



**NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

**DIVISION OF WASTE MANAGEMENT**

April 13, 1999

Fac/Perm/Co ID # <i>B.C.</i>	Date <i>04/13/99</i>	Doc ID# DIN
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Mr. Jay Denton  
 Jackson County Manager  
 Jackson County Justice Center  
 401 Grindstaff Cove Road  
 Sylva, N.C. 28779

Re: Approval of the Phase II Water Quality Investigation at the Closed Jackson County Landfill (Permit #50-02).

Dear Mr. Denton,

First of all I want to thank you for the diligence you have demonstrated in working towards a resolution of the water quality issues surrounding the County's landfill. The Solid Waste Section realizes the time and monetary investment it takes to resolve these issues but the County has made significant progress in answering many of the questions surrounding the water quality in the area.

Verbal approval was given for the phase I and phase II assessment proposals. This correspondence is to follow up in writing the verbal approval granted for both phases. The proposed field work and subsequent report shall be due as the phase II work plan schedule prescribed.

Once again, thank you for your prompt attention to these matters. If you have any questions, please contact Mark Poindexter at (919) 733-0692, extension 261.

Sincerely,

Philip Prete, Head  
 Field Operations Branch  
 Solid Waste Section

c: Mark Poindexter  
 Julian Foscue  
 Jim Patterson  
 central file

C:\WPDOCS\COUNTIES\JACKSON\50-02#3.AST



NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT



December 14, 1998

Mr. Frank Young  
4222 Tilley Creek Road  
Cullowhee, N.C. 28723

Dear Mr. Young,

I appreciate your concern about the water quality issues at the Jackson County landfill. To update you on the efforts being made at the Jackson County landfill, the Division has approved phase I of a water quality assessment plan that will identify the extent of the contaminated groundwater. Private potable wells near the landfill have been sampled and no contaminants were detected. The phase I investigation includes sampling all the potable wells within one-quarter mile radius of the landfill. Tuckaseige River samples have not detected any landfill contamination.

Waste management decisions (whether to landfill, incinerate, combustion, etc.) within the County is a local issue. I would encourage you to make your local elected officials aware of your concerns.

Sincerely,

A handwritten signature in cursive script that reads "Mark Poindexter".

Mark Poindexter, Hydrogeologist  
Groundwater Compliance Unit  
Solid Waste Section

c: Philip Prete  
Julian Foscue  
Jim Patterson  
central file

C:\WPDOCS\COUNTIES\JACKSON\YOUNG.RSP

**NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES**

**DIVISION OF WASTE MANAGEMENT**

September 3, 1998

Mr. Dave Fowler  
Executive Director of Services  
Jackson County  
401 Grindstaff Cove Road  
Sylva, N.C. 28779

Re: Implementation of Groundwater Assessment and Corrective Action  
Requirements (Permit #50-02).

Dear Mr. Fowler,

The Solid Waste Section is in receipt of the August 25, 1998 letter submitted on behalf of Jackson County by McGill Associates. In response to that letter the Section offers the following comments as reasons why the County should not further delay the implementation of the remaining requirements of .1634. After completing the requirements of .1634 it will then be determined if it is necessary to implement the requirements in .1635 (Assessment of Corrective Measures), .1636 (Selection of a Remedy), and .1637 (Implementation of the Corrective Action Program).

- 1) The water quality data collected to date confirms the landfill has had an affect on the groundwater for some time. While the recently installed landfill cap will likely reduce further degradation of the groundwater it will have little effect on the groundwater contamination already present.
- 2) The County is required to compare, using the approved statistical procedures, the concentration of the Appendix II constituents to the groundwater protection standards to ascertain if further action is necessary. If so, the following step must be taken:
  - a) Since the extent of the contaminant plume is not known at this time, delineation of the contaminant plume(s), vertically and horizontally, is required. Rule .1634 (g) requires characterization of the nature and extent of any release. In addition, characterization of the plume and continued monitoring would be useful in assessing the effectiveness of the cap in the future.
- 3) The effect the private wells on properties adjacent to the landfill are having on local groundwater flow also needs to be determined.

The closure and capping of the landfill is a requirement for all unlined municipal solid waste landfills and is not considered corrective action. Only after the requirements of .1634 have been fulfilled can a corrective action plan

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605  
PHONE 919-733-4996 FAX 919-715-3605

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**JAMES B. HUNT JR.**  
GOVERNOR

**WAYNE MCDEVITT**  
SECRETARY

**WILLIAM L. MEYER**  
DIRECTOR

2-7-96 IMPORTANT 3:00

To Bobby 3:10

Date 2-6-96 Time 3:00

**WHILE YOU WERE OUT**

M Dave Fowler

of S. Waste Co. - Jackson G.

Phone 704 - 586 - 7577

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL			

Message 1995 Sampling data

J. Co Justice Center  
401 Grindstaff Cove Rd.  
Sylva, NC 28779

Signed

N.C. Dept. of Environment, Health, and Natural Resources



Printed on Recycled Paper

This is a copy of  
 a letter you've  
 already received.  
 I'm just correcting  
 a type-o. The  
 highlighted areas  
 should be 6 inches  
 instead of 6 feet.  
 Thank you!



June 2, 1998

P.O. BOX 96, SYLVA, NC 28779

390 W. HAYWOOD RD. DILLSBORO 28725

NCDENR  
PO Box 27687  
Raleigh, NC 27611-7687  
ATTN: Bobby Lutfy



RE: Jackson County Monitoring Wells

Dear Mr. Lutfy:

We received your letter dated May 26, 1998, and we appreciate the concern you have shown for us. When information is made available we will be forwarding it for your review.

Western Builders of Sylva, Inc., presently employs approximately sixty people on a full-time basis. However, we also have many vendors, subcontractors and customers that visit our office on a daily basis. Being a construction company also requires job site water coolers which are filled at our office due largely to the ice machine located here. Our coffee machine seems to be our prize possession as each morning most of our employees gather at our office to drink coffee before car pooling to the various job sites.

Our well is 140 feet deep and the yield is 6 GPM. The diameter is 6 <sup>inches</sup> ~~feet~~, casing depth is 50 feet and the static water level is at 30 feet. It is located approximately 300 feet from Jackson County monitoring well #5 and is approximately the same distance from West Haywood Road.

At this time, we are attempting to hire a consultant to assist us with monitoring, testing, etc... We will send you the results when we can. It appears to me that some of these organic compounds present in the county's monitoring wells exceed NC Groundwater Standards. Could you tell us if they do? Is there any guide line the county must follow if the groundwater standards are exceeded?

Again, we really appreciate your help and concern with our drinking water.

Sincerely,

A handwritten signature in cursive script that reads 'Roger Bartlett'.

Roger Bartlett  
President

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT



June 1, 1998

JAMES B. HUNT JR.  
GOVERNOR

WAYNE MCDEVITT  
SECRETARY

WILLIAM L. MEYER  
DIRECTOR

Mr. Roger Bartlett  
Western Builders  
P.O. Box 96  
Sylva, N.C. 28779

RE: Water Quality In The Vicinity Of The Jackson County  
Landfill (Permit Number 50-02)

Dear Mr. Bartlett,

My letter of May 26 was written in response to our telephone conversation of May 22. However, since my letter went out before I received a copy of your letter of May 22, I did not know of your request for "a comparison of the analytical data to the NC groundwater standards". The NC Groundwater Standards for the constituents detected at the Jackson County Landfill are as follows:

Barium	2.0	mg/l
Cobalt	no standard	
Lead	0.015	mg/l
Tin	no standard	
Mercury	0.0011	mg/l
Zinc	2.1	mg/l

Benzene	1.0	ug/l
1,1-Dichloroethane	700.0	ug/l
1,1,1-Trichloroethane	200.0	ug/l
Xylenes	530.0	ug/l
Chlorobenzene	50.0	ug/l
1,4-Dichlorobenzene	75.0	ug/l
cis-1,2-Dichloroethene	70.0	ug/l
Tetrachloroethylene	0.7	ug/l

Mr. Roger Bartlett  
Western Builders  
Page 2

Based upon the current NC Groundwater Standards listed above, a comparison to the data from the Jackson County Landfill monitoring wells (that was forwarded to you in my recent letter) indicates the following constituents exceed the Standards:

- Benzene in Monitoring Well #1
- Tetrachloroethylene in Monitoring Well #4, and
- Benzene and cis-1,2-Dichloroethene in Monitoring Well #5

The levels of contaminants shown are only slightly above the Standards and it is not likely that contamination would migrate off-site in a direction that could affect water supply wells. The Jackson County Landfill is currently proceeding with assessment monitoring as required by the N.C. Solid Waste Management Rules.

Thank you for the map you forwarded to me showing the location of your water supply well. As I stated in my recent letter, the Solid Waste Section Permitting Branch had assumed, based upon information supplied to us in the Transition Plan, that Western Builders was using the public water supply system. In subsequent conversations with members of our Groundwater Compliance Unit, I found out that they were aware that Western Builders has a water supply well.

Based upon previous conversations with you by members of our Groundwater Compliance Unit, it is our understanding that while your supply well is providing water for Western Builders, bottled water is being used for drinking water. Your well was sampled by our office on May 6, 1997. Results of that sampling indicated no detection of contaminants at that time. Based upon the ground-water flow in the vicinity of the landfill, it is not likely that the landfill would affect water quality in your well. However further ground-water quality assessment will continue at the landfill site in order to ensure protection of public health.

Thank you for contacting me and for providing the map showing the location of your water supply well. Once again, any additional information you may be able to provide the Solid Waste Section regarding the design of the well or additional testing of water quality in the well would be useful to us in our continuing evaluation of ground-water quality in the vicinity of the Jackson County Landfill site.

Mr. Roger Bartlett  
Western Builders  
Page 3

If you have any further questions regarding water quality in the vicinity of the landfill or if we can be of any further assistance, please contact us at (919) 733-0692.

Sincerely,

*Bobby Lutfy*

Bobby Lutfy  
Hydrogeologist  
Solid Waste Section

cc: Mark Poindexter - Solid Waste Section  
Jim Patterson, SWS - Asheville



P.O. BOX 96, SYLVA, NC 28779

May 22, 1998

390 W. HAYWOOD RD. DILLSBORO 28725

D.E.H.N.R.  
PO Box 27687  
Raleigh, NC 27611-7687  
ATTN: Bobby Lutfy

RE: Jackson County Monitoring Wells

Dear Mr. Lutfy:

Thank you for taking the time to speak with me today. As we discussed, I would really appreciate any current information you could send me on the base-line sampling reports. Hopefully, these reports will include a comparison of the analytical data to the NC groundwater standards.

I have enclosed a map of our facility in regards to the landfill. I also measured the distance from monitoring well # 5 to our well and it is a little less than three hundred (300) feet.

We would like to do everything possible to protect our people and facility from any possible contamination. Please feel free to give me any advice you may have concerning our current situation.

Sincerely,

A handwritten signature in cursive script that reads 'Roger Bartlett'.

Roger Bartlett  
President

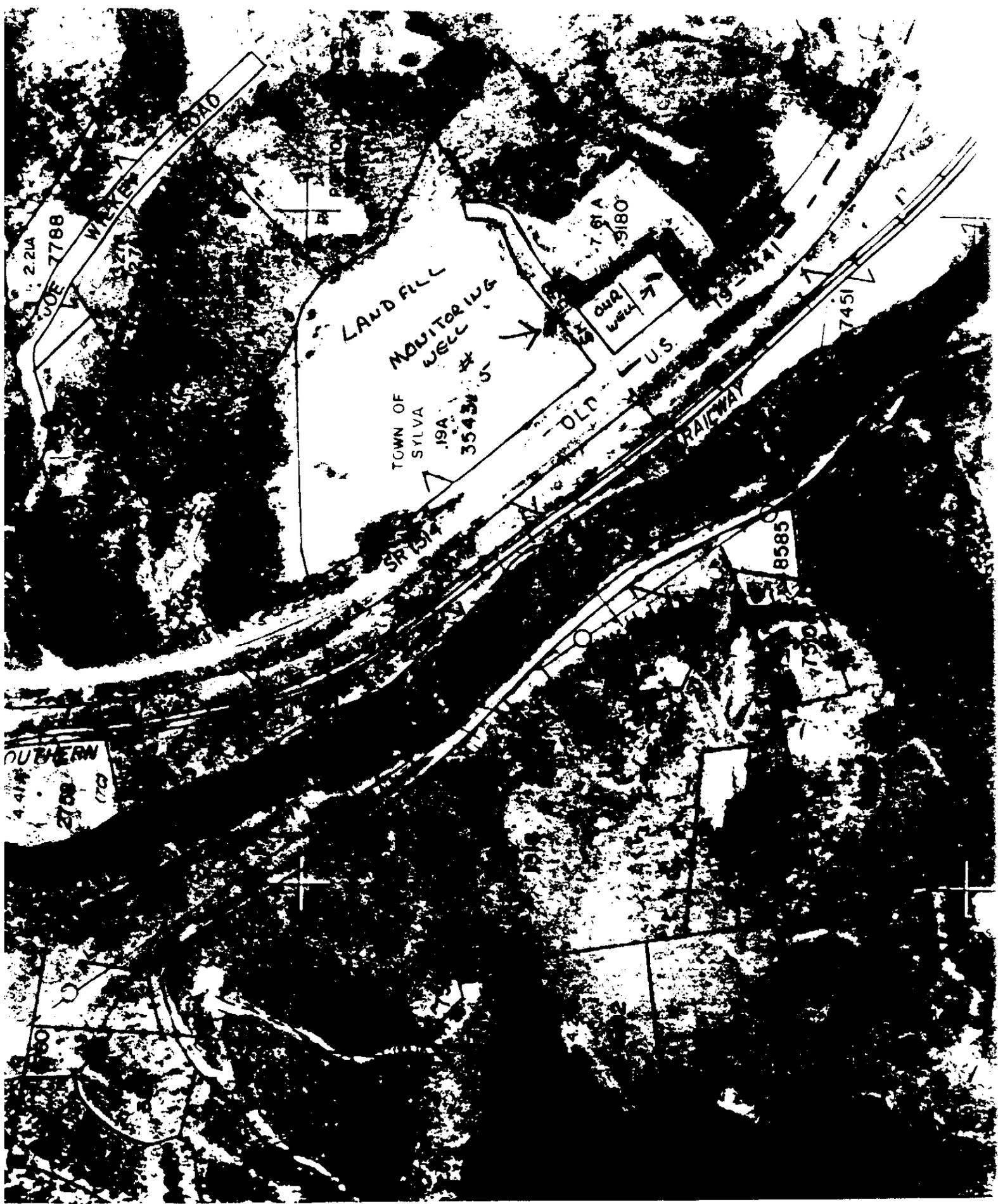
Enclosures



8

7

6



LAND FILL  
 MONITORING WELL

TOWN OF SYLVA  
 19A  
 35430 S

OLD U.S. RAILWAY

2.21A

7788

WILKINSON ROAD

761A

7180

7451

8585

7750

SOUTHERN

2700

780

State of North Carolina  
Department of Environment  
and Natural Resources  
Division of Waste Management

James B. Hunt, Jr., Governor  
Wayne McDevitt, Secretary  
William L. Meyer, Director



December 1, 1997

Mr. Joel L. Storrow, P.E.  
McGill Associates, P.A.  
P.O. Box 2259  
Asheville, North Carolina 28802

RE: Hydrogeologic Review Of The Revised Transition Plan For The  
Jackson County MSW Landfill, Permit # 50-02

Dear Mr. Storrow,

The Solid Waste Section Hydrogeologic Unit has completed a review of the August 29, 1997, revisions to the Transition Plan for the Jackson County Landfill. There are still several items that need clarification or revision. Please address the following comments and questions:

SUMMARY REPORT

Clarification is needed for section 1.3.1 - Proximity of human and environmental receptors. It is not clear which residences and businesses have public water supply and which have wells.

- Are the builders supply (and other buildings in the vicinity of the builders supply) located at the landfill entrance road (SR 1539) served by the municipal water supply?
- Are the two mobile homes, located approximately 400 feet to the northwest of the landfill, served by wells?
- Are the houses to the north of the landfill, on Wilkey Road (SR 1379), served by wells?
- Are the two "fishing cabins" to the southwest, between the landfill and the Tuckasegee River, served by wells?

Some of these structures do not appear on Revised Figure 1, the Local Characterization Study Map.

#### LOCAL AREA STUDY

Section 4.0 of the report does not reflect some of the revisions that have been made:

- Section 4.1 still identifies Figure 1 as "USGS Quadrangle topographic map of the area". The cover sheet for Figure 1 still references a scale of 1" = 1000'. The location of the landfill is plotted incorrectly on the original Figure 1.
- Section 4.1: The paragraph regarding the NGS benchmark does not correspond with the information on the revised Figures.
- Section 4.2: Further clarification is needed regarding sources of water for the residences, businesses, and other structures in the vicinity of the landfill (as discussed in the comments above on the Summary Report).

I assume all of the Figures listed in section 4.1 are being used to illustrate the information required by Rule .1629(b)(2)(A). Some of the residences and businesses do not appear to be shown on Figure 7. There is no discussion of "known or potential sources of contamination". Is the water line the only underground utility in the vicinity of the landfill? These items need to be discussed in Section 4.0 - the Local Area Study.

#### TABLES

Is the survey information in Table 1 still accurate?

#### FIGURES

Figure 1: See comments above for section 4.1

Figure 8: The revised Figure 8 (Proposed Contours) appears to be incorrectly labeled Sheet 1 of 1.

Figure 14: The revised Figure 14 is different than the earlier submittal. It has a larger scale and therefore shows less detail than the previous figure.

WATER QUALITY MONITORING PLAN (WQMP)

Table 7: The note on revised Table 7 refers to Beryllium, Cobalt, Nickel, Thallium, and Vanadium as "organics". These constituents are metals, not organics. The note refers to these constituents as "organics" and states these samples were "first analyzed" for these constituents. This raises the question: Were four base-line samples taken for each of these five metals?

Figures: The site is incorrectly located on Figure 3, and to some extent on Figure 1. For Figure 4, my earlier question regarding "the elevation of the Tuckasegee River at a location projected along the A-A' Profile" has still not been addressed.

Appendix F: Monitoring Well Construction: The Solid Waste Section still has concerns regarding the construction of MW-2. The extended filter pack in a fractured bedrock well could result in dilution of contaminants that would mask the detection of a contaminant release. Since the facility is already in assessment monitoring, we will not require that the detection monitoring system be modified at this time. However, future assessment of ground-water quality at the facility will probably make it necessary to install additional monitoring wells in the vicinity of well MW-2.

Appendix H: SAMPLING AND ANALYSIS PLAN:

3.5.2 Sample Blanks: The last paragraph contradicts the previous paragraph. It needs to be clarified that the field equipment blank will be analyzed for all constituents and the trip blank will be analyzed for organic constituents.

Table 1: The metals Beryllium, Cobalt, Nickel, Thallium, and Vanadium should not be crossed out. The NC GW Standard for Nickel should not be crossed out. The "proposed" standard for Antimony should be crossed out. While some of the metals do not presently have NC GW Standards, they must still be analyzed and statistically evaluated.

Mr. Joel Storrow  
Jackson Transition Plan  
Page 4

Please provide the additional information and revisions as soon as possible. If you have any questions regarding this letter, please contact me at (919) 733-0692, extension 258.

Sincerely,

Bobby Lutfy  
Hydrogeologist  
Solid Waste Section

cc: Susan Leistiko, Solid Waste Section  
Jim Patterson, SWS - Asheville Regional Office  
Tom Massie, Jackson County Planning



STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	971763	971764				
	FIELD NO	18052	18174				
COMPOUND	TYPE	( )	( )	( )	( )	( )	( )
	MDL'S (PPB)	(ppb) ppm	(ppb) ppm	ppb ppm	ppb ppm	ppb ppm	ppb ppm
CHLOROMETHANE	20	u	u				
VINYL CHLORIDE	10						
BROMOMETHANE	20						
CHLOROETHANE	10						
TRICHLOROFLUOROMETHANE	10						
ACETONE	20						
1,1-DICHLOROETHENE	5						
IODOMETHANE	1	✓					
METHYLENE CHLORIDE	1	13c					
CARBON DISULFIDE	1	LL					
TRANS-1,2-DICHLOROETHENE	✓						
ACRYLONITRILE	20						
1,1-DICHLOROETHANE	5						
2-BUTANONE	20						
CIS-1,2-DICHLOROETHENE	5						
CHLOROFORM	1						
1,1,1-TRICHLOROETHANE	1						
CARBON TETRACHLORIDE	1						
BENZENE	1						
1,2-DICHLOROETHANE	1						
TRICHLOROETHENE	1						
1,2-DICHLOROPROPANE	1						
BROMODICHLOROMETHANE	✓	✓	✓				

- C - POSSIBLE LAB CONTAMINATION OR BACKGROUND.
- J - Estimated value
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.
- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - COMPOUND RELIABLY DETECTABLE ONLY IN HIGH CONCENTRATIONS.
- ✓ - SAMPLE HIGHLY DILUTED. MDL'S DO NOT APPLY.

STATE LABORATORY OF PUBLIC HEALTH  
 PO BOX 28047 - 306 N. WILMINGTON ST., RALEIGH, NC 27611

ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	971763	971764				
	FIELD NO	18052	18174				
COMPOUND	TYPE	( )	( )	( )	( )	( )	( )
	MDL'S (ppb)	(ppb) ppm	(ppb) ppm	ppb ppm	ppb ppm	ppb ppm	ppb ppm
DIBROMOMETHANE	5	u	u				
4-METHYL-2-PENTANONE	10						
CIS-1,3-DICHLOROPROPENE	5						
TOLUENE	↓						
TRANS-1,3-DICHLOROPROPENE							
1,1,2,2-TETRACHLOROETHANE							
1,1,2-TRICHLOROETHANE	✓						
2-HEXANONE	10						
TETRACHLOROETHENE	5						
DIBROMOCHLOROMETHANE	↓						
ETHYLENE DIBROMIDE							
CHLOROBENZENE							
1,1,1,2-TETRACHLOROETHANE							
ETHYL BENZENE							
XYLENES	↓						
STYRENE	✓						
BROMOFORM	10						
TRANS-1,4-DICHLORO-2-BUTENE	80						
1,2,3-TRICHLOROPROPANE	5						
1,4-DICHLOROBENZENE	↓						
1,2-DICHLOROBENZENE	✓						
1,2-DIBROMO-3-CHLOROPROPANE	20						
VINYL ACETATE	200	✓	✓				

C - POSSIBLE LAB CONTAMINATION OR BACKGROUND.  
 J - Estimated value  
 K - Actual value is known to be less than value given.  
 L - Actual value is known to be greater than value given.  
 U - Material was analyzed for but not detected. The number is the Minimum Detection Limit.  
 NA - Not analyzed.  
 1/ - Tentative identification.  
 2/ - COMPOUND RELIABLY DETECTABLE ONLY IN HIGH CONCENTRATIONS.  
 ✓ - SAMPLE HIGHLY DILUTED. MDL'S DO NOT APPLY.

STATE LABORATORY OF PUBLIC HEALTH

P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	971763	971764				
	FIELD #	18052	18174	( )	( )	( )	( )
COMPOUND	TYPE	(1)	(1)				
	UNITS	μg/l μg/kg					
N-nitrosodimethylamine	10/330	K	K				
Di(2-chloroethyl)ether							
2-chlorophenol							
Phenol							
1,3-dichlorobenzene							
1,4-dichlorobenzene							
1,2-dichlorobenzene							
Di(2-chloroisopropyl)ether							
Hexachloroethane							
N-nitroso-di-n-propylamine							
Nitrobenzene							
Sophorone							
2-nitrophenol							
2,4-dimethylphenol							
Di(2-chloroethoxy)methane							
2,4-dichlorophenol							
1,2,4-trichlorobenzene							
Naphthalene							
Hexachlorobutadiene							
4-chloro-m-cresol							
Hexachlorocyclopentadiene							
2,4,6-trichlorophenol							
2-chloronaphthalene							
Acenaphthylene							
Dimethyl phthalate							
2,6-dinitrotoluene							
Acenaphthene		↓					
2,4-dinitrophenol	50/1650						
2,4-dinitrotoluene	10/330						
4-nitrophenol	50/1650						
Fluorene	10/330						
4-chlorophenylphenylether		↓					
Diethyl phthalate		↓					
4,6-dinitro-o-cresol	50/1650						
Diphenylamine	10/330						
Azobenzene		↓					
4-bromophenylphenylether		↓					
Hexachlorobenzene		↓					
Pentachlorophenol	50/1650						
Phenanthrene	10/330						
Anthracene		↓					
Dibutyl phthalate		↓					
Fluoranthene		↓	✓	✓			

MDL  
H<sub>2</sub>O/SOIL

- J - Estimated value.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On NRDC List of Priority Pollutants.

STATE LABORATORY OF PUBLIC HEALTH

P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES COMPOUND	LAB NO	971703	971704				
	FIELD #	18052	18174				
	TYPE	(1)	(1)	( )	( )	( )	( )
	UNITS	μg/l μg/kg					
pyrene	10/330	u	u				
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene	↓						
chrysene	↓						
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene	↓						
benzo(a)pyrene	↓						
indeno(1,2,3-cd)pyrene	↓						
dibenzo(a,h)anthracene	↓	✓	✓				
benzo(g,h,i)perylene	↓						
aniline	50/1650	u	u				
benzoic acid	↓						
benzyl alcohol	↓						
4-chloroaniline	↓						
dibenzofuran	10/330						
2-methylnaphthalene	↓						
2-methylphenol	↓						
4-methylphenol	↓						
2-nitroaniline	50/1650						
3-nitroaniline	↓						
4-nitroaniline	↓						
2,4,5-trichlorophenol	↓	✓	✓				

MDL  
H<sub>2</sub>O/SOIL

- J - Estimated value.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- U - Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
- NA - Not analyzed.
- 1/ - Tentative identification.
- 2/ - On NRDC List of Priority Pollutants.

NC-DEHN?  
 Division of Solid Waste Management  
 Superfund Section  
 Hazardous Waste Section  
 Solid Waste Section

Organics Lab:   
 Inorganics Lab: \_\_\_\_\_

CHAIN OF CUSTODY RECORD

Project Name: <u>Western Builders</u>	Sampled by: <u>L. Rose</u>
Site ID # (NCD#): _____	Sampler ID: <u>100</u>
Location: <u>Dillsboro</u>	Telephone: ( ) <u>733-0692 ext. 287</u>
Address: <u>Jackson Co</u>	Date Sampled: _____
	Time Sampled: _____

Sample Types: Soil \_\_\_\_\_ Water  Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: Supply Well near Jackson Co LF

Field Sample Numbers	<u>18174</u>	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____

Relinquished by: L. Rose (Signature) Date: 5/7/97 Time: 11:00

Received by: William C. Glen Jr (Signature) Date: 5-7-97 Time: 11:00

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Results Reported: John R. Neal (Signature) Date: 6/63/97 Time: \_\_\_\_\_

NC-DEHNR  
Division of Solid Waste Management  
 Superfund Section  
 Hazardous Waste Section  
 Solid Waste Section

Organics Lab: \_\_\_\_\_  
Inorganics Lab:

CHAIN OF CUSTODY RECORD

Project Name: <u>Western Builders</u>	Sampled by: <u>L. Rose</u>
Site ID # (NCD#): _____	Sampler ID: <u>100</u>
Location: <u>Dillsboro</u>	Telephone: ( ) <u>733-0692 ext 257</u>
Address: <u>Jackson Co</u>	Date Sampled: <u>5/6/97</u>
	Time Sampled: _____

Sample Types: Soil \_\_\_\_\_ Water  Waste \_\_\_\_\_ Other \_\_\_\_\_

Remarks: Supply - near Jackson Po LF

Field Sample Numbers 20593

Relinquished by: Larry Rose (Signature) Date: 5/7/97 Time: 11:40

Received by: W.C. Walker (Signature) Date: 6 Time: 11:40

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

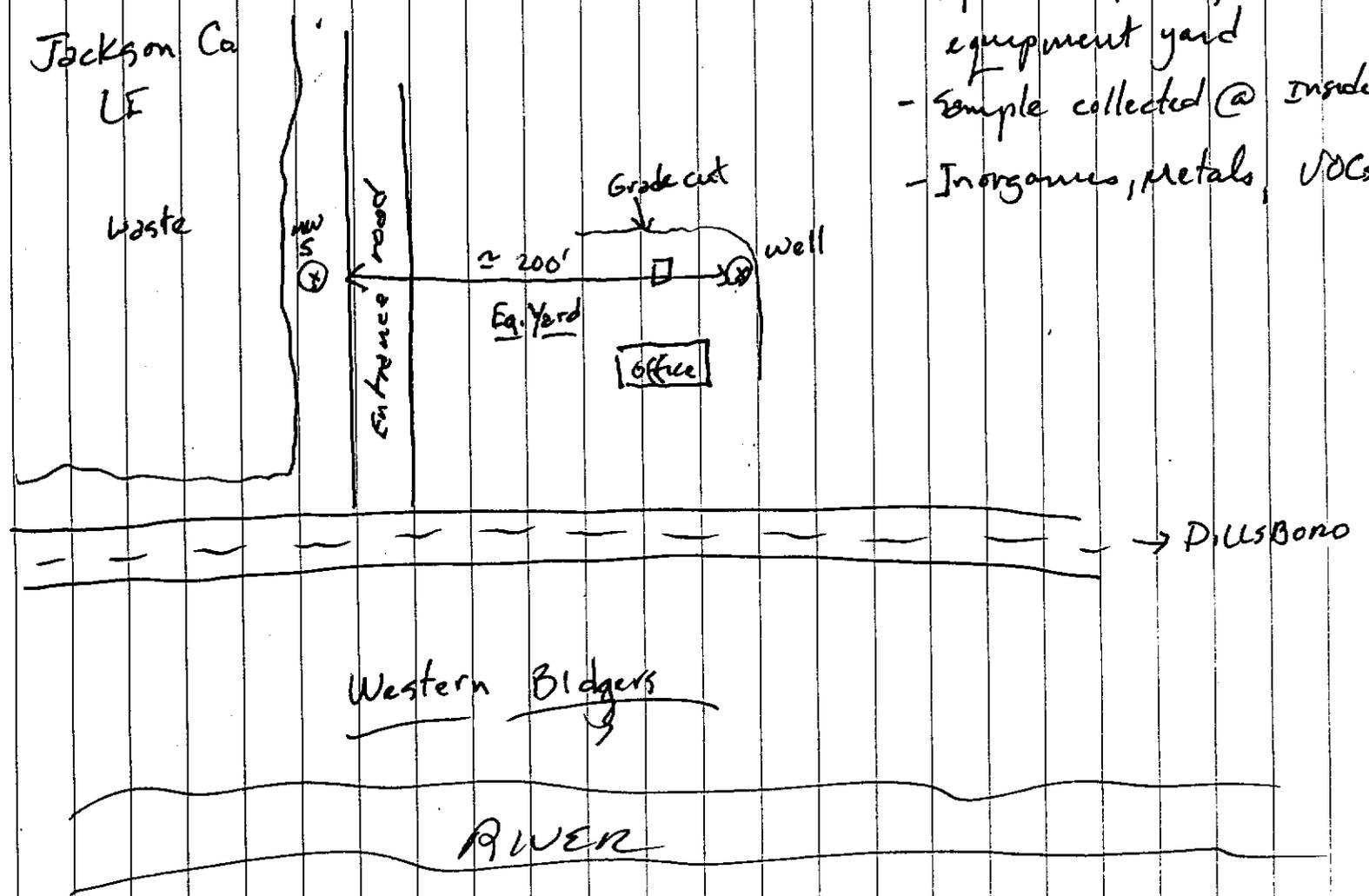
Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: \_\_\_\_\_ (Signature) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Results Reported: W.C. Walker (Signature) Date: 5 June 97 Time: \_\_\_\_\_

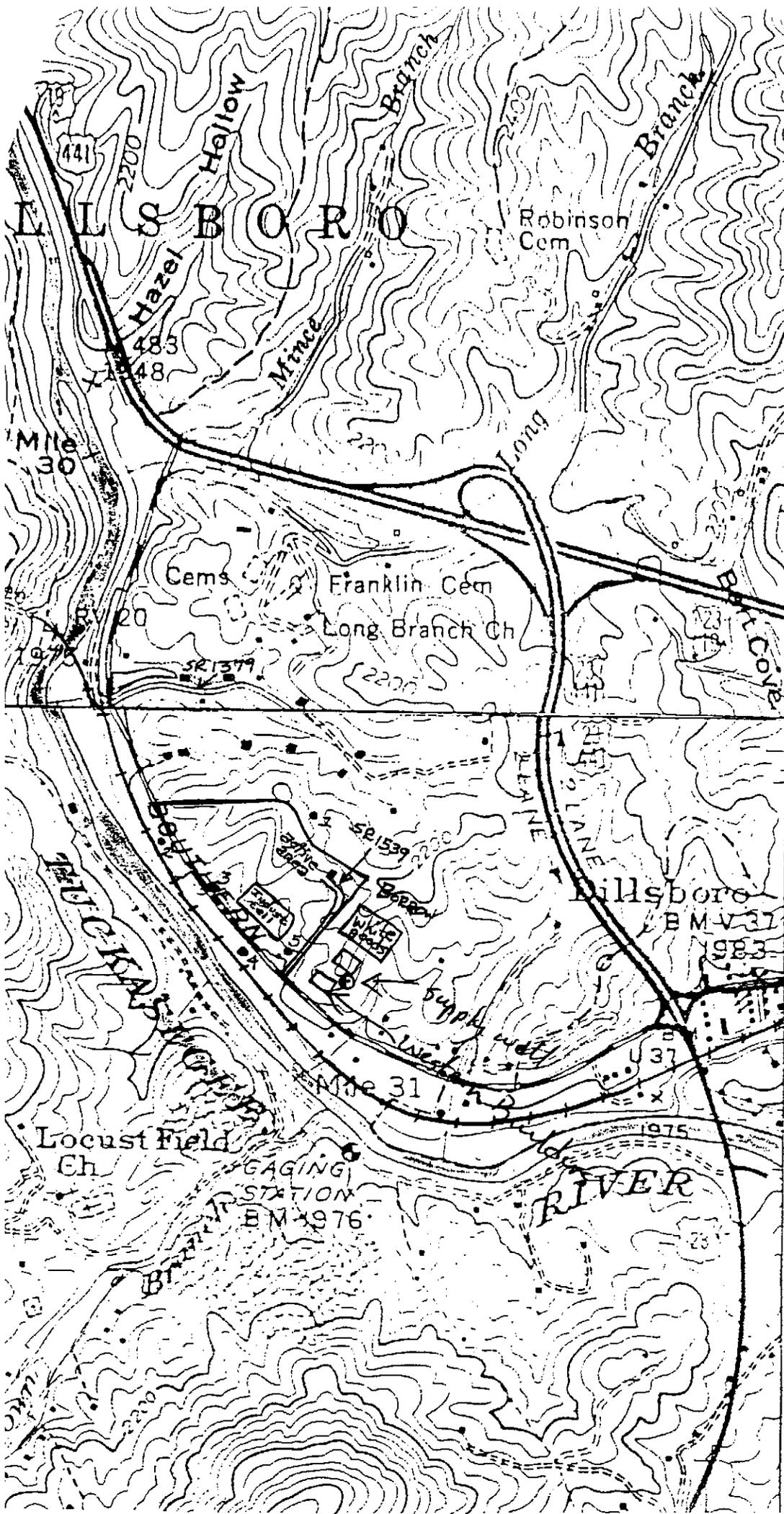




5-6-97

- Drilled well
- Surface soil contamination w/ hydraulic fluids, etc. in equipment yard
- Sample collected @ Inside Sunk.
- Inorganics, Metals, VOCs, SVOCs

4/3/96  
site visit



3918

1.7 MI. TO SYLVA EXIT  
WAYNESVILLE 18 MI.

3917000m. N.

35°22'30"

SYLVA 1.5 MI.  
3916

• monitoring well

- Roger Bartlett -  
Western Builders  
704-586-5091 (5091)  
200' SE side
- General contractor
- Well -  $\approx$  200' from  
Jackson Co. LF

- Call Jim Patterson

- Possibly sample May 6<sup>th</sup> after  
Mitchell Co. conveniences well.
- 4-21-97 - called Jim Patterson  
- will meet me there  $\approx$  2:00
- Called Roger Bartlett  
- left message about  
sampling 5-6-97

JACKSON Co. LF

4-18-97 4:30 Regu Bartlett - Western Builders - called  
704-586-5094

- Business (Bldg) SE of LF  $\approx 200'$
- Located on entrance road.
- Has 200' supply well - using bottled H<sub>2</sub>O for drinking
- Concerns about well & off-site contamination - on his property - Mention C:O siting.
- I told him the data from the LF showed some contamination
  - would review data as to which wells & how groundwater flow was in relation to his property.
  - If necessary I would arrange to sample his well

4-21-97

- Data review indicates contamination very near Bartlett property - MW-5 - Appears to be side gradient of LF.
- Spoke w/ Jim Patterson - Thought supply well needed to be sampled. We could do better & quicker than county
- Agreed to sample well 5-6-97
- Called Western Builders (704) 586-5094  $\approx 2:45$  - left message about sampling.

# MEMO

DATE: 9-12-96

TO: Mike Owens

SUBJECT: \_\_\_\_\_

*M. Geology*

- Jackson Co analytical data's statistics is to be sent after next (4th) background sampling event @ end of month
- GW flow rate will be sent also

From: LR



North Carolina Department of Environment

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



July 18, 1996

Mr. Tom Massie  
Jackson County Planning  
8 Ridgeway Street  
Sylva, N.C. 28779

RE: Water Quality Monitoring Requirements at the Jackson County Landfill (Permit # 50-02)

Dear Mr. Massie,

North Carolina Solid Waste Management Rules (Rule .1632) require a statistical analysis of monitoring data, and groundwater flow rate each time the monitoring wells are sampled at all **operating** municipal solid waste landfills. The report for the July 23, 1996 sampling event at the Jackson County landfill did not include this information. Please provide this information to the Solid Waste Section as soon as possible and include it as part of all future water quality monitoring reports.

Thank you for your cooperation. If you have any questions, please call me at (919) 733-0692, ext. 257.

Sincerely,

Larry Rose  
Hydrogeological Technician  
Solid Waste Section

c: Julian Foscue  
Jim Patterson

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

June 28, 1996

Mr. Tom Massie  
Jackson County Planning  
8 Ridgeway Street  
Sylva, NC 28779

RE: Status of the Jackson County MSW Landfill Transition Plan, Permit No. 50-02

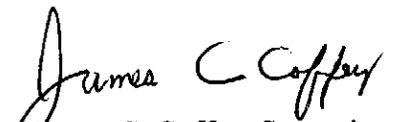
Dear Mr. Massie:

Rule .1603(d)(2)(A) of the North Carolina Solid Management Rules directs that the Division will determine the adequacy of all Transition Plans by October 9, 1996. Furthermore, in accordance with Rule .1601(c)(4), MSW Landfill Units that have not demonstrated the adequacy of their plans by this date are constituted as "Open Dumps" and must be closed under both state and federal law.

As of this time, the Division has not been able to complete it's review of the above referenced Transition Plan. A response to the Division's review letter of December 12, 1995 needs to be submitted in order to complete the review process.

Please submit all required information to the Division by September 1, 1996 in order for a timely review to be completed prior to the October 9, 1996 deadline. If you have any further questions, please contact Greg Eades at (919) 733-0692 extension 344.

Sincerely,

  
James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section

cc: Jim Patterson, SWS  
Bobby Lutfy, SWS

# JACKSON Co. C&D SITE CANDIDATES

	WEBSTER	441	ODIE MINE
VISUAL IMPACT	NONE <del>SMALL</del> IF CONFINED TO "INNER HOLLOW"	MAY BE VISIBLE FROM HIGHWAY (?)	ALL PERMISSIBLE SITES ADJACENT TO ROAD
ADEQUATE ACREAGE?	100 YRS PLUS	MAYBE, DEPENDS ON ROCK, WATER 500' BUFFER USEABLE SPACE LIMITED BY NEARBY WELLS	LIMITED AT BEST
ENTRANCE TRAFFIC SAFETY	GOOD, MAY US WATER TREATMENT PLANT ENTRANCE?	GOOD	MAY NEED TO ADD NEW MEDIAN CROSSING
RELATIVE PERMITTING COST	LOW TO AVERAGE	AVERAGE	HIGH ERRATIC BEDROCK SURFACE, ROCKY SOIL HIGH R.W.
CONTROL OF DISCHARGE POINT	PROPERTY TO RIVER <sup>(GOOD)</sup> GW FLOW FACILITATED TO MONITOR	<del>DISCHARGE</del> DISCHARGE 3-500' OFF SITE POSSIBILITY OF OFFSITE MIGRATION OF CONTAM	DISCHARGE CROSSES SITE MINOR CHANCE OF OFFSITE MIGRATION FA ROUTE TO STREAM
EASE OF MONITORING	EASY	STANDARD	DIFFICULT NEED TO DESIGN BEDROCK SYSTEM
COVER SOILS	ADEQUATE	PROBABLY ADEQUATE NEED TO CONFIRM	NOT <del>BE</del> LIKELY ADEQUATE
THREAT TO GW RECEPTORS	NONE	NEARBY WELLS ANY FUTURE WELLS IN FLOODPLAIN WOULD BE AT RISK	MAYBE THREAT TO DEEP WELLS TO NORTH
UP FRONT WORK NEEDED BEFORE PURCHASE	NONE	SEVERAL BEDROCK, GW POINTS (BACKLOG) ↓ ROUGH MAP (TOPO PROFILES SPRING BROOK LOCATIONS)	DIFFICULT TO ASSESS FEASIBILITY WITHOUT COMPLETE SITE SUITABILITY STUDY



S&ME, Inc.  
44 Buck Shoals Road, Unit G9  
Arden, North Carolina 28704  
(704) 687-9080  
Fax (704) 687-8003

**URGENT TRANSMISSION**  
Please Forward Immediately

TO: BOBBY LUETEE

FROM: \_\_\_\_\_

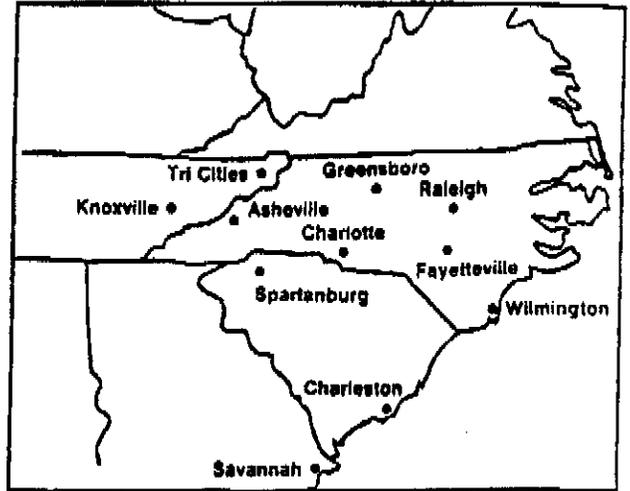
LOCATION: \_\_\_\_\_

FROM: MICK USSERY  
ASHEVILLE, NORTH CAROLINA

DATE: 3/18/96 TIME: 2:15 am (pm)

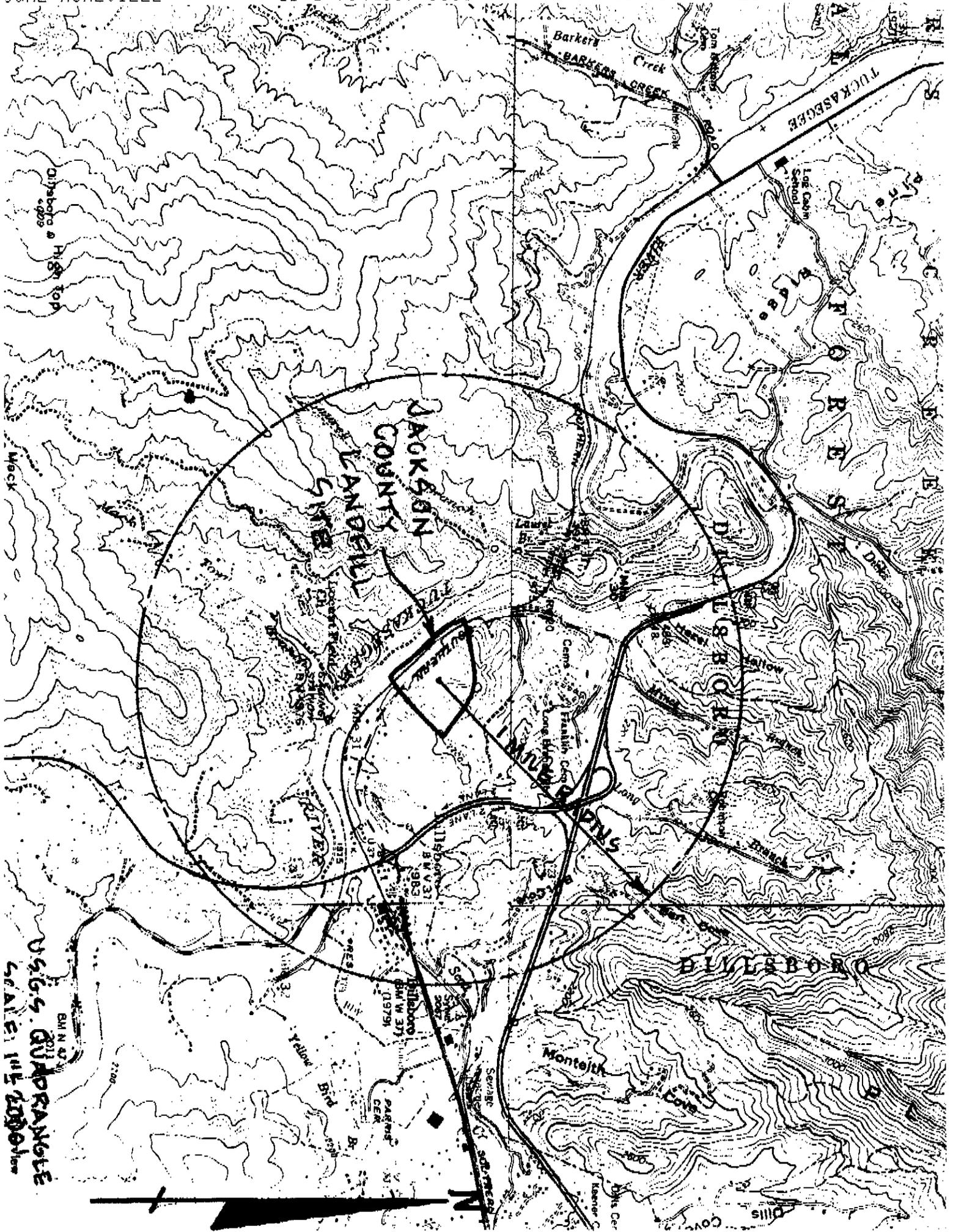
RETURN FAX NUMBER: (704) 687-8003

NUMBER OF PAGES INCLUDING COVER SHEET: 7  
If all pages not received, call (704) 687-9080



COMMENTS: JACKSON COUNTY LANDFILL LOCATED AT DILLSBORO,  
HWY 441, SEE LOCATION ON QUAD SHEET  
PERMIT NO. 50-02

ME Project Number: \_\_\_\_\_



Gilshoborn's High Top  
4900'

JACKSON  
COUNTY  
LANDSELL  
SHEPHERD

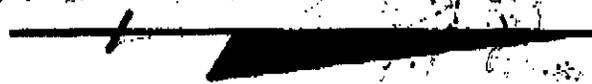
MOREHEAD

DILLSBORO

DILLSBORO

Montejith

USGS SUPPLEMENT  
SCALE 1:250,000



IMPORTANT

To Bobby 3:30

Date 3-13-96 Time 2:50

WHILE YOU WERE OUT

M. Mick Ussery

of SME - Asheville

Phone 704-687-9080

AREA CODE NUMBER EXTENSION

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL			

Message Jackson Co. LF

Dillsboro

Operational Plan 84

4-27-84

# 50-02 Signed

50-01 WCU + Co LF Closed

N.C. Dept. of Environment, Health, and Natural Resources

GW Data —  Violations?

Printed on Recycled Paper

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

1-26-96

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 4
To Andrew Lewis	From Bobby Luffy	
Co. McGill Assoc.	Co. NC Solid Waste Section	
Dept.	Phone # 919-733-0692	
Fax # 704-252-2578	Fax # 919-733-4810	

December 12, 1995

Mr. Tom Massie  
Jackson County Planning  
8 Ridgeway Street  
Sylva, North Carolina 28779

RE: Hydrogeologic Review Of The Revised Transition Plan For The  
Jackson County Landfill, # 50-02

Dear Mr. Massie,

The Solid Waste Section Hydrogeologic Unit has reviewed the revisions to the Transition Plan for the Jackson County MSW Landfill. Although some of the items in my letter of March 17, 1995 to Michael Palmer of McGill Associates were addressed adequately, there are still a number of items that need additional clarification or changes. Please address the following questions and comments:

LOCAL AREA STUDY

- The Solid Waste Section has not received any documentation for the location and elevations of permanent survey benchmarks.
- Monitoring wells MW-2 and MW-4 are outside the permitted facility boundary and therefore do not meet the point of compliance requirements in the rules. Jackson County needs to request that the additional county owned property between the road and the river be incorporated into the permitted facility boundaries for buffer and monitoring purposes.
- The location of the landfill is not indicated on our copies of Figure 14, the Tuckasegee Water & Sewer Authority - Water System Map.
- There is still no 2000 foot perimeter topography map on a scale of one inch equals four hundred feet that clearly indicates all the information required in Rule .1629(b) (2) (A) (i) through (v).

#### WATER QUALITY MONITORING PLAN

The "Item numbers" are those referenced in Law Engineering and Environmental Services' April 25, 1995 Response To Request For Revised Transition Plan.

Item 1

- As previously referenced, two monitoring wells are located outside the permitted facility boundaries. The additional county owned property needs to be incorporated into the permitted facility boundaries for buffer and monitoring.

Item 3

- The maintenance problems with the monitoring wells need to be corrected and documentation provided to the Solid Waste Section.

Item 4

- Either the non-detect data for the subject metals need to be incorporated into Table 7 for the December 16, 1993 sampling event or a footnote needs to be provided that indicates these metals were analyzed but not detected for this sampling event.

Item 7

- Monitoring well MW-2 is designed and constructed improperly. The extended screened interval could cause dilution which would mask any contaminant release. Further evaluation of this well is needed. It probably needs to be replaced.

Item 8

- Based upon past sampling data, Jackson County should have begun assessment monitoring by sampling for the Appendix II constituents. As of this date, the Solid Waste Section has not received an Appendix II sampling report.

SAMPLING AND ANALYSIS PLAN (SAP)

Item 3

- The EPA approved cleaning protocol varies depending upon the material of the purging equipment (Teflon or stainless steel). Please provide clarification on the source of the EPA protocol specified in the revised SAP and what type of purging equipment it is for.

Item 4

- It should be noted that field decontamination is generally to be avoided for purging equipment. If purging pumps are used, field decontamination may sometimes be necessary. If bailers are used for purging, then a separate laboratory cleaned bailer is required for each monitoring well.

Item 7

- Volatile organic compounds should be sampled from the top of the water column. Other constituents do not require sampling from the top of the water column. Volatile organic compound samples should have no head space. Other constituents do not require zero head space. Revisions need are needed to the text on page 3-6 to clarify these issues.

Item 8

- It should be noted that use of intermediate sampling containers for surface water sampling should be avoided if possible. Many surface water samples can be taken directly with the sample containers. Again, zero headspace is required only for volatile organic compounds. Revisions need to be made on pages 3-7 through 3-9 to clarify these issues.

Page 3-11

- While field equipment blanks should be analyzed for all constituents, trip blanks only need to be analyzed for organic constituents.
- The revised SAP states: "Analytical procedures shall be in conformance with those recommended in 40 CFR Part 258." The analytical procedures must also be in conformance with the guidance memos from the Solid Waste Section dated June 24, 1994 and January 18, 1995.

Mr. Tom Massie  
Jackson Transition Plan  
Page 4

- Water quality samples need to be analyzed by a laboratory certified by the North Carolina Division of Environmental Management for ground-water analyses using the approved analytical methods.

Page 4-1

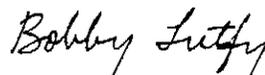
- In paragraph four the SAP states: "In determining whether a statistically significant increase has occurred, the owner or operator shall compare the ground-water quality ... according to the statistical procedures and performance standards specified in this plan". There were no statistical procedures or performance standards specified in the plan. You may want to reference the statistical procedures and performance standards in the Solid Waste Management Rules, .1632(g) & (h).

Table 1

- The "proposed ground water standards" were published in error. There are no proposed ground-water standards for Antimony, Beryllium, Cobalt, Thallium, or Vanadium. These references should be deleted from Table 1.

Please provide the additional revisions to the Transition Plan as soon as possible, so the Solid Waste Section can complete our technical review. If you have any questions regarding this letter, please contact me at (919) 733-0692, extension 258.

Sincerely,



Bobby Lutfy  
Hydrogeologist  
Solid Waste Section

cc: Greg Eades, Solid Waste Section  
Jim Patterson, SWS - Asheville  
Joel Storrow, McGill Associates  
Paul Johnstone, Law Engineering

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management

James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director



October 6, 1995

Mr. Tom Massie  
Jackson Planning Dept.  
8 Ridgeway Street  
Sylva, N. C. 28779

RE: Ground-water Monitoring Data and Statistical Analysis - Jackson County Landfill  
(Permit # 50-02)

Dear Mr. Massie,

The Solid Waste Section has not received a complete baseline sampling report, including analytical data and statistical analysis, for the Jackson County Landfill (Solid Waste Management Rule .1632). Water quality sampling data has been received for the April 28, 1995 sampling event only. We have not received data for the second, third or fourth sampling events that make up the baseline sampling episode. This data was required to be submitted to the Solid Waste Section on or before April 9, 1995. If the baseline sampling has been completed, please forward a copy of the report to the Solid Waste Section as soon as possible.

Rule .1632 also requires that the rate and direction of ground-water flow be determined each time monitoring wells are sampled. The data report for the last sampling event did not include this field data.

Thank you for your cooperation. If you have any questions, please call this office at (919) 733-0692.

Sincerely,

Larry Rose  
Hydrogeological Technician  
Solid Waste Section

c: Julian Foscue  
Jim Patterson

March 15, 1995

# Jackson County Transition Plan # 50-02

## Summary Report

since early '70s

~ 15 acres

5 mon. wells

All residences on wells upgradient

Dillsboro water supply for homes + businesses along  
Dillsboro Rd.

discharge to Tuckasegee River

Jackson Co MSWLF

+ Jackson Paper Co. pulp/ash LF

L.F. County 13.7 acres (16 acres active)

J. Paper 2 acres

## Local Area Study

temporary benchmarks

Table 1 Mon. Well Coordinates + Elevations

Figures 2, 3 + indicate facility location on orthophoto maps

? Figure 7 facility boundary on lower side

? wells outside facility boundary

? who owns land to sides

? Figure 14 location of LF

X No 1:400 2000' perimeter topo map

# Jackson Co Tr. Plan

## Portion of Transition Plan - Law Eng

- X 14 Wells 2 + 4 outside facility boundary
- X 17 no vented caps
- X wells tags - incomplete
- ? upgradient well - background
- X Wells 2 + 4 outside facility

### SAP

- < Table 5 Design of wells
- < Table 6 Maintenance of wells
- Table 7 Metals  $\neq$  Appendix I

no Beryllium

no Cobalt

no Nickel

no Thallium

no Vanadium

? Figure 4 elev. of river?

Figure 7 GW Contours - date of WT data

X Appendix F Well Const. Records  
MW-2

X Appendix E  
no slug test data  
for MW-5

- Appendix G GW Contamination

### Appendix H SAP

- X 1. measurements to 0.1  $\rightarrow$  0.01 ft
- X 2,3 field decon
- X incorrect decon
- X 4 decon of purging equip.
- X 5 delay TP measurement
- X 5,6 circulate a minimum of 3 well vol. (stick field parameters)
- X 5 field decon

## SAP

- X 7 discard first barrel-full H<sub>2</sub>O
- ? no headspace for other organics
- ?X 9 SW sampling w/ intermediate container
- ? decon

## Initial Data Report of 12-15-94

- ? test methods metals + VOCs
- X 6 organics not reported
- X Beryllium, Cobalt, Vanadium not reported
- X detection limit too high - Lead
- Well 3 VOC contamination

Jackson County  
# 50-02

**Table 1**  
**Ground Monitoring Well**  
**Coordinates and Elevations**

<b><u>MW #</u></b>	<b><u>Northing</u></b>	<b><u>Easting</u></b>	<b><u>Casing Elev.</u></b>	<b><u>Ground Elev.</u></b>
<b>MW-1</b>	<b>618068.67</b>	<b>729472.25</b>	<b>2174.40</b>	<b>2172.47</b>
<b>MW-2</b>	<b>617814.36</b>	<b>729638.18</b>	<b>2039.25</b>	<b>2038.52</b>
<b>MW-3</b>	<b>617547.52</b>	<b>729250.44</b>	<b>2045.51</b>	<b>2044.12</b>
<b>MW-4</b>	<b>617055.12</b>	<b>729335.60</b>	<b>1980.74</b>	<b>1978.60</b>
<b>MW-5</b>	<b>617213.03</b>	<b>729638.05</b>	<b>2039.25</b>	<b>2038.52</b>

**IMPORTANT**

To Bobby

Date 10-6-94 Time 4:15

**WHILE YOU WERE OUT**

M Mark Teague

of Env. Maintenance Systems

Phone Cullowhee N.C.

AREA CODE NUMBER EXTENSION

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL			

Message Jackson County  
6-24-94 letter

just do sampling  
letter part of October  
Signed

N.C. Dept. of Environment, Health, and Natural Resources



Printed on Recycled Paper

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

July 6, 1994

Mr. Tom Massie  
Jackson Planning Dept.  
8 Ridgeway Street  
Sylva, North Carolina 28779

RE: Interim Review Of Water Quality Monitoring Transition Plan  
Permit # 50-02

Dear Mr. Massie,

There is limited time available for the Solid Waste Section to review and evaluate the Water Quality Monitoring Plan submitted as part of the Transition Plan. It is not possible to do a full technical review of this plan in time to allow for the upgrading of the monitoring system and the initial sampling episode of the baseline sampling event.

Therefore the Solid Waste Section is giving interim authorization for Jackson County to proceed with the upgrade of the ground-water monitoring system at the Jackson County MSWLF facility in general accordance with the proposal submitted in the monitoring plan included as part of the Transition Plan. **However, the monitoring system upgrade must meet the following conditions:**

None of the existing monitoring wells are to be abandoned or dropped from the detection monitoring system without written authorization from the Solid Waste Section.

New monitoring wells should generally be installed about 100 to 150 feet from the waste boundary.

The monitoring wells are to be constructed according to the specifications in the North Carolina Well Construction Standards (15A NCAC 2C .0108).

The monitoring wells are to be constructed according to the specifications in the "North Carolina Water Quality Monitoring Guidance Document For Solid Waste Facilities" as illustrated by the Typical Monitoring Well Schematic" diagram enclosed.

The monitoring wells are to be placed in the approved locations in areas free of garbage, refuse, or debris, and in areas not subject to flooding.

The monitoring wells are to be drilled to a depth, and the screens placed at vertical locations, that will ensure that future drought conditions, which may lower the water table, will not render the monitoring system ineffective.

Generally shallow monitoring wells shall be installed with a 15 foot screen, with the top of the screen set just above the seasonal high water table, unless hydrogeologic conditions justify changes in this design.

The sand pack should extend no more than 2 feet above the screen and no more than 1 foot below the screen. A bentonite seal of at least 1.0 foot should be installed above the screened interval. The bentonite shall be allowed adequate time to hydrate prior to grouting up the annular space of the well above the bentonite seal.

Monitoring wells shall be thoroughly developed after construction in order to reduce suspended solids, flush out the well, and re-establish equilibrium with the aquifer.

In addition to the water quality analytical data, the initial baseline sampling report must include for each monitoring well the following information: a Well Completion Record, Well Schematic Diagram, boring log, hydraulic conductivity value, porosity value, effective porosity value, and the direction and rate of groundwater flow. **This initial baseline sampling report must be received in the Solid Waste Section office on or before October 9, 1994.** The technical review and determination of adequacy of the Transition Plan Water Quality Monitoring Plan will not be completed until after the initial baseline sampling document has been received and reviewed by the Solid Waste Section.

**The water quality sampling and analysis for the baseline sampling must be done according to the directives in the June 24, 1994, memorandum from the Solid Waste Section to MSWLF owners and operators.** If you have any questions or comments regarding this conditional interim authorization to install monitoring wells as necessary in order to upgrade the monitoring system at the Jackson County Landfill, please contact the Solid Waste Section at (919) 733-0692.

Sincerely,

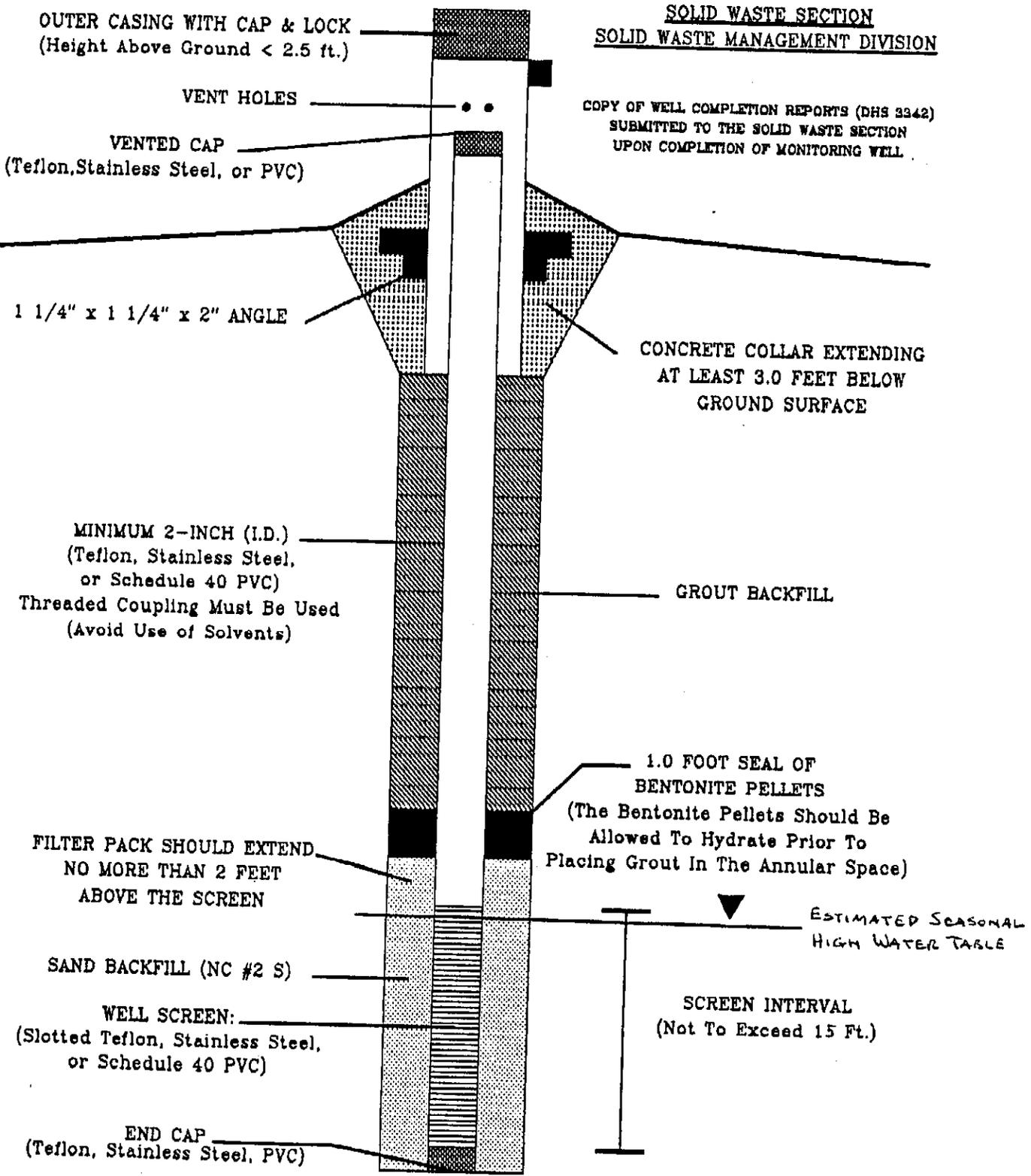
*Bobby Lutfy*

Bobby Lutfy, Hydrogeologist  
Solid Waste Section

cc: Ellis Cayton  
Jim Patterson

Attachment

# TYPICAL MONITORING WELL SCHEMATIC





State of North Carolina  
Department of Environment, Health, and Natural Resources

512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

Division of Solid Waste Management  
Telephone (919)733-0692

Jonathan B. Howes, Secretary

July 27, 1993

Mr. Wayne Hooper  
County Manager, Jackson County  
County Administration Building  
Sylva, N.C. 28779

Re: Implementation Of Subtitle 'D' Ground-water Monitoring Program

Dear Mr. Hooper,

The purpose of this correspondence is to provide information and clarification on the changes in ground-water monitoring requirements for MSWLF facilities that remain in operation after October 9, 1993. The proposed North Carolina Solid Waste Management Rules reflect significant changes for ground-water monitoring based on requirements of the E.P.A. Subtitle D Rules.

Attachment A to this letter provides a summary of important dates and significant activities that must be accomplished in order to be in compliance with the new rules. Attachment B contrasts existing and proposed ground-water monitoring and assessment requirements based on changes in the rules. Because of significant increases in costs that will be incurred in order to operate a MSWLF under the new Subtitle D Rules, including financial assurance and increased costs for ground-water monitoring and assessment, you may wish to seriously consider closing your sanitary landfill prior to October 9, 1993, when the new rules become effective.

When the new rules take effect, MSWLF facilities that have violations of the North Carolina Groundwater Quality Standards or facilities that show a significant statistical increase in the level of any Appendix I constituent will quickly be required to implement assessment monitoring for all Appendix II constituents. Since the Groundwater Quality Standards are also used in establishing the ground-water protection standards, MSWLF facilities with violations may also rapidly move into assessment of corrective action alternatives based on a full-scale ground-water investigation to determine the nature and extent of contamination at the site.

If Jackson County chooses to continue to operate their MSWLF facility after October 9, 1993, then you need to begin planning and budgeting immediately for the activities outlined in Attachment A. A revised Water Quality Monitoring Plan must be submitted as part of the Transition Plan on or before April 9, 1994. The present monitoring system at the facility will require upgrading to meet the requirements of the new N.C. Solid Waste Management Rules for MSWLF facilities. All background sampling and related activities for the upgraded monitoring system must be completed and reported to the Division in order to demonstrate compliance with the new water quality monitoring requirements on or before October 9, 1994.

Please note that the goals and objectives for ground-water assessment monitoring and ground-water contamination investigations are the same under both the current and the proposed rules and shall be accomplished in a way that is protective of human health and the environment. However, current rules allow for greater flexibility in the assessment and investigation activities and the sample analytical costs could be substantially less using the constituent list required under current rules and policy as compared to analytical costs required by the new rules based on Subtitle D, which require sampling for the Appendix II list of constituents.

I hope this letter has been helpful in providing you more insight into the actions that will be required by Jackson County to maintain compliance with the water quality monitoring requirements of the Solid Waste Management Rules as we make the transition to the new rules growing out of the E.P.A. Subtitle D Regulations. If you have any questions or comments regarding this letter, please contact the Solid Waste Section at (919) 733-0692.

Sincerely,

*Bobby Lutfy*

Bobby Lutfy, Hydrogeologist

Solid Waste Section

cc: James Patterson  
**50-02**  
Attachments

## ATTACHMENT A

Important dates and significant activities that must be accomplished in order to be in compliance with the new rules on ground-water monitoring at MSWLF facilities:

April 9, 1994: A Water Quality Monitoring Plan that fulfills the requirements of the new Solid Waste Management Rules must be submitted to the Division as part of the Transition Plan on or before April 9, 1994.

October 9, 1994: Compliance with the new ground-water monitoring requirements must be demonstrated to the Division on or before October 9, 1994. In order to demonstrate compliance, the MSWLF owner or operator must perform the following activities and provide documentation to the Division.

1. Upgrade the ground-water monitoring system so that it meets the criteria of the new rules for monitoring systems.  
Rule .1631
  - (a) Monitoring wells shall be installed at the relevant point of compliance based upon the waste boundaries established on October 9, 1993. - Rule .1631(a)(2)
  - (b) Monitoring wells shall be designed and constructed in accordance with the applicable North Carolina Well Construction Standards as codified in 15A NCAC 2C. - Rule .1631(b)
2. In order to accurately determine ground-water elevations for each monitoring well, the wells shall have been accurately surveyed by a North Carolina Registered Land Surveyor.  
- Rule .1632(d)(1)
3. In order to determine the rate of ground-water flow, the owner or operator shall provide data for hydraulic conductivity and porosity for the formation materials at each of the well locations. - Rule .1632(d)(2)
4. A minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. - Rule .1633(b)
5. The owner or operator shall determine whether or not there is a statistically significant increase over background values for each parameter or constituent required in the particular ground-water monitoring program that applies to the MSWLF unit. - .1632(i)

ATTACHMENT B

Contrasts between the existing and the new ground-water monitoring and assessment requirements based on changes in the Solid Waste Management Rules. All MSWLF units that are in operation on or after October 9, 1993, will be subject to the new rules.

EXISTING RULES

NEW RULES

Detection monitoring:

Monitoring frequency:  
Semiannual monitoring

Monitoring frequency:  
Semiannual monitoring

Monitoring parameters:  
23 landfill constituents

Monitoring parameters:  
Appendix I constituents

Data evaluation based on:  
N.C. Groundwater Quality  
Standards

Data evaluation based on:  
N.C. Groundwater Quality  
Standards and statistical  
increase over background  
levels

Post Closure Monitoring:

Length of time:  
5 years and reevaluate need  
for further monitoring

Length of time:  
30 years and reevaluate need  
for further monitoring

Monitoring parameters:  
23 landfill constituents &  
occasional VOCs

Monitoring parameters:  
Appendix I constituents

Data evaluation based on:  
N.C. Groundwater Quality  
Standards

Data evaluation based on:  
N.C. Groundwater Quality  
Standards and statistical  
increase over background  
levels

Assessment monitoring and ground-water investigations:

Monitoring parameters:  
23 landfill constituents,  
VOCs, semi-VOCs

Monitoring parameters:  
Appendix II constituents  
(213 constituents)

Data evaluation based on:  
N.C. Groundwater Quality  
Standards

Data evaluation based on:  
N.C. Groundwater Quality  
Standards and statistical  
increase over background  
levels

Greater flexibility

Flexibility more limited

**WHILE YOU WERE OUT**

FOR <u>Larry</u>	DATE <u>12-1</u>	TIME <u>12:03 A.M.</u>
M. <u>Tammera Christ</u>		<u>P.M.</u>
OF _____		<input checked="" type="checkbox"/> PHONED
PHONE <u>704 586 4055</u>	AREA CODE NUMBER EXTENSION	<input type="checkbox"/> RETURNED YOUR CALL
MESSAGE <u>well</u>		<input checked="" type="checkbox"/> PLEASE CALL
<u>Re: <del>total</del> monitoring request</u>		<input type="checkbox"/> WILL CALL AGAIN
<u>call after 1:00</u>		<input type="checkbox"/> CAME TO SEE YOU
SIGNED <u>SP Pace to send copy</u>		<input type="checkbox"/> WANTS TO SEE YOU
<u>of 1993 MW total</u>		FORM 400B

**JACKSON COUNTY  
PLANNING AND DEVELOPMENT DEPARTMENT**

8 Ridgeway Street  
Sylva, North Carolina 28779  
Telephone 704/586-4055

September 18, 1992

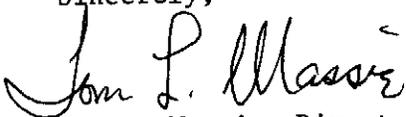


Mr. Bobby Lufty  
Solid Waste Section  
NCDEHNR  
P O Box 27687  
Raleigh, NC 27611-7687

Dear Mr. Lufty:

Jackson County has contracted with Pace Laboratories to perform the required semi annual ground water sampling for FY 1993. These tests will be conducted in October and April respectively.

I apologize for any inconvenience about reporting back to your office by July 1, 1992. I contracted with Pace on January 28, 1992 for the semi annual testing, but apparently failed to respond in writing to your office. It will not happen in the future.

Sincerely,  
  
Tom L. Massis, Director  
Planning and Economic Development

TLM/tc



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

September 10, 1992

William L. Meyer  
Director

Mr. Wayne Hooper  
County Manager  
Jackson County  
County Administration Building  
Sylva, N.C. 28779

RE: Notification Of Semi-annual Sampling Dates For Landfills

Dear Mr. Hooper,

This past January a letter was mailed to all landfill owner/operators informing them that the Solid Waste Section will be requiring semi-annual ground and surface water monitoring beginning January 1, 1993. All landfill owner/operators were requested to notify the Section prior to July 1, 1992, of the months they will be performing each of their semi-annual sampling episodes for the 1993 calendar year. Please note details in the letter of January 10, 1992 that is enclosed with this letter.

As of this date the Solid Waste Section has no record of the proposed sampling dates for next year for your facility. Please notify the Solid Waste Section in writing immediately of the two months you have chosen for sampling this coming year. A response should be received in our office by October 15, 1992.

If you have any questions regarding this request or the water quality monitoring program required at sanitary landfills in North Carolina, please contact the Solid Waste Section at (919) 733-0692.

Sincerely,

A handwritten signature in cursive script that reads "Bobby Lutfy".

Bobby Lutfy  
Hydrogeologist  
Solid Waste Section

cc: Julian Foscue  
Jim Patterson  
Attachment

4/8

IMPORTANT

3:00

To Bobby

Date 4/7/92 Time 2:40

**WHILE YOU WERE OUT**

M Russ Ashburn

of S & ME

Phone (704) 687-9080

AREA CODE          NUMBER          EXTENSION

Asheville

TELEPHONED	<input checked="" type="checkbox"/>	PLEASE CALL	<input checked="" type="checkbox"/>
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN	<input type="checkbox"/>
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT	<input type="checkbox"/>
RETURNED YOUR CALL		<input type="checkbox"/>	<input type="checkbox"/>

Message Jackson Co, L.F.

Well Logs & Borings

FAX (704) 687-8003

[Signature]

Signed

N.C. Dept. of Environment, Health, and Natural Resources



Printed on Recycled Paper

4-7-92

Tom Massey, Sylva

Jackson Co LF

SME

Wells to be installed by  
end of this month.

Downgradient well below  
Ash Fill.



JACKSON COUNTY  
ELDON CABE  
8 RIDGEWAY STREET  
SYLVA, NC 28779

State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

William L. Meyer  
Director

October 3, 1991

TO: Solid Waste Management Facility Owner/Operators

FROM: Larry Rose, Hydrogeological Technician  
Solid Waste Section

RE: 1991 Ground water and Surface Water Monitoring Requirement

In accordance with the Solid Waste Management Rules, 15A NCAC 13B, Sections .0601 and .0602, and the "North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities", all permitted solid waste management facilities are required to submit copies of the ground and surface water analytical data to the Solid Waste Section within 15 days of receipt of the analytical results by the facility owner/operator. As the Solid Waste Section has not received your 1991 sampling data, and with only three months remaining in this calendar year, we are requesting that you schedule a sampling episode with your sampling contractor if you have not already done so. If you have completed your 1991 sampling for ground water and surface water, please forward a copy of the analytical results to this office for review.

Thank you for your prompt attention to this matter. Should you have any questions or comments, please call this office at (919) 733-0692.

GROUND WATER MONITORING WELL DOCUMENTATION SHEET

Date: 1-15-92 Site Name: Jackson County Site Desc.: Munic / Sani District: Western  
 Permit #: 50-02 County: Jackson Site Address: Old U.S. Hwy 441 Site Contact: Eldon Cabe  
(munic.-indus./sani.-demo)

Abbreviations: PVC = Polyvinylchloride; GS = Galvanized Steel; S = Steel; SS = Stainless Steel

Well #	Type of Casing		Size of Casing		Depth from Top of Outer Casing		Feet of Standing Water	Stickup Height		Comments	
	inner	outer	inner	outer	to Bottom	to Water		inner	outer		
2	PVC	S	2"	5"	74 ±	47.8	26 ±	9"	30"	12"	Downgradient Well Near Entrance Road
1	PVC	S	2"	5"	54 ±	49.1	5 ±	9"	27	13'	Downgradient Well Middle
											Need Upgradient Well Need additional Downgradient Well
											Probably need additional downgrad. well below <sup>paper</sup> fill area, but it would be very difficult to site a well at this location.
											Site Visit Jim Patterson

**JACKSON COUNTY  
PLANNING AND DEVELOPMENT DEPARTMENT**

8 Ridgeway Street  
Sylva, North Carolina 28779  
Telephone 704/586-4055



December 8, 1989

Mr. Jim Coffey  
State of North Carolina  
Div. of Solid Waste Management  
Solid Waste Section  
P.O. Box 27687  
Raleigh, NC 27611-7687

Dear Mr. Coffey:

Enclosed are test results for the monitoring wells at the Jackson County Landfill (permit #50-02). If you have any questions about these results, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Tom L. Massie".

Tom L. Massie  
Director

TLM/gkb

Enclosures

# COUNTY OF JACKSON

*Administrative Offices*

October 12, 1989



Mr. Bobby Lufty  
NC Dept. of Environmental Health  
& Natural Resources  
Div. of Solid Waste Management  
P.O. Box 27687  
Raleigh, NC 27611-7687

Re: Documentation of Ground-water Monitoring Wells at  
Jackson County Sanitary Landfill (Permit #50-02)

Dear Mr. Lufty:

This letter is in response to your letter of September 19, 1989 requesting additional information about monitoring wells at our landfill. I have requested Mr. Ralph Owen of Storrow Engineering to submit the map delineating the landfill property, plus the current permit description. I am sure he has spoken directly with you about the matter.

In regard to submission of well completion records for our two monitoring wells, I have enclosed the DHS 3342 completed to the best of my knowledge. You will note there are many questions I am unable to answer. These wells were constructed under my predecessor's scrutiny (approx. 1984) and adequate records were not maintained in this office.

I have contacted the well drilling company which completed the original wells and requested additional information including boring logs and other subsurface information. The company, Greene Brothers Well Drilling and Pump Service (704/586-5550) was unable to produce the boring log, or provide the missing information. They did however indicate the depth of the two wells (79' and 54') and assure me that the Groundwater Monitoring Well minimum standards were followed. I have enclosed what little information they could supply. Please advise this office if additional measures need to be taken to insure the accuracy of our wells compliance.

Jackson County has contracted with Mr. Paul Smith of Environmental Testing, 54 Ravenscroft Dr., Asheville, NC 28801 to sample the county monitoring wells on an annual basis. The next scheduled sampling will occur on October 19, 1989.

Mr. Bobby Lufty  
October 12, 1989  
Page 2

If you have other questions, or require further information,  
please contact me or Mr. Owens.

Sincerely,

A handwritten signature in cursive script that reads "Tom L. Massie". The signature is written in dark ink and is positioned above the typed name.

Tom L. Massie, Director  
Planning & Economic Development

TLM/gkb

Enclosure

**RECORD OF COMMUNICATION**

704-252-8284

PHONE CALL     DISCUSSION     FIELD TRIP     CONFERENCE

OTHER (SPECIFY)

(Record of item checked above)

TO: Ralph Owens  
Starrow Eng. Assoc.

FROM: Bobby Luffy  
(Return call)

DATE 10-12-89  
TIME 9:45

SUBJECT  
Well Documentation for Jackson County

SUMMARY OF COMMUNICATION

Tom Massey - Jackson Co. - 2 wells (downgradient)

Depth to Screen

Depth to bottom

2 in wells PVC

Bentonite Seal

Wells to be sampled by:

of Asheville, H.C.

Paul Howard (?)

1 well damaged?

Paper Pulp L.F. at Toe of Slope, Trash in Burrow Area

Need Additional Wells Between road + River

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES

TO:

**RECORD OF COMMUNICATION**

- PHONE CALL     DISCUSSION     FIELD TRIP     CONFERENCE  
 OTHER (SPECIFY)

(Record of item checked above)

TO: Bobby Luffy  
50-02

FROM: Ralph Owens

DATE 9-26-89

TIME 9:15

SUBJECT: Jackson County Landfill Monitoring Well Documentation

**SUMMARY OF COMMUNICATION**

3 wells

- all downgradient
- one damaged

Need additional wells

- landfilling in borrow trench
- silt basin
- additional drainage area

**CONCLUSIONS, ACTION TAKEN OR REQUIRED**

Need documentation for existing monitoring wells

**INFORMATION COPIES**

TO:



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Solid Waste Management  
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

William L. Meyer  
Director

September 19, 1989

Mr. Wayne Hooper  
Jackson County Manager  
County Administration Bldg.  
8 Ridgeway Street  
Sylva, N.C. 28779

Re: Documentation for Ground-water Monitoring Wells at the Jackson County Sanitary Landfill (Permit #50-02)

Dear Mr. Hooper,

Upon a recent review of our files, our office found that we do not have sufficient documentation on the ground-water monitoring wells at the Jackson County Landfill facility. Within the next 30 days would you please provide our office with the following information:

1. A map (preferably 8 1/2" x 11") delineating the entire landfill and adjacent property owned (or leased) by you. This map should clearly show the location of the landfill with respect to the entire property.
2. A specific site map of the landfill itself illustrating the configuration of the landfill per the current permit description. On this map also indicate the following:
  - a. Areas of past landfilling activity
  - b. Area of present landfilling activity
  - c. Areas of proposed future landfilling activity
  - d. Areas of demolition waste landfilling
  - e. Locations of existing monitoring wells; Each well should be numbered on the map (e.g. MW-1; MW-2; etc.) in a manner corresponding to the designations of the wells in the field.
3. Complete and accurate Well Completion Records (DHS 3342) for all ground-water monitoring wells. These records should clearly indicate the following:

- a. Well construction specifications pertaining to inner/outer casing diameter
- b. Borehole depth
- c. 24-hour water table elevations
- d. Screen length
- e. Screen slot size
- f. Vertical extent of screen (e.g. where the screen is placed in the aquifer).
- g. Which wells are "upgradient" and which wells are "downgradient".
- h. All other data required on well construction forms as specified in the "N.C. Water Quality Monitoring Guidance Document for Solid Waste Facilities".

In addition, please submit to us a summary of the hydro-geological data accumulated for the landfill site from the boring operation. Include boring logs and other pertinent subsurface information. Also, designate in writing to this office the name of the contractor you have chosen to perform your annual ground and surface water monitoring extractions, and the date on which you plan to perform your annual sampling.

If you have questions or comments please contact this office at (919) 733-0692.

Sincerely,

*Bobby Lutfy*

Bobby Lutfy  
Hydrogeological Technician  
Solid Waste Section  
Solid Waste Management Division

BL

cc: Jim Patterson

Attachment



NORTH CAROLINA  
DEPARTMENT OF HUMAN RESOURCES  
INTER OFFICE MEMORANDUM

DATE 8/30/89

TO Bobby

50-02

FROM Gary

From a conversation w/  
a consultant re: Jackson Co. LF.

One of their wells may be  
damaged by equipment, at  
the "base" of the LF.

Note for file

**JACKSON COUNTY  
PLANNING AND DEVELOPMENT DEPARTMENT**

8 Ridgeway Street  
Sylva, North Carolina 28779  
Telephone 704/586-4055

August 26, 1987



Mr. Michael L. Babuin  
Solid Waste Hydrologist  
Solid & Hazardous Waste Management  
NC Department of Human Resources  
Division of Health Services  
P.O. Box 2091  
Raleigh, NC 27602-2091

Dear Mr. Babuin:

Thank you for your reminder letter of August 3, 1987. I appologize for the oversight. Jackson County has desginated approximately September 15, as its annual sampling date for our landfill's ground water monitories wells. Jackson County will contract with Wastewater Services, Inc. of Asheville to conduct the sampling and analysis of the ground water.

If you have any further questions about this and the landfill operations, please contact Mr. Eldon Cabe at this address.

Sincerely,

A handwritten signature in cursive script that reads "Tom L. Massie".

Tom L. Massie, Director  
Planning & Economic Development

TLM/gkb



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director

August 19, 1987

MEMORANDUM

TO: Perry Nelson, Chief Ground-Water Section  
Division of Environmental Management

FROM: Paula Byrd, Solid Waste Unit  
Solid & Hazardous Waste Management Branch

SUBJECT: Analytical results from Jackson County Landfill Solid Waste  
Facility #50-02.

Per the MOA dated June 4, 1987 between NRCD and DHR, enclosed are copies of recent analytical results from the above referenced facility that may indicate contravention or potential contravention of ground-water standards. If any additional information is required please advise.

PDB/mj/6369pg5

cc: Wayne Hooper Jackson Co. Manager  
Jim Patterson  
Julian Foscue  
✓Michael Babuin



*Jackson*

North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
Phillip J. Kirk, Jr., Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director

May 8, 1987

Tom Massie  
Director of Planning & Economic Development  
8 Ridgeway St.  
Sylva, N.C. 28779

Dear Mr. Massie:

This office concurs with the procedures outlined in Mr. George W. Jensen's report of February 3, 1987 concerning correction of the problems at the base of the Jackson County Landfill.

Please note that the monitoring well at location #5 is to be relocated as indicated on the enclosed map.

Should you have questions, please call

A handwritten signature in cursive script that reads "Julian M. Foscue III".

Julian M. Foscue III  
Western Area Supervisor  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

cc: James E. Patterson  
George W. Jensen, P.E.



OFFICE OF

# COMMISSIONERS OF JACKSON COUNTY

Sylva, North Carolina 28779

WAYNE HOOPER  
COMMISSIONER OF FINANCE

ROBERT BLANTON  
VERONICA NICHOLAS  
PART-TIME COMMISSIONERS  
Ph: (704)586-4055  
Extension 212



DARLENE FOX  
COUNTY ACCOUNTANT

W. PAUL HOLT, JR.  
COUNTY ATTORNEY



Mr. Joe Hinkie, Plant Manager  
Jackson Paper Manufacturing Company  
Sylva, North Carolina 28779

Dear Mr. Hinkie:

When Jackson Paper Company began operations and started generating large amounts of solid waste, the County agreed to allow your company to use a specific area at the landfill below Dillsboro so the Company would have time to locate, and have approved, a place to dispose of your solid waste. A plan of operation was developed by Jackson County and approved by the State for the use of the Dillsboro site. Jackson Paper was presented with a plan for the area which you were to use and those plans were explained to company officials and a contractor for the company at that time. The Company was also given a key for a padlock and asked to keep a cable across the roadway leading into that area.

Today I received a visit from Mr. James E. Patterson from the Solid and Hazardous Waste Management Branch of the Division of Health Services. Mr. Patterson stated that one of our monitoring wells has been damaged by Jackson Paper Company and that it may have to be replaced. He also states that your material has not been placed in the area according to the plan and that you may have exceeded the amount of material that can go in there.

Although the Paper Company is responsible for that area, State Officials look to the County, because the permit and approved plans are issued to Jackson County. The Division of Health Services has the authority to levy fines on the County for non compliance.

Your prompt attention in this matter, so the landfill will be in compliance will be appreciated. If you are unable to locate your plan for the area, our sanitation department will be happy to supply you with a copy and go over them with you. After getting the area in proper shape, if it appears you are approaching or exceeding the limits for its use, you may wish to get in touch with Mr. Gordon Layton at: Division of Health Services, Solid and Hazardous Waste Management Branch, P.O. Box 2091, Raleigh, N.C., 27602; Phone No: (919) 733-2178. Mr. Layton is the only official who could authorize a change in the plan that would allow additional material in the site.

If I can be of assistance please get in touch.

Sincerely,



Wayne Hooper, Chairman  
Jackson County Board of Commissioners

cc: James Patterson  
Gordon Layton



*W-D*

**FROEHLING & ROBERTSON, INC.**  
 FULL SERVICE LABORATORIES • ENGINEERING/CHEMICAL  
 "OVER ONE HUNDRED YEARS OF SERVICE"



CW  
 JBB  
 Amse  
 Champion  
 George Jensen  
*Jackson*  
*W-D*

January 16, 1984

No: L-52-028-1-A

Analysis of Sludge

Made For: Jackson Paper Manufacturing Co.  
 P.O. Box 667  
 Sylva, N. C. 28779  
 Attn: Mr. Carr Tyndall

Marked: Sample of Sludge submitted 12-23-83

0 - 0 - 0

P.P.M., Dry Wt. Basis

Arsenic (As)	< 1.0
Barium (Ba)	56
Cadmium (Cd)	1.1
Chromium (Cr)	21
Lead (Pb)	45
Mercury (Hg)	0.78
Selenium (Se)	< 1.0
Silver (Ag)	1.3
Sodium (Na)	12169
Potassium(K)	1070
TKN	2.1
Ammonia Nitrogen	< 1.0
Phosphorus, As P	
Filtered Ortho	6.8
Filtered Total	6.3
Unfiltered Ortho	9.0
Unfiltered Total	10.3

P.P.M. (As Rec'd)

Ep Toxicity Test (Metals)	EPA Hazardous Waste #	Mg/L
Arsenic (As)	D 004	< 0.001
Barium (Ba)	D 005	0.6
Cadmium (Cd)	D 006	< 0.02
Chromium (Cr)	D 007	< 0.20
Lead (Pb)	D 008	< 0.20
Mercury (Hg)	D 009	0.0012
Selenium (Se)	D 010	< 0.0005
Silver (Ag)	D 011	< 0.03

*Linsen Report*  
*pH = 7.5 - 8*  
*JRR*  
*3/17/84*

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA. 23261 •  
 TEL (804) 264-2701  
 BRANCHES: ASHEVILLE, NC • BALTIMORE, MD • CHARLOTTE, NC • CROZET, VA •  
 FAYETTEVILLE, NC • GREENVILLE, SC • NORFOLK, VA • RALEIGH, NC • ROANOKE,  
 VA • LYNCHBURG, VA



CHARTER MEMBER    CHARTER MEMBER    MEMBER SINCE 1904



<u>Pesticides</u>	<u>EPA Hazardous Waste #</u>	<u>Mg/L</u>
Endrin	D 012	< 0.006
Lindane	D 013	< 0.004
Methoxychlor	D 014	< 0.04
Toxaphene	D 015	< 0.01
 <u>Herbicides</u>		
2,4-D (2,4-Dichlorophenoxyacetic Acid)	D 016	< 0.01
2,4,5-TP (Silvex)	D 017	< 0.01
 <u>Other Tests</u>		
Polychlorinated Biphenyls (P.C.B.) E.P. Toxicity Extract		< 0.10

Respectfully,

August A. Thieme  
Chief Chemist & Director  
Chemical & Biological Services



DIVISION OF HEALTH SERVICES  
P.O. Box 2091  
Raleigh, N.C. 27602-2091

*Jack Levine*  
Ronald H. Levine, M.D., M.P.H.  
STATE HEALTH DIRECTOR

*RHL*

October 13, 1982

J. K. Spencer  
Jackson Paper Mfg. Co.  
P. O. Box 26179  
Richmond, Va. 23260

Re: Wood Ash Disposal at  
Jackson County Landfill at Dillsboro

Dear Mr. Spencer:

The Division of Health Services has received a request for characterization of the subject waste. Based upon the submitted information, the waste appears to be non-hazardous. DHS has no objection to the sanitary landfill disposal of this waste if in accordance with the conditions below:

1. The waste is non-liquid and can be confined, compacted, and covered in accordance with the "Solid Waste Management Rules".
2. The owner/operator of the landfill approves the disposal.
3. The waste remains non-hazardous as determined by the current RCRA regulations.

Failure to meet these conditions may result in revocation of this approval and an administrative penalty. This approval is subject to change if new regulations were to prohibit this practice. If the process which generates the waste changes or if the composition of the waste changes significantly, this approval is voided, and re-evaluation of the waste will be required prior to disposal.

If you have any questions concerning this matter, please contact our office at (919) 733-2178.

Respectfully,

*J. Gordon Layton*  
J. Gordon Layton, Environmental Engineer  
Solid & Hazardous Waste Management Branch  
Environmental Health Section

JGL:dwm

cc: J. W. Moore, Jr.  
Eldon Cabe

**Jackson Paper Manufacturing Company**

MANUFACTURERS OF STONEWALL LINERBOARD AND MEDIUM



P.O. BOX 26179  
RICHMOND, VIRGINIA 23260  
TELEPHONE 232-1292 AREA CODE 804

September 30, 1982

State of North Carolina  
Department of Human Resources  
Division of Health Services  
Environmental Health Section  
Raleigh, North Carolina 27602

Attention: Mr. Gordon Layton  
Solid & Hazardous Waste Management Branch

Gentlemen:

Jackson Paper Manufacturing Company submits the following information required by procedure and criteria for waste determination for your evaluation:

General Information

1. Jackson Paper Manufacturing Company, Sylva, N.C., generates the waste.
2. The waste is wood ash.
3. The process generating the waste is the firing of waste wood fuel for the generation of steam.
4. Based on a density of 100 pounds per cubic foot the total amount of ash generated would be approximately 230 cubic feet per day. This naturally will vary depending upon the fuel being fired and the cleanliness of the fuel. The above figure represents ash discharged off the stoker (bottom ash) as well as that collected in the dry multiclone collector and wet scrubber. Frequency of disposal has not been determined at this time; however, it could be disposed of on a dailey basis or up to a maximum of thirty (30) day intervals for portions of the waste.

Information for Hazardous (RCRA) Determination (10NCAC10F .0029)

1. Materials contained in the wood ash, based on a typical analysis, are not listed under Subpart D 261.31 and 261.32.

2. The waste does not meet the requirements of Subpart D as defined by 261.33 (e) and (f) in that it does not contain any of the hazardous or toxic substances listed.
3. N/A

Information for Landfilling Determination

1. The waste does not contain any constituents listed in Appendix VIII, 40CRF, May 19, 1980, and the amendments.
2. Constituents present and their concentration (percent by weight) are listed below based on a typical wood ash analysis.

Silica	as SiO <sub>2</sub>	1.6
Iron	as Fe <sub>2</sub> O <sub>3</sub>	3.1
Titanium	as TiO <sub>2</sub>	0.0
Aluminum	as Al <sub>2</sub> O <sub>3</sub>	3.1
Manganese	as Mn <sub>3</sub> O <sub>4</sub>	3.8
Calcium	as CaO	60.7
Magnesium	as MgO	2.9
Alkalies	as Na <sub>2</sub> O	10.3
Sulfate	as SO <sub>3</sub>	2.9
Chloride	as Cl	0.3
Carbonate	as CO <sub>2</sub>	11.4

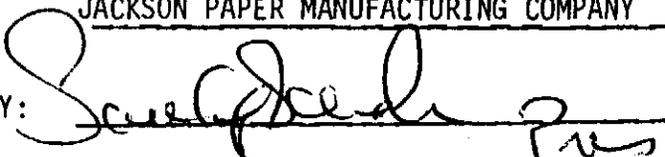
3. The total heavy metals content is listed in the above analysis as oxides of the heavy metals.
4. N/A
5. N/A

Enclosed for your information is Wood Fuel Analysis (0-120 mi, of Sylva, N.C.).

Should you have any questions, please contact Wiley & Wilson, P.O. Box 877, Lynchburg, Virginia 24501 (Telephone NoL 804-528-1901).

"I hereby certify that the information submitted in regard to Wood Ash is true and correct to the best of my knowledge and belief."

JACKSON PAPER MANUFACTURING COMPANY

BY: 

FUEL SPECIFICATION - WOOD BOILER  
Jackson Paper Manufacturing Co.  
Sylva, N.C.

FUEL DESCRIPTION

The subject fuel will be wood residues consisting of sawdust, bark, shavings, chips and other wood materials, both hardwood and softwood. Preliminary studies show that the mixture should be approximately 80% hardwood and 20% pine. Of this, 50% will be sawdust, 25% will be bark and the remainder will be composed wholly or in part of chips, shavings, pole peelings, trim ends, trim blocks, slabs and slivers.

WOOD FUEL ANALYSIS (0-120 mi. of Sylva, N.C.)

Ultimate Analysis (% by weight)

Hydrogen	3.0
Carbon	26.3
Nitrogen	.1
Oxygen	19.5
Sulfur	0
*Ash	1.1
Moisture	50

Proximate Analysis (% by weight)

Volatile Matter	37.7
Fixed Carbon	11.2
Moisture Content	50.0
* Ash	1.1

Heating Value 8168 BTU/lb bone dry

4084 BTU/lb as delivered (50% moisture content)

\*Denotes ash contained in fuel only. Contaminants could run as high as 3%.

SANITARY LANDFILL OPERATIONAL PLANS  
 JACKSON COUNTY LANDFILL, DILLSBORO SITE  
 JACKSON COUNTY, NORTH CAROLINA  
 FOR  
 THE JACKSON COUNTY BOARD OF COMMISSIONERS  
COMMISSIONERS

Wayne Hooper, Chairman  
 Robert Blanton  
 Veronica Nicholas



CONSULTING ENGINEERS  
 Butler/McGill Associates, P.A.  
 Asheville, North Carolina

George W. Jensen, P.E.

Project No. 82194

and Community Development. Specific population information was obtained from the Southwestern Planning and Development Commission (Region A), shown on Exhibits C. The present population of Jackson County is approximately 25,950 people. Because of the existence of the Cullowhee landfill it is expected that approximately 50 percent of the county's population use the Dillsboro landfill.

### C. Site Topography and Soils Limitations

The present site is located in an elevated, well drained area. The majority of the surface drainage is carried southwestward to the Tuckasegee River by diversion ditches and pipe. The site is subject only to runoff from precipitation with no adjoining drainage onto the site. Soil borings were performed by Soil & Material Engineers, Inc. and information on results are included in Exhibit F. It is important to note that no water was encountered in any of the borings which ranged in depth from 20 to 45 feet. All borings were taken to proposed depth with no rock encountered. The soils consist of brown micaceous silty fine sands which when properly compacted should provide a good cover material to limit water intrusion of the completed cells leading to undesirable leachate from the landfill.





**SOIL & MATERIAL ENGINEERS INC. ENGINEERING-TESTING-INSPECTION**

125 London Rd., Box 15153, Biltmore Sta., Asheville, NC 28813-0153, Ph. (704) 274-7800

February 29, 1984

Mr. Woody Hampton, County Planner  
Jackson County  
County Administration Building  
8 Ridgeway Street  
Sylva, N.C. 28779

Re: Jackson County Landfill  
Dillsboro, N.C.

Dear Mr. Hampton:

Soil & Material Engineers, Inc. has completed the auger borings at the Jackson County Landfill in Dillsboro, N.C.

A total of nine auger borings were drilled at the locations shown on the attached site plan. In general, the auger borings ranged from twenty foot to forty-five foot depths. The soils consist of a brown micaceous silty fine sand. No rock was encountered in any of the borings at the locations shown. Attached is an itemized sheet indicating boring numbers and depths.

We appreciate the opportunity to be of service to you; any questions, please advise.

Very truly yours,

Soil & Material Engineers, Inc.



Richard A. Gilstrap  
Construction Services Manager



J.C. Bumgarner, P.E.  
Branch Manager

RAG:JCB/dh

Enclosure

PERMIT NO. 50-02

DATE ISSUED 4/27/84

STATE OF NORTH CAROLINA  
DEPARTMENT OF HUMAN RESOURCES  
*Division of Health Services*  
P.O. Box 2091                      Raleigh 27602

## SOLID WASTE PERMIT

Jackson County is hereby issued a permit to  
operate a sanitary landfill  
located on U.S. 441 (Dillsboro),

in accordance with Article 13B of the General Statutes of North Carolina and all  
rules promulgated thereunder and subject to the conditions set forth in this  
permit. The facility is located on the below described property.

A certain parcel of land, situated in Dillsboro Township, Jackson County,  
North Carolina, bounded and described as follows:

Beginning on a point in the edge of the water at the easterly bank of the  
Tuckaseegee River, the beginning corner of a deed recorded in deed book  
350, page 552; Jackson County Public Registry, said point being:

S 66 41 30 W 219.06'

from an iron, and thence with the original line of the Town of Sylva property:

N 66 41 30 W 219.06'

to an iron, passing through an offset line iron at 6.50', the centerline  
of Southern Railway tracks at 109.62', the centerline of an old concrete  
toad at 187.62'; thence continuing with said line and with McFall's (now  
or formerly), then Goodson Garments (now or formerly) line:



O. W. Strickland, Head  
Solid & Hazardous Waste Management  
Branch  
Environmental Health Section

PERMIT NO. 50-02

DATE ISSUED 4/27/84

## SOLID WASTE PERMIT

### Property Description (continued)

N 54 08 50 E 592.85'

to an iron, passing through an existing offset line iron at 59.04', the centerline of old US 19-A & 441 at 81.27', another offset line iron at 104.77'; thence:

N 43 38 50 E 137.23'

to an iron, thence:

N 56 38 50 E 295.79'

to an existing iron on top of a ridge, common corner of Wilkey (now or formerly); thence with the top of said ridge and Wilkey, then Conner (now or formerly), then Fowler Heirs (now or formerly) line the following courses and distances:

N 72 47 10 W 98.81'

N 71 03 10 W 98.99'

N 67 22 10 W 99.07'

N 63 21 20 W 46.77'

to an existing iron at a twenty-seven (27) inch white oak, thence:

N 39 18 30 W 99.91'

N 21 50 10 W 99.48'

N 31 10 10 W 55.27'

to an existing iron at a twenty (20) inch white oak, thence: N 54 12 W 99.28"

to an existing iron thence:

N 74 27 20 W 146.59'

to an existing iron, thence:

N 50 42 30 W 114.57'

to an existing iron, thence:

S 68 19 30 W 142.73'

PERMIT NO. 50-02

DATE ISSUED 4/27/84

## SOLID WASTE PERMIT

### Property Description (continued)

to an existing iron at a pine, thence:

N 69 35 10 W 83.02'  
N 78 58 10 W 103.55  
N 87 51 50 W 37.13'  
S 66 59 50 W 73.90'  
v S 79 05 50 W 96.73'  
N 80 26 W 149.94'

to an existing iron on top of a roadway cut, thence:

N 79 24 40 W 86.14'

to an existing nail in the centerline of old highway US 19-A & 441; thence continuing with said Fowler line:

N 79 52 50 W 402.09'

to a point in the edge of the water at the easterly bank of the Tuckaseegee River, common corner of said Fowler Hiers property, passing the centerline of an old concrete road at 126.16', the centerline of Southern Railway tracks at 208.37'; thence up and with the easterly edge of said Tuckaseegee River:

S 27 35 05 E 112.55'

S 34 36 45 E 210.82'  
S 28 09 40 E 241.73'  
S 39 17 10 E 141.35'  
S 45 24 10 E 189.26'  
S 42 38 10 E 162.31'  
S 37 07 20 E 203.75'  
S 32 15 E 152.37'  
S 20 09 E 132.49'

to the beginning.

The above parcel contains 26.97 acres.

PERMIT NO. 50-02

DATE ISSUED 4/27/84

## SOLID WASTE PERMIT

### Conditions of Permit:

1. This permit may be subject to review at an administrative hearing upon petition of anyone whose legal rights, privileges and duties may have been affected by the issuance thereof.
2. This permit shall not be effective unless the certified copy is filed in the register of deeds' office, in the grantor index under the name of the owner of the land in the county or counties in which the land is located. After recordation, the certified copy shall be returned to the Solid & Hazardous Waste Management Branch and shall have indicated on it the page and book number, date of recordation and registrar's seal.
3. The following requirements shall be met prior to receiving solid waste at the site:
  - a. Site preparation shall be in accordance with construction plan.
  - b. Site inspection shall be made by a representative of the Division of Health Services.
4. This solid waste disposal site is permitted to receive solid waste as defined in 10 NCAC 10G, .0101(31), except that hazardous waste, liquid waste and any other wastes that may pose a threat to the environment or the public health are prohibited from disposal at this site unless prior authorization is obtained from the Division of Health Services.
5. This permit is for construction according to plans prepared by Butler and Assoc. dated December 1983. Any modification or deviation from the approved plans shall be approved by the N.C. Solid and Hazardous Waste Management Branch.
6. Groundwater monitoring wells are installed per the DHS monitoring well standard by August 1, 1984.
7. This facility shall conform to operating procedures in Rule .0505 of the Solid Waste Management Rules.
8. When this property is sold, leased, conveyed or transferred, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a sanitary landfill.



**NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES**

**DIVISION OF WASTE MANAGEMENT**



May 26, 1998

**JAMES B. HUNT JR.  
GOVERNOR**

**WAYNE MCDEVITT  
SECRETARY**

**WILLIAM L. MEYER  
DIRECTOR**

Mr. Roger Bartlett  
Western Builders  
P.O. Box 96  
Sylva, N.C. 28779

RE: Water Quality Monitoring Results From The Jackson  
County Landfill (Permit Number 50-02)

Dear Mr. Bartlett,

Thank you for your telephone call of this past Friday (May 22, 1998). The Solid Waste Section was not aware that Western Builders was using a well as its water supply source. Based upon the Transition Plan submitted by the County's consultant, it was our understanding that all residences and businesses to the southeast of the landfill, along the road from Dillsboro, were using the public water supply system.

Attached is a copy of the summary sheets for the most recent water quality sampling event at the Jackson County Landfill for which we have records in our office. The main chemical constituents of concern appear to be the volatile organic compounds that appear on the last page of the attachment.

The Solid Waste Section would appreciate you providing us with information on the location and design of your water supply well and how many people are using the well. It would also help if you could provide us with the results of any water quality analyses from this well.

Mr. Roger Bartlett  
Western Builders  
Page 2

You may address future questions or comments either to myself or to Mr. Mark Poindexter of our Groundwater Compliance Unit. If you have any questions about this letter, please contact either Mark or myself at (919) 733-0692.

Sincerely,

*Bobby Lutfy*

Bobby Lutfy  
Hydrogeologist  
Solid Waste Section

cc: Mark Poindexter - Solid Waste Section  
Jim Patterson, SWS - Asheville

Attachment

1325 Dills Cove Rd.  
Sylva, NC 28779



50-02  
11-10-97

Phone & Fax  
(704) 586-3955

01/02/98

▲  
JAN 1998  
Received  
Solid Waste  
Section

TO: Solid Waste Section  
Attn: Larry Rose  
P. O. Box 27687  
Raleigh, NC 27611-7687

RE: Jackson County Landfill  
11/97 Water Sampling  
Appendix I - Surface Water  
Appendix II- Ground Water

Attached are the following:

- Field Measurements
- Analyses above background
- Groundwater flow direction & rate
- Analyses
- Chain of Custody
- Bailer Certification

Please contact me if you need further information.

*Michael H. Owens*  
MICHAEL H. OWENS

▲  
JAN 1998  
Received  
Solid Waste  
Section

Jackson County Landfill

Field Measurements

<u>Site</u>	<u>pH</u>	<u>temp(°C)</u>	<u>conductivity (umho)</u>	<u>water depth (ft)</u>
MW-1	5.35	12.0	80.3	90.7
MW-2	6.32	13.1	83.3	37.4
MW-3	5.58	14.2	170.0	52.2
MW-4	5.20	14.2	260.0	28.6
MW-5	5.68	13.7	322.0	45.4
U (upstream)	7.42	9.3	26.8	-
D (downstream)	7.55	9.3	26.9	-

MAY 1998  
 Received  
 Solid Waste  
 Section

Jackson County Landfill - Monitor Wells

Summary of metals Analyses above background

<u>Monitor well</u>	<u>Analysis</u>	<u>detection limits or background (mg/l)</u>	<u>Analysis (mg/l)</u>
1	Barium	0.030 +/- 0.033	0.071
	Cobalt	0.005	0.038
2	Lead*	0.003	0.006 *
	Barium	0.030 +/- 0.033	0.029
	Tin	0.250	0.390
3	Barium	0.030 +/- 0.033	0.083
4	Lead*	0.003	0.007 *
	Mecury	0.0002	0.0003
	Barium	0.030 +/- 0.033	0.930
	Tin	0.250	0.990
	Zinc	0.031 +/- 0.086	0.042
5	Cobalt	0.005	0.006
	Barium	0.030 +/- 0.033	0.150
	Tin	0.250	1.550

\* note: equipment blank contains 0.006 mg/l Lead

↑

1988  
Received  
Solid Waste  
Section

Jackson County Landfill - Monitor Wells

Summary of Appendix I Organic Analyses above background

<u>Monitor well</u>	<u>Analysis</u>	<u>detection limits or background (ug/l)</u>	<u>Analysis (ug/l)</u>
1	Benzene	5.0	5.00
	1,1-Dichloroethane	0.638 +/- 1.62	41.70
	1,1,1-Trichloroethane	5.0	5.00
	Xylenes	5.0	29.60
3	Chlorobenzene	5.0	5.30
	1,1-DCA		5.32
4	1,4-Dichlorobenzene	5.0	5.92
	cis-1,2-Dichloroethene	5.0	33.50
	Tetrachloroethylene	5.0	7.15
	1,1-DCA		5.32
5	Benzene	5.0	7.76
	1,4-Dichlorobenzene	5.0	11.30
	cis-1,2-Dichloroethene	5.0	72.60
	1,1-DCA		5.00

note: no other organic analytes were detected in the Appendix II analyses

5-22-98

Roger Bartlett

Western Builders

P.O. Box 96

Sylva, N.C. 28779

~ 8-10 gal/min 200' ?

1976

well close to LF

Jackson Co, L.F.

704-586-5094

7/20/98

① Mike Owens - Mt. Geology  
828-586-3453  
RE: Western Builders  
Jackson Co LF

Previous SWS Results	
.16 ppm	Zn
7 ppm	Sulfate

- Discussed SWS sampling results for Western Builders' well,

IMPORTANT

To File

Date 7/30/98 Time \_\_\_\_\_

**WHILE YOU WERE OUT**

M \_\_\_\_\_

of \_\_\_\_\_

Phone \_\_\_\_\_

AREA CODE      NUMBER      EXTENSION

TELEPHONED	<input type="checkbox"/>	PLEASE CALL	<input type="checkbox"/>
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN	<input type="checkbox"/>
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT	<input type="checkbox"/>
RETURNED YOUR CALL		<input type="checkbox"/>	<input type="checkbox"/>

Message Dave Fowler - new  
Jackson Co. Solid Waste  
Director - per Jim Bishop  
McCall Assoc

\_\_\_\_\_  
Signed

N.C. Dept. of Environment, Health, and Natural Resources



Printed on Recycled Paper

State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Solid Waste Management



James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
William L. Meyer, Director

December 12, 1995

Mr. Tom Massie  
Jackson County Planning  
8 Ridgeway Street  
Sylva, North Carolina 28779

RE: Hydrogeologic Review Of The Revised Transition Plan For The  
Jackson County Landfill, # 50-02

Dear Mr. Massie,

The Solid Waste Section Hydrogeologic Unit has reviewed the revisions to the Transition Plan for the Jackson County MSW Landfill. Although some of the items in my letter of March 17, 1995 to Michael Palmer of McGill Associates were addressed adequately, there are still a number of items that need additional clarification or changes. Please address the following questions and comments:

LOCAL AREA STUDY

- The Solid Waste Section has not received any documentation for the location and elevations of permanent survey benchmarks.
- Monitoring wells MW-2 and MW-4 are outside the permitted facility boundary and therefore do not meet the point of compliance requirements in the rules. Jackson County needs to request that the additional county owned property between the road and the river be incorporated into the permitted facility boundaries for buffer and monitoring purposes.
- The location of the landfill is not indicated on our copies of Figure 14, the Tuckasegee Water & Sewer Authority - Water System Map.
- There is still no 2000 foot perimeter topography map on a scale of one inch equals four hundred feet that clearly indicates all the information required in Rule .1629(b)(2)(A)(i) through (v).

WATER QUALITY MONITORING PLAN

The "Item numbers" are those referenced in Law Engineering and Environmental Services' April 25, 1995 Response To Request For Revised Transition Plan.

Item 1

- As previously referenced, two monitoring wells are located outside the permitted facility boundaries. The additional county owned property needs to be incorporated into the permitted facility boundaries for buffer and monitoring.

Item 3

- The maintenance problems with the monitoring wells need to be corrected and documentation provided to the Solid Waste Section.

Item 4

- Either the non-detect data for the subject metals need to be incorporated into Table 7 for the December 16, 1993 sampling event or a footnote needs to be provided that indicates these metals were analyzed but not detected for this sampling event.

Item 7

- Monitoring well MW-2 is designed and constructed improperly. The extended screened interval could cause dilution which would mask any contaminant release. Further evaluation of this well is needed. It probably needs to be replaced.

Item 8

- Based upon past sampling data, Jackson County should have begun assessment monitoring by sampling for the Appendix II constituents. As of this date, the Solid Waste Section has not received an Appendix II sampling report.

SAMPLING AND ANALYSIS PLAN (SAP)

Item 3

- The EPA approved cleaning protocol varies depending upon the material of the purging equipment (Teflon or stainless steel). Please provide clarification on the source of the EPA protocol specified in the revised SAP and what type of purging equipment it is for.

Item 4

- It should be noted that field decontamination is generally to be avoided for purging equipment. If purging pumps are used, field decontamination may sometimes be necessary. If bailers are used for purging, then a separate laboratory cleaned bailer is required for each monitoring well.

Item 7

- Volatile organic compounds should be sampled from the top of the water column. Other constituents do not require sampling from the top of the water column. Volatile organic compound samples should have no head space. Other constituents do not require zero head space. Revisions need are needed to the text on page 3-6 to clarify these issues.

Item 8

- It should be noted that use of intermediate sampling containers for surface water sampling should be avoided if possible. Many surface water samples can be taken directly with the sample containers. Again, zero headspace is required only for volatile organic compounds. Revisions need to be made on pages 3-7 through 3-9 to clarify these issues.

Page 3-11

- While field equipment blanks should be analyzed for all constituents, trip blanks only need to be analyzed for organic constituents.
- The revised SAP states: "Analytical procedures shall be in conformance with those recommended in 40 CFR Part 258." The analytical procedures must also be in conformance with the guidance memos from the Solid Waste Section dated June 24, 1994 and January 18, 1995.

Mr. Tom Massie  
Jackson Transition Plan  
Page 4

- Water quality samples need to be analyzed by a laboratory certified by the North Carolina Division of Environmental Management for ground-water analyses using the approved analytical methods.

Page 4-1

- In paragraph four the SAP states: "In determining whether a statistically significant increase has occurred, the owner or operator shall compare the ground-water quality ... according to the statistical procedures and performance standards specified in this plan". There were no statistical procedures or performance standards specified in the plan. You may want to reference the statistical procedures and performance standards in the Solid Waste Management Rules, .1632(g) & (h).

Table 1

- The "proposed ground water standards" were published in error. There are no proposed ground-water standards for Antimony, Beryllium, Cobalt, Thallium, or Vanadium. These references should be deleted from Table 1.

Please provide the additional revisions to the Transition Plan as soon as possible, so the Solid Waste Section can complete our technical review. If you have any questions regarding this letter, please contact me at (919) 733-0692, extension 258.

Sincerely,

*Bobby Lutfy*

~~Bobby Lutfy~~

Hydrogeologist  
Solid Waste Section

cc: Greg Eades, Solid Waste Section  
Jim Patterson, SWS - Asheville  
Joel Storrow, McGill Associates  
Paul Johnstone, Law Engineering