



March 24, 2016

Mr. Matt Aufman, Engineer
North Carolina Department of Environmental Quality
Division of Waste Management, Pre-Regulatory Landfill Unit
1646 Mail Service Center
Raleigh, NC 27699-1646

Reference: **WORK PLAN FOR TASK ORDER 813FP**
 Remedial Investigation – First Phase Activities
 Reynold’s School Road
 End of Reynold’s School Road
 Canton, Haywood County, North Carolina
 ID # NONCD0000813
 State Contract # N13001S
 ESP Project No. E6-BN12.614.002

Dear Mr. Aufman:

ESP Associates, P.A. (ESP) is pleased to provide the attached cost proposal for Task Order 813FP for performing Remedial Investigation – First Phase activities at the Reynold’s School Road (State ID # NONCD0000813). This proposal was developed in accordance with the scope of work requested by the North Carolina Department of Environmental Quality (NCDEQ) Pre-Regulatory Landfill Unit via a letter dated February 29, 2016. All field activities will be performed in accordance with ESP’s *Standard Operating Procedures and Quality Assurance Manual* dated April 18, 2013, and referencing NCDEQ’s most recent version of *Guidelines for Addressing Pre-Regulatory Landfills and Dumps*.

Mr. Chris Ward will be ESP’s project manager for these tasks while quality control (QC) oversight will be provided by ESP’s senior engineer, Ms. Nora Zirps. Mr. Eddie Rogers will be ESP’s staff scientist during the field effort. In addition to the staff scientist, a technician will also be on-site to assist in locating water sources, locating property lines, collection of Global Positioning System (GPS) coordinate data and clearing lanes through brush for the geophysical survey. All field personnel will be qualified to identify contaminated material and landfill waste and will comply with OSHA-required health and safety training.

ESP will take photographs of pertinent areas of the site before and after the field effort to document potential impact to the property as a result of the field effort. Photographs of locations where property is damaged during the field effort and/or not restored to its original condition will be provided to NCDEQ. Photographs will also be taken of noteworthy observations during the field effort for submittal to NCDEQ for review for possible inclusion in the report.

GPS coordinate data will be collected along the waste boundary starting at the northernmost point of the perimeter and will be reported in a clockwise progression around the landfill perimeter. Coordinates will be reported in decimal degrees to the seventh order using the North American Datum of 1983 (NAD83) format and latitude and longitude using WGS 84 format. The coordinates will be tabulated and included as an appendix. GPS data collected as part of this work plan is not intended to be land survey data and will not be reviewed by a licensed surveyor.

Our cost proposal for the proposed field and office effort is attached.

Task Order 813FP – First Phase Activates

Subtask A: Work Plan Preparation

This letter presents ESP's work plan for conducting Remedial Investigation – First Phase activities at the Reynold's School Road (see Figure 1). Preparation of this work plan involved the following activities based on information gathered during our initial site visit:

- Development of the work plan text.
- Preparation of request for proposals to secure geophysical bids.
- Review of subcontractor bids.
- Development of a proposed field schedule (see Figure 2).
- Preparation of a site location map.
- Preparation of the associated cost proposals.

Subtask B: First Phase

Water Source Survey Map - ESP will perform a visual reconnaissance to identify water supply wells, surface water/springs and surface water intakes within 1,000 feet of the waste disposal boundary. Features identified in the visual reconnaissance will be depicted on a map titled "Water Source Survey Map."

Vicinity Map - ESP will provide a map(s) titled "Vicinity Map" that identifies property lines and zoning classifications of properties containing the waste disposal area and adjacent properties including roadways and easements as well as identifying a radius of 500 feet from the landfill perimeter.

Sensitive Environments Map - ESP will send a letter or email to each of the agencies listed in Appendix C of the current NCDEQ's *Guidelines for Assessment and Cleanup* dated October 2015. A table of sensitive environments within 500 feet of the landfill perimeter will be provided indicating the name of the agency, contact name, response received, and sensitive environment reported. If any documented sensitive environments are present, they will be cross-referenced to a map(s) titled "Sensitive Environments Map."

Site Map - ESP will provide a map(s) titled "Site Map" that identifies areas on the site property that are paved or landscaped, including the type and extent of ground cover, general surface conditions, structures, septic systems, storm water conduits, and underground utilities (as marked by NC811 and on visual observations).

ESP will provide a description of local geologic and hydrogeologic conditions based on reference material.

Subtask C: Geophysical Survey

A geophysical subcontractor will attempt to delineate the horizontal extent of the waste disposal area on the site property using single-frequency electromagnetic induction (EM) geophysical methods with a nominal profile interval of approximately 50 feet in two orthogonal orientations. The spacing and length of the survey transects may need to be altered due to surface obstructions such as soil/waste piles, trees, fences, etc. The survey grids will extend approximately 25 feet beyond the estimated waste disposal area perimeter (see Figure 1).

Prior to mobilization, the following preparatory tasks will be performed:

- Preparation of a base map that is linked to the State Plane Coordinate System in North American Datum of 1983 (NAD83). This map will also depict property boundaries, streams and water bodies, and other features.
- Procuring the necessary equipment and supplies for line clearing.

Portion of the area to be included in the geophysical study are covered by thick underbrush and dense woods. During the performance of the geophysical study, an ESP technician will clear geophysical study lines in areas covered by the thick underbrush and dense woods using only hand tools, as needed.

As part of the geophysical study, a GPS unit will be utilized to record locations of the perimeter of the site, site entrances, and at points delineating the suspect extent of buried waste. Geodetic position of the geophysical grids, geophysical data, relevant surface features (surface metal, roads, etc.) and the waste boundaries will be achieved using a combination of GPS and total station equipment.

A map titled "Geophysical Survey Results Map" that depicts both the landfill perimeters as visually determined and by the geophysical survey.

Subtask D: Project Management, Coordination, and Support

The following activities are included in this subtask:

- Scheduling and communication with subcontractor.
- Procurement of field equipment.
- Providing project management and technical support to the field team.
- Providing project management and communication with NCDEQ.
- Invoicing and administrative tasks.

Subtask E: Report Compilation

ESP will compile the details of the task order activities into a report titled *Remedial Investigation – First Phase*, for electronic submittal in pdf format. The report will include text, tables, and

maps including a text section noting any variations to the work plan or our SOPs. The report will include previously identified maps. All maps will include data referenced on a scaled drawing with a bar scale (in ft), legend, and a north arrow. Background (light grey) topographic contour lines obtained from readily available public sources will be included on maps detailing the Site and Site vicinity. The report will include a discussion of any variations to the approved work plan or our SOP.

If the attached Cost Proposal is satisfactory, please acknowledge with a written notice to proceed. All work will be performed in accordance with State Contract # N13001S. Should you have any questions or require additional information, please do not hesitate to contact Chris Ward at (803) 835-0915.

Sincerely,
ESP Associates, P.A.



Franklin D. Newsom
Staff Scientist

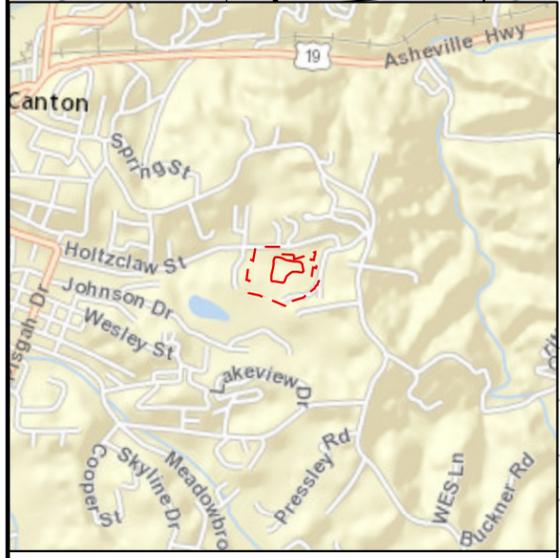
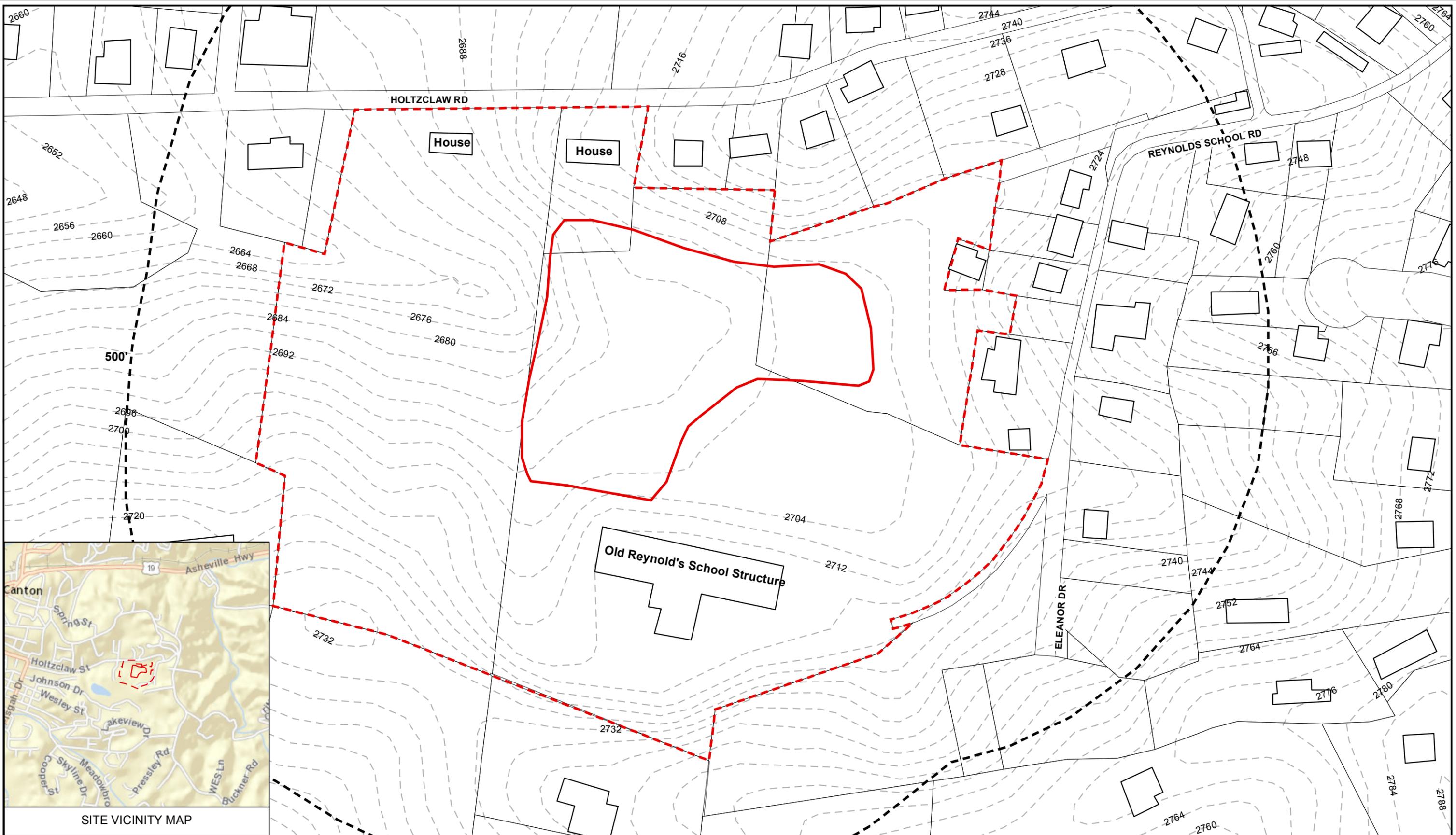
FDN/CJW



Christopher J. Ward, PG
Program Manager

Attachments:

- Figure 1 – Site Vicinity Map
- Figure 2 – Field Schedule
- Cost Proposal – Task Order 813FP
- Geophysical Survey Bids



	Estimated Waste Disposal Area		Parcel
	Site Parcel Boundaries		Waste Disposal Area Radius
	Structure		4 Foot LIDAR Contour Elevation Interval

SHEET TITLE:

Figure 1
Site Vicinity Map

Reynold's School Road
Canton, Haywood County North Carolina
ID# NONCD000813

Feet
0 25 50 100 150

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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DATE: March 10, 2016

PROJECT NO.: BN12.614

SCALE: As Shown

DRAWN BY: FN

CHECKED BY: CW

ESP Associates, P.A.
P.O. Box 7030
Charlotte NC, 28241
www.espassociates.com
Phone: 803-802-2440

Figure 2
 Task Order 813FP
 First Phase - Proposed Field Schedule
 Reynold's School Road - ID # NONCD0000813

Field Schedule	Subtask	ESP On-site Staff		Others on Site
		Staff Level	Technician Level	
Day 1	B - Documentation of off-site receptors along with on-site features.	1	1	
Day 2	B - Complete on-site and off-site receptor documentation. Conduct and complete geophysical study and clear lanes through brush using hand tools.	1	1	Geophysicist

Note: Due to the thick underbrush and densely wooded areas in some portions of the site, it will be necessary to clear some of the geophysical study lines to provide the geophysicist a path to walk.