



CITY OF DURHAM

DEPARTMENT OF WATER MANAGEMENT
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Re: LF Condensate Spill at the City of Durham Closed MSW Sanitary Landfill

Attn: Ervin Lane
 Compliance Hydrogeologist
 NC Department of Environment and Natural Resources
 Division of Waste Management - Solid Waste Section
 1646 Mail Service Center
 Raleigh, NC 27699-1646
 919-707-8288 (phone/fax)

Date: March 21, 2013

Dear Sir,

The proposed Sampling Plan aims to determine the presence or absence of any potential Landfill Leachate that may have left the compliance boundary of the City of Durham Closed Sanitary landfill.

Background;

City of Durham personnel observed an unknown foam present at the City's stormwater discharge during some construction activities that disturbed an area outside the edge of waste on February 8, 2013. After further inspection and testing of DO and conductivity, it became evident that the foam was a result of biological activity. By that afternoon, City staff had re-compacted the area that was allowing significant discharge. City Staff also pumped down all surface water that had accumulated in the plunge pool at the bottom of the Storm Drain.

Staff obtained a sample of the liquid and tested it for Appendix 1 VOC's and found no indication of VOC's in the discharge. NCDENR Solid Waste Section reviewed the results and requested additional testing of the water and soil contacted by the unknown flow to determine if there had been in fact any residual contamination.

Purpose:

The purpose of the soil and water sampling is to identify any contamination in the soil and water that may have been impacted by the unknown discharge from the landfill. The sampling sites and their purpose are as follows.

Soil Samples:

Identifier	Location	Purpose	Analyses
S - 1	20-25 ft outside of the plunge pool area, ~1" below surface	Background	Nitrogen (TKN), phosphorous, sulfate, Appendix 1 VOC's and Metals
SW - 2	From sediment in	Determine if residual contamination is	Nitrogen (TKN), phosphorous, sulfate, Appendix 1 VOC's

	plunge pool	present	and Metals
SW – 3	After confluence of surface drainage channels, from sediment	If contamination was present, determine the extent.	Nitrogen (TKN), phosphorous, sulfate, Appendix 1 VOC's and Metals

Surface Water Samples

Identifier	Location	Purpose	Analyses
SW – 1	From Water in plunge pool	Determine if residual contamination is present	Nitrogen (TKN), phosphorous, sulfate, Appendix 1 Metals
SW – 2	After confluence of surface drainage channels, from standing water	If contamination was present, determine the extent.	itrogen (TKN), phosphorous, sulfate, Appendix 1 Metals
SW – 3	Before confluence of surface drainage channels, from standing water	Background	itrogen (TKN), phosphorous, sulfate, Appendix 1 Metals

See Figures 1 and 2 for locations and descriptions of the samples.

We look forward to your approval of the sampling plan. Should you have any questions or further suggestions for the plan, please don't hesitate to call. Thank you for your work and continued assistance in maintaining our compliance with our closure activities.

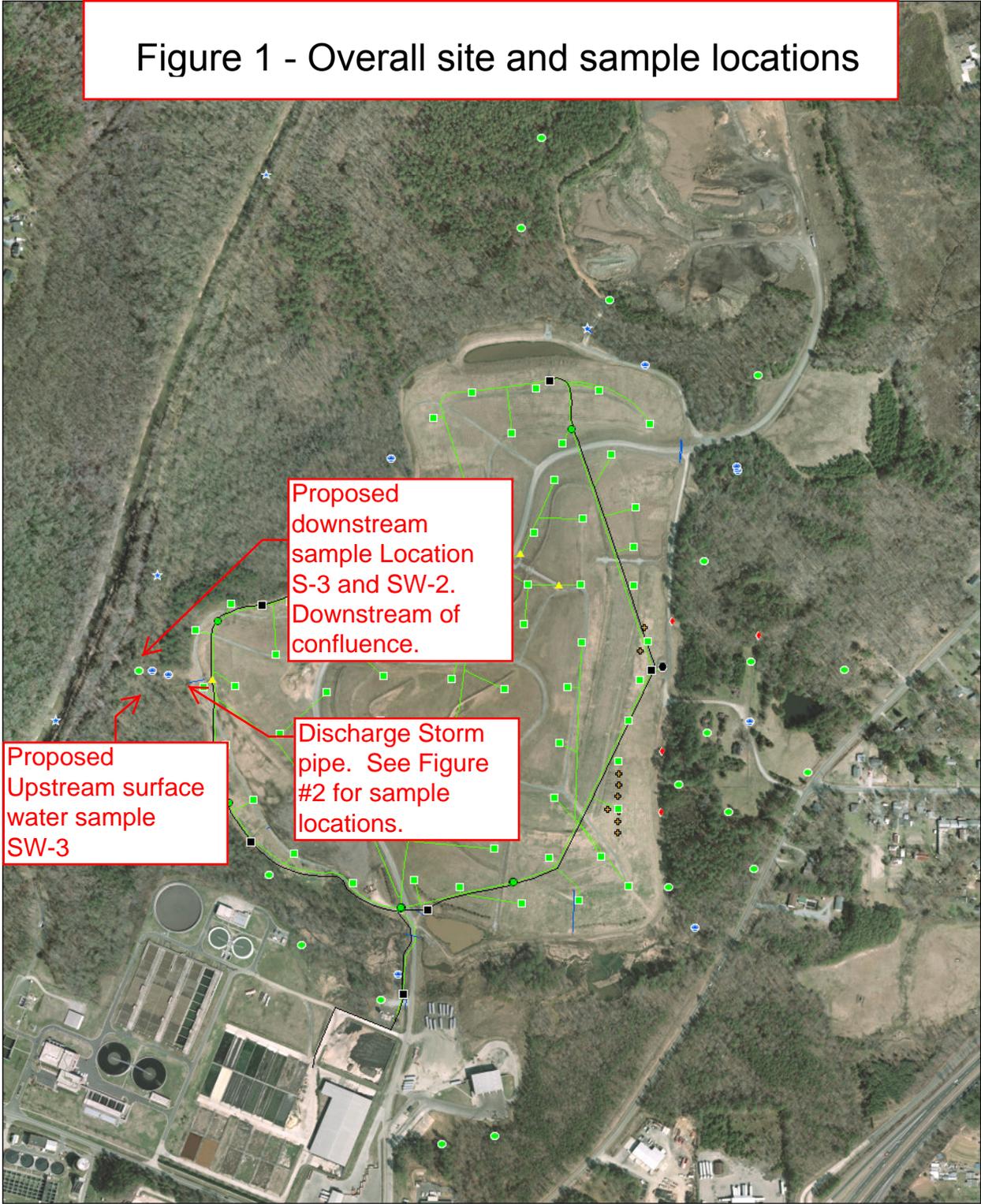
Sincerely,

Simon Lobdell, PE
City of Durham, Department of Water Management.

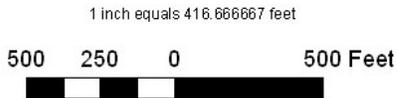
Figures

City of Durham Landfill

Figure 1 - Overall site and sample locations



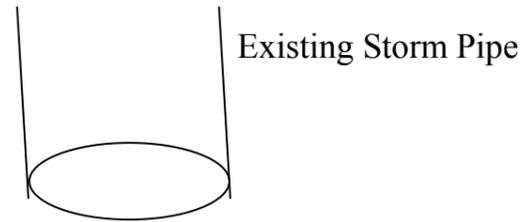
Legend			
■ Extraction Well	● Condensate Trap	● Piezometer	
— Gas C collection Pipe	● Condensate Cleanout	● Groundwater Well	
● Isolation Valve	— Condensate Pipe	● Surface Water Monitor	
▲ Gas Line Marker	— Drainage Pipe	◆ Temperature Probe	
■ Condensate Pump	● Gas Probe		



The following features were collected with a Trimble GeoXH GPS receiver, and post-processed using data from the City of Durham Continuously Operating Reference Station: Condensate Cleanouts, Drainage Pipes, Extraction Wells, Gas Line Markers, Gas Probes, Isolation Valves, Manhole, Temperature Probes. Accuracy ranges from sub-foot to sub-meter in open areas, and sub-meter to more than a meter in wooded areas for these features.

The following features were collected with an unknown GPS receiver by S & ME Inc., and it is not known if differential correction was applied: Groundwater Wells, Piezometers, Surface Water Monitors.

Figure 2—Sketch of sample locations.



Background Soil Sample
S-1



SW - 1 - Discharge
area surface water sam-
ple to be collected from
water in pool

S -2 Discharge area soil sam-
ple to be collected from sedi-
ment in drainage channel

