MEMO

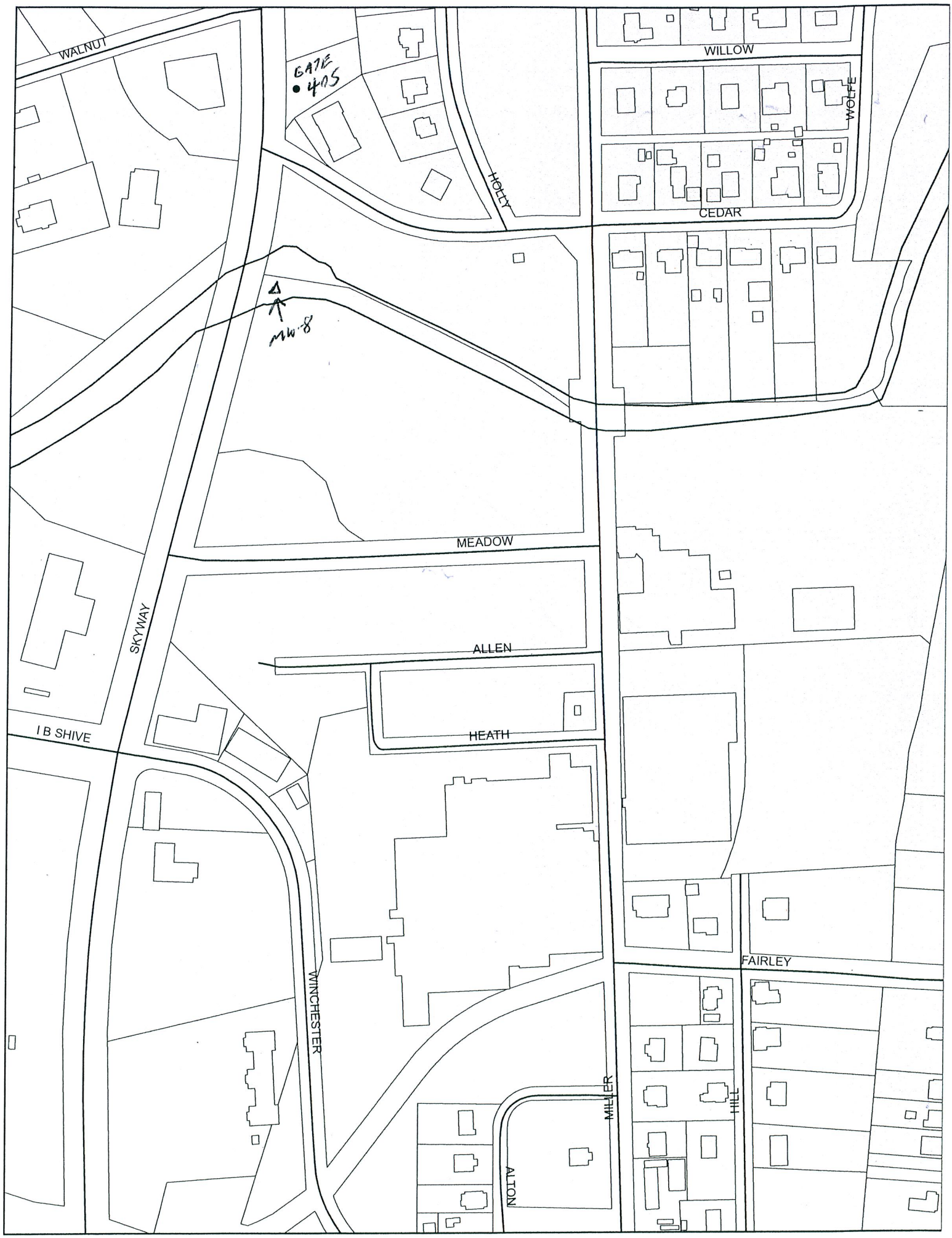
To: Bruce Parris, Western Regional Supervisor
Inactive Hazardous Waste Branch
Superfund Section

Date: March 4, 2013

From: Ed Leach
UST Section - CAB
Mooresville Regional Office

RE: **Bearskin Creek near Gate 405** **UST Incident No. 27969**

The Comprehensive Site Assessment report for the Gate 405 site included delineation of the petroleum plume towards Bearskin Creek in Monroe, NC. As part of the delineation PCE, TCE, and carbon tetrachloride were documented in off-site well MW-8 located across Bearskin Creek from the Gate site. As indicated on one of the attached GIS maps, Monroe Ice & Fuel NONCD0002092, is located upstream of this point and may be the source of these solvents. No WSW's have been identified within 1,000 feet. A stream sample located in line with MW-8 was not impacted by solvent, but was taken during a period of high flow. Copies of the analytical results for MW-8 and the stream sample are attached along with a potentiometric map.


WALNUT
GATE
405
WILLOW
WOLFE
HOLLY
CEDAR
MW-8
MEADOW
SKYWAY
ALLEN
HEATH
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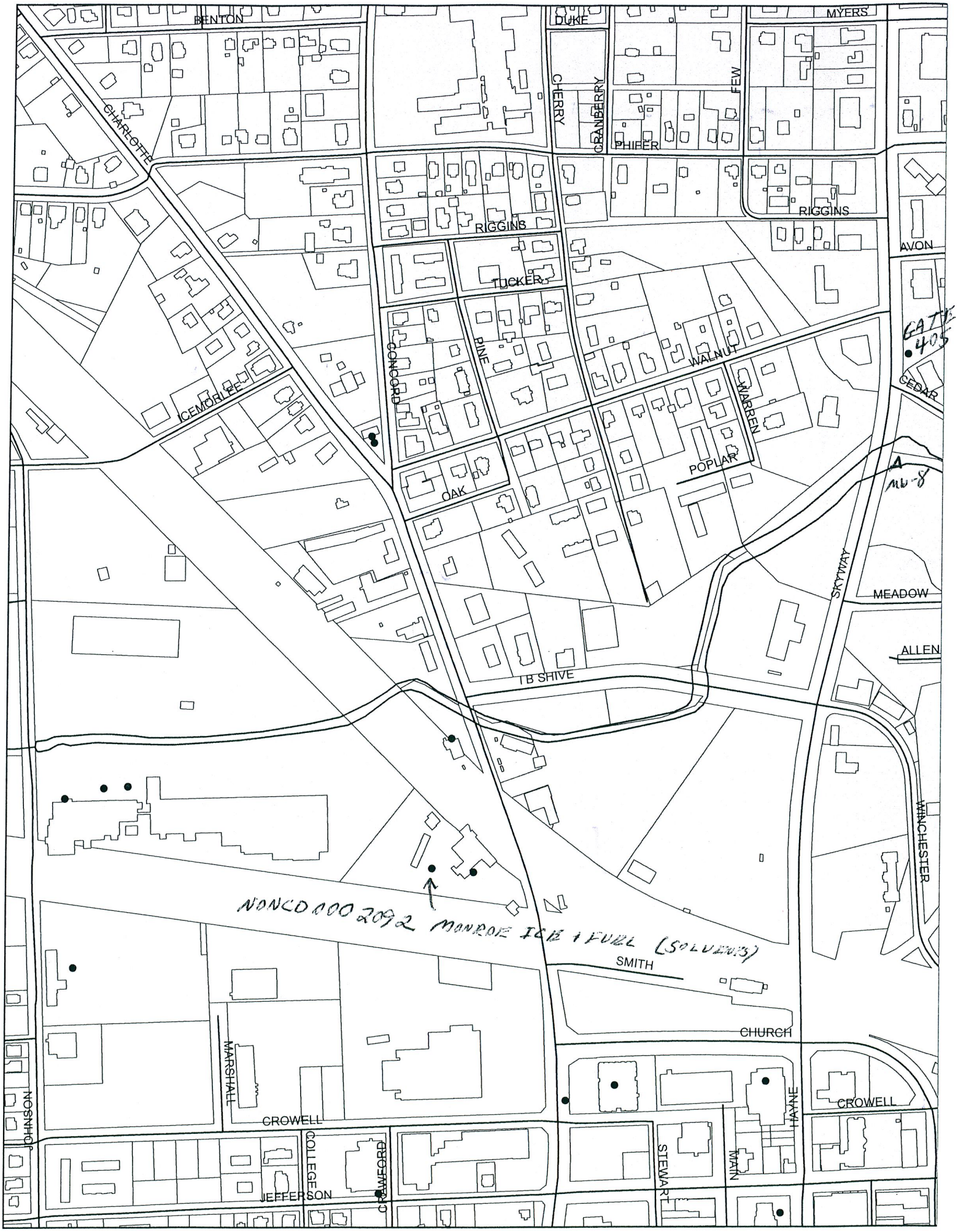
WINCHESTER
FAIRLEY
MILLER
HILL
ALTON


BENTON
DUKE
MYERS
CHARLOTTE
CHERRY
CRANBERRY
FEW
PHIFER
RIGGINS
RIGGINS
AVON
TUCKER
GATE 405
CONCORD
PINE
WALNUT
CEDAR
ICEMORLEE
WARREN
POPLAR
OAK
MU-8
SKYWAY
MEADOW
ALLEN
TB SHIVE
WINCHESTER
NONCD000 2092 MONROE ICE + FUEL (SOLVENTS)
SMITH
CHURCH
MARSHALL
JOHNSON
CROWELL
CROWELL
HAYNE
COLLEGE
CRAWFORD
STEWART
MAIN
JEFFERSON

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0177960.D	1	01/02/13	TD	n/a	n/a	VA1182
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 6200B List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.10	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.10	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.10	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.10	ug/l	
75-25-2	Bromoform	ND	0.50	0.10	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.10	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.10	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.10	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.10	ug/l	
75-00-3	Chloroethane	ND	0.50	0.13	ug/l	
67-66-3	Chloroform	0.54	0.50	0.10	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.10	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.10	ug/l	
56-23-5	Carbon tetrachloride	0.27	0.50	0.13	ug/l	J
75-34-3	1,1-Dichloroethane	ND	0.50	0.10	ug/l	
75-35-4	1,1-Dichloroethylene	0.82	0.50	0.10	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.10	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.16	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.10	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.10	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.10	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.10	ug/l	
108-20-3	Di-Isopropyl ether	ND	0.50	0.10	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.10	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.10	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.10	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.5	0.50	0.10	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.10	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.10	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.10	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.11	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.10	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

VOA 6200B List

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.10	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.10	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.10	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.10	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.10	ug/l	
74-83-9	Methyl bromide	ND	0.50	0.15	ug/l	
74-87-3	Methyl chloride	0.14	0.50	0.11	ug/l	J
74-95-3	Methylene bromide	ND	0.50	0.10	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.36	0.50	0.10	ug/l	J
91-20-3	Naphthalene	ND	0.50	0.15	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.10	ug/l	
100-42-5	Styrene	ND	0.50	0.10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.10	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.10	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.10	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.10	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.10	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.10	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.10	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.10	ug/l	
127-18-4	Tetrachloroethylene	35.9	0.50	0.10	ug/l	
108-88-3	Toluene	ND	0.50	0.10	ug/l	
79-01-6	Trichloroethylene	3.7	0.50	0.10	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	0.10	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.10	ug/l	
	m,p-Xylene	ND	1.0	0.12	ug/l	
95-47-6	o-Xylene	ND	0.50	0.10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
17060-07-0	1,2-Dichloroethane-D4	95%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

3.1

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Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	EPA 625 SW846 3510C	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T005830.D	1	01/02/13	FS	12/31/12	OP45103	ST285
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.67	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.67	ug/l	
120-12-7	Anthracene	ND	4.8	0.72	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.52	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.55	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.73	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.64	ug/l	
218-01-9	Chrysene	ND	4.8	0.56	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.56	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.56	ug/l	
86-73-7	Fluorene	ND	4.8	0.73	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.55	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.68	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.66	ug/l	
91-20-3	Naphthalene	ND	4.8	0.61	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.68	ug/l	
129-00-0	Pyrene	ND	4.8	0.65	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		42-108%
321-60-8	2-Fluorobiphenyl	59%		40-106%
1718-51-0	Terphenyl-d14	69%		39-121%

ND = Not detected MDL - Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV058745.D	1	01/03/13	MM	n/a	n/a	GUV3170
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	1.0	ug/l	
91-20-3	Naphthalene	ND	3.0	3.0	ug/l	
108-88-3	Toluene	ND	2.0	2.0	ug/l	
	m,p-Xylene	ND	2.0	2.0	ug/l	
95-47-6	o-Xylene	ND	2.0	2.0	ug/l	
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	
	C5- C8 Aliphatics	ND	100	35	ug/l	
	C9- C12 Aliphatics	ND	100	35	ug/l	
	C9- C10 Aromatics	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	101%		70-130%
460-00-4	BFB	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN003031.D	1	01/03/13	NMC	12/31/12	OP45104	GNN122
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	3.8	1.9	ug/l	
208-96-8	Acenaphthylene	ND	3.8	1.9	ug/l	
120-12-7	Anthracene	ND	3.8	1.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	3.8	1.9	ug/l	
50-32-8	Benzo(a)pyrene	ND	3.8	1.9	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	3.8	1.9	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	3.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	3.8	1.9	ug/l	
218-01-9	Chrysene	ND	3.8	1.9	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	3.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	3.8	1.9	ug/l	
86-73-7	Fluorene	ND	3.8	1.9	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	3.8	1.9	ug/l	
91-57-6	2-Methylnaphthalene	ND	3.8	1.9	ug/l	
91-20-3	Naphthalene	ND	3.8	1.9	ug/l	
85-01-8	Phenanthrene	ND	3.8	1.9	ug/l	
129-00-0	Pyrene	ND	3.8	1.9	ug/l	
	C11-C22 Aromatics (Unadj.)	ND	190	95	ug/l	
	C9-C18 Aliphatics	ND	190	95	ug/l	
	C19-C36 Aliphatics	ND	190	95	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	74%		40-140%
580-13-2	2-Bromonaphthalene	85%		40-140%
84-15-1	o-Terphenyl	72%		40-140%
321-60-8	2-Fluorobiphenyl	78%		40-140%

ND = Not detected MDL - Method Detection Limit
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW 8		
Lab Sample ID:	FA347-1	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
		Percent Solids:	n/a
Project:	Former Gate 405; Monroe, NC		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	392	5.0	ug/l	1	12/28/12	12/31/12 LM	SW846 6010C [1]	SM 3030C [2]

(1) Instrument QC Batch: MA10426
(2) Prep QC Batch: MP24370

RL = Reporting Limit

Report of Analysis

Client Sample ID:	MW 9		
Lab Sample ID:	FA347-2	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0177961.D	1	01/02/13	TD	n/a	n/a	VA1182
Run #2	-						

	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 6200B List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.10	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.10	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.10	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.10	ug/l	
75-25-2	Bromoform	ND	0.50	0.10	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.10	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.10	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.10	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.10	ug/l	
75-00-3	Chloroethane	ND	0.50	0.13	ug/l	
67-66-3	Chloroform	0.19	0.50	0.10	ug/l	J
95-49-8	o-Chlorotoluene	ND	0.50	0.10	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.10	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.10	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.10	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.10	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.16	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.10	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.10	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.10	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.10	ug/l	
108-20-3	Di-Isopropyl ether	ND	0.50	0.10	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.10	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.10	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.10	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.10	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.10	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.10	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.10	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.11	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.10	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DW 2		
Lab Sample ID:	FA347-3	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
		Percent Solids:	n/a
Project:	Former Gate 405; Monroe, NC		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	9.4	5.0	ug/l	1	12/28/12	12/31/12 LM	SW846 6010C [1]	SM 3030C [2]

(1) Instrument QC Batch: MA10426
(2) Prep QC Batch: MP24370

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0177963.D	1	01/02/13	TD	n/a	n/a	VA1182
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

VOA 6200B List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.10	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.10	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.10	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.10	ug/l	
75-25-2	Bromoform	ND	0.50	0.10	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.10	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.10	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.10	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.10	ug/l	
75-00-3	Chloroethane	ND	0.50	0.13	ug/l	
67-66-3	Chloroform	ND	0.50	0.10	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.10	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.10	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.10	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.10	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.10	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.16	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.10	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.10	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.10	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.10	ug/l	
108-20-3	Di-Isopropyl ether	ND	0.50	0.10	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.10	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.10	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.10	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.10	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.10	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.10	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.10	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.11	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.10	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

VOA 6200B List

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.10	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.10	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.10	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.10	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.10	ug/l	
74-83-9	Methyl bromide	ND	0.50	0.15	ug/l	
74-87-3	Methyl chloride	ND	0.50	0.11	ug/l	
74-95-3	Methylene bromide	ND	0.50	0.10	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.10	ug/l	
91-20-3	Naphthalene	ND	0.50	0.15	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.10	ug/l	
100-42-5	Styrene	ND	0.50	0.10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.10	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.10	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.10	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.10	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.10	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.10	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.10	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.10	ug/l	
127-18-4	Tetrachloroethylene	0.26	0.50	0.10	ug/l	J
108-88-3	Toluene	ND	0.50	0.10	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.10	ug/l	
75-69-4	Trichlorofluoromethane	ND	0.50	0.10	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.10	ug/l	
	m,p-Xylene	ND	1.0	0.12	ug/l	
95-47-6	o-Xylene	ND	0.50	0.10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
17060-07-0	1,2-Dichloroethane-D4	97%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL - Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

3.4 3

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	EPA 625 SW846 3510C	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X026761.D	1	12/31/12	FS	12/31/12	OP45103	SX1290
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.67	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.66	ug/l	
120-12-7	Anthracene	ND	4.8	0.71	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.52	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.54	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.72	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.63	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.64	ug/l	
218-01-9	Chrysene	ND	4.8	0.56	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.56	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.56	ug/l	
86-73-7	Fluorene	ND	4.8	0.73	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.55	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.67	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.66	ug/l	
91-20-3	Naphthalene	ND	4.8	0.61	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.67	ug/l	
129-00-0	Pyrene	ND	4.8	0.65	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		42-108%
321-60-8	2-Fluorobiphenyl	55%		40-106%
1718-51-0	Terphenyl-d14	58%		39-121%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV058765.D	1	01/04/13	MM	n/a	n/a	GUV3171
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	3.0	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
	m,p-Xylene	ND	4.0	2.0	ug/l	
95-47-6	o-Xylene	ND	2.0	1.0	ug/l	
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	
	C5- C8 Aliphatics	ND	100	35	ug/l	
	C9- C12 Aliphatics	ND	100	35	ug/l	
	C9- C10 Aromatics	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	98%		70-130%
460-00-4	BFB	96%		70-130%

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	Former Gate 405; Monroe, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN003034.D	1	01/03/13	NMC	12/31/12	OP45104	GNN122
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	3.8	1.9	ug/l	
208-96-8	Acenaphthylene	ND	3.8	1.9	ug/l	
120-12-7	Anthracene	ND	3.8	1.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	3.8	1.9	ug/l	
50-32-8	Benzo(a)pyrene	ND	3.8	1.9	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	3.8	1.9	ug/l	
191-24-2	Benzo(g,h,i)perylene	2.7	3.8	1.9	ug/l	J
207-08-9	Benzo(k)fluoranthene	ND	3.8	1.9	ug/l	
218-01-9	Chrysene	ND	3.8	1.9	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	3.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	3.8	1.9	ug/l	
86-73-7	Fluorene	ND	3.8	1.9	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	3.8	1.9	ug/l	
91-57-6	2-Methylnaphthalene	ND	3.8	1.9	ug/l	
91-20-3	Naphthalene	ND	3.8	1.9	ug/l	
85-01-8	Phenanthrene	ND	3.8	1.9	ug/l	
129-00-0	Pyrene	ND	3.8	1.9	ug/l	
	C11-C22 Aromatics (Unadj.)	ND	190	96	ug/l	
	C9-C18 Aliphatics	ND	190	96	ug/l	
	C19-C36 Aliphatics	ND	190	96	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	67%		40-140%
580-13-2	2-Bromonaphthalene	94%		40-140%
84-15-1	o-Terphenyl	77%		40-140%
321-60-8	2-Fluorobiphenyl	86%		40-140%

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CREEK		
Lab Sample ID:	FA347-4	**Date Sampled:**	12/27/12
Matrix:	AQ - Ground Water	**Date Received:**	12/28/12
		Percent Solids:	n/a
Project:	Former Gate 405; Monroe, NC		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	< 5.0	5.0	ug/l	1	12/28/12	12/31/12 LM	SW846 6010C [1]	SM 3030C [2]

(1) Instrument QC Batch: MA10426
(2) Prep QC Batch: MP24370

RL = Reporting Limit

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA347 PAGE 1 OF 1

Accutest Quote #

SKIFF#

Client / Reporting Information

Company Name: GRI
Address: 2301-F Crown Point Exec Dr
City: Charlotte State: NC Zip: 28273
Project Contact: J. Teschner E-mail: JMT
Phone#: 704 845 4010
Sampler(s) Name(s) (Printed): Hanna Kahrmann-Zabel

Project Information

Project Name: Gate 405
Street: Skyway Dr
City: Monroe State: NC
Project #:
Fax #:
Client Purchase Order #:

Analytical Information

Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	Total # of Bottles	Other	None	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI Water	MeOH	6200B + MTBE + EDB + TPE	EPA 625 PAH	Total Pb - 3030C	MADEP VPH	MADEP EPH						
1	MW 8	12/27/12	942	HKZ	GW	8	2	1	5							X	X	X	X	X						
2	MW 9	↓	1010	↓	↓	8	2	1	5							X	X	X	X	X						
3	DW2	↓	1033	↓	↓	8	2	1	5							X	X	X	X	X						
4	Creek	↓	917	↓	↓	8	2	1	5							X	X	X	X	X						

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

LAB USE ONLY

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- [x] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [ ] EDD'S

ACCUTEST 2828-C QUEEN CITY DR CLT NC 28208

Comments / Remarks

NC DNER VST
All grab, 1cooler
Limited vol. for DW2

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1	12/27/12	2 12/27 13:30	3	12/27 15:00	4 FX
Relinquished by: 5 FX	Date Time: 12-28-12	Received By: 6 (ALSE) 09:30	Relinquished by: 7	Date Time:	Received By: 8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: / Cooler Temperature (s) Celsius: 2-8

4.1 4

FA347: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA 347 CLIENT: GRI PROJECT: GATE 405

DATE/TIME RECEIVED: 12-28-12 09:30 (MM/DD/YY 24:00) NIMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS: 8994 9338 2817

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 3 CORR. FACTOR +0.4
- [ ] OBSERVED TEMPS: 2.4
- [ ] CORRECTED TEMPS: 2.8

SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [X] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

(APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

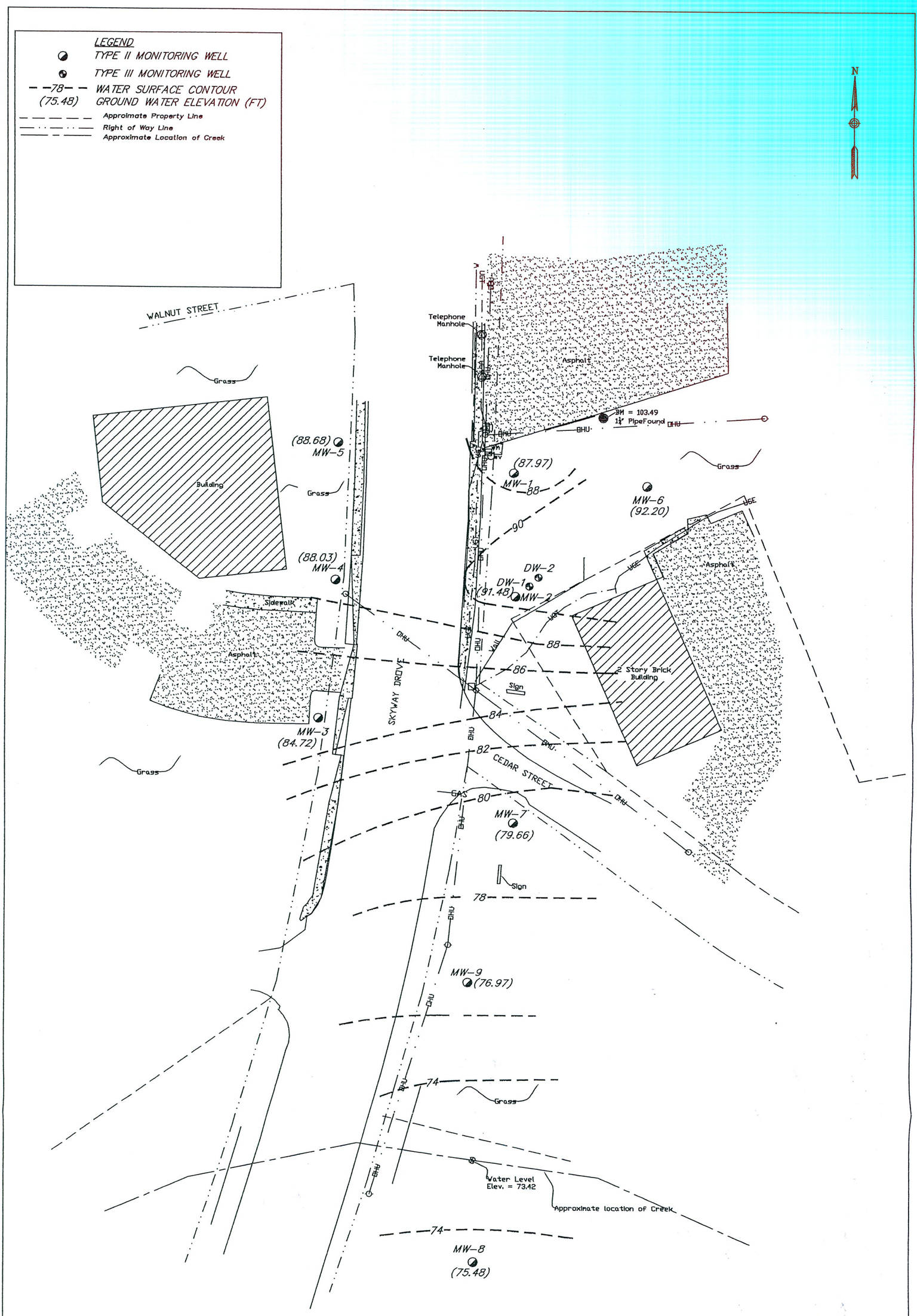
SUMMARY OF COMMENTS: FOR SAMPLE # 3 AMBERS (GRS) and (EPH) RECEIVED 1/4 FULL
RECEIVED 1 AMBER (GRS) 1 (EPH) PER SAMPLE
" 2 VIALS (VPH) PER SAMPLE

TECHNICIAN SIGNATURE/DATE JC 12-28-12 REVIEWER SIGNATURE/DATE [signature] 12/28/12

NF 12/10 receipt confirmation 122910.xls

4.1 4

FA347: Chain of Custody
Page 2 of 2



Geological Resources, Inc.

0 25 50 100

(IN FEET)
1 inch = 50 ft

WATER TABLE SURFACE MAP (1/24/13)

GATE #405 — 1012 Skyway Drive

Monroe, Union County, NC — Incident # 27969

Date: 01/28/13 | Drawn by: RS | Figure: 6