

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

S. DANIEL SMITH
Director



NORTH CAROLINA
Environmental Quality

June 21, 2019

Certified Mail
Return Receipt Requested
7016 2140 0000 0564 4903

Mr. Chad M. Threatt
Alamance Aggregates LLC
PO Box 552
Snow Camp, North Carolina 27349

RE: Proposed Alamance Quarry and Construction Materials Quarry
Alamance County
Cape Fear River Basin

Dear Mr. Threatt:

We have reviewed the application your company submitted for the referenced mine site. In order for this office to complete its review of the referenced project in accordance with GS 74-50 and 51 of the Mining Act of 1971, please provide the additional or revised information in accordance with the following comments:

1. Send certified mail, return receipt requested letters to Duke Power Company and Colonial Pipeline outlining the proposed access across the rights-of-way. Provide copies of said letters and signed return receipts.
2. Provide a thorough geologic investigation of the site that outlines any fractures, dikes, rock type, radon presence etc. See the comments provided by the NC Geological Survey. Determine the location of the diabase dikes in the area by acceptable methods, such as magnetometer.
3. Provide results of an on-site pump test and modeling of ground water movement. Determine the possible impact of the diabase dikes may have on the area ground water wells with respect to the dewatering activities. Revise the ground water monitoring plan to include the requested studies. Note that conditions may be placed in any issued permit that will require well replacement or deepening of impacted wells.



North Carolina Department of Environmental Quality | Division of Energy, Mineral and Land Resources
512 North Salisbury Street | 1612 Mail Service Center | Raleigh, North Carolina 27699-1612
919.707.9200

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4. See the Attachment 1 provided to this office by Colonial Pipeline Company regarding blasting operations. Note that any permit issued will require adherence to the recommendations and may contain additional conditions required by the Department.
5. See the enclosed comments from the Winston Salem Regional Office regarding the erosion and sediment control plan review submitted with the application. Address all if these issues.
6. Provide a construction sequence and staged seeding for the overburden storage area.

Please be advised that our review cannot be completed until all of the items listed above have been fully addressed. In addition, please note this office may request additional information, not included in this letter, as the mining application review progresses.

In order to complete the processing of your application, please forward **two (2)** copies of the requested information to my attention at the following address:

Division of Energy, Mineral and Land Resources
Department of Environmental Quality
1612 Mail Service Center
Raleigh, NC 27699-1612

As required by 15A NCAC 5B.0013, you are hereby advised that you have 180 days from the date of your receipt of this letter to submit all of the requested information. If you are unable to meet this deadline and wish to request additional time, you must submit information, in writing, to the Director clearly indicating why the deadline cannot be met and request that an extension of time be granted. If an extension of time is not granted, a decision will be made to grant or deny the mining permit based upon the information currently in the Department's files at the end of the 180-day period.

Though the preceding statement cites the maximum time limit for your response, we encourage you to provide the additional information requested by this letter as soon as possible. Your prompt response will help us to complete processing your application sooner.

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Mr. Threatt

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Please contact me at (919) 707-9220 if you have any questions.

Sincerely,



Judith A. Wehner

Assistant State Mining Specialist

Enclosures

cc: Mr. Matt Gantt, PE

June 11, 2019

Comments of Phil Bradley, Piedmont Geologist, North Carolina Geological Survey

Reviewed by Kenneth B. Taylor – June 11, 2019

Ref: Revised Groundwater monitoring plan for the proposed Snow Camp Quarry, Snow Camp, Alamance County, North Carolina

Purpose:

The groundwater monitoring plan was evaluated by Geological Survey staff to determine the potential presence of geologic features that may cause a preferential (anisotropic) groundwater drawdown from dewatering activities.

Background:

As part of geologic mapping activities, geologic structures are identified and include diabase dikes, faults and fracture zones. These geologic structures are zones of increased bedrock fractures and are therefore zones of increased groundwater permeability and flow.

Pumping a well removes groundwater and lowers the water level in the well and nearby rock as water is diverted toward the well. In locations proximal to geologic structures like diabase dikes, faults and fracture zones, the lowering of the water table may be more pronounced and may extend in a preferred direction due to the linear nature of the geologic structure.

Findings:

Geologic mapping by the North Carolina Geological Survey (Bradley et al., 2017) identified the presence of diabase rock debris to the south of the proposed site (Figure 1). Geologic data has not been collected in the immediate vicinity of the site. Additionally, reconnaissance mapping by Burt et al. (1978) indicates the presence of a through-going diabase dike (roughly parallel and east of Snow Camp Road) inferred from aeromagnetic data or stream patterns in the map area.

Recommendations:

Determine the accurate location of the diabase dikes in the area and determine the possible impact to area groundwater wells with respect to the dewatering activities.

References:

Bradley, P.J., Hanna, H.D. and Peach, B.T., 2017, Geologic map of Chatham County portion of the Crutchfield Crossroads 7.5-Minute Quadrangle, Chatham and Alamance counties, North Carolina: North

June 11, 2019

Carolina Geological Survey Open-file Report 2017-10, scale 1:24,000, in color (Supersedes Open-file Report 2016-09).

[https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Geological%20Survey/OF
Rs Geological Survey/NCGS OFR 2017-10 CrutchfieldCrossroads.pdf](https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Geological%20Survey/OF%20Rs%20Geological%20Survey/NCGS%20OFR%202017-10%20CrutchfieldCrossroads.pdf)

Burt, E.R., Carpenter, P.A., III, McDaniel, R.D., and Wilson, W.F., 1978, Diabase Dikes of the Eastern Piedmont of North Carolina: North Carolina Geological Survey Information Circular 23, 12 p. text plus map compilation. <https://ngmdb.usgs.gov/Prodesc/proddesc/55082.htm>

ATTACHMENT 1

Colonial Pipeline Company Proposed Requirements

Alamance Aggregates LLC Permit to Operate

Snow Camp, NC

1. Colonial Pipeline Company (Colonial) requests that a condition be included in the Permit to Operate that requires the mine operator to provide advanced notification to Colonial at least 2 business days (email or fax is acceptable) before any blasting is performed. Each notification will need to include the following information:
 - a. Date and time of proposed blast;
 - b. GPS Coordinates for the closest blast hole to Colonial's closest pipeline;
 - c. Minimum distance from the closest blast hole to Colonial's closest pipeline;
 - d. Maximum explosive weight per delay;
 - e. Scaled Distance in units of feet/pounds^½ using Colonial's closest pipeline as the reference point;
 - f. Type of detonators that will be used (e.g., electronic, electric, non-electric, etc.);
 - g. Minimum time delay between charges.
 - h. Notifications must be sent to Mr. Tom West as the designated representative for Colonial at twest@colpipe.com.

If the maximum explosive weight per delay will vary during the shot, items a. through g. above must be provided for each variation. If any of the above information changes within the 2-day period, an update must be provided to Colonial in writing (e-mail or fax is acceptable) before the shot is conducted.

2. Colonial requests that the Permit to Operate require that all communications and records related to Condition 1. above be maintained by the mine operator for at least 3 years to facilitate external audits and/or inspections of their operations and conformance with the Permit to Operate.
3. Colonial requests that the limits of the mine operation be defined and that maximum extent of the quarry be no closer than 1,175 feet from Colonial's pipeline.
4. Colonial requests that the Scaled Distance for all blasts at the mine must be greater than 51 feet/pounds^½ using Colonial's closest pipeline as the reference point.
 - a. The Scaled Distance at Colonial's closest pipeline may be calculated using the maximum explosive weight per delay that will be detonated within the actual minimum time delay period (e.g., 3 milliseconds, 5 milliseconds, 12 milliseconds, etc.) if electronic detonators will be used. If any other type of detonators will be used, the Scaled Distance at Colonial's closest pipeline must be calculated using

the maximum explosive weight that will be detonated within any 8 millisecond time period.

5. Colonial requests that the Permit to Operate specify that if electronic detonators are used, the minimum time delay period must be greater than or equal to 1 millisecond.
6. Colonial requests that the Permit to Operate specify that the Peak Particle Velocity (PPV) at Colonial's closest pipeline may not exceed 1 inch/second during any blast, and Colonial must be notified within 1 hour if this vibration limit is exceeded.
7. Colonial requests the Permit to Operate require the installation of at least 10 seismographs along the southern edge of Colonial's easement as per ISEE guidelines to monitor vibration levels during blasting operations. The spacing between adjacent seismographs must not exceed 200 feet, and the seismographs must be positioned in such a manner so that they provide the actual vibration level within 100 feet of the closest point from Colonial's closest pipeline to each blast. The seismographs must be owned, installed, and monitored by an independent 3rd party company that specializes in this type of work, and each seismograph must be fully functional at all times.
8. Colonial asks that the Permit to Operate state that the NCDEQ may inspect and audit the mine operating records on an annual basis to confirm all specific Terms and Conditions, record keeping, and other requirements of the Permit to Operate are being met, documented, and maintained per N.C.G. S. 74-51 of the Mining Act of 1971 and other relevant records.
9. Colonial recommends that the Permit to Operate state that the NCDEQ will notify the mine and Colonial of their findings within 30 days after each audit is conducted.

COMMENTS FOR ALAMANCE AGGREGATES, LLC

PLAN RECEIVED BY WSRO ON 6/7/2019

1. Sediment skimmer basins must be designed for the 25-year storm. As submitted, the sediment skimmer basins have been designed for the 10-year storm. Please revise.
2. Auxiliary spillways for sediment skimmer basins may not be shown within fill material for each basin.
3. Please provide match lines on sheets C301A through C301F.
4. Final plans submitted for review may not be stamped "Preliminary – Not for Construction".
5. A detailed construction sequence must be shown on sheet C301B for the installation of the proposed 24' arch span culvert and the proposed retaining wall. The construction sequence must include sediment controls for areas adjacent to the stream during the culvert placement and retaining wall construction. Also, particular attention must be given to maintain the stream buffers for the maximum duration possible during culvert placement. Construction drawings must also show fill placement on either side of the stream as the road fill retaining walls are brought to final grade.
6. No sediment control measures have been shown for the proposed fence clearing around the perimeter of the property. Please provide acceptable sediment control measures for these areas.
7. Please note the following comments addressing permanent ditch placement and stabilization:
 - a. All proposed ditches must be assigned a specific number (i.e., #1, #2, #3, etc.) corresponding to the design calculations. In addition, a schedule must be provided on the detail sheets of the plans showing each proposed ditch and methods for stabilization
 - b. The following proposed permanent ditches may not be constructed as shown with temporary diversions shown within the ditch line: (1) FES #1 to 6+50, (2) FES #2 to 6+50, (3) 7+00 to 14+00 (West), (4) 8+50 to 14+00 (East), (5) Access road (East side) 14+00 to stream buffer, (6) Access road (West side) 14+00 to stream buffer, (7) Access road (East side) 17+50 to 20+00, (8) Access road (West side) stream buffer to 20+00.
 - c. An adequate sediment control measure must be placed at the outlet of the access road ditch (East side) stations 18+50 to stream buffer.
 - d. An adequate sediment control measure must be placed at the outlet of the ditch from the outlet of sediment skimmer basin #8 to the stream buffer. Note: the drainage for this ditch is 4.86 acres, which would necessitate the use of sediment skimmer basin.
 - e. An adequate sediment control measure must be placed at the outlet of the ditch from the outlet of sediment skimmer basin #11 to the stream buffer. Note: the drainage for this ditch is 3.58 acres, which would necessitate the use of sediment skimmer basin.
 - f. Adequate sediment control measures are needed at the outlets of ditches discharging toward Clark Road. In addition, a rock check dam will need to be placed in the ditch along Clark Road below the outlet of FES#2.
 - g. Ditches adjacent to sediment skimmer basins #4, #5, #6, and #7 are required to discharge into the sediment skimmer basins. As shown, discharges are routed around the basins.

8. No adequate sediment control measures have been shown below the fill slope north east of proposed sediment skimmer basin #7. In addition, proposed fill in this area is shown within the proposed temporary diversion berm, which is not acceptable.
9. It appears that permanent storm water control measures will be needed within the proposed plant areas located west of the proposed pit excavation. In addition, the temporary diversion berms that have been shown will not function properly on fill material and can not be properly maintained throughout the grading process.
10. Proposed baffles within sediment skimmer basins must be located such that runoff entering each basin will be filtered through three baffles. Please reevaluate baffle place placement and the temporary diversion berm configuration such that this requirement may be properly addressed.
11. It appears that sediment skimmer basin #13 could be relocated further to the east (back uphill) so that additional areas below the basin would not have to be cleared. In addition, the temporary diversion berms leading to sediment skimmer basin #13 may not be shown directing site runoff over constructed fill slopes.
12. Please provide reasoning to support the clearing of additional areas as noted below:
 - a. Areas below the proposed temporary diversions around sediment skimmer basin #23.
 - b. Areas around sediment skimmer basin #25.
 - c. Areas shown as being graded below sediment basin #1.
 - d. Areas around sediment skimmer basin #2.
 - e. Areas around sediment skimmer basin #3.
 - f. Areas around sediment skimmer basin #12.
 - g. Areas around sediment skimmer basin #14.
 - h. Areas around sediment skimmer basin #15, also ensure that discharge from FES#4 is directed into skimmer basin #15.
 - i. Areas around sediment skimmer basin #26.
 - j. Areas around sediment skimmer basin #27.
 - k. Areas around sediment skimmer basin #24 (Note: clearing has been shown through the 50' undisturbed buffer below sediment skimmer basin #24).
13. Provide sediment control measures for the perimeter fence installation through the 50' undisturbed buffer zone shown on sheet C301E.
14. On sheet C301E, sufficient sediment control measures must be shown on the south side of the processing area (east of sediment skimmer basin #12). The temporary diversion berm that has been shown will not function as intended because it will not have positive drainage toward sediment skimmer basin #12. Also, areas have been shown graded such that they will be directed into the 50' undisturbed buffer zone, which is not acceptable.
15. At numerous locations on the plan the disturbed limits have encroached into the proposed 50' buffer zone. Please amend the plans to show no encroachments into the 50' buffer zone.
16. No sediment control measures have been provided for the "emergency access road". It appears that this area will need to be disturbed to have proper drainage for vehicle access.
17. An acceptable sediment control measure is needed below the north side of the proposed 8' tall berm shown on sheet C301E. The proposed check dam is not an acceptable sediment control measure.

18. Acceptable sediment control measures must be shown below the construction of proposed tailings pond #2. Silt fence shown below this measure is not an acceptable sediment control measure. In addition, basin construction is encroaching into the 50' undisturbed buffer zone.
19. Additional silt fence outlets must be shown below the 8' proposed berm on sheet C301C.
20. A number of the temporary berms shown on the plan do not appear to be "temporary" structures. Any "temporary" diversion berms used for permanent storm water conveyance must be accompanied by design calculations and construction details.
21. Provide elevations for the temporary diversion berm upstream of FES#9 to show that the diversion will actually direct runoff into skimmer basin #8 and not through the pipe inlet at FES#9. Should this not be the case, calculations for skimmer basin #22 will need to be revised for the additional drainage area.
22. No sediment control measures have been shown west of the temporary diversion directing runoff into skimmer basin #10. Only a perimeter security fence has been shown below the basin.