



## NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management

Pat McCrory  
Governor

Dexter R. Matthews  
Director

John E. Skvarla, III  
Secretary

### Solid Waste Section

August 29, 2013

Ms. Amanda Bader, P.E.  
County Engineer  
Harnett County General Services  
P. O. Box 940  
Lillington, NC 27546

**Subject:** Comments on Permit to Construct Application – Phase III (the Application)  
Anderson Creek Construction and Demolition Debris Landfill (C&DLF)  
Harnett County, North Carolina,  
Permit No. 43-03, Document ID No. (Doc ID) 19617

Dear Ms. Bader:

The Division of Waste Management (DWM), Solid Waste Section (SWS) has completed a review of the Permit to Construct Application for Phase III (Doc ID 19382) at the above-referenced landfill facility. The Application was received by SWS on June 28, 2013. Based on the review the SWS has several comments on the Application which stated below:

#### Facility Plan

1. The land use and zoning around the landfill property are classified as residential which are depicted in Section 2.1.2. Pursuant to existing Solid Waste Management Rules (Rule) 15A NCAC 13B .0537(b) &.0547(3) and more stringent rule requirements for a future landfill expansion (Section Law 2013-413, House Bill 74), the County may want to consider preparing a facility plan containing a comprehensive development within the permitted landfill property boundaries so that the County can utilize the existing permitted property for landfilling to its maximum possible extent rather than developing Phase III alone. To do so, the County requires to take the following actions:
  - i. Confirm that scopes of site investigation encompassing the areas outside Phases I, II & III have been completed in previous Site Study Report and/or follow-up amendments according to the requirements stated in Rule 15A NCAC 13B .0536(c).
  - ii. Complete a local government approval processes and present the new facility plan and drawings of the comprehensive development of the entire landfill property for the estimated service life years and gross capacity for an approval, in addition to the annual disposal rate and service area.

- iii. Submit the SWS the revised Facility Plan and Site Study Report Update as an addendum to the Permit Application.
2. For Phase III, the gross capacity of approximately 299,000 tons is proposed in Section 3.1.2 which is inconsistent with that (330,000 tons) in Section 3.2. Please clarify and make necessary correction.
3. (Section 3.2) Please address the following concerns:
  - i. Please provide the in-place waste volume (in cubic yards) at the existing Phase I & II area and the gross capacity for both phases which encompasses wastes footprints of 7 acres. The info will be incorporated into the new permit.
  - ii. The capacity data shown in Table 3.2 is questionable. For example, the Cell 1 has waste volume of 90,000 CY which excludes the weekly cover volume. According to Appendix VII the estimated total air space required is 103,000 CY (Including waste volume of 90,000 CY and 13,000CY cover soil volume). The final cover volume is 2,100 CY in Table 3.2 which is inconsistent with the data calculated in Appendix VII. Please re-examine the gross capacity calculation for each Cells in Phase III and present the revised capacity in this Section.

#### Engineering Plan

4. (Section 4.1.1, on Page 25) The Rule 15A NCAC 13B .0540(2) requires that “C&DLF unit(s) must be constructed so that the *POST-SETTLEMENT* bottom elevation of wastes is a minimum of four feet above the seasonal high groundwater table....” Please provide a settlement analysis to demonstrate that the proposed Phase III development under the designed waste load and final cover system will meet this vertical separation requirement.
5. (Section 4.1.3, on Page 26) Please address the following concerns:
  - i. Describe the purposes of the existing “French Drain” shown on the Drawing 9 (Sections C-C & D-D) and Drawing 11.
  - ii. Will the “French Drain” be abandoned in-place after the proposed landfill cells are constructed? Please described the abandonment approaches to eliminate the drainage path from becoming a passage of groundwater contamination.
  - iii. If the “French Drain” will be left in-place as shown on Drawing 11, please describe where is the discharge point (also show the location on the site-wide drawings) and is there a NPDES permit to monitor the discharge point (please provide a copy of the NPDES permit)?
  - iv. According the Section A-A on Drawing 9, the landfill cells, Cells 1 & 2 that will be operated and received waste disposal initially in the Phase III area are located on the up-gradient or highest elevation areas. The Section proposes to use temporary erosion control devises such as diversion berms to separate the stormwater and leachate generated from waste operation in Cells 1 & 2. Please (a) show the typical details on the drawings, (b) show the locations on the layout drawings – which will be relocated along with the incremental development of landfill cells (c) provide the details of the temporary erosion control devises including: the dimensions, material, the disposal approaches of the devices, etc.

#### Construction Quality Assurance (CQA) Plan

6. (Section 5.1 on page 29) The CQA Plan must be used for construction both landfill sub-grade and baseliner according to Rule 15A NCAC 13B .0539 and approved Engineering Plan and landfill final cover system according to Rule 15A NCAC 13B .0534 and approved Engineering and Closure Plan. Please revise this paragraph accordingly.
7. (Section 5.1.1, on Pages 29 & 30) Please address the following concerns:
  - i. Please add the reference of Section 5.1.4.1 for detailing the pre-construction meeting and Section 5.1.4.2 for detailing of progress meetings.
  - ii. The Inspection activities shall be conducted according to Rules 15A NCAC 13B .0540(5) & .0541(d)(1) for landfill sub-grade & base grade; and for the final cap system, the inspection activities shall be conducted according to Rule 15A NCAC 13B .0541(d)(2) to satisfy the requirements stated in Rule 15A NCAC 13B .0543(c) and the approved Engineering Plan. Please revise the content of this sub-section accordingly.
8. (Section 5.1.3) Please describe the qualifications of the Quality Control Laboratory (QCL) mentioned in sub-sections 5.3.2.2 & 5.3.2.3.
9. (Section 5.1.3.2, on Page 31) For this permit application, an Engineer shall certify that the construction activities for completion of both landfill cell and final cover systems according to the rules and approved plans and specifications, not just Rule 15A NCAC 13B .0543(c)(7) alone. Please revise this sub-section accordingly.
10. (Section 5.2.1) This sub-section must provide the specifications for landfill base/sub-grade preparation/construction and not the ones for landfill final cover system alone. The sub-grade specifications, including testing items, methods, and frequencies must confirm the requirements of soil types stated in Rule 15A NCAC 13B .0540(2)(b) and the minimum soil density & shear strength defined in the Settlement Analysis. Please revise this sub-section accordingly.
11. (Section 5.3.1) Soil classification method – ASTM D 2488 is the visual procedure which can be used by a well-trained field technician to confirm if the stockpiled or borrowed soils meet the material specification. Soil classification method – ASTM D 2487 which is based on the laboratory soil testing results shall be used to officially confirm the types of soil used in the project.
12. (Section 5.3.2.1) Please address the following concerns:
  - i. To avoid any confusion or potential dispute, please state that at sloped areas, the thicknesses of landfill baseliner and the final cover system are measurements perpendicular to the slopes.
  - ii. In addition to the chess-board survey grid, additional survey points must be provided on the topographic breakpoints such as top and toe of a slope. Please add this requirement to the survey protocols.
13. (Section 5.3.2.2) For Phase III construction at the Anderson Creek C&DLF, a test pad is only required for construction of a C&DLF final cover system, although the SWS is no objection to implement this QA/QC processes on the landfill base liner system. To avoid any confusion, please indicate in this sub-section that the test pad is only applicable to construction of final cover system; otherwise, indicate that the test pad is applicable to both construction of baseliner and final cover systems.

14. (Section 5.3.2.2) Please add the following requirement to the construction specification – “Prior to placement of successive lifts, the surface of the lift in place shall be scarified or otherwise conditioned to eliminate lift interfaces.”
15. (Section 5.5) Record drawings must show the QA/QC sampling and testing locations, both pass and fail the criteria specified in the CQA Plan. Please add this requirement to the sub-section.

#### Operations Plan

16. According to the Facility Plan of the Permit Application, the facility audit reports, and facility layout drawings, there are other waste management units in addition to landfills currently operating within the facility boundaries, which includes a transfer station, a tear-off asphalt shingle recycling unit, a used/scrap tire unit, a white good/scrap metal unit, a used oil/filter collection area, and the yard waste & LCID treatment & processing (T&P) unit. Except for the transfer station, which is under the separate Solid Waste Management Permit Number, the Operations Plan must describe how the above-mentioned waste management units are managed on-site including, but not limited to:
  - i. Waste segregation (need to be incorporated to the waste screening and segregation plan) [Rule 15A NCAC 13B .0547(3)(a)];
  - ii. Estimated waste amount per week or month;
  - iii. Temporary stockpile and storage locations which must add to the drawing; white goods containing Freon must be separated stockpiled from scarp metals; tire storage area must have a practice to mitigate vectors/mosquitos; used oil collection area must have a roof cover and second containment system, etc.;
  - iv. Schedule of off-site removal and the maximum tonnage will be allowed to store at any time at the facility;
  - v. BMPs to prevent surface water from contacting wastes;
  - vi. The information of the companies that have contracted to the County to haul and process the recyclable wastes off-facility; Or
  - vii. The total amount of each of the recyclable wastes must be documented in the operating record. Scales shall be used to weigh the amount of recyclable waste.

For the tear-off asphalt shingle recycling unit, the previously application document titled “Asphalt Shingle Recycling Pilot Program” dated August 31, 2010 (Doc ID 11566) can be finalized based on the conclusion pilot program results and appended to the Permit Application. The designated location for this unit must show on the site-wide drawing.

17. The Operation Plan and drawings must describe the planed progressive operation and the locations of stockpiles for weekly cover for Phase III, Cell 1 according to Rules 15A NCAC 13B .0542(b)(1)(B) and (F), respectively.

18. (Section 6.0) The referring rule of operation plan and requirements of a C&DLF is incorrect, the correct one is 15A NCAC 13B .0542. Please correct the typo.
19. (Section 6.3.2) Please address the following concerns:
- i. Please add the designated stockpile locations for processed material on the drawing.
  - ii. In Paragraph g, please describe the temperature monitoring plan on the stockpiles of processed yard waste material including the tool/equipment, the frequency, the action to be taken if the detected temperatures exceed the specified degree of Fahrenheit, and documentation requirement.
  - iii. The Paragraph h indicates that the County may sale the processed yard waste to the general public. If the processed material is composted either active or passive composting, the material must meet the temperature/pathogen reduction and testing requirements stated in Rules 15A NCAC 13B .1406 & .1407. Please add these requirements to this paragraph.
20. (Section 6.3.3) Please address the following concerns:
- i. Adding the following wastes to the prohibited waste lists according to Rule 15A NCAC 13B .0542(d) for wastewater treatment sludge & Rule 15A NCAC 13B .0542(e) for septage and sludge as defined in NCGS 130A-290(a)(32) & (34), respectively.
  - ii. If the landfill accepts asbestos containing wastes for disposal, please describe how the wastes will be managed according to Rule 15A NCAC 13B .0542(c)(2). If not, please add the asbestos containing wastes to the prohibited waste list.
  - iii. Add the requirements stated in Rule 15A NCAC 13B .0542(e)(18) to the plan.
  - iv. Please add the time frame (within 24 hours) for reporting the attempted disposal of unpermitted waste(s) to the agency below:  
Department of Environment and Natural Resources  
Division of Waste Management, Solid Waste Section  
1646 MSC, Raleigh, NC 27699-1646  
Phone (919)707-8200
21. (Section 6.5) Please address the following concerns:
- i. Please provide the qualification and training credential of landfill operators at this C&DLF.
  - ii. The Contingency Plan needs to discuss how the landfill management team / operators handle the unexpected situations that will interrupt landfill operations (not transfer station) which include power outage, inclement weather condition, natural disaster, etc.
22. (Section 6.7) Please address the following concerns:
- i. The cover material must be placed over the working faces exceeding one-half acre and at least once per week [Rule 15A NCAC 13B .0542(f)(1)], whichever comes first. Please add the working face limits to this section.
  - ii. Please provide the information and specifications (material and operation) of the proposed alternative cover to be used at this landfill.

- iii. Additionally, the SWS Facility Audit Reports shown historically the landfill has a fairly large area of exposed waste without or lacking sufficient soil cover. Pursuant to Rules 15A NCAC 13B .0542(f)(1) & (g)(1), the Operation Plan needs to provide a device (such as color tapes, traffic cone, concrete barrier, etc.) and practice to determine when the working face is at or near the one-half acre limit.
  - iv. The time to place additional soil cover over waste areas in the C&DLF which are inactive or not receiving additional wastes placed on them is three (3) months, not twelve (12) months [Rule 15A NCAC 13B .0542(f)(2)]. The areas must be stabilized with vegetative ground cover according to the seeding schedule specified in the approved Erosion and Sediment Control Plan or other stabilizing material approved by the SWS. Please make necessary corrections.
  - v. It is a routine practice that the working faces covered by earthen cover material must be properly compacted and graded to facilitate surface draining to prevent leachate seepage or runoff ponding in the landfill cells as described in the action item 5 of Section 6.16. Please refer this requirement to the Section 6.7.
23. (Section 6.9) According to the Facility Audit Reports, the landfill facility historically has problems associated with wind blow wastes spreading around areas beyond working faces. This County may consider using fencing or other devices located around working faces to confine solid wastes which are subject to be blown by wind [Rule 15A NCAC 13B .0542(g)(3)].
24. (Section 6.10) In addition to obtaining an approval from the local Fire Marshall, the open burning request must be submitted to NC Division of Air Quality for a review and approval. The approval documents along with the open burning request must be forwarded to the SWS for final review and approval prior to starting burning activities. The approved documents must be placed in the operating record according to Rule 15A NCAC 13B .0542(i)(2). Please revise the section accordingly.
25. (Section 6.11) In addition to installing vegetative ground cover over the final cover for control dust, this practice should be applicable to the intermediate cover over the inactive cells or phases as well. Please add this requirement to the section.
26. (Section 6.12) Is there any fire extinguisher available and maintained in the on-site equipment? Please clarify. And add the local fire department info – address & phone number to this section such as below:
- Spring Lake Fire Department, 300 Ruth Street, Spring Lake, NC  
Phone No. 911 or 910-436-0337.
27. (Section 6.16) Please provide the as-built drawings including the leachate piping (sizes and alignments) & valves, sumps & pumps (locations), the load-out station associated with the approved Leachate Management Plan.
28. (Section 6.17) Please add the following documentations to the record keeping lists:
- i. A notation of date and time for deploying cover material [Rule 15A NCAC 13B .0542(f)(1)].
  - ii. A notation of approval of on-site open burning according to Rule 15A NCAC 13B .0542(i)(2).

iii. The approved plans, the permits, quarterly landfill gas sampling results, and other documents required by the Rule 15A NCAC 13B .0542(n)(1)(D), (E) & (G) must be placed in the operating record. Please revise this section accordingly.

29. The plan needs to address the prohibition of waste scavenge according to Rule 15A NCAC 13B .0542(j)(8) except for collecting recyclable and removing unpermitted wastes from working faces by landfill staffs.

#### Closure & Post Closure Plan

30. (Section 7.0) Please address the following concerns:

- i. The submitted Closure and Post Closure Plan is a final plan, not a preliminary one; however, an updated closure and post-closure plan including a construction quality assurance plan described in Section 7.4 can be submitted for a review approval at least ninety (90) days prior to closure or partial closure of any landfill unit. The revised plan must be prepared in accordance with applicable statutes and rules in effect at the time of closure and will be subject to a permitting fee. Please revise the section accordingly.
- ii. Please revise the Closure Plan contents by adding the requirements set forth in Rule 15A NCAC 13B .0543(d)(2), (3), &(5).

31. (Section 7.1) Please address the following concerns:

- i. The thickness of the erosion layer is not consistent with the proposed one described in Engineering Plan (Section 4.1.2, on Page 25). Please clarify.
- ii. The reference of the Rule 15A NCAC 13B .0540(g) doesn't exist. Please provide the correct reference.

32. (Section 7.3) The schedule to begin closure activities described in the first bullet item is not acceptable. Pursuant to Rule 15A NCAC 13B .0543(c)(5), the closure activities including partial or incremental closures shall start when the unclosed CDLF "unit", not the "complete facility" nor Phase III alone meets the closure criteria set forth in the aforementioned rule. Please revise the closure schedule in this section.

33. (Section 7.5) Please provide the schedule of submittal of closure verification such as 60 calendar days after the construction tasks related to the site closure project have been completed.

34. (Section 7.6) Pursuant to Rule 15A NCAC 13B .0543(e)(1)(C)The maintenance of the monitoring system shall also include the landfill gas wells/vents, either the ones installed in the perimeters of the landfill facility or the ones installed inside the closed landfill units.

35. (Section 7.7) Please address the following concerns:

- i. Pursuant to Rules 15A NCAC 13B .0543(f) & 547(2), please provide the cost estimates for the proposed 30-year post-closure care activities described in the Post-Closure Plan.
- ii. Please add the requirements for the inspection, maintenance, and repair to the following items: service/access roads (to the landfill units, and environmental media monitoring points), landfill gas vents/wells, surface water monitoring points, and vegetation restoration (mowing & reseeding).

- iii. Please describe the approaches to prevent and remediate leachate outbreak, if occurs at the closed landfill cells.
- iv. The waste edge markers must be properly maintained. Please add this requirement to the post-closure care task lists.

36. (Section 7.8) Please address the following concerns:

- i. Please describe the landfill gas control and monitoring after the landfill units are closed which including descriptions of well & well bore material, locations, well depths, monitoring record, sampling frequency, inspection/repair of the gas vents, and actions to be taken if the detected landfill gas concentration exceeds the regulated limits. The scopes will include both gas vents installed inside the landfill cells and the gas wells installed along the landfill property boundaries. The layout of gas wells and gas vents and typical details of gas well/vent completion also need to provide in the drawing.
- ii. The post-closure care items mentioned in the Comment Nos. 34 & 35ii need to be included in the inspection table as depicted in Section 7.8.1.

#### Appendices

37. (Appendix I) Please provide the completed landfill property deed as depicted on the survey map.

#### Drawings

38. Drawing 1. Please address the following concerns:

- i. Add the elevations to the contour lines.
- ii. Add the survey control benchmark and related info according Rules 15A NCAC 13B .0540(3) &(4).
- iii. Have the permitted waste limits (northwest corner) for existing Phases I & II been extended into a sediment basin? Please clarify and make necessary correction on all drawings appended to the Permit Application.
- iv. Add the locations of all on-site miscellaneous waste management units (referring Comment No 16) to the drawing [Rule 15A NCAC 13B .0542(b)(1)(G)].
- v. The Section 3.3.1 reports that the borrow area is, under LQS No. Harne 2010-043, a permitted area for construction disturbance activities. The outline and/or the note indicate the permitted disturbance limits on the drawing must be revised according to the LQS permits.
- vi. The final alignment & locations of leachate piping and apparatus (referring Comment No. 27).

39. To enhance visualization, please add cell numbers (Cell 1 thru Cell 5) to the Drawing 3.

40. Please add the proposed locations of gas vents or gas wells to Drawing 8.

41. Drawing 11. Please address the following concerns:

- i. Add the intermediate soil layer to the "Typical Cap Detail." It is likely that the landfill will be covered by a layer of earthen cover [Rule 15A NCAC 13B .0542(f)] prior to initiate the final site closure activities.
- ii. Add the criteria of hydraulic conductivity to the "low permeability earthen material."
- iii. Add the typical details of the completed gas vent or well.

#### Financial Assurance

42. The County must be in compliance with financial assurance requirements stated in Rules 15A NCAC 13B .0546 & .0547(2) and NCGS 130A-295.2(h) by submitting the cost estimates for site closure and post-closure cares and the cost estimates for potential assessment and corrective actions (PACA) to the SWS for a review and approval.

If you have questions about the above-mentioned comments or require further clarification, please contact myself at (919) 707-8251 or [ming.chao@ncdenr.gov](mailto:ming.chao@ncdenr.gov).

Sincerely,



Ming-Tai Chao, P.E.  
Environmental Engineer  
Solid Waste Section

cc:

Pieter Scheer, P.E., Smith + Gardner  
Ed Mussler, Permitting Branch Supervisor  
Robert Hearn, DWM  
Dennis Shackelford, DWM  
Central Files