



## North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

June 15, 2006

Mr. G. Van Ness Burbach, P.G.  
Joyce Engineering, Inc.  
2301 West Meadowview Road,  
Greensboro, NC 27407

RE: Volume 1, Section 2 – Hydrogeological Report for Coble's Sandrock, Inc.,  
Construction and Debris Landfill – Phase 3A (6.3 acres), 3B (5.8 acres) Design  
Study & and additional acreage for Site Suitability (114.4 acres)  
Alamance County  
Permit No. 01-05

Dear Mr. Burbach

The above referenced Hydrogeologic Report (Volume 1, Section 2) for the proposed new phases (3A, 3B) and additional acreage for Site Suitability for the expansion of the Construction and Debris Landfill, submitted by Joyce Engineering, Inc., on behalf of Coble's Sandrock, Inc. is being reviewed by the Solid Waste Section (SWS) for hydrogeologic concerns. There are several items in the Report that require clarification and/or revision before the hydrogeologic review can be completed. Please respond to the following questions and comments:

*Volume 1, Section 2- Hydrogeologic Report*  
*Section 1.0 Introduction and Overview*  
*Page 1*  
*Volume 1, Section 1-Site Suitability Report*  
*Section 1.0 Introduction and Overview*  
*Page 1*

Page 1 of the Hydrogeologic Report states, in part, the following: *"The total acreage included in the Site Plan Application consists of approximately 139 acres in Alamance County...."* However, Page 1 of the Site Suitability Report states, in part, the following: *The proposed facility will include 114.4 acres in addition to the currently permitted 39.6 acres for a total facility area of 154.0 acres... "*

Please clarify the discrepancies of the new acreage to be added and the total acreage at this site.

*Volume 1, Section 2- Hydrogeologic Report*

*Appendix DH-1 – Boring Logs and Construction Diagrams for Piezometers and Monitoring Wells from Previous Investigations*

*Appendix DH-2 – Boring Logs and Construction Diagrams for Piezometers and Monitoring Wells from the Current Investigation.*

*Table 5 – Summary of Groundwater Elevation Data*

According to historical and current boring logs, construction diagrams for piezometers and monitoring wells, and ground-water elevation data (Table 5) submitted in the Report; the information compiled below by the SWS depicts some missing criteria (i.e. indicated by a dashed line “-”).

Well ID	Total Depth of Boring/Well	Top of Rock (auger refusal)	Water Level (depicted on log)	High Water Level	Low Water Level
B-1	18.9	-	-	-	-
B-2	18.9	-	-	-	-
B-3	19.0	-	-	-	-
B-4	10.5	10.5	-	-	-
B-4A	10.0	10.0	-	-	-
B-5	18.6	18.6+	-	-	-
C-1	55.4	45.4	-	-	-
C-2	48.5	38.5	-	-	-
C-3	23.1	13.1	-	-	-
TW-1	22.6	<13.2	12.0	-	-
**TW-2	29.5	<8.5	17.0	-	-
**MW-3	21.5	21.5	-	29.9	36.4
*MW-6	-	-	-	18.3	31.1
**MW-10S	21.5	5	4	2.6	15.9
**MW-10D	64	5	4	3.9	6.9
**P-15	50	17	39	33.7	39.7
**P-16	41	5	12	4.9	15.7
**P-21	62.5	23	45	35.6	46.8
P-22	10	10	1	0.2	9.3
**P-23	41	27	28	19.7	29.1
**P-24	38	18	25	24.6	28.6
**P-25	38	14	18	18.1	22.3
**P-26	52	25	24	23.8	27.1
P-27	4.5	-	0.2	0.2	dry
P-28	4	-	0.5	0.5	2.7
P-29	5	-	0.5	0.5	dry
P-30	4	-	0.5	0.4	dry
*P-2	-	-	-	0.0	9.2
*P-2A	-	-	-	8.3	9.3
*P-4	-	-	-	19.0	26.6
*P-5	-	-	-	3.3	27.7
*P-6	-	-	-	16.0	55.9
*P-7	-	-	-	18.4	22.4

\* No boring log/well log submitted.

\*\*Piezometers that have shown groundwater below top of rock

Based on some incomplete boring/piezometer log information and water level data submitted thus far and noted above, site suitability for the new acreage 114.4 (?) acres and design study for Phase 3A, 3B cannot be determined at this time.

The Solid Waste Section requests the following information:

- More hydrogeological data is needed from borings in the proposed design phase 3A and 3B areas. Presently, there is not enough complete boring/piezometer well data and boring number density at these proposed phases. It's the Solid Waste Section's policy that a minimum of one boring/piezometer per acre be installed within the proposed footprint(s) for design purposes. Also, an ample number of borings/piezometers need to be installed within the compliance area (250 feet from the footprint). As noted in the compiled table above, some of the historical borings/piezometers do not depict water levels at time of boring/piezometer installation, nor depict historical high or low ground-water level trends (i.e. B-2, B-3, B-4, B-5, C-3 within proposed Phase 3B and B-1, C-1, and C-2 located near existing C&D Phase 1); therefore, these borings represent incomplete data.
- There are not enough borings/piezometers and lithologic/hydrogeological data to adequately characterize the proposed additional 114.4 ? acres for site suitability (i.e. especially the eastern and southeastern side of the property. It's the Solid Waste Section's policy that a minimum of one boring/piezometer per 10 acres be within the facility boundary for Site Suitability purposes. Also some of the proposed new borings / piezometers need to be drilled and lithologically characterized to 50 feet below land surface according to **Rule 15A NCAC 13B .0504(1)(c)(i)(E)**.
- According to the boring/well logs submitted in the Report and the compiled table above, some of the borings/piezometers (i.e. B-1, B-2, B-3, MW-6, P-27, P-28, P-29, P-30) do not show auger refusal (top of rock). Borings/piezometers need to show all lithologic units, including top of bedrock (auger refusal).
- According to much of the existing boring/piezometer data submitted thus far, ground-water is noted below top of rock. Since this is the case, further characterization of the entire site (via more borings/piezometers, pump tests, etc.) is needed to determine if bedrock fractures are interconnected or not, and if the site can be adequately monitored for the proposed new Construction and Debris landfill phases.

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Please note the comments and questions stated above and provide additional information and revisions as needed. If you and your staff have any questions, or wish to schedule a meeting to discuss the items referenced in this letter, please call me at 919-508-8524.

Sincerely,



Brian Wootton  
Hydrogeologist  
Solid Waste Section

cc:	Ed Mussler	Solid Waste Section
	Tim Jewett	Solid Waste Section
	Joanne Linder, P.G.	Joyce Engineering, Inc.
	Central File	