix.....: WATER
 Analysis Date...: 04/28/10

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	ND	0.25	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.025	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.025	mg/L	SW846 8260B
Trichloroethylene	ND	0.025	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Dibromofluoromethane	116	(86 - 125)
1,2-Dichloroethane-d4	110	(80 - 122)
Toluene-d8	104	(90 - 122)
4-Bromofluorobenzene	91	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: A0D230525 Work Order #....: L0N1D1AA Matrix.....: WATER
 LCS Lot-Sample#: A0D280000-368
 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
 Prep Batch #....: 0118368
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Benzene	1.0	1.0	mg/L	100	SW846 8260B
2-Butanone (MEK)	2.0	1.6	mg/L	82	SW846 8260B
Carbon tetrachloride	1.0	0.89	mg/L	89	SW846 8260B
Chlorobenzene	1.0	0.97	mg/L	97	SW846 8260B
Chloroform	1.0	1.1	mg/L	110	SW846 8260B
1,2-Dichloroethane	1.0	1.0	mg/L	103	SW846 8260B
1,1-Dichloroethylene	1.0	1.2	mg/L	121	SW846 8260B
Tetrachloroethylene	1.0	1.2	mg/L	116	SW846 8260B
Trichloroethylene	1.0	1.1	mg/L	109	SW846 8260B
Vinyl chloride	1.0	0.94	mg/L	94	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	118	(86 - 124)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	106	(90 - 122)
4-Bromofluorobenzene	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A0D230525 Work Order #....: L0N1D1AA Matrix.....: WATER
 LCS Lot-Sample#: A0D280000-368
 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
 Prep Batch #....: 0118368
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	100	(76 - 118)	SW846 8260B
2-Butanone (MEK)	82	(40 - 110)	SW846 8260B
Carbon tetrachloride	89	(71 - 124)	SW846 8260B
Chlorobenzene	97	(76 - 113)	SW846 8260B
Chloroform	110	(82 - 117)	SW846 8260B
1,2-Dichloroethane	103	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	121	(67 - 128)	SW846 8260B
Tetrachloroethylene	116	(64 - 121)	SW846 8260B
Trichloroethylene	109	(76 - 119)	SW846 8260B
Vinyl chloride	94	(47 - 123)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	118	(86 - 124)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	106	(90 - 122)
4-Bromofluorobenzene	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230525 **Work Order #...**: L0FLR1AR-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D230531-002 L0FLR1AT-MSD
Date Sampled...: 04/21/10 12:45 **Date Received...**: 04/23/10
Leach Date.....: 04/26/10 **Prep Date.....**: 04/28/10 **Analysis Date...**: 04/28/10
Leach Batch #...: P011601 **Prep Batch #...**: 0118368
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	1.0	1.1	mg/L	106		SW846 8260B
	ND	1.0	1.1	mg/L	105	0.96	SW846 8260B
2-Butanone (MEK)	ND	2.0	1.7	mg/L	86		SW846 8260B
	ND	2.0	1.7	mg/L	83	3.2	SW846 8260B
Carbon tetrachloride	ND	1.0	0.87	mg/L	87		SW846 8260B
	ND	1.0	0.86	mg/L	86	0.89	SW846 8260B
Chlorobenzene	ND	1.0	1.0	mg/L	105		SW846 8260B
	ND	1.0	1.0	mg/L	104	0.35	SW846 8260B
Chloroform	ND	1.0	1.1	mg/L	114		SW846 8260B
	ND	1.0	1.1	mg/L	112	1.9	SW846 8260B
1,2-Dichloroethane	ND	1.0	1.1	mg/L	108		SW846 8260B
	ND	1.0	1.1	mg/L	107	0.55	SW846 8260B
1,1-Dichloroethylene	ND	1.0	1.2	mg/L	119		SW846 8260B
	ND	1.0	1.2	mg/L	124	4.0	SW846 8260B
Tetrachloroethylene	ND	1.0	1.2	mg/L	119		SW846 8260B
	ND	1.0	1.1	mg/L	112	6.0	SW846 8260B
Trichloroethylene	ND	1.0	1.2	mg/L	116		SW846 8260B
	ND	1.0	1.1	mg/L	115	1.3	SW846 8260B
Vinyl chloride	ND	1.0	0.96	mg/L	96		SW846 8260B
	ND	1.0	0.97	mg/L	97	1.3	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(86 - 125)
	116	(86 - 125)
1,2-Dichloroethane-d4	105	(80 - 122)
	104	(80 - 122)
Toluene-d8	106	(90 - 122)
	107	(90 - 122)
4-Bromofluorobenzene	96	(84 - 125)
	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230525 **Work Order #...**: L0FLR1AR-MS **Matrix.....**: SOLID
MS Lot-Sample #: A0D230531-002 L0FLR1AT-MSD
Date Sampled...: 04/21/10 12:45 **Date Received...**: 04/23/10
Leach Date.....: 04/26/10 **Prep Date.....**: 04/28/10 **Analysis Date...**: 04/28/10
Leach Batch #...: P011601 **Prep Batch #...**: 0118368
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	106	(76 - 117)			SW846 8260B
	105	(76 - 117)	0.96	(0-30)	SW846 8260B
2-Butanone (MEK)	86	(37 - 110)			SW846 8260B
	83	(37 - 110)	3.2	(0-30)	SW846 8260B
Carbon tetrachloride	87	(72 - 124)			SW846 8260B
	86	(72 - 124)	0.89	(0-30)	SW846 8260B
Chlorobenzene	105	(72 - 114)			SW846 8260B
	104	(72 - 114)	0.35	(0-30)	SW846 8260B
Chloroform	114	(82 - 117)			SW846 8260B
	112	(82 - 117)	1.9	(0-30)	SW846 8260B
1,2-Dichloroethane	108	(80 - 120)			SW846 8260B
	107	(80 - 120)	0.55	(0-30)	SW846 8260B
1,1-Dichloroethylene	119	(67 - 129)			SW846 8260B
	124	(67 - 129)	4.0	(0-30)	SW846 8260B
Tetrachloroethylene	119	(60 - 119)			SW846 8260B
	112	(60 - 119)	6.0	(0-30)	SW846 8260B
Trichloroethylene	116	(72 - 121)			SW846 8260B
	115	(72 - 121)	1.3	(0-30)	SW846 8260B
Vinyl chloride	96	(54 - 118)			SW846 8260B
	97	(54 - 118)	1.3	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(86 - 125)
	116	(86 - 125)
1,2-Dichloroethane-d4	105	(80 - 122)
	104	(80 - 122)
Toluene-d8	106	(90 - 122)
	107	(90 - 122)
4-Bromofluorobenzene	96	(84 - 125)
	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A0D230525
 MB Lot-Sample #: A0D270000-028
 Leach Date.....: 04/23/10
 Leach Batch #...: P011602
 Dilution Factor: 1

Work Order #...: L0J391AA
 Prep Date.....: 04/27/10
 Prep Batch #...: 0117028

Matrix.....: WATER
 Analysis Date...: 04/29/10

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
SURROGATE	PERCENT		RECOVERY	
	RECOVERY		LIMITS	
Nitrobenzene-d5	52		(27 - 110)	
2-Fluorobiphenyl	63		(20 - 110)	
Terphenyl-d14	81		(44 - 110)	
Phenol-d5	43		(10 - 110)	
2-Fluorophenol	62		(10 - 110)	
2,4,6-Tribromophenol	50		(28 - 110)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D230525 Work Order #...: L0J391AC Matrix.....: WATER
 LCS Lot-Sample#: A0D270000-028
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117028
 Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
o-Cresol	0.080	0.054	mg/L	68	SW846 8270C
m-Cresol & p-Cresol	0.16	0.11	mg/L	66	SW846 8270C
1,4-Dichlorobenzene	0.080	0.050	mg/L	63	SW846 8270C
2,4-Dinitrotoluene	0.080	0.059	mg/L	74	SW846 8270C
Hexachlorobenzene	0.080	0.054	mg/L	68	SW846 8270C
Hexachlorobutadiene	0.080	0.047	mg/L	59	SW846 8270C
Hexachloroethane	0.080	0.045	mg/L	56	SW846 8270C
Nitrobenzene	0.080	0.056	mg/L	70	SW846 8270C
Pentachlorophenol	0.080	0.047	mg/L	59	SW846 8270C
Pyridine	0.080	0.044	mg/L	55	SW846 8270C
2,4,5-Trichloro-phenol	0.080	0.036	mg/L	45	SW846 8270C
2,4,6-Trichloro-phenol	0.080	0.052	mg/L	66	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(27 - 110)
2-Fluorobiphenyl	67	(20 - 110)
Terphenyl-d14	77	(44 - 110)
Phenol-d5	55	(10 - 110)
2-Fluorophenol	67	(10 - 110)
2,4,6-Tribromophenol	67	(28 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D230525 Work Order #...: L0J391AC Matrix.....: WATER
 LCS Lot-Sample#: A0D270000-028
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117028
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
o-Cresol	68	(23 - 110)	SW846 8270C
m-Cresol & p-Cresol	66	(28 - 110)	SW846 8270C
1,4-Dichlorobenzene	63	(13 - 110)	SW846 8270C
2,4-Dinitrotoluene	74	(45 - 119)	SW846 8270C
Hexachlorobenzene	68	(46 - 112)	SW846 8270C
Hexachlorobutadiene	59	(10 - 110)	SW846 8270C
Hexachloroethane	56	(10 - 110)	SW846 8270C
Nitrobenzene	70	(29 - 118)	SW846 8270C
Pentachlorophenol	59	(10 - 116)	SW846 8270C
Pyridine	55	(15 - 110)	SW846 8270C
2,4,5-Trichloro-phenol	45	(36 - 110)	SW846 8270C
2,4,6-Trichloro-phenol	66	(32 - 110)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(27 - 110)
2-Fluorobiphenyl	67	(20 - 110)
Terphenyl-d14	77	(44 - 110)
Phenol-d5	55	(10 - 110)
2-Fluorophenol	67	(10 - 110)
2,4,6-Tribromophenol	67	(28 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230525 **Work Order #...**: L0FJ41C0 **Matrix.....**: SOLID
MS Lot-Sample #: A0D230517-002
Date Sampled...: 04/22/10 09:48 **Date Received...**: 04/23/10
Prep Date.....: 04/27/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0117029
Dilution Factor: 50 **Percnt Moisture:** 49

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	METHOD
o-Cresol	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
2-Methylphenol	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
m-Cresol & p-Cresol	ND	0.16	0.0	DIL mg/L	0.0	SW846 8270C
1,4-Dichlorobenzene	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
2,4-Dinitrotoluene	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Hexachlorobenzene	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Hexachlorobutadiene	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Hexachloroethane	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Nitrobenzene	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Pentachlorophenol	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
Pyridine	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.080	0.0	DIL mg/L	0.0	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0 DIL, *	(29 - 111)
2-Fluorobiphenyl	0.0 DIL, *	(22 - 110)
Terphenyl-d14	0.0 DIL, *	(40 - 119)
Phenol-d5	0.0 DIL, *	(10 - 110)
2-Fluorophenol	0.0 DIL, *	(10 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(17 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230525 **Work Order #...**: L0FJ41C0 **Matrix.....**: SOLID
MS Lot-Sample #: A0D230517-002
Date Sampled...: 04/22/10 09:48 **Date Received...**: 04/23/10
Prep Date.....: 04/27/10 **Analysis Date...**: 04/29/10
Prep Batch #...: 0117029
Dilution Factor: 50 **Percnt Moisture:** 49

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
o-Cresol	0.0 DIL	(33 - 115)	SW846 8270C
2-Methylphenol	0.0 DIL	(33 - 115)	SW846 8270C
m-Cresol & p-Cresol	0.0 DIL	(46 - 109)	SW846 8270C
1,4-Dichlorobenzene	0.0 DIL	(18 - 110)	SW846 8270C
2,4-Dinitrotoluene	0.0 DIL	(31 - 131)	SW846 8270C
Hexachlorobenzene	0.0 DIL	(36 - 132)	SW846 8270C
Hexachlorobutadiene	0.0 DIL	(18 - 116)	SW846 8270C
Hexachloroethane	0.0 DIL	(18 - 110)	SW846 8270C
Nitrobenzene	0.0 DIL	(19 - 211)	SW846 8270C
Pentachlorophenol	0.0 DIL	(10 - 140)	SW846 8270C
Pyridine	0.0 DIL	(10 - 148)	SW846 8270C
2,4,5-Trichloro-phenol	0.0 DIL	(24 - 143)	SW846 8270C
2,4,6-Trichloro-phenol	0.0 DIL	(36 - 135)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0 DIL, *	(29 - 111)
2-Fluorobiphenyl	0.0 DIL, *	(22 - 110)
Terphenyl-d14	0.0 DIL, *	(40 - 119)
Phenol-d5	0.0 DIL, *	(10 - 110)
2-Fluorophenol	0.0 DIL, *	(10 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(17 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D260000-071 Prep Batch #... 0117020 Leach Date.....: 04/23/10 Leach Batch #... P011602						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AC
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AD
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0HW01AJ
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0HW01AK
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D270000-020 Prep Batch #...: 0117020						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AC
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AD
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AE
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AF
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AG
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AH
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/29/10	L0J3R1AJ
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0J3R1AA
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A0D270000-020 Prep Batch #...: 0117020							
Arsenic	2.0	2.1	mg/L	105	SW846 6010B	04/27-04/29/10	L0J3R1AL
			Dilution Factor: 1				
Barium	2.0	1.9	mg/L	95	SW846 6010B	04/27-04/29/10	L0J3R1AM
			Dilution Factor: 1				
Cadmium	0.050	0.052	mg/L	104	SW846 6010B	04/27-04/29/10	L0J3R1AN
			Dilution Factor: 1				
Chromium	0.20	0.20	mg/L	101	SW846 6010B	04/27-04/29/10	L0J3R1AP
			Dilution Factor: 1				
Lead	0.50	0.51	mg/L	102	SW846 6010B	04/27-04/29/10	L0J3R1AQ
			Dilution Factor: 1				
Selenium	2.0	2.1	mg/L	103	SW846 6010B	04/27-04/29/10	L0J3R1AR
			Dilution Factor: 1				
Silver	0.050	0.050	mg/L	100	SW846 6010B	04/27-04/29/10	L0J3R1AT
			Dilution Factor: 1				
Mercury	0.0050	0.0052	mg/L	103	SW846 7470A	04/27/10	L0J3R1AK
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#: A0D270000-020 Prep Batch #... 0117020					
Arsenic	105	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AL
		Dilution Factor: 1			
Barium	95	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AM
		Dilution Factor: 1			
Cadmium	104	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AN
		Dilution Factor: 1			
Chromium	101	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AP
		Dilution Factor: 1			
Lead	102	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AQ
		Dilution Factor: 1			
Selenium	103	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AR
		Dilution Factor: 1			
Silver	100	(50 - 150)	SW846 6010B	04/27-04/29/10	L0J3R1AT
		Dilution Factor: 1			
Mercury	103	(50 - 150)	SW846 7470A	04/27/10	L0J3R1AK
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WG

Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D230525-001 Prep Batch #... 0117020 Leach Date.....: 04/23/10 Leach Batch #... P011602									
Arsenic									
ND	5.0	5.6	mg/L	112			SW846 6010B	04/27-04/29/10	L0FKR1AT
ND	5.0	5.6	mg/L	112	0.11		SW846 6010B	04/27-04/29/10	L0FKR1AU
Dilution Factor: 5									
Barium									
ND	50.0	50.7	mg/L	101			SW846 6010B	04/27-04/29/10	L0FKR1AV
ND	50.0	50.8	mg/L	101	0.14		SW846 6010B	04/27-04/29/10	L0FKR1AW
Dilution Factor: 5									
Cadmium									
ND	1.0	1.1	mg/L	113			SW846 6010B	04/27-04/29/10	L0FKR1AX
ND	1.0	1.1	mg/L	113	0.30		SW846 6010B	04/27-04/29/10	L0FKR1A0
Dilution Factor: 5									
Chromium									
ND	5.0	5.5	mg/L	110			SW846 6010B	04/27-04/29/10	L0FKR1A1
ND	5.0	5.5	mg/L	111	0.13		SW846 6010B	04/27-04/29/10	L0FKR1A2
Dilution Factor: 5									
Lead									
ND	5.0	5.6	mg/L	113			SW846 6010B	04/27-04/29/10	L0FKR1A3
ND	5.0	5.7	mg/L	113	0.36		SW846 6010B	04/27-04/29/10	L0FKR1A4
Dilution Factor: 5									
Selenium									
ND	1.0	1.1	mg/L	110			SW846 6010B	04/27-04/29/10	L0FKR1A5
ND	1.0	1.1	mg/L	110	0.13		SW846 6010B	04/27-04/29/10	L0FKR1A6
Dilution Factor: 5									
Silver									
ND	1.0	1.1	mg/L	108			SW846 6010B	04/27-04/29/10	L0FKR1A7
ND	1.0	1.1	mg/L	108	0.37		SW846 6010B	04/27-04/29/10	L0FKR1A8
Dilution Factor: 5									
Mercury									
ND	0.0050	0.0053	mg/L	106			SW846 7470A	04/27/10	L0FKR1AQ
ND	0.0050	0.0053	mg/L	105	0.64		SW846 7470A	04/27/10	L0FKR1AR
Dilution Factor: 1									

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A0D230525

Matrix.....: WG

Date Sampled...: 04/21/10 13:00 Date Received...: 04/23/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D230525-001 Prep Batch #...: 0117020						
Leach Date.....: 04/23/10 Leach Batch #...: P011602						
Arsenic	112	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1AT
	112	(50 - 150)	0.11 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1AU
Dilution Factor: 5						
Barium	101	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1AV
	101	(50 - 150)	0.14 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1AW
Dilution Factor: 5						
Cadmium	113	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1AX
	113	(50 - 150)	0.30 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1A0
Dilution Factor: 5						
Chromium	110	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1A1
	111	(50 - 150)	0.13 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1A2
Dilution Factor: 5						
Lead	113	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1A3
	113	(50 - 150)	0.36 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1A4
Dilution Factor: 5						
Selenium	110	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1A5
	110	(50 - 150)	0.13 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1A6
Dilution Factor: 5						
Silver	108	(50 - 150)		SW846 6010B	04/27-04/29/10	L0FKR1A7
	108	(50 - 150)	0.37 (0-20)	SW846 6010B	04/27-04/29/10	L0FKR1A8
Dilution Factor: 5						
Mercury	106	(50 - 150)		SW846 7470A	04/27/10	L0FKR1AQ
	105	(50 - 150)	0.64 (0-20)	SW846 7470A	04/27/10	L0FKR1AR
Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D230525

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u> <u>RECVRY</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Corrosivity	6.5	6.4	No Units	99	SW846 9045A	04/23/10	0113385

Work Order #: L0F1M1AA LCS Lot-Sample#: A0D230000-385
Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230525

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Corrosivity	99	Work Order #: L0F1M1AA (97 - 103)	LCS Lot-Sample#: A0D230000-385 SW846 9045A	04/23/10	0113385
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230525

Work Order #...: L0FKR-SMP
L0FKR-DUP

Matrix.....: WG

Date Sampled...: 04/21/10 13:00

Date Received...: 04/23/10

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A0D230525-001 SW846 1010	05/04/10	0124414
			Dilution Factor: 1					
Corrosivity	7.2	7.2	No Units	0.14	(0-20)	SD Lot-Sample #: A0D230525-001 SW846 9045A	04/23/10	0113385
			Dilution Factor: 1					

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230525

Work Order #...: L0FLR-SMP
L0FLR-DUP

Matrix.....: SOLID

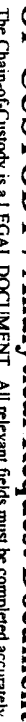
Date Sampled...: 04/21/10 12:45

Date Received...: 04/23/10

% Moisture.....: 9.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A0D230531-002 SW846 1010	05/04/10	0124414

Dilution Factor: 1



CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

ID # A19 D 7300

SSOW Ref. Code:
E030019

RFV 016041

TestAmerica Cooler Receipt Form/Narrative

Lot Number: AUD230525

North Canton Facility

Client CRA Project GM-GR By: Chris LivingstonCooler Received on 4/23/10 Opened on 4/23/10 (Signature)FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☒ Other ☐1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒

If YES, Quantity _____ Quantity Unsalvageable _____

Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒Were custody seals on the bottle(s)? Yes ☐ No ☒

If YES, are there any exceptions? _____

2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other ☐6. Cooler temperature upon receipt 1.2 °C See back of form for multiple coolers/temps ☐METHOD: IR ☒ Other ☐COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☐ No ☒Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐

Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

Corrosivity was received expired.

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample

Receiving to meet recommended pH level(s). Nitric Acid Lot# 121709-HNO₃; Sulfuric Acid Lot# 082509-H₂SO₄; Sodium

Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-

(CH₃COO)₂Zn/NaOH. What time was preservative added to sample(s)? _____

Client ID

pH

Date

Initials

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

[illegible]

Discrepancies Cont'd:

END OF REPORT

ANALYTICAL REPORT

PROJECT NO. 17360

GM GRAND RAPIDS SSOW# E030019

Lot #: A0D230531

Paul Wiseman

**Conestoga Rovers & Assoc., Inc
14496 Sheldon Rd Suite 200
Plymouth, MI 48170**

TESTAMERICA LABORATORIES, INC.



Denise D. Heckler
Project Manager
denise.heckler@testamericainc.com

Approved for release.
Denise D. Heckler
Project Manager
5/7/2010 9:20 AM

May 06, 2010

TestAmerica Laboratories, Inc.

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

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CASE NARRATIVE

A0D230531

The following report contains the analytical results for two solid samples submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the GM Grand Rapids SSOW# E030019 Site, project number 17360. The samples were received April 23, 2010, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by a dry weight adjustment footnote at the bottom of the analytical report page. The list of parameters which are never reported on a dry weight basis is included on the Sample Summary.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the reporting limit.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.2°C.

GC/MS VOLATILES

The analytical results met the requirements of the laboratory's QA/QC program.

GC/MS SEMIVOLATILES

The matrix spike/matrix spike duplicate(s) for batch(es) 0117029 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

METALS

The analytical results met the requirements of the laboratory's QA/QC program.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,
ARMY, USDA Soil Permit

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EXECUTIVE SUMMARY - Detection Highlights

A0D230531

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
S0-17360-042110-DR-042 04/21/10 12:30 001				
Flashpoint	>180		deg F	SW846 1010
Corrosivity	8.4		No Units	SW846 9045C
Percent Solids	93.0	10.0	%	MCAWW 160.3 MOD
S0-17360-042110-DR-043 04/21/10 12:45 002				
Lead - TCLP	1.5	0.50	mg/L	SW846 6010B
Flashpoint	>180		deg F	SW846 1010
Corrosivity	12.2		No Units	SW846 9045C
Percent Solids	90.9	10.0	%	MCAWW 160.3 MOD

ANALYTICAL METHODS SUMMARY

A0D230531

PARAMETER	ANALYTICAL METHOD
Corrosivity	SW846 9045C
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Pensky-Martens Method for Determining Ignitability	SW846 1010
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Total Residue as Percent Solids	MCAWW 160.3 MOD
Volatile Organics by GC/MS	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A0D230531

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
L0FLL	001	SO-17360-042110-DR-042	04/21/10	12:30
L0FLR	002	SO-17360-042110-DR-043	04/21/10	12:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-042

TCLP GC/MS Volatiles

Lot-Sample #....: A0D230531-001 Work Order #....: L0FLL1AC Matrix.....: S0
Date Sampled...: 04/21/10 12:30 Date Received...: 04/23/10
Leach Date.....: 04/26/10 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
Leach Batch #...: P011601 Prep Batch #....: 0118368
Dilution Factor: 1
% Moisture.....: 7.0 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Benzene	ND	0.025	mg/L
2-Butanone (MEK)	ND	0.25	mg/L
Carbon tetrachloride	ND	0.025	mg/L
Chlorobenzene	ND	0.025	mg/L
Chloroform	ND	0.025	mg/L
1,2-Dichloroethane	ND	0.025	mg/L
1,1-Dichloroethylene	ND	0.025	mg/L
Tetrachloroethylene	ND	0.025	mg/L
Trichloroethylene	ND	0.025	mg/L
Vinyl chloride	ND	0.025	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Dibromofluoromethane	111	(86 - 125)
1,2-Dichloroethane-d4	112	(80 - 122)
Toluene-d8	104	(90 - 122)
4-Bromofluorobenzene	92	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-043

TCLP GC/MS Volatiles

Lot-Sample #....: A0D230531-002 Work Order #....: L0FLR1AC Matrix.....: S0
Date Sampled...: 04/21/10 12:45 Date Received...: 04/23/10
Leach Date.....: 04/26/10 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
Leach Batch #...: P011601 Prep Batch #....: 0118368
Dilution Factor: 1
% Moisture.....: 9.2 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Benzene	ND	0.025	mg/L
2-Butanone (MEK)	ND	0.25	mg/L
Carbon tetrachloride	ND	0.025	mg/L
Chlorobenzene	ND	0.025	mg/L
Chloroform	ND	0.025	mg/L
1,2-Dichloroethane	ND	0.025	mg/L
1,1-Dichloroethylene	ND	0.070	mg/L
Tetrachloroethylene	ND	0.070	mg/L
Trichloroethylene	ND	0.050	mg/L
Vinyl chloride	ND	0.025	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Dibromofluoromethane	115	(86 - 125)
1,2-Dichloroethane-d4	112	(80 - 122)
Toluene-d8	104	(90 - 122)
4-Bromofluorobenzene	93	(84 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-042

TCLP GC/MS Semivolatiles

Lot-Sample #....: A0D230531-001 Work Order #....: L0FLL1AD Matrix.....: S0
Date Sampled...: 04/21/10 12:30 Date Received...: 04/23/10
Leach Date.....: 04/26/10 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
Leach Batch #...: P011603 Prep Batch #....: 0117029
Dilution Factor: 1
% Moisture.....: 7.0 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
o-Cresol	ND	0.0040	mg/L
m-Cresol & p-Cresol	ND	0.040	mg/L
1,4-Dichlorobenzene	ND	0.0040	mg/L
2,4-Dinitrotoluene	ND	0.020	mg/L
Hexachlorobenzene	ND	0.020	mg/L
Hexachlorobutadiene	ND	0.020	mg/L
Hexachloroethane	ND	0.020	mg/L
Nitrobenzene	ND	0.0040	mg/L
Pentachlorophenol	ND	0.040	mg/L
Pyridine	ND	0.020	mg/L
2,4,5-Trichloro-phenol	ND	0.020	mg/L
2,4,6-Trichloro-phenol	ND	0.020	mg/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Nitrobenzene-d5	50	(29 - 111)
2-Fluorobiphenyl	47	(22 - 110)
Terphenyl-d14	71	(40 - 119)
Phenol-d5	29	(10 - 110)
2-Fluorophenol	48	(10 - 110)
2,4,6-Tribromophenol	26	(17 - 117)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-043

TCLP GC/MS Semivolatiles

Lot-Sample #... : A0D230531-002	Work Order #... : L0FLR1AD	Matrix..... : S0
Date Sampled... : 04/21/10 12:45	Date Received... : 04/23/10	
Leach Date..... : 04/26/10	Prep Date..... : 04/27/10	Analysis Date... : 04/29/10
Leach Batch #... : P011603	Prep Batch #... : 0117029	
Dilution Factor: 1		
% Moisture..... : 9.2	Method..... : SW846 8270C	

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
o-Cresol	ND	0.0040	mg/L
m-Cresol & p-Cresol	ND	0.040	mg/L
1,4-Dichlorobenzene	ND	0.0040	mg/L
2,4-Dinitrotoluene	ND	0.020	mg/L
Hexachlorobenzene	ND	0.020	mg/L
Hexachlorobutadiene	ND	0.020	mg/L
Hexachloroethane	ND	0.020	mg/L
Nitrobenzene	ND	0.0040	mg/L
Pentachlorophenol	ND	0.040	mg/L
Pyridine	ND	0.020	mg/L
2,4,5-Trichloro-phenol	ND	0.020	mg/L
2,4,6-Trichloro-phenol	ND	0.020	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY
		LIMITS
Nitrobenzene-d5	51	(29 - 111)
2-Fluorobiphenyl	50	(22 - 110)
Terphenyl-d14	79	(40 - 119)
Phenol-d5	40	(10 - 110)
2-Fluorophenol	53	(10 - 110)
2,4,6-Tribromophenol	45	(17 - 117)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-042

TCLP Metals

Lot-Sample #...: A0D230531-001

Matrix.....: S0

Date Sampled...: 04/21/10 12:30 Date Received...: 04/23/10

Leach Date.....: 04/26/10 Leach Batch #...: P011603

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0117021						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AF
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AG
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AH
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AJ
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AK
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AL
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLL1AM
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0FLL1AE
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-043

TCLP Metals

Lot-Sample #...: A0D230531-002

Matrix.....: S0

Date Sampled...: 04/21/10 12:45 **Date Received...**: 04/23/10

Leach Date.....: 04/26/10 **Leach Batch #...**: P011603

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... : 0117021						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AF
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AG
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AH
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AJ
		Dilution Factor: 1				
Lead	1.5	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AK
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AL
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0FLR1AM
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0FLR1AE
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-042

General Chemistry

Lot-Sample #...: A0D230531-001 Work Order #...: L0FLL Matrix.....: S0
Date Sampled...: 04/21/10 12:30 Date Received...: 04/23/10
% Moisture.....: 7.0

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Corrosivity	8.4		No Units	SW846 9045C	04/23/10	0113386
			Dilution Factor: 1			
Flashpoint	>180		deg F	SW846 1010	04/30/10	0120369
			Dilution Factor: 1			
Percent Solids	93.0	10.0	%	MCAWW 160.3 MOD	04/29-04/30/10	0119191
			Dilution Factor: 1			

Conestoga-Rovers & Associates, Inc.

Client Sample ID: S0-17360-042110-DR-043

General Chemistry

Lot-Sample #...: A0D230531-002 Work Order #...: L0FLR Matrix.....: S0
Date Sampled...: 04/21/10 12:45 Date Received...: 04/23/10
% Moisture.....: 9.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Corrosivity	12.2		No Units	SW846 9045C	04/23/10	0113386
			Dilution Factor: 1			
Flashpoint	>180		deg F	SW846 1010	05/04/10	0124414
			Dilution Factor: 1			
Percent Solids	90.9	10.0	%	MCAWW 160.3 MOD	04/29-04/30/10	0119191
			Dilution Factor: 1			

QUALITY CONTROL SECTION

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230531
 MB Lot-Sample #: A0D260000-063
 Leach Date.....: 04/26/10
 Leach Batch #...: P011601
 Dilution Factor: 1

Work Order #...: L0HWK1AA
 Prep Date.....: 04/28/10
 Prep Batch #...: 0118368

Matrix.....: WATER
 Analysis Date...: 04/28/10

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	ND	0.25	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.025	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.025	mg/L	SW846 8260B
Trichloroethylene	ND	0.025	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
Dibromofluoromethane	116	(86 - 125)		
1,2-Dichloroethane-d4	110	(80 - 122)		
Toluene-d8	104	(90 - 122)		
4-Bromofluorobenzene	91	(84 - 125)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #....: A0D230531 Work Order #....: L0N1D1AA Matrix.....: WATER
 LCS Lot-Sample#: A0D280000-368
 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
 Prep Batch #....: 0118368
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
Benzene	1.0	1.0	mg/L	100	SW846 8260B
2-Butanone (MEK)	2.0	1.6	mg/L	82	SW846 8260B
Carbon tetrachloride	1.0	0.89	mg/L	89	SW846 8260B
Chlorobenzene	1.0	0.97	mg/L	97	SW846 8260B
Chloroform	1.0	1.1	mg/L	110	SW846 8260B
1,2-Dichloroethane	1.0	1.0	mg/L	103	SW846 8260B
1,1-Dichloroethylene	1.0	1.2	mg/L	121	SW846 8260B
Tetrachloroethylene	1.0	1.2	mg/L	116	SW846 8260B
Trichloroethylene	1.0	1.1	mg/L	109	SW846 8260B
Vinyl chloride	1.0	0.94	mg/L	94	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	118	(86 - 124)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	106	(90 - 122)
4-Bromofluorobenzene	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: A0D230531 Work Order #....: L0N1D1AA Matrix.....: WATER
 LCS Lot-Sample#: A0D280000-368
 Prep Date.....: 04/28/10 Analysis Date...: 04/28/10
 Prep Batch #....: 0118368
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	100	(76 - 118)	SW846 8260B
2-Butanone (MEK)	82	(40 - 110)	SW846 8260B
Carbon tetrachloride	89	(71 - 124)	SW846 8260B
Chlorobenzene	97	(76 - 113)	SW846 8260B
Chloroform	110	(82 - 117)	SW846 8260B
1,2-Dichloroethane	103	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	121	(67 - 128)	SW846 8260B
Tetrachloroethylene	116	(64 - 121)	SW846 8260B
Trichloroethylene	109	(76 - 119)	SW846 8260B
Vinyl chloride	94	(47 - 123)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	118	(86 - 124)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	106	(90 - 122)
4-Bromofluorobenzene	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230531 **Work Order #...**: L0FLR1AR-MS **Matrix.....**: S0
MS Lot-Sample #: A0D230531-002 L0FLR1AT-MSD
Date Sampled...: 04/21/10 12:45 **Date Received...**: 04/23/10
Leach Date.....: 04/26/10 **Prep Date.....**: 04/28/10 **Analysis Date...**: 04/28/10
Leach Batch #...: P011601 **Prep Batch #...**: 0118368
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	ND	1.0	1.1	mg/L	106		SW846 8260B
	ND	1.0	1.1	mg/L	105	0.96	SW846 8260B
2-Butanone (MEK)	ND	2.0	1.7	mg/L	86		SW846 8260B
	ND	2.0	1.7	mg/L	83	3.2	SW846 8260B
Carbon tetrachloride	ND	1.0	0.87	mg/L	87		SW846 8260B
	ND	1.0	0.86	mg/L	86	0.89	SW846 8260B
Chlorobenzene	ND	1.0	1.0	mg/L	105		SW846 8260B
	ND	1.0	1.0	mg/L	104	0.35	SW846 8260B
Chloroform	ND	1.0	1.1	mg/L	114		SW846 8260B
	ND	1.0	1.1	mg/L	112	1.9	SW846 8260B
1,2-Dichloroethane	ND	1.0	1.1	mg/L	108		SW846 8260B
	ND	1.0	1.1	mg/L	107	0.55	SW846 8260B
1,1-Dichloroethylene	ND	1.0	1.2	mg/L	119		SW846 8260B
	ND	1.0	1.2	mg/L	124	4.0	SW846 8260B
Tetrachloroethylene	ND	1.0	1.2	mg/L	119		SW846 8260B
	ND	1.0	1.1	mg/L	112	6.0	SW846 8260B
Trichloroethylene	ND	1.0	1.2	mg/L	116		SW846 8260B
	ND	1.0	1.1	mg/L	115	1.3	SW846 8260B
Vinyl chloride	ND	1.0	0.96	mg/L	96		SW846 8260B
	ND	1.0	0.97	mg/L	97	1.3	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(86 - 125)
	116	(86 - 125)
1,2-Dichloroethane-d4	105	(80 - 122)
	104	(80 - 122)
Toluene-d8	106	(90 - 122)
	107	(90 - 122)
4-Bromofluorobenzene	96	(84 - 125)
	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP GC/MS Volatiles

Client Lot #...: A0D230531 **Work Order #...**: L0FLR1AR-MS **Matrix.....**: S0
MS Lot-Sample #: A0D230531-002 L0FLR1AT-MSD
Date Sampled...: 04/21/10 12:45 **Date Received...**: 04/23/10
Leach Date.....: 04/26/10 **Prep Date.....**: 04/28/10 **Analysis Date...**: 04/28/10
Leach Batch #...: P011601 **Prep Batch #...**: 0118368
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	106	(76 - 117)			SW846 8260B
	105	(76 - 117)	0.96	(0-30)	SW846 8260B
2-Butanone (MEK)	86	(37 - 110)			SW846 8260B
	83	(37 - 110)	3.2	(0-30)	SW846 8260B
Carbon tetrachloride	87	(72 - 124)			SW846 8260B
	86	(72 - 124)	0.89	(0-30)	SW846 8260B
Chlorobenzene	105	(72 - 114)			SW846 8260B
	104	(72 - 114)	0.35	(0-30)	SW846 8260B
Chloroform	114	(82 - 117)			SW846 8260B
	112	(82 - 117)	1.9	(0-30)	SW846 8260B
1,2-Dichloroethane	108	(80 - 120)			SW846 8260B
	107	(80 - 120)	0.55	(0-30)	SW846 8260B
1,1-Dichloroethylene	119	(67 - 129)			SW846 8260B
	124	(67 - 129)	4.0	(0-30)	SW846 8260B
Tetrachloroethylene	119	(60 - 119)			SW846 8260B
	112	(60 - 119)	6.0	(0-30)	SW846 8260B
Trichloroethylene	116	(72 - 121)			SW846 8260B
	115	(72 - 121)	1.3	(0-30)	SW846 8260B
Vinyl chloride	96	(54 - 118)			SW846 8260B
	97	(54 - 118)	1.3	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	115	(86 - 125)
	116	(86 - 125)
1,2-Dichloroethane-d4	105	(80 - 122)
	104	(80 - 122)
Toluene-d8	106	(90 - 122)
	107	(90 - 122)
4-Bromofluorobenzene	96	(84 - 125)
	101	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: A0D230531
 MB Lot-Sample #: A0D270000-029
 Leach Date.....: 04/26/10
 Leach Batch #...: P011603
 Dilution Factor: 1

Work Order #...: L0J4A1AA
 Prep Date.....: 04/27/10
 Prep Batch #...: 0117029

Matrix.....: SOLID
 Analysis Date...: 04/29/10

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.020	mg/L	SW846 8270C
SURROGATE	PERCENT		RECOVERY	
	RECOVERY		LIMITS	
Nitrobenzene-d5	52		(29 - 111)	
2-Fluorobiphenyl	63		(22 - 110)	
Terphenyl-d14	81		(40 - 119)	
Phenol-d5	43		(10 - 110)	
2-Fluorophenol	62		(10 - 110)	
2,4,6-Tribromophenol	50		(17 - 117)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A0D230531 Work Order #...: L0J4A1AC Matrix.....: SOLID
 LCS Lot-Sample#: A0D270000-029
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117029
 Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
o-Cresol	0.080	0.054	mg/L	68	SW846 8270C
m-Cresol & p-Cresol	0.16	0.11	mg/L	66	SW846 8270C
1,4-Dichlorobenzene	0.080	0.050	mg/L	63	SW846 8270C
2,4-Dinitrotoluene	0.080	0.059	mg/L	74	SW846 8270C
Hexachlorobenzene	0.080	0.054	mg/L	68	SW846 8270C
Hexachlorobutadiene	0.080	0.047	mg/L	59	SW846 8270C
Hexachloroethane	0.080	0.045	mg/L	56	SW846 8270C
Nitrobenzene	0.080	0.056	mg/L	70	SW846 8270C
Pentachlorophenol	0.080	0.047	mg/L	59	SW846 8270C
Pyridine	0.080	0.044	mg/L	55	SW846 8270C
2,4,5-Trichloro-phenol	0.080	0.036	mg/L	45	SW846 8270C
2,4,6-Trichloro-phenol	0.080	0.052	mg/L	66	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(29 - 111)
2-Fluorobiphenyl	67	(22 - 110)
Terphenyl-d14	77	(40 - 119)
Phenol-d5	55	(10 - 110)
2-Fluorophenol	67	(10 - 110)
2,4,6-Tribromophenol	67	(17 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A0D230531 Work Order #...: L0J4A1AC Matrix.....: SOLID
 LCS Lot-Sample#: A0D270000-029
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117029
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
o-Cresol	68	(24 - 110)	SW846 8270C
m-Cresol & p-Cresol	66	(27 - 110)	SW846 8270C
1,4-Dichlorobenzene	63	(16 - 110)	SW846 8270C
2,4-Dinitrotoluene	74	(45 - 126)	SW846 8270C
Hexachlorobenzene	68	(47 - 116)	SW846 8270C
Hexachlorobutadiene	59	(10 - 110)	SW846 8270C
Hexachloroethane	56	(10 - 110)	SW846 8270C
Nitrobenzene	70	(35 - 117)	SW846 8270C
Pentachlorophenol	59	(12 - 110)	SW846 8270C
Pyridine	55	(10 - 110)	SW846 8270C
2,4,5-Trichloro-phenol	45	(35 - 111)	SW846 8270C
2,4,6-Trichloro-phenol	66	(32 - 110)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(29 - 111)
2-Fluorobiphenyl	67	(22 - 110)
Terphenyl-d14	77	(40 - 119)
Phenol-d5	55	(10 - 110)
2-Fluorophenol	67	(10 - 110)
2,4,6-Tribromophenol	67	(17 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230531 Work Order #...: L0FJ41C0 Matrix.....: SOLID
 MS Lot-Sample #: A0D230517-002
 Date Sampled...: 04/22/10 09:48 Date Received...: 04/23/10
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117029
 Dilution Factor: 50 Percnt Moisture: 49

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	METHOD
o-Cresol	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
m-Cresol & p-Cresol	ND	0.16	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
1,4-Dichlorobenzene	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
2,4-Dinitrotoluene	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Hexachlorobenzene	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Hexachlorobutadiene	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Hexachloroethane	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Nitrobenzene	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Pentachlorophenol	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
Pyridine	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
2,4,5-Trichloro-phenol	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				
2,4,6-Trichloro-phenol	ND	0.080	0.0	mg/L	0.0	SW846 8270C
		Qualifiers: DIL,a				

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0 DIL, *	(29 - 111)
2-Fluorobiphenyl	0.0 DIL, *	(22 - 110)
Terphenyl-d14	0.0 DIL, *	(40 - 119)
Phenol-d5	0.0 DIL, *	(10 - 110)
2-Fluorophenol	0.0 DIL, *	(10 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(17 - 117)

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230531

Work Order #...: L0FJ41C0

Matrix.....: SOLID

MS Lot-Sample #: A0D230517-002

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230531 Work Order #...: L0FJ41C0 Matrix.....: SOLID
 MS Lot-Sample #: A0D230517-002
 Date Sampled...: 04/22/10 09:48 Date Received...: 04/23/10
 Prep Date.....: 04/27/10 Analysis Date...: 04/29/10
 Prep Batch #...: 0117029
 Dilution Factor: 50 Percnt Moisture: 49

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
o-Cresol	0.0	(33 - 115) Qualifiers: DIL,a	SW846 8270C
m-Cresol & p-Cresol	0.0	(46 - 109) Qualifiers: DIL,a	SW846 8270C
1,4-Dichlorobenzene	0.0	(18 - 110) Qualifiers: DIL,a	SW846 8270C
2,4-Dinitrotoluene	0.0	(31 - 131) Qualifiers: DIL,a	SW846 8270C
Hexachlorobenzene	0.0	(36 - 132) Qualifiers: DIL,a	SW846 8270C
Hexachlorobutadiene	0.0	(18 - 116) Qualifiers: DIL,a	SW846 8270C
Hexachloroethane	0.0	(18 - 110) Qualifiers: DIL,a	SW846 8270C
Nitrobenzene	0.0	(19 - 211) Qualifiers: DIL,a	SW846 8270C
Pentachlorophenol	0.0	(10 - 140) Qualifiers: DIL,a	SW846 8270C
Pyridine	0.0	(10 - 148) Qualifiers: DIL,a	SW846 8270C
2,4,5-Trichloro-phenol	0.0	(24 - 143) Qualifiers: DIL,a	SW846 8270C
2,4,6-Trichloro-phenol	0.0	(36 - 135) Qualifiers: DIL,a	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	0.0 DIL, *	(29 - 111)
2-Fluorobiphenyl	0.0 DIL, *	(22 - 110)
Terphenyl-d14	0.0 DIL, *	(40 - 119)
Phenol-d5	0.0 DIL, *	(10 - 110)
2-Fluorophenol	0.0 DIL, *	(10 - 110)
2,4,6-Tribromophenol	0.0 DIL, *	(17 - 117)

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Lot-Sample #...: A0D230531

Work Order #...: L0FJ41C0

Matrix.....: SOLID

MS Lot-Sample #: A0D230517-002

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D260000-073 Prep Batch #... : 0117021 Leach Date..... : 04/26/10 Leach Batch #... : P011603						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AN
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AP
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AQ
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AR
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AT
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AU
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0HW21AV
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0HW21AK
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A0D270000-021 Prep Batch #...: 0117021						
Arsenic	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1AU
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1AV
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1AW
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1AX
		Dilution Factor: 1				
Lead	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1A0
		Dilution Factor: 1				
Selenium	ND	0.25	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1A1
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	04/27-04/28/10	L0J3V1A2
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	04/27/10	L0J3V1AJ
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A0D270000-021 Prep Batch #...: 0117021							
Arsenic	2.0	2.3	mg/L	113	SW846 6010B	04/27-04/28/10	L0J3V1A3
			Dilution Factor: 1				
Barium	2.0	2.1	mg/L	103	SW846 6010B	04/27-04/28/10	L0J3V1A4
			Dilution Factor: 1				
Cadmium	0.050	0.056	mg/L	112	SW846 6010B	04/27-04/28/10	L0J3V1A5
			Dilution Factor: 1				
Chromium	0.20	0.22	mg/L	109	SW846 6010B	04/27-04/28/10	L0J3V1A6
			Dilution Factor: 1				
Lead	0.50	0.56	mg/L	111	SW846 6010B	04/27-04/28/10	L0J3V1A7
			Dilution Factor: 1				
Selenium	2.0	2.3	mg/L	113	SW846 6010B	04/27-04/28/10	L0J3V1A8
			Dilution Factor: 1				
Silver	0.050	0.054	mg/L	108	SW846 6010B	04/27-04/28/10	L0J3V1A9
			Dilution Factor: 1				
Mercury	0.0050	0.0053	mg/L	106	SW846 7470A	04/27/10	L0J3V1AT
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
LCS Lot-Sample#: A0D270000-021 Prep Batch #... 0117021					
Arsenic	113	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A3
Barium	103	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A4
Cadmium	112	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A5
Chromium	109	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A6
Lead	111	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A7
Selenium	113	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A8
Silver	108	(50 - 150)	SW846 6010B Dilution Factor: 1	04/27-04/28/10	L0J3V1A9
Mercury	106	(50 - 150)	SW846 7470A Dilution Factor: 1	04/27/10	L0J3V1AT

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

Date Sampled...: 04/22/10 09:48 Date Received...: 04/23/10

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #

MS Lot-Sample #: A0D230517-002 Prep Batch #...: 0117021

Leach Date.....: 04/26/10 Leach Batch #...: P011603

Arsenic

ND	5.0	5.5	mg/L	109			SW846 6010B	04/27-04/28/10	L0FJ41CA
ND	5.0	5.6	mg/L	112	2.3		SW846 6010B	04/27-04/28/10	L0FJ41CC
Dilution Factor: 5									

Barium

ND	50.0	49.0	mg/L	98			SW846 6010B	04/27-04/28/10	L0FJ41CE
ND	50.0	50.1	mg/L	100	2.0		SW846 6010B	04/27-04/28/10	L0FJ41CF
Dilution Factor: 5									

Cadmium

ND	1.0	1.1	mg/L	109			SW846 6010B	04/27-04/28/10	L0FJ41CH
ND	1.0	1.1	mg/L	111	2.2		SW846 6010B	04/27-04/28/10	L0FJ41CJ
Dilution Factor: 5									

Chromium

ND	5.0	5.3	mg/L	106			SW846 6010B	04/27-04/28/10	L0FJ41CL
ND	5.0	5.5	mg/L	108	2.2		SW846 6010B	04/27-04/28/10	L0FJ41CM
Dilution Factor: 5									

Lead

ND	5.0	5.5	mg/L	109			SW846 6010B	04/27-04/28/10	L0FJ41CP
ND	5.0	5.6	mg/L	112	2.4		SW846 6010B	04/27-04/28/10	L0FJ41CQ
Dilution Factor: 5									

Selenium

ND	1.0	1.1	mg/L	107			SW846 6010B	04/27-04/28/10	L0FJ41CT
ND	1.0	1.1	mg/L	109	2.2		SW846 6010B	04/27-04/28/10	L0FJ41CU
Dilution Factor: 5									

Silver

ND	1.0	1.1	mg/L	105			SW846 6010B	04/27-04/28/10	L0FJ41CW
ND	1.0	1.1	mg/L	107	1.6		SW846 6010B	04/27-04/28/10	L0FJ41CX
Dilution Factor: 5									

Mercury

ND	0.0050	0.0051	mg/L	102			SW846 7470A	04/27/10	L0FJ41A7
ND	0.0050	0.0050	mg/L	100	1.8		SW846 7470A	04/27/10	L0FJ41A8
Dilution Factor: 1									

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: A0D230531

Matrix.....: SOLID

Date Sampled...: 04/22/10 09:48 Date Received...: 04/23/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A0D230517-002 Prep Batch #...: 0117021						
Leach Date.....: 04/26/10 Leach Batch #...: P011603						
Arsenic	109	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CA
	112	(50 - 150) 2.3 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CC
Dilution Factor: 5						
Barium	98	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CE
	100	(50 - 150) 2.0 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CF
Dilution Factor: 5						
Cadmium	109	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CH
	111	(50 - 150) 2.2 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CJ
Dilution Factor: 5						
Chromium	106	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CL
	108	(50 - 150) 2.2 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CM
Dilution Factor: 5						
Lead	109	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CP
	112	(50 - 150) 2.4 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CQ
Dilution Factor: 5						
Selenium	107	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CT
	109	(50 - 150) 2.2 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CU
Dilution Factor: 5						
Silver	105	(50 - 150)		SW846 6010B	04/27-04/28/10	L0FJ41CW
	107	(50 - 150) 1.6 (0-20)		SW846 6010B	04/27-04/28/10	L0FJ41CX
Dilution Factor: 5						
Mercury	102	(50 - 150)		SW846 7470A	04/27/10	L0FJ41A7
	100	(50 - 150) 1.8 (0-20)		SW846 7470A	04/27/10	L0FJ41A8
Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A0D230531

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	ND	Work Order #: L0PM91AA		MB Lot-Sample #:	A0D290000-191	
		10.0	%	MCAWW 160.3 MOD	04/29-04/30/10	0119191
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A0D230531

Matrix.....: SOLID

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u> <u>RECVRY</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Corrosivity	6.5	6.4	No Units	99	SW846 9045C	04/23/10	0113386

Work Order #: L0F1P1AA LCS Lot-Sample#: A0D230000-386
Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230531

Matrix.....: SOLID

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Corrosivity	99	Work Order #: L0F1P1AA (97 - 103)	LCS Lot-Sample#: A0D230000-386 SW846 9045C	04/23/10	0113386
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230531

Work Order #...: L0NNN-SMP
L0NNN-DUP

Matrix.....: SOLID

Date Sampled...: 04/27/10 12:05

Date Received...: 04/28/10

% Moisture.....: 22

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Percent Solids	78.4	78.3	%	0.026 (0-20)	SD Lot-Sample #: A0D280534-007 MCAWW 160.3 MOD	04/29-04/30/10	0119191

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230531

Work Order #...: L0FLL-SMP
L0FLL-DUP

Matrix.....: S0

Date Sampled...: 04/21/10 12:30

Date Received...: 04/23/10

% Moisture.....: 7.0

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A0D230531-001 SW846 1010	04/30/10	0120369

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230531

Work Order #...: L0FKR-SMP
L0FKR-DUP

Matrix.....: WATER

Date Sampled...: 04/21/10 13:00

Date Received...: 04/23/10

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE RESULT</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD LIMIT</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A0D230525-001 SW846 1010	05/04/10	0124414
Dilution Factor: 1								

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A0D230531

Work Order #...: L0FLR-SMP
L0FLR-DUP

Matrix.....: S0

Date Sampled...: 04/21/10 12:45

Date Received...: 04/23/10

% Moisture.....: 9.2

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Flashpoint	>180	>180	deg F	0.0	(0-20)	SD Lot-Sample #: A0D230531-002 SW846 1010	05/04/10	0124414
Dilution Factor: 1								
Corrosivity	12.2	12.1	No Units	0.90	(0-20)	SD Lot-Sample #: A0D230531-002 SW846 9045C	04/23/10	0113386
Dilution Factor: 1								



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

PAGE 1 OF 1

Laboratory:	TESTAM 67214A
Laboratory Location:	N. Canterbury 014
Laboratory Contact:	D. Hecker
Requested Due Date:	
QA/QC Requirements:	TAT: 577D

ID # N^o D 7396

SSOW Ref. Code:

E030019

Remarks/I ah ID

[illegible]

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
FEPS	1	D. Rivers / CPH	4/22/10	1500	Chari Stimpard	4/23/10	910
AIRBILL NO. 90093730 60229							
Sample Condition							
Temp in C							
Received on Ice	Y / N						
Sealed Cooler	Y / N						
Samples Intact	Y / N						
Additional Comments:							
Sampler Name: David Rivers Sampler Signature: <i>[Signature]</i> Date: 4/22/10							

Additional Comments:

Sampler Name: David Dines

Sammler Signatur:

D

Temp in °C	
Received on Ice	Y / N
Scaled Cooler	Y / N
Samples Intact	Y / N

TestAmerica Cooler Receipt Form/Narrative

 Lot Number: A00230531
North Canton Facility

Client CRA Project GM-GR By: Chris Livingston
 Cooler Received on 4/23/10 Opened on 4/23/10 (Signature)
 FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other _____
 TestAmerica Cooler # _____ Multiple Coolers ☐ Foam Box ☐ Client Cooler ☒ Other _____
 1. Were custody seals on the outside of the cooler(s)? Yes ☐ No ☒ Intact? Yes ☐ No ☐ NA ☒
 If YES, Quantity _____ Quantity Unsalvageable _____
 Were custody seals on the outside of cooler(s) signed and dated? Yes ☐ No ☐ NA ☒
 Were custody seals on the bottle(s)? Yes ☐ No ☒
 If YES, are there any exceptions? _____
 2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
 3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
 4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
 5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other _____
 6. Cooler temperature upon receipt 1.2 °C See back of form for multiple coolers/temps ☐
 METHOD: IR ☒ Other ☐
 COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
 7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
 8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
 9. Were sample(s) at the correct pH upon receipt? Yes ☐ No ☐ NA ☒
 10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
 11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒
 12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
 13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☐ No ☒
 Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
 Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 121709-HNO₃; Sulfuric Acid Lot# 082509-H₂SO₄; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

END OF REPORT

APPENDIX C

DATA QUALITY VALIDATION MEMORANDUM



MEMORANDUM

TO:	Jennifer Quigley	REF. NO.:	017360
FROM:	Cindy Zadorozny/rr/1/Det <i>PF for C. Zadorozny</i>	DATE:	June 30, 2010
RE:	Data Quality Assessment and Full Validation Soil Sampling – April 2010 Motors Liquidation Company – Grand Rapids Metal Plant Wyoming, Michigan	SSOW NO:	058510-119802

The following details a quality assessment and validation of the analytical data resulting from the April 20, 2010 collection of 38 soil and three (3) quality control samples from the Motors Liquidation Company – Grand Rapids Metal Plant Site in Wyoming, Michigan. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at TestAmerica in North Canton, Ohio (TA) in accordance with the methodologies presented in Table 2.

The quality control criteria used to assess the data were established by the methods and the quality assurance project plan (QAPP). Application of quality assurance criteria was consistent with following guidance documents:

- i. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999; and
- ii. "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review", EPA-540/R-94/013, February 1994.

These guidelines are collectively referred to as "NFGs" in this Memorandum.

Sample Quantitation

The laboratory reported detected concentrations of semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCB), and inorganics below the laboratory's report limit (RL) but above the laboratory's method detection limit (MDL). The laboratory flagged these sample concentrations with a "J" or a "B" for organics and inorganics, respectively. These concentrations should be qualified as estimated (J) values unless qualified otherwise in this memorandum. The laboratory "B" flags may be disregarded.

The laboratory reported two (2) sets of SVOC concentrations for sample SO-17360-4/20/10-DR-029 due to associated method blank contamination for the original extraction. This sample was re-extracted and re-analyzed outside of holding time criteria. SVOC results should be reported from the original extraction and analysis only.

Sample Preservation and Holding Times

Sample holding time periods and preservation requirements are presented in Table 2.

The samples were prepared and/or analyzed within the specified holding time periods.

The samples were shipped and maintained in accordance with the sample preservation requirements.

Gas Chromatography/Mass Spectrometer (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check) – Organic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each GC/MS instrument used for SVOC analyses was checked at the beginning of each 12-hour period using decafluorotriphenylphosphine (DFTPP). The resulting spectra must meet the criteria cited in the NFGs before initiating an analysis sequence.

Instrument performance check data were reviewed. These tuning compounds were analyzed at the required frequency throughout the SVOC analyses. The results of all instrument performance checks were within the acceptance criteria.

Initial Calibration – Organic Analyses

Initial calibration data are used to demonstrate that each instrument is capable of generating acceptable quantitative data. A minimum of a five point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each over a specific concentration range.

Initial calibration criteria for organic analyses are evaluated against the following criteria:

- i. GC/MS (all compounds) – must meet a minimum mean relative response factor (RRF) of 0.05 ;
- ii. GC/MS (all compounds) – the percent relative standard deviation (RSD) values must not exceed 30.0 percent. If quadratic equation calibration curves are used the coefficient of determination must be greater than or equal to 0.99; and
- iii. GC (all compounds using an average for multi-response compounds) – the percent RSD must not exceed 20 percent. If linear regression calibration curves are used the correlation coefficient must be greater than or equal to 0.995.

Calibration standards were analyzed at the required frequency and the results met the above criteria for linearity and sensitivity with the exception of the qualified samples presented in Table 3.

Continuing Calibration – Organic Analyses

To ensure that each instrument was capable of producing acceptable quantitative data over the analysis period, continuing calibration standards must be analyzed every 12 hours for GC/MS analyses and every 10 samples by GC. The following criteria are employed to evaluate the continuing calibration data:

Continuing Calibration – Organic Analyses (continued)

- i. GC/MS (all compounds) – must meet a minimum mean RRF of 0.05 ;
- ii. GC/MS (all compounds) – the percent difference between the mean initial calibration RRF and the continuing calibration RRF must not exceed 25 percent;
- iii. GC/MS (compounds determined by quadratic curve) – the percent drift between the true value and the continuing calibration value must not exceed 25 percent;
- iv. GC (all compounds using average for multi-response compounds) – the percent difference between mean initial calibration factor and the continuing calibration factor must not exceed 15 percent; and
- v. GC (compounds determined by linear regression) – the percent drift between the true value and the continuing calibration value must not exceed 15 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity of response.

Inductively Coupled Plasma/Mass Spectrometer (ICP/MS) –
Mass Calibration and Resolution Checks – Metal Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each ICP/MS instrument used for metals analyses was checked prior to calibration before initiating an analysis sequence through the analysis of a tuning solution. The results of the tuning solution analysis were reviewed against the following criteria:

- i. Analyze tuning solution a minimum of four times with a percent RSD of less than or equal to five for the analytes contained in the tuning solution; and
- ii. The mass resolution must be within 0.1 amu of the true value over the analytical range.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the acceptance criteria, indicating acceptable instrument performance.

Initial Calibration – Inorganic Analyses

The initial calibration includes a blank and at least one standard for inductively coupled plasma (ICP) and ICP/MS to establish the analytical curve. Mercury analysis by cold vapor atomic absorption spectroscopy (CVAA) requires the analysis of a calibration blank and a minimum of five standards to establish the calibration curve. The coefficient of variation for calibration curves must be greater than or equal to 0.995.

Initial calibration is verified with an initial calibration verification (ICV) standard which must recover within 90 to 110 percent for metals by ICP and ICP/MS or 80 to 120 percent for mercury by CVAA.

A review of the laboratory data showed that the inorganic initial calibration curves and ICVs were analyzed at the appropriate frequency and were within the acceptance criteria.

Continuing Calibration – Inorganic Analyses

Continuing calibration verification (CCV) standards are analyzed at method specified frequency (one every 10 samples). The CCVs must meet the percent recovery control limits specified above for the ICVs. Criteria for inorganic analyses are the same criteria as used for assessing the initial calibration data.

A review of the laboratory data showed that CCVs were analyzed at the appropriate frequency and the data were within the acceptance criteria.

Method Blank Samples

Method blank samples are prepared from a purified sample matrix and are processed concurrently with investigative samples to assess the presence and the magnitude of sample contamination introduced during sample analysis. Method blank samples are analyzed at a minimum frequency of one per analytical batch and target analytes should be non-detect.

The samples presented in Table 4 should be qualified due to laboratory contamination. The laboratory flagged the organic concentrations with a “B” and the inorganics with a “J”, both of which may be disregarded. The remaining method blank samples did not contain target compounds with concentrations that impacted the investigative samples.

Laboratory Blank Samples – Inorganic Analyses

Metals analyses include the analysis of initial calibration blanks (ICB) and continuing calibration blanks (CCB) to assess the presence and the magnitude of sample contamination introduced during sample analysis. The CCBs are analyzed at a minimum frequency of one every 10 samples. Target analytes should be non-detect in both the ICBs and CCBs.

Several ICBs and CCBs were reported with detectable concentrations of target analytes. The samples presented in Table 5 should be qualified due to ICB and/or CCB contamination above the laboratory MDLs. The remaining ICBs and CCBs did not contain elements with concentrations that impacted the investigative samples.

Surrogate Compounds – Organic Analyses

Individual sample performance for organic analyses was monitored by assessing the results of surrogate compound percent recoveries. Surrogate percent recoveries are reviewed against the laboratory developed control limits provided in the analytical report.

The SVOC surrogate recoveries could not be measured or evaluated in several samples due to dilutions required to successfully analyze the samples. No qualification of these samples was required. The surrogate recovery acceptance criteria were met or did not warrant qualification for all samples that could be evaluated.

Matrix Spike/Matrix Spike Duplicate Analyses

To assess the long term accuracy and precision of the analytical methods on various matrices, matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) of the

Matrix Spike/Matrix Spike Duplicate Analyses (continued)

concentrations were determined. The organic MS/MSD percent recovery and RPD control limits are established by the laboratory. The inorganic control limits are defined by the methods or the laboratory and the NFG. The samples selected for MS/MSD analysis are identified in Table 1.

The MS/MSD percent recoveries could not be measured in some samples due to the dilutions required to successfully analyze the samples. No qualification of these samples was required. The samples that should be qualified due to violation of MS/MSD percent recovery criteria and/or RPD are outlined in Table 6. The MS/MSD percent recoveries and associated RPD acceptance criteria were met in the remaining sample analyses.

Laboratory Control Sample Analyses

The laboratory control sample (LCS) analyses serves as a monitor of the overall performance in all steps of the sample analysis and is analyzed with each sample batch. The LCS percent recoveries were evaluated against method and laboratory established control limits.

The LCS percent recoveries were within the laboratory control limits or did not warrant qualification, indicating that an acceptable level of overall performance was achieved with the exception of the qualified samples presented in Table 7.

Inductively Coupled Plasma (ICP) Interference Check Sample Analysis - Inorganic Analyses

To verify that proper inter-element and background correction factors had been established by the laboratory for metals analyses, the ICP interference check samples (ICS) are analyzed. The ICSs are evaluated against recovery control limits of 80 to 120 percent.

The ICS analysis results were evaluated for all samples and were within the control limits.

Internal Standard Summaries - Organic Analyses

To correct for variability in the GC/MS response and sensitivity, internal standard (IS) compounds are added to all samples. All results are calculated as a ratio of the compound and associated IS response. Overall instrument stability and performance for SVOC analyses were monitored using IS peak area and retention time (RT) data. The IS peak areas and RTs of the samples are required to meet the following criteria:

- i. IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated continuing calibration standard IS area counts; and
- ii. The RT of the IS must not vary by more than plus or minus 30 seconds from the associated continuing calibration standard.

A review of the SVOC internal standard data showed that the IS area counts and retention time data were within the acceptance criteria.

Internal Standard Summaries – Inorganic Analyses

To correct for variability in the ICP/MS response and sensitivity, internal standards (IS) are added to all samples. All results are calculated as a ratio of the IS response to the response of the sample. Overall instrument stability and performance for metals analyses was monitored using the IS intensity data which are evaluated against the following criteria:

- i. The IS intensities in samples must recover between 30 and 120 percent of the true value; and
- ii. The IS intensities in instrument calibration checks (CCVs and CCBs) must recover between 60 and 125 percent of the true value.

A review of the ICP/MS metals IS data showed that the IS intensities were within the acceptance criteria.

Serial Dilution – Inorganic Analyses

The percent difference (D) between a serial dilution of a sample for each matrix was monitored to determine physical or chemical interference. A minimum of one sample per 20 investigative samples is analyzed at a five-fold dilution. The serial dilution results must agree within 10 percent D of the original results for samples with detected concentrations greater than 50 times the instrument detection limit.

The percent D acceptance criteria was met with the exception of the qualified samples presented Table 8. The laboratory flagged these concentrations with an “E” flag, which may be disregarded.

Contract Required Detection Limit (CRDL) Analyses – Inorganic Analyses

The instrument calibration near the Contract Required Detection Limit (CRDL) must be verified for each analyte reported. An ICP standard solution at the CRDL (CRI) is evaluated against the control limits provided.

The CRI analysis results were evaluated for all samples and were within the control limits.

Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

Target Compound Quantitation

The reported quantitation results and detection limits were checked to ensure results reported were accurate. The samples identified in Table 1 were reviewed. No discrepancies were found between the raw data and the sample results reported by the laboratory.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of three (3) field duplicate sample sets.

Field Duplicate Samples

Overall precision for the sampling event and laboratory procedures was monitored using the results of the field duplicate sample sets. The RPDs associated with these duplicate samples must be less than 100 percent soil samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the RL, the evaluation criteria is two times the RL value for soil samples.

The data indicates that an adequate level of precision was achieved for the sampling event.

System Performance

System performance between various quality control checks was evaluated to monitor for changes that may have caused the degradation of data quality. No technical problems or chromatographic anomalies were observed which would require qualification of the data.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Analysis/Parameters													
CRA SDG No. 18-1	Sample Identification	Location	Matrix	Initial Sample Depth (ft. bgs)	Final Sample Depth (ft. bgs)	QC Samples	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	TAL Metals				
									TCL SVOC	TCL PCB	Fractionated Lead	Hexavalent Chromium	Trivalent Chromium
TA-NC Lot No. A0D210499	SO-17360-4/20/10-DR-001 (1)	SB39-10	soil	0	2	MS/MSD	4/20/2010	08:05	X	X			
	SO-17360-4/20/10-DR-002 (1)	SB39-10	soil	2	4		4/20/2010	08:25	X	X			
	SO-17360-4/20/10-DR-003 (1)	SB39-10	soil	4	6		4/20/2010	08:35	X	X			
	SO-17360-4/20/10-DR-004 (1)	SB39-10	soil	6	8		4/20/2010	08:45	X	X			
	SO-17360-4/20/10-DR-005 (1)	SB39-10	soil	8	10		4/20/2010	08:47	X	X			
	SO-17360-4/20/10-DR-006 (1)	SB39-10	soil	10	12		4/20/2010	08:50	X	X			
	SO-17360-4/20/10-DR-007 (1)	SB39-10	soil	12	14		4/20/2010	08:52	X	X			
	SO-17360-4/20/10-DR-008 (1)	SB39-10	soil	14	15		4/20/2010	08:55	X	X			
	SO-17360-4/20/10-DR-009 (1)	SB38-10	soil	0	2		4/20/2010	09:25	X	X			
	SO-17360-4/20/10-DR-010 (1)	SB38-10	soil	2	4		4/20/2010	09:29	X	X			
	SO-17360-4/20/10-DR-011 (1)	SB38-10	soil	2	4	DUP (010)	4/20/2010	09:30	X	X			
	SO-17360-4/20/10-DR-012 (1)	SB38-10	soil	4	6		4/20/2010	09:40	X	X			
	SO-17360-4/20/10-DR-013 (1)	SB38-10	soil	6	8		4/20/2010	09:42	X	X			
	SO-17360-4/20/10-DR-014 (1)	SB38-10	soil	8	10		4/20/2010	09:45	X	X			
	SO-17360-4/20/10-DR-015 (1)	SB37-10	soil	0	2		4/20/2010	09:55	X	X			
	SO-17360-4/20/10-DR-016 (1)	SB37-10	soil	0	2	DUP (015)	4/20/2010	09:55	X	X			
	SO-17360-4/20/10-DR-017 (1)	SB37-10	soil	2	4		4/20/2010	09:57	X	X			
	SO-17360-4/20/10-DR-018 (1)	SB37-10	soil	4	6		4/20/2010	10:00	X	X			
	SO-17360-4/20/10-DR-019 (1)	SB37-10	soil	6	8		4/20/2010	10:02	X	X			
	SO-17360-4/20/10-DR-020 (1)	SB37-10	soil	8	10		4/20/2010	10:05	X	X			
	SO-17360-4/20/10-DR-021 (1)	SB36-10	soil	0	2	MS/MSD-P DUP (021)	4/20/2010	10:20	X	X			
	SO-17360-4/20/10-DR-022 (1)	SB36-10	soil	0	2		4/20/2010	10:21	X	X			
	SO-17360-4/20/10-DR-023 (1)	SB36-10	soil	2	4		4/20/2010	10:22	X	X			
	SO-17360-4/20/10-DR-024 (1)	SB36-10	soil	4	6		4/20/2010	10:25	X	X			
	SO-17360-4/20/10-DR-025 (1)	SB36-10	soil	6	8		4/20/2010	10:27	X	X			
	SO-17360-4/20/10-DR-026 (1)	SB36-10	soil	8	10		4/20/2010	10:30	X	X			
	SO-17360-4/20/10-DR-027 (1)	SB40-10	soil	0	2		4/20/2010	10:35	X	X			
	SO-17360-4/20/10-DR-028 (1)	SB40-10	soil	2	4		4/20/2010	10:37	X	X			
	SO-17360-4/20/10-DR-029 (1)	SB40-10	soil	4	6		4/20/2010	10:40	X	X			
	SO-17360-4/20/10-DR-030 (1)	SB40-10	soil	6	8		4/20/2010	10:42	X	X			
	SO-17360-4/20/10-DR-031 (1)	SB40-10	soil	8	10		4/20/2010	10:45	X	X			

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

CRA SDG No. 18-1 (continued)	Sample Identification	Location	Matrix	Initial Sample Depth (ft. bgs)	Final Sample Depth (ft. bgs)	QC Samples	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters						
									TCL SVOC	TCL PCB	TAL Metals	Fractionated Lead	Hexavalent Chromium	Trivalent Chromium	
		TA-NC Lot No. A0D210499													
	SO-17360-4/20/10-DR-032 (1)	SB35-10	soil	0	2		4/20/2010	11:15	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-033 (1)	SB35-10	soil	2	4	MS/MSD-P	4/20/2010	11:17	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-034 (1)	SB35-10	soil	4	6		4/20/2010	11:20	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-035 (1)	SB35-10	soil	6	8		4/20/2010	11:22	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-036 (1)	SB35-10	soil	8	10		4/20/2010	11:25	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-037 (1)	SB34-10	soil	0	2		4/20/2010	11:35	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-038 (1)	SB34-10	soil	2	4		4/20/2010	11:39	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-039 (1)	SB34-10	soil	4	6		4/20/2010	11:40	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-040 (1)	SB34-10	soil	6	8		4/20/2010	11:42	X	X	X	X	X	X	X
	SO-17360-4/20/10-DR-041 (1)	SB34-10	soil	8	10	MS/MSD-P	4/20/2010	11:45	X	X	X	X	X	X	X

Notes:

- DUP - Field Duplicate Sample of sample in parenthesis
ft. bags - Feet Below Ground Surface
MS/MSD - Matrix Spike/Matrix Spike Duplicate
MS/MSD-P - Matrix Spike/Matrix Spike Duplicate (Partial parameters)
PCB - Polychlorinated biphenyls
QC - Quality Control
SDG - Sample Delivery Group
SVOC - Semivolatile Organic Compounds
TA-NC - TestAmerica-North Canton, Ohio
TAL - Target Analyte List
TCL - Target Compound List
(1) - Additional review per Tier 3 requirements

TABLE 2

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Method¹</i>	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i>
TCL SVOC	SW-846 8270C	Soil	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis	Iced, 4 ± 2° C
TCL PCB	SW-846 8082	Soil	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis	Iced, 4 ± 2° C
TAL Metals		Soil	- 180 days from sample collection to completion of analysis	Iced, 4 ± 2° C
Aluminum	SW-846 6010B			
Antimony	SW-846 6020			
Arsenic	SW-846 6020			
Barium	SW-846 6010B			
Beryllium	SW-846 6010B			
Cadmium	SW-846 6010B			
Calcium	SW-846 6010B			
Chromium	SW-846 6010B			
Cobalt	SW-846 6010B			
Copper	SW-846 6010B			
Iron	SW-846 6010B			
Lead	SW-846 6010B			
Lead - Total	SW-846 6010B			
Lead - Fine	SW-846 6010B			
Lead - Coarse	SW-846 6010B			
Magnesium	SW-846 6010B			
Manganese	SW-846 6010B			
Nickel	SW-846 6010B			
Potassium	SW-846 6010B			
Selenium	SW-846 6020			
Silver	SW-846 6020			
Sodium	SW-846 6010B			
Thallium	SW-846 6020			
Vanadium	SW-846 6010B			
Zinc	SW-846 6020			
Mercury	SW-846 7471A	Soil	- 28 days from sample collection to completion of analysis	Iced, 4 ± 2° C

TABLE 2
SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Method</i> ¹	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i>
General Chemistry Hexavalent Chromium	SW-846 7196A	Soil	- 30 days from sample collection to extraction - 24 hours from extraction to completion of analysis	Iced, 4 ± 2° C
Trivalent Chromium	SW-846 7196A	Soil	- 30 days from sample collection to extraction - 24 hours from extraction to completion of analysis	Iced, 4 ± 2° C

Notes

¹ Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986

PCB - Polychlorinated biphenyls

SVOC - Semivolatile Organic Compounds

TAL - Target Analyte List

TCL - Target Compound List

TABLE 3

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO VIOLATION OF INITIAL CALIBRATION ACCEPTANCE CRITERIA
 SOIL SAMPLING - APRIL 2010
 MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
 WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Calibration Date</i>	<i>RRF</i>	<i>% RSD</i>	<i>r</i>	<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TCL PCB	Aroclor 1221	04/02/10	-	-	0.994	SO-17360-4/20/10-DR-037 SO-17360-4/20/10-DR-038 SO-17360-4/20/10-DR-039	280 UJ 280 UJ 320 UJ	µg/kg µg/kg µg/kg

Notes:

- UJ - Non-detect with an Estimated Report Limit
- RRF - Relative Response Factor
- % RSD - Percent Relative Standard Deviation
- r - Correlation Coefficient
- PCB - Polychlorinated biphenyls
- TCL - Target Compound List

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO METHOD BLANK CONTAMINATION
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Analysis Date</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TCL SVOC	Naphthalene	05/03/10	79 J	SO-17360-4/20/10-DR-029	7100 U	µg/kg
TAL Metals	Potassium	04/29/10	14.4 B	SO-17360-4/20/10-DR-024	418 U	mg/kg
TAL Metals	Thallium	04/26/10	0.014 B	SO-17360-4/20/10-DR-001	0.082 U	mg/kg
				SO-17360-4/20/10-DR-002	0.088 U	mg/kg
				SO-17360-4/20/10-DR-003	0.083 U	mg/kg
				SO-17360-4/20/10-DR-004	0.082 U	mg/kg
				SO-17360-4/20/10-DR-005	0.082 U	mg/kg
				SO-17360-4/20/10-DR-006	0.086 U	mg/kg
				SO-17360-4/20/10-DR-007	0.085 U	mg/kg
				SO-17360-4/20/10-DR-008	0.084 U	mg/kg
				SO-17360-4/20/10-DR-009	0.084 U	mg/kg
				SO-17360-4/20/10-DR-010	0.085 U	mg/kg
				SO-17360-4/20/10-DR-011	0.085 U	mg/kg
				SO-17360-4/20/10-DR-012	0.086 U	mg/kg
				SO-17360-4/20/10-DR-013	0.084 U	mg/kg
				SO-17360-4/20/10-DR-014	0.085 U	mg/kg
				SO-17360-4/20/10-DR-015	0.083 U	mg/kg
				SO-17360-4/20/10-DR-016	0.082 U	mg/kg
				SO-17360-4/20/10-DR-017	0.088 U	mg/kg
				SO-17360-4/20/10-DR-018	0.087 U	mg/kg
				SO-17360-4/20/10-DR-019	0.088 U	mg/kg
				SO-17360-4/20/10-DR-020	0.085 U	mg/kg
TAL Metals	Zinc	04/26/10	0.77 B	SO-17360-4/20/10-DR-026	3.0 U	mg/kg

Notes:

B (inorganics) - Estimated Results, Results less than Report Limit (RL)
J (organics) - Estimated Results, Results less than Report Limit (RL)
U - Qualified as Not Detected at the Report Limit (RL)

SVOC - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO LABORATORY BLANK CONTAMINATION
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Analysis Date</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	Cadmium	04/26/10	0.02 B	SO-17360-4/20/10-DR-002	0.088 U	mg/kg
				SO-17360-4/20/10-DR-003	0.083 U	mg/kg
				SO-17360-4/20/10-DR-004	0.082 U	mg/kg
				SO-17360-4/20/10-DR-005	0.082 U	mg/kg
				SO-17360-4/20/10-DR-009	0.084 U	mg/kg
TAL Metals	Cadmium	04/27/10	0.025 B	SO-17360-4/20/10-DR-012	0.11 U	mg/kg
				SO-17360-4/20/10-DR-013	0.084 U	mg/kg
				SO-17360-4/20/10-DR-017	0.098 U	mg/kg
				SO-17360-4/20/10-DR-020	0.085 U	mg/kg
TAL Metals	Beryllium	04/29/10	0.03 B	SO-17360-4/20/10-DR-030	0.20 U	mg/kg
TAL Metals	Cadmium	04/29/10	0.02 B	SO-17360-4/20/10-DR-032	0.094 U	mg/kg
TAL Metals	Beryllium	04/29/10	0.04 B	SO-17360-4/20/10-DR-039	0.19 U	mg/kg
TAL Metals	Antimony	04/26/10	0.025 B	SO-17360-4/20/10-DR-010	0.17 U	mg/kg
				SO-17360-4/20/10-DR-018	0.17 U	mg/kg
				SO-17360-4/20/10-DR-030	0.20 U	mg/kg
				SO-17360-4/20/10-DR-037	0.17 U	mg/kg
TAL Metals	Antimony Thallium	04/23/10	0.012 B 0.022 B	SO-17360-4/20/10-DR-041	0.17 U	mg/kg
				SO-17360-4/20/10-DR-041	0.086 U	mg/kg
TAL Metals	Silver	04/26/10	0.0119 B	SO-17360-4/20/10-DR-002 SO-17360-4/20/10-DR-003	0.088 U 0.083 U	mg/kg mg/kg
TAL Metals	Silver	04/26/10	0.0169 B	SO-17360-4/20/10-DR-006	0.086 U	mg/kg
				SO-17360-4/20/10-DR-012	0.086 U	mg/kg
				SO-17360-4/20/10-DR-015	0.083 U	mg/kg
TAL Metals	Silver	04/26/10	0.0195 B	SO-17360-4/20/10-DR-016	0.082 U	mg/kg

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO LABORATORY BLANK CONTAMINATION
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Analysis Date</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	Thallium	04/26/10	0.024 B	SO-17360-4/20/10-DR-021 SO-17360-4/20/10-DR-022	0.097 U 0.088 U	mg/kg mg/kg
TAL Metals	Antimony	04/26/10	0.036 B	SO-17360-4/20/10-DR-032	0.19 U	mg/kg
TAL Metals	Thallium	04/26/10	0.024 B	SO-17360-4/20/10-DR-023 SO-17360-4/20/10-DR-024 SO-17360-4/20/10-DR-025 SO-17360-4/20/10-DR-026 SO-17360-4/20/10-DR-028 SO-17360-4/20/10-DR-029 SO-17360-4/20/10-DR-030 SO-17360-4/20/10-DR-031 SO-17360-4/20/10-DR-032	0.086 U 0.084 U 0.087 U 0.085 U 0.089 U 0.086 U 0.10 U 0.087 U 0.094 U	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
TAL Metals	Antimony	04/26/10	0.0305 B	SO-17360-4/20/10-DR-038	0.17 U	mg/kg
TAL Metals	Silver	04/26/10	0.01075 B	SO-17360-4/20/10-DR-037 SO-17360-4/20/10-DR-038	0.086 U 0.086 U	mg/kg mg/kg
TAL Metals	Thallium	04/26/10	0.0295 B	SO-17360-4/20/10-DR-033 SO-17360-4/20/10-DR-035 SO-17360-4/20/10-DR-036 SO-17360-4/20/10-DR-037 SO-17360-4/20/10-DR-039 SO-17360-4/20/10-DR-040	0.097 U 0.090 U 0.087 U 0.086 U 0.096 U 0.089 U	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
TAL Metals	Thallium	04/27/10	0.0195 B	SO-17360-4/20/10-DR-034	0.47 U	mg/kg

Notes:

B (inorganics) - Estimated Results. Results less than Report Limit (RL)

U - Qualified as Not Detected at the Report Limit (RL)

TAL - Target Analyte List

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND/OR RELATIVE PERCENT DIFFERENCE
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Parameter	Analyte	MS Recovery (percent)	MSD Recovery (percent)	RPD	Control Limits		Associated Sample ID	Qualified Result	Units
					Recovery (percent)	RPD (percent)			
TAL Metals	Calcium Magnesium	73	216	64	75-125	35	SO-17360-4/20/10-DR-041	4290 J	mg/kg
		85	169	46	75-125	35	SO-17360-4/20/10-DR-041	3020 J	mg/kg
TAL Metals	Calcium	132	148	8.5	75-125	35	SO-17360-4/20/10-DR-021	15100 J	mg/kg
							SO-17360-4/20/10-DR-022	16100 J	mg/kg
							SO-17360-4/20/10-DR-023	13500 J	mg/kg
							SO-17360-4/20/10-DR-024	742 J	mg/kg
							SO-17360-4/20/10-DR-025	417 J	mg/kg
							SO-17360-4/20/10-DR-026	253 J	mg/kg
							SO-17360-4/20/10-DR-027	29400 J	mg/kg
							SO-17360-4/20/10-DR-028	31200 J	mg/kg
							SO-17360-4/20/10-DR-029	51900 J	mg/kg
							SO-17360-4/20/10-DR-030	8480 J	mg/kg
							SO-17360-4/20/10-DR-031	564 J	mg/kg
							SO-17360-4/20/10-DR-032	1390 J	mg/kg
							SO-17360-4/20/10-DR-033	2620 J	mg/kg
							SO-17360-4/20/10-DR-034	78000 J	mg/kg
							SO-17360-4/20/10-DR-035	788 J	mg/kg
							SO-17360-4/20/10-DR-036	602 J	mg/kg
							SO-17360-4/20/10-DR-037	7130 J	mg/kg
							SO-17360-4/20/10-DR-038	6520 J	mg/kg
							SO-17360-4/20/10-DR-039	2470 J	mg/kg
							SO-17360-4/20/10-DR-040	563 J	mg/kg
TAL Metals	Nickel	299	161	26	75-125	35	SO-17360-4/20/10-DR-021	477 J	mg/kg
							SO-17360-4/20/10-DR-022	246 J	mg/kg
							SO-17360-4/20/10-DR-023	5540 J	mg/kg
							SO-17360-4/20/10-DR-024	216 J	mg/kg
							SO-17360-4/20/10-DR-025	3.2 J	mg/kg
							SO-17360-4/20/10-DR-026	2.3 J	mg/kg
							SO-17360-4/20/10-DR-027	268 J	mg/kg
							SO-17360-4/20/10-DR-028	141 J	mg/kg
							SO-17360-4/20/10-DR-029	61.7 J	mg/kg
							SO-17360-4/20/10-DR-030	11.6 J	mg/kg

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND/OR RELATIVE PERCENT DIFFERENCE
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Parameter	Analyte	MS Recovery (percent)	MSD Recovery (percent)	RPD	Control Limits		Associated Sample ID	Qualified Result	Units
					Recovery (percent)	RPD (percent)			
TAL Metals	Nickel (continued)	299	161	26	75-125	35	SO-17360-4/20/10-DR-031	3.2 J	mg/kg
							SO-17360-4/20/10-DR-032	15.1 J	mg/kg
							SO-17360-4/20/10-DR-033	169 J	mg/kg
							SO-17360-4/20/10-DR-034	535 J	mg/kg
							SO-17360-4/20/10-DR-035	4.6 J	mg/kg
							SO-17360-4/20/10-DR-036	3.2 J	mg/kg
							SO-17360-4/20/10-DR-037	5.8 J	mg/kg
							SO-17360-4/20/10-DR-038	5.2 J	mg/kg
							SO-17360-4/20/10-DR-039	3.2 J	mg/kg
							SO-17360-4/20/10-DR-040	4.0 J	mg/kg
							SO-17360-4/20/10-DR-041	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-041	8.5 J	mg/kg
TAL Metals	Antimony Zinc	58 180	61 174	4.0 2.7	75-125 75-125	35 35	SO-17360-4/20/10-DR-001	0.16 UJ	mg/kg
							SO-17360-4/20/10-DR-002	0.18 UJ	mg/kg
							SO-17360-4/20/10-DR-003	0.17 UJ	mg/kg
TAL Metals	Antimony	47	47	0.19	75-125	35	SO-17360-4/20/10-DR-004	0.16 UJ	mg/kg
							SO-17360-4/20/10-DR-005	0.16 UJ	mg/kg
							SO-17360-4/20/10-DR-006	0.14 J	mg/kg
							SO-17360-4/20/10-DR-007	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-008	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-009	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-010	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-011	0.18 J	mg/kg
							SO-17360-4/20/10-DR-012	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-013	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-014	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-015	1.5 J	mg/kg
							SO-17360-4/20/10-DR-016	1.5 J	mg/kg
							SO-17360-4/20/10-DR-017	0.34 J	mg/kg
							SO-17360-4/20/10-DR-018	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-019	0.18 UJ	mg/kg
							SO-17360-4/20/10-DR-020	0.17 UJ	mg/kg

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND/OR RELATIVE PERCENT DIFFERENCE
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Parameter	Analyte	MS Recovery (percent)	MSD Recovery (percent)	RPD	Control Limits		Associated Sample ID	Qualified Result	Units
					Recovery (percent)	RPD (percent)			
TAL Metals	Antimony	61	63	4.2	75-125	35	SO-17360-4/20/10-DR-021	0.59 J	mg/kg
							SO-17360-4/20/10-DR-022	0.60 J	mg/kg
							SO-17360-4/20/10-DR-023	2.2 J	mg/kg
							SO-17360-4/20/10-DR-024	5.0 J	mg/kg
							SO-17360-4/20/10-DR-025	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-026	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-027	27.8 J	mg/kg
							SO-17360-4/20/10-DR-028	5.8 J	mg/kg
							SO-17360-4/20/10-DR-029	1.8 J	mg/kg
							SO-17360-4/20/10-DR-030	0.20 UJ	mg/kg
							SO-17360-4/20/10-DR-031	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-032	0.19 UJ	mg/kg
							SO-17360-4/20/10-DR-033	0.43 J	mg/kg
							SO-17360-4/20/10-DR-034	0.97 J	mg/kg
							SO-17360-4/20/10-DR-035	0.18 UJ	mg/kg
							SO-17360-4/20/10-DR-036	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-037	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-038	0.17 UJ	mg/kg
							SO-17360-4/20/10-DR-039	0.19 UJ	mg/kg
							SO-17360-4/20/10-DR-040	0.18 UJ	mg/kg
TAL Metals	Zinc	146	173	5.6	75-125	35	SO-17360-4/20/10-DR-021	69.2 J	mg/kg
							SO-17360-4/20/10-DR-022	67.2 J	mg/kg
							SO-17360-4/20/10-DR-023	27.8 J	mg/kg
							SO-17360-4/20/10-DR-024	11.7 J	mg/kg
							SO-17360-4/20/10-DR-025	6.4 J	mg/kg
							SO-17360-4/20/10-DR-027	819 J	mg/kg
							SO-17360-4/20/10-DR-028	260 J	mg/kg
							SO-17360-4/20/10-DR-029	105 J	mg/kg
							SO-17360-4/20/10-DR-030	52.4 J	mg/kg
							SO-17360-4/20/10-DR-031	8.0 J	mg/kg
							SO-17360-4/20/10-DR-032	43.8 J	mg/kg
							SO-17360-4/20/10-DR-033	38.2 J	mg/kg
							SO-17360-4/20/10-DR-034	49.4 J	mg/kg

TABLE 6

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO OUTLYING
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND/OR RELATIVE PERCENT DIFFERENCE
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>MS Recovery (percent)</i>	<i>MSD Recovery (percent)</i>	<i>RPD</i>	<i>Control Limits</i>		<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
					<i>Recovery (percent)</i>	<i>RPD (percent)</i>			
TAL Metals	Zinc (continued)	146	173	5.6	75-125	35	SO-17360-4/20/10-DR-035	6.6 J	mg/kg
							SO-17360-4/20/10-DR-036	5.5 J	mg/kg
							SO-17360-4/20/10-DR-037	15.2 J	mg/kg
							SO-17360-4/20/10-DR-038	14.1 J	mg/kg
							SO-17360-4/20/10-DR-039	22.1 J	mg/kg
							SO-17360-4/20/10-DR-040	6.0 J	mg/kg

Notes:

- J - Estimated Concentration
- UJ - Non-detect with an Estimated Report Limit
- MS - Matrix Spike
- MSD - Matrix Spike Duplicate
- RPD - Relative Percent Difference
- TAL - Target Analyte List

TABLE 7

SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>LCS Date</i>	<i>LCS %Rec</i>	<i>Control Limits %Rec</i>	<i>Associated Sample ID</i>	<i>Qualified Results</i>	<i>Units</i>
TAL Metals	Selenium	04/23/10	79	80-110	SO-17360-4/20/10-DR-041	0.28 J	mg/kg
TAL Metals	Arsenic	04/26/10	76	80-110	SO-17360-4/20/10-DR-001	1.8 J	mg/kg
					SO-17360-4/20/10-DR-002	1.9 J	mg/kg
					SO-17360-4/20/10-DR-003	2.1 J	mg/kg
					SO-17360-4/20/10-DR-004	1.5 J	mg/kg
					SO-17360-4/20/10-DR-005	1.5 J	mg/kg
					SO-17360-4/20/10-DR-006	2.1 J	mg/kg
					SO-17360-4/20/10-DR-007	0.62 J	mg/kg
					SO-17360-4/20/10-DR-008	0.73 J	mg/kg
					SO-17360-4/20/10-DR-009	1.0 J	mg/kg
					SO-17360-4/20/10-DR-010	1.3 J	mg/kg
					SO-17360-4/20/10-DR-011	1.4 J	mg/kg
					SO-17360-4/20/10-DR-012	1.0 J	mg/kg
					SO-17360-4/20/10-DR-013	1.2 J	mg/kg
					SO-17360-4/20/10-DR-014	1.7 J	mg/kg
					SO-17360-4/20/10-DR-015	1.2 J	mg/kg
					SO-17360-4/20/10-DR-016	1.2 J	mg/kg
					SO-17360-4/20/10-DR-017	1.7 J	mg/kg
					SO-17360-4/20/10-DR-018	1.2 J	mg/kg
					SO-17360-4/20/10-DR-019	1.1 J	mg/kg
					SO-17360-4/20/10-DR-020	1.4 J	mg/kg
TAL Metals	Selenium	04/26/10	69	80-110	SO-17360-4/20/10-DR-001	0.15 J	mg/kg
					SO-17360-4/20/10-DR-002	0.17 J	mg/kg
					SO-17360-4/20/10-DR-003	0.17 J	mg/kg
					SO-17360-4/20/10-DR-004	0.13 J	mg/kg
					SO-17360-4/20/10-DR-005	0.16 J	mg/kg
					SO-17360-4/20/10-DR-006	0.16 J	mg/kg
					SO-17360-4/20/10-DR-007	0.11 J	mg/kg
					SO-17360-4/20/10-DR-008	0.17 UJ	mg/kg
					SO-17360-4/20/10-DR-009	0.097 J	mg/kg
					SO-17360-4/20/10-DR-010	0.14 J	mg/kg
					SO-17360-4/20/10-DR-011	0.12 J	mg/kg
					SO-17360-4/20/10-DR-012	0.17 UJ	mg/kg

TABLE 7

SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>LCS Date</i>	<i>LCS %Rec</i>	<i>Control Limits %Rec</i>	<i>Associated Sample ID</i>	<i>Qualified Results</i>	<i>Units</i>
TAL Metals	Selenium (continued)	04/26/10	69	80-110	SO-17360-4/20/10-DR-013	0.11 J	mg/kg
					SO-17360-4/20/10-DR-014	0.60 J	mg/kg
					SO-17360-4/20/10-DR-015	0.17 UJ	mg/kg
					SO-17360-4/20/10-DR-016	0.16 UJ	mg/kg
					SO-17360-4/20/10-DR-017	0.15 J	mg/kg
					SO-17360-4/20/10-DR-018	0.16 J	mg/kg
					SO-17360-4/20/10-DR-019	0.17 J	mg/kg
					SO-17360-4/20/10-DR-020	0.11 J	mg/kg
					SO-17360-4/20/10-DR-021	5.8 J	mg/kg
					SO-17360-4/20/10-DR-022	5.2 J	mg/kg
TAL Metals	Arsenic	04/26/10	75	80-110	SO-17360-4/20/10-DR-023	8.3 J	mg/kg
					SO-17360-4/20/10-DR-024	1.4 J	mg/kg
					SO-17360-4/20/10-DR-025	0.76 J	mg/kg
					SO-17360-4/20/10-DR-026	0.47 J	mg/kg
					SO-17360-4/20/10-DR-027	11.4 J	mg/kg
					SO-17360-4/20/10-DR-028	7.4 J	mg/kg
					SO-17360-4/20/10-DR-029	6.2 J	mg/kg
					SO-17360-4/20/10-DR-030	2.1 J	mg/kg
					SO-17360-4/20/10-DR-031	0.43 J	mg/kg
					SO-17360-4/20/10-DR-032	4.9 J	mg/kg
TAL Metals	Selenium	04/26/10	70	80-110	SO-17360-4/20/10-DR-033	6.5 J	mg/kg
					SO-17360-4/20/10-DR-034	3.7 J	mg/kg
					SO-17360-4/20/10-DR-035	2.0 J	mg/kg
					SO-17360-4/20/10-DR-036	0.68 J	mg/kg
					SO-17360-4/20/10-DR-037	3.1 J	mg/kg
					SO-17360-4/20/10-DR-038	5.9 J	mg/kg
					SO-17360-4/20/10-DR-039	3.4 J	mg/kg
					SO-17360-4/20/10-DR-040	2.2 J	mg/kg
					SO-17360-4/20/10-DR-021	0.44 J	mg/kg
					SO-17360-4/20/10-DR-022	0.39 J	mg/kg
TAL Metals	Selenium	04/26/10	70	80-110	SO-17360-4/20/10-DR-023	0.12 J	mg/kg
					SO-17360-4/20/10-DR-024	0.17 UJ	mg/kg
					SO-17360-4/20/10-DR-025	0.14 J	mg/kg

TABLE 7

SUMMARY OF QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

Parameter	Analyte	LCS Date	LCS %Rec	Control Limits		Associated Sample ID	Qualified Results	Units
				%Rec				
TAL Metals	Selenium (continued)	04/26/10	70	80-110		SO-17360-4/20/10-DR-026	0.10 J	mg/kg
						SO-17360-4/20/10-DR-027	0.91 J	mg/kg
						SO-17360-4/20/10-DR-028	0.28 J	mg/kg
						SO-17360-4/20/10-DR-029	0.16 J	mg/kg
						SO-17360-4/20/10-DR-030	0.76 J	mg/kg
						SO-17360-4/20/10-DR-031	0.21 J	mg/kg
						SO-17360-4/20/10-DR-032	0.41 J	mg/kg
						SO-17360-4/20/10-DR-033	0.40 J	mg/kg
						SO-17360-4/20/10-DR-034	0.20 J	mg/kg
						SO-17360-4/20/10-DR-035	0.17 J	mg/kg
						SO-17360-4/20/10-DR-036	0.30 J	mg/kg
						SO-17360-4/20/10-DR-037	0.20 J	mg/kg
						SO-17360-4/20/10-DR-038	0.31 J	mg/kg
						SO-17360-4/20/10-DR-039	0.32 J	mg/kg
						SO-17360-4/20/10-DR-040	0.18 J	mg/kg

Notes:

- J - Estimated Concentration
- UJ - Non-detect with an Estimated Report Limit
- LCS - Laboratory Control Spike
- %Rec - Percent Recovery
- TAL - Target Analyte List

TABLE 8

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO VIOLATION OF ICP SERIAL DILUTION CONTROL LIMITS
SOIL SAMPLING - APRIL 2010
MOTORS LIQUIDATION COMPANY - GRAND RAPIDS METAL PLANT
WYOMING, MICHIGAN

<i>Parameter</i>	<i>Analyte</i>	<i>Serial Dilution Sample ID</i>	<i>%D</i>	<i>Associated Sample I.D.</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	Potassium	SO-17360-4/20/10-DR-033	12	SO-17360-4/20/10-DR-021	273 J	mg/kg
				SO-17360-4/20/10-DR-022	286 J	mg/kg
				SO-17360-4/20/10-DR-023	138 J	mg/kg
				SO-17360-4/20/10-DR-025	168 J	mg/kg
				SO-17360-4/20/10-DR-026	107 J	mg/kg
				SO-17360-4/20/10-DR-027	463 J	mg/kg
				SO-17360-4/20/10-DR-028	305 J	mg/kg
				SO-17360-4/20/10-DR-029	373 J	mg/kg
				SO-17360-4/20/10-DR-030	412 J	mg/kg
				SO-17360-4/20/10-DR-031	204 J	mg/kg
				SO-17360-4/20/10-DR-032	164 J	mg/kg
				SO-17360-4/20/10-DR-033	135 J	mg/kg
				SO-17360-4/20/10-DR-034	417 J	mg/kg
				SO-17360-4/20/10-DR-035	229 J	mg/kg
				SO-17360-4/20/10-DR-036	115 J	mg/kg
				SO-17360-4/20/10-DR-037	172 J	mg/kg
				SO-17360-4/20/10-DR-038	204 J	mg/kg
				SO-17360-4/20/10-DR-039	126 J	mg/kg
				SO-17360-4/20/10-DR-040	117 J	mg/kg

Notes:

J - Estimated Concentration

%D - Percent Difference

TAL - Target Analyte List