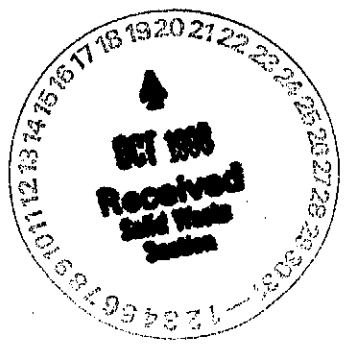
Fac/Perm/Co ID #	Date	Doc ID#
fpc	10.19.98	DIN

To: Mark Poindexter 10/16/98

From: Sandy Wright
(828) 743-0542
- per our conversation today.

ALPHA
ENVIRONMENTAL SCIENCES INC.

PROFESSIONAL ENVIRONMENTAL CONSULTING



MONITORING WELL SAMPLING

AND ANALYSIS

SUMMARY REPORT

FOR

WESTERN BUILDER'S INC., OF SYLVA
SYLVA, NORTH CAROLINA
AES PROJECT #8402.01

PREPARED FOR:

MR. ROGER BARTLETT
WESTERN BUILDER'S, INC.
POST OFFICE BOX 96
SYLVA, NORTH CAROLINA 28779

PREPARED BY:

ALPHA ENVIRONMENTAL SCIENCES, INC.
367 DELLWOOD ROAD, SUITE A-2
WAYNESVILLE, NORTH CAROLINA 28786
(828) 452-3449

SEPTEMBER 22, 1998

ALPHA
ENVIRONMENTAL SCIENCES INC.

September 22, 1998

Mr. Roger Bartlett
Western Builder's Inc. of Sylva
Post Office Box 96
Sylva, North Carolina 28779

RE: Results of Monitoring Well Sampling and Analysis for Western Builder's Inc. Facility, Sylva, North Carolina, AES Project #8402.01

Dear Mr. Bartlett:

As requested, Alpha Environmental Sciences, Inc. has completed the installation/sampling/analysis/reporting of one (1) shallow monitoring well for Western Builder's, Inc. facility. The Summary Report provides a description of the activities performed on site and a summary of the results and conclusions based on the activities performed. Samples were collected to assess potential groundwater contamination. Should you have any question with regard to the information in this summary report, do not hesitate to contact us.

Respectfully submitted,

Alpha Environmental Sciences, Inc.

Russell A. McConnell
Environmental Technician

Roger D. Moore, P.G.
Professional Geologist/Division Manager

RAM/RDM:dps

INTRODUCTION

Alpha Environmental Sciences, Inc. was contracted to perform the installation, sampling and analyses of a shallow two (2) inch monitoring well for Western Builder's Inc. facility located adjacent to the Jackson County Municipal Solid Waste Landfill, Sylva, North Carolina.

The property in question is adjacent and downgradient of the Jackson County Municipal Solid Waste Landfill. These activities were performed as a result of possible impacts to groundwater on the Western Builder's property and potential impact to the drinking water well currently in use on the Western Builder's, Inc. property.

FIELD ASSESSMENT ACTIVITIES

One (1) shallow monitoring well was installed on the Western Builder's, Inc. of Sylva property using a trailer-mounted drill rig employing Hollow Stem auger drilling techniques.

Soil samples were collected at five (5) foot intervals using a split spoon sampler in accordance with ASTM D-1586. Upon completion of the boring, a monitoring well was installed in accordance with NCAC 2C well construction standards using two (2) inch Schedule 40 PVC piping and 0.010 inch slot screen. Figure 1 shows the complete well construction diagram.

On August 31, 1998, groundwater samples were collected in accordance with EPA and NC DENR-DWQ methods from the monitoring well installed on the Western Builder's, Inc. property. The groundwater sampling apparatus consisted of a battery operated purge/sample pump connected to 3/8 inch polyethylene tubing. The well was first thoroughly purged, then samples were collected. The samples were placed in the appropriate containers and placed in an ice filled cooler on site. A proper chain of custody was completed for submittal to a North Carolina certified laboratory.

LABORATORY ANALYTICAL TESTING

A total of four (4) groundwater samples were collected for submittal to a North Carolina certified lab for testing. The samples were to be analyzed for EPA methods 8260/8270 plus tentatively identified compounds and RCRA metals. Tables 1 and 2 show a tabulated list of results from the submitted groundwater samples. The laboratory results may be found in the appendix section of this report.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analytical testing performed on samples from the new monitoring well, it appears that groundwater beneath the Western Builders, Inc. property has been impacted by contaminants leaching from the adjacent Jackson County Municipal Solid Waste Landfill. We would recommend that the drinking water well on the Western Builder's Inc. property not be used for potable water until it is sampled and tested and found to be free of contamination. We would also recommend that the apparent responsible party, Jackson County, as owner of the adjacent landfill be contacted regarding these findings. Under the NCAC 2L groundwater regulations .0106 (c): 1) the Division (of Environmental Management) should be notified 2) owners should take action to eliminate the source 3) owner should submit a report assessing the cause, significance and extent of contamination 4) the owner should implement an approved corrective action plan to restore the groundwater quality. A copy of this section of the regulations is attached in the appendix.

TABLE ONE
GROUNDWATER ANALYTICAL RESULTS
DETECTED COMPOUNDS
EPA METHOD 8260

(concentrations in parts per billion)

CONSTITUENT	RESULT	NCAC 2L STANDARD
BENZENE	5.43	1.0
CHLOROBENZENE	3.59	50.0
CHLOROETHANE	1.99	NL
1,4 - DICHLOROBENZENE	4.35	NL
1,1 - DICHLOROETHANE	2.13	700
CIS - 1,2-DICHLOROETHENE	31.9	70
METHYL CHLORIDE	13.4	NL
TETRACHLOROETHYLENE	5.43	0.70
TRICHLOROETHYLENE	3.80	2.8
VINYL CHLORIDE	2.00	0.015
XYLENES (TOTAL)	3.88	530
NUMBER OF TIC'S		-----

Exceeds NCAC 2L Standards

EPA METHOD 8270
(concentration in parts per billion)

CONSTITUENT	RESULT	NCAC 2L STANDARD
ALL	ND	------
NUMBER OF TIC'S	2	------

* ND - NONE DETECTED
NL - NOT LISTED
TIC'S - TENTATIVELY IDENTIFIED COMPOUNDS
ALL REMAINING PARAMETERS ANALYZED FOR WERE BELOW METHOD DETECTION LIMITS

TABLE TWO
GROUNDWATER ANALYTICAL RESULTS
APPENDIX I
(concentrations in parts per million)

METAL	RESULT	2L STANDARD
BARIUM	0.680	2.0
COBALT	0.018	NL
CHROMIUM	0.035	0.05
COPPER	0.023	1.0
NICKEL	0.023	0.1
LEAD	0.008	0.015
VANADIUM	0.049	NL
ZINC	0.099	2.1

BORING LOG / WELL CONSTRUCTION RECORD

PROJECT NAME	JOB #	BORING/WELL #	SHEET
Western Builders	8402.01	MW-1	1 OF 2

ALPHA Environmental Sciences, Inc.

SITE LOCATION: Dillsboro, N.C.

LOGGED BY: Russell McConnell

OWNER: Western Builders

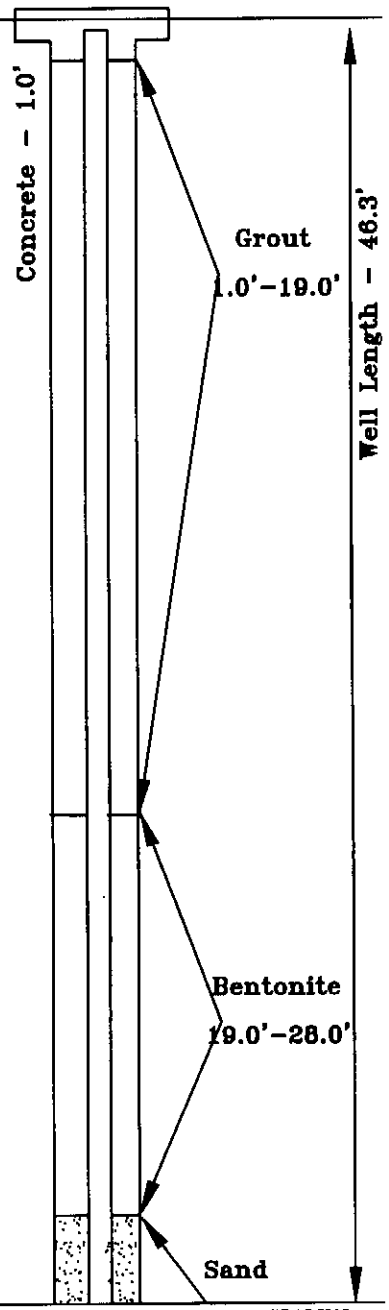
NOTES

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE TIME (24)	RECOVERY (%)	DESCRIPTION OF MATERIAL	USCS
0					SURFACE ELEVATION	
					Topsoil and Rootmat	(ML)
					Brown – Tan – Orange silt with some sand, micaceous, Organic.	(ML)
5	S-1	SS		70		
10	S-2	SS		80	Tan – orange silt and sand, micaceous.	(ML)
15	S-3	SS		90		
20					Tan, white black to orange peppered with mica throughout, mottled.	(ML)
25	S-3	SS		90		
30						

WELL INSTALLED

WELL ID – MW-1

Flush Mount Well Design



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES, IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL FROM TOP OF CASING	39.05	BORING STARTED	8/28/98	TOPSOIL DEPTH	12"
WATER LEVEL AT SAMPLING TIME	39.05	BORING COMPLETED	8/28/98	CAVE-IN-DEPTH	NA
		RIG SIMCO	DRILLER BE	DRILLING METHOD	HSA

PROJECT NAME	JOB #	BORING/WELL #	SHEET
Western Builders	8402.01	MW-1	2 OF 2

SITE LOCATION	LOGGED BY
Dillsboro, N.C.	Russell McConnell

ALPHA Environmental Sciences, Inc.

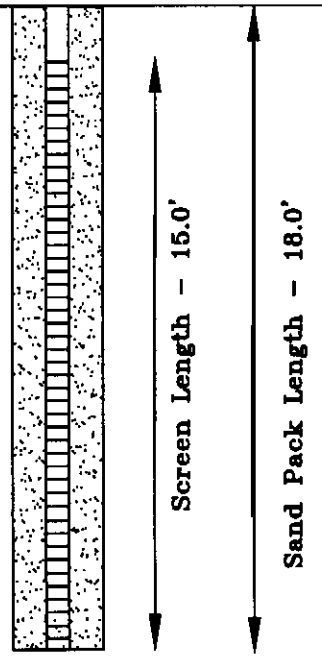
OWNER
Western Builders

NOTES
Cont. from prev. page

WELL INSTALLED

WELL ID - MW-1

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE TIME (24)	RECOVERY (%)	DESCRIPTION OF MATERIAL	USCS
					SURFACE ELEVATION	
30					Brown Tan White Silt with some sand, micaceous, groundwater located at approximately 40ft.	(ML)
	S-5	SS		90		
35						
	S-6	SS		90		
40						
	S-7	SS		90		
45					Boring Terminated at 46.3ft.	
50						
55						
60						



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES, IN-SITU THE TRANSITION MAY BE GRADUAL

WATER LEVEL FROM TOP OF CASING 39.05'	BORING STARTED 08/28/98	TOPSOIL DEPTH	NA-Gravel Surface
WATER LEVEL AT SAMPLING TIME 39.05'	BORING COMPLETED 08/28/98	CAVE-IN-DEPTH	NA
	RIG Simco DRILLER BE	DRILLING METHOD	HSA

LABORATORY ANALYTICAL

RESULTS

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334
Founded 1972

September 14, 1998

Mr. Roger Moore
Alpha Environmental
367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Ref: Analytical Testing
ETC Order # 9809118
Project Description Western Builders

Project # 8402.01

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Nathan A. Pera, IV
Chief Executive Officer

rt
Attachment

ALPHA_ENV

Certifications

Tennessee	*#TN02027*	*Mississippi*	
Arkansas		*Oklahoma*	*#9311*
Alabama	*#40730*	*Virginia*	*#00106*
Kentucky	*#90047*	*Washington*	*#C248*
North Carolina	*#415*	*US Army Corps of Engineers*	
South Carolina	*#84002002*		

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **Alpha Environmental** Project # 8402.01

367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Site ID Western Builders

Date Arrived 09/03/98
ETC Order Number 9809118

ETC Lab ID **9809118-01** Matrix :AQUEOUS
Sample ID: MW-1 Sample Date :08/31/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED	BY	METHOD
Silver	<0.009	mg/L	0.009	1031	09/09/98	TD	6010B
Arsenic	<0.003	mg/L	0.003	1619	09/04/98	TD	7060A
Barium	0.680	mg/L	0.003	1031	09/09/98	TD	6010B
Beryllium	<0.002	mg/L	0.002	1031	09/09/98	TD	6010B
Cadmium	<0.001	mg/L	0.001	1539	09/11/98	JF	7131A
Cobalt	0.018	mg/L	0.009	1031	09/09/98	TD	6010B
Chromium	0.035	mg/L	0.009	1031	09/09/98	TD	6010B
Copper	0.023	mg/L	0.008	1031	09/09/98	TD	6010B
Nickel	0.023	mg/L	0.020	1031	09/09/98	TD	6010B
Lead	0.008	mg/L	0.002	1239	09/08/98	JF	7421
Antimony	<0.004	mg/L	0.004	1431	09/11/98	JF	7041
Selenium	<0.003	mg/L	0.003	1619	09/04/98	TD	7740
Thallium	<0.002	mg/L	0.002	1429	09/08/98	JF	7841
Vanadium	0.049	mg/L	0.010	1031	09/09/98	TD	6010B
Zinc	0.099	mg/L	0.010	1031	09/09/98	TD	6010B

LABORATORY MANAGER

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **Alpha Environmental**

367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Site ID Western Builders

Project # 8402.01
FID #

Date Arrived 09/03/98
ETC Order Number 9809118

ETC Lab ID **9809118-01**
Sample ID: MW-1

Matrix :AQUEOUS
Sample Date :08/31/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics					09/09/98	LS	8260B
Acetone	ND	ug/L	25.0				
Acrylonitrile	ND	ug/L	50.0				
Benzene	5.43	ug/L	1.00				
Bromochloromethane	ND	ug/L	1.00				
Bromodichloromethane	ND	ug/L	1.00				
Bromoform	ND	ug/L	1.00				
Carbon Disulfide	ND	ug/L	5.00				
Carbon Tetrachloride	ND	ug/L	1.00				
Chlorobenzene	3.59	ug/L	1.00				
Chloroethane	1.99	ug/L	1.00				
Chloroform	ND	ug/L	1.00				
Dibromochloromethane	ND	ug/L	1.00				
1,2-Dibromo-3-chloropropane	ND	ug/L	1.00				
1,2-Dibromoethane	ND	ug/L	1.00				
1,2-Dichlorobenzene	ND	ug/L	1.00				
1,4-Dichlorobenzene	4.35	ug/L	1.00				
trans-1,4-Dichloro-2-butene	ND	ug/L	1.00				
1,1-Dichloroethane	2.13	ug/L	1.00				
1,2-Dichloroethane	ND	ug/L	1.00				
1,1-Dichloroethene	ND	ug/L	1.00				
cis-1,2-Dichloroethene	31.9	ug/L	1.00				
trans-1,2-Dichloroethene	ND	ug/L	1.00				
1,2-Dichloropropane	ND	ug/L	1.00				
cis-1,3-Dichloropropene	ND	ug/L	1.00				
trans-1,3-Dichloropropene	ND	ug/L	1.00				
Ethylbenzene	ND	ug/L	1.00				
2-Hexanone (MBK)	ND	ug/L	20.0				
Methyl Bromide	ND	ug/L	1.00				
Methyl Chloride	13.4	ug/L	1.00				
Methylene Bromide	ND	ug/L	1.00				
Methylene Chloride	ND	ug/L	10.0				
Methyl Ethyl Ketone (MEK)	ND	ug/L	20.0				
Methyl Iodide	ND	ug/L	1.00				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	20.0				
Styrene	ND	ug/L	1.00				
1,1,1,2-Tetrachloroethane	ND	ug/L	1.00				
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00				
Tetrachloroethene	5.43	ug/L	1.00				
Toluene	ND	ug/L	1.00				
1,1,1-Trichloroethane	ND	ug/L	1.00				
1,1,2-Trichloroethane	ND	ug/L	1.00				
Trichloroethene	3.80	ug/L	1.00				
Trichlorofluoromethane	ND	ug/L	1.00				

LABORATORY MANAGER

ND - Not Detected

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **Alpha Environmental**

367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Site ID Western Builders

Project # 8402.01
FID #

Date Arrived 09/03/98
ETC Order Number 9809118

ETC Lab ID **9809118-01**
Sample ID: MW-1

Matrix :AQUEOUS
Sample Date :08/31/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics					09/09/98	LS	8260B
1,2,3-Trichloropropane	ND	ug/L	1.00				
Vinyl Acetate	ND	ug/L	5.00				
Vinyl Chloride	2.00	ug/L	1.00				
Xylenes (Total)	3.88	ug/L	1.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	103	87	107
S2 - Toluene-d8	95	91	108
S3 - 4-Bromofluorobenzene	100	88	107

LABORATORY MANAGER

ND - Not Detected

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9809-118-1

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 9809-118

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML Lab File ID: 0601002

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 09/09/98

GC Column: ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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19.					
20.					
21.					
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27.					
28.					
29.					
30.					

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **Alpha Environmental**

367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Site ID Western Builders

Project # 8402.01
FID #

Date Arrived 09/03/98
ETC Order Number 9809118

ETC Lab ID **9809118-01**
Sample ID: MW-1

Matrix :AQUEOUS
Sample Date :08/31/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				09/04/98	09/12/98	RR	8270C
Acenaphthene	ND	ug/L	5.00				
Acenaphthylene	ND	ug/L	5.00				
Aniline	ND	ug/L	5.00				
Anthracene	ND	ug/L	5.00				
Benzo(a)anthracene	ND	ug/L	5.00				
Benzo(b)fluoranthene	ND	ug/L	5.00				
Benzo(k)fluoranthene	ND	ug/L	5.00				
Benzo(g,h,i)perylene	ND	ug/L	5.00				
Benzo(a)pyrene	ND	ug/L	5.00				
Benzoic Acid	ND	ug/L	20.0				
Benzidine	ND	ug/L	50.0				
Benzyl Alcohol	ND	ug/L	5.00				
Bis(2-chloroethoxy)methane	ND	ug/L	5.00				
Bis(2-chloroethyl)ether	ND	ug/L	5.00				
Bis(2-chloroisopropyl)ether	ND	ug/L	5.00				
Bis(2-ethylhexyl) phthalate	ND	ug/L	5.00				
4-Bromophenyl phenyl ether	ND	ug/L	5.00				
Butyl benzyl phthalate	ND	ug/L	5.00				
4-Chloroaniline	ND	ug/L	5.00				
2-Chloronaphthalene	ND	ug/L	5.00				
4-Chloro-3-methylphenol	ND	ug/L	5.00				
2-Chlorophenol	ND	ug/L	5.00				
4-Chlorophenyl phenyl ether	ND	ug/L	5.00				
Chrysene	ND	ug/L	5.00				
Dibenzo(a,h)anthracene	ND	ug/L	5.00				
Dibenzofuran	ND	ug/L	5.00				
Di-n-butyl phthalate	ND	ug/L	5.00				
1,2-Dichlorobenzene	ND	ug/L	5.00				
1,3-Dichlorobenzene	ND	ug/L	5.00				
1,4-Dichlorobenzene	ND	ug/L	5.00				
3,3'-Dichlorobenzidine	ND	ug/L	5.00				
2,4-Dichlorophenol	ND	ug/L	5.00				
Diethyl phthalate	ND	ug/L	5.00				
2,4-Dimethylphenol	ND	ug/L	5.00				
Dimethyl phthalate	ND	ug/L	5.00				
4,6-Dinitro-2-methylphenol	ND	ug/L	5.00				
2,4-Dinitrophenol	ND	ug/L	10.0				
2,4-Dinitrotoluene	ND	ug/L	5.00				
2,6-Dinitrotoluene	ND	ug/L	5.00				
Di-n-octyl phthalate	ND	ug/L	5.00				
Fluoranthene	ND	ug/L	5.00				
Fluorene	ND	ug/L	5.00				
Hexachlorobenzene	ND	ug/L	5.00				

LABORATORY MANAGER

ND - Not Detected

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **Alpha Environmental**

367 Dellwood Road
Suite A-2
Waynesville, NC 28786

Site ID Western Builders

Project # 8402.01
FID #

Date Arrived 09/03/98
ETC Order Number 9809118

ETC Lab ID **9809118-01**
Sample ID: MW-1

Matrix :AQUEOUS
Sample Date :08/31/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				09/04/98	09/12/98	RR	8270C
Hexachlorobutadiene	ND	ug/L	5.00				
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.00				
Isophorone	ND	ug/L	5.00				
2-Methylnaphthalene	ND	ug/L	5.00				
2-Methylphenol (o-cresol)	ND	ug/L	5.00				
3&4-Methylphenol (m&p-cresol)	ND	ug/L	5.00				
Naphthalene	ND	ug/L	5.00				
Nitrobenzene	ND	ug/L	5.00				
2-Nitroaniline	ND	ug/L	5.00				
3-Nitroaniline	ND	ug/L	5.00				
4-Nitroaniline	ND	ug/L	5.00				
2-Nitrophenol	ND	ug/L	5.00				
4-Nitrophenol	ND	ug/L	5.00				
N-Nitrosodimethylamine	ND	ug/L	5.00				
N-Nitrosodiphenylamine	ND	ug/L	5.00				
N-Nitrosodipropylamine	ND	ug/L	5.00				
Pentachlorophenol	ND	ug/L	5.00				
Phenanthrene	ND	ug/L	5.00				
Phenol	ND	ug/L	5.00				
Pyrene	ND	ug/L	5.00				
Pyridine	ND	ug/L	5.00				
1,2,4-Trichlorobenzene	ND	ug/L	5.00				
2,4,5-Trichlorphenol	ND	ug/L	5.00				
2,4,6-Trichlorophenol	ND	ug/L	5.00				
Hexachloroethane	ND	ug/L	5.00				
Hexachlorocyclopentadiene	ND	ug/L	5.00				
1,2-Diphenylhydrazine	ND	ug/L	5.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Nitrobenzene-d5	74	35	85
S2 - 2-Fluorobiphenyl	67	46	84
S3 - 4-Terphenyl-d14	61	33	113
S4 - Phenol-d6	28	12	48
S5 - 2,4,6-Tribromophenol	72	10	100
S6 - 2-Fluorophenol	42	21	73

LABORATORY MANAGER

ND - Not Detected

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9809-118-1

Lab Name: ETC, INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: 9809-118

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1901019

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1(mL) Date Analyzed: 09/12/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-38-3	BENZENE, 1,3-DIMETHYL-	3.59	13.4	NJ
2.	542-85-8	ETHANE, ISOTHIOCYANATO-	4.22	8.4	NJ
3.					
4.					
5.					
6.					
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30.					

CHAIN OF CUSTODY RECORD

Environmental Testing & Consulting, Inc.
2924 Walnut Grove Rd.
Memphis, TN 38111
(901)327-2750 FAX (901)327-6334

ETC Work Order : 9809118

Company Name	Phone # : 828 452 3449	Fax Results	✓
Alpha Env. Sciences Inc.	Fax # : 828 452 7828	RUSH	
Project/Site	FID # :	Ice	✓
Western Builders	PO # :		
Project #	Matrix		
8402.01	1 Wastewater 4 Sludge		
Project Manager/Contact	2 Aqueous 5 Oil/Solvent		
Roger Moore	3 Soil/Sediment 6 Other		

Analysis Requested
(Note special detection limits or methods)

# of cont.	Sample ID/ Number	Depth	Sample Date	Sample Time	Matrix	Type Grab/Comp	8260 plus TICs	8270	Metals (3050) Appendix I	Mercury	Comments
4	MW-1	—	8/3/98	1220	2	Comp	X	X	X		

Relinquished By [signature]

Sampled By	Method of Shipment	Blank/Cooler Temp	Remarks
Brevard Blythe	FedEx	4°C (RB)	Fax Results - Normal TAT

RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY (sign)	DATE	TIME	Sample Delivery Group ID
[signature]	9/1/98	1400				
RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY (sign)	DATE	TIME	
RELINQUISHED BY (sign)	DATE	TIME	RECEIVED BY LAB (print/sign)	DATE	TIME	
			[signature]	9/8/98	1000	

Distribution : Original and Yellow accompany samples to the laboratory. Pink copy for Field Crew.

NORTH CAROLINA ADMINISTRATIVE CODE SUBCHAPTER 2L CLASSIFICATIONS AND WATER QUALITY STANDARDS

property owners identified pursuant to Paragraph (e) of this Rule and to the local County Health Director and the chief administrative officer of the political jurisdiction(s) in which the contamination occurs.

(2) The notice shall contain the following information:

(A) name, address, and phone number of the agency issuing the public notice;

(B) the location and extent of the designated area;

(C) the county title number, county tax identification number, or the property tax book and page identifiers;

(D) a brief description of the action or actions which resulted in the degradation of groundwater in the area;

(E) actions or intended actions taken to restore groundwater quality;

(F) the significance of the RS designation;

(G) conditions applicable to removal of the RS designation;

(H) address and phone number of a Division contact from whom interested parties may obtain further information.

(3) The Director shall consider all requests for a public hearing, and if he determines that there is significant public interest he shall issue public notice and hold a public hearing in accordance with G.S 143-215.4(b) and Rule .0113(e) of this Section.

(4) These requirements shall not apply to groundwaters defined in Paragraph (b) of this Rule.

History Note: *Statutory Authority G.S. 143-214.1; 143-215.3(a)(1); 143B-282(2);*
Eff. June 10, 1979;
Amended Eff. October 1, 1993; December 1, 1989; August 1, 1989;
December 30, 1983.

.0105 ADOPTION BY REFERENCE

History Note: *Statutory Authority G.S. 143-214.1;*
Eff. December 30, 1983;
Repealed Eff. August 1, 1989.

.0106 CORRECTIVE ACTION

(a) Where groundwater quality has been degraded, the goal of any required corrective action shall be restoration to the level of the standards, or as closely thereto as is economically and technologically feasible. In all cases involving requests to the Director for approval of corrective action plans, or termination of corrective action, the responsibility for providing all information required by this Rule lies with the person(s) making the request.

(b) Any person conducting or controlling an activity which results in the discharge of a waste or hazardous substance or oil to the groundwaters of the State, or in proximity thereto, shall take immediate action to terminate and control the discharge, mitigate any hazards resulting from exposure to the pollutants and notify the Division of the discharge.

(c) Any person conducting or controlling an activity which has not been permitted by the Division and which results in an increase in the concentration of a substance in excess of the standard, other than agricultural operations, shall:

(1) immediately notify the Division of the activity that has resulted in the increase

and the contaminant concentration levels;

(2) take immediate action to eliminate the source or sources of contamination;

(3) submit a report to the Director assessing the cause, significance and extent of the violation; and

(4) implement an approved corrective action plan for restoration of groundwater quality in accordance with a schedule established by the Director, or his designee. In establishing a schedule the Director, or his designee shall consider any reasonable schedule proposed by the person submitting the plan. A report shall be made to the Health Director of the county or counties in which the contamination occurs in accordance with the requirements of Rule .0114(a) in this Section.

(d) Any person conducting or controlling an activity which is conducted under the authority of a permit issued by the Division and which results in an increase in concentration of a substance in excess of the standards:

(1) at or beyond a review boundary, shall demonstrate, through predictive calculations or modeling, that natural site conditions, facility design and operational controls will prevent a violation of standards at the compliance boundary; or submit a plan for alteration of existing site conditions, facility design or operational controls that will prevent a violation at the compliance boundary, and implement that plan upon its approval by the Director, or his designee.

(2) at or beyond a compliance boundary, shall assess the cause, significance and extent of the violation of standards and submit the results of the investigation, and a plan and proposed schedule for corrective action to the Director, or his designee. The permittee shall implement the plan as approved by and in accordance with a schedule established by the Director, or his designee. In establishing a schedule the Director, or his designee shall consider any reasonable schedule proposed by the permittee.

(e) For the purposes of Paragraphs (c) and (d) of this Rule, an activity conducted under the authority of a permit issued by the Division, and subject to Paragraph (d) of this Rule, is one for which:

(1) a permit has been issued pursuant to G.S. 143-215.1;

(2) the permit was originally issued after December 30, 1983;

(3) the substance for which a standard has been exceeded outside the compliance boundary has been released to groundwater as a result of the permitted activity;

(4) all other activities shall for the purpose of this Rule be deemed not permitted by the Division and subject to the provisions of Paragraph (c) of this Rule.

(f) Corrective action required following discovery of the unauthorized release of a contaminant to the surface or subsurface of the land, and prior to or concurrent with the assessment required in Paragraphs (c) and (d) of this Rule, shall include, but is not limited to:

(1) Prevention of fire, explosion or the spread of noxious fumes;

(2) Abatement, containment or control of the migration of contaminants;

(3) Removal, or treatment and control of any primary pollution source such as buried waste, waste stockpiles or surficial accumulations of free products;

(4) Removal, treatment or control of secondary pollution sources which would be potential continuing sources of pollutants to the groundwaters such as contaminated soils and non-aqueous phase liquids. Contaminated soils which threaten the quality of groundwaters must be treated, contained or disposed of in

accordance with applicable rules and procedures established by the Division. The treatment or disposal of contaminated soils shall be conducted in a manner that will not result in a violation of standards or North Carolina Hazardous Waste Management rules.

(g) The site assessment conducted pursuant to the requirements of Paragraph (c) of this Rule, shall include:

(1) The source and cause of contamination;

(2) Any imminent hazards to public health and safety and actions taken to mitigate them in accordance with Paragraph (f) of this Rule;

(3) All receptors and significant exposure pathways;

(4) The horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport; and

(5) Geological and hydrogeological features influencing the movement, chemical, and physical character of the contaminants.

Reports of site assessments shall be submitted to the Division as soon as practicable or in accordance with a schedule established by the Director, or his designee. In establishing a schedule the Director, or his designee shall consider any reasonable proposal by the person submitting the report.

(h) Corrective action plans for restoration of groundwater quality, submitted pursuant to Paragraphs (c) and (d) of this Rule shall include:

(1) A description of the proposed corrective action and reasons for its selection.

(2) Specific plans, including engineering details where applicable, for restoring groundwater quality.

(3) A schedule for the implementation and operation of the proposed plan.

(4) A monitoring plan for evaluating the effectiveness of the proposed corrective action and the movement of the contaminant plume.

(i) In the evaluation of corrective action plans, the Director, or his designee shall consider the extent of any violations, the extent of any threat to human health or safety, the extent of damage or potential adverse impact to the environment, technology available to accomplish restoration, the potential for degradation of the contaminants in the environment, the time and costs estimated to achieve groundwater quality restoration, and the public and economic benefits to be derived from groundwater quality restoration.

(j) A corrective action plan prepared pursuant to Paragraph (c) or (d) of this Rule must be implemented using the best available technology for restoration of groundwater quality to the level of the standards, except as provided in Paragraphs (k), (l), and (m) of this Rule.

(k) Any person required to implement an approved corrective action plan for a non-permitted site pursuant to this Rule may request that the Director approve such a plan without requiring groundwater remediation to the standards. A request submitted to the Director under this Paragraph shall include a description of site specific conditions, including information on the availability of public water supplies for the affected area; the technical basis for the request; and any other information requested by the Director to thoroughly evaluate the request. In addition, the person making the request must demonstrate to the satisfaction of the Director:

(1) that all sources of contamination and free product have been removed or controlled pursuant to Paragraph (f) of this Rule;

(2) that the time and direction of contaminant travel can be predicted with reasonable certainty;

(3) that contaminants have not and will not migrate onto adjacent properties, or that:

(A) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater, or

(B) the owners of such properties have consented in writing to the request;

(4) that the standards specified in Rule .0202 of this Subchapter will be met at a location no closer than one year time of travel upgradient of an existing or foreseeable receptor, based on travel time and the natural attenuation capacity of subsurface materials or on a physical barrier to groundwater migration that exists or will be installed by the person making the request;

(5) that, if the contaminant plume is expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 2B .0200;

(6) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section;

(7) that the proposed corrective action plan would be consistent with all other environmental laws.

(l) Any person required to implement an approved corrective action plan for a non-permitted site pursuant to this Rule may request that the Director approve such a plan based upon natural processes of degradation and attenuation of contaminants. A request submitted to the Director under this Paragraph shall include a description of site specific conditions, including written documentation of projected groundwater use in the contaminated area based on current state or local government planning efforts; the technical basis for the request; and any other information requested by the Director to thoroughly evaluate the request. In addition, the person making the request must demonstrate to the satisfaction of the Director:

(1) that all sources of contamination and free product have been removed or controlled pursuant to Paragraph (f) of this Rule;

(2) that the contaminant has the capacity to degrade or attenuate under the site-specific conditions;

(3) that the time and direction of contaminant travel can be predicted with reasonable certainty;

(4) that contaminant migration will not result in any violation of applicable groundwater standards at any existing or foreseeable receptor;

(5) that contaminants have not and will not migrate onto adjacent properties, or that:

(A) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater, or

(B) the owners of such properties have consented in writing to the request;

(6) that, if the contaminant plume is expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 2B .0200;

(7) that the person making the request will put in place a groundwater monitoring program sufficient to track the degradation and attenuation of contaminants and contaminant by-products within and down gradient of the plume and to detect contaminants and contaminant by-products prior to their reaching any existing or foreseeable receptor at least one year's time of travel upgradient of the receptor and no greater than the distance the groundwater at the contaminated site is predicted to travel in five years;

(8) that all necessary access agreements needed to monitor groundwater quality pursuant to Subparagraph (7) of this Paragraph have been or can be obtained;

(9) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section; and

(10) that the proposed corrective action plan would be consistent with all other environmental laws.

(m) The Division or any person required to implement an approved corrective action plan for a non-permitted site pursuant to this Rule may request that the Director approve termination of corrective action.

(1) A request submitted to the Director under this Paragraph shall include:

(A) a discussion of the duration of the corrective action, the total project's cost, projected annual cost for continuance and evaluation of the success of the corrective action;

(B) an evaluation of alternate treatment technologies which could result in further reduction of contaminant levels projected capital and annual operating costs for each technology;

(C) effects, including health and safety impacts, on groundwater users if contaminant levels remain at levels existing at the time corrective action is terminated; and

(D) any other information requested by the Director to thoroughly evaluate the request.

(2) In addition, the person making the request must demonstrate to the satisfaction of the Director:

(A) that continuation of corrective action would not result in a significant reduction in the concentration of contaminants (At a minimum this demonstration must show the duration and degree of success of existing remedial efforts to attain standards and include a showing that the asymptotic slope of the contaminants curve of decontamination is less than a ratio of 1:40 over a term of one year based on quarterly sampling);

(B) that contaminants have not and will not migrate onto adjacent properties, or that:

(i) such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater, or

(ii) the owners of such properties have consented in writing to the request;

(C) that, if the contaminant plumes expected to intercept surface waters, the groundwater discharge will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 15A NCAC 2B .0200;

(D) that public notice of the request has been provided in accordance with Rule .0114(b) of this Section; and

(E) that the proposed termination would be consistent with all other environmental laws.

(3) The Director shall not authorize termination of corrective action for any area that, at the time the request is made, has been identified by a state or local groundwater use planning process for resource development.

(4) The Director may authorize the termination of corrective action, or amend the corrective action plan after considering all the information in the request. Upon termination of corrective action, the Director shall require implementation of a

groundwater monitoring program sufficient to track the degradation and attenuation of contaminants at a location of at least one year's predicted time of travel upgradient of any existing or foreseeable receptor. The monitoring program shall remain in effect until there is sufficient evidence that the contaminant concentrations have been reduced to the level of the standards.

(n) Upon a determination by the Director that continued corrective action would result in no significant reduction in contaminant concentrations, and the contaminated groundwaters can be rendered potable by treatment using readily available and economically reasonable technologies, the Director may designate the remaining area of degraded groundwater RS. Where the remaining degraded groundwaters cannot be made potable by such treatment, the Director may consider a request for reclassification of the groundwater to a GC classification as outlined in Rule .0201 of this Subchapter.

(o) If at any time the Director determines that a new technology is available that would remediate the contaminated groundwater to the standards specified in Rule .0202 of this Subchapter, the Director may require the responsible party to evaluate the economic and technological feasibility of implementing the new technology in an active groundwater corrective action plan in accordance with a schedule established by the Director. The Director's determination to utilize new technology at any site or for any particular constituent shall include a consideration of the factors in Paragraph (h) of this Rule.

(p) Where standards are exceeded as a result of the application of pesticides or other agricultural chemicals, the Director shall request the Pesticide Board or the Department of Agriculture to assist the Division of Environmental Management in determining the cause of the violation. If the violation is determined to have resulted from the use of pesticides, the Director shall request the Pesticide Board to take appropriate regulatory action to control the use of the chemical or chemicals responsible for, or contributing to, such violations, or to discontinue their use.

(q) The approval pursuant to this Rule of any corrective action plan, or modification or termination thereof, which permits the migration of a contaminant onto adjacent property, shall not affect any private right of action by any party which may be effected by that contamination.

History Note: *Statutory Authority G.S. 143-215.2; 143-215.3(a)(1); 143B-282;*
Eff. August 1, 1989;
Amended Eff. October 1, 1993; September 1, 1992.

.0107 COMPLIANCE BOUNDARY

(a) For disposal systems individually permitted prior to December 30, 1983, the compliance boundary is established at a horizontal distance of 500 feet from the waste boundary or at the property boundary, whichever is closer to the source.

(b) For disposal systems individually permitted on or after December 30, 1983, a compliance boundary shall be established 250 feet from the waste boundary, or 50 feet within the property boundary, whichever point is closer to the source.

(c) The boundary shall be established by the Director, or his designee at the time of permit issuance. Any sale or transfer of property which affects a compliance boundary shall be reported immediately to the Director, or his designee. For disposal systems which are not governed by Paragraphs (e) or (f) of this Rule, the compliance boundary affected by the sale or transfer of property will be re-established consistent with Paragraphs (a) or (b) of this Rule, whichever is applicable.