



February 6, 2014

Ms. Jaclynne Drummond  
North Carolina DENR  
Solid Waste Section  
Division of Waste Management  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

RE: Proposed Contaminant Delineation Plan  
North Mecklenburg C&D Closed Landfill  
15300 Holbrooks Road  
Huntersville, North Carolina

Dear Ms. Drummond:

Per your letter to Mr. Mike Griffin with Greenway Waste Solutions, LLC dated December 3, 2013, please find the attached Proposed Contaminant Delineation Plan for the subject closed facility.

Please contact me at (803) 547-4955 if you have any questions or comments concerning this Plan.

Sincerely,  
ENVIRO-PRO, P.C.

A handwritten signature in cursive script that reads "Thomas H. Bolyard".

Thomas H. Bolyard, P.G.  
Senior Hydrogeologist

cc: Mr. Mike Griffin, Greenway Waste Solutions, LLC  
Mr. Ellie Allen, Greenway Waste Solutions, LLC  
Mr. Scott Brown, Civil & Environmental Consultants, Inc.



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**PROPOSED CONTAMINANT DELINEATION PLAN**

North Mecklenburg C&D Closed Landfill  
Solid Waste Permit No. 60-13  
Huntersville, Mecklenburg County, North Carolina

Prepared for:

Greenway Waste Solutions, LLC  
19109 West Catawba Avenue – Suite 200  
Cornelius, North Carolina 28031

Prepared by:

Enviro-Pro, P.C.  
2646 Farmlake Lane  
Fort Mill, South Carolina 29708

*Thomas H. Bolvard*



Project No. EP-1217 (A)

February 6, 2014

## **Background**

A Proposed Assessment Monitoring Work Plan for the closed North Mecklenburg C&D Landfill was submitted to the NCDENR Solid Waste Section on behalf of Greenway Waste Solutions on August 5, 2013. The Solid Waste Section approved the Plan as submitted in a letter to Greenway Waste Solutions dated August 15.

Enviro-Pro, P.C. (EP) subsequently supervised the installation of 12 additional groundwater monitor wells for this facility. The existing and newly installed wells (21 total) were sampled on October 3, with the laboratory analytical results provided to the Solid Waste Section. On October 25, DENR personnel requested an additional groundwater sampling event to verify the October 3 laboratory results for volatile organic compounds (VOCs). EP personnel resampled all 15 previously impacted monitor wells for VOCs only on October 30 and included both sets of laboratory data in the Second 2013 Semi-Annual Monitoring Report submitted on November 30 to the Solid Waste Section. As the result of their review of this Monitoring Report, the Solid Waste Section notified Greenway Waste Solutions on December 3 of a request for additional documentation and activities related to this closed landfill facility. The submittal of this Proposed Contaminant Delineation Work Plan addresses one of the requested items in this letter from the Solid Waste Section.

## **Proposed Assessment Activities**

In order to determine the vertical extent of VOC contamination, deeper Type III groundwater monitor wells will be installed in the immediate vicinity of existing wells MW-4D and MW-6D. These locations were selected based on their proximity to the adjacent properties containing the Gilkerson and Hammill water supply wells. Monitor well MW-7D, installed upgradient from the Tinsley water supply well, has not shown any VOC impact to date. Therefore, it appears that the vertical extent of VOC contamination in bedrock has been established in the direction of this potential receptor. The distance of the Wright water supply well located approximately 1,100 feet northeast from the landfill property boundary helps minimize the risk of this well being adversely impacted. No bedrock vertical extent determination within the landfill boundary is deemed necessary in the direction of this potential receptor.

Groundwater contamination has been confirmed at the compliance boundary (i.e., 50 feet on the landfill side of the property boundary) in the direction of three adjacent properties containing water supply wells. Through a series of meetings and conversations with joining property owners Tinsley, Gilkerson, and Hammill during the last three months, it does not appear that access will be granted to delineate the downgradient extent of the groundwater contaminant plume via additional well installation on their properties.

The Landfill Gas Monitoring Plan for this facility was approved on January 31, 2014. These gas monitor wells will be installed and sampled within the next 30 days to evaluate the possible correlation between gas occurrence and groundwater contamination. A baseline risk assessment will be conducted for this closed landfill facility to characterize exposure pathways and potential receptors. Based on the results from this risk assessment, contaminant fate and transport modeling may be performed for selected portions of the site. Field data previously collected from in-situ permeability testing of the groundwater monitor wells will be evaluated to determine the hydrogeologic characteristics of the bedrock aquifer, calculate vertical gradients, and identify whether adjacent streams are functioning as groundwater discharge features. A groundwater elevation contour map will also be constructed from well gauging data to determine hydraulic gradients and flow directions.

If the adjoining property owners are agreeable, we will attempt to obtain down hole camera videos of the Tinsley, Gilkerson, and Hammill water supply wells in addition to bedrock monitor well MW-4D. This information will be used to provide a better understanding of the drawdown and recharge characteristics of the bedrock aquifer.

The information generated from the proposed activities previously described will be utilized to develop a site conceptual model. All the newly acquired information will be evaluated to determine whether this closed landfill should be combined with the adjacent Infill permitted landfill facility and considered as a single area of concern. The Hydraulic Evaluation of Landfill Performance (HELP) Model will be used to predict infiltration of precipitation and leachate production within the closed NMLF landfill facility. This modeling effort will be conducted in conjunction with items 3, 4, and 6 in your December 3, 2013 letter to Greenway Waste Solutions, LLC and will be submitted along with the other information by the approved April 18, 2014 deadline.

The additional proposed field activities described herein will be completed within 60 days after DENR approval of this Plan. A report summarizing the various proposed tasks, including a baseline risk assessment and site conceptual model, will be submitted within 90 days after Plan approval.