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October 29, 2012

Mr. Bruce E. Lefler, Jr.
Hydrogeologist
NCDENR-Superfund Section
Inactive Hazardous Sites Branch
1646 Mail Service Center
Raleigh, North Carolina 27699

Re: *Proposal and Cost Estimate-Task Order PRLF092-1*
Location Research: Mangum Estates, Wake Forest, Wake County, 1 Site
State ID No. Unassigned
State Contract: N11001S
MM&A Project No.: NCUL243

Dear Bruce:

Marshall Miller & Associates, Inc. (MM&A) is pleased to provide the **North Carolina Department of Environment and Natural Resources (NCDENR)**, Division of Waste Management, Superfund Section, Inactive Hazardous Sites Branch with this *Cost Proposal* for performance of an assessment of a potential landfill site in Wake Forest, Wake County, North Carolina, under Task Order No. PRLF092-1. The *Scope of Work* reflects the tasks required to collect the Site information and perform a Site inspection to provide NCDENR with adequate information to identify potential environmental risks at the Site.

SCOPE OF WORK

The following discussion outlines the proposed scope of work for the project.

Subtask 1 – Project Management

MM&A will perform management tasks throughout the project including project scoping, subtask scheduling, and coordination with NCDENR personnel throughout the project.

Subtask 2 – Site Location/Property Ownership

Upon approval of the proposal for the Site, MM&A will use the data provided to determine the location of the waste disposal area, research details of property ownership and to collect as much data about the Site as possible, including tax maps, aerial photography, topographic location, Sanborn maps if available, etc. MM&A will make every effort to determine the years of operation and the type of disposed waste (e.g. municipal, construction and demolition, etc.)

MM&A will review historical USGS topographic maps as available from Environmental Data Resources, Inc. (EDR) to try and determine site elevations before and after suspected landfilling operations. If the topographic maps are not available from EDR, then it will be noted that no maps were available. MM&A will also review LiDAR (2007) data available from the North Carolina Department of Transportation (NCDOT) to evaluate topography for indication of landfilling operations.

MM&A will obtain historical aerial photographs from the United States Geological Survey Geospatial Data Gateway dating back prior to landfill operations, if available. MM&A will process and evaluate the aerial photographs in order to estimate the limits of the waste disposal area. A visit to the county courthouse to obtain ownership and property information and/or the county's Soil & Water Conservation District for historical aerial photographs may be required. MM&A will also obtain and review Sanborn Fire Insurance maps, if available for the area of interest, from EDR. If the Sanborn maps are not available from EDR, then it will be noted that no maps were available and no further attempts to obtain Sanborn Fire Insurance Maps will be made.

Subtask 3 – Site Inspection

NCDENR has contacted the property owners to obtain rights of access and has received verbal permission to access the properties. MM&A will schedule the Site visit through the coordination with NCDENR, who in turn will handle communication with the property owners. MM&A will conduct a Site inspection including completion of a *Site Inspection Checklist* to detail the following:

- Property location and size
- Suspected disposal area location and size
- Property conditions
 - Structures (including type of structure) located on the property
 - Current usage
 - Water supply wells and intakes located on the property
 - Evidence of municipal water supply
 - Surface water features
- Waste disposal area conditions
 - Identifiable perimeter
 - Evidence of potential landfill gas migration pathways
 - Physical barriers
 - Other pertinent information
- Vicinity conditions
 - Structures located within 50 feet of the waste disposal area
 - Water supply wells and intakes
 - Evidence of municipal water supply
 - Current land usage
 - Surface water features

Costs for this Task Order have been projected assuming the Site inspection and any necessary travel and out-of-office research for Subtask 2 will be conducted during the same trip.

A GPS unit will be used during the Site inspection to acquire the location of the Site, establish the perimeter(s) of the waste disposal area(s), and mark any points of interest such as structures, water supply wells, and Site drainage features.

Subtask 4 – Interviews

MM&A will attempt to contact and interview the previous site owners identified in Subtask 2 and the developer(s) of Mangum Estates to determine if they have any knowledge of the operational history of the suspected landfill.

Subtask 5 – Site Summary Report

After the Site information has been gathered and the Site inspection is completed, a *Site Summary Report* will be prepared to provide NCDENR with the Site information in the predetermined report format. The report will include all Site location and ownership information; details of years of operation and type of disposed waste; highlight areas of note; provide summaries of Site and vicinity conditions; a discussion of the aerial photography; and a Site location research summary. Supporting information will be included as Appendices as follows:

- Maps: USGS 7.5 minute topographic (dates), Site map, vicinity map, other maps collected during the investigation.
- Aerial photographs (source and date)
- Tables: Tabulated GPS data, Areas of Concern
- Tax Records: 2012 or most recent tax statement, sales history
- Original *Field Reconnaissance Sheet*
- Communication records
- Photographs taken during Site inspection

SCHEDULE

MM&A will begin coordination of all work within 5 working days of the approval of this proposal. MM&A will schedule the field activities once property owner permission has been obtained. Invoices for work performed under this Task Order will be issued upon approval of the report.

Field Schedule	Subtask	Staff Level	
		Staff Scientist	Technician
	Subtasks 2 & 3 (combined time/expenses)	1	1

A cost estimate for the proposed work is attached. MM&A appreciates the opportunity to provide this proposal. Should you have any questions or require additional information, please do not hesitate to call.

Sincerely,

MARSHALL MILLER & ASSOCIATES, INC.

Timothy D. Grant

Timothy D. Grant, P.G.

Project Manager

Larry M. George

Larry M. George, P.G.

Program Manager

Attachment