



May 26, 2010

Department of Environment and Natural Resources  
Division of Waste Management  
Solid Waste Section  
401 Oberlin Road, Suite 150  
Raleigh, North Carolina 27605  
919-508-8500

Attention: Ms. Jackie Drummond  
Hydrogeologist

**Re: Landfill Gas Remediation Plan  
Material Recovery, LLC Construction & Demolition Landfill, Permit No. 92-31  
Wake County, North Carolina**

Dear Ms. Drummond:

Material Recovery, LLC, a subsidiary of WCA Waste Corporation, is submitting the enclosed *Landfill Gas Remediation Plan*, which details the proposed installation of a cut-off trench between the waste unit and monitoring well MW-3 at the above-referenced facility. If you have any questions, please contact Dusty Reedy with Golder Associates NC, Inc. at 336-852-4903 or myself at 954-415-7230.

Sincerely,  
**WCA WASTE CORPORATION**



Nick Marotta  
Regional Engineer

Enclosure

cc: Vernon Smith, Regional Vice President, WCA of North Carolina, 40 Estes Plant Road, Piedmont, South Carolina 29763, 864-845-8355. (letter only)  
Dennis Gehle, General Manager, Material Recovery, LLC, 2600 Brown-Field Road, Raleigh, North Carolina 27610, 919-838-6973. (letter only)  
Rachel P. Kirkman, P.G., Senior Project Geologist, 4900 Koger Boulevard, Suite 140, Greensboro, North Carolina, 27407. [rkirkman@golder.com](mailto:rkirkman@golder.com). 336-852-4903. (letter only)

May 26, 2010

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Mr. Nick Marotta, Regional Engineer  
WCA Waste Corporation  
Material Recovery, LLC  
2600 Brown-Field Road  
Raleigh, NC. 27610

**RE: LANDFILL GAS REMEDIATION PLAN  
WCA'S MATERIAL RECOVERY C&D LANDFILL, PERMIT NO. 92-31  
WAKE COUNTY, NORTH CAROLINA**

Dear Nick:

Golder Associates NC, Inc. (Golder) is submitting this Landfill Gas Remediation Plan (Plan) for the above referenced facility. The purpose of this Plan is to detail the proposed installation of a cut-off trench between the landfill and monitoring well MW-3, where it appears that water quality is being impacted by landfill gas. The Material Recovery Construction and Demolition (C&D) Landfill is owned and operated by Material Recovery, LLC, a subsidiary of WCA Waste Corporation (WCA) under Permit No. 92-31 issued by the North Carolina (NC) Department of Environment and Natural Resources (DENR).

## OVERVIEW

The Material Recovery C&D Landfill has been operational as an unlined C&D facility with a groundwater monitoring program since May 2002. In accordance with the facility's permit, groundwater in the uppermost aquifer beneath the disposal area is monitored on a semi-annual basis under the Detection Monitoring Program (Title 15A NCAC 13B.0544 of the NCSWMR). On November 5, 2007, an Alternate Source Demonstration (ASD) for trichlorofluoromethane (TCFM) was submitted and subsequently approved by DENR on May 15, 2008. The 2007 ASD was submitted in response to the detection of TCFM in a groundwater sample collected from monitoring well MW-3 during the first semi-annual water quality monitoring event of 2007. The 2007 ASD concluded that the likely source of TCFM was not landfill-derived leachate, but instead, may be due to landfill gas-to-groundwater impacts or previous land use practices.

During the first semi-annual water quality monitoring event of 2008, trichloroethene (TCE) was detected at an estimated concentration in the sample from MW-3 for the first time. During the second event of 2008, TCE was detected at a quantifiable concentration and tetrachloroethene (PCE) was detected at an estimated concentration in the sample from MW-3. TCE and PCE were detected at similar concentrations during the first semi-annual event of 2009 in MW-3. During the most recent sampling event in December 2009, TCE and PCE were detected in the sample from MW-3 at quantifiable concentrations that exceeded their respective NC 2L Drinking Water Standards. Since December 2006, TCFM has continued to be detected in MW-3, though concentrations have declined. Due to the chemical similarity between TCFM, TCE, and PCE, it is believed that they may share a similar on-site source.

A meeting was conducted on April 6, 2010, which included representatives from WCA, Golder, and DENR, to discuss the most recent sampling results and determine the best course of action. During the meeting, WCA proposed to install a cut-off trench between the waste and MW-3 in order to vent landfill gas that may be migrating from the landfill and impacting groundwater in the vicinity of MW-3. Ms. Jackie Drummond of DENR agreed that this was an appropriate remedy for the constituents detected in samples from MW-3 and requested that a Plan, detailing the proposed procedures, be submitted to DENR for approval.



## PROPOSED ACTIONS

WCA proposes to install a cut-off trench between the waste unit and monitoring well MW-3 in order to vent landfill gas that may be migrating from the landfill and potentially impacting groundwater in the vicinity of MW-3. The proposed trench is to be approximately 225 feet long and 2 to 4 feet wide and will be located as shown on Drawing 1. The trench will be dug to an average depth of 18 feet below ground surface, which is approximately equal to the estimated depth of waste in the northwest corner of the waste unit, based on available information.

The back wall of the trench will be lined with an impermeable barrier and backfilled with a combination of clean concrete and on-site rock and stone. Perforated 6-inch schedule 80 polyvinyl chloride (PVC) pipe will be installed approximately 4 feet below ground surface along the length of the excavation. Non-perforated 6-inch schedule 80 PVC pipe will be attached to the perforated pipe and extend above ground to vent accumulated landfill gas. A vent located 50 feet from each end of the trench will be installed. The vents will be topped by passive wind-driven venting equipment. The upper 2 feet of the excavation will be backfilled with a relatively impermeable soil. A detail of the construction of the cut-off trench is shown on Drawing 1.

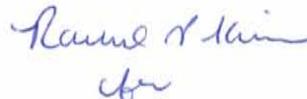
The proposed cut-off trench will be installed within 90 days of receiving approval of this Plan by DENR. Routine groundwater monitoring will continue on a semi-annual basis for two years to determine if concentrations of TCFM, PCE, and TCE in samples from MW-3 show a declining trend. If there is no indication of a declining trend at the end of two years, a temporary blower unit will be connected to the passive vents to expedite the removal of landfill gas from the cut-off trench. Another evaluation period of two years will be implemented to determine if the constituents of concern show a decreasing trend.

If you have any questions, please contact the undersigned at 336-852-4903. We appreciate your assistance with this project.

### GOLDER ASSOCIATES NC, INC.



David "Dusty" Y. Reedy II, P.G.  
Senior Project Hydrogeologist



Charles Hiner, P.E.  
Associate and Senior Consultant

Attachments: Drawing 1 – Site Plan and Proposed Landfill Gas Remediation Plan

C: Dennis Gehle, General Manager, Material Recovery, LLC, 2600 Brown-Field Road, Raleigh, North Carolina, 27610, 919-838-6973.

Rachel P. Kirkman, P.G., Golder Associates NC, Inc., 4900 Koger Boulevard, Suite 140, Greensboro, North Carolina, 27407, 336-852-4903.

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