QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ32583-001
Batch: 32583
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/22/2013 2306
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/22/2013 2306
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/22/2013 2306
Naphthalene	ND		1	0.50	0.17	ug/L	10/22/2013 2306
Toluene	ND		1	0.50	0.17	ug/L	10/22/2013 2306
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/22/2013 2306

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		114	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ32583-002
Batch: 32583
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	49		1	99	70-130	10/22/2013 2134
Ethylbenzene	50	51		1	101	70-130	10/22/2013 2134
Methyl tertiary butyl ether (MTBE)	50	51		1	102	70-130	10/22/2013 2134
Naphthalene	50	58		1	117	50-140	10/22/2013 2134
Toluene	50	48		1	96	70-130	10/22/2013 2134
Xylenes (total)	100	100		1	102	70-130	10/22/2013 2134

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		111	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ32583-003
Batch: 32583
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	49		1	98	0.49	70-130	20	10/22/2013 2157
Ethylbenzene	50	51		1	102	1.1	70-130	20	10/22/2013 2157
Methyl tertiary butyl ether (MTBE)	50	48		1	96	6.3	70-130	20	10/22/2013 2157
Naphthalene	50	53		1	106	9.6	50-140	20	10/22/2013 2157
Toluene	50	50		1	99	3.0	70-130	20	10/22/2013 2157
Xylenes (total)	100	100		1	102	0.037	70-130	20	10/22/2013 2157

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		114	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: OJ18025-002MS
Batch: 32583
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	50	56		1	111	70-130	10/23/2013 0612
Ethylbenzene	ND	50	57		1	115	70-130	10/23/2013 0612
Methyl tertiary butyl ether (MTBE)	1.6	50	57		1	112	70-130	10/23/2013 0612
Naphthalene	ND	50	63		1	125	50-140	10/23/2013 0612
Toluene	ND	50	57		1	113	70-130	10/23/2013 0612
Xylenes (total)	ND	100	120		1	116	70-130	10/23/2013 0612

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		114	70-130
Bromofluorobenzene		114	70-130
Toluene-d8		119	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: OJ18025-002MD
Batch: 32583
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	ND	50	56		1	113	1.4	70-130	20	10/23/2013 0635
Ethylbenzene	ND	50	58		1	117	1.7	70-130	20	10/23/2013 0635
Methyl tertiary butyl ether (MTBE)	1.6	50	59		1	114	2.1	70-130	20	10/23/2013 0635
Naphthalene	ND	50	64		1	129	2.9	50-140	20	10/23/2013 0635
Toluene	ND	50	57		1	115	1.5	70-130	20	10/23/2013 0635
Xylenes (total)	ND	100	120		1	117	0.95	70-130	20	10/23/2013 0635

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		116	70-130
Bromofluorobenzene		114	70-130
Toluene-d8		121	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ32647-001
Batch: 32647
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/23/2013 1409
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/23/2013 1409
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/23/2013 1409
Naphthalene	ND		1	0.50	0.17	ug/L	10/23/2013 1409
Toluene	ND		1	0.50	0.17	ug/L	10/23/2013 1409
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/23/2013 1409

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		107	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ32647-002
Batch: 32647
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	50		1	100	70-130	10/23/2013 1054
Ethylbenzene	50	55		1	109	70-130	10/23/2013 1054
Methyl tertiary butyl ether (MTBE)	50	48		1	97	70-130	10/23/2013 1054
Naphthalene	50	48		1	97	50-140	10/23/2013 1054
Toluene	50	55		1	111	70-130	10/23/2013 1054
Xylenes (total)	100	100		1	104	70-130	10/23/2013 1054

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		106	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ32647-003
Batch: 32647
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	50		1	100	0.13	70-130	20	10/23/2013 1259
Ethylbenzene	50	51		1	103	6.1	70-130	20	10/23/2013 1259
Methyl tertiary butyl ether (MTBE)	50	46		1	93	4.6	70-130	20	10/23/2013 1259
Naphthalene	50	43		1	85	13	50-140	20	10/23/2013 1259
Toluene	50	53		1	106	4.5	70-130	20	10/23/2013 1259
Xylenes (total)	100	100		1	100	4.4	70-130	20	10/23/2013 1259

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		109	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: OJ18025-030MS
Batch: 32647
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	ND	50	54		1	108	70-130	10/23/2013 2024
Ethylbenzene	ND	50	56		1	113	70-130	10/23/2013 2024
Methyl tertiary butyl ether (MTBE)	7.9	50	58		1	99	70-130	10/23/2013 2024
Naphthalene	ND	50	42		1	84	50-140	10/23/2013 2024
Toluene	ND	50	59		1	117	70-130	10/23/2013 2024
Xylenes (total)	ND	100	110		1	108	70-130	10/23/2013 2024

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		104	70-130
Toluene-d8		110	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: OJ18025-030MD
Batch: 32647
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	ND	50	56		1	112	3.9	70-130	20	10/23/2013 2047
Ethylbenzene	ND	50	60		1	119	5.3	70-130	20	10/23/2013 2047
Methyl tertiary butyl ether (MTBE)	7.9	50	61		1	106	6.0	70-130	20	10/23/2013 2047
Naphthalene	ND	50	49		1	99	16	50-140	20	10/23/2013 2047
Toluene	ND	50	61		1	123	4.3	70-130	20	10/23/2013 2047
Xylenes (total)	ND	100	110		1	114	5.9	70-130	20	10/23/2013 2047

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4		93	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		109	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35721-001
Batch: 35721
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/24/2013 1012
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/24/2013 1012
Naphthalene	ND		1	0.50	0.17	ug/L	10/24/2013 1012
Toluene	ND		1	0.50	0.17	ug/L	10/24/2013 1012
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/24/2013 1012

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		90	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35721-002
Batch: 35721
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	47		1	94	70-130	10/24/2013 0840
Ethylbenzene	50	45		1	91	70-130	10/24/2013 0840
Naphthalene	50	40		1	81	50-140	10/24/2013 0840
Toluene	50	47		1	94	70-130	10/24/2013 0840
Xylenes (total)	100	92		1	92	70-130	10/24/2013 0840

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		84	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		87	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35721-003
Batch: 35721
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	47		1	95	0.77	70-130	20	10/24/2013 0903
Ethylbenzene	50	45		1	90	0.71	70-130	20	10/24/2013 0903
Naphthalene	50	41		1	83	2.8	50-140	20	10/24/2013 0903
Toluene	50	47		1	94	0.051	70-130	20	10/24/2013 0903
Xylenes (total)	100	91		1	91	1.1	70-130	20	10/24/2013 0903

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		82	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		86	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35723-001
Batch: 35723
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/22/2013 2251
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/22/2013 2251
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/22/2013 2251
Naphthalene	ND		1	0.50	0.17	ug/L	10/22/2013 2251
Toluene	ND		1	0.50	0.17	ug/L	10/22/2013 2251
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/22/2013 2251

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		90	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35723-002
Batch: 35723
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	70-130	10/22/2013 2120
Ethylbenzene	50	50		1	100	70-130	10/22/2013 2120
Methyl tertiary butyl ether (MTBE)	50	55		1	110	70-130	10/22/2013 2120
Naphthalene	50	48		1	97	50-140	10/22/2013 2120
Toluene	50	51		1	101	70-130	10/22/2013 2120
Xylenes (total)	100	100		1	101	70-130	10/22/2013 2120

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		89	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35723-003
Batch: 35723
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	49		1	99	3.0	70-130	20	10/22/2013 2142
Ethylbenzene	50	50		1	99	0.47	70-130	20	10/22/2013 2142
Methyl tertiary butyl ether (MTBE)	50	53		1	106	4.4	70-130	20	10/22/2013 2142
Naphthalene	50	49		1	98	1.2	50-140	20	10/22/2013 2142
Toluene	50	50		1	100	1.9	70-130	20	10/22/2013 2142
Xylenes (total)	100	100		1	100	0.43	70-130	20	10/22/2013 2142

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		89	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: OJ18025-011MS
Batch: 35723
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	10	1000	2300	N	20	232	70-130	10/23/2013 0702
Ethylbenzene	ND	1000	1900	N	20	187	70-130	10/23/2013 0702
Methyl tertiary butyl ether (MTBE)	240	1000	3800	N	20	354	70-130	10/23/2013 0702
Naphthalene	ND	1000	2400	N	20	239	50-140	10/23/2013 0702
Toluene	ND	1000	2300	N	20	231	70-130	10/23/2013 0702
Xylenes (total)	ND	2000	3800	N	20	190	70-130	10/23/2013 0702

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	223	70-130
Bromofluorobenzene	N	181	70-130
Toluene-d8	N	198	70-130

PQL = Practical quantitation limit

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: OJ18025-011MD
Batch: 35723
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	10	1000	2300	N	20	233	0.52	70-130	20	10/23/2013 0727
Ethylbenzene	ND	1000	1900	N	20	194	3.7	70-130	20	10/23/2013 0727
Methyl tertiary butyl ether (MTBE)	240	1000	3800	N	20	352	0.32	70-130	20	10/23/2013 0727
Naphthalene	ND	1000	2000	N	20	202	17	50-140	20	10/23/2013 0727
Toluene	ND	1000	2300	N	20	231	0.36	70-130	20	10/23/2013 0727
Xylenes (total)	ND	2000	3800	N	20	192	1.3	70-130	20	10/23/2013 0727

Surrogate	Q	% Rec	Acceptance Limit
1,2-Dichloroethane-d4	N	217	70-130
Bromofluorobenzene	N	182	70-130
Toluene-d8	N	196	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35729-001
Batch: 35729
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/23/2013 1055
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/23/2013 1055
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/23/2013 1055
Naphthalene	ND		1	0.50	0.17	ug/L	10/23/2013 1055
Toluene	ND		1	0.50	0.17	ug/L	10/23/2013 1055
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/23/2013 1055

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		85	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35729-002
Batch: 35729
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	46		1	91	70-130	10/23/2013 0921
Ethylbenzene	50	45		1	90	70-130	10/23/2013 0921
Methyl tertiary butyl ether (MTBE)	50	52		1	103	70-130	10/23/2013 0921
Naphthalene	50	45		1	90	50-140	10/23/2013 0921
Toluene	50	46		1	92	70-130	10/23/2013 0921
Xylenes (total)	100	91		1	91	70-130	10/23/2013 0921

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		86	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35729-003
Batch: 35729
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	48		1	96	4.6	70-130	20	10/23/2013 0947
Ethylbenzene	50	47		1	94	5.2	70-130	20	10/23/2013 0947
Methyl tertiary butyl ether (MTBE)	50	50		1	100	3.5	70-130	20	10/23/2013 0947
Naphthalene	50	44		1	88	2.3	50-140	20	10/23/2013 0947
Toluene	50	48		1	97	5.5	70-130	20	10/23/2013 0947
Xylenes (total)	100	95		1	95	3.9	70-130	20	10/23/2013 0947

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		88	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35730-001
Batch: 35730
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/23/2013 1644
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/23/2013 1644
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/23/2013 1644
Naphthalene	ND		1	0.50	0.17	ug/L	10/23/2013 1644
Toluene	ND		1	0.50	0.17	ug/L	10/23/2013 1644
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/23/2013 1644

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		113	70-130
1,2-Dichloroethane-d4		118	70-130
Toluene-d8		116	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35730-002
Batch: 35730
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	102	70-130	10/23/2013 1511
Ethylbenzene	50	53		1	106	70-130	10/23/2013 1511
Methyl tertiary butyl ether (MTBE)	50	54		1	107	70-130	10/23/2013 1511
Naphthalene	50	61		1	122	50-140	10/23/2013 1511
Toluene	50	51		1	101	70-130	10/23/2013 1511
Xylenes (total)	100	110		1	107	70-130	10/23/2013 1511

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		113	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		118	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35730-003
Batch: 35730
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	49		1	99	3.3	70-130	20	10/23/2013 1534
Ethylbenzene	50	52		1	105	0.81	70-130	20	10/23/2013 1534
Methyl tertiary butyl ether (MTBE)	50	51		1	102	4.9	70-130	20	10/23/2013 1534
Naphthalene	50	56		1	113	8.0	50-140	20	10/23/2013 1534
Toluene	50	52		1	103	2.0	70-130	20	10/23/2013 1534
Xylenes (total)	100	110		1	106	1.4	70-130	20	10/23/2013 1534

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		113	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		121	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35732-001
Batch: 35732
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Benzene	ND		1	0.50	0.027	ug/L	10/24/2013 0039
Ethylbenzene	ND		1	0.50	0.17	ug/L	10/24/2013 0039
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/24/2013 0039
Naphthalene	ND		1	0.50	0.17	ug/L	10/24/2013 0039
Toluene	ND		1	0.50	0.17	ug/L	10/24/2013 0039
Xylenes (total)	ND		1	0.50	0.17	ug/L	10/24/2013 0039

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35732-002
Batch: 35732
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	50		1	101	70-130	10/23/2013 2305
Ethylbenzene	50	57		1	113	70-130	10/23/2013 2305
Methyl tertiary butyl ether (MTBE)	50	50		1	101	70-130	10/23/2013 2305
Naphthalene	50	52		1	103	50-140	10/23/2013 2305
Toluene	50	57		1	114	70-130	10/23/2013 2305
Xylenes (total)	100	110		1	110	70-130	10/23/2013 2305

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		106	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35732-003
Batch: 35732
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	49		1	97	3.7	70-130	20	10/23/2013 2328
Ethylbenzene	50	55		1	111	1.9	70-130	20	10/23/2013 2328
Methyl tertiary butyl ether (MTBE)	50	49		1	98	2.8	70-130	20	10/23/2013 2328
Naphthalene	50	52		1	103	0.36	50-140	20	10/23/2013 2328
Toluene	50	56		1	111	2.2	70-130	20	10/23/2013 2328
Xylenes (total)	100	110		1	106	3.1	70-130	20	10/23/2013 2328

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		108	70-130

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

P = The RPD between two GC columns exceeds 40%

J = Estimated result < PQL and ≥ MDL

N = Recovery is out of criteria

+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ35733-001
Batch: 35733
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	MDL	Units	Analysis Date
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.019	ug/L	10/24/2013 1323

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		106	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ35733-002
Batch: 35733
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	50	48		1	95	70-130	10/24/2013 1150

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		108	70-130

PQL = Practical quantitation limit
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ35733-003
Batch: 35733
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	50	49		1	99	3.7	70-130	20	10/24/2013 1213

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		106	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the MDL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

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

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West Columbia, South Carolina 29172
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Chain of Custody Record

Number 34744

Client: ARCADIS	Report to Contact: Shelley Gibbons	Sampler (Printed Name): Jared Fish / Dan Rhodes	Quote No.
Address: 801 Corporate Center Dr. #300	Telephone No. / Fax No. / Email: 919-854-1282 / shelley.gibbons@arcadis-us.com	Waybill No.	Page: 1 of 4
City: Raleigh / State: NC / Zip Code: 27607	Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH		Number of Containers: 3 / Bottle (See Instructions on back): A / Preservative: 5
Project Name: FST-26			Lot No.: 0518025
Project Number: GPOPHAFS.2012.1266M	P.O Number		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX, MTBE	Remarks / Cooler ID
26-MW-16 (101513)	10/15/13	1131	G	X					X	
26-MW-24R (101513)	10/15/13	1215							X	
26-MW-24R (101513) MS		1215							X	
26-MW-24R (101513) MSD		1215							X	
26-MW-35 (101513)		1138							X	
26-MW-25R (101513)		1218							X	
26-MW-59 (101513)		1304							X	
26-MW-15R (101513)		1259							X	
26-MW-36R (101513)		1455							X	
26-MW-06R (101513)		1533							X	

Turn Around Time Required (Prior lab approval required for expedited TAT): ☒ Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

QC Requirements (Specify):

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	10/17/13	1200	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: FedEx	10/18/13	0900	4. Laboratory Received by: Christie	10/18/13	0900

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY — Received on Ice (Check): ☒ Yes ☐ No ☐ Ice Pack — Receipt Temp. 1.1 °C — Temp. Blank ☐ Y / ☒ N

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Chain of Custody Record

Number 34745

Client: ARCADIS	Report to Contact: Shelley Gibbons	Sampler (Printed Name): Jared Fink / Dan Rhodes	Quote No.
Address: 801 Corporate Center Dr. #300	Telephone No. / Fax No. / Email: 919-854-1282 / shelley.gibbons@arcadis-us.com	Waybill No.	Page: 2 of 4
City: Raleigh / State: NC / Zip Code: 27607	Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH		Number of Containers: 3 A 5
Project Name: FST-26			Bottle (See Instructions on back):
Project Number: GP0PHAFS.2012.N26.GM	P.O Number:		Preservative:
			Lot No.: OJ18025

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: OTEX, MTBE	Remarks / Cooler ID
26-MW-09(101513)	10/15/13	1627	G	X					X	
26-MW-23(101513)		1729							X	
26-MW-55(101513)		1644							X	
26-MW-20(101513)		1734							X	
Dup-1(101513)		0000							X	
26-MW-07(101513)	10/15/13	1546							X	
26-MW-28R(101513)	10/15/13	1458							X	
26-MW-56(101613)	10/16/13	1017							X	
26-MW-21(101613)	10/16/13	0937							X	
26-MW-33(101613)	10/16/13	1014							X	

Turn Around Time Required (Prior lab approval required for expedited TAT): X Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client X Disposal by Lab

QC Requirements (Specify):

Possible Hazard Identification: ☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison ☐Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	10/17/13	1200	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	10/18/13	0900	4. Laboratory Received by	10/18/13	0900

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) X Yes ☐ No ☐ Ice Pack
Receipt Temp. 1.1 °C
Temp. Blank ☐ Y / X N

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Chain of Custody Record

Number 34748

Client: ARCADIS	Report to Contact: Shelley Gibbons	Supplier (Printed Name): Jared Fino / Dan Rhodes	Quote No.
Address: 801 Corporate Center Dr. #300	Telephone No. / Fax No. / Email: 919-854-1282 / shelley.gibbons@arcadis-us.com	Waybill No.	Page: 3 of 4
City: Raleigh State: NC Zip Code: 27607	Preservative: 1. Unpres. 2. NaOH/ZnA 3. H_2SO_4 4. HNO_3 5. HCl 6. Na Thio. 7. NaOH		
Project Name: FST-26			
Project Number: GP08HAFS.2012.026GM	P.O Number:		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX, MTBE	Number of Containers	Bottle (See Instructions on back)	Preservative	Lot No.	Remarks / Cooler ID
										3	A	B	OJ18025	
26-MW-43(101613)	10/16/13	1104	G	X					X					
26-MW-19(101613)		1111							X					
Dup-2(101613)		0001							X					
26-MW-54(101613)		1155							X					
26-MW-31(101613)		1154							X					
26-MW-41(101613)		1239							X					
26-MW-57(101613)		1244							X					
26-MW-38(101613)		1433							X					
26-MW-51(101613)		1446							X					
26-MW-53(101613)		1537							X					

Turn Around Time Required (Prior lab approval required for expedited TAT): ✓ Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ✓ Disposal by Lab

QC Requirements (Specify):

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	10/17/13	1200	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	10/18/13	0900	4. Laboratory Received by	10/18/13	0900

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ✓ Yes ☐ No ☐ Ice Pack Receipt Temp. 1.1 °C Temp. Blank ☐ Y / ☐ N

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Chain of Custody Record

Number 34747

Client: ARCADIS	Report to Contact: Shelley Gibbons	Sampler (Printed Name): Jared Fin / Dan Rhodes	Quote No.
Address: 801 Corporate Center Dr. #300	Telephone No. / Fax No. / Email: 919-854-1282 / shelley.gibbons@arcadis-us.com	Waybill No.	Page: 4 of 4
City: Raleigh	State: NC	Zip Code: 27607	
Project Name: FST-26			
Project Number: G108HAPS. 2012.026GM	P O Number		

Preservative: 1. Unpres. 2. NaOH/ZnA 3. H2SO4 4. HNO3 5. HCL 6. Na Thio. 7. NaOH

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: GW	DW	WW	S	Other	Analysis: BTEX MTBE	Number of Containers: 3	Bottle (See Instructions on back): A	Preservative: 5	Lot No.	Remarks / Cooler ID
26-MW-52(101613)	10/16/13	1530	G	X					X				OJ18025	
26-MW-58(101613)		1625							X					
26-MW-58(101613)MS		1625							X					
26-MW-58(101613)MSD		1625							X					
26-MW-32(101613)		1632							X					
26-MW-60(101613)		1723							X					
26-MW-42(101613)		1770							X					
26-MW-49(101613)		1809							X					
26-MW-40(101713)	10/17/13	0915							X					
26-MW-39(101713)	10/17/13	0948							X					

Turn Around Time Required (Prior lab approval required for expedited TAT): ☒ Standard ☐ Rush (Please Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

QC Requirements (Specify):

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

	Date	Time		Date	Time
1. Relinquished by / Sampler	10/17/13	1200	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by FedEx	10/18/13	0900	4. Laboratory Received by	10/18/13	0900

Note: All samples are retained for six weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Check) ☒ Yes ☐ No ☐ Ice Pack Receipt Temp: 1.1 °C Temp. Blank ☐ Y / ☒ N

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Level 1 Report v2.1

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 13

Page 1 of 1
Replaces Date: 09/24/13
Effective Date: 09/26/13

Sample Receipt Checklist (SRC)

Client: Arcadis Cooler Inspected by/date: CMT / 10/18/13 Lot #: 0318025

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☑ FedEx ☐ Airborne Exp ☐ Other			
Yes ☑	No ☐		1. Were custody seals present on the cooler?
Yes ☑	No ☐		2. If custody seals were present, were they intact and unbroken?
Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt: 1574/1.4/1.1 °C ___/___/___ °C ___/___/___ °C ___/___/___ °C Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 3 IR Gun Correction Factor: -.3 °C Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other: ___. (For coolers received via commercial courier, PMs are to be notified immediately.
Yes ☐	No ☑	NA ☐	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☑	NA ☐	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☐	No ☑		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☑	No ☐		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☑	No ☐		15. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) ___ were received incorrectly preserved and were adjusted accordingly in sample receiving with ___ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number) ___.

Sample(s) ___ were received with bubbles >6 mm in diameter.

Sample(s) ___ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: KVP Date: 10/18/13

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: ___ Date of response: ___

Comments: Sample – 012 was labeled 26-MW-26 on bottle but is 26-MW-23 on CoC. ID recorded per CoC and matched with date + time.
Trip blank received but not documented on CoC.

ARCADIS

Appendix B

Data Validation Reports

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OD05014
FST-26

Analytical data were evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), analytical method control criteria, the analytical laboratory Quality Assurance Control Limits, the Fort Stewart Military Reservation and Hunter Army Airfield Quality Assurance Project Plan (ARCADIS-2008), and professional judgment.

The data review summarized in this report includes a review of all sample collection documentation and the electronic data validation of the analytical data housed in the project database. Sample collection documentation included sample collection logs and chains of custody. The electronic data validation was performed utilizing the EQuIS Data Qualification Module (DQM). DQM checks for the following parameters:

- Holding times and preservation;
- Blank contamination;
    1. Method blanks,
    2. Trip blanks,
    3. Equipment blanks;
- Matrix spike and Duplicate sample recovery;
- Matrix Spike and Matrix Spike Duplicate relative percent differences;
- Laboratory Control Sample and Duplicate recovery;
- Laboratory Control Sample and Duplicate relative percent differences;
- Surrogate recovery (organic analyses only); and
- Field duplicate relative percent difference.

Manual review was performed for the following items:

- Sample dilutions and reporting limits;
- Case Narratives; and
- Laboratory Duplicates

Data was generated by Shealy Environmental Services, Inc. – West Columbia, South Carolina and Test America – Savannah Laboratories. Data qualifiers were applied electronically to the database with any additional qualifiers added manually. A summary of the data as amended by data qualifiers is included with the original hard copy reports.

The attached table summarizes the data that were qualified due to QC deficiencies. The table indicates compounds/analytes qualified based on electronic and manual validation. Refer to the associated method section of the validation checklist for a detailed explanation of qualification. All other data in these SDGs are considered usable as reported.

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OD05014
FST-26

The following list of data qualifiers and definitions were applied in accordance with qualification criteria defined in the greater than guidance documents:

UB Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value.

J The analyte was positively identified, but the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected greater than the reporting limit; however, the reported quantitation limit is approximate and may, or may not represent the actual limit of quantitation necessary to accurately and precisely measure analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria; and the presence or absence of the analyte cannot be verified.

U Not detected at the quantitative reporting limit

DQM RUN BY:	Rachelle Borne	June 11, 2013
REVIEW PERFORMED BY:	Rachelle Borne	June 11, 2013
SIGNATURE:		June 11, 2013

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OD05014
FST-26

The following samples were included in this SDG:

SDG	Sample ID	Sample Date	Parent Sample
OD05014	26-MW-55(040313)	4/3/2013	
OD05014	26-MW-56(040313)	4/3/2013	
OD05014	26-MW-57(040213)	4/2/2013	
OD05014	26-MW-58(040213)	4/2/2013	
OD05014	26-MW-59(040313)	4/3/2013	
OD05014	Trip Blank_20130403	4/3/2013	
OD05014	26-DUP-01(040313)	4/3/2013	26-MW-54(040313)
OD05014	26-DUP-02(040313)	4/3/2013	26-MW-55(040313)
OD05014	26-MW-06R(040313)	4/3/2013	
OD05014	26-MW-07(040313)	4/3/2013	
OD05014	26-MW-09(040313)	4/3/2013	
OD05014	26-MW-15R(040313)	4/3/2013	
OD05014	26-MW-16(040313)	4/3/2013	
OD05014	26-MW-19(040313)	4/3/2013	
OD05014	26-MW-20(040313)	4/3/2013	
OD05014	26-MW-21(040313)	4/3/2013	
OD05014	26-MW-23(040313)	4/3/2013	
OD05014	26-MW-24R(040313)	4/3/2013	
OD05014	26-MW-25R(040313)	4/3/2013	
OD05014	26-MW-28R(040313)	4/3/2013	
OD05014	26-MW-31(040213)	4/2/2013	
OD05014	26-MW-32(040213)	4/2/2013	
OD05014	26-MW-33(040213)	4/2/2013	
OD05014	26-MW-35(040313)	4/3/2013	
OD05014	26-MW-36R(040313)	4/3/2013	
OD05014	26-MW-38(040313)	4/3/2013	
OD05014	26-MW-39(040213)	4/2/2013	
OD05014	26-MW-40(040213)	4/2/2013	
OD05014	26-MW-41(040313)	4/3/2013	
OD05014	26-MW-42(040213)	4/2/2013	
OD05014	26-MW-43(040213)	4/2/2013	
OD05014	26-MW-47(040213)	4/2/2013	
OD05014	26-MW-49(040213)	4/2/2013	
OD05014	26-MW-50(040213)	4/2/2013	
OD05014	26-MW-51(040213)	4/2/2013	
OD05014	26-MW-52(040213)	4/2/2013	
OD05014	26-MW-53(040313)	4/3/2013	
OD05014	26-MW-54(040313)	4/3/2013	

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OD05014
FST-26

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Methods of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Laboratory Signature		X		X	
13. South Carolina Certification Number		X		X	

QA - quality assurance

The analytical report was complete with the following exceptions or notations.

Note: The laboratory reported values between the quantitative reporting limit and the method detection limit as estimated concentrations. The "J" qualifier was retained in this validation. Non-detect values are reported at the quantitative reporting limit.

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OD05014
FST-26

VOLATILE ORGANIC COMPOUNDS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks	NA		NA	
C. Trip blanks	DQM		DQM	
4. Surrogate spike recoveries	DQM		DQM	
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	DQM		DQM	
C. LCS/LCSD RPD	DQM		DQM	
6. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)	DQM		DQM	
7. Field/Lab Duplicate precision (RPD)		DQM		DQM

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Method 8260B.

6. Sample 26-MW-58(040213) was used as the MS. The recoveries were acceptable.

   Sample 26-MW-24R(040313) was used as the MS/MSD. The recoveries and RPDs were acceptable.

   Sample 26-DUP-02(040313) was used as the MS/MSD. The recoveries and RPDs were acceptable.

   Sample 26-MW-21(040313) was used as the MS. The recoveries were acceptable.

7. Sample 26-MW-56(040313) was used as the laboratory duplicate. The RPD for MTBE was above the control limit. The parent sample was qualified as estimated for this compound.

   Sample 26-DUP-01(040313) was collected as a field duplicate of 26-MW-54(040313). The RPDs were acceptable at less than 40%.

   Sample 26-DUP-02(040313) was collected as a field duplicate of 26-MW-55(040313). The RPDs were acceptable at less than 40%.

OD05014
FST-26

SDG	Sample ID	Method	Analyte	Result	Units	Qualifier	Reason	Dilution
OD05014	26-MW-56(040313)	SW8260	Methyl tert-butyl ether	24	ug/l	J	LD RPD	1

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OJ18025
FST-26

Analytical data were evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), analytical method control criteria, the analytical laboratory Quality Assurance Control Limits, the Fort Stewart Military Reservation and Hunter Army Airfield Quality Assurance Project Plan (ARCADIS-2008), and professional judgment.

The data review summarized in this report includes a review of all sample collection documentation and the electronic data validation of the analytical data housed in the project database. Sample collection documentation included sample collection logs and chains of custody. The electronic data validation was performed utilizing the EQuIS Data Qualification Module (DQM). DQM checks for the following parameters:

- Holding times and preservation;
- Blank contamination;
    1. Method blanks,
    2. Trip blanks,
    3. Equipment blanks;
- Matrix spike and Duplicate sample recovery;
- Matrix Spike and Matrix Spike Duplicate relative percent differences;
- Laboratory Control Sample and Duplicate recovery;
- Laboratory Control Sample and Duplicate relative percent differences;
- Surrogate recovery (organic analyses only); and
- Field duplicate relative percent difference.

Manual review was performed for the following items:

- Sample dilutions and reporting limits;
- Case Narratives; and
- Laboratory Duplicates

Data was generated by Shealy Environmental Services, Inc. – West Columbia, South Carolina and Test America – Savannah Laboratories. Data qualifiers were applied electronically to the database with any additional qualifiers added manually. A summary of the data as amended by data qualifiers is included with the original hard copy reports.

The attached table summarizes the data that were qualified due to QC deficiencies. The table indicates compounds/analytes qualified based on electronic and manual validation. Refer to the associated method section of the validation checklist for a detailed explanation of qualification. All other data in these SDGs are considered usable as reported.

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OJ18025
FST-26

The following list of data qualifiers and definitions were applied in accordance with qualification criteria defined in the greater than guidance documents:

UB Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value.

J The analyte was positively identified, but the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected greater than the reporting limit; however, the reported quantitation limit is approximate and may, or may not represent the actual limit of quantitation necessary to accurately and precisely measure analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria; and the presence or absence of the analyte cannot be verified.

U Not detected at the quantitative reporting limit

DQM RUN BY:	Rachelle Borne	11/15/13
REVIEW PERFORMED BY:	Rachelle Borne	11/15/13
SIGNATURE:		11/15/13

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OJ18025
FST-26

The following samples were included in this SDG:

SDG	Sample ID	Sample Date	Parent Sample
OJ18025	26-MW-06R (101513)	10/15/2013	
OJ18025	26-MW-07 (101513)	10/15/2013	
OJ18025	26-MW-09R (101513)	10/15/2013	
OJ18025	26-MW-15R (101513)	10/15/2013	
OJ18025	26-MW-16 (101513)	10/15/2013	
OJ18025	26-MW-19 (101613)	10/16/2013	
OJ18025	26-MW-20 (101513)	10/15/2013	
OJ18025	26-MW-21 (101613)	10/16/2013	
OJ18025	26-MW-23 (101513)	10/15/2013	
OJ18025	26-MW-24R (101513)	10/15/2013	
OJ18025	26-MW-25R (101513)	10/15/2013	
OJ18025	26-MW-28R (101513)	10/15/2013	
OJ18025	26-MW-31 (101613)	10/16/2013	
OJ18025	26-MW-32 (101613)	10/16/2013	
OJ18025	26-MW-33 (101613)	10/16/2013	
OJ18025	26-MW-35 (101513)	10/15/2013	
OJ18025	26-MW-36R (101513)	10/15/2013	
OJ18025	26-MW-38 (101613)	10/16/2013	
OJ18025	26-MW-39 (101713)	10/17/2013	
OJ18025	26-MW-40 (101713)	10/17/2013	
OJ18025	26-MW-41 (101613)	10/16/2013	
OJ18025	26-MW-42 (101613)	10/16/2013	
OJ18025	26-MW-43 (101613)	10/16/2013	
OJ18025	26-MW-49 (101613)	10/16/2013	
OJ18025	26-MW-50 (101613)	10/16/2013	
OJ18025	26-MW-51 (101613)	10/16/2013	
OJ18025	26-MW-52 (101613)	10/16/2013	
OJ18025	26-MW-53 (101613)	10/16/2013	
OJ18025	26-MW-54 (101613)	10/16/2013	
OJ18025	26-MW-55 (101513)	10/15/2013	
OJ18025	26-MW-56 (101613)	10/16/2013	
OJ18025	26-MW-57 (101613)	10/16/2013	
OJ18025	26-MW-58 (101613)	10/16/2013	
OJ18025	26-MW-59 (101513)	10/15/2013	
OJ18025	TRIP BLANK	10/18/2013	
OJ18025	DUP-1 (101513)	10/15/2013	26-MW-55 (101513)
OJ18025	DUP-2 (101613)	10/16/2013	26-MW-54 (101613)

ARCADIS

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OJ18025
FST-26

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Methods of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Laboratory Signature		X		X	
13. South Carolina Certification Number		X		X	

QA - quality assurance

The analytical report was complete with the following exceptions or notations.

Note: The laboratory reported values between the quantitative reporting limit and the method detection limit as estimated concentrations. The "J" qualifier was retained in this validation. Non-detect values are reported at the quantitative reporting limit.

HUNTER STEWART
ELECTRONIC VALIDATION REVIEW REPORT
SDG: OJ18025
FST-26

VOLATILE ORGANIC COMPOUNDS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks	NA		NA	
C. Trip blanks	DQM		DQM	
4. Surrogate spike recoveries	DQM		DQM	
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	DQM		DQM	
C. LCS/LCSD RPD	DQM		DQM	
6. Matrix spike (MS)				
A. MS %R	DQM			DQM
B. MS duplicate (MSD) %R	DQM			DQM
C. MS/MSD precision (RPD)	DQM		DQM	
7. Field/Lab Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Method 8260B.

6A. Samples 26-MW-24R and 26-MW-58(101613) were used as the MS/MSDs. The recoveries and RPDs were acceptable. Sample 26-m2-55(101513) was used as the MS/MSD. The recovery of methyl tert butyl ether was above the control limit in the MS and the MSD. This compound was detected in the parent sample and therefore qualified as estimated.

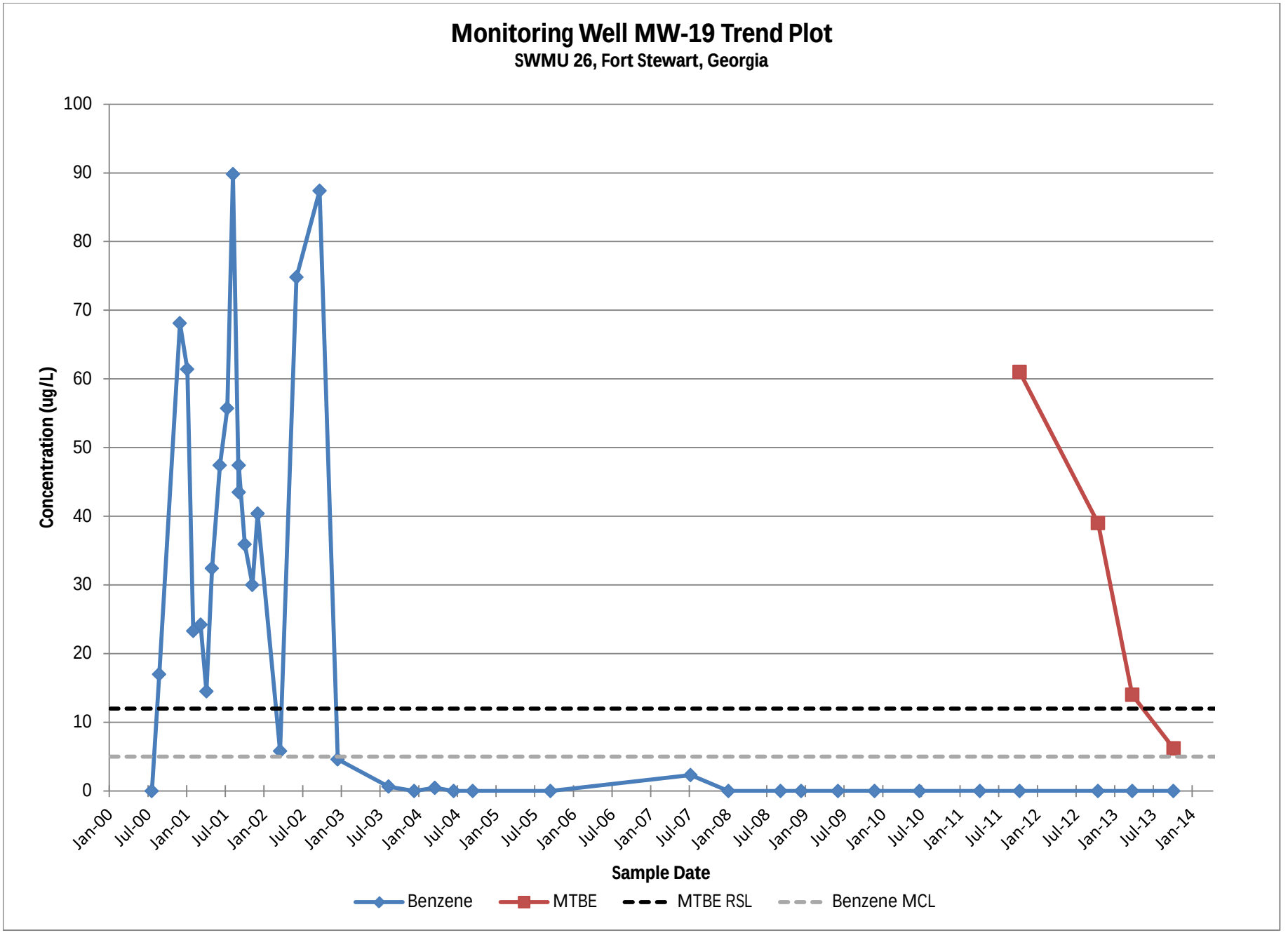
7. Sample DUP-1 (101513) was collected as a field duplicate of 26-MW-55 (101513). The RPDs were acceptable at less than 40%.

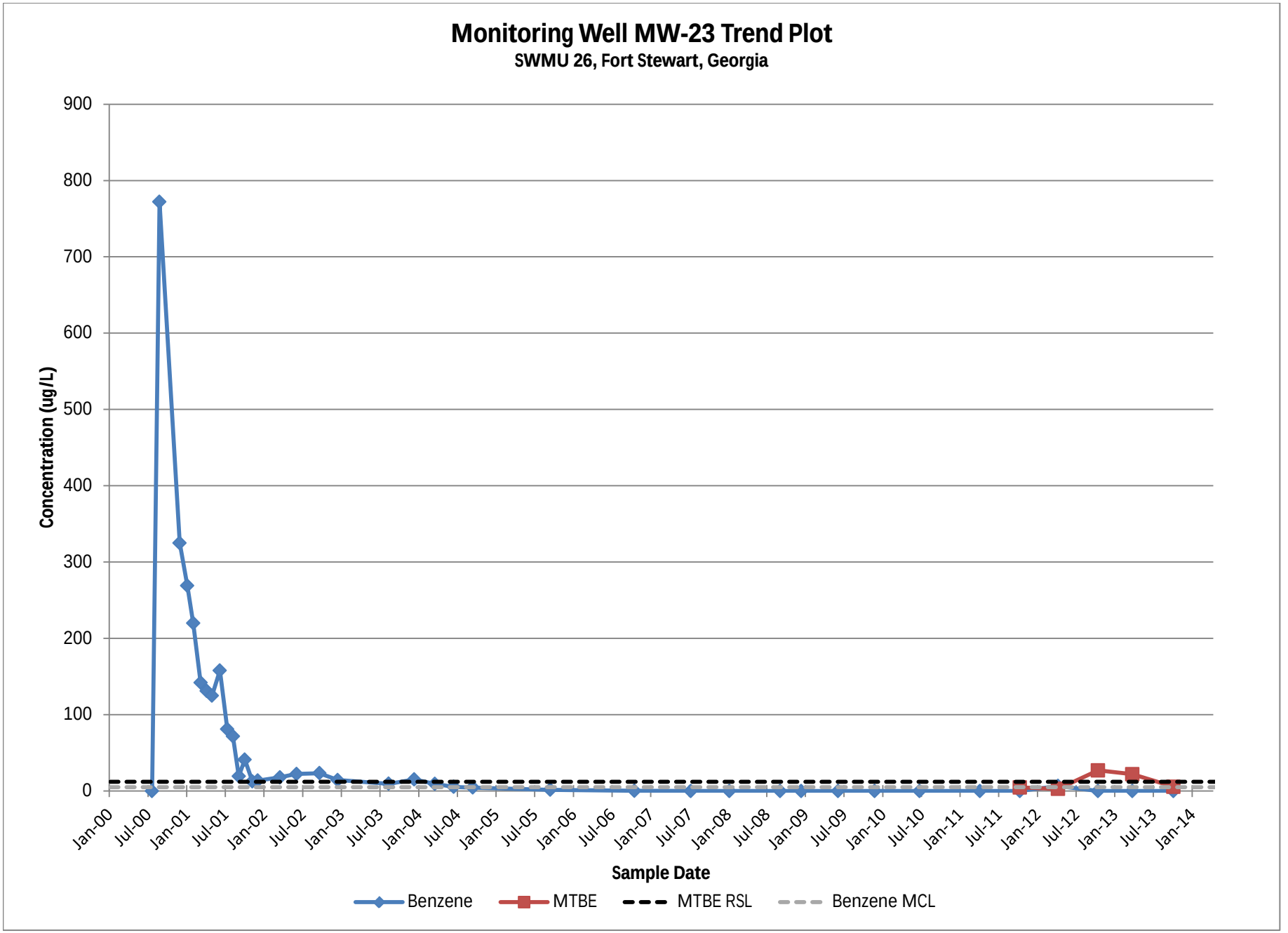
Sample DUP-02 (101613) was collected as a field duplicate of 26-MW-54(101613). The RPDs were acceptable at less than 40%.

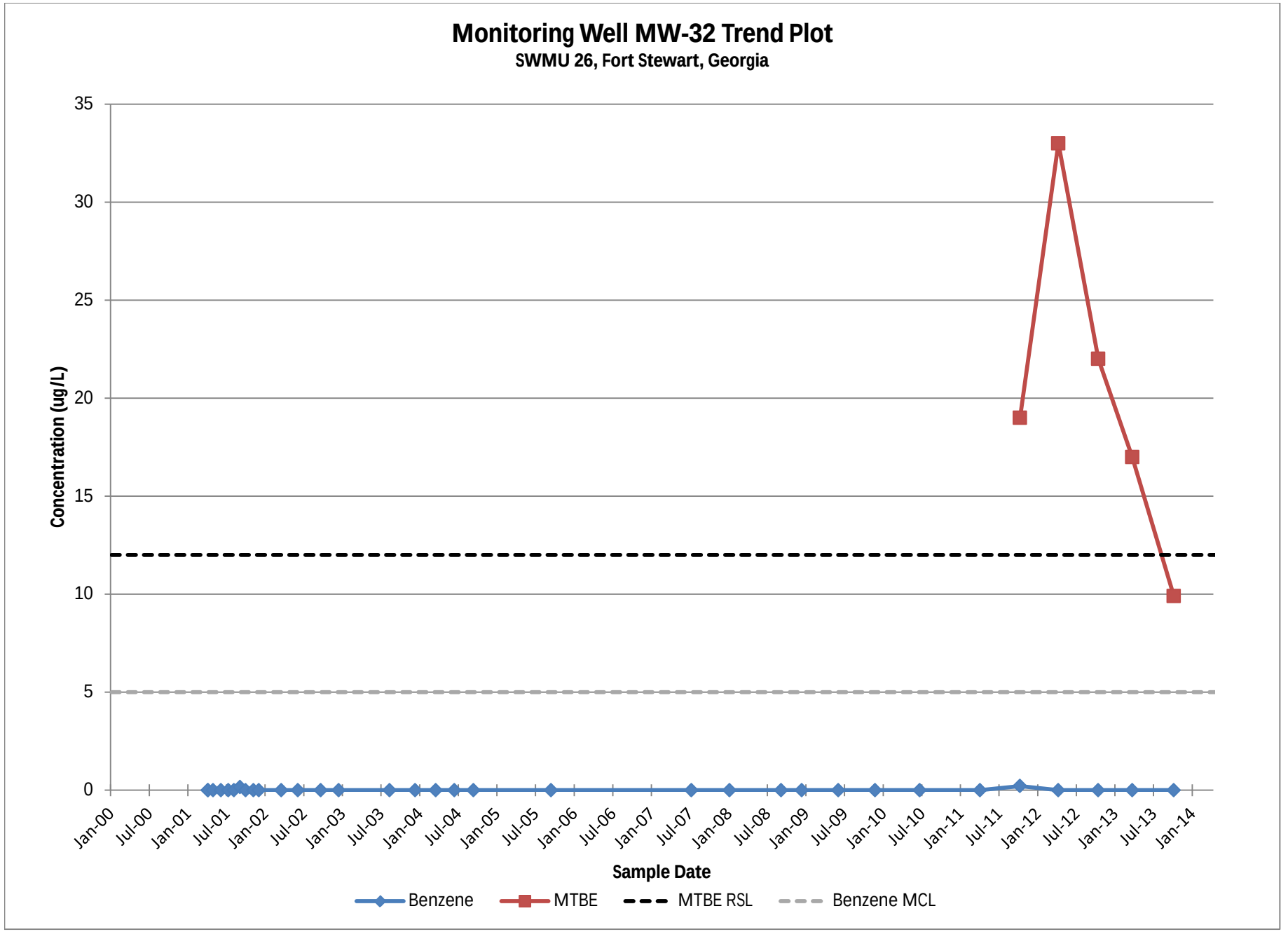
ARCADIS

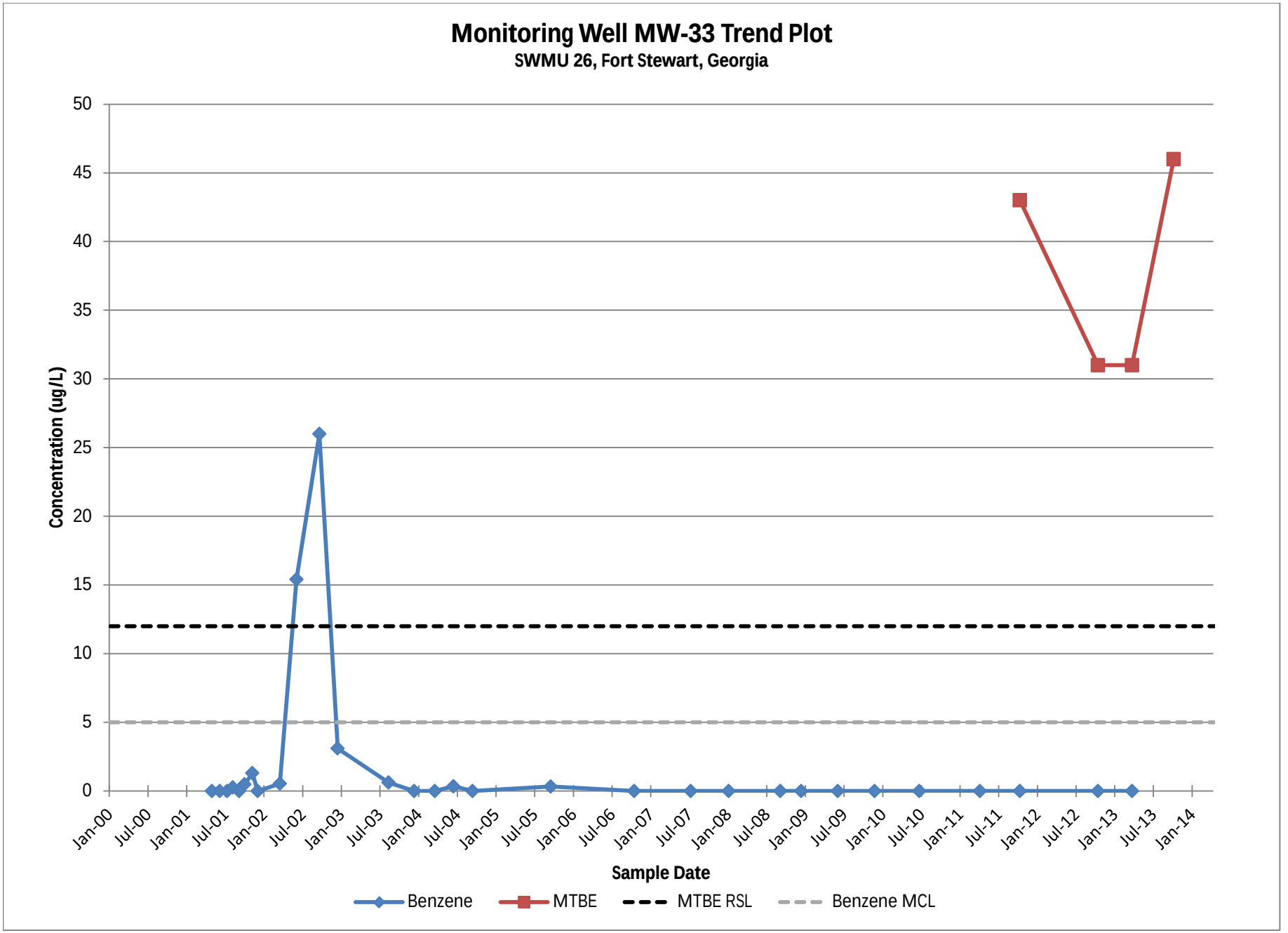
Appendix C

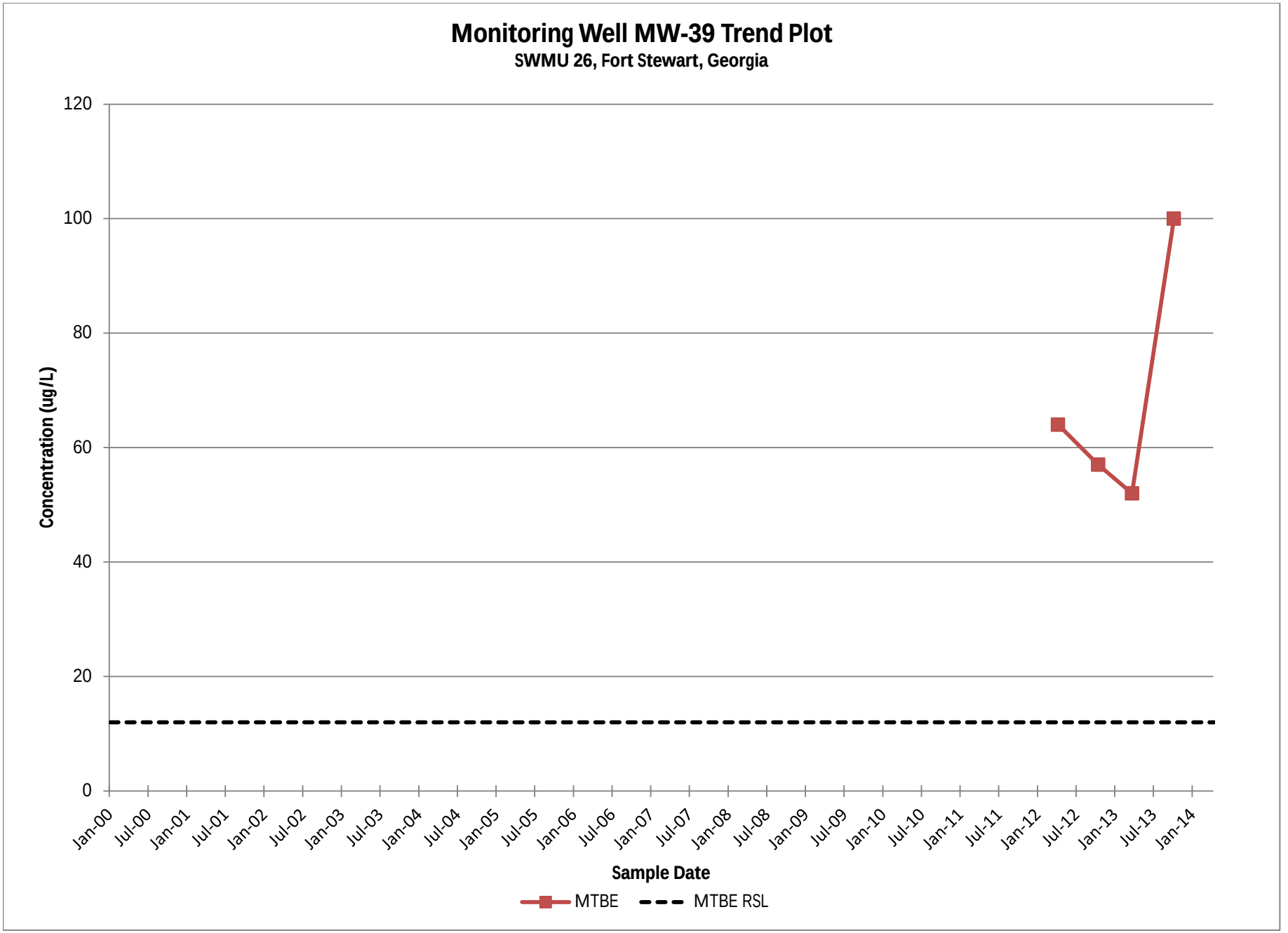
Trend Plots

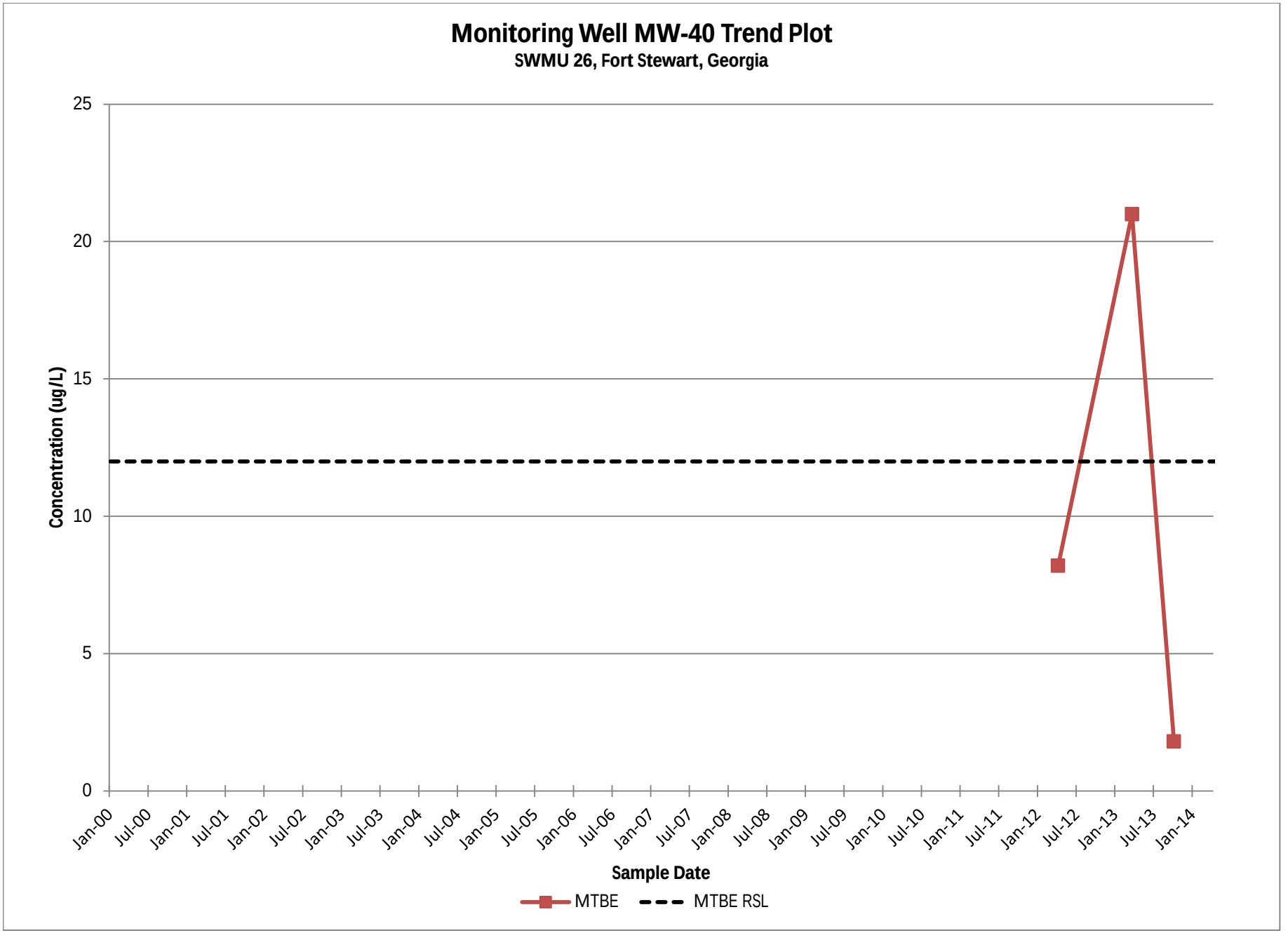

Monitoring Well MW-19 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL

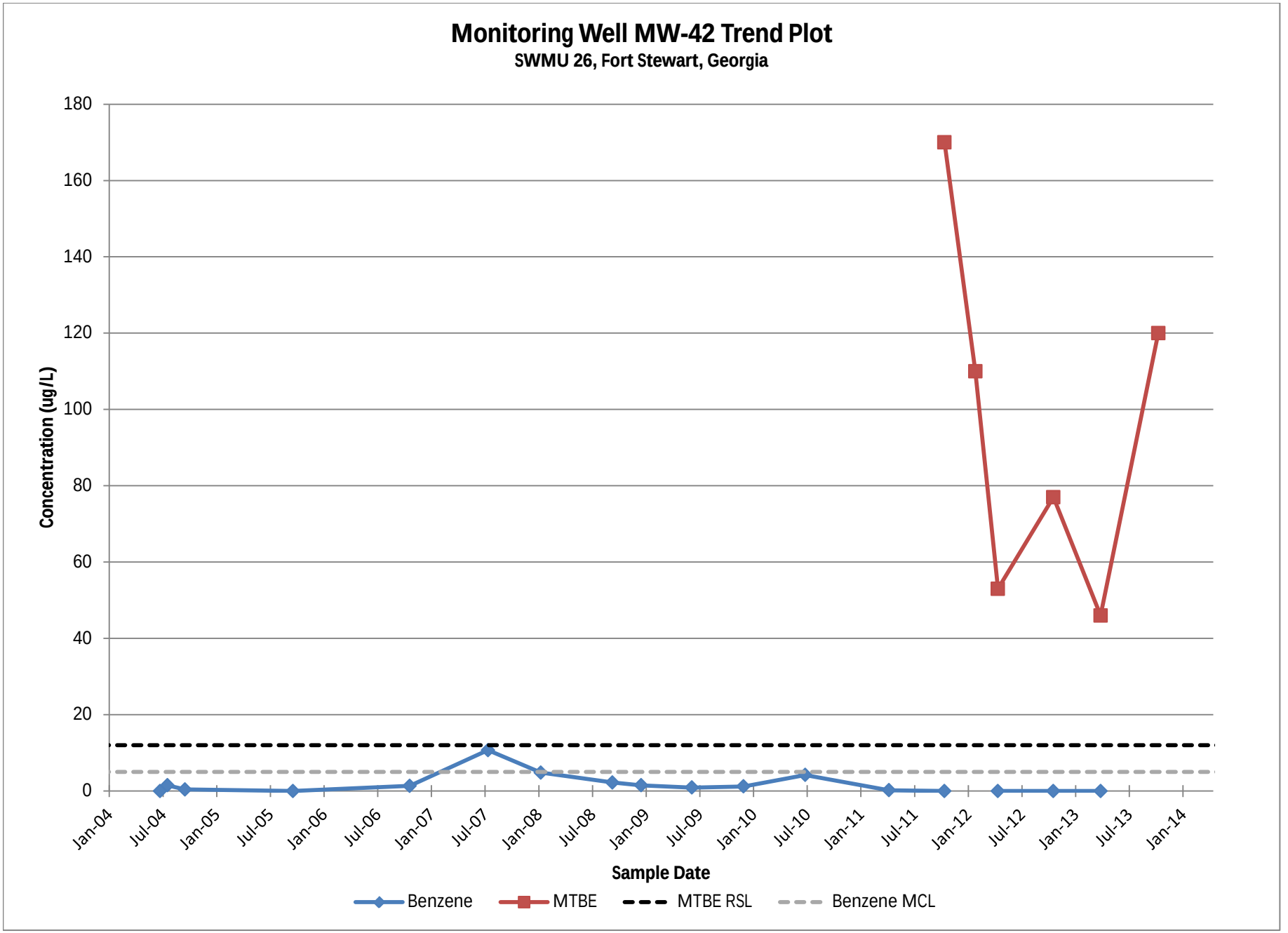

Monitoring Well MW-23 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
900
800
700
600
500
400
300
200
100
0
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-32 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
35
30
25
20
15
10
5
0
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-33 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-39 Trend Plot
SWMU 26, Fort Stewart, Georgia
120
100
80
60
40
20
0
Concentration (ug/L)
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
MTBE
MTBE RSL


Monitoring Well MW-40 Trend Plot
SWMU 26, Fort Stewart, Georgia
25
20
15
10
5
0
Concentration (ug/L)
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
MTBE
MTBE RSL


Monitoring Well MW-42 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
180
160
140
120
100
80
60
40
20
0
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
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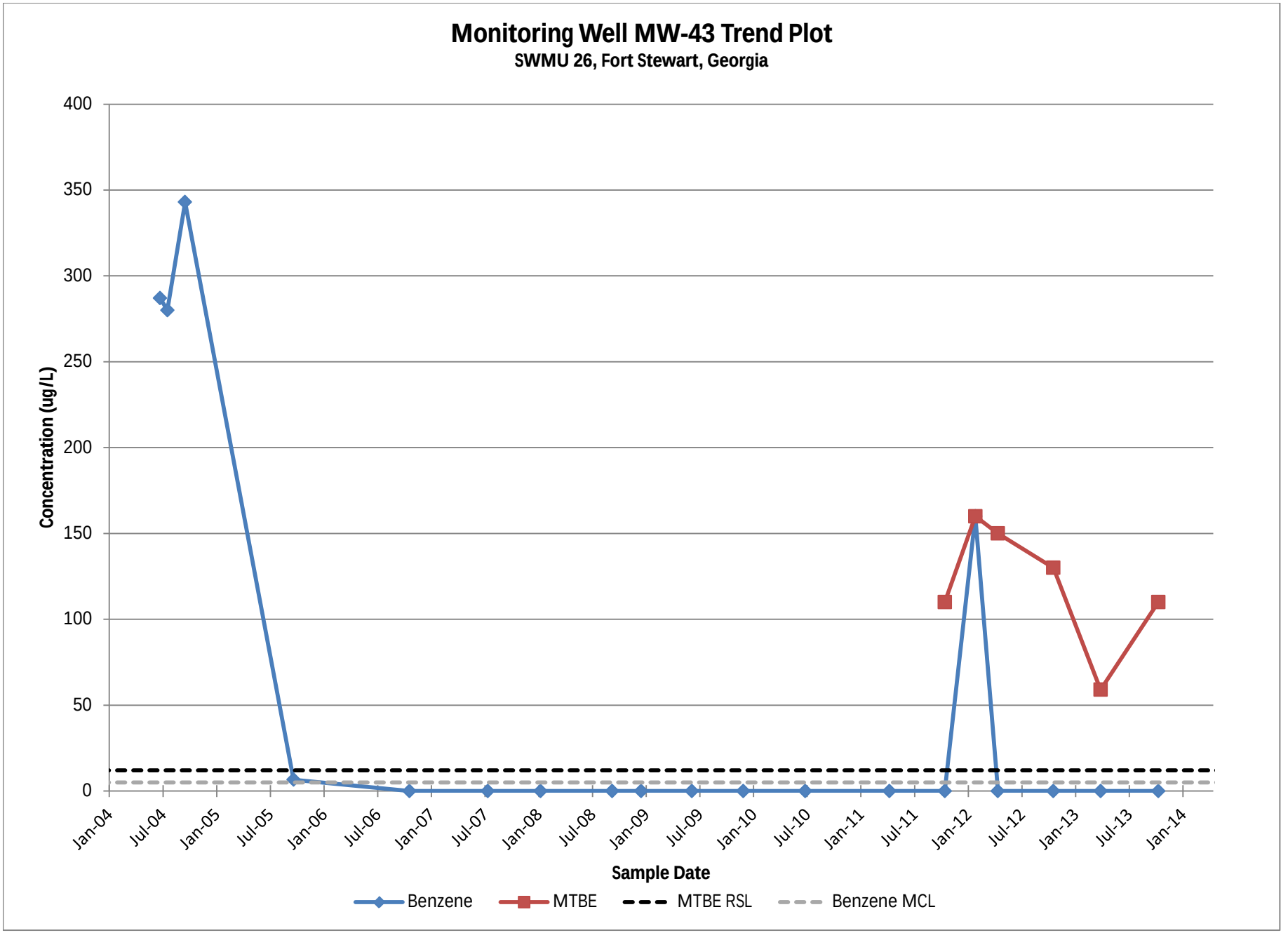
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-43 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
400
350
300
250
200
150
100
50
0
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
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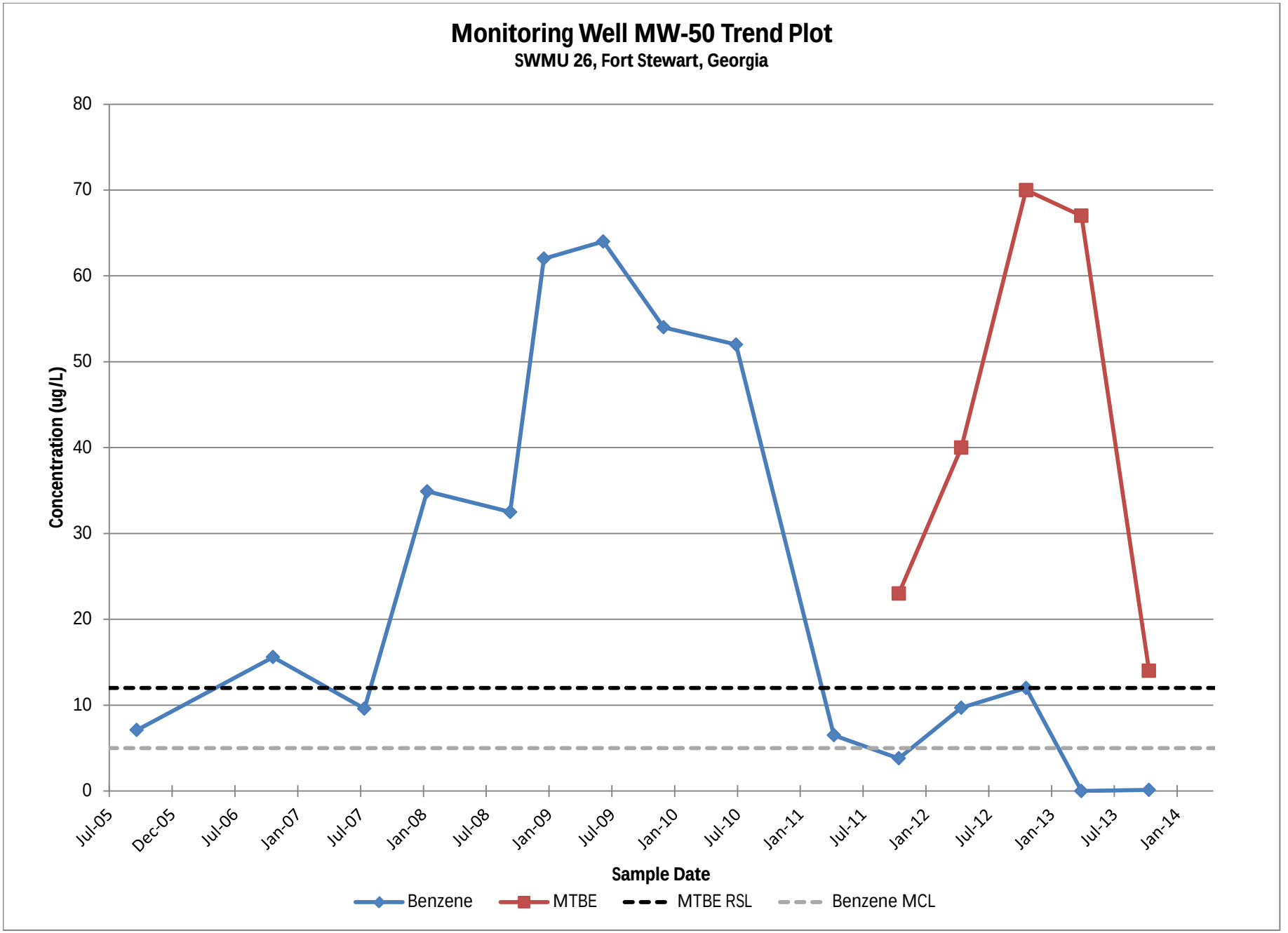
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-50 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
80
70
60
50
40
30
20
10
0
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
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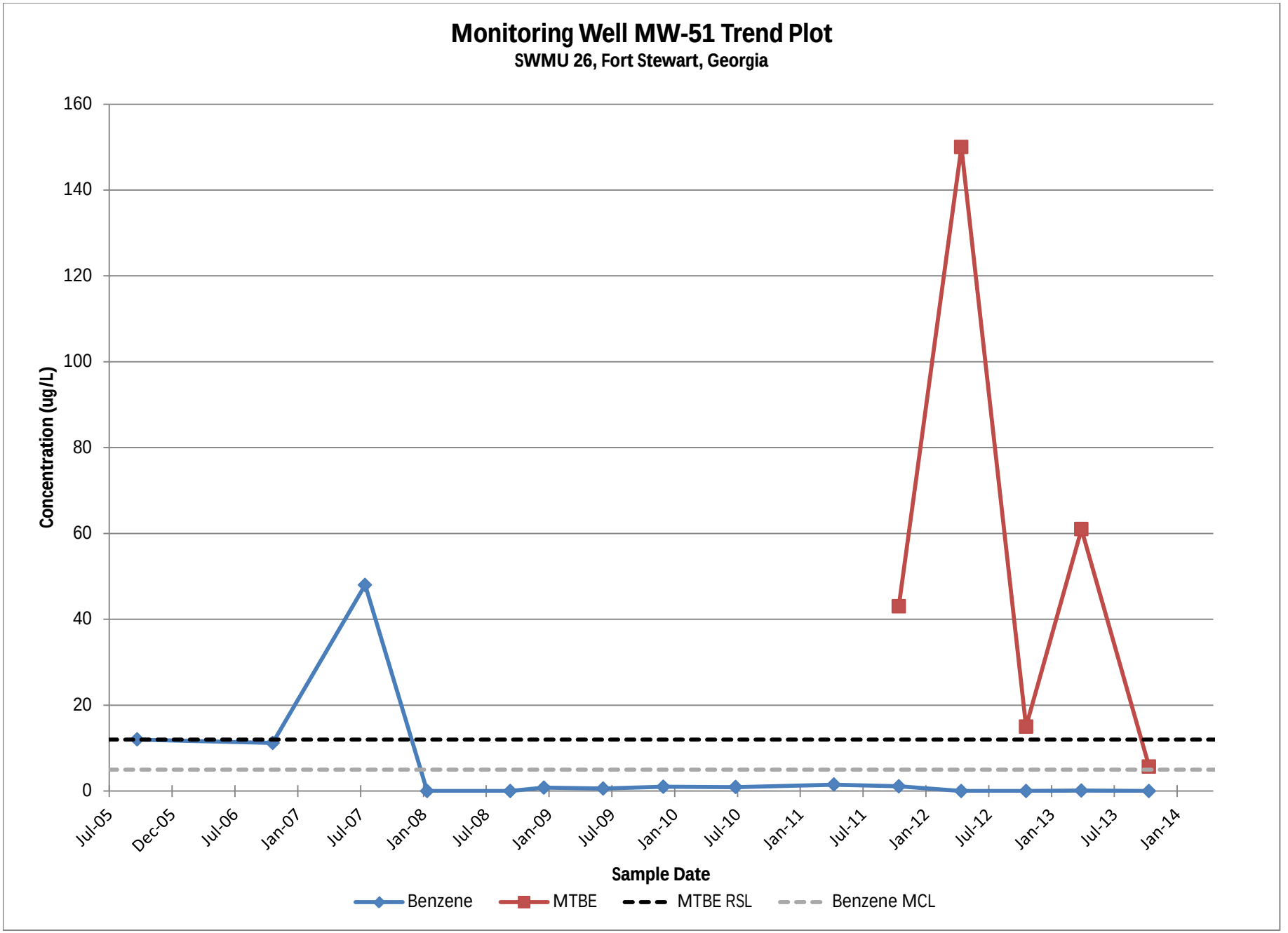
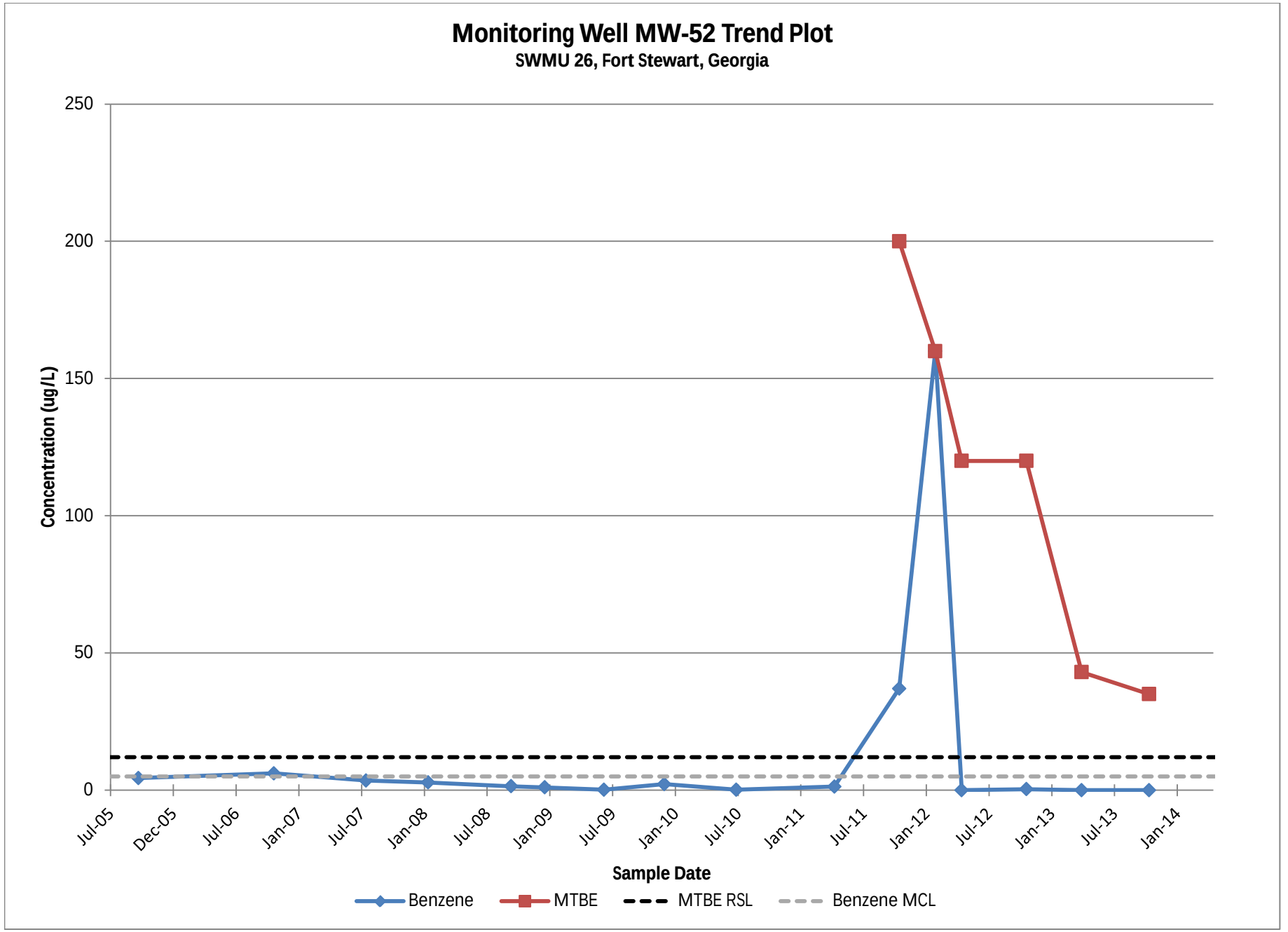
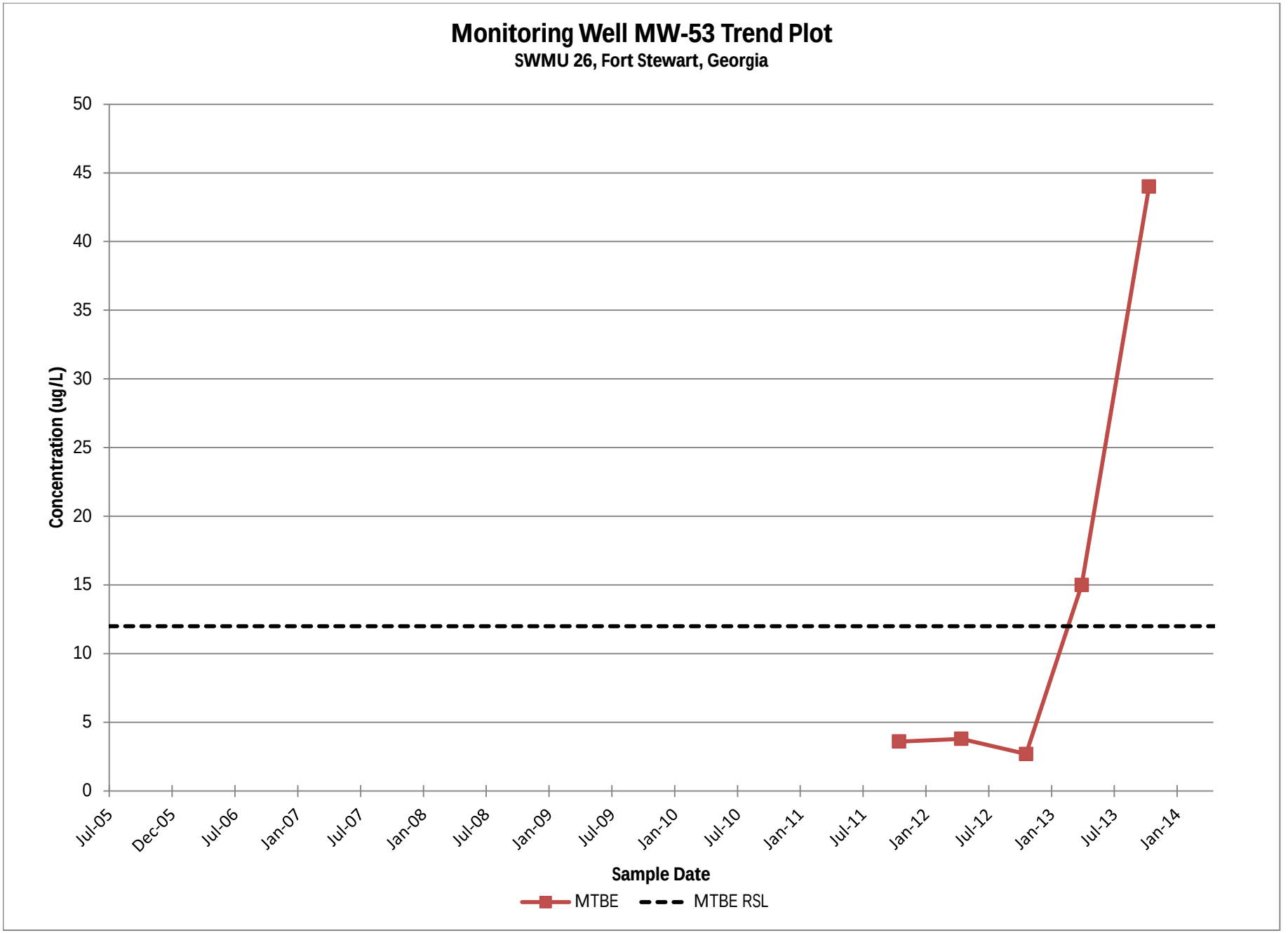
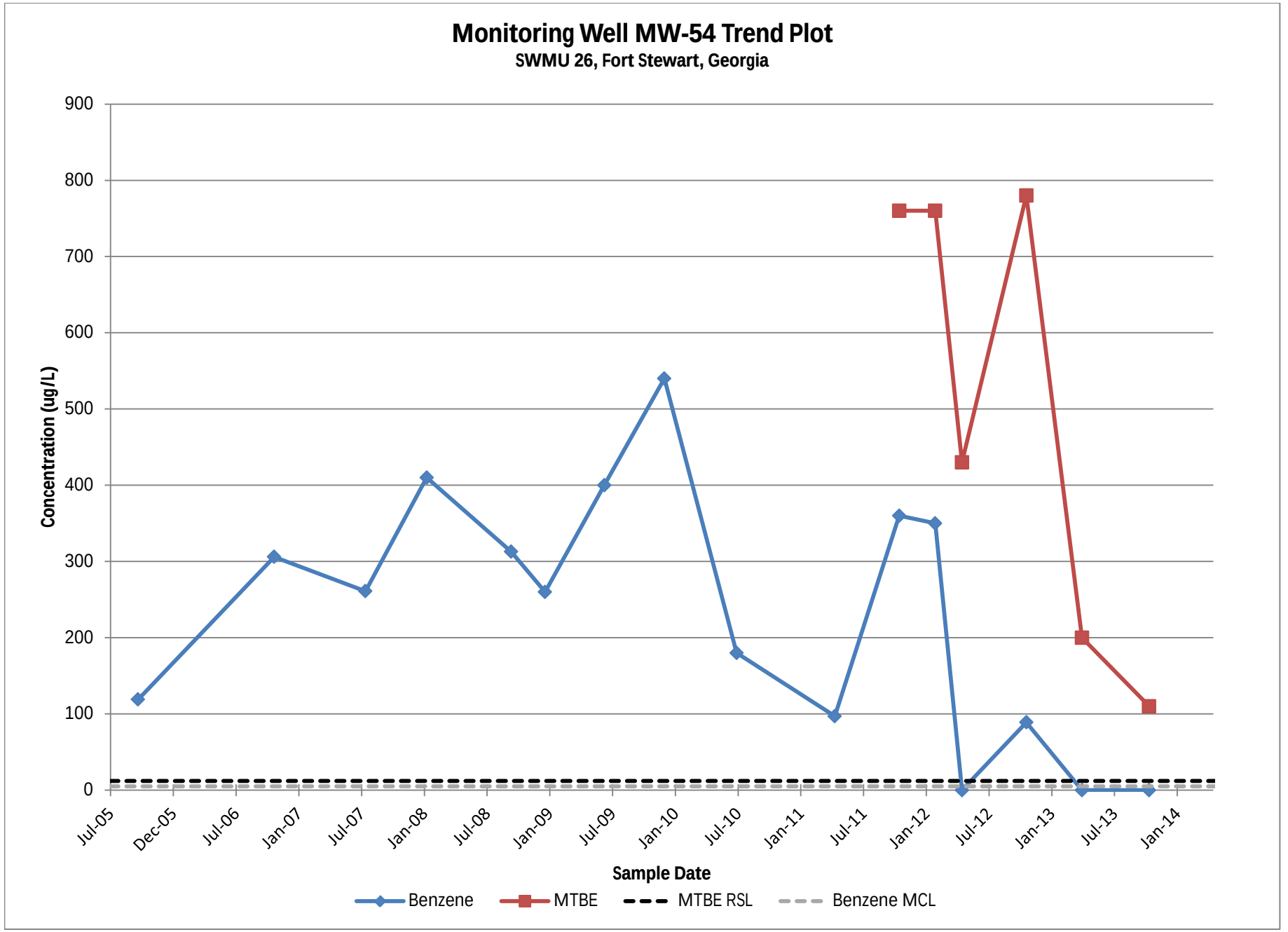
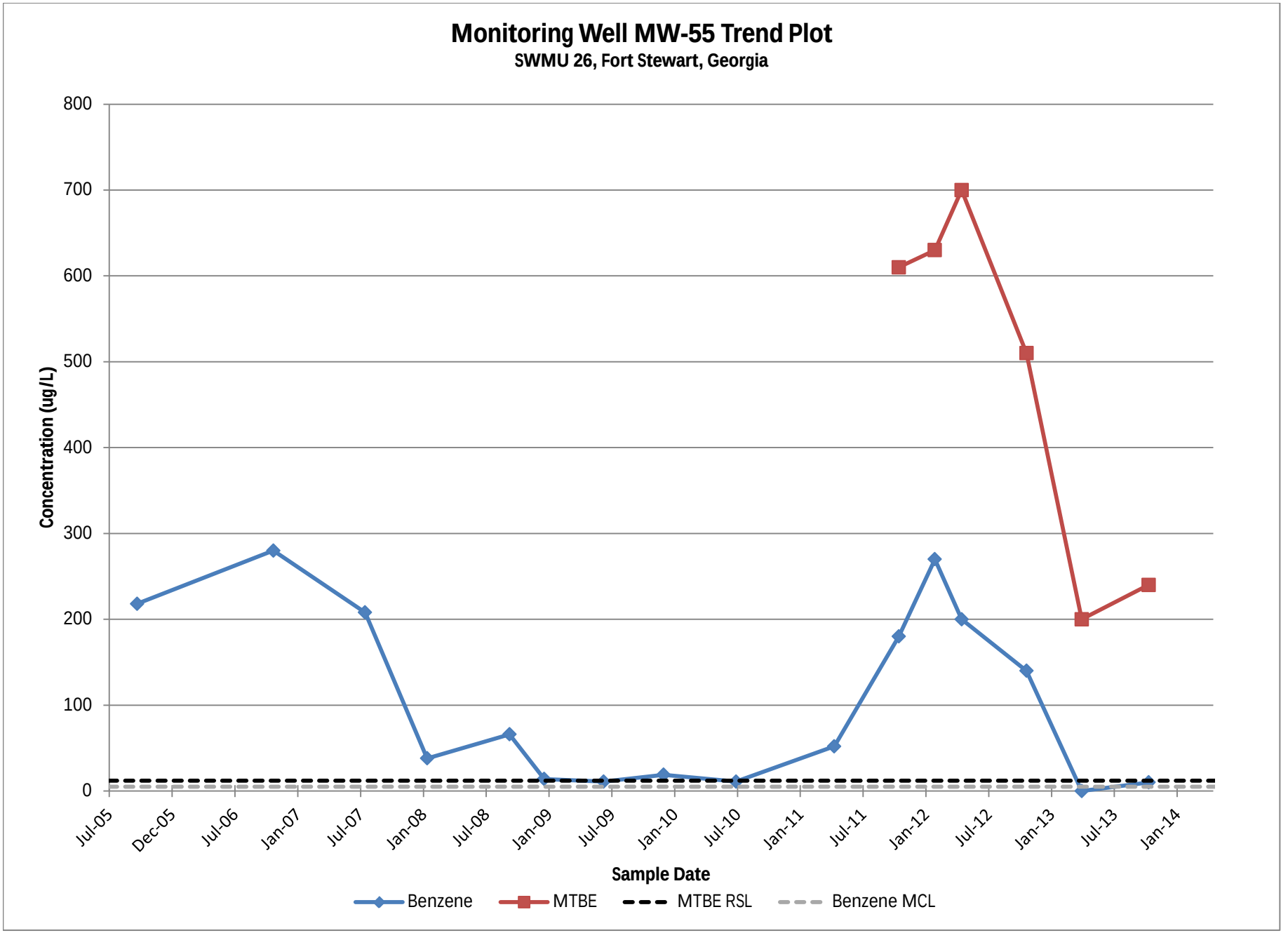
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL

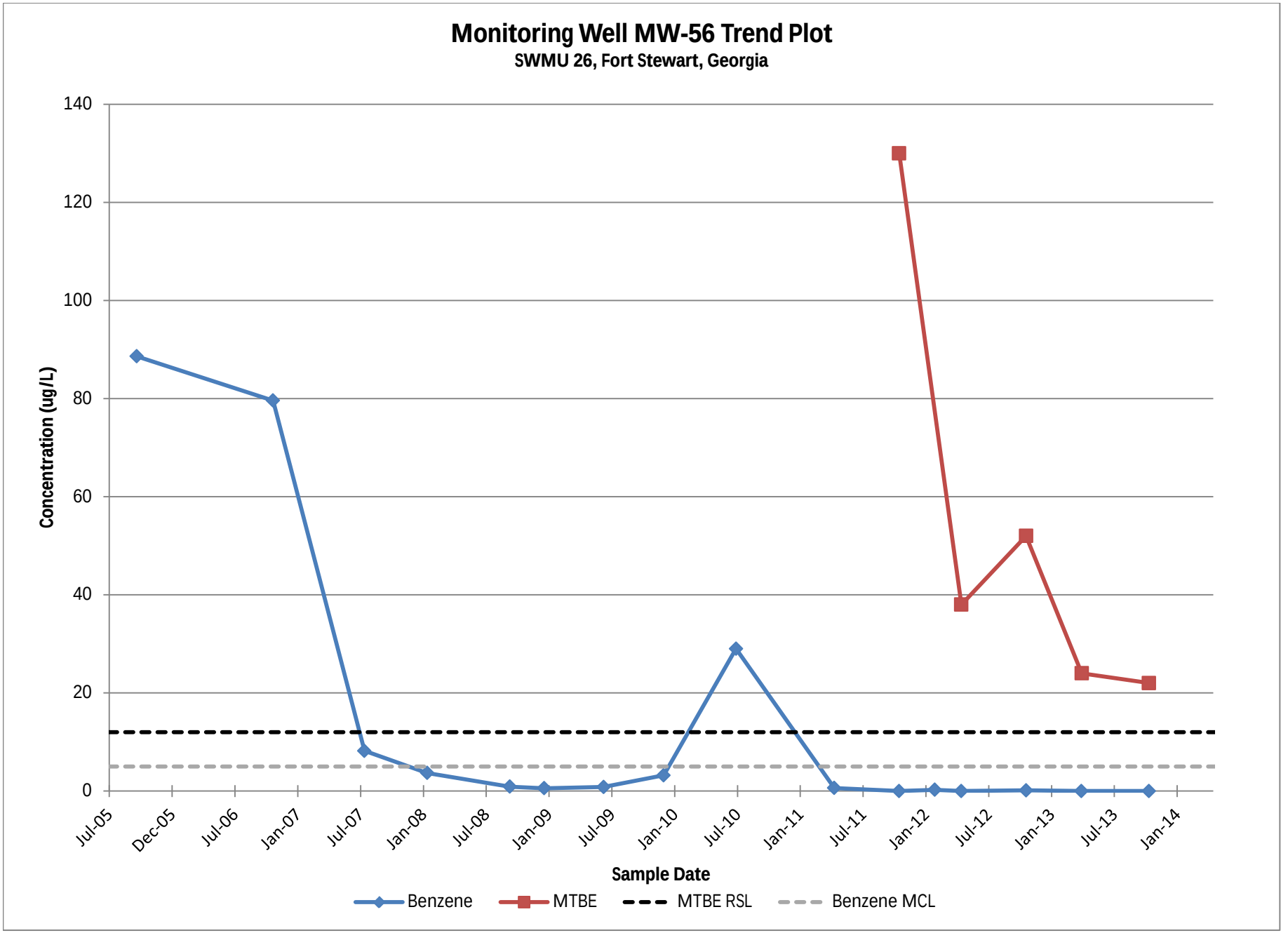

Monitoring Well MW-51 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
160
140
120
100
80
60
40
20
0
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-52 Trend Plot
SWMU 26, Fort Stewart, Georgia
250
200
150
100
50
0
Concentration (ug/L)
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-53 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
50
45
40
35
30
25
20
15
10
5
0
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
MTBE
MTBE RSL


Monitoring Well MW-54 Trend Plot
SWMU 26, Fort Stewart, Georgia
900
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-55 Trend Plot
SWMU 26, Fort Stewart, Georgia
800
700
600
500
400
300
200
100
0
Concentration (ug/L)
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-56 Trend Plot
SWMU 26, Fort Stewart, Georgia
Concentration (ug/L)
140
120
100
80
60
40
20
0
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
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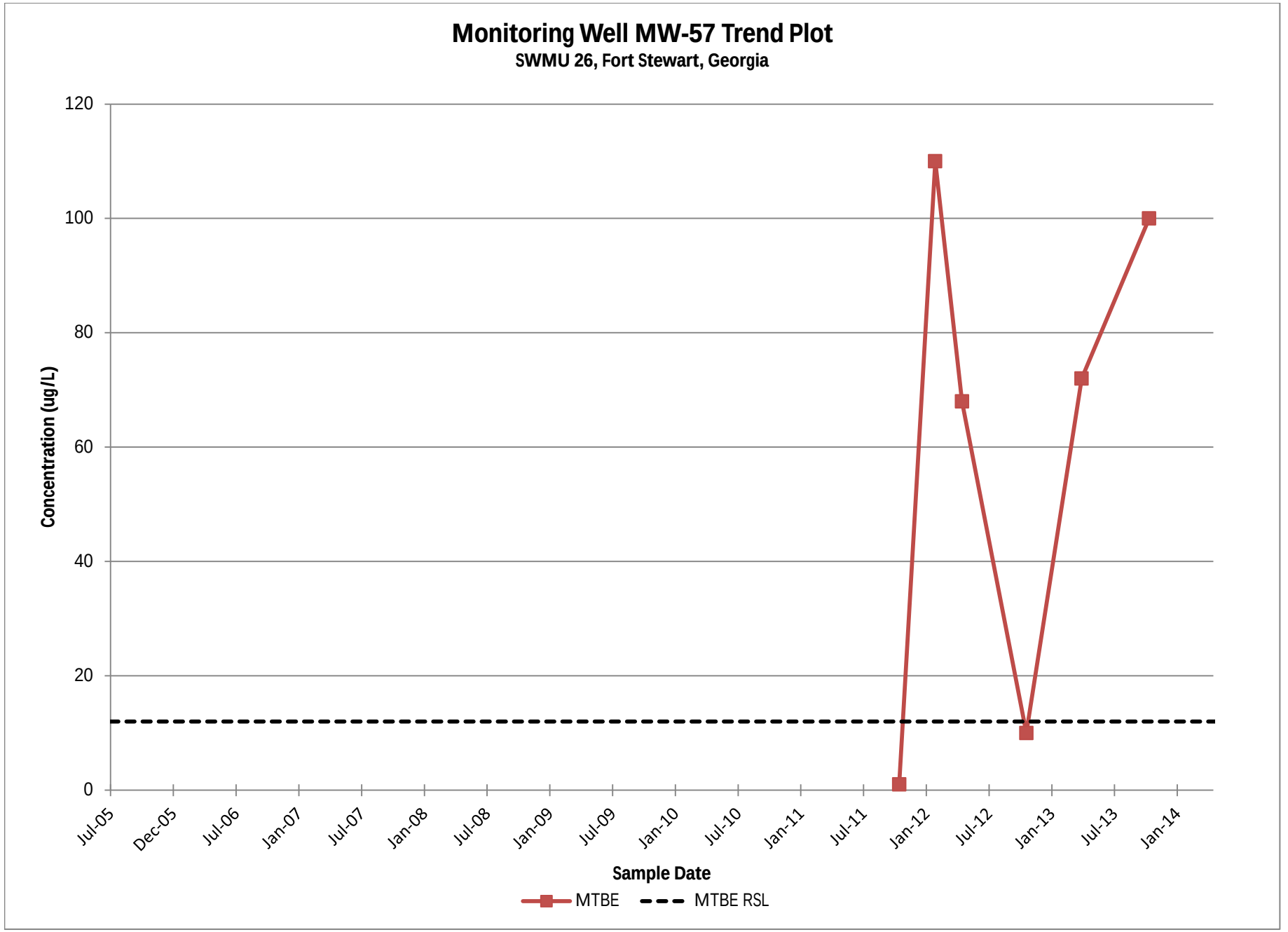
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
Benzene
MTBE
MTBE RSL
Benzene MCL


Monitoring Well MW-57 Trend Plot
SWMU 26, Fort Stewart, Georgia
120
100
80
60
40
20
0
Concentration (ug/L)
Jul-05
Dec-05
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Sample Date
MTBE
MTBE RSL

ARCADIS

Appendix D

MTBE and Naphthalene Remediation Goal Calculations

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MEMO

To:
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Scott Bostian

ARCADIS G&M of North Carolina, Inc.

NC Engineering License # C-1869
NC Surveying License # C-1869

From:
Alexandra Meyers
Shawn Sager

Date:
17 August 2015

ARCADIS Project No.:
10153004.0001.26RPT

Subject:
Development of Health Based Remediation Goals for the Former 724th Tanker Purging Station (Solid Waste Management Unit [SWMU] 26), Fort Stewart, Georgia

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Groundwater at SWMU 26 is monitored as part of the corrective action plan. Methyl-tert-butyl either (MTBE) and naphthalene were detected in groundwater at concentrations exceeding the United States Environmental Protection Agency (USEPA) Tapwater Regional Screening Levels (RSLs) as reported in Seventeenth (17th) and Eighteenth (18th) Corrective Action Plan (CAP) Progress Report (ARCADIS 2013a,b). The Georgia Department of Natural Resources, Environmental Protection Division (GAEPD) requested derivation of site-specific health based remediation goals (RGs) to be incorporated into the next CAP Progress report. In the response to comment letter, ARCADIS indicated that groundwater was not used as a potable water supply nor was the site developed. There are no plans to develop SWMU 26. Therefore, the most likely exposure pathway would be if a construction or utility worker were to dig a trench for subsurface utilities. However, the GAEPD indicated in a comment to the Nineteenth (19th) CAP to which this is an appendix, that all groundwater in Georgia must be considered to be a potential source for drinking water. As a result, RGs were developed for a hypothetical future child and adult resident and a hypothetical future commercial worker based on potable use of groundwater. RGs were calculated for MTBE and naphthalene based on direct contact with groundwater (incidental ingestion, dermal absorption, and inhalation of vapors).

The remainder of this memo includes an exposure assessment, toxicity assessment, and derivation of goals.

Exposure Assessment

Although unlikely, groundwater could be used as a potable water supply. If this were to occur and if SWMU 26 were redeveloped, then a hypothetical future child and adult resident could occur contact groundwater through ingestion, dermal contact while washing hands and showering, and inhalation of volatiles during showering and household use. The exposure parameters used to calculate RGs are presented below as well as in Table 1:

- Averaging time of 25,550 days (70 years × 365 days per year) for cancer effects and averaging time of 2,190 days (6 years × 365 days per year) for a child and 7,300 days (20 years × 365 days per year) for an adult for non-cancer effects (USEPA 1989);
- Exposure duration of 6 years for a child and 20 years for an adult (USEPA 2014);
- Exposure frequency of 350 days per year for 24 hours per day for both a hypothetical future child and adult resident (USEPA 2014);
- Groundwater ingestion rate of 0.78 liters per day (L/day) for a hypothetical future child resident and 2.5 L/day for a hypothetical future adult resident (USEPA 2014);
- Exposed skin surface area of 6,378 square centimeters (cm^2) for a hypothetical future child resident and 20,000 cm^2 for a hypothetical future adult resident (USEPA 2014); and
- Groundwater dermal exposure time of 0.54 hours per day for a hypothetical future child resident and 0.71 hours per day for a hypothetical future adult resident (USEPA 2014).

If SWMU 26 were redeveloped and used for non-residential purposes, it is possible, albeit unlikely, that a future commercial worker could occur use the groundwater as a potable water source and contact groundwater through ingestion, dermal contact, and inhalation of volatiles while washing hands. The exposure parameters used to calculate the RGs are presented in Table 1 and summarized below:

- Averaging time of 25,550 days (70 years × 365 days per year) for cancer effects and averaging time of 9,125 days (25 years × 365 days per year) for non-cancer effects (USEPA 1989);
- Exposure duration of 25 years (USEPA 2014);
- Exposure frequency of 250 days per year for 8 hours per day (USEPA 2014);
- Groundwater ingestion rate of 1.25 liters per day (professional judgement; a worker is assumed to consume half the daily intake of water at their place of work);
- Exposed hands skin surface area of 980 cm^2 (USEPA 2011); and

- Groundwater dermal exposure time of 0.25 hours per day (professional judgement).

Typically, utility trenches are three feet below ground surface (bgs). Depth to water at SWMU 26 is six feet bgs. Therefore, it is unlikely that a construction or utility worker would contact water seeping into the trench. The worker could inhale vapors migrating into the trench. Thus, the most likely exposure pathway is inhalation of vapors migrating from groundwater by a hypothetical future construction or utility worker. Nonetheless, at the request of GAEPD, it was assumed that the trench would be constructed to at least a depth of 6 feet so that water would seep into the trench. With these assumptions, it was assumed that a construction worker could be exposed to groundwater through incidental ingestion, dermal contact, and inhalation of volatiles that migrate into the excavation area. The exposure parameters are presented in **Table 1** and are summarized as follows:

- Averaging time of 25,550 days (70 years × 365 days per year) for cancer effects; and averaging time of 182 days (26 weeks × 7 days per week) for non-cancer effects (USEPA 1989);
- Exposure duration of 26 weeks assuming that the excavation lasted for six months (professional judgment);
- Exposure frequency of 5 workdays per week for eight hours per day or a standard 40 hour work week (professional judgment);
- Groundwater ingestion rate of 0.002 liters per day (professional judgement; a construction worker is assumed to consume 1/10th the ingestion rate during swimming);
- Exposed skin surface area of 3,527 cm^2 (USEPA 2014); and
- Groundwater contact or dermal exposure time of 2 hours per day (professional judgement) assuming that once the groundwater seeped into the trench, the worker would not linger in the trench but would work to create a safe work environment.

The equations used to evaluate groundwater exposure by a hypothetical future resident and hypothetical future commercial worker are presented in **Table 2**. The equations used to evaluate groundwater exposure by a hypothetical future construction worker are presented in **Table 3**.

Emissions via volatilization from groundwater into a trench were estimated following Virginia Department of Environmental Quality (VDEQ; 2012) guidance (**Table 3**). The volatilization factor was calculated assuming that there was a mass transfer from the groundwater to the soil at the bottom of the trench into the air in the trench driven by molecular diffusion. The result of the volatilization factor calculation for each constituent is

presented in **Table 4**. Absorption parameters used to estimate dermal exposure to groundwater are presented in **Table 5**.

Toxicity Assessment

The toxicity assessment discusses the two general categories of toxic effects (noncarcinogenic and carcinogenic) and constituent-specific toxicity values used to calculate potential risks for these two types of toxic effects. The toxicity values were obtained from the USEPA (June 2015) RSL table, based on GAEPD recommendations **(Table 6)**.

Non-Carcinogenic Effects

For many non-carcinogenic effects, protective mechanisms must be overcome before an effect is manifested. Therefore, a finite dose (threshold), below which adverse effects will not occur, exists for non-carcinogens. Depending on the dose, a single compound might elicit several adverse effects in the exposure route, the duration of exposure, and the susceptibility of the individual. Constituents may exhibit their toxic effects at the point of application or contact (local effect) or at other sites (systemic effects) after they have been absorbed into and distributed throughout the body. Most constituents can produce more than one type of toxic effect, depending on the dose and the susceptibility of the exposed individual or receptor. The goal of toxicity studies for application in risk assessment is to identify the most sensitive toxic effect and the exposure levels that are expected to be safe.

For a given constituent, the dose or concentration that elicits no adverse effect when evaluating the most sensitive response in the most sensitive species studied is referred to as the “no observed adverse effect level” (NOAEL). The NOAEL is used to establish non-cancer toxicity values (called reference doses [RfDs] or reference concentrations [RfCs]). The RfD and RfC represent a daily oral and inhalation exposure level that is not expected to cause adverse non-carcinogenic health effects, respectively. USEPA has not yet developed toxicity values for dermal exposure. Therefore, dermal RfDs were calculated by multiplying the oral RfD by the percent oral absorption efficiency as obtained from USEPA (2004) guidance.

Subchronic toxicity values were used to evaluate the potential for adverse health effects associated with exposure to constituents over a period of 2 weeks to 7 years, which apply to the construction worker scenario. Subchronic RfDs and RfCs are available for MTBE from the Agency for Toxic Substances and Disease Registry (ATSDR; 2015). A subchronic RfD is also available for naphthalene from ATSDR (2015). A subchronic RfC is unavailable for naphthalene; therefore, the chronic RfC was used to assess exposure to naphthalene. The RfDs and RfCs are presented in **Table 6**.

Carcinogenic Effects

Cancer induction in humans and animals by chemicals proceeds through a complex series of reactions and processes. Carcinogenic constituents may produce tumors at the point of application or contact, or they may produce tumors in other tissues after they have been distributed throughout the body. Some constituents are associated only with one or two tumor types, while others may cause tumors at many different sites.

For carcinogens, USEPA's Cancer Guidelines (USEPA 2005) recommend a conservative default approach in which it is assumed that any level of exposure could cause cancer when data are not adequate to understand the mode of action. USEPA generally considers a linear dose-response model, and extrapolates from either the lowest dose or point of departure from laboratory animal data using a mathematical model that plots a line through the zero point and, based on the slope of this dose-response line, assigns a risk level for increasingly smaller doses of a particular compound. While constructing the linear extrapolation from animal or human data, USEPA uses values that are based on a 95 percent upper confidence limit (UCL) of the dose/response slope. Therefore, any risk estimates derived from the model are based on values higher than those reported in the underlying studies and not the most likely estimates generated by applying the mathematical model to the actual study data. The UCL for the slope of this line is called the cancer slope factor (CSF) or inhalation unit risk (IUR). CSFs and IURs are used to assess oral and inhalation carcinogenic risk, respectively. USEPA has not yet developed toxicity values for dermal exposure for MTBE or naphthalene. Therefore, dermal RfDs were calculated by dividing the oral CSF by the percent oral absorption efficiency as obtained from USEPA (2004) guidance. **Table 6** presents the carcinogenic toxicity values..

Health Based Remediation Goal Derivation

An RG for cancer (RG_c) and non-cancer effects (RG_{nc}) were derived for the hypothetical future child and adult resident, hypothetical future commercial worker, and construction worker assuming a target cancer risk of 1 in 1,000,000 (1×10^{-6}) and target hazard quotient of 1 for non-cancer effects in **Tables 7** through **Table 10**, respectively.

The final RG for each receptor was derived by taking the minimum result of the RG based on cancer and non-cancer effects as presented in **Table 11** In addition, the hypothetical future resident RG is based on the minimum RG for the child and adult resident.

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Table 1
Receptor Exposure Parameters
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Parameter	Symbol	Units	Resident				Commercial Worker		Construction Worker	
			Child 0 to 6 years	[ref]	Adult 6 to 30 years	[ref]		[ref]		[ref]
General Factors										
Averaging Time (cancer)	ATc	days	25,550	[1,2,a]	25,550	[1,2,a]	25,550	[1,2,a]	25,550	[1,2,a]
Averaging Time (noncancer)	ATnc	days	2,190	[1,2,a]	7,300	[1,2,a]	9,125	[1,2,a]	182	[1,2,a]
Body Weight	BW	kg	15	[1,2]	80	[2]	80	[2]	80	[2]
Exposure Frequency	EF	days/year	350	[1,2]	350	[1,2]	250	[2,3]	–	
Exposure Duration	ED	years	6	[2]	20	[2]	25	[1,2]	–	
Subchronic Exposure										
Exposure Frequency - subchronic	EFsc	days/week	–		–		–		5	PJ [d]
Exposure Duration - subchronic	EDsc	weeks	–		–		–		26	PJ [d]
Inhalation										
Exposure Time	ET	hour/day	24	PJ	24	PJ	8	PJ	8	PJ
Conversion Factor	CF	day/hour	0.042		0.042		0.042		0.042	
Groundwater - Ingestion (Oral)										
Groundwater Ingestion Rate	IRgw	L/day	0.78	[2]	2.5	[2]	1.25	[1,b]	0.002	PJ [e]
Groundwater - Dermal Contact										
Exposed Skin Surface Area	SSAgw	cm^2	6,378	[2]	20,900	[2]	980	[2,c]	3,527	[2]
Exposure Time; groundwater contact	ETgw	hours/day	0.54	[2]	0.71	[2]	0.25	PJ [c]	2	PJ

References [ref]:

[1] USEPA 1989
[2] USEPA 2014
[3] USEPA 2011

[a] The averaging time for cancer risk is the expected lifespan of 70 years expressed in days.
The averaging time for non-cancer hazard is the total exposure duration (ED) expressed in days.

[b] It was assumed that a worker may get up to half the adult daily water intake at the place of work.

[c] A worker is assumed to wash their hands with groundwater used as drinking water. Therefore, skin surface area was set equal to that of an adult worker's hands and the exposure time was assumed to be a quarter of an hour a day.

[d] The construction worker is assumed to work 5 times a week for 26 weeks.

[e] The incidential groundwater ingestion rate for the construction worker is assumed to be $1/10^{th}$ the ingestion rate during swimming (USEPA 2011).

cm^2 Centimeter squared.
kg Kilogram.
L Liter.
mg Milligram.
PJ Professional Judgement.

Table 2
Site-Specific Remediation Goal Equations for Groundwater Based on Residential and Commercial Worker Exposure
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

ROUTE-SPECIFIC CONCENTRATION GOALS:

Oral:
$$(RG_o)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times BW \times (AT_C\ or\ AT_{NC})}{IRgw \times EF \times ED \times [\ CSF_o\ or\ (1/RfD_o)\ ]}$$

Dermal:
$$(RG_d)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times BW \times (AT_C\ or\ AT_{NC}) \times (1{,}000\ cm^3/L)}{SSAgw \times Kp \times ETgw \times EF \times ED \times [\ CSF_a\ or\ (1/RfD_a)\ ]}$$

Inhalation:
$$(RG_i)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times (AT_C\ or\ AT_{NC})}{VFres \times ET \times CF \times EF \times ED \times [\ (IUR \times 10\text{-}3\ mg/\mu g)\ or\ (1/RfC)\ ]}$$

RG BASED ON CANCER EFFECTS: (combining all exposure routes)

$$RG_C = \frac{1}{[\ 1 / (RG_o)_C\ ] + [\ 1 / (RG_d)_C\ ] + [\ 1 / (RG_i)_C\ ]}$$

RG BASED ON NON-CANCER EFFECTS: (combining all exposure routes)

$$RG_{NC} = \frac{1}{[\ 1 / (RG_o)_{NC}\ ] + [\ 1 / (RG_d)_{NC}\ ] + [\ 1 / (RG_i)_{NC}\ ]}$$

RG = MINIMUM of RG_C and RG_{NC}

Variable Definitions:	
AT_C	Averaging time for cancer effects (days) (Table 1).
AT_{NC}	Averaging time for non-cancer effects (days) (Table 1).
BW	Body weight (kg) (Table 1).
CF	Conversion Factor 0.042 day/hour.
CSF	Cancer slope factor for oral (CSF_o) and dermal (adjusted to an absorbed dose, CSF_a) exposure (kg-day/mg [inverse mg/kg/day]) (Table 6).
ED	Exposure duration (years) (Table 1).
EF	Exposure frequency (days/year) (Table 1).
ETgw	Exposure time for groundwater contact (hours/day) (Table 1).
IRgw	Ingestion rate of groundwater (L/day) (Table 1).
IUR	Inhalation Unit Risk ($m^3/\mu g$) (Table 6).
Kp	Permeability coefficient (cm/hour) (Table 5).
RfC	Reference concentration (mg/m^3) (Table 6).
RfD	Reference dose for oral (RfD_o) or dermal (adjusted to an absorbed dose, RfD_a) exposure (mg/kg/day) (Table 6).
RG	Remediation goal for groundwater (mg/L).
SSAgw	Exposed skin surface area for groundwater contact (cm^2) (Table 1).
TCR	Target cancer risk (unitless).
THQ	Target hazard quotient for non-cancer effects (unitless).
VFres	Volatilization factor for residential tap water (0.5 L/m^3) (USEPA 1991).

Table 3
Site-Specific Remediation Goal Equations for Groundwater Based on Construction Worker Exposure
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

ROUTE-SPECIFIC CONCENTRATION GOALS:

Oral: $$(RG_o)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times BW \times (AT_C\ or\ AT_{NC})}{IRgw \times EFsc \times EDsc \times [\ CSF_o\ or\ (1/RfD_o)\ ]}$$

Dermal: $$(RG_d)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times BW \times (AT_C\ or\ AT_{NC})}{SSAgw \times DA \times EFsc \times EDsc \times [\ CSF_a\ or\ (1/RfD_a)\ ]}$$

Organics: $$DA\ [1] = \frac{2\ FA \times Kp}{1{,}000\ cm^3/L} \times \sqrt{\frac{(6\ \tau \times ETgw)}{\pi}} \quad \text{if } ETgw \le t^*$$

or $$DA\ [2] = \frac{FA \times Kp}{1{,}000\ cm^3/L} \times \left(\frac{ETgw}{1+B} + \frac{2\ \tau\ (1 + 3\ B + 3\ B^2)}{(1+B)^2} \right) \quad \text{if } ETgw > t^*$$

Inhalation: $$(RG_i)_{C\ or\ NC} = \frac{(TCR\ or\ THQ) \times (AT_C\ or\ AT_{NC})}{VFw \times ETgw \times CF \times EFsc \times EDsc \times [CSF_i \times 10^3\ \mu g/mg\ or\ (1/RfD_i)]}$$

where: $$VFw = \frac{k_i \times A \times F\ 10^{-3} \times 10^4 \times 3{,}600}{ACH \times V}$$ (VDEQ 2012)

$$k_i = \frac{1}{k_l} + \frac{1}{k_g}$$

RG BASED ON CANCER EFFECTS: (combining all exposure routes)

$$RG_C = \frac{1}{[\ 1 / (RG_o)_C\ ] + [\ 1 / (RG_d)_C\ ] + [\ 1 / (RG_i)_C\ ]}$$

RG BASED ON NON-CANCER EFFECTS: (combining all exposure routes)

$$RG_{NC} = \frac{1}{[\ 1 / (RG_o)_{NC}\ ] + [\ 1 / (RG_d)_{NC}\ ] + [\ 1 / (RG_i)_{NC}\ ]}$$

RG = MINIMUM of RG_C and RG_{NC}

Table 3
Site-Specific Remediation Goal Equations for Groundwater Based on Construction Worker Exposure
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Variable Definitions:	
τ	Lag time for dermal absorption through the skin (hour) (Table 5).
Λ	Area of trench (m2) (Table 4).
ACH	Air changes per hour (h-1) (Table 4).
AT_C	Averaging time for cancer effects (days) (Table 1).
AT_{NC}	Averaging time for non-cancer effects (days) (Table 1).
B	Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (unitless) (Table 5).
BW	Body weight (kg) (Table 1).
CF	Conversion Factor 0.042 day/hour.
CSF	Cancer slope factor for oral (CSF_o) or dermal (adjusted to an absorbed dose, CSF_a) exposure (kg-day/mg [inverse mg/kg/day]) (Table 6).
DA	Dermal absorption factor (L/cm²/day) calculated using Equation [1] or [2] as appropriate.
EDsc	Subchronic exposure duration (years) (Table 1).
EFsc	Subchronic exposure frequency (days/year) (Table 1).
ETgw	Exposure time for groundwater contact (hours/day) (Table 1).
F	Fraction of trench floor through which contaminant can enter (unitless) (Table 4).
FA	Fraction of absorbed water (unitless) (Table 5).
IRgw	Incidental ingestion rate of groundwater (L/day) (Table 1).
IUR	Inhalation Unit Risk (m³/µg) (Table 6).
k_g	Gas-phase mass transfer coefficient (cm/sec) $\approx$ (0.833 cm/sec) × $[(18\ g/mol)/MW]^{0.335}$ × $(T/298.15)^{1.005}$.
k_i	Mass transfer coefficient (cm/sec) (Table 4).
k_l	Liquid-phase mass transfer coefficient (cm/sec) $\approx$ (0.002 cm/sec) × (T/298.15) × $[(32\ g/mol)/MW]^{1/2}$.
Kp	Permeability coefficient (cm/hour) (Table 5).
MW	Molecular weight (g/mol) (Table 4).
RfC	Reference concentration (mg/m³) (Table 6).
RfD	Reference dose for oral (RfD_o) or dermal (adjusted to an absorbed dose, RfD_a) exposure (mg/kg/day) (Table 6).
RG	Remediation goal for groundwater (mg/L).
SSAgw	Exposed skin surface area for groundwater contact (cm²) (Table 1).
t*	Time required to reach steady state (hour) (Table 5).
TCR	Target cancer risk (unitless).
THQ	Target hazard quotient for non-cancer effects (unitless).
V	Volume of trench (m³) (Table 4).
VFw	Volatilization factor from exposed water in a trench (L/m³) (Table 4).

Table 4
Water Volatilization Factors
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	Constituent Specific Physical Parameters [a]							Enthalpy of vaporization at water temp. [b] (ΔH_v) (cal/mol)	Henry's Law Constant at water temp. [b] (H) (atm-m³/mol)	Henry's Law Constant at water temp. [b] (Ho) (unitless)	Gas-Phase Mass Transfer Coefficient (K_{iG}) (cm/sec)	Liquid-Phase Mass Transfer Coefficient (K_{iL}) (cm/sec)	Overall Mass Transfer Coefficient (K_i) (cm/sec)	Volatilization Factor [c] Exposed Water in a Trench (VFw) (L/m³)
	Molecular Weight (MW) (g/mol)	Henry's Law Constant at ref. temp. (H) (atm-m³/mol)	Henry's Law Constant at ref temp. (Ho) (unitless)	Diffusivity in Air (D_{air}) (cm²/sec)	Enthalpy of vaporization at boiling point (ΔH_v) (cal/mol)	Normal Boiling Point (Tb) (K)	Critical Temperature (Tc) (K)							
Volatile Organic Compounds														
Methyl tert-Butyl Ether (MTBE)	8.82E+01	5.87E-04	2.40E-02	7.53E-02	6.68E+03	3.28E+02	4.97E+02	7.17E+03	4.77E-04	1.99E-02	4.8E-01	1.18E-03	1.1E-03	1.04E+01
Naphthalene	1.28E+02	4.40E-04	1.80E-02	6.05E-02	1.04E+04	4.91E+02	7.48E+02	1.28E+04	3.04E-04	1.27E-02	4.2E-01	9.83E-04	8.3E-04	8.17E+00

Mass Transfer Coefficient Parameters

Default input parameters, as presented in the table beneath, were used.

Parameter	Unit		
MWH_20	g/mol	18.02	Molecular weight of water.
MWO_2	g/mol	32.00	Molecular weight of oxygen.
kL,O_2	cm/sec	0.002	Liquid-phase mass transfer coefficient of oxygen at 25°C.
kG,H_2O	cm/sec	0.833	Gas-phase mass transfer coefficient of water vapor at 25°C.
R	atm-m^3/mole-K	0.000082	Ideal gas constant.
Tgw	°C	20	Temperature of groundwater.
T	K	293.15	Average system absolute temperature.

Trench Model Input Parameters:

Default input parameters, as presented in the table beneath, were used.

Parameter	Unit	Value	
A	m^2	2.23	Area of trench (length x width). Assumed to be 3 feet wide and 8 feet long (VDEQ 2012 default).
F	unitless	1	Fraction of trench floor through which contaminant can enter (VDEQ 2012 default).
V	m^3	4.08	Volume of trench (area x depth) (VDEQ 2012 default).
ACH	h^{-1}	2	Air changes per hour (VDEQ 2012 default).
D_{Trench}	m	1.83	Depth of trench which is equal to the depth of groundwater (Site-specific).
θ_{as}	cm^3/cm^3	0.26	Air-filled porosity in the vadose zone (default for silty clay) (Site-specific).
θ_T	cm^3/cm^3	0.48	Total porosity in the vadose zone (default for silty clay) (Site-specific).

atm-m^3/mol	Atmosphere per meter cubed per mole.	h^{-1}	Inverse hour.
°C	Degrees Celsius.	K	Degrees Kelvin.
cal/mol	Calories per mol.	L/m^3	Liter per cubic meter.
cm/sec	Centimeter per second.	m	Meter.
cm^2/sec	Centimeter squared per second.	m^2	Square Meter.
cm^3/cm^3	Cubic centimeter per cubic centimeter.	m^3	Cubic Meter.
g/mol	Gram per mol.		

[a] Constituent-specific physical parameters were obtained from (USEPA 2015a).
[b] Enthalpy of vaporization and Henry's Law Constant were adjusted for soil temperature based on USEPA recommended methods (USEPA 2001).
[c] Volatilization factors for water in a trench were calculated using VDEQ trench model (2012).
Assuming dispersion is occurring within a box that is a square meter in area and two meters high.

Table 5
Dermal Absorption Parameters
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	Within EPD Range? [a]	Permeability Constant Kp (cm/hour) [b] Value	[Ref]	Non-Steady State Dermal Absorption Parameters [c] FA (unitless)	τ (hour)	t* (hour)	B (unitless)	Source
Volatile Organic Compounds								
Methyl tert-Butyl Ether (MTBE)	Yes	2.1E-03	RSL	1.0E+00	3.3E-01	7.9E-01	7.6E-03	RSL
Naphthalene	Yes	4.7E-02	RSL	1.0E+00	5.5E-01	1.3E+00	2.0E-01	RSL

References [ref]:
EPD Effective Prediction Domain
RSL Regional Screening Level

cm Centimeter.
mg Milligram.

[a] As defined by USEPA 2004b, constituents with a molecular weight and Kow outside the EPD are not evaluated for dermal exposu
[b] Permeability coefficient for dermal contact with constituents in water (centimeters per hour).
[c] Absorption parameters for use in the non-steady state model for dermal contact with constituents in water.
τ = Lag time for dermal absorption through the skin.
t* = Time required to reach steady state.
B = Ratio of the permeability coefficient through the stratus corneum relative to the permeability coefficient across the viable epide
FA = Fraction of absorbed water.

Table 6
Toxicity Values
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	ABS_{GI} [a]	Oral RfD (mg/kg/day) [b]				Dermal RfD (mg/kg/day) [c]		Inhalation RfC (mg/m^3) [b]				Oral CSF $(mg/kg/day)^{-1}$ [b]		Dermal CSF $(mg/kg/day)^{-1}$ [c]	Inhalation Unit Risk $(\mu g/m^3)^{-1}$ [b]	
		Subchronic		Chronic		Subchronic	Chronic	Subchronic		Chronic						
		Value	[ref]	Value	[ref]	Value	Value	Value	[ref]	Value	[ref]	Value	[ref]	Value	Value	[ref]
Volatile Organic Compounds																
Methyl tert-Butyl Ether (MTBE)	1	3.0E-01	A	NA		3.0E-01	NA	2.5E+00	A	3.0E+00	I	1.8E-03	C	1.8E-03	2.6E-07	C
Naphthalene	1	6.0E-01	A	2.0E-02	I	6.0E-01	2.0E-02	3.0E-03	c	3.0E-03	I	NA		NA	3.4E-05	C

References [ref]:

A	Agency for Toxic Substances Disease Registry (ATSDR 2015).
C	CalEPA, Toxicity Criteria database (CalEPA 2015).
I	USEPA, Integrated Risk Information System (IRIS) (USEPA 2015b).

mg/kg/day	Milligram per kilogram per day.
mg/m^3	Milligram per cubic meter.
$(mg/kg/day)^{-1}$	Inverse milligram per kilogram per day (risk per unit dose).
$(\mu g/m^3)^{-1}$	Inverse microgram per cubic meter.
c	Chronic criteria used as subchronic.
NA	Toxicity value is not available.

[b]	ABSGI = Gastrointestinal track absorption factor; from USEPA 2015a.
[b]	Toxicity values were obtained per USEPA hierarchy (USEPA 2003).
[c]	RfD (dermal) = RfD (oral) × ABS_{GI}.
	CSF (dermal) = CSF (oral) / ABS_{GI}.

Table 7
Site-Specific Remediation Goal Concentration Calculation for Exposure to Groundwater of a Child Resident
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	DA [a] (L/cm²/day)		CANCER EFFECTS				NON-CANCER EFFECTS				Minimum RG [b] (mg/L)	
			Route-Specific RG (mg/L)			RG_C (mg/L)	Route-Specific RG (mg/L)			RG_{NC} (mg/L)		
			Oral $(RG_o)_C$	Dermal $(RG_d)_C$	Inhalation $(RG_i)_C$	TCR = 1E-06	Oral $(RG_o)_{NC}$	Dermal $(RG_d)_{NC}$	Inhalation $(RG_i)_{NC}$	THQ = 1		
Volatile Organic Compounds												
Methyl tert-Butyl Ether (MTBE)	2.45E-06	[1]	1.3E-01	6.5E+00	4.1E+00	1.2E-01	NA	NA	2.8E+02	2.8E+02	1.2E-01	C
Naphthalene	7.01E-05	[1]	NA	NA	3.2E-02	3.2E-02	4.0E-01	7.0E-01	2.8E-01	1.3E-01	3.2E-02	C

[a] The dermal absorption factor was calculated using Equation [1] as indicated in Table 5.
[b] Minimum of the HBG_C (identified by "C") and HBG_{NC} (identified by "N").

DA	Dermal absorption.
$L/cm^2/day$	Liter per square centimer per day.
mg/L	Milligram per liter.
NA	Not available; insufficient data.
RG	Remediation goal for groundwater.
TCR	Target cancer risk.
THQ	Target hazard quotient for noncancer effects.

Equations:

(RGo)c = (TCR × 15 × 25,550) / (0.78 × 350 × 6 × CSFo)
(RGd)c = (TCR × 15 × 25,550) / (6,378 × DA × 350 × 6 × CSFa)
(RGi)c = (TCR × 25,550) / (0.5 × 0.042 × 0.54 × 350 × 6 × IUR)

(RGo)nc = (THQ × 15 × 2,190) / (0.78 × 350 × 6 × [1/RfDo])
(RGd)nc = (THQ × 15 × 2,190) / (6,378 × DA × 350 × 6 × [1/RfDa])
(RGi)nc = (THQ × 2,190) / (0.5 × 0.042 × 0.54 × 350 × 6 × [1/RfC])

Table 8
Site-Specific Remediation Goal Concentration Calculation for Exposure to Groundwater of an Adult Resident
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	DA [a] (L/cm²/day)		CANCER EFFECTS				NON-CANCER EFFECTS				Minimum RG [b] (mg/L)	
			Route-Specific RG (mg/L)			RG_C (mg/L)	Route-Specific RG (mg/L)			RG_{NC} (mg/L)		
			Oral $(RG_o)_C$	Dermal $(RG_d)_C$	Inhalation $(RG_i)_C$	TCR = 1E-06	Oral $(RG_o)_{NC}$	Dermal $(RG_d)_{NC}$	Inhalation $(RG_i)_{NC}$	THQ = 1		
Volatile Organic Compounds												
Methyl tert-Butyl Ether (MTBE)	2.81E-06	[1]	6.5E-02	2.8E+00	9.4E-01	5.9E-02	NA	NA	2.1E+02	2.1E+02	5.9E-02	C
Naphthalene	8.04E-05	[1]	NA	NA	7.2E-03	7.2E-03	6.7E-01	9.9E-01	2.1E-01	1.4E-01	7.2E-03	C

[a] The dermal absorption factor was calculated using Equation [1] as indicated in Table 5.
[b] Minimum of the HBG_C (identified by "C") and HBG_{NC} (identified by "N").

DA	Dermal absorption.
$L/cm^2/day$	Liter per square centimer per day.
mg/L	Milligram per liter.
NA	Not available; insufficient data.
RG	Remediation goal for groundwater.
TCR	Target cancer risk.
THQ	Target hazard quotient for noncancer effects.

Equations:

(RGo)c = (TCR × 80 × 25,550) / (2.5 × 350 × 20 × CSFo)
(RGd)c = (TCR × 80 × 25,550) / (20,900 × DA × 350 × 20 × CSFa)
(RGi)c = (TCR × 25,550) / (0.5 × 0.042 × 0.71 × 350 × 20 × IUR)

(RGo)nc = (THQ × 80 × 7,300) / (2.5 × 350 × 20 × [1/RfDo])
(RGd)nc = (THQ × 80 × 7,300) / (20,900 × DA × 350 × 20 × [1/RfDa])
(RGi)nc = (THQ × 7,300) / (0.5 × 0.042 × 0.71 × 350 × 20 × [1/RfC])

Table 9
Site-Specific Remediation Goal Concentration Calculation for Exposure to Groundwater of a Commercial Worker
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	DA [a] (L/cm²/day)		CANCER EFFECTS				NON-CANCER EFFECTS				Minimum RG [b] (mg/L)	
			Route-Specific RG (mg/L)			RG_C (mg/L)	Route-Specific RG (mg/L)			RG_{NC} (mg/L)		
			Oral $(RG_o)_C$	Dermal $(RG_d)_C$	Inhalation $(RG_i)_C$	TCR = 1E-06	Oral $(RG_o)_{NC}$	Dermal $(RG_d)_{NC}$	Inhalation $(RG_i)_{NC}$	THQ = 1		
Volatile Organic Compounds												
Methyl tert-Butyl Ether (MTBE)	1.67E-06	[1]	1.5E-01	1.1E+02	3.0E+00	1.4E-01	NA	NA	8.3E+02	8.3E+02	1.4E-01	C
Naphthalene	4.77E-05	[1]	NA	NA	2.3E-02	2.3E-02	1.9E+00	5.0E+01	8.3E-01	5.7E-01	2.3E-02	C

[a] The dermal absorption factor was calculated using Equation [1] as indicated in Table 5.
[b] Minimum of the HBG_C (identified by "C") and HBG_{NC} (identified by "N").

DA	Dermal absorption.
$L/cm^2/day$	Liter per square centimer per day.
mg/L	Milligram per liter.
NA	Not available; insufficient data.
RG	Remediation goal for groundwater.
TCR	Target cancer risk.
THQ	Target hazard quotient for noncancer effects.

Equations:

(RGo)c = (TCR × 80 × 25,550) / (1.25 × 250 × 25 × CSFo)
(RGd)c = (TCR × 80 × 25,550) / (980 × DA × 250 × 25 × CSFa)
(RGi)c = (TCR × 25,550) / (0.5 × 0.042 × 0.25 × 250 × 25 × IUR)

(RGo)nc = (THQ × 80 × 9,125) / (1.25 × 250 × 25 × [1/RfDo])
(RGd)nc = (THQ × 80 × 9,125) / (980 × DA × 250 × 25 × [1/RfDa])
(RGi)nc = (THQ × 9,125) / (0.5 × 0.042 × 0.25 × 250 × 25 × [1/RfC])

Table 10
Site-Specific Remediation Goal Concentration Calculation for Exposure to Groundwater of a Construction Worker
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	DA [a] (L/cm²/day)	VF [b] (L/m³)	CANCER EFFECTS: Route-Specific RG (mg/L) Oral $(RG_o)_C$	Dermal $(RG_d)_C$	Inhalation $(RG_i)_C$	RG_C (mg/L) TCR = 1E-06	NON-CANCER EFFECTS: Route-Specific RG (mg/L) Oral $(RG_o)_{NC}$	Dermal $(RG_d)_{NC}$	Inhalation $(RG_i)_{NC}$	RG_{NC} (mg/L) THQ = 1	Minimum RG [c] (mg/L)	
Volatile Organic Compounds												
Methyl tert-Butyl Ether (MTBE)	5.58E-06 [2]	1.04E+01	4.4E+03	4.4E+02	8.7E-01	8.7E-01	1.7E+04	1.7E+03	4.0E+00	4.0E+00	8.7E-01	C
Naphthalene	1.39E-04 [2]	8.17E+00	NA	NA	8.4E-03	8.4E-03	3.4E+04	1.4E+02	6.1E-03	6.1E-03	6.1E-03	N

[a] The dermal absorption factor was calculated using Equation [2] as indicated in Table 5.
[b] The volatilization factor [VF] calculated in Table 4.
[c] Minimum of the HBG_C (identified by "C") and HBG_{NC} (identified by "N").

DA	Dermal absorption.
L/cm^2/day	Liter per square centimer per day.
mg/L	Milligram per liter.
NA	Not available; insufficient data.
RG	Remediation goal for groundwater.
TCR	Target cancer risk.
THQ	Target hazard quotient for noncancer effects.
VF	Volatilization factor.

Equations:

(RGo)c = (TCR × 80 × 25,550) / (0.002 × 5 × 26 × CSFo)
(RGd)c = (TCR × 80 × 25,550) / (3,527 × DA × 5 × 26 × CSFa)
(RGi)c = (TCR × 25,550) / (VF × 0.042 × 2 × 5 × 26 × IUR)

(RGo)nc = (THQ × 80 × 182) / (0.002 × 5 × 26 × [1/RfDo])
(RGd)nc = (THQ × 80 × 182) / (3,527 × DA × 5 × 26 × [1/RfDa])
(RGi)nc = (THQ × 182) / (VF × 0.042 × 2 × 5 × 26 × [1/RfC])

Table 11
Summary of Calculated Site-Specific Remediation Goals
Solid Waste Management Unit (SWMU) 26
Fort Stewart, Georgia

Constituent	Minimum Groundwater RG (mg/L)				
	Child Resident	Adult Resident	Resident[a]	Commercial Worker	Construction Worker
Volatile Organic Compounds					
Methyl tert-Butyl Ether (MTBE)	1.2E-01	5.9E-02	5.9E-02	1.4E-01	8.7E-01
Naphthalene	3.2E-02	7.2E-03	7.2E-03	2.3E-02	6.1E-03

[a] = The resident RG is based on the minimum RG for the child and adult resident.

mg/L Milligram per liter.

RG Remediation goal.

ARCADIS

Appendix E

Soil Boring and Well Construction Log

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well MW-60 Project/No. GPOSTHAFJ.2013.0026MW Page 1 of 1

Site Location FJT-26 Ft. Stewart, Ga Drilling Started 5/14/14 Drilling Completed 5/14/14

Drilling Contractor Geo Lab Driller Phillip Helper Lat

Drilling Fluid Used NONE Drilling Method Hollow Stem Auger

Length and Diameter of Coring Device 5' x 2½" Sampling Interval Continuous feet

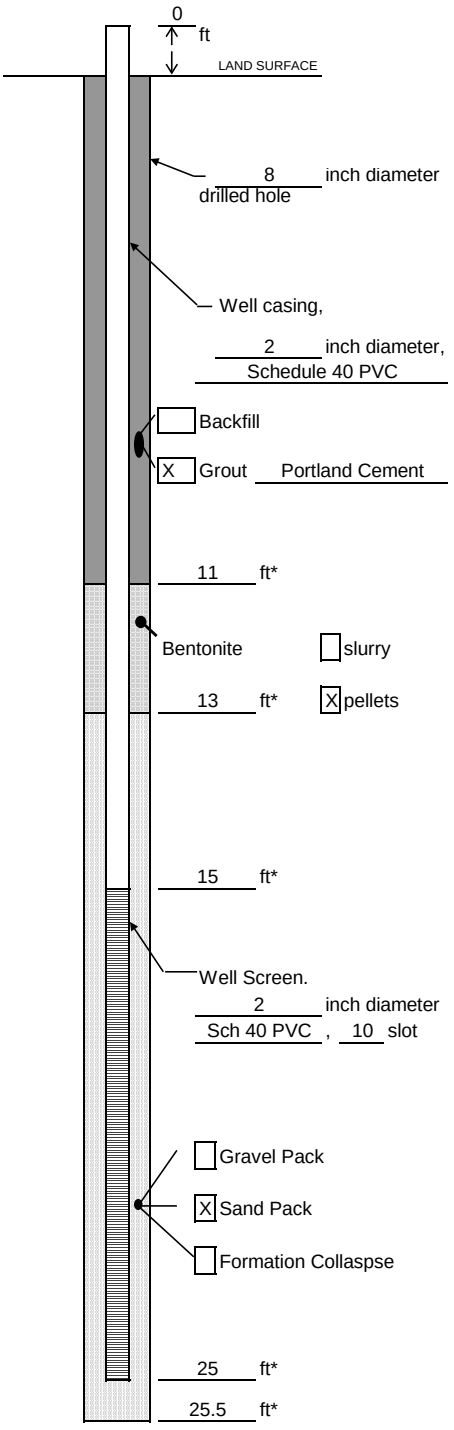
Total Depth Drilled 25 Feet Hole Diameter 2 Coring Device Macro Core

Prepared By Jared Fine Hammer Weight N/A Hammer Drop N/A ins.

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Sample/Core Description	PID (ppm)
		Grass Surface	
0	3	Brown Sand, some organic material, fine - med, soft Low plasticity	
3	3.5	Gray silty clay, some clay mod stiff, high plasticity	
4	5	Lt. brown sand, some silt, soft, low plasticity	
5	6.5	No Recovery	
6.5	7	Gray silty sand, some clay, soft, hi med plasticity	
7	10	Dark Gray fine - medium sand, Wet	
10	16	Same as above but fine - Coarse, trace clay WET	
16	19.5	Gray fine - coarse sand w/some clay & shell fragment WET	
19.5	20.5	Gray silty sand w/clay med stiff, high plasticity Dry	
20.5	25	Lt Gray fine - very coarse sand, some clay & shell fragments WET	
		- End of Boring @ 25 ft bgs	

WELL CONSTRUCTION LOG- UNCONSOLIDATED



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

* Depth Below Land Surface
NM = Not Measured
N/A = Not Applicable
gpm = gallons per minute

Project FST-26-Former 724th Purging Station **Well** **MW-60**

Town/City Fort Stewart

County Liberty State Georgia

Installation Date(s) 5/14/2014

Drilling Method Hollow Stem Auger

Drilling Contractor Geo Lab

Drilling Fluid None

Development Technique(s) and Date(s)

Whale Pump, 5/14/2014

Fluid Loss During Drilling N/A gallons

Water Removed During Development 100 gallons

Static Depth to Water 9.35 feet below M.P.

Pumping Depth to Water 18.5 feet below M.P.

Pumping Duration 1 hours

Yield NM gpm Date 5/14/2014

Specific Capacity NM gpm/ft

Well Purpose Monitoring Well

Remarks Flush Mount Completion with Locking Well Seal

Prepared by Jared Fino

ARCADIS

Appendix F

Sampling Data Sheets

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-2013

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-40

Rep./Field Blank No. _____

Sample Collection Time 1215

Weather Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.60

Casing stick-up above concrete (feet) _____

Depth to water from top of casing _____

Screened Interval (ft bls) _____

Water Column ___ (ft) Gallons in well _____

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1145	start	18.39	5.38	3.39	103	8.47	32.7	5.86
1150	0.1	17.90	4.58	2.33	101	8.14	24.5	5.99
1155	0.2	17.81	4.49	2.04	100	20.1	29.6	6.10
1200	0.3	17.79	4.39	1.89	100	23.4	19.6	6.19
1205	0.4	18.11	4.37	1.73	100	22.5	15.6	6.19
1210	0.5	18.11	4.37	1.75	100	19.7	19.1	6.19
1215	0.6	18.12	4.35	1.73	100	17.5	~~+~~19.1	6.19
				DBM				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE 8260	3X 40 mL glass vial	HCl

Remarks _____

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-47

Rep./Field Blank No.

Sample Collection Time 12:26

Weather Sunny, 60's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14

Casing stick-up above concrete (feet) 2

Depth to water from top of casing 4.32

Screened Interval (ft bls) 3.9 - 13.5

Water Column 9.68 (ft) Gallons in well 1.55

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1156

µS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1201	0.1	18.10	6.44	2.22	966	>1000	117.7	5.85
1206	0.2	18.10	6.41	2.92	904	1671	109.0	6.60
1211	0.3	18.06	6.39	3.30	878	1456	106.1	6.60
1216	0.4	18.31	6.32	3.06	813	2236	97.8	6.81
1221	0.5	18.02	6.26	3.03	805	368	96.4	6.81
1226	0.6	18.37	6.25	3.01	798	31	92.1	6.81

Valyn Paouncic 4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Very turbid

Turbidimeter - LaMotte

Sampling Personnel ~~Jared Fino~~ Danny Mays / Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-39

Rep./Field Blank No.

Sample Collection Time 1300

Weather Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 26.15

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1230	Start	18.69	6.38	1.15	571	3.34	14.1	5.90
1235	0.1	18.50	6.54	0.73	578	3.15	10.6	5.90
1240	0.2	18.72	6.63	0.64	581	3.30	4.2	5.88
1245	0.3	18.70	6.67	0.57	582	3.71	-2.4	5.88
1250	0.4	18.92	6.68	0.55	582	4.44	-9.2	5.88
1255	0.5	18.94	6.69	0.53	582	4.57	-11.8	5.88
1300	0.6	19.05	6.69	0.51	582	4.90	-16.5	5.88
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-33

Rep./Field Blank No.

Sample Collection Time 1315

Weather Sunny, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14

Casing stick-up above concrete (feet)

Depth to water from top of casing 5.04

Screened Interval (ft bls) 3.6-13.6

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start: 1244

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1249	0.1	18.52	4.63	0.78	142	87.7	79.3	5.37
1254	0.2	18.41	4.56	0.82	141	60.2	82.2	5.37
1259	0.3	18.38	4.43	0.88	141	46.2	87.8	5.37
1304	0.4	18.20	4.34	0.90	140	39.2	93.6	5.37
1309	0.5	18.18	4.28	0.92	141	35.5	98.6	5.37
1314	0.6	18.25	4.25	0.96	140	35.8	100.1	5.37

Valyn Paouncic 4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water Cloudy, Slightly Turbid

Sampling Personnel Danny Mass
Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-~~99~~ 43

Rep./Field Blank No.

Sample Collection Time 1410

Weather Sunny, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Casing stick-up above concrete (feet)

Depth to water from top of casing 6.59

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start : 1338

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1343	0.1	19.15	5.77	0.97	492	119	116.8	6.70
1348	0.2	19.22	5.80	0.82	495	80.7	108.7	6.70
1353	0.3	19.50	5.80	0.75	496	37.9	103.5	6.70
1358	0.4	19.58	5.79	0.68	497	~~75.1~~ 29.6	99.4	6.70
1403	0.5	19.28	5.79	0.69	498	18.8	94.1	6.71
1408	0.6	19.28	5.79	0.67	497	19.7	90.3	6.71

4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Slightly turbid - cloudy

Sampling Personnel ~~Jared Fino~~/Valyn Paouncic Danny Mays

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ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-42

Rep./Field Blank No.

Sample Collection Time 1420

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 25.22

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1350	Start	20.50	5.39	5.02	806	25.7	-1.3	6.92
1355	0.1	20.38	5.24	4.79	804	26.4	20.4	7.00
1400	0.2	20.35	5.16	4.72	803	26.9	26.1	7.09
1405	0.3	20.27	5.10	4.49	802	25.8	46.0	7.11
1410	0.4	20.27	5.07	4.48	803	25.9	59.3	7.10
1415	0.5	20.42	5.07	4.52	803	24.4	77.4	7.12
1420	0.6	20.60	5.08	4.34	802	24.2	78.8	7.13
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-51

Rep./Field Blank No.

Sample Collection Time 1445

Weather Sunny, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14

Casing stick-up above concrete (feet) 2'

Depth to water from top of casing 5.46

Screened Interval (ft bls) 3.9 - 13.9

Water Column 8.54 (ft) Gallons in well 1.37

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1413

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1418	0.1	19.40	5.82	1.10	233	39.6	76.5	5.94
1423	0.2	19.35	5.79	0.80	230	33.9	74.3	5.94
1428	0.3	19.19	5.77	0.80	226	26.8	70.1	5.96
1433	0.4	19.13	5.74	0.64	223	21.4	64.2	5.99
1438	0.5	19.13	5.74	0.62	223	21.4	63.5	5.99
1443	0.6	19.16	5.72	0.63	222	23.1	61.3	5.99

Valyn Paouncic 4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Slightly cloudy / slightly turbid.

Sampling Personnel ~~Jared Fino~~ Danny Mayo / Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-32

Rep./Field Blank No.

Sample Collection Time ~~1505~~ 1510

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 17.82

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1440	start	20.48	5.76	3.28	160	95.1	41.2	7.10
1445	0.1	20.98	5.72	3.17	138	99.8	19.3	7.05
1450	0.2	21.30	5.69	3.02	130	97.8	14.2	7.02
1455	0.3	21.36	5.68	3.21	128	90.8	7.2	7.03
1500	0.4	21.26	5.67	3.13	126	87.5	4.1	7.03
1505 ~~1505~~	0.5	21.26	5.63	3.16	123	82.3	1.6	7.04
1510	0.6	21.28	5.63	3.19	123	82.1	1.4	7.05
		DRM						

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-52

Rep./Field Blank No.

Sample Collection Time 1520

Weather Sunny / 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31

Casing stick-up above concrete (feet) 2

Depth to water from top of casing 5.80

Screened Interval (ft bls) 26.9 - 30.4

Water Column 25.2 (ft) Gallons in well 4.032

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1447

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1452	0.1	20.42	6.66	3.80	1820	22.1	71.8	5.85
1457	0.2	20.42	6.60	2.05	1993	11.3	48.5	5.85
1502	0.3	20.47	6.61	0.94	2044	7.77	29.5	5.85
1507	0.4	20.48	6.63	0.69	2075	5.34	5.2	5.85
1512	0.5	20.43	6.65	0.60	2092	4.30	7.8	5.85
1517	0.6	20.37	6.64	0.51	2108	2.64	-20.5	5.85

Valyn Paouncic 4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel ~~Jared Fino~~ Danny Mays / Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-31

Rep./Field Blank No.

Sample Collection Time 1550

Weather Sunny, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Casing stick-up above concrete (feet) ~2.5

Depth to water from top of casing 6.36

Screened Interval (ft bls) 4-14

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1620

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
~~1625~~ 1615	0.1	18.62	5.64	3.24	320	870 AU	29.6	7.87
~~1630~~ 1625	0.2	18.93	5.55	1.91	274	684 AU	35.2	7.87
~~1635~~ 1630	0.3	19.04	5.22	1.31	251	467 AU	36.5	7.87
1540	0.4	18.93	5.07	1.05	247	189 AU	48.0	7.87
1545	0.5	18.93	5.07	1.01	246	196 AU	49.7	7.88
1550	0.6	18.92	5.05	0.99	244	207 AU	53.3	7.88

4-2-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Very turbid

Sampling Personnel ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-49

Rep./Field Blank No.

Sample Collection Time 1615

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14.00

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1545	start	21.25	6.19	8.62	164	220	-12.9	6.50
1550	0.1	20.19	5.95	3.31	158	179	-13.6	6.95
1555	0.2	20.25	5.84	3.09	156	170	-7.5	6.95
1600	0.3	20.50	5.82	2.90	156	174	-6.2	6.95
1605	0.4	20.81	5.83	2.74	155	173	-7.6	6.95
1610	0.5	20.69	5.81	2.73	154	167	-11.6	6.96
1615	0.6	20.60	5.78	2.59	154	161	-13.6	6.97
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-57

Rep./Field Blank No.

Sample Collection Time 1626

Weather Sunny, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.7

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 6.51

Screened Interval (ft bls) 25.9 - 30.4

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: 1556 ← Start

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1601	0.1	19.98	2.02	4.79	716	6.87	343.1	6.68
1606	0.2	19.88	2.20	4.77	719	8.29	337.5	6.68
1611	0.3	20.00	2.36	4.57	729	1.90	332.7	6.68
1616	0.4	20.24	2.52	4.34	735	1.04	328.7	6.73
1621	0.5	20.28	2.53	4.40	736	1.14	328.1	6.73
1626	0.6	20.33	2.47	4.47	739	0.67	323.9	6.75

4-2-13

Valyn Paouncic

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel ~~Jared Fino~~ Danny Mays/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-50

Rep./Field Blank No.

Sample Collection Time 1655

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 34.5

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1625	start	20.71	6.93	4.15	1333	14.8	8.1	6.78
1630	0.1	20.75	7.04	3.97	1336	13.7	6.2	6.79
1635	0.2	20.74	7.08	3.94	1340	12.2	6.0	6.79
1640	0.3	20.52	7.07	4.08	1350	11.9	6.6	6.80
1645	0.4	20.43	6.96	3.83	1452	15.7	7.9	6.80
1650	0.5	20.55	6.67	1.79	1700	32.4	5.7	6.79
1655	0.6	20.60	6.64	0.61	1931	10.5	-49.0	6.79
			DTBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-2-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-58

Rep./Field Blank No. MS / MSD

Sample Collection Time 1710

Weather Sunny / 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 6.91

Screened Interval (ft bls) 26 - 31

Water Column 24.09 (ft) Gallons in well 3.85

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1640 µS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1645	0.1	19.95	7.09	4.22	1721	37.1	59.7	6.93
1650	0.2	20.03	7.05	4.00	1729	36.5	61.9	6.93
1655	0.3	20.09	7.04	3.72	1736	31.1	55.2	6.93
~~1700~~ 1700	0.4	19.96	6.75	3.76	2127	28.2	13.6	6.93
1705	0.5	19.96	6.67	1.31	2488	15.7	-61.4	6.93
1710	0.6	19.89	6.66	0.58	2656	10.36	-73.6	6.93
1715	0.7	19.88	6.66	1.01	2551	7.31	-70.1	~~6.93~~
					4-2-13			

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks MS taken @ 1712; MSD @ 1715
Water turbid

Sampling Personnel Danny Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-38

Rep./Field Blank No.

Sample Collection Time 0850

Weather Sunny, 50's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Casing stick-up above concrete (feet) 2

Depth to water from top of casing 6.05

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 0819

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0824	0.1	17.22	6.77	3.45	2131	28.1	188.2	6.27
0829	0.2	17.52	6.77	3.41	2131	7.97	157.0	6.27
0834	0.3	17.54	6.78	3.25	2136	6.19	147.7	6.27
0839	0.4	17.68	6.79	3.17	2137	6.30	134.0	6.28
0844	0.5	17.97	6.79	3.13	2135	7.11	126.2	6.28
0849	0.6	17.72	6.79	3.09	2137	8.72	120.6	6.28

4-3-13

Valyn Paouncic

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Danny Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-53

Rep./Field Blank No.

Sample Collection Time 855

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Casing stick-up above concrete (feet)

Depth to water from top of casing 34.24

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
825 ~~855~~	start	16.25	7.29	5.21	743	7.02	139.3	7.14
830	0.1	16.48	7.48	4.93	742	6.71	127.9	7.11
835	0.2	16.66	7.54	4.77	740	5.81	112.2	7.09
840	0.3	17.05	7.58	4.65	738	6.46	81.6	7.12
845	0.4	17.29	7.59	4.62	736	6.66	66.6	7.13
850	0.5	17.44	7.60	4.60	736	5.58	53.7	7.13
855	0.6	17.67	7.61	4.43	737	7.22	41.4	7.14
				DBM				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-41

Rep./Field Blank No.

Sample Collection Time 0925

Weather Sunny / 60's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Casing stick-up above concrete (feet) 2

Depth to water from top of casing 5.90

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 0853 µS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0858	0.1	16.94	5.02	3.58	207	46.7	135.2	6.25
0903	0.2	16.86	4.39	3.33	180	42.2	136	6.25
0908	0.3	16.88	4.24	3.29	173	43.4	135.9	6.26
0913	0.4	16.88	4.09	3.39	166	40.1	135.8	6.45
0918	0.5	16.93	3.99	3.21	158	31.8	135.7	6.45
0923	0.6	16.90	4.01	3.30	158	29.5	136.6	6.45

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water Slightly turbid

Sampling Personnel Danny Hays
~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-~~8~~54

Rep./Field Blank No. DUP-1

Sample Collection Time 955

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 34.40

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
925	start	17.11	7.53	2.36	897	12.1	-6.9	6.77
930	0.1	17.31	7.46	2.07	898	13.1	-9.7	6.74
935	0.2	17.44	7.44	2.01	898	11.7	-14.2	6.74
940	0.3	17.57	7.43	1.85	898	14.5	-13.5	6.74
945	0.4	17.77	7.42	1.91	897	13.7	-18.9	6.75
950	0.5	17.90	7.42	1.90	898	10.4	-20.1	6.75
955	0.6	18.04	7.42	1.87	898	13.2	-20.5	6.78
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather Sunny 150's

Date 4-3-13

Monitoring Well Number MW-20

Sample Collection Time 1000

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16.0

Depth to water from top of casing 5.72

Water Column 10.28 (ft) Gallons in well 1.65

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) 2.5

Screened Interval (ft bls) 6.0 – 16.0

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: 0930 start

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µS/cm) (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0935	0.1	18.20	4.53	2.16	138	848	144.7	6.45
0940	0.2	17.99	4.56	2.17	127	58	147.4	6.45
0945	0.3	18.10	4.56	2.36	126	75	150.9	6.45
0950	0.4	18.10	4.56	2.36	126	72	151.6	6.45
0955	0.5	18.14	4.56	2.35	125	107	153.8	6.70
1000	0.6	18.18	4.56	2.40	125	72.0	155.7	6.70

Valyn Paouncic 4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water turbid - cloudy slightly yellows

Sampling Personnel Daniel Mays Jared Finn/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-55

Rep./Field Blank No. DUP-02

Sample Collection Time 1035

Weather Sunny / 50's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 32.0

Casing stick-up above concrete (feet) 2

Depth to water from top of casing 6.41

Screened Interval (ft bls) 26.9 - 31.4

Water Column 25.59 (ft) Gallons in well 4.09

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: 1005 Start

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1010	0.1	18.87	6.84	4.16	615	19.7	148.4	6.50
1015	0.2	18.91	6.97	4.12	638	7.99	145.4	6.50
1020	0.3	19.17	7.27	3.98	641	4.32	131.1	6.50
1025	0.4	19.24	7.28	3.83	6061	4.02	130.0	6.50
~~1030~~ 1030 DUP	0.5	19.24	7.29	3.90	6062	3.92	129.2	6.50
1035	0.6	19.29	7.33	3.91	6063	3.38	126.7	6.50

4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks FB 26-DUP-02(040313) @ 1038

Sampling Personnel Danny Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-19

Rep./Field Blank No.

Sample Collection Time 1040

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14.50

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)	
1010	0 start	17.06	6.77	3.68	302	7999	-0.1	6.05	lower flow rate
1015	0.1	16.99	6.30	3.68	297	7999	-3.5	7.50	
1020	0.2	17.17	6.08	3.30	296	7999	-2.5	7.70	
1025	Changed	Tubing							
1030	0.3	17.54	5.86	3.77	299	7999	-1.8	8.3	
1035	0.4	18.42	5.48	3.78	279	7999	1.1	8.7	lowered flow
1040	0.5	18.42	5.48	3.68	278	7999	2.2	8.8	
1045	0.6	18.40	5.51	3.63	279	7999	5.7	9.2	
1050	0.7	18.38	5.53	3.49	281	7999	8.3	9.4	
1055	0.8	18.39	5.56	3.24	283	7999	8.6	9.6	
		- Extremely Turbid (7999) took sample						3 x 40 ml glass vial	

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Extremely turbid when sampled

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No.

Weather Sunny, 60's

Date 4-3-13

Monitoring Well Number MW-23

Sample Collection Time 1125

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls)

Depth to water from top of casing 6.30

Water Column ___ (ft) Gallons in well

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) 3

Screened Interval (ft bls)

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1053 µS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1058	0.1	19.07	6.59	0.49	375	932AU	97.8	7.41
1103	0.2	18.93	6.58	0.49	376	143	95.7	7.41
1108	0.3	18.93	6.58	0.51	414	68.3	87.9	7.00
1113	0.4	18.96	6.57	0.51	415	38.6	85.6	7.00
1118	0.5	19.05	6.56	0.53	424	107.0	80.5	6.99
1123	0.6	19.01	6.55	0.53	419	68.5	79.1	6.99

4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Very turbid

Sampling Personnel Daniel Hays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-56

Rep./Field Blank No.

Sample Collection Time 1145

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 33.72

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1115 ~~1045~~	start	19.88	6.94	5.13	1342	110	18.8	7.05
1120	0.1	19.93	7.20	4.99	1341	70.4	15.3	7.05
1125	0.2	19.80	7.51	4.65	1341	37.7	10.6	7.09
1130	0.3	19.80	7.64	4.56	1340	38.1	7.1	7.09
1135	0.4	19.86	7.69	4.74	1342	30.6	5.1	7.09
1140	0.5	19.84	7.72	4.69	1346	26.5	3.9	7.13
1145	0.6	19.78	7.73	4.68	1357	25.8	2.6	7.10
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No.

Weather Cloudy / 70's

Evacuation Data:

Depth to bottom of well (ft bls) 19

Depth to water from top of casing 4.78

Water Column ___ (ft) Gallons in well

Evacuation Volume (x 3) = Low Flow

Date 4-3-13

Monitoring Well Number MW-09

Sample Collection Time 1215

Sampling Method Low Flow Peristaltic

Casing stick-up above concrete (feet) 2'

Screened Interval (ft bls) 16.0-16.0

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1143 uS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1148	0.1	17.49	5.30	0.48	82	43.6	81.0	5.53
1153	0.2	17.62	5.08	0.414	84	33.8	86.2	5.53
1158	0.3	17.72	4.97	0.45	82	28.9	84.5	5.53
1203	0.4	17.73	4.90	0.48	81	~~15.7~~ 24.6	84.0	5.53
1208	0.5	17.81	4.87	0.51	81	11.9	79.5	5.53
1213	0.6	17.81	4.82	0.46	80	15.1	77.9	5.53

4-3-13

Valyn Paouncic

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Slightly turbid

Sampling Personnel Daniel Hays Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-21

Rep./Field Blank No.

Sample Collection Time 1325

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16.75

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1255	Start	19.32	5.26	2.95	216	95.5	-3.7	6.40
1300	0.1	19.30	4.69	2.43	210	39.7	12.9	6.79
1305	0.2	19.27	4.43	2.38	201	40.4	19.9	6.90
1310	0.3	19.46	4.35	2.20	196	49.9	22.5	7.00
1315	0.4	19.42	4.27	2.18	193	78.1	19.9	7.00
1320	0.5	19.18	4.22	2.19	191	68.0	20.5	7.15
1325	0.6	18.86	4.17	2.18	190	60.7	22.1	7.32
			DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. MS/MSD

Weather partly cloudy/70's

Date 4-3-13

Monitoring Well Number MW-24R

Sample Collection Time 1400

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) _____

Depth to water from top of casing 4.88

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) flush mount

Screened Interval (ft bls) _____

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters Start: 1330

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1335	0.1	22.70	2.24	3.86	17039	5.31	287.5	5.20
1340	0.2	22.75	2.16	2.74	16426	3.61	296.9	5.20
1345	0.3	22.93	2.10	2.21	15597	3.24	302.3	5.40
1350	0.4	22.75	2.03	1.85	14806	3.27	320.6	5.40
1355	0.5	22.71	1.99	1.75	14544	3.97	330.4	5.40
1400	0.6	22.79	1.98	1.75	14467	2.64	333.6	5.40
1405	0.7	22.75	1.97	1.71	14393	2.64	337.5	5.40

Valyn Paouncic 4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks MS taken @ 1402 ; MSD taken @ 1405

Sampling Personnel Dana Mays ~~Jared Pino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-06R

Rep./Field Blank No. _____

Sample Collection Time 1445

Weather _____

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16.00

Casing stick-up above concrete (feet) _____

Depth to water from top of casing _____

Screened Interval (ft bls) _____

Water Column ___ (ft) Gallons in well _____

Casing Diameter: _____

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1415	start	19.36	3.59	9.14	8792	[illegible]	206.2	5.50
1420	0.1	19.20	3.36	0.61	8442	9.81	340.1	5.70
1425	0.2	19.13	3.45	0.71	7527	9.80	334.7	5.59
1430	0.3	19.08	3.74	1.00	6815	9.62	313.2	5.65
1435	0.4	18.58	4.15	1.70	5969	9.95	286.1	5.75
1440	0.5	18.42	4.36	2.03	5685	9.57	263.2	5.75
1445	0.6	18.24	4.49	2.46	5494	8.26	229.8	5.78
				DBM				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks _____

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather Partly Cloudy / 70's

Evacuation Data:

Depth to bottom of well (ft bls) _____

Depth to water from top of casing 5.45

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Date 4-3-13

Monitoring Well Number MW-16

Sample Collection Time 1450

Sampling Method Low Flow Peristaltic

Casing stick-up above concrete (feet) Flush mount

Screened Interval (ft bls) _____

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start : 1417 µS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1422	0.1	22.99	4.05	1.39	900	82.1	134.2	5.48
1427	0.2	22.94	4.43	1.45	795	46.7	114.6	5.48
1432	0.3	22.71	4.80	1.46	698	31.6	90.7	5.48
1437	0.4	22.41	5.06	1.44	591	13.0	61.9	5.70
1442	0.5	22.49	5.09	1.43	551	11.2	60.3	5.70
1447	0.6	22.51	5.12	1.40	488	8.40	59.3	5.71

4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water Slightly Turbid

Sampling Personnel David Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-36R

Rep./Field Blank No.

Sample Collection Time 1525

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 25'

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1455	start	19.63	6.55	0.81	1848	99.2	-51.9	7.30
1500	0.1	19.96	6.71	0.43	1796	80.9	-74.0	7.30
1505	0.2	19.99	6.80	0.34	1770	73.3	-84.3	7.30
1510	0.3	20.48	6.87	0.30	1744	52.0	-101.7	7.30
1515	0.4	20.51	6.90	0.26	1738	51.2	-101.6	7.30
1520	0.5	20.42	6.93	0.23	1726	43.3	-99.8	7.30
1525	0.6	20.67	6.94	0.21	1723	38.8	-98.2	7.30
					DBM			

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather Cloudy / 70's

Evacuation Data:

Depth to bottom of well (ft bls) _____

Depth to water from top of casing 6.44

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Date 4-3-13

Monitoring Well Number MW-35

Sample Collection Time 1525

Sampling Method Low Flow Peristaltic

Casing stick-up above concrete (feet) Flush mount

Screened Interval (ft bls) _____

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1452

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µS/cm µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1457	0.1	22.63	5.70	1.56	440	15.6	36.6	6.63
1502	0.2	23.12	5.71	1.46	440	11.14	51.3	6.63
1507	0.3	23.23	5.73	1.44	436	10.10	58.9	6.63
1512	0.4	23.40	5.73	1.34	437	8.73	64.5	6.63
1517	0.5	23.27	5.74	1.27	436	8.55	67.9	6.63
1522	0.6	23.32	5.73	1.24	436	8.30	70.6	6.64

Valyn Paouncic 4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks _____

Sampling Personnel Daniel Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather Partly Cloudy / 70's

Date 4-3-13

Monitoring Well Number MW-25R

Sample Collection Time 1600

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) _____

Depth to water from top of casing 4.89

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) Flush mount

Screened Interval (ft bls) _____

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1528

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1533	0.1	22.85	5.10	0.69	337	15.2	60.1	5.35
1538	0.2	22.82	5.05	0.80	335	14.3	56.5	5.35
1543	0.3	22.82	5.04	1.02	334	35.5	45.5	5.35
1548	0.4	22.76	5.04	0.96	332	23.8	39.9	5.70
1553	0.5	22.89	4.60	0.95	330	16.5	76.9	5.70
1558	0.6	22.92	4.51	0.97	329	15.2	69.9	5.70
1603	0.7	22.87	4.57	0.97	328	15.7	57.1	5.70

Valyn Paouncil 4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water slightly turbid

Sampling Personnel Daniel Mays
~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather _____

Date 4-3-13

Monitoring Well Number 26-MW-07

Sample Collection Time 1605

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 17'

Depth to water from top of casing _____

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) _____

Screened Interval (ft bls) _____

Casing Diameter: _____

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)	
1535	start	17.99	6.98	0.69	726	64.5	-50.2	4.80	
1540	0.1	18.11	6.93	0.54	725	35.5	-50.5	5.55	slow flow
1545	0.2	18.28	6.82	0.35	722	22.0	-50.0	5.90	
1550	0.3	18.37	6.80	0.35	717	17.4	-49.1	6.10	lowest flow setting
1555	0.4	18.26	6.78	0.24	705	14.8	-49.7	6.30	
1600	0.5	18.31	6.74	0.22	697	12.4	-50.8	6.40	
1605	0.6	18.22	6.73	0.22	695	12.5	-52.7	6.50	
					DBM				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks _____

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Site Location: Ft. Stewart, GA (FST-26)

Rep./Field Blank No. _____

Weather Partly cloudy / 70's

Date 4-3-13

Monitoring Well Number MW-59

Sample Collection Time 1635

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) _____

Depth to water from top of casing 4.07

Water Column ___ (ft) Gallons in well _____

Evacuation Volume (x 3) = Low Flow

Casing stick-up above concrete (feet) Flush mount

Screened Interval (ft bls) _____

Casing Diameter: 2"

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1605

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1610	0.1	20.39	5.19	1.15	361	23.0	46.0	4.40
1615	0.2	20.36	5.19	1.12	363	21.9	50.1	4.40
1620	0.3	20.34	5.20	1.10	363	19.7	51.3	4.40
1625	0.4	20.36	5.20	1.09	362	19.8	55.6	4.71
1630	0.5	20.39	5.21	1.07	361	20.0	57.1	4.75
1635	0.6	20.36	5.21	1.07	360	19.8	56.8	4.75

Valyn Paouncic 4-3-13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Water Slightly Turbid

Sampling Personnel Daniel Mays / ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number 26-MW-28R

Rep./Field Blank No.

Sample Collection Time ~~1630~~ 1650

Weather

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13'

Casing stick-up above concrete (feet)

Depth to water from top of casing

Screened Interval (ft bls)

Water Column ___ (ft) Gallons in well

Casing Diameter:

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters:

	Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
16	1420	start	19.80	3.20	0.41	14558	8.81	314.5	6.80
16	1425	0.1	19.81	3.19	0.33	13832	5.66	306.1	6.90
16	1430	0.2	19.79	3.21	0.30	12902	3.69	302.3	6.95
16	1435	0.3	19.75	3.26	0.45	12166	3.77	296.0	7.00
16	1440	0.4	19.65	3.34	0.76	11738	4.86	291.1	7.05
16	1445	0.5	19.59	3.40	1.11	11520	3.51	284.7	7.09
16	1450	0.6	19.49	3.48	1.25	11301	2.80	280.4	7.18
				DBM					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 4-3-13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-15R

Rep./Field Blank No.

Sample Collection Time ~~1715~~ 1720

Weather Cloudy, 70's

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.0

Casing stick-up above concrete (feet) 2'

Depth to water from top of casing 4.03

Screened Interval (ft bls) 3.0 - 13.0

Water Column 6.97 (ft) Gallons in well 1.12

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start : 1645 mS/cm

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1650	0.2	19.33	~~3~~.01	0.87	14451	4.87	370.6	6.36
1655	0.2	19.29	2.11	0.97	13830	4.06	373.1	6.36
1700	0.3	19.21	2.10	0.80	13539	4.35	374.2	6.36
1705	0.4	19.22	2.13	0.86	13250	3.07	367.3	6.50
1710	0.5	19.18	2.14	0.93	13130	2.96	364.9	6.50
1715	0.6	19.15	2.24	1.15	13056	2.20	361.9	6.50
		DBM						

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Danny Mays ~~Jared Fino~~/Valyn Paouncic

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/17/17

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-40

Rep./Field Blank No.

Sample Collection Time 0915

Weather 70°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 12.3

Casing stick-up above concrete (feet) 2.7

Depth to water from top of casing 7.38

Screened Interval (ft bls) 2.3 - 12.3

Water Column 4.92 (ft) Gallons in well 0.79

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 0843

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0848	0.1	20.91	4.39	2.45	93	33.4	252.5	7.84
0853	0.2	20.95	4.39	2.29	91	28.8	251.4	7.91
0858	0.3	21.02	4.39	2.28	89	17.3	258.6	8.03
0903	0.4	21.13	4.41	1.87	88	12.3	254.4	8.08
0908	0.5	21.22	4.45	1.70	88	9.90	240.3	8.14
0913	0.6	21.27	4.48	0.79	88	7.97	234.3	8.18
			JMF					
				10/17/17				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	JMF		
		10/17/17	

Remarks Flow Rate: 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-49

Rep./Field Blank No. —

Sample Collection Time 1809

Weather 80°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.5

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 8.91

Screened Interval (ft bls) 3.9-13.5

Water Column 4.59 (ft) Gallons in well 0.73

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1732

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1737	0.1	23.24	6.03	4.28	153	686	196.5	9.40
1742	0.2	23.29	5.65	3.74	157	>1000	216.3	9.37
1747	0.3	23.27	5.60	3.25	159	>1000	212.7	9.39
1752	0.4	23.23	5.55	2.76	161	>1000	210.9	9.41
1757	0.5	23.19	5.50	2.56	161	>1000	218.4	9.41
1802	0.6	23.19	5.47	2.45	160	411	214.8	9.40
1807	0.7	23.21	5.46	2.27	160	332	219.4	9.40
			5.46	10/16/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	JMP 10/16/13		

Remarks Pump Rate: 100 mL/min

Sampling Personnel Jared Pino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/17/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-39

Rep./Field Blank No. —

Sample Collection Time 0928

Weather 65°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 25.1

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 9.21

Screened Interval (ft bls) 20.1 - 25.1

Water Column 15.89 (ft) Gallons in well 2.54

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 0855

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0900	0.1	20.92	6.49	0.68	351	6.39	-16.7	9.72
0905	0.2	20.87	6.52	0.46	352	5.06	-23.3	9.71
0910	0.3	20.88	6.53	0.38	349	4.03	-23.8	9.71
0915	0.4	20.88	6.54	0.31	345	3.94	-23.2	9.71
0920	0.5	20.88	6.54	0.28	342	3.20	-22.6	9.70
0925	0.6	20.88	6.53	0.27	336	2.88	-21.6	9.71

10/17/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-42

Rep./Field Blank No. —

Sample Collection Time 1730

Weather 80°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 22.0

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing ~~9.48~~ 9.78

Screened Interval (ft bls) 17.0 - 22.0

Water Column 12.22 (ft) Gallons in well 1.96

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1658

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1703	0.1	22.95	6.42	6.48	333	46.0	190.7	10.17
1708	0.2	22.84	6.42	6.55	333	11.0	191.8	10.24
1713	0.3	22.77	6.43	6.28	333	5.32	192.6	10.27
1718	0.4	22.69	6.43	6.74	332	4.62	193.3	10.31
1723	0.5	22.63	6.44	6.53	331	4.69	194.5	10.33
1728	0.6	22.57	6.44	6.26	331	6.96	194.9	10.36

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate — 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-32

Rep./Field Blank No. —

Sample Collection Time 1632

Weather 80°, sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.6

Casing stick-up above concrete (feet) 3.0

Depth to water from top of casing 9.53

Screened Interval (ft bls) 3.6 - 13.6

Water Column 4.07 (ft) Gallons in well 0.65

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 1600

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1605	0.1	23.37	5.52	3.12	86	0.64	207.0	10.24
1610	0.2	23.32	5.45	3.18	87	533	219.1	10.23
1615	0.3	23.36	5.40	3.43	85	1650	235.1	10.25
1620	0.4	23.27	5.38	3.76	85	865	240.4	10.27
1625	0.5	23.26	5.38	3.94	85	>1000	245.4	10.28
1630	0.6	23.14	5.36	3.93	83	>1000	249.2	10.31

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate - 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-52

Rep./Field Blank No. —

Sample Collection Time 1530

Weather 80°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 30.4

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 10.49

Screened Interval (ft bls) 25.9 — 30.4

Water Column 19.91 (ft) Gallons in well 3.19

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1457

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1502	0.1	22.33	6.70	0.65	1185	2.73	-66.7	10.47
1507	0.2	22.43	6.79	0.46	1190	1.66	-57.0	10.46
1512	0.3	22.34	6.84	0.40	1195	1.42	-59.5	10.46
1517	0.4	22.24	6.87	0.33	1197	0.98	-62.3	10.44
1522	0.5	22.31	6.89	0.30	1196	1.26	-63.1	10.44
1527	0.6	22.39	6.89	0.29	1196	0.88	-62.8	10.43

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate — 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-51

Rep./Field Blank No. —

Sample Collection Time 1446

Weather 80°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.5

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 7.46

Screened Interval (ft bls) 3.9 - 13.5

Water Column 6.04 (ft) Gallons in well 0.97

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1414

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1419	0.1	22.59	5.88	1.89	243	15.6	124.1	8.06
1424	0.2	22.65	5.79	1.81	240	12.0	142.1	8.21
1429	0.3	22.68	5.77	1.77	236	10.1	154.0	8.28
1434	0.4	22.71	5.75	1.69	232	7.51	156.7	8.34
1439	0.5	22.65	5.74	1.75	232	9.39	165.2	8.39
1444	0.6	22.64	5.74	1.68	233	7.39	163.6	8.42
~~1449~~								

DR 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate — 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-57

Rep./Field Blank No. —

Sample Collection Time 1244

Weather 70°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.4

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 9.33

Screened Interval (ft bls) 26.9 - 31.4

Water Column 22.07 (ft) Gallons in well 3.53

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 1211

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1216	0.1	22.81	6.83	1.56	744	8.81	-58.8	9.61
1221	0.2	22.91	6.96	1.40	756	2.09	-47.0	9.62
1226	0.3	23.12	7.01	1.08	777	1.07	-26.5	9.62
1231	0.4	22.77	7.04	1.03	803	1.70	-1.8	9.63
1236	0.5	22.72	7.06	0.92	806	0.64	14.1	9.62
1241	0.6	22.65	7.06	0.84	811	0.68	30.2	9.62

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate - 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-31

Rep./Field Blank No. —

Sample Collection Time 1154

Weather 70°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 14.0

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 8.85

Screened Interval (ft bls) 4.0 – 14.0

Water Column 5.15 (ft) Gallons in well 0.82

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: ~~Pre~~ start – 1121

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1126	0.1	22.53	5.51	1.21	292	>1000	78.6	9.77
1131	0.2	22.50	5.51	0.48	283	>1000	84.7	10.38
1136	0.3	22.53	5.50	0.42	283	>1000	87.3	10.57
1141	0.4	22.56	5.51	0.45	283	>1000	86.8	10.71
1146	0.5	22.56	5.51	0.39	281	>1000	83.6	10.76
1151	0.6	22.54	5.51	0.41	267	>1000	76.2	10.78

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate – 100mL/min

* very silty

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-43

Rep./Field Blank No. —

Sample Collection Time 1104

Weather 70° - Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 22.7

Casing stick-up above concrete (feet) 3.5

Depth to water from top of casing 8.82

Screened Interval (ft bls) 17.7 - 22.7

Water Column 13.88 (ft) Gallons in well 2.22

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1032

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1037	0.1	21.42	5.99	3.21	219	3.28	93.2	8.93
1042	0.2	21.41	5.91	1.76	216	2.43	87.1	8.92
1047	0.3	21.41	5.78	1.43	211	9.39	57.1	8.94
1052	0.4	21.38	5.63	1.48	206	7.50	43.4	8.97
1057	0.5	21.34	5.64	0.80	204	3.09	37.1	8.96
1102	0.6	21.33	5.61	0.60	204	3.33	35.7	8.92

Dan Rhodes 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-33

Rep./Field Blank No. —

Sample Collection Time 1014

Weather 65°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.6

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 6.87

Screened Interval (ft bls) 3.6 - 13.6

Water Column 6.73 (ft) Gallons in well 1.08

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 0942

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0947	0.1	21.17	5.35	0.70	129	228	84.1	7.83
0952	0.2	21.20	5.28	0.60	129	50.3	79.1	7.81
0957	0.3	21.22	5.26	0.54	131	24.0	77.9	7.92
1002	0.4	21.29	5.23	0.41	132	15.6	73.0	7.93
1007	0.5	21.33	5.23	0.37	134	9.80	72.3	7.95
1012	0.6	21.36	5.24	0.32	137	6.04	72.3	7.95

10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate — 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-47

Rep./Field Blank No. —

Sample Collection Time —

Weather 66°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.5

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 4.58

Screened Interval (ft bls) 3.9 - 13.5

Water Column 8.92 (ft) Gallons in well 1.43

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 0909

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0914	0.1	20.91	—	—	611	>1000	177.7	—
~~0919~~	~~0.2~~							
~~0924~~	~~0.3~~	DLR						
~~0929~~	~~0.4~~							
	~~0.5~~							
	~~0~~							
				DLR	10/16/13			

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks unable to sample - well filled with silt/clay ~~[illegible]~~ at ~ 7ft.

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-56

Rep./Field Blank No. ~

Sample Collection Time 1017

Weather 75°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.4

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 11.31

Screened Interval (ft bls) 26.9 - 31.4

Water Column 20.09 (ft) Gallons in well 3.21

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 0944

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0949	0.1	21.36	6.98	4.69	1705	20.8	126.6	11.61
0954	0.2	21.33	7.11	4.28	1710	17.0	116.2	11.62
0959	0.3	21.34	7.15	4.20	1715	17.7	109.8	11.62
1004	0.4	21.37	7.11	4.23	1803	33.9	61.7	11.62
1009	0.5	21.38	7.09	3.52	1828	21.6	39.1	11.62
1014	0.6	21.40	7.10	3.26	1837	19.4	31.3	11.62

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-21

Rep./Field Blank No. —

Sample Collection Time 0937

Weather 70°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 15.1

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 10.05

Screened Interval (ft bls) 5.1-15.1

Water Column 5.05 (ft) Gallons in well 0.81

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 0905

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
0910	0.1	21.18	3.67	3.29	568	96.8	397.9	10.64
0915	0.2	21.25	3.62	2.94	571	130	419.5	10.86
0920	0.3	21.36	3.61	2.98	572	132	420.0	10.99
0925	0.4	21.51	3.62	2.92	577	148	423.7	11.25
0930	0.5	21.66	3.62	2.94	580	170	419.3	11.33
0935	0.6	21.78	3.61	2.87	591	197	417.3	11.46

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate = 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-50

Rep./Field Blank No.

Sample Collection Time 1723

Weather 80F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.4

Casing stick-up above concrete (feet) ~3'

Depth to water from top of casing 12.00

Screened Interval (ft bls) 29.6 - 31.4

Water Column 19.4 (ft) Gallons in well 3.10

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1651

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1656	0.1	22.89	7.01	0.89	1535	2.36	-78.4	12.05
1701	0.2	23.13	6.98	0.63	1534	1.19	-77.1	12.04
1706	0.3	23.13	6.94	0.52	1541	1.43	-76.6	12.03
1711	0.4	23.07	6.92	0.50	1545	1.32	-79.1	12.03
1716	0.5	22.94	6.91	0.41	1546	1.49	-80.7	12.03
1721	0.6	22.80	6.89	0.36	1549	1.64	-77.6	12.03
			JMF	10/16/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
		JMF 10/16/13	

Remarks Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-58

Rep./Field Blank No. MS/MSD

Sample Collection Time 1625

Weather 85°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 12.68

Screened Interval (ft bls) 26-31

Water Column 18.32 (ft) Gallons in well 2.93

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1552

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1557	0.1	22.96	7.08	1.21	1206	4.54	54.2	12.71
1602	0.2	23.04	7.07	0.83	1214	2.19	44.6	12.71
1607	0.3	22.99	7.03	0.68	1220	2.19	42.5	12.71
1612	0.4	23.05	6.97	0.68	1220	1.45	43.0	12.71
1617	0.5	22.77	6.91	0.61	1225	2.43	44.7	12.71
1622	0.6	22.62	6.95	0.60	1233	1.90	45.9	12.71

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate = 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-53

Rep./Field Blank No. ~~—~~

Sample Collection Time 1537

Weather 80°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.1

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 11.81

Screened Interval (ft bls) 26.7-31.1

Water Column 19.29 (ft) Gallons in well 3.10

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1505

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1510	0.1	22.60	7.27	635	1.15	10.5	-111.2	11.90
1515	0.2	23.00	7.21	0.55	685	4.12	-120.0	11.90
1520	0.3	23.08	7.10	0.42	718	2.53	-118.0	11.89
1525	0.4	23.21	7.04	0.41	735	2.17	-112.1	11.90
1530	0.5	22.98	7.01	0.37	740	2.22	-110.0	11.90
1535	0.6	22.77	7.02	0.41	744	1.92	-107.4	11.90

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate ~ 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-38

Rep./Field Blank No. —

Sample Collection Time 1433

Weather 80°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 29.1

Casing stick-up above concrete (feet) ~2

Depth to water from top of casing 9.53

Screened Interval (ft bls) 24.1 - 29.1

Water Column 19.57 (ft) Gallons in well 3.13

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1400

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1405	0.1	22.98	7.00	3.30	1680	517	86.4	10.08
1410	0.2	22.78	7.22	3.14	1694	457	78.9	10.11
1415	0.3	22.66	7.27	2.94	1698	493	77.5	10.14
1420	0.4	22.59	7.31	2.81	1692	504	77.2	10.14
1425	0.5	22.53	7.32	2.79	1686	537	76.5	10.16
1430	0.6	22.55	7.33	2.69	1687	588	75.5	10.16

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-41

Rep./Field Blank No. —

Sample Collection Time 1239

Weather 80F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 12

Casing stick-up above concrete (feet) +3

Depth to water from top of casing 7.87

Screened Interval (ft bls) 2.0 - 12.0

Water Column 4.13 (ft) Gallons in well 0.66

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1205

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1210	0.1	23.06	3.98	4.08	867	39.9	446.6	8.36
1215	0.2	23.14	3.82	3.77	870	79.4	444.4	8.41
1220	0.3	23.14	3.80	3.73	868	94.7	441.4	8.45
1225	0.4	23.15	3.76	3.86	872	84.3	449.1	8.50
1230	0.5	23.13	3.75	3.88	878	60.8	447.6	8.53
1235	0.6	23.18	3.75	4.04	878	41.7	444.8	8.56
			JMF					
				10/16/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	JMF	10/16/13	

Remarks Flow Rate: 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-54

Rep./Field Blank No. Dup-2

Sample Collection Time 1155

Weather 80F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.4

Casing stick-up above concrete (feet) .3

Depth to water from top of casing 10.78

Screened Interval (ft bls) 26.9-31.4

Water Column 20.62 (ft) Gallons in well 3.23

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1123

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1128	0.1	22.56	6.99	0.98	864	8.13	-75.6	10.94
1133	0.2	22.81	7.06	0.78	864	5.45	-89.8	10.95
1138	0.3	22.89	7.11	0.66	887	5.71	-94.1	10.95
1143	0.4	22.85	7.11	0.56	921	6.07	-100.8	10.95
1148	0.5	22.92	7.10	0.48	929	4.54	-103.4	10.95
1153	0.6	23.03	7.09	0.47	935	4.63	-102.8	10.95

JMF 10/16/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/16/13

Remarks Flow Rate: 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/16/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-19

Rep./Field Blank No. ~~

Sample Collection Time 1111

Weather 75°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16.3

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 8.51

Screened Interval (ft bls) 6.3 - 16.3

Water Column 7.79 (ft) Gallons in well 1.25

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1030

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1035	0.1	23.11	6.22	5.57	383	>1000	157.2	9.83
1040	0.2	23.02	5.76	4.71	381	>1000	173.5	10.16
1045	0.3	22.95	5.57	4.26	378	>1000	185.9	10.60
1050	0.4	22.94	5.50	4.11	377	>1000	190.6	10.80
1055	0.5	22.86	5.31	5.35	288	>1000	263.2	10.95
1100	0.6	22.85	5.20	5.96	272	>1000	270.4	11.24
1105	0.7	22.91	5.18	6.00	271	>1000	271.6	11.35
1110	0.8	22.95	5.16	5.95	268	>1000	272.3	11.46
			JAF	10/16/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	JAF	10/16/13	

Remarks Flow Rate = 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-20

Rep./Field Blank No. —

Sample Collection Time 1734

Weather 75°, Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16.0

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 8.54

Screened Interval (ft bls) 6.0-16.0

Water Column 7.46 (ft) Gallons in well 1.19

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1702

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1707	0.1	22.65	5.80	3.90	108	890	226.4	9.34
1712	0.2	22.61	5.37	3.45	120	>1000	269.1	9.72
1717	0.3	22.59	5.09	3.15	140	>1000	291.4	10.22
1722	0.4	22.53	4.94	3.03	153	>1000	310.9	10.89
1727	0.5	22.50	4.95	4.05	145	>1000	311.6	11.75
1732	0.6	22.46	4.99	3.67	138	>1000	297.9	12.47

Drum 10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate - 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-55

Rep./Field Blank No. ~~MW~~ Dup-01

Sample Collection Time 1644

Weather 75° - sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 31.4

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 12.61

Screened Interval (ft bls) 26.9 - 31.4

Water Column 18.79 (ft) Gallons in well 3.00

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 1611

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1616	0.1	22.08	7.05	2.33	739	2.88	-26.4	12.57
1621	0.2	22.00	7.06	0.79	746	1.18	-42.9	12.55
1626	0.3	21.88	7.05	0.43	754	0.93	-62.3	12.54
1631	0.4	21.84	7.06	0.29	762	1.11	-64.6	12.52
1636	0.5	21.82	7.06	0.24	768	1.10	-55.0	12.52
1641	0.6	21.80	7.06	0.21	774	0.76	-47.9	12.51

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate - 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-23

Rep./Field Blank No. /

Sample Collection Time 1729

Weather 85°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 23

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 11.31

Screened Interval (ft bls) 13-23

Water Column 11.69 (ft) Gallons in well 1.87

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Stat. 1656

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1701	0.1	22.31	6.20	5.32	796	62.8	48.2	12.36
1706	0.2	22.25	6.19	4.84	796	55.2	51.0	12.41
1711	0.3	22.20	6.20	5.11	791	57.1	52.4	12.48
1716	0.4	22.14	6.21	4.72	788	53.1	53.1	12.55
1721	0.5	22.09	6.20	5.14	786	56.5	55.4	12.59
1726	0.6	22.03	6.20	4.96	785	52.4	57.4	12.62
			SMP					
				10/15/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	SMP	10/15/13	

Remarks Flow Rate = 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-09

Rep./Field Blank No. —

Sample Collection Time 1627

Weather 85°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16

Casing stick-up above concrete (feet) ~3

Depth to water from top of casing 6.49

Screened Interval (ft bls) 6–16

Water Column 9.51 (ft) Gallons in well 1.52

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1550

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1555	0.1	23.00	5.78	0.97	140	101	31.1	7.37
1600	0.2	23.26	5.64	1.92	97	89.6	39.2	7.19
1605	0.3	23.70	5.62	1.64	89	59.9	39.5	7.16
1610	0.4	23.21	5.62	1.26	83	41.2	39.5	7.17
1615	0.5	23.08	5.61	1.05	74	28.4	37.3	7.19
1620	0.6	22.96	5.57	0.89	70	22.3	36.8	7.21
1625	0.7	22.83	5.55	0.76	70	21.6	37.0	7.23

JMF 10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/10/13

Remarks Low Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-07

Rep./Field Blank No. ~

Sample Collection Time 1546

Weather 75°, partly

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 15.25

Casing stick-up above concrete (feet) 2.5

Depth to water from top of casing 5.85

Screened Interval (ft bls) 5.25-15.25

Water Column 9.4 (ft) Gallons in well 1.5

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: 1513

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1518	0.1	22.23	6.12	0.29	897	3.84	-84.0	8.40
1523	0.2	22.23	6.19	0.18	875	23.7	-89.1	8.38
1528	0.3	22.24	6.22	0.12	859	13.7	-89.2	8.51
1533	0.4	22.20	6.23	0.09	849	12.5	-89.5	8.66
1538	0.5	22.17	6.25	0.08	844	11.4	-89.6	8.78
1543	0.6	22.10	6.27	0.08	831	11.3	-89.0	8.88

Dan 10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate - 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-28R

Rep./Field Blank No. —

Sample Collection Time 1458

Weather 70°, partly cloudy

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) ~~30~~ 13.0

Casing stick-up above concrete (feet) 2.5ft

Depth to water from top of casing 7.31

Screened Interval (ft bls) 3.0-13.0

Water Column 5.69 (ft) Gallons in well 0.91

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 1425

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1430	0.1	25.46	3.54	0.24	7461	7.10	237.5	7.66
1435	0.2	25.87	3.55	0.15	7599	2.79	237.5	7.94
1440	0.3	25.24	3.53	0.13	7757	3.42	230.2	8.22
1445	0.4	25.68	3.50	0.11	8033	3.49	232.4	8.42
1450	0.5	25.95	3.50	0.13	8201	3.46	239.2	8.61
1455	0.6	25.62	3.48	0.14	8489	3.84	239.4	8.83

10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks flow rate — 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-06R

Rep./Field Blank No. —

Sample Collection Time 1533

Weather 85° Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13

Casing stick-up above concrete (feet) Flush ~3'

Depth to water from top of casing 5.89

Screened Interval (ft bls) 3-13

Water Column 7.11 (ft) Gallons in well 1.14

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1500

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1505	0.1	23.88	6.20	0.61	2852	29.8	-25.4	6.34
1510	0.2	23.65	6.16	0.50	2846	27.6	-24.4	6.32
1515	0.3	23.66	6.15	0.86	2843	21.3	-20.8	6.32
1520	0.4	23.48	6.14	0.43	2844	19.0	-16.5	6.34
1525	0.5	23.58	6.13	0.44	2865	12.9	-17.3	6.38
1530	0.6	23.53	6.10	0.37	2896	10.7	-9.5	6.38
			JMF	10/15/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
		JMF 10/15/13	

Remarks Flow Rate: 100mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-36R

Rep./Field Blank No. —

Sample Collection Time 1455

Weather 85°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 25

Casing stick-up above concrete (feet) ~~.84~~ 2.3'

Depth to water from top of casing 10.12

Screened Interval (ft bls) 20-25

Water Column 14.88 (ft) Gallons in well 2.38

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1421

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1426	6.1	23.65	6.63	1.36	1389	11.4	-110.2	10.18
1431	6.2	23.49	6.71	0.94	1350	3.23	-133.2	10.17
1436	0.3	23.57	6.75	0.69	1317	2.30	-124.2	10.17
1441	0.4	23.19	6.76	0.57	1306	1.89	-137.9	10.18
1446	0.5	23.29	6.77	0.39	1301	1.86	-130.6	10.18
1451	0.6	23.32	6.76	0.35	1304	1.70	-135.7	10.19
			JMF					
				10/15/13				

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
		JMF 10/16/13	

Remarks Flow Rate: 160 mL/min

Sampling Personnel Jared Finn/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-15R

Rep./Field Blank No. —

Sample Collection Time 1259

Weather 85°F Sunny

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 17

Casing stick-up above concrete (feet) —

Depth to water from top of casing 6.34

Screened Interval (ft bls) 3-13

Water Column 6.66 (ft) Gallons in well 1.06

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start: 1226

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1231	0.1	26.40	3.40	0.66	8160	5.86	331.1	6.60
1236	0.2	26.44	3.52	0.37	7422	6.56	315.3	6.66
1241	0.3	26.50	3.59	0.27	7128	6.05	300.5	6.70
1246	0.4	26.13	3.61	0.23	7090	5.71	293.1	6.75
1251	0.5	26.21	3.59	0.21	7099	4.60	283.1	6.81
1256	0.6	25.80	3.61	0.17	7114	4.91	276.4	6.86
			JMF 10/15/13					

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl
	JMF 10/15/13		

Remarks Low Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-59

Rep./Field Blank No.

Sample Collection Time 1304

Weather 70°, partly cloudy

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.0

Casing stick-up above concrete (feet) Flush

Depth to water from top of casing 4.38

Screened Interval (ft bls) 3.0-13.0

Water Column 8.62 (ft) Gallons in well 1.38

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1232

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1237	0.1	28.12	5.74	0.42	671	6.70	51.2	4.83
1242	0.2	28.10	5.74	0.26	670	3.89	35.0	4.92
1247	0.3	27.98	5.73	0.25	665	5.49	20.5	4.98
1252	0.4	28.08	5.73	0.23	658	6.60	16.2	5.03
1257	0.5	27.87	5.73	0.20	656	7.06	12.2	5.17
1302	0.6	28.12	5.74	0.18	653	8.10	8.2	5.21

10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate – 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-25R

Rep./Field Blank No. ~~/~~

Sample Collection Time 1218

Weather 70°, Sunny, Breezy

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13.0

Casing stick-up above concrete (feet) flush

Depth to water from top of casing 4.97

Screened Interval (ft bls) 3.0 - 13.0

Water Column 8.03 (ft) Gallons in well 1.28

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: start - 1146

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1151	0.1	28.26	5.66	0.34	487	0.88	34.60	5.23
1156	0.2	28.35	5.57	0.18	478	3.04	47.8	5.43
1201	0.3	28.38	5.50	0.16	472	4.87	59.2	5.64
1206	0.4	27.88	5.53	0.14	485	5.72	48.4	5.88
1211	0.5	27.96	5.54	0.08	494	6.62	39.7	6.10
1216	0.6	28.07	5.65	0.10	513	6.70	23.1	6.23

DR 10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow rate - 100 mL/minute

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number ~~MW-26~~ MW-35

Rep./Field Blank No. —

Sample Collection Time 1138

Weather 70°, Partly cloudy

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 28.0

Casing stick-up above concrete (feet) —

Depth to water from top of casing 8.56

Screened Interval (ft bls) 23.0 - 28.0

Water Column 19.44 (ft) Gallons in well 3.11

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start - 1106

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1111	0.1	26.41	6.21	1.02	470	1.55	-55.6	8.68
1116	0.2	26.33	6.23	0.58	486	1.48	-55.4	8.69
1121	0.3	26.24	6.24	0.44	491	1.61	-50.7	8.71
1126	0.4	25.85	6.23	0.36	492	1.83	-48.3	8.69
1131	0.5	25.66	6.23	0.30	492	1.21	-42.9	8.68
1136	0.6	25.73	6.23	0.28	493	0.88	-38.1	8.70

10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

Remarks Flow-Rate — 100mL - turbidity

Sampling Personnel Jared Fino/Dan Rhodes

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ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/17

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-24R

Rep./Field Blank No. MS — MSD

Sample Collection Time 1215

Weather 75°F Partly Cloudy

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 13

Casing stick-up above concrete (feet) —

Depth to water from top of casing 4.78

Screened Interval (ft bls) 3-13

Water Column 8.22 (ft) Gallons in well 1.31

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1140

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1145	0.1	27.98	2.51	0.56	12505	6.24	373.4	5.01
1150	0.2	28.29	2.45	0.35	12300	4.27	374.0	5.07
1155	0.3	28.37	2.43	0.28	12195	3.41	375.1	5.10
1200	0.4	28.40	2.41	0.26	12158	3.01	375.9	5.14
1205	0.5	28.35	2.44	0.23	12115	1.96	376.8	5.17
1210	0.6	28.19	2.45	0.19	12136	2.40	377.2	5.20

JAF 10/15/17

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JAF 10/15/17

Remarks Flow Rate: 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

ARCADIS

WATER SAMPLING LOG

Project No. GP08HAFS.2012.N26GM

Date 10/15/13

Site Location: Ft. Stewart, GA (FST-26)

Monitoring Well Number MW-16

Rep./Field Blank No. —

Sample Collection Time 1131

Weather 75°F Overcast

Sampling Method Low Flow Peristaltic

Evacuation Data:

Depth to bottom of well (ft bls) 16

Casing stick-up above concrete (feet) —

Depth to water from top of casing 5.51

Screened Interval (ft bls) 6-16

Water Column 10.49 (ft) Gallons in well 1.68

Casing Diameter: 2"

Evacuation Volume (x 3) = Low Flow

Casing Volume 1"=0.04 gal gal/ft, 2"=0.16 gal/ft

Field Parameters: Start 1058

Time	Gallons Purged	Temp (°C)	pH (SU)	DO (mg/L)	Spec. Cond. (µmhos/cm)	Turb (NTU)	Redox (mV)	Depth to Water (ft)
1103	0.1	26.34	6.24	2.58	566	5.67	-61.4	5.90
1108	0.2	26.42	6.23	0.80	562	6.34	-58.6	6.01
1113	0.3	26.58	6.23	0.52	560	6.96	-54.6	6.08
1118	0.4	27.24	6.21	0.26	551	14.7	-51.8	6.14
1123	0.5	26.72	6.19	0.23	526	34.5	-62.0	6.15
1128	0.6	26.45	6.19	0.21	525	35.8	-63.0	6.10

JMF 10/15/13

Analyses:

Check if Sampled	Analytical Parameter	Sample Bottles	Preservative
✓	BTEX, MTBE	3X 40 mL glass vial	HCl

JMF 10/15/13

Remarks Flow Rate = 100 mL/min

Sampling Personnel Jared Fino/Dan Rhodes

Appendix G

O&M Data Logs

FST-26 Biosparge System Fort Stewart, Georgia

Site: Fort Stewart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins ✓ Date: 1-30-13 Pg 1 of 3

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM	1015 AM	12.2	NM	231°F	in manifold on arrival
SYSTEM					
BSP-01	1119	10.3	110		
BSP-02	1110	10	180		
BSP-03	1102	10.2	70-80		
BSP-04	1125	10.3	55-60		
BSP-05	1127	10.2	55		flowmeter dirty bolt
BSP-06	1123	10.5	50		Flow ball bouncing in meter Bolt
BSP-07	off				
BSP-08	1128	10.2	110		flowmeter dirty water in meter
BSP-09	1130	10.3	120		" "
BSP-10	1133	10.2	<50		water in flowmeter
BSP-11	1208	10.4	55		water flow in flowmeter
BSP-12	1210	10.4	55		" " " " dirty
BSP-13	1238	10.5	50		bouncing water flow in meter dirty
BSP-14	1241	10.5	130		dirty
BSP-15	1243	10.5	<50		"
BSP-16	1245	10.4	<50		
BSP-17	1247	10.1	200		

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

AT Store 0930. P/U water, ice, paper towels, crackers.

At Site 0950. cooling fan is off. Also found tubing to manoid switch broke melted away from contact point w/ manifold This tube is HDPE - needs to be copper/ S.S/ OTHER. Fan thermostat bypassed - already. FAN'D Breaker in control panel tripped. Reset ✓ Fan is running 231°F

Shelly Gibbons update Mid Atlantic / courtland. Till 1105

1110 start Readings Shawn Evans

1130 DO too low for cal. replace DO sensor cap + restart calibration

1250 readings done sys. off. Fan not working again. Let Shelly know.

Fan pulling 32-33 Amps on a 15 Amp breaker. Fan blade turns - tight.

Call Shawn Evans - leave message - Call Wayne Pope - closest man is S. Atl.

YSI 7.40@ 1103 25.34°C / 1112 7.41@ 25.54 / @ 1138 7.14 mg/L DO@ 26.42°F

YSI Readings done @ 1600 YSI put away. I work on Fan. See pg 2

Site: Fort Stewart, FST-26, Biosparge, Former Tanker Purging Area

Sampler Ivan Jenkins

DATE: 1-30-13

Well ID	Screen Interval (ft bls)	Start Time	W.L. Depth (feet)	Reading Depth	GROUNDWATER Temp (°C)	DO (mg/L)	SC* (mS/cm²)	pH* (SU)	ORP* (mV)	@ = est - YSI cable taped @ 10', 15', 20', 25', 30' NOTES
MW-18	4.9 - 14.9	1443	12 e	14.50	20.11	5.97	69	4.71	-31.5	↓
MW-19	6.3 - 16.3	1540	12	14.50	19.61	7.41	150	5.19	51.45	Jumping SP Cond, DO @ 1542:00 = 6.73, SPC=199, pH = 5.04
MW-20	6.0 - 16.0	1414	13.5 e	15.00	20.70	9.48	118	4.11	45.9	SP Cond jumping 65 - 400
MW-21	5.1 - 15.1	1434	12' e	~~14.00~~ 13.50	20.06	7.03	145	3.35	294	readings @ 14'
MW-22	4.0 - 14.0	1424	10	~~12~~ 13.00	19.25	1.42	112	4.39	-50.0	w.l. @ 10' Measurements @ 12'
MW-23	13.0 - 23.0	1429	11.5	15.00	20.07	7.01	1442	6.36	26.0	7.01 = DO
MW-32	3.6 - 13.6	1518	12.5	15.00	20.24	8.14	140-170	6.17	36 ↑	DO = 7.8 - 8.12. Believe well still sweating same w/ SpCond
MW-38	24.1 - 29.1	1534	14.5	26.00	20.70	10.60	1148	7.07	31	
MW-41	2.0 - 12.0	1532	13	~~14~~ 13.5 B-6"	19.63	7.65	96	4.01	6.2 ↓	hard bottom 15' TD
MW-42	17.0 - 22.0	1526	12.5-13	20.00	20.58	9.66	1179	4.42	143	
MW-49	3.9 - 13.5	1500	12.5	~~13.5~~ 14.00	19.86	8.26	181	5.74	91	TD barely below water level. soft bottom - silt in probe YSI
MW-50	26.9 - 31.4	1504	13.5	29.00	21.35	4.80	992	6.92	16.5 ↑	DO = 4.68 after 4 min @ 1508
MW-53	26.7 - 31.2	1454	13	29.00	20.57	1.10	644	6.77	-21	probe in for 6-8 min.
MW-52	-			29.00						
MW-54	26.9 - 31.4	1550	15	28.50	21.04	5.38	664	7.06	26.5	
MW-55	26.9 - 31.4	1419	14' e	29.00	21.54	5.60	486	6.73	21.7	
MW-56	26.9 - 31.4	1438	13' e	29.00	21.01	4.89	927	6.69	2.7	
MW-58	26.0 - 31.0	1512	13.5	28.50	20.69	1.14	1334	6.74	-26	

* - Only collect if you have time.

The following meter was rented from Pine and used for the readings: YSI MPS 556-02 w/Barometer and a 20 meter cable.

AT calibration press Baro 29.87

1205 restart DO cal. w/New Membrane. YSI 556 10:57 @ 24.53°C / Talk to Pine RE DO 90% mg/L rose to 170,000 & 12 mg/L. We eliminated old calibrations - @ Hg screen hold enter press ESC. Then DO settled to 140,000 DO% 10.87 mg/L @ 28.54°C Time 12:35 → enter now 100.2% & 7.25 mg/L
Calibrate all other YSI data pts, Spec Cond, pH 7+4, ORP all good.

@ 1525 "? press Baro 29.79

MW19 - Probe covered in silt on removal from well.
1600 readings done. YSI cleaned + put away. Waterproofing Truck + tools
1630 take off fanscreen. Fan is dirty, dusty, hard to find labels. clean off labels + photograph.
OPEN Peckerhead - 2 of the wire nuts abraided - not all the way through. Some yellow dust inside peckerhead from wire nuts. All are tight + No wires look melted, brittle, too hot or loose.
Put it all back together.
1730 - 1800 Talk to Shelly about fan, readings 25 min.

FST-26 Biosparge System Fort Stewart, Georgia

Site: Fort Stewart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins ✓ Arr site 1400 **Date:** 3-27-13

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold	
SYSTEM	1424	12.3	NM	90	w/ oil filled	Temp gun temp @ dis. 96/182 " " " off 3" = 92 @ 1705
SYSTEM	1620	11.2-11.5	NM	95	w/ field gauge	
BSP-01	1701	11.4	<50		wet < 1 pint	
BSP-02	1655	11.2	<50		dry bouncing	B
BSP-03	1651	11.2	<50		dry blew < 4 oz	B
BSP-04	1647	11.2	<50		dry " none	B
BSP-05	1642	11.5	<50		blew out 1-2 qts water in flowmeter	~~B~~
BSP-06	1637	11.2	<50		dry	B
BSP-07	@	f	f			X
BSP-08	1643	11.5	<50		blew out 1 pint water in flowmeter	X F
BSP-09	1631	10.5	<50		blew out about 1-1+ qts water in flowmeter	F
BSP-10	1600	10.8	<50		1-2 qts	X
BSP-11	1550	11.7	<50		1/2 qt blown out, water in flowmeter	B
BSP-12	1540	11.2	<50		dry - little blown out	B
BSP-13	1530	10.7	<50		blew out < 1/pint flow = 50-55 cfh	B
BSP-14	1520	11.7	<50		no water blow out < 1 cup.	B
BSP-15	1512	11.2	<50		slight water in meter blow out < 1 qt	X
BSP-16	1455	11.2	<50		dry #1 blow out 5 times - always get initial	X
BSP-17	1430	11.5	~~0~~ <50		no water no flow double ck. blower.	X

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

@ sys @ 1405. Walk site. No wet wells. Check sys. readings above

#1 slug water total 1qt-2qts but then blows dry w/in a min.

1605 ret. to sys listening for leaks none heard. checked volts on each motor phase - all 480 V. changed out psi gauge w/ one I'm using in field. 1-1.5 psi off sys. gauge reads higher. by 1-1.25 psi.

Raised ~~temp~~ Psi to 13.2/13.3 on oil gauge. Take temp. above.

Go close up BSP16 after blowing it out last time.

Check for increased flow in BSP 2 - none seen

1730 off site. 1740 check drum area. Drums covered + grass doesn't need cutting. Note sign on tree near BSP3

1745 off base

Ivan Jenkins

FST-26 Biosparge System Fort Stewart, Georgia

Site: Fort Stewart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins ~ IJ Arrive 1135 **Date:** 3-28-13

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM	1117	13.5	NR	95	Temp. 96/180 + on discharg pipe = 94.
SYSTEM					
BSP-03	1200	12	50		off peg @ 55 1830
BSP-02	1153	12	110		@ 180 @ 1830
BSP-01	1150	12.2	50		off peg @ 55 1830
BSP-06	1205	12	<50		
BSP-04	1208	12.5	<50		
BSP-05	1212	12.1	<50		
BSP-08	1215	12.2	55-60		steady lite water vapor 1830 55-60 blew out 1 qt water 1910 flow @ 70-80
BSP-07	0	f	f		
BSP-09	1217	12.2	50		No more water vapor than yesterday @ end of blowout
BSP-10	1230	12.2	<50		
BSP-11	1235	12.4	50?		
BSP-12	1241	11.7	50?		
BSP-13	1238	11.8	50		1910 flow 55-60
BSP-14	1242	12.1	<50		no flow 1830
BSP-15	1245	12.1	<50		bouncing blew out 1 qt water 1830
BSP-16	1253	12	60		1830 blew out 2/3 qts water Flow = 60-80
BSP-17	1257	12.1	60		

2* 3*

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

No overflowing @ wells. w/ 13.5 PSI. Take readings & start calibration of YSI DO.

1250 Check sys. Psi still @ 13.5 psi. Check DO also

1310 Blower off for DO readings

1320 32 min discuss site ops - flows/psi w/ Shelby & Chris

1750 Blower back on

1825 Look @ flows

1830 2* no flow BSP9

1850 MW23 is dry. Raise PRESS to 14.5 — was @ 14

1900 #3 Blew over 1 qt maybe 2 from 9 again - no flow

1910 BSP 13 @ 60-70 Blew out 14, 11, 10, 5, 8 ~ 5=0 flow bumbling

1922 BSP Flows #1 60-70, #2 160, #3 55-60, Sys. psi @ 14.2 increase to 14.5

1930 off site Ivan Jenkins

Site: Fort Stewart, FST-26, Biosparge, Former Tanker Purging Area

Location: This is in the woods behind the 135 QM CO Tank Farm which is next to 831 West 18th St. The Tactical Equipment Maint. Facility, 87th Support Battalion, 3rd Inf. Div is at the The nearest intersection is W 18th St. and FS Road 40.

Employee: Ivan Jenkins — wunderground baro 30.32 @ 1300 **DATE/TIME:**

Well ID	Screen Interval (ft bls)	Time	W.L. Depth (feet)	Reading Depth	GROUNDWATER Temp (°C)	DO (mg/L)	SC* (µS/cm²)	pH* (SU)	ORP* (mV)	NOTES
MW-18	4.9 - 14.9	1606	5.6	14.50	18.56	6.60	30-103	5.2	37.1	③
MW-19	6.3 - 16.3	1732	5.8?	14.50	18.37	1.70	175	5.09	93	? W.L. may be off. 0.2-0.4 to deep
MW-20	6.0 - 16.0	1453	5.2'	15.00	NR	9.99	82	4.14	136↓	9.4→9.7 00 @1711 do = 10.2
MW-21	5.1 - 15.1	1654	4.7	13.50	18.25	4.03	11-148	3.54	235	
MW-22	4.0 - 14.0	1527	3.47'	10.00	17.11	1.17	49	3.87	-176↓	
MW-23	13.0 - 23.0	1531	5.7'	15.00	18.20	4.96	322	6.83	98	
MW-32	3.6 - 13.6	1641	5.9	15.00	18.77	3.04	121	5.47	410↓	
MW-38	24.1 - 29.1	1723	6.3	26.00	20.05	5.85	1473	7.13	64↓	
MW-41	2.0 - 12.0	1721	5.2	B-6"*	17.65	4.86	60	3.99	-3.0	1' above bottom*
MW-42	17.0 - 22.0	1645	5.5	20.00	18.84	7.80*	515	6.08	X	→ varies 570-604 to 113 sparging *8.97
MW-49	3.9 - 13.5	1616	5.8	13.00	17.63	9.31	27-90	5.45	-1↓	sparging
MW-50	26.9 - 31.4	1621	5.75	29.00	20.65	1.12	1703	7.29	-56↑	
MW-53	26.7 - 31.2	1610	5.88	29.00	20.09	1.32	257	7.36	6.1↓	
MW-52				29.00						
MW-54	26.9 - 31.4	1741	6.4	28.50	20.18	2.17	688	7.35	52	
MW-55	26.9 - 31.4	1459	7.57	29.00	20.94	5.55	488	7.50	162	① DO@1716 = 4.54 ④ Last one
MW-56	26.9 - 31.4	1659	6.05	29.00	20.38	0.98	2091	6.97	-36	
MW-58	26.0 - 31.0	1628	5.8	28.50	19.97	3.34	1159	7.44	-5.1	

* - Only collect if you have time. *The following meter was rented from Pine and used for the readings: YSI MPS 556-02 w/Barometer and a 20 meter cable.

1220 DO in Calibrate
1228 DO = 10.28 @ 17.79°C
1240 DO = 10.74 17.45
1254 DO = 10.67 17.16
1301 DO = 10.72 17.10
1305 Accept calibration
% do goes to 9.78 @ 17.11°C
start pH 7.0 2 point w/ 4.0
good cal. 2.0 & finally w 4 thru Pine. Cal good on SC, ORP not done

① Hi reading in MW55? .. Check DO out of well. 98-98.5. In YSI cap = 84-85. Tim @ Pine says this is OK
② Baro. Press now 1538 = 30.23 & falling
③ Between MW 23 & MW8 recalibrate DO. Showing 120-118 @ DO in atm
④ Last ones Note recheckd DOs @ 55 & 20 after recal of DO @ MW18
Restart sys @ 1750
1805 YSI 556 cleaned & put away

FST-26 Biosparge System Fort Stewart, Georgia

Site: Fort Stewart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins ✓ on site 1020 (base 1005) Date: 3-29-13 Pg 1 of 3

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM		15/→ 14.5		108	manifold bypass temp 187. Manifold Temp 104 reduced psi to 14.5 -
SYSTEM					
BSP-01		13	70-80		
BSP-02		12.5	170		
BSP-03		13.	55		
BSP-04					
BSP-05					
BSP-06					
BSP-07					
BSP-08		12.75	55-60		
BSP-09		~~13~~ 12	80		12.75 psi
BSP-10					
BSP-11					
BSP-12					
BSP-13		12.75	60.		
BSP-14		13.0	<50. 50		
BSP-15		~~55~~			
BSP-16		13.0	55		
BSP-17		12.5	70		

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

MW23 overflowing Set well/

week of 15th/22nd/23 -

call Shelley + discuss site info 1113 → 1148. shut down SVS after adjust PSI @ SVS. to 13.5 1155 SVS set @ 13.5. 1220 check 13.2 adjust up some 1300 @ 13.5 Lock up trailer turn off blower. 1307 leave site.

DAILY LOG

Date: 4-24-13 Page: 1 of 2

Project: O+M biosparge Project No:

Client: FT Stew Site Location: Hinesville GA

Prepared By: I Jenkins Other Emp: —

TIME	NOTES			Flow	PSI
1120	@ post store p/u supplies				
1155	chuck our power meter + text Shelley				
1210	catch up messages + emails				
1230	Sys. running temp = 120 PSI = 12.7				
	No well overflow found @ any wells				
	RW #1			<5	11.5
	RW 2	water in meter	slow out 1gt	100	11.3
	RW 3	"	1gt	50	11.2
	RW 4	"	1 1/2 +	50	11.5
	RW 5	"	1 1/2 +	<50	11.2
	RW 6	"	1/2 gal	<50	11.7
	RW 7	off		—	—
	RW 8	" " "	>1/2 gal	<50	10-5
	RW 8	"		50	11.5
Scorpion	RW 9	" " "	>1/2 gal	65 ~~9.8~~	9.8
	RW 10	Meter full + flowing		<50	10.6
	RW 11	" " " " barely	>1/2 gal	<50	11.5
	RW 11	~~Meter full - air flow thru water pass~~		<50	11.5
	RW 12	Meter FULL - w/ air flow thru water 1gt		<50	11.3
	RW 13	Air bubbling thru full meter		<50	10.75
	RW 14			<50	11.3
	RW 15			<50	11.3
	" 16			60	11.1
	" 17			85-90	11.0
	Calibrate DO from 2-11. Cal other - pH SP cond + ORP all to appropriate #s. all good				
1640	Sys. off for YSI readings				
1735	Start YSI readings				

Dana Jenkins

DAILY LOG

Date: 4-24-13 Page: 2 of 2

Project: OXM Biospace Project No:

Client: FT Stew. Site Location: Hinesville GA

Prepared By: I Jenkins Other Emp: —

TIME	NOTES		WL	YSI Depth	Temp	SP	DO%	pH	ORP	
1813	MW 18		7'2"	14.5	18.57	66	5.62	5.54	310↑	
1856	MW 19		6'4"	14.5	18.20	275	0.33	6.03	137↑	
1742	MW 20		6'4"	15	18.84	111	10.89	4.65	288↑	No bubbling heard
1803		21	5.9"	13.5	18.21	125	2.75	3.98	398↑	
1749		22	53"	10	17.90	89	4.60	~~4.59~~	378	pH=3.76
1757		23	7'3"	15	18.41	345	8.09	6.15	297↓	
1834		32	7.5'	15	18.61	116	8.10	6.64	238	
1856		38	7.5'	26	18.81	1539	0.69	6.41	347	19.87
1849		41	6'9"	8'6"	18.23	100	3.03	4.31	400↑	
1838		42	7'3"	20	18.98	946	8.71	4.85	367	not aerating
1821		49	6'11"	14	18.19	122	9.25	6.80	254	aerating (8.99)
826		50	8'	29	20.20	1391	2.42	6.71	254↓	
1820		53	7'10"	29	19.88	713	1.53	6.60	278↓	
1903		54	7'8"	28.5	19.91	831	0.38	6.50	44↓	
1746		55	NM	29	20.57	7.14	2.61	6.47	242↓	
1807		57	8'3"	29	20.02	2.5	2.5	6.26	330↓	1724=SPCond
1830		58	8.5'	28.5	19.36	1117	3.20	6.89	247↓	

Clean up & packup YSI. Store equip in trailer

~~1900~~ check out ~~condition~~ H/S

1855 W to down area. Down area needs mowing

1915 off base

Tom Derby

DAILY LOG

Date: 4-25-13 Page: 1 of

Project: Bio Sparge O&M Project No: GP08HAFS.00

Client: Army Ft. Stewart Site Location: Hinesville, GA

Prepared By: I Jenkins Other Emp: —

TIME	NOTES			Eyebolt Only	Complete
1200	on base				
1230	@ site Sys. running reason for 8-9 AM email unknown				
	start install of MW well seal wires photos of MW32+42			MW-32	MW-18
				MW-22	MW-49
				MW-18	MW-09
					MW-23
9-10 +/- AM	→ Discuss site w/ Shelley for 30 min + send pics noted of hr. meter				
	blew all wells except MW5, 10, 15, 13 + 9? till dry 2-3 times on half of them				
	changed meter out in MW-2				
	5 trouble wells are sealed tight				
	& Changed oil in blower 1 hr. 522p-630pm				
	List: Need: wire ferrells 17 wells total. – 20 sets.				
	crimper (check)				
	eye bolts				
	Air: 1" male adapt part ~~& Conf.~~ have				
	Water: 2" RB Galv or PVC				
	change or 2 nipples				
	grease blower / motor				
	try drilling out orange well seals				
	Mower or weed eater				
	Sysem is @ 150°F + 13 psi		Flow	PSI	
BSP 1	dry meter		60	11.5	
2	NEED CHG Meter looks dry		120	11.2	
3	dry meter		50	11.4	
4	Water in meter		65-70	11.7	
5	water in meter		50+	11.3	
6	dry		<50	11.5	
7			off		
8	water in meter		55	11.3	
9	" " "		50ish	11.3	
10	water in meter	blew to a clear vapor 2x. not. 4 min. 2nd time	<50	11.2	
11	dry meter	blew dry 3-4 min	<50	11.6	
12	" "	Blew dry - was dry	<50	11.5	
13	" " ?	" " - 1-2 min	<50	11.4	
14	dry meter		<50	11.5	
15	blew out 3 times for 2-3 min. Water stream not stopping		<50	11.5	
16	meter is water free, dry w/in 1-2 min. quick for this well		55	11.5	
BSP 17	" " " " , a bit wet-no wet stream - just spitting drops		100	11.2	
	1840 off site				

9127674895

Site: Fort Stewart, FST-26, Former Tanker purg

Sampler: Ivan Jenkins

Date: 6-5-13

Well ID	TIME	Press. (PSI)	Flow (cfh)	TEMP Deg. F	NOTE(S) check for leakage
SYSTEM	**1030**	**12.2**	**not meas.**	**132**	
SYSTEM					
BSP-01	1157.0	10.2	50.0		
BSP-02	1200.0	10.2	120.0	B	wster in FM.
BSP-03	1202.0	10.2	<50		no water
BSP-04	1208.0	10.5	100.0	B	fluctuating
BSP-05	1211.0	8.5	50.0	B	water heard in manifold seen in FM. BOLT.
BSP-06	1206.0	10.5	<50		no water. BOLT
BSP-07	off				
BSP-08	1225.0	10.5	55.0		water in manifold?
BSP-09	1234.0	10.1	80.0	B	warer in FM. change out FM.
BSP-10	1237.0	10.7	<50		
BSP-11	1241.0	10.1	<50		check manifold.
BSP-12	1251.0	10.3	<50		
BSP-13	1255.0	10.3	<50		water in manifold
BSP-14	1257.0	10.3	51.0		check manifold
BSP-15	1302.0	10.3	<50		dry
BSP-16	1306.0	10.1	100.0		dry but a vibration.
BSP-17	1310.0	9.9	140.0		dry

* Instructions: Record initial press B4 connecting flow meter assembly. Attach flow assembly and record pressure again. Adjus valve to match initial pressure. Record flow rate. Readjust pressure back to the flow pressure (2od reading). Move to next we

on site 10 am. work with new gauges. new ones not liq fillid. old sys one is.

non liq filled shows 10.5 psi. old liq filled shows 12.5. old gauge 0-30. new are 0-15.

calibrating di since 1130. at 1253 T28.35 n do = 8.86.

1210 calibrate do start ph. 1245 calibrate sp cond

1317 system off.. 1hr til readings. mowed area while walting

raining at 1410. still mowing. 1430 raining steady. mowing complete. had to cool off w trk ac.

1720 system restarted. mowed 30 more min. 1755 set psi on new gauge at 12.2.

load mower. check well for overflow sparging. off to drum area.

1820 til 1910 mow drum area. 1918 leave base.

Site: Fort Stewart, FST-26, Biosparge, Former Tanker Purging Area

Sampler Ivan Jenkins

DATE: 6-5-13

Well ID	Screen Interval (ft bls)	Time	W.L. Depth (feet)	Reading Depth	GROUNDWATER					
					Temp (oC)	DO (mg/L)	SC* (mS/cm2)	pH* (SU)	ORP* (mV)	NOTES
MW-18	4.9 - 14.9	1548.0	10.00	14.50	19.25	3.94	68	5.29	311^	
MW-19	6.3 - 16.3	1653.0	11.00	14.50	19.55	8.21	286	5.85	315	
MW-20	6.0 - 16.0	xxxxxx	xxxxxx	15.00	x	x	x	x	x	
MW-20	6.0 - 16.0	1504	9.00	15.00	19.71	9.76	142	4.25	332^	
MW-21	5.1 - 15.1	1526.0	9.50	13.50	19.29	9.31	222	3.84	483^	
MW-22		1515.0	7.00	?	19.33	7.39	110	3.87	414^	
MW-23		1519.0	19.00	?	19.21	8.53	320	5.87	350_	
MW-32	3.6 - 13.6	1630.0	10 3	14.00	19.44	8.17	150	594.00	261	
MW-32	3.6 - 13.6	xxxxxxx	xxxxxxx	15.00	x	x	x	x	x	
MW-38	24.1 - 29.1	1648.0	12.00	26.00	19.65	10.85	2197	6.74	303	
MW-41	2.0 - 12.0	1642.0	11.00	B-6"	19.5	3.34	107	4.28	352	
MW-42	17.0 - 22.0	1636.0	10.80	20.00	19.46	8.79	987	4.50	399	
MW-49	3.9 - 13.5	1558.0	10.00	14.00	19.35	6.73	125	5.75	253^	
MW-50	26.9 - 31.4	1603.0	12.00	29.00	20.08	1.14	1437	6.56	171_	
MW-53	26.7 - 31.2	1551.0	12.00	29.00	19.37	0.36	733	6.48	20_	
MW-53	26.7 - 31.2	xxxxxxx	xxxxxx	15.00	x	x	x	x	x	
MW-54	26.9 - 31.4	1659.0	13.00	28.50	19.84	0.39	1042	6.60	-67_	
MW-54	26.9 - 31.4	xxxxxxx	xxxxxxx	15.00	x	x	x	x	x	
MW-55	26.9 - 31.4	1510.0	12.00	29.00	20.37	0.63	750	6.43	70_	
MW-56	26.9 - 31.4	1529.0	12.00	29.00	19.85	0.52	1694	6.27	-42_	
MW-56	26.9 - 31.4	xxxxxxx	xxxxxxx	17.00	x	x	x	x	x	
MW-58	26.0 - 31.0	1623.0	12.00	28.50	19.53	2.02	1147	6.80	187	

* - Only collect if you have time.

The following meter was rented from Pine and used for the readings: YSI MPS 556-02 w/Barometer and a 20 meter cable.

1720 blower turned back on.

FST-26 Biosparge System Fort Stewart, Georgia

Site: Fort Stewart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins

Arrive at 1100 am. Date: 6-6-2013

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM	**1100**	**14.0**	**NM**	**138**	**No over flowing wells. All were checked.**
SYSTEM	**1350**	**14.0**	**NM**	**132**	
BSP-01	1135	13.0	140.0		
BSP-02	1130	13.0	180.0		
BSP-03		12.9	90.0		
BSP-04		12.9	100.0		
BSP-05		12.6	60.0		
BSP-06		13.5	50.0		
BSP-07	o	f	f		
BSP-08		12.5	110.0		
BSP-09		12.5	150.0		
BSP-10		13.5	50.0		
BSP-11		13.2	<50		
BSP-12		13.0	50.0		
BSP-13		12.8	60.0		
BSP-14		12.5	70.0		
BSP-15		12.7	<50		
BSP-16		12.7	100.0		
BSP-17		12.7	120.0		

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

I blew the water out of each well as I went and then redid a few.

Discussed site opservations withh Shelley. We decide to leave the pressure at 13-14 as it was found. No reduction made.

close and seal all the wells.

pick up mower and gas can from drum storage.

left site about 1455.

Tried to send the electronic frm I filled out to Shelley. T didn't work. Not to me either. I can open and read it just can't open it after sending. \

DAILY LOG

Date: 7-24-13 Page: 1 of 1

Project: O+M Project No: GP08HAFS

Client: ARMY FT STEWART Site Location: MCOM

Prepared By: IVAN Jenkins Other Emp: None

TIME	NOTES
	1600
1555	@ Gate 1603 on site. There is a lake in the road- beyond the sys. building
	02 7.531 kW, 0' 11211 kW H = Elect. Meter readings
	System Temp - 148 PSI = >15 on old gauge & 12.8 on new 3" 0-15 gauge I installed today
	Found MW38 sparging - overflow. No others.
	The big lake above comes to w/in 6' of MW22

BSP	Press	Flow		Manhole	H2O Flow	
1	12.7	140		W		
2	12.3	240			/	
3	12.5	140			/	
4	12.8	55	vibrating	W		
5	12.2	140		W	/	
6	12.8	60		W		
7	off			W		
8	12.2	150		W		
9	12.3	180		W	/	① well leak in vault corner
10	12.0	~~55~~ <55	no moving	W	/	
11	12.5	55	Vib	"		
12	12.5	<55	no moving	"		blew out
13	12.7	<55		"		* well leak @ well
14	12.5	55 - <55		"		
15	12.2	<55		"		blew out
16	12.8	55-60		"		blew out
17	12.2	150		"	recovered	

normal amount water during blow out of lines.

* when well shut off heavy bubbling in vault continued for 1-2 min. Then well turned back on

① Trees → BSP 9 bubbling well

Tree BSP 13 well bubbling

1800	LV BSP site to drum area. Have used weed eater at BSP site to trim grass & weeds ~~th~~ grown in last 5 weeks
1930	Leaving site, have cut around fence & inside fence w/ weed-eater. Grass was shin to knee high.
2000	@ motel, equip. secured. Checking DO on meter. registers a little low call A.I.R. in AM.

Ivan Jenkins

DAILY LOG

Date: 7-25-13 Page: 1 of 1

Project: O+M Air Sparge Project No: GP08HAFS.2012.M26OM

Client: ARMY Site Location: Hinesville, GA FST26

Prepared By: IVAN JENKINS Other Emp: None

TIME NOTES 1220 on base · 1240 @ site

1241 system running. MW 38 still over flowing though at a much reduced rate. Sys Pressure gauge is shot again

1305 Sys is off.

1638 Water qual. readings done MW 38 covered YSI probe in mud.

1705 YSI cleaned + packed. Truck packed. Go look @ blower.

1809 Sys running @ 12 psi. Oil changed in blower, Air filter brushed out

1820 adjust sys. pressure to 12 again. It was @ 12.5. No ~~flow~~ overflow @ BSPs 5 or 8 yet. No overflow @ MW 38

1840 SYS. Pressure @ 11.8-12 so increase it slightly. Still no visible flow @ BSP 5 or 8.

1900 Pressure @ 12 (average) for sys No visible flow @ 8. Ball bouncing in 5

	Time	MW Well	Read Depth	Temp	DO	SC	pH	ORP	N.L	Press Inc ed	
	1514	18	14.5	21.20	3.37	.78	11.89	149r	4'10"	N	
	1558	19	14.5	22.37	7.80	311	6.22	134r			
#1	1438	20	15	22.05	8.58	.136	3.90	156r	46"	N	
	—	21	13.5	21.47	8.05	311	3.73	244→	4'4"	Y(a)	sparging a little
	—	22	10	23.08	6.18	143	3.70	178f	2'9"	N	
*	—	23	14.5	20.59	9.46	1000-1400	4.92	235r	5'-20'	Y	Sparging
	1545	32	15	22.41	9.05V	108V	6.48	50.3r	5'2"	N	
	1628	38	26	20.39	12.42	1286V	7.38	151f	9'9"	N	Sparging
	1623	41	B-6"	22.89	2.65	1183	4.07	193r	4'8"	N	
	1550	42	20	21.11	9.62	549	5.51	147r		N	
	1525	49	14	21.86	10.05	2000V	6.92	82	12'0	Y	sparging
	1530	50	29	20.32	1.54	1548	6.70	-49f	8'3"	N	
	1518	53	29	19.92	2.07	741	6.78	25.9r	8'4"	N	
	1604	54	28.5	20.38	1.87	1023	6.71	-101f	9'8"	N	
	—	55	29	20.57	1.75	819	6.81	-40f	9'11"	N	
	1501	56	29	20.19	1.69	1617	6.52	-52f	10'9"	N	
	—	58	28.5	19.89	1.91	1631	6.83	-71f	8'3"	N	

YSI calibrated @ noted except for DO pH 4.0, 7.0 & SP. Cond 4.49 good.

V= vortex

f= falling

r= rising } ORP

S= stable

Call A.I.R. regards D.O. @ site 1430. Do a fresh air calibration, cause after several trys/checks DO looks low to me.

1910 off site Ivan Jenkins

ARCADIS

DAILY LOG

Date: 7-26-13

Page: 1 of

Project: O+M Air Sparge

Project No: GP08 HAFS, FS26

Client: Army FT Stewart

Site Location: Hinesville, GA

Prepared By: IVAN Jenkins

Other Emp: —

TIME	NOTES
0950	on site sys running check Sys Press = 12.0 ~~red. to 11~~ increase to 12.25. (11.8)
	Flow @ RW5 = 55 + RW8 barely bouncing to still (ball in flowmeter)
	Flow increased to 12.25
	Discuss w/Shelly, Give her DOs, Discuss tick bite.
1050	off site to gate + ST. Joseph's Immediate Care
1115	Arr. ST. Joe. 1205 LV. ST Joe 1220-1350 Lvm. ? check
1335	@ Ace hardware (1400) @ Dodge Dealer. - trk parts + repair
1600	return to site install retaining cabels on MW 38, 41, 22, ~~18~~, 32, 49, 1220
	MW 23, 21, 19, 18 have them. Need a second ferrel for MW20.
	* Need to cut MW42 down or leave it.
	Need ferrals for 8 wells = 16 total. Check on eyes + nuts.
	Sys press was 12.5 reduced to 12.2-12.3
1833	BSP5 = 80 + flow BSP8 = 55 or less
1840	off site mobe to Atlanta

313191

FST-26 Biosparge System Fort Stewart, Georgia

Site: **Fort Stewart, FST-26, Former Tanker Purging Area** Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Sampler: Ivan Jenkins

Arrival Time: 0900, Date: 10-9-13 Pg 1 of 3 2

Well ID	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM	0945	12.5-13.0		122	
SYSTEM					
BSP-01	1001	12.5	140		dry
BSP-02		12.2	150		flowmeter has water - not much flow
BSP-03		12.5	110		water flow thru totallizer
BSP-04		12.25	120		dry
BSP-05		11.8	<50		water in totalizer w/ Air bubbling thru it
BSP-06		12.4	<50		" " " " " " " "
BSP-07	0	f	f		—
BSP-08		12.0	80		water flow in flowmeter
BSP-09		12.1	170		water flow @ flowmeter
BSP-10		12.0	<50	11.9	water flow thru flowmeter
BSP-11		12.25	90		" " " "
BSP-12		12.2	60		" " " "
BSP-13		12.4	50 +/-		" " " " bubbling heard in manifold
BSP-14		12.2	110		" " " "
BSP-15		12.3	>=50		" " " " ✓ can hear bubbling in manifold
BSP-16		12.5	110		
BSP-17	1109	11.5	200		

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

Walk site; Area on Road beyond sys. not flagged for a change

No wells damaged or overflowing

1202 system off for DO readings

1505 system on. DO complete. Blew out ALL wells except BSP 1, 4 + 7. 7 is off.

System restarted w/out any changes

1705 W sys to Drum area. Put lgt Lig in drum & Mow drum area.

1741 off site to gate

Site: Fort Stewart, FST-26, Biosparge, Former Tanker Purging Area

Location: This is in the woods behind the 135 QM CO Tank Farm which is next to 831 West 18th St. The Tactical Equipment Maint. Facility, 87th Support Battalion, 3rd Inf. Div is at the E
The nearest intersection is W 18th St. and FS Road 40.

Employee: Ivan Jenkins Ivan Jenkins **DATE/TIME:** 10-9-15

Well ID	Screen Interval (ft bls)	Time	W.L. Depth (feet)	Reading Depth	GROUNDWATER Temp (°C)	DO (mg/L)	SC* (mS/cm²)	pH* (SU)	ORP* (mV)	NOTES	open ecl
MW-18	4.9 - 14.9	1355	6.6'	14.50'	21.14	6.00	63	4.57	168	slight press - pushed out	C
MW-19 *2	6.3 - 16.3	1439	6.9'	14.50	22.12	9.42	296	4.77	159	Not overflowed, well seal is blown off.	1240 C
MW-20	6.0 - 16.0	1326	6.9" *	16.00'	21.79	9.50	307	4.28	174	slight pressure	C
MW-21	5.1 - 15.1	1344	7.0	13.50	21.69	8.47	623	3.50	226 ↑	pressurized - pushed itself out	1250 C
MW-22	4.0 - 14.0	1334	4.8'	10.00	21.25	6.80	~~1500~~ 1504	3.36	195 ↓	slight press - lifted out	1251 C
MW-23	13.0 - 23.0	1337	6.3'	15.00'	20.96	9.77	1500 F	4.19	183	Highly pressurized - Blew off	C
MW-32	3.6 - 13.6	1419	6.75'	15.00'	21.52	6.67	1041	5.22	134	slight press. - pushed out into hand easy	C
MW-38	24.1 - 29.1	1433	9.9'	26.00'	20.66	11.21	2026	7.27	144 ↓	Highly pressurized / 107 = 4/5 cm² / sediment on probe	C
MW-41	2.0 - 12.0	1428	6.4'	14.5' B-6"	21.95	2.87	959	3.67	186	No Press - slight / 14.5' drop	
MW-42	17.0 - 22.0	1423	7.3'	20.00'	21.39	8.97	422	6.12	135	No Press	C, 22'
MW-49	3.9 - 13.5	1404	6.6'	14.00'	20.87	8.42	135	4.92	144	No Press. Sparging inside well.	1253 C
MW-50	26.9 - 31.4	1409	9.4'	29.00'	20.21	0.2	1523	6.60	110	? No Press felt. Need well seal	" C
MW-53	26.7 - 31.2	1401	9.6'	29.00'	19.71	0.22	742	6.78	129	No Press Need wet Seal	C
MW-54	26.9 - 31.4	1419	9.0' +/-	28.50	20.60	0.21	878	6.82	78 ↓	No Press Well seal OK need wire	C
MW-55	26.9 - 31.4	1330	9.9'	29.00'	20.26	0.3	810	4.78	125	NO Press Need well seal.	C
MW-56	26.9 - 31.4	1350	10.3 est.	29.00'	20.14	0.2	1635	6.59	144	no press Need well seal.	1245 C
MW-58	26.0 - 31.0	1415	8.7'	28.50'	19.79	0.3	1500	6.64	116	NO Press felt Need well seal	C

* - Only collect if you have time.

The following meter was rented from Pine and used for the readings: YSI MPS 556-02 w/Barometer and a 20 meter cable.

1114 Start Calibration of YSI w/pH 7 good + pH 4.0 @ 4.31 was out of range. I accepted sp cond @ 4.49 ms → 4.52 ~ Good. No ORP sold.

1130 Start DO done @ 1220. Calibrates good.

1202 Sys. off.

* 6.75' / *1 188 lbs/cm² for MW22 / *2 Milky sediment water from MW19 on probe when removed

Baro press = 30.11 @ start + finish

1505 Sys. on.

BSP 03 backsurging to manifold, closed valve

Elec. Meter @ 1650
01 24529 10/9/15
02 7344

ARCADIS

DAILY LOG

Date: 10-10-13 Page: 1 of 1

Project: Ft. Stewart biosparge Project No: GPOSHAFS-2012

Client: US Army Site Location: Hinesville, GA

Prepared By: Ivan Jenkins Other Emp: —

TIME	NOTES
1000	Pick up 2 drill bits @ LOWEs 3/16
1050	@ site Check wells no over flow. System press is @ 12.0-12.5 Try raising slightly. Start completion of tie downs. - Don't have a good enough crimper Go get new crimper @ low. Check wells & press again first Press about even on 12.5.
1300	Install tie downs on MW's 20, 53, 54 (re-crimp), 55, 56 & 58. Remove 0.22' of well casing on MW 42 & install last tie down. I need to tape wire ends w/ elec tape. All MW's used in Biosparge monitoring are done.
1335	Off site to Atlanta

Ivan Jenkins

FST-26 Biosparge System Fort Stewart, Georgia

wart, FST-26, Former Tanker Purging Area Corner of W 18th St. & FS Road 40 behind 135 QM CO Tank Farm in woods.

Jenkins

Arrival Time: 1000 , Date: 12-4-13 Pg 1 of 3

	TIME	Press. (PSI)	Flow (CFH)	TEMP Deg. F	NOTE(S) check/listen for air leakage or water in manifold
SYSTEM	1050	12.5	NM	127	103- db in building w/ blower running
SYSTEM	1710	11.5-12	NM	132	will check in AM. If not @ 12.5 will increase. Running over nite may be enough
BSP-01	1030	12	140		
BSP-02	1025	11.75	190		
BSP-03	1033	12	110		
BSP-04	1040	12	150		
BSP-05	1048	11.5	100		
BSP-06	1052	11.5	50		water flow in meter
BSP-07	off	—	—		well open checked. ok
BSP-08	1058	11.75	90		
BSP-09	1105	11.0	200		
BSP-10	1120	~~11.5~~ <50	<50		A- bubbling thru water in flowmeter
BSP-11	1128	12	50		water flow in meter
BSP-12	1200	11.5	90		" " " "
BSP-13	1204	11.5	50 or <		" " " " can hear water in line
BSP-14	1209	~~30~~ <11.70	130 CFH		130 CFH water in meter
BSP-15	1229	11.7	<50		water in meter
BSP-16	1234	12	80		
BSP-17	1238	X	180		can't read air - need new Female fitting

We use a TSI 9555 for measurement of flow at the system. Each well has a flowmeter installed. A comman gauge with quick connect is in traile

Sys. running normally. No overflow at any MWs.

1130 start calibration YSI 556 SN 07A1477 AF from A.I.R.

Time	Temp	DO%	
1140	19.26	8.16	mm Hg
1222	20.16	7.32	771.6 per YSI
1226	20.56	7.16	764.3 per wunderground
1241	21.11	6.97	771.6
1246	21.36	6.90	
1250	21.38	6.80	remove from cylinder-for open air cal. & Sys. Off, for
1252	19.63	7.56	opening MWs & vent water qual. readings
1306	19.37	7.45	
1313	19.74	7.33	
1317	19.57	7.42	calibrate good to 9.4 (see pg2)

Site: Fort Stewart, FST-26, Biosparge, Former Tanker Purging Area

Location: This is in the woods behind the 135 QM CO Tank Farm which is next to 831 West 18th St. The Tactical Equipment Maint. Facility, 87th Support Battalion, 3rd Inf. Div is at the 8
The nearest intersection is W 18th St. and FS Road 40.

Employee: Ivan Jenkins IJ

DATE/TIME: 12-4-13

Well ID	Screen Interval (ft bls)	Time	W.L. Depth (feet)	Reading Depth	GROUNDWATER Temp (°C)	DO (mg/L)	SC* (mS/cm²)	pH* (SU)	ORP* (mV)	NOTES	
MW-18	4.9 - 14.9	14.23	7.8'	14.50	20.04	8.05	62	4.28	107 ↑	No discernable press	NP
MW-19	6.3 - 16.3	1506	8.7'	14.50	20.37	9.83	263	4.23	143 ↑	Slow boil	P
MW-20	6.0 - 16.0	1352	7.35'	15.00	20.42	9.84	268	3.85	122		P
MW-21	5.1 - 15.1	1411	8.25'	13.50	20.38	6.44	736	3.30	152 ↑	slow boil. / DO falling 6.08 after 1 min - 2 min 6.40 again 6.49	P
MW-22	4.0 - 14.0	1402	6'8"	10.00	19.45	8.57	164	3.25	139 ↑		NP
MW-23	13.0 - 23.0	1407	7'2"	15.00	20.16	9.74	940F	5.09	116 ↓	blew off + boiled, slight audible bubbling @ meas. time	HI P.
MW-32	3.6 - 13.6	1444	8.10	15.00	20.02	7.70	139	4.56	97 ↑		NP. P.
MW-38	24.1 - 29.1	1445	8.25'	26.00	20.31	11.96	333	7.21	120 ↓	blew off + boiled / SP Cond = 133 / Cable + sensor silty on removal	HiPSI
MW-41	2.0 - 12.0	1454	8.5'	B-6"	19.80	3.20	711	3.28	166 ↑		NO PSI
MW-42	17.0 - 22.0	1448	9' +/-	20.00	20.35	8.98F	428	6.15	87.0 ↓	NO Discernable PSI / 8.48 - 9.87 - 10.33 dO	NO. P.
MW-49	3.9 - 13.5	1432	8.1'	14.00	20.23	7.95	195	5.11	86.6 —	NO Discernable psi	NO P.
MW-50	26.9 - 31.4	1437	10.45'	29.00	20.46	0.22	1554	6.60	54.5 —	NO Discernable PSI / W.L = 10.85' +/-	NO P.
MW-53	26.7 - 31.2	1426	10.9'	29.00	19.95	0.20	641	6.68	72 ↓		NO PSI
MW-54	26.9 - 31.4	1511	13.2'	28.50	20.51	0.23	834	6.71	76 ↓		No. P.
MW-55	26.9 - 31.4	1357	11.5'	29.00	20.60	0.32	1040	6.65	71 ↓		UP
MW-56	26.9 - 31.4	1416	16.0'	29.00	20.15	10.83	1840	7.04	87 ↓	Blew off, boiled + overflowed, slug full water well still bubbling bubbles @ 6' WL can't tell.	HI PSI
MW-58	26.0 - 31.0	1440	10.5'	28.50	19.95	0.23	1595	6.73	41 ↓	NO Discernable press	NP.

* - Only collect if you have time.

The following meter was rented from Pine and used for the readings: YSI MPS 556-02 w/Barometer and a 20 meter cable.

F = fluctuating

Sys. off 1250.
Wells opened to vent from 1252 to 1317. NP or NoP means no press in Manifold well when opened.
Hi Press means well seal blew off, the water in well was a rolling boil + @ MW56 lifted out of well.
P = felt or heard press - slight lift of well seal + in some cases a slow or light bubbling heard.
1324 Calibrate ph to 7.00 ~ 6.64 @ 21.54, 6.63 @ 21.55 cal good, pH 4.00 - 4.55 @ 21.62, 4.56 @ 2.68, 4.57 @ 21.93
1352 - 1517 take readings Then clean equip. + store
1533 1618 Restart Air Sparge blower, drill hole in S/V MW-56 to drain S/V / Replace 2 quick connects @ BSP 9+17 for PSI reading first

1659 All BSP wells blown out of water + sealed
1730 Drum Area - does not need mowing. Drum (1) is about ½ full mixed FST 26 but no drum #.
1740 off site Ivan Jenkins

Elec 01 33718 @ 1707
Meter 02 7.218

Appendix H

Waste Disposal Manifest

A&D Environmental Services –GA, LLC
100 Waste Research Drive
Macon, Ga 31206
(478) 788 – 8899 (Phone) / (478) 788 – 7881 (fax)

Dear Valued A&D Environmental Customer:

Enclosed is your original manifest from your recent waste disposal load with the following referenced work order number **82055**. The manifest number is **76428** and date of disposal is **4/25/13.** Please keep this document with your environmental records. If you have any questions, please feel free to contact us. We appreciate your business and hope we can further service all of your environmental needs. Let this certificate serve as evidence that all waste was properly disposed of at our facility located in Macon, GA at the address shown below.

Sincerely yours,
Daniel Nulf
Facility Manager
A&D Environmental Services – GA, LLC

Main Office
4943 Austin Park Ave
Buford, GA 30518

Ph-678-714-8420
Fax – 678-714-8425

Macon Office/Facility
100 Waste Research Drive
Macon, GA 31206

Ph- 478-788-8899
Fax – 478-788-7881

Check out our website:

www.adenviro.com

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	GA9210020872	1	770/384-6663	76428

5. Generator's Name and Mailing Address
DPW PREVENTION & COMPLIANCE BRANCH (FST-26)
1550 FRANK COCHRAN DRIVE BLDG #1137
FORT STEWART, GA 31314

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: A&D ENVIRONMENTAL SERVICES (SC), LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D ENVIRONMENTAL SERVICES (GA), LLC
100 WASTE RESEARCH DRIVE
MACON, GA 31206

U.S. EPA ID Number: GAR000007484

Facility's Phone: 478/ 788-8899

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-REGULATED MATERIAL, LIQUID (IDW WATER) APPROVAL # 14768 FST-130	001	DM	55	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1.
2.
3.
4. WORK ORDER #5055082055

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Pilgeana D Stevenson — Signature — Month 4 Day 24 Year 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Greg Thorpe — Signature — Month 4 Day 24 Year 13

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Lin. 1a Rejected FST130

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Marc R Hurz — Signature — Month 4 Day 25 Year 13

DESIGNATED FACILITY TO GENERATOR

A&D Environmental Services –GA, LLC
100 Waste Research Drive
Macon, Ga 31206
(478) 788 – 8899 (Phone) / (478) 788 – 7881 (fax)

Dear Valued A&D Environmental Customer:

Enclosed is your original manifest from your recent waste disposal load with the following referenced work order number **82054**. The manifest number is **76427** and date of disposal is **4/25/13.** Please keep this document with your environmental records. If you have any questions, please feel free to contact us. We appreciate your business and hope we can further service all of your environmental needs. Let this certificate serve as evidence that all waste was properly disposed of at our facility located in Macon, GA at the address shown below.

Sincerely yours,
Daniel Nulf
Facility Manager
A&D Environmental Services – GA, LLC

Main Office
4943 Austin Park Ave
Buford, GA 30518

Ph-678-714-8420
Fax – 678-714-8425

Macon Office/Facility
100 Waste Research Drive
Macon, GA 31206

Ph- 478-788-8899
Fax – 478-788-7881

Check out our website:

www.adenviro.com

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	GA9210020872	1	770/384-6663	76427

5. Generator's Name and Mailing Address
DPW PREVENTION & COMPLIANCE BRANCH (FST-13)
1550 FRANK COCHRAN DRIVE BLDG #1137
FORT STEWART, GA 31314

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: A&D ENVIRONMENTAL SERVICES (SC), LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D ENVIRONMENTAL SERVICES (GA), LLC
100 WASTE RESEARCH DRIVE
MACON, GA 31206
478/ 788-8899

U.S. EPA ID Number: GAR000007484

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-REGULATED MATERIAL, LIQUID (IDW WATER) APPROVAL # 15686 ~~FST-26~~	001	DM	55	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1.
2.
3.
4.
WORK ORDER #5055082054

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Megara Stevenson — Signature — Month 4 Day 24 Year 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Greg Thorpe — Signature — Month 4 Day 24 Year 13

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Limit removed FST-26

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Marc Rhyne — Signature — Month 4 Day 25 Year 13

DESIGNATED FACILITY TO GENERATOR

A&D Environmental Services (GA), LLC

100 Waste Research Drive, Macon, GA 31206
478-788-8899 FAX: 478-788-7881

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: _____

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company: A&D Environmental Services (GA), LLC Account #: _____
Address: 4943 Austin Park Avenue
City/State: Buford, GA Zip: 30518 Contact: Jeff Sturgeon
Phone: 678-714-8420 Fax: 678-714-8425

B. Generator Information/Location of Waste

Generator Name: DPW Prevention & Compliance Branch Site Contact: Algeana Stevenson
Address: 1550 Frank Cochran Drive, Bldg #1137
City/State: Fort Stewart, GA Zip: 31314-4927
Contact Phone: 912-695-2102 EPD ID: GA9210020872
Type of Business: US Army SIC Code: _____

C. Waste Description

Common Name of Waste: IDW Water (FST-13)
Process Generating Waste: Investigative Derived Waste

D. Physical Properties

Physical State
☐ 100% Solid
☑ 100% Liquid
☐ Sludge
____ % Free Liquid

Odor
☑ None
☐ Mild
☐ Strong
Describe: _____

Color
Describe: characteristic

Viscosity
☑ Low
☐ Medium
☐ High

Specific Gravity
____ lb/gallon

Flash Point
☐ <73 F ☐ 140-199 F
☐ 73-99 F ☑ >199 F
☐ 100-139 F ☐ N/A

pH
☐ < 2 ☐ 9.1 - 12.4
☐ 2.1 - 4.9 ☐ > 12.5
☑ 5 - 9 ☐ N/A

Water
☐ < 5% ☐ 30-80%
☐ 5-10% ☑ 80-100%
☐ 10-30% ☐ N/A

Is this waste incompatibile with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 1
☑ Drums ☐ 5-Gallon ☐ 30-Gallon ☑ 55-Gallon ☐ Tote
☐ Bulk ☐ Tanker ☐ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other _____

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
Water	100%	
See attached analytical		
	100%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pyrophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☐ Generator Knowledge ☑ Analytical Results

All analytical data provided relevant to this profile must be conducted by laboratories that have NELPA/NELAC accreditation.

Accreditation Number: E87653 Name: Shealy Environmental Services,Inc.

Address: 106 Vantage Point Drive, West Columbia, SC 29172 Phone: 803-791-9700

Inorganic

Metals		Level	(mg/l)
D004	Arsenic	5.0	0
D005	Barium	100.0	0
D006	Cadmium	1.0	0
D007	Chromium	5.0	0
D008	Lead	5.0	0
D009	Mercury	0.2	0
D010	Selenium	1.0	0
D011	Silver	5.0	0

Other	Conc.
Ammonia	0
Phosphorus	0
Formaldehyde	0
Total Solids	0
PCBs	0
Copper	0
Nickel	0
Zinc	0

Pesticides/Herbicides		Level	(mg/l)
D012	Endrin		0
D013	Lindane		0
D014	Methoxychlor		0
D015	Toxaphene		0
D016	2,4-D		0
D017	2,4,5-TP		0
D020	Chlordane		0
D031	Heptachlor		0

Organic

Volatile Compounds		Level	(mg/l)
D018	Benzene	0.5	0
D019	Carbon Tetrachloride	0.5	0
D021	Chlorobenzene	100.0	0
D022	Chloroform	6.0	0
D028	1,2-Dichloroethane	0.5	0
D029	1,1-Dichloroethylene	0.7	0
D035	Methyl Ethyl Ketone	200.0	0
D039	Tetrachloroethylene	0.7	0
D040	Trichloroethylene	0.5	0
D043	Vinyl Chloride	0.2	0

Semi-Volatile Compounds		Level	(mg/l)
D023	o-Cresol	200.0	0
D024	m-Cresol	200.0	0
D025	p-Cresol	200.0	0
D026	Cresol	200.0	0
D027	1,4-Dichlorobenzene	7.5	0
D030	2,4-Dinitrotoluene	0.13	0
D032	Hexachlorobenzene	0.13	0
D033	Hexachlorobutadiene	0.5	0
D034	Hexachloroethane	3.0	0
D036	Nitrobenzene	2.0	0
D037	Pentachlorophenol	100.0	0
D038	Pyridine	5.0	0
D041	2,4,5-Trichlorophenol	400.0	0
D042	2,4,6-Trichlorophenol	2.0	0

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardous Waste Determination prescribed at 40CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define:

8 ☐ No ☑ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

9 ☑ No ☐ Yes Is this waste derived from an Investigation of an Underground Storage Tank release (IDW)?

K. Sample

Has a sample been included? ☐ Yes ☑ No If yes, sampled by: Date:

L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services (GA), LLC discovers a discrepancy during the approval process, Generator grants A&D Environmental Services (GA), LLC the authority to amend the profile, as A&D Environmental Services (GA), LLC deems necessary, to reflect the discrepancy.

Generator Signature Print Name Date

Algeana Stevenson 22Apr13

A&D Environmental Services (GA), LLC

100 Waste Research Drive, Macon, GA 31206
478-788-8899 FAX: 478-788-7881

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: _____

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company: A&D Environmental Services (GA), LLC Account #: _____
Address: 4943 Austin Park Avenue
City/State: Buford, GA Zip: 30518 Contact: Jeff Sturgeon
Phone: 678-714-8420 Fax: 678-714-8425

B. Generator Information/Location of Waste

Generator Name: DPW Prevention & Compliance Branch Site Contact: Algeana Stevenson
Address: 1550 Frank Cochran Drive, Bldg #1137
City/State: Fort Stewart, GA Zip: 31314-4927
Contact Phone: 912-695-2102 EPD ID: GA9210020872
Type of Business: US Army SIC Code: _____

C. Waste Description

Common Name of Waste: IDW Water (FST-26)
Process Generating Waste: Investigative Derived Waste

D. Physical Properties

Physical State
☐ 100% Solid
☑ 100% Liquid
☐ Sludge
____ % Free Liquid

Odor
☑ None
☐ Mild
☐ Strong
Describe: _____

Color
Describe: characteristic

Viscosity
☑ Low
☐ Medium
☐ High

Specific Gravity
____ lb/gallon

Flash Point
☐ <73 F ☐ 140-199 F
☐ 73-99 F ☑ >199 F
☐ 100-139 F ☐ N/A

pH
☐ < 2 ☐ 9.1 - 12.4
☐ 2.1 - 4.9 ☐ > 12.5
☑ 5 - 9 ☐ N/A

Water
☐ < 5% ☐ 30-80%
☐ 5-10% ☑ 80-100%
☐ 10-30% ☐ N/A

Is this waste incompatibile with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 1
☑ Drums ☐ 5-Gallon ☐ 30-Gallon ☑ 55-Gallon ☐ Tote
☐ Bulk ☐ Tanker ☐ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other _____

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
Water	100%	
See attached analytical		
	100%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pyrophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☐ Generator Knowledge ☑ Analytical Results

All analytical data provided relevant to this profile must be conducted by laboratories that have NELPA/NELAC accreditation.

Accreditation Number: E87653 Name: Shealy Environmental Services,Inc.

Address: 106 Vantage Point Drive, West Columbia, SC 29172 Phone: 803-791-9700

Inorganic

Metals		Level	(mg/l)
D004	Arsenic	5.0	0
D005	Barium	100.0	0
D006	Cadmium	1.0	0
D007	Chromium	5.0	0
D008	Lead	5.0	0
D009	Mercury	0.2	0
D010	Selenium	1.0	0
D011	Silver	5.0	0

Other	Conc.
Ammonia	0
Phosphorus	0
Formaldehyde	0
Total Solids	0
PCBs	0
Copper	0
Nickel	0
Zinc	0

Pesticides/Herbicides		Level	(mg/l)
D012	Endrin		0
D013	Lindane		0
D014	Methoxychlor		0
D015	Toxaphene		0
D016	2,4-D		0
D017	2,4,5-TP		0
D020	Chlordane		0
D031	Heptachlor		0

Organic

Volatile Compounds		Level	(mg/l)
D018	Benzene	0.5	0
D019	Carbon Tetrachloride	0.5	0
D021	Chlorobenzene	100.0	0
D022	Chloroform	6.0	0
D028	1,2-Dichloroethane	0.5	0
D029	1,1-Dichloroethylene	0.7	0
D035	Methyl Ethyl Ketone	200.0	0
D039	Tetrachloroethylene	0.7	0
D040	Trichloroethylene	0.5	0
D043	Vinyl Chloride	0.2	0

Semi-Volatile Compounds		Level	(mg/l)
D023	o-Cresol	200.0	0
D024	m-Cresol	200.0	0
D025	p-Cresol	200.0	0
D026	Cresol	200.0	0
D027	1,4-Dichlorobenzene	7.5	0
D030	2,4-Dinitrotoluene	0.13	0
D032	Hexachlorobenzene	0.13	0
D033	Hexachlorobutadiene	0.5	0
D034	Hexachloroethane	3.0	0
D036	Nitrobenzene	2.0	0
D037	Pentachlorophenol	100.0	0
D038	Pyridine	5.0	0
D041	2,4,5-Trichlorophenol	400.0	0
D042	2,4,6-Trichlorophenol	2.0	0

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardous Waste Determination prescribed at 40CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of Ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define:

8 ☐ No ☑ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

9 ☑ No ☐ Yes Is this waste derived from an Investigation of an Underground Storage Tank release (IDW)?

K. Sample

Has a sample been included? ☐ Yes ☑ No If yes, sampled by: Date:

L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services (GA), LLC discovers a discrepancy during the approval process, Generator grants A&D Environmental Services (GA), LLC the authority to amend the profile, as A&D Environmental Services (GA), LLC deems necessary, to reflect the discrepancy.

Generator Signature Print Name Date

Algeana Stevenson 12 Apr B

A&D Environmental Services (GA), LLC

100 Waste Research Drive, Macon, GA 31206
478-788-8899 FAX: 478-788-7881

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: _____

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company: A&D Environmental Services (GA), LLC Account #: _____
Address: 4943 Austin Park Avenue
City/State: Buford, GA Zip: 30518 Contact: Jeff Sturgeon
Phone: 678-714-8420 Fax: 678-714-8425

B. Generator Information/Location of Waste

Generator Name: DPW Prevention & Compliance Branch Site Contact: Algeana Stevenson
Address: 1550 Frank Cochran Drive, Bldg #1137
City/State: Fort Stewart, GA Zip: 31314-4927
Contact Phone: 912-315-S144 EPD ID: GA9210020872
Type of Business: US Army SIC Code: _____

C. Waste Description

Common Name of Waste: IDW Water (FST-26)
Process Generating Waste: Investigative Derived Waste

D. Physical Properties

Physical State
☐ 100% Solid
☑ 100% Liquid
☐ Sludge
____ % Free Liquid

Odor
☑ None
☐ Mild
☐ Strong
Describe: _____

Color
Describe: characteristic

Viscosity
☑ Low
☐ Medium
☐ High

Specific Gravity
____ lb/gallon

Flash Point
☐ <73 F ☐ 140-199 F
☐ 73-99 F ☑ >199 F
☐ 100-139 F ☐ N/A

pH
☐ < 2 ☐ 9.1 - 12.4
☐ 2.1 - 4.9 ☐ > 12.5
☑ 5 - 9 ☐ N/A

Water
☐ < 5% ☐ 30-80%
☐ 5-10% ☑ 80-100%
☐ 10-30% ☐ N/A

Is this waste incompatibile with other material? ☑ No ☐ Yes If Yes, explain: _____

E. Volume

Anticipated Volume: 4
☑ Drums ☐ 5-Gallon ☐ 30-Gallon ☑ 55-Gallon ☐ Tote
☐ Bulk ☐ Tanker ☐ Pump Truck ☐ Other: _____

Estimated Frequency: ☐ Weekly ☐ Semimonthly ☐ Monthly ☐ Quarterly ☑ Other _____

F. Constituents

Total must be equal to 100%. All constituents, including debris must be identified.

Constituents	Actual %	Range
Water	100%	
See attached analytical		
	100%	

G. Other Hazards

☐ Radioactive
☐ Water Reactive
☐ Oxidizer
☐ OSHA
☐ Carcinogen
☐ Explosive
☐ Pesticide
☐ Polymerizable
☐ Organic Peroxide
☐ Infectious
☐ Pyrophoric

H. Process Flow Chart

Using the space provided, draw a flow chart showing how waste is generated

I. Constituents

These values are based on ☐ Generator Knowledge ☑ Analytical Results

All analytical data provided relevant to this profile must be conducted by laboratories that have NELPA/NELAC accreditation.

Accreditation Number: E87653 Name: Shealy Environmental Services,Inc.

Address: 106 Vantage Point Drive, West Columbia, SC 29172 Phone: 803-791-9700

Inorganic

	Metals	Level	(mg/l)
D004	Arsenic	5.0	0
D005	Barium	100.0	0
D006	Cadmium	1.0	0
D007	Chromium	5.0	0
D008	Lead	5.0	0
D009	Mercury	0.2	0
D010	Selenium	1.0	0
D011	Silver	5.0	0

Other	Conc.
Ammonia	0
Phosphorus	0
Formaldehyde	0
Total Solids	0
PCBs	0
Copper	0
Nickel	0
Zinc	0

	Pesticides/Herbicides	Level	(mg/l)
D012	Endrin		0
D013	Lindane		0
D014	Methoxychlor		0
D015	Toxaphene		0
D016	2,4-D		0
D017	2,4,5-TP		0
D020	Chlordane		0
D031	Heptachlor		0

Organic

	Volatile Compounds	Level	(mg/l)
D018	Benzene	0.5	0
D019	Carbon Tetrachloride	0.5	0
D021	Chlorobenzene	100.0	0
D022	Chloroform	6.0	0
D028	1,2-Dichloroethane	0.5	0
D029	1,1-Dichloroethylene	0.7	0
D035	Methyl Ethyl Ketone	200.0	0
D039	Tetrachloroethylene	0.7	0
D040	Trichloroethylene	0.5	0
D043	Vinyl Chloride	0.2	0

	Semi-Volatile Compounds	Level	(mg/l)
D023	o-Cresol	200.0	0
D024	m-Cresol	200.0	0
D025	p-Cresol	200.0	0
D026	Cresol	200.0	0
D027	1,4-Dichlorobenzene	7.5	0
D030	2,4-Dinitrotoluene	0.13	0
D032	Hexachlorobenzene	0.13	0
D033	Hexachlorobutadiene	0.5	0
D034	Hexachloroethane	3.0	0
D036	Nitrobenzene	2.0	0
D037	Pentachlorophenol	100.0	0
D038	Pyridine	5.0	0
D041	2,4,5-Trichlorophenol	400.0	0
D042	2,4,6-Trichlorophenol	2.0	0

J. General Information

1 ☑ No ☐ Yes Is this waste a hazardous material as defined in 49 CFR Section 172.101?
If yes, include shipping name, placard hazard class and packaging group:

2 ☑ No ☐ Yes Is this waste regulated as a reportable quantity as defined in 49 CFR Section 172.101 Appendix A?

3 ☑ No ☐ Yes Is this waste a marine pollutant as defined in 49 CFR Section 172.101 Appendix B?

4 ☑ No ☐ Yes Is this hazardous waste, as determined by performing the Hazardous Waste Determination prescribed at 40CFR262.11? (Attach Documentation)

5 ☑ No ☐ Yes Does this waste contain any amount of Listed Hazardous Waste in 40 CFR 261.31, Hazardous Waste from Non-specific Sources; 261.32, Hazardous Waste from Specific Sources; and 261.33, Discarded Commercial Chemical Products, Off specification Species, Container Residues, and Spill Residues?

6 ☑ No ☐ Yes Does waste fail any of the four Hazardous Waste Characteristics of ignitibility, corrosivity, reactivity, and toxicity, as defined in 40 CFR 261.21, 261.22, 261.23, 261.23, respectively?

7 ☑ No ☐ Yes Is this waste state regulated? If Yes, define:

8 ☐ No ☑ Yes Are Material Safety Data Sheets and/or all analytical data relevant to this profile data sheet attached?

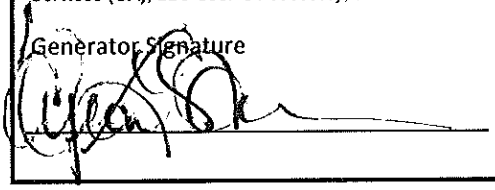
9 ☑ No ☐ Yes Is this waste derived from an Investigation of an Underground Storage Tank release (IDW)?

K. Sample

Has a sample been included? ☐ Yes ☑ No If yes, sampled by: Date:

L. Generator's Certification

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If A&D Environmental Services (GA), LLC discovers a discrepancy during the approval process, Generator grants A&D Environmental Services (GA), LLC the authority to amend the profile, as A&D Environmental Services (GA), LLC deems necessary, to reflect the discrepancy.

Generator Signature	Print Name	Date
	Algeana Stevenson	20-Jun-14

A&D Environmental Services (GA), LLC

100 Waste Research Drive, Macon, GA 31206
478-788-8899 FAX: 478-788-7881

Reserved for Facility Use Approval Date: _____ By: _____ Expiration Date: _____

☐ Solidification ☐ Recovery **Profile Number:** _____

A. Billing Information

Company: A&D Environmental Services (GA), LLC Account #: _____
Address: 4943 Austin Park Avenue
City/State: Buford, GA Zip: 30518 Contact: Jeff Sturgeon
Phone: 678-714-8420 Fax: 678-714-8425

B. Generator Information/Location of Waste

Generator Name: DPW Prevention & Compliance Branch Site Contact: Algeana Stevenson
Address: 1550 Frank Cochran Drive, Bldg #1137
City/State: Fort Stewart, GA Zip: 31314-4927
Contact Phone: 912-315-5144 EPD ID: GA9210020872
Type of Business: US Army SIC Code: _____

C. Waste Description

Common Name of Waste: IDW Soil (FST-26)
Process Generating Waste: Investigative Derived Waste

D. Physical Properties

Physical State
☑ 100% Solid
☐ 100% Liquid
☐ Sludge
_____ % Free Liquid

Odor
☑ None
☐ Mild
☐ Strong
Describe: _____

Color
Describe: characteristic

Viscosity
☑ Low
☐ Medium
☐ High

Specific Gravity
_____ lb/gallon

Flash Point
☐ <73 F ☐ 140-199 F
☐ 73-99 F ☐ >199 F
☐ 100-139 F ☑ N/A

pH
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See attached analytical		
	100%	

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D011	Silver	5.0	0

Other	Conc.
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Phosphorus	0
Formaldehyde	0
Total Solids	0
PCBs	0
Copper	0
Nickel	0
Zinc	0

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D013	Lindane		0
D014	Methoxychlor		0
D015	Toxaphene		0
D016	2,4-D		0
D017	2,4,5-TP		0
D020	Chlordane		0
D031	Heptachlor		0

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Generator Signature	Print Name	Date
	Algeana Stevenson	20-Jun-14