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March 26, 2008

Ms. Jaclynne Drummond
Compliance Hydrogeologist
North Carolina Department of Environment and
Natural Resources - Division of Waste Management
Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27699-1646

Subject: Henderson County Additional Groundwater Assessment
Proposed Workplan

Dear Jackie:

As we discussed previously, CDM, on behalf of Henderson County, would like to move forward with assessment of existing groundwater contamination conditions at the Closed Henderson County Sanitary Landfill with the intent of beginning the Assessment of Corrective Measures. Currently, there are several Volatile Organic Compounds (VOC) above their respective 2L Standards in the compliance and existing assessment wells at the site. In order to determine the horizontal and vertical extent of groundwater contamination, CDM is proposing to install and sample additional assessment wells and collect samples from existing down-gradient monitoring wells beyond the current approved network. Existing and proposed well locations are provided on the attached Figure 1.

Groundwater Sampling
Wells MW-1, Old MW-1, MW-2, and Old MW-2 are older wells that, due to their distance from the edge of waste, are not part of the current monitoring well network. These wells were last sampled in February 2001 as part of a limited groundwater assessment. In February 2001 all Appendix I and II constituents were below detection limits, with the exception of 1,1-dichloroethane and cis-1,2-dichloroethene. Both detections were below their respective North Carolina 2L standards.

Sampling of the older wells will be conducted in conjunction with the regular semi-annual sampling. Groundwater samples will be submitted for laboratory analysis of Appendix I constituents plus the Appendix II constituents, mercury, naphthalene, and phenols detected in wells from the approved monitoring well network during previous sampling events. Prior

to sample collection, water levels will be measured in each well to determine the height of the water column and the volume of the water to be purged. The wells will then be purged with a submersible pump to remove any accumulated sediment or detritus until either a minimum of five well volumes have been removed or until the well is dry. This procedure will ensure that a representative groundwater sample is collected. During well purging, temperature, pH, conductivity, turbidity, dissolved oxygen, and ORP readings will also be monitored. Well purging will continue until these readings have stabilized.

Samples will then be collected after purging is completed using a laboratory decontaminated Teflon bailer and transferred directly from the bailer into the appropriate sample bottles provided by the analytical laboratory. Sample bottles will then be placed in a chilled cooler and transported to the laboratory following standard EPA chain-of-custody protocol.

Monitoring Well Installation

A nested pair of monitoring wells will be installed at the site. One new shallow monitoring well (AMW-2s) and one new deep monitoring well (AMW-2d) will be installed down gradient of the existing wells AMW-1s and AMW-1d. It is anticipated that the shallow well will be installed utilizing 8.25-inch OD hollow stem auger techniques and the deep well with 6-inch air rotary drilling techniques. The new shallow monitoring well will be installed to an anticipated depth of 25 feet and constructed of 2 inch, Schedule 40 PVC. A screen length of 15 feet will be used. The new deep monitoring well will be installed with a 6-inch PVC outer casing into the top of bedrock (assumed to be 40 feet) with 12.25-inch OD hollow-stem augers, and continued into bedrock with air rotary. The well will be screened at the first water producing bedrock fracture and is anticipated to be 60 feet deep.

Both new monitoring well will be completed with a sand filter extending 2 feet above the screened interval. A minimum of 2 feet bentonite chip layer will be placed above the sand filter pack and hydrated with potable water. After the bentonite layer has cured, the remainder of the borehole annulus will be completed with a Portland cement/bentonite grout slurry which will be tremmied into place. The monitoring wells will be protected with stainless steel stick-up well covers and 3ft by 3ft concrete pads.

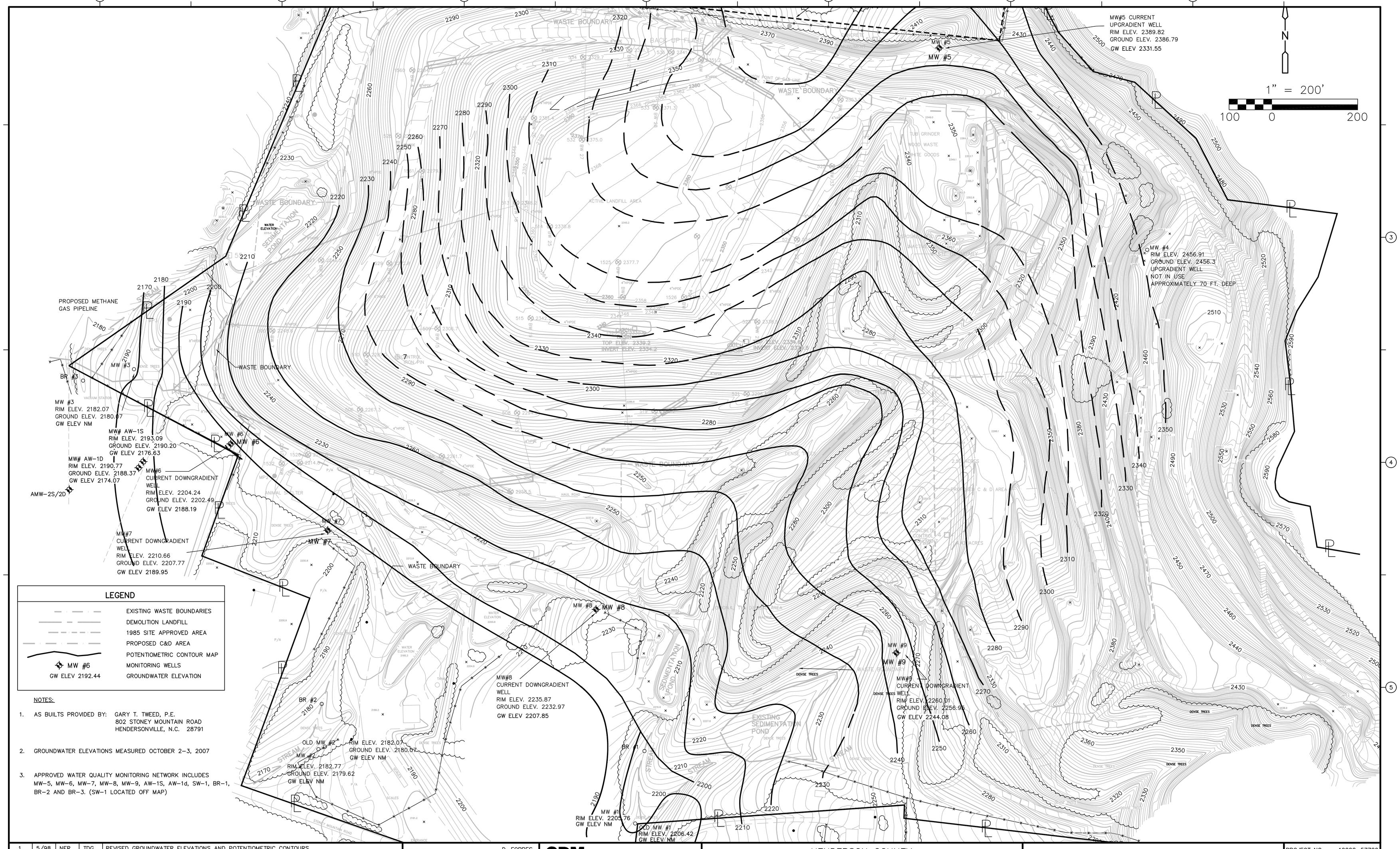
Following completion of the monitoring well installation, the wells will be allowed to equilibrate for 24-hours prior to sampling. One groundwater quality sample will be collected from each well and analyzed for the North Carolina Appendix I Volatile Organic Compounds plus naphthalene by EPA Method 8260, Metals by Method 6010 plus mercury by Method 7470, and Phenols by EPA Method 8270.

CDM

Information collected during this additional assessment will be used to determine how to continue with the Assessment of Corrective Measures. If you have any questions or require further information, please contact me at (919) 787-5620 or email to colonemf@cdm.com.

Very truly yours,

Mathew F. Colone, P.G.
Camp Dresser & McKee



LEGEND

	EXISTING WASTE BOUNDARIES
	DEMOLITION LANDFILL
	1985 SITE APPROVED AREA
	PROPOSED C&D AREA
	POTENTIOMETRIC CONTOUR MAP
MW #6	MONITORING WELLS
GW ELEV 2192.44	GROUNDWATER ELEVATION

NOTES:

1. AS BUILTS PROVIDED BY: GARY T. TWEED, P.E.
   802 STONEY MOUNTAIN ROAD
   HENDERSONVILLE, N.C. 28791
2. GROUNDWATER ELEVATIONS MEASURED OCTOBER 2-3, 2007
3. APPROVED WATER QUALITY MONITORING NETWORK INCLUDES MW-5, MW-6, MW-7, MW-8, MW-9, AW-1S, AW-1d, SW-1, BR-1, BR-2 AND BR-3. (SW-1 LOCATED OFF MAP)

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	5/98	NER	TDG	REVISED GROUNDWATER ELEVATIONS AND POTENTIOMETRIC CONTOURS
2	11/98	NER	MFC	REVISED GROUNDWATER ELEVATIONS AND POTENTIOMETRIC CONTOURS
3	6/99	JDB	MFC	REVISED GROUNDWATER ELEVATIONS AND POTENTIOMETRIC CONTOURS
4	1/00	JSK	MFC	REVISED GROUNDWATER ELEVATIONS AND POTENTIOMETRIC CONTOURS
5	5/00	JDB	TDG	REVISED GROUNDWATER ELEVATIONS AND POTENTIOMETRIC CONTOURS

DESIGNED BY: D. FORBES
DRAWN BY: P. DOUGLAS
SHEET CHK'D BY: M. COLONE
CROSS CHK'D BY:
APPROVED BY:
DATE: OCTOBER 2007

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HENDERSON COUNTY
NORTH CAROLINA

STONEY MOUNTAIN ROAD SANITARY LANDFILL
FACILITY PERMIT #4501

MONITORING WELL LOCATION AND POTENTIOMETRIC CONTOUR MAP

PROJECT NO. 10002-57720
FILE NAME: HCMAY2002.dwg

SHEET NO.
1

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