



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

July 3, 2019

Mr. Brian D. Long
Plant Manager
Chemours Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

RE: Comments on Chemours Old Outfall 002 Remedial Options Plan

Dear Mr. Long,

On May 20, 2019 Chemours submitted a Remedial Options Plan for Old Outfall 002 Pursuant to Consent Order Paragraph 12.e. The North Carolina Department of Environmental Quality (DEQ) has the following comments.

General Questions and Observations:

- DEQ requests any monthly sampling data be provided to the agency as it is generated, rather than waiting until the final report in September.
- There are no potential preferential pathways identified at the site, which may be useful for test design and developing an overall corrective-action strategy. Please provide any identified potential preferential pathways.
- There may be low hydraulic conductivity intervals in the subsurface that could be important considerations with respect to test design and implementation.
 - Vertical gradients may be present in low conductivity intervals.
 - Delivery of injectants may be limited by low conductivity intervals and overall subsurface heterogeneity.
- Site-specific geochemical conditions may be important considerations for implementation and interpretation of test results. Please provide any available geochemical data for the site.

Option 1: Capture and Treat

- Option 1 appears to address the perched and surficial aquifer but not the Black Creek aquifer. How would Option 1 decrease the loading from this aquifer to meet the requirements of the Paragraph 12.e?



Option 2: Regenesis PlumeStop

- DEQ does not believe that enough information has been provided to determine if Option 2 would be an effective means of compliance with Paragraph 12.e of the Consent Order, i.e. would it achieve results that would be equivalent to or greater than treating dry weather flow at the Option B location with a PFAS removal efficiency of 99%.
- Options 2 appears to address only the perched aquifer, but does not address the surficial aquifer or the Black Creek aquifer. How would Option 2 decrease the loading from these sources to meet the requirements of the Paragraph 12.e?
- Option 2 should include monitoring for the full suite of PFAS in wells around the PlumeStop to better understand how it interacts with these chemicals and its efficacy.
- DEQ requests that Chemours explain how Chemours will monitor for movement of PlumeStop in soils at the site over time to ensure that PlumeStop constituents are not migrating into surface waters.
- Option 2 would require an Injection Permit Application. A complete application would need to be submitted 60-90 days before implementation with the following information:
 - Injection zone
 - Hydrogeologic Evaluation
 - Injectant Information
 - Injection Procedure
 - Fracturing plan (if applicable)
 - Well Construction Details
 - Monitoring Plan
 - Well Data Tabulation
 - Maps and Cross section

Option 3: Hydraulic Control

- DEQ does not believe that enough information has been provided to determine if Option 3 would be an effective means of compliance with Paragraph 12.e of the Consent Order, i.e. would it achieve results that would be equivalent to or greater than treating dry weather flow at the Option B location with a PFAS removal efficiency of 99%.
- Option 3 appears to address the perched and surficial aquifer but not the Black Creek aquifer. How would Option 3 decrease the loading from this aquifer to meet the requirements of the Paragraph 12.e?
- Option 3 would require a non-discharge groundwater remediation permit application that includes information on hydraulic control and hydrogeology that helps determine if the aquifer will accommodate the volumes of injected water.
- As Option 3 is considered, it should be noted that a slurry wall with treated water injected into the aquifer at too high a volume and pressure could result in well integrity failure, injected water breaching into upper or lower aquifers, or injected water daylighting to the surface.
- What levels of PFAS are proposed to be reinjected as part of the pump and treat system?



DEQ is available to discuss these comments if needed.

Sincerely,



Sheila C. Holman
Assistant Secretary for the Environment
North Carolina Department of Environmental Quality

Cc: Christel Compton
Joel Gross
Tom Santoro
Bill Lane
Francisco Benzoni
Asher Spiller
Linda Culpepper
Michael Scott

