

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



October 30, 1996

Mr. Randall Fletcher  
Avery County Solid Waste Director  
Post Office Box 638  
Newland, NC 28657

Fac/Permit/Co ID #	Date	Doc ID#
06-03	08/02/2011	DIN 14638

RE: Avery County LCID and C&D Landfill  
Permit # 06-03

Dear Mr. Fletcher,

Enclosed please find a copy of the Water Quality Monitoring Plan for the above referenced landfill. This monitoring plan is also included as a section in the binder containing the entire approved permit application. This separate copy is for your convenience, so that you can easily make the information available to contractors when the County puts contracts out for bid, either for installation of Wells 1, 2, and 3 in the near future, installation of well 4 upon construction of Phase II of the C&D unit, or upon change of sampling contractors.

Sincerely,

Jim Bateson,  
Hydrogeologist  
Solid Waste Section

cc: Ms. Cheryl Marks; Municipal Engineering Services



OPERATION/CONSTRUCTION MANAGERS

**Municipal  
Services**

P.O. Box 97, Garner, North Carolina 27529 (919)772-5393



CIVIL/SANITARY ENGINEERS

**Engineering  
Company, P.A.**

P.O. Box 349, Boone, North Carolina 28607 (704)262-1767

## WATER QUALITY MONITORING PLAN SUMMARY

Three monitoring wells (1,2, and 3) and two surface water locations will be sampled semi-annually for the water quality monitoring plan.

Monitoring well 1 is upgradient. Monitoring wells 2, and 3 are downgradient.

Monitoring wells 1,2, and 3 will be monitored for both Phase 1, and Phase 2. In addition, before acceptance of waste in Phase 2, a fourth monitoring well (4) will be installed. Monitoring well 4 will be added to the water quality monitoring plan.

Monitoring wells and surface water locations are located in the Water Quality Monitoring Plan on Plate 1.

Testing of samples collected will be in accordance with methods and parameters set forth in North Carolina regulations.

Sampling procedures will be completed by guidelines set forth in the Water Quality Monitoring Plan.

Very Truly Yours,  
**MUNICIPAL ENGINEERING SERVICES CO., P.A.**

Cheryl Marks  
Geologist

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



August 22, 1996

Municipal Engineering  
Post Office Box 97  
Garner, North Carolina 27529

Re: Permit Application  
Avery County C&D and LCID Facility

Charlie:

To follow up on our brief meeting on Tuesday; the following three items are needed to complete the Avery County C&D application. Final approval and issuance of a Permit to Construct is dependant upon review of the complete application. At this time, however, it appears that the permit can be issued very soon after all items are received.

C&D Comments

.0504(1)(e)(i) Local government approval needs to be provided.

.0504(1)(g)(iv) Provide summary of the water quality monitoring plan as discussed between Jim Bateson and Cheryl Marks.

LCID Comments

.0564(8)(d), .0565(1)(c), and .0565(3)(n) Test pit locations are noted on drawings. However, no information was provided demonstrating that base grading will be a minimum of four feet above the seasonal high water table.

Please be advised that three additional complete copies of the application will be needed for Section distribution when the permit is issued. Once the review is completed, the Section will notify you when to submit the additional copies.

The Section reserves the right to request additional information during the continuing review. If such additional information is required, you will be notified by the Section. Should you have any questions concerning this review, please contact the Section at (919) 733-0692.

Thank you,

  
William D. Sessoms, PE

copy: Jim Bateson - DWM

From: "Bill Sessoms" <n1nw345@wastenot.ehnr.state.nc.us>  
Organization: SOLID WASTE MGMT.  
To: JBATESON@NRONA01  
Date sent: Mon, 1 Jul 1996 10:55:11 +1100  
Subject: avery county  
Priority: normal

Jim:

I've put your copy of the Avery County C&D/LCID responses in your mailbox. I've briefly looked over them. It appears that they have incorporated the changes we requested. However, they still have not addressed many of the site requirements, such as local government approval, methane monitoring and control, etc..

Also, I'm not sure they have presented any information showing that the LCID grading will maintain a minimum of 4 foot vertical separation. I know we discussed this, did we decide that they didn't need to present any info on that?

Anyway, it appears that they still have some items on the engineering side that need addressing. So, I'll have to write another review letter instead of being able to issue the permit.

Let me know what you find when you've had a chance to look over the hydrogeology part.

Thanks,

Bill Sessoms

OPERATION/CONSTRUCTION MANAGERS

CIVIL/SANITARY ENGINEERS

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Company, P.A.**

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P.O. Box 349, Boone, North Carolina 28607 (704)262-1767

April 24, 1996

Mr. Jim Bateson  
Hydrogeologist  
Solid Waste Section  
P.O. Box 27687  
Raleigh, NC 27611-7687

Re: Avery County Construction / Demolition and Land Clearing and Inert Debris Landfill  
Project No. G95115

Dear Mr. Bateson:

Enclosed you will find the responses to your January 2, 1996 letter concerning the permit application of the above referenced landfill.

If you have any questions, please advise.

Very truly yours,  
MUNICIPAL ENGINEERING SERVICES CO., PA

D. Wayne Sullivan  
Project Manager

DWS:lh

Enclosures

cc: Randall Fletcher, Solid Waste Director



GAI Consultants - NC, Inc.

3812-H Tarheel Drive  
Raleigh, NC 27609  
919/878-4478  
FAX 919/878-4032

April 9, 1996

Mr. Jim Bateson  
Hydrogeologist  
North Carolina Department of Environment,  
Health, and Natural Resources  
Division of Solid Waste Management  
Post Office Box 27687  
Raleigh, North Carolina 27611-7687

Re: Responses to Comments by Solid Waste Management  
Permit Application for Proposed  
Avery County Construction and Demolition Landfill  
Ingalls, North Carolina  
Project No. 95144.02

Dear Mr. Bateson:

Responses are made herein to your comments in a memorandum dated January 2, 1996 pertaining to hydrogeological considerations for the proposed Avery County Construction and Demolition (C&D) Landfill. These comments and the following responses were discussed in a meeting on the site for the C&D landfill on March 26, 1996.

- Additional borings required for the site to produce a groundwater potentiometric map and to characterize further subsurface soil types and conditions will be completed with the installation of the three proposed monitoring wells.
- Permeabilities for lithologic units were analyzed for unconfined aquifers using the Hvorslev method; results obtained are in Table 1. Calculations and documentation for the permeabilities are in Enclosure A. The permeabilities are in general agreement with the permeabilities in the original submittal as expected.
- A maximum groundwater fluctuation of six feet is established for the C&D landfill based on hydrologic data for the area, and, in particular, water level data from an observation well with a similar geologic setting as Avery County. Groundwater levels typically reach seasonal lows during the fall season in this area of North Carolina. Based on average annual rainfall from 1961 to 1990 for the general area, groundwater levels are not dependent on precipitation. Data used in evaluation and estimation of seasonal high groundwater levels are in Enclosure B.
- Sampling events for water quality monitoring are to be conducted on a semi-annual basis. A copy of the Sampling and Analysis Requirements For a Construction and Demolition Landfill is in Enclosure C. Proposed Groundwater Monitoring Well 2 for water quality monitoring will be installed near the creek in an area not generally subject to flooding.

Mr. Jim Bateson  
April 9, 1996  
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We trust this meets with your approval and assists in expediting the Avery County Construction and Demolition Landfill permit.

Respectfully submitted,  
GAI Consultants - NC, Inc.

  
Cheryl Marks  
Geologist

  
Wendell W. Parker, Ph.D., P.E.  
Vice President

Copy to: Wayne Sullivan, Municipal Engineering Services Company