North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

July 30, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jamie VanBuskirk
DuPont Engineering
6324 Fairview Road
Charlotte, North Carolina 28210

Re: **Comments on Remedial Investigation Report**
Former DuPont Brevard Facility
EPA ID No. NCD 003 152 329

Dear Mr. VanBuskirk,

The North Carolina Hazardous Waste Section (HWS) has reviewed the Remedial Investigation Report (RIR) submitted May 6, 2015 for the DuPont Facility in Brevard and has the attached comments. DuPont should provide a response to these comments within thirty (30) days of receipt of this letter. Response to these comments could include submittal of a workplan to address the comments or notification that these comments will be addressed in a risk-based Remedial Action Plan (RAP) proposed to be developed for the site. The HWS encourages DuPont representatives to contact the HWS for a meeting to discuss the issues raised by these comments.

Please contact me at 919-707-8207 or by email at mark.wilkins@ncdenr.gov if you have any questions about this letter.

Sincerely,

Mark Wilkins, Hydrogeologist, Hazardous Waste Section
Division of Waste Management, NCDENR

Attachment

ec: John Johnston, US EPA, Region 4
Joe Hudyncia, NC DA&CS
Brent Burch
Bud McCarty
Mark Wilkins

Comments on Remedial Investigation Report
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The focus of our review was the Remedial Investigation Report (RIR) submitted May 6, 2015. Past data gathered during previous investigations at the site were also looked at during our review. In addition, the HWS acknowledges that the Facility has proposed to remediate the site following NCGS 130A-310.65 to 310.77 requirements. Therefore any review of the RIR should take into account the information that will be needed for approval of a RAP that meets the requirements in NCGS 130A-310.65 to 310.77.

Additional information required to complete assessment or related to the RIR.

1. DuPont should install a minimum of two (2) monitoring wells just east of the DuPont State Forest (DSF) Visitor Center. One of the wells should be screened across the water table. Another well should be screened at the top of bedrock. If bedrock is encountered prior to encountering the water table, DuPont should attempt to screen a well(s) at the first water bearing fracture encountered in bedrock. The purpose of these wells is to help determine the extent of groundwater contamination north of Solid Waste Management Unit (SWMU) 17.

2. Due to occasional detections of contaminants in samples collected from DERA Creek during historical surface water monitoring, DuPont should develop a surface water monitoring plan to collect samples quarterly for a one year period from DERA Creek. Due to the detection of contaminants above NC 2B standards, the monitoring plan should include sample collection from the seep area downgradient of the former WWTP polishing pond. The monitoring plan should include at least one sampling event during a period when surface water flow is typically at lower flow conditions based on historical information. In addition, as stated in Comment 12 of the September 25, 2014 letter from the HWS to DuPont, if Polycyclic Aromatic Hydrocarbons (PAHs) were detected in sediment samples collected during the RI, analysis of surface water for the presence of PAHs may be required. Since PAHs were detected in DERA Creek sediment, PAHs should be added to the list of analytes for surface water samples collected during these quarterly monitoring events.

3. To provide a visual representation of areas of the site that are contaminated DuPont should develop figures that show:
   a. location and extent of soil contamination found in samples collected at the 0 – 1 foot and 0 – 2 foot intervals that are above residential (unrestricted) remediation goals as listed in the Inactive Hazardous Sites Branch (IHSB) Preliminary Soil Remediation Goals (PSRG) Table;
   b. location and extent of soil contamination found in samples collected at the 0 – 1 foot and 0 – 2 foot intervals that are above industrial remediation goals as listed in the IHSB PSRG Table;
   c. location and extent of soil contamination found in samples collected more than 2 feet below land surface that are above industrial remediation goals as listed in the IHSB PSRG Table;
   d. location and extent of areas that must be remediated or must have restricted uses based on the calculated most restrictive proposed use of the site;

e. location and extent of areas that must have restricted uses due to potential vapor intrusion issues;
f. location and extent of areas of surface water contamination above NC 2B standards;
g. location and extent of sediment contamination where the recalculated Hazard Quotient (HQ) for ecological effects due to any constituent detected in the sediment is greater than 1; and,
h. the location and extent of groundwater contamination above NC 2L standards in the surficial and bedrock aquifers.

**This information is not only necessary to identify contaminated areas and their extent but will be critical in development of any Land Use Restrictions (LURs) established at the site.

4. In Sections 5.1.2. and 7.5.2., DuPont indicates that a two-foot soil cover is not present over all areas of contamination at the site. DuPont should provide a figure that locates any areas at the site where surface covers are insufficient.

5. In Section 7.5.1. and 7.5.2. of the RIR, DuPont states "Potentially complete exposure pathways for this receptor may include … inhalation of soil-derived particulates." When considering these potential pathways, DuPont should include inhalation of volatile constituents present in the soil along with inhalation of soil particulates.

6. In Section 7.7.2. of the RIR, DuPont compares the concentration of metals in sediment samples collected at the Facility to the concentration ranges of metals in sediments from across the United States. DuPont should determine the natural background levels of these metals in sediments collected from or as close as possible to the Facility and compare these concentrations to those in sediment samples from impacted areas at the Site.

7. In Section 7.7. and Table 25, DuPont summed the concentration of individual PAHs and then used this total number when determining the Hazard Quotient (HQ) for PAHs in sediment. DuPont should determine the HQ for each individual PAH separately. In addition, as part of the ecological evaluation process, DuPont used averages of constituent concentrations in sediment sampled from Lake DERA, DERA Creek, and the Little River to screen contaminants. Due to the distance between sampling locations and differences in sample environments, DuPont should not use the average value from all of these areas in the screening process. Reevaluating the data using individual PAHs and not using the averaged values indicates additional sediment sampling is necessary to fully evaluate the ecological risk in DERA Creek and Lake DERA. DuPont should develop a sediment sampling plan to fully evaluate the ecological risk from contaminated sediments.

   In addition, Polychlorinated Biphenyls (PCBs) were detected during soil sampling at the Facility. Although EPA Region 4 is overseeing Corrective Action related to the PCB contamination, comment 12 of the September 24, 2014 letter from the HWS to DuPont states that analysis of sediment samples for the presence of PCBs may be required if PCBs were detected in soil samples collected during the RI. DuPont may want to include PCB analysis in the next round of sediment sampling to prevent having to return to the site for additional sediment sample collection potentially requested by EPA.

8. The RIR indicates surface water samples were collected at or just below the surface of Lake DERA. The RIR also indicates contamination was detected above residential standards in

several sediment samples and above industrial standards in one sediment sample collected from Lake DERA. Although the likelihood of an individual coming into significant contact with sediment is minimal, DuPont should collect surface water samples from the water column just above the bottom of Lake DERA in the area(s) of sediment contamination and should collect additional sediment samples from Lake DERA to fully evaluate the ecological risk in Lake DERA. DuPont should also consider the potential effect sediment contamination would have on fish populations in Lake DERA and whether tissue samples are appropriate to fully evaluate risk to potential receptors.

Additional Comments for Remedial Investigation Report,
Site Specific Risk Levels, and the Remedial Action Plan
Former DuPont Brevard Facility
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a. In Section 4.2. of the Remedial Investigation Report (RIR), DuPont states Remedial Levels (RLs) were developed so soil concentrations are "... protective of potential groundwater receptors (Little River)..." As indicated in previous correspondence (see August 21, 2014 NCDENR comments to DuPont, for example) the HWS considers DERA Creek a receptor for discharge of contaminated groundwater at the Facility. DuPont must include DERA Creek and not the Little River as the receptor when calculating site specific groundwater RLs (and therefore site specific soil RLs) for the site.

b. Based on figures provided in the RIR and in previous discussions about potential future site uses, areas near the former manufacturing area may be utilized for vehicle and motorcycle training. If areas to be utilized for this and other training do not have a permanent cover of asphalt, concrete or other similar surface, DuPont should revise the soil ingestion rate up from 100 mg/day to 330 mg/day when calculating site specific RLs due to the amount of soil that will be suspended in air due to disturbance by vehicles.

c. Benzo(a)anthracene is considered a volatile compound. DuPont should consider a volatilization factor when calculating a site specific RL for this constituent.

d. In Table 12 of the RIR, DuPont uses a contact fraction of 0.25 as an assumption when calculating the remediation goals for trail users. DuPont should provide details as to how this contact fraction number was established.

e. Based on data and calculations provided, trail user is the most restrictive standard that would be applied throughout the site. Any area of the site where contaminants are above the RL that was calculated based on trail user exposure should be clearly identified and either remediated or restricted by a mechanism that can be demonstrated to be adequate to protect against any use that could cause exposure above the calculated acceptable risk concentration.

f. DuPont has calculated RLs based on an increased cancer risk of 1×10^{-4} for individual hazardous constituents. However, as multiple carcinogens have been identified DuPont must calculate RLs based on no greater than a 1×10^{-5} increased risk (and HI = 1) due to the additivity effect of multiple carcinogens.