

March 11, 2016

Mr. David P. Kwiatkowski
North Carolina Department of Environmental Quality
Division of Waste Management,
Inactive Hazardous Sites Branch - Superfund Section
Pre-Regulatory Landfill Unit
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

RE: Work Plan and Cost Proposal for Task Orders 730DP-5 and 6
Elon College LDFL – Amick Rd.
Elon, Alamance County, North Carolina
ID No. NONCD0000730
State Contract No. N13003S

Dear Mr. Kwiatkowski:

ATC Associates of North Carolina, P.C. (ATC) is submitting this work plan and cost proposal in response to the Pre-Regulatory Landfill Unit's (Unit) February 15, 2016 request referencing *Task Orders 730DP-5 and 6*. The requested scope of work includes delineation of wetlands and floodways; survey and preparation of a plat showing site features; collection of soil/waste samples for hexavalent chromium, leachability, and asbestos analysis; and determination of approximate waste volumes based on this assessment and previous remedial investigations. Section 1.0 of this submittal describes general procedures to be followed during field activities, Section 2.0 contains a detailed description of the proposed scope of work by task, Section 3.0 details the proposed schedule and staffing, and Section 4.0 provides estimated costs.

1.0 GENERAL PROCEDURES

Sampling procedures for field activities detailed in this work plan will be in accordance with ATC's approved Standard Operating Procedures (SOPs) and Quality Assurance (QA) Manual dated April 17, 2013 and the Unit's most recent Guidelines for Addressing Pre-Regulatory Landfills and Dumps. In addition, all employees, including subcontractor personnel, engaged in intrusive field activities will be trained in accordance with Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. The following general procedures will be followed for all field activities detailed in this work plan:

- Before and after photographs will be taken of any areas that are disturbed as part of the scope of work. Photographs of any damage will be provided to the Unit within 48 hours.
- Survey locations will be recorded with a Global Positioning System (GPS) unit in latitude and longitude by decimal degrees to the seventh order using the North American Datum of

1983 (NAD83) format. Coordinates will also be reported in latitude and longitude using WGS 84 format.

- Updates will be provided to the Unit on a daily basis during field activities via email and/or telephone.
- For quality assurance/quality control related to waste sampling and analysis, one trip blank will be included in each sample shipment for analysis of volatile organic compounds (VOCs), one equipment rinsate blank will be collected per week and analyzed for all parameters, and one duplicate sample will be collected per media per day and analyzed for all parameters. Note the rinsate sample will be collected from the hand auger during waste sampling.
- A completeness check of laboratory analytical reports will be performed. If issues are identified, ATC will work with the laboratory to attempt to resolve issues. Once issues are resolved, ATC will provide documentation of the completeness check with a statement that the data is usable.
- Field notes, sample sheets, and if applicable, photographs, will be provided to the Unit upon completion of field activities. Tables and figures will then be provided to the Unit and billed under the appropriate sub-tasks for *Task Order 730DP-5*. Upon approval by the Unit, the final report will be submitted and billed under *Task Order 730DP-6*.

2.0 SCOPE OF WORK

Task Order 730DP-5 – Work Plan and Field Services

Subtask A – Work Plan and Estimate Preparation

Under this subtask, ATC will prepare a work plan and cost proposal for the requested scope of work as noted in *Task Orders 730DP-5* and *730DP-6*. This submittal is intended to fulfill this task. Refer to subsequent sections of this submittal for details regarding the proposed scope of work.

Subtask B – Wetlands and Floodway Determination

Under this subtask, ATC will determine the locations (if present) of wetlands and floodways in the vicinity of the waste disposal area. Prior to mobilization, ATC will conduct a file review of available published and internet resources with regards to the presence of previously designated wetlands and floodways. The file review will include United States Geological Survey records, the U.S. Fish & Wildlife Service National Wetlands Inventory, and the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs). Following the initial file review, ATC will conduct a site visit to evaluate the site and to determine the presence and, if applicable, the approximate location of the wetlands. If evidence of wetlands are substantiated, they will be included in the topographic and boundary surveys described in *Subtask C*. In addition, the results of the floodway determination from the FEMA FIRMs will also be included in the surveys.

Subtask C – Topographic and Boundary Survey

Under this subtask, ATC will contract with a NC Registered Land Surveyor to conduct a topographic and boundary survey for the two site parcels the waste boundary is located on. The survey will include site boundaries (waste disposal area and areas of contamination as delineated

under *Task Order 730DP-3*), property lines within the site boundaries, unique site features, floodways and wetlands (if identified under Subtask B scope of work), and on-site structures. In addition, the survey will include applicable topographic and planimetric site features and will be tied to the North Carolina State Plane Coordinate System (NAD83) and vertical datum (NAVD88) using 1-foot contour intervals. The plat will be prepared in accordance with the Unit's Instructions for Preparing a Notice of an Inactive Hazardous Substance or Waste Disposal Site for Recordation.

Subtask D – Hexavalent Chromium Cover Soil and Waste Sampling

This subtask includes soil boring advancement and soil sampling from previously sampled borings SB-2 (0.5' and 1.5' below ground surface [bgs]), SB-3 (0, 5', and 7' bgs), SB-4 (0.5', 1.5', 7', and 12' bgs), SB-5 (0.5' and 1.5' bgs), SB-6 (0, 5', and 8' bgs), and SB-14 (0.5' and 1.5' bgs). Where sampling at depths greater than 5 feet, borings will initially be advanced and samples will be collected using a hand auger in order to avoid potential unmarked utility lines. Below a depth of 5 feet bgs, direct-push drilling techniques will be utilized to continuously log samples. At depths where samples are to be submitted for laboratory analysis, a Macrocore® with Teflon® liner will be collected. Per instructions from Unit personnel during ATC's SOP and QA Manual preparation, a PID will be used to screen the air zone directly overlying the sample core. Samples will then be collected from the desired interval and analyzed for total chromium by SW-846 Method 6010 and hexavalent chromium by Method 7196A for soil and Method 218.6 for water. A copy of Appendix B of the Unit Guidelines (November 2015) has been provided to the laboratories as a reference for the required analytical parameters. ATC proposes to collect one duplicate sample per day (estimated one day of sampling) and one equipment rinsate blank sample per week for this media. Therefore, costs for a total of 18 samples are included in this work plan.

Subtask E – Composite Waste Sampling – TCLP Analysis

This subtask includes soil boring advancement and soil sampling from previously sampled borings SB-2 through SB-6. Where sampling at depths greater than 5 feet, borings will initially be advanced and samples will be collected using a hand auger in order to avoid potential unmarked utility lines. Below a depth of 5 feet bgs, direct-push drilling techniques will be utilized to continuously log samples. At depths where samples are to be submitted for laboratory analysis, a Macrocore® with Teflon® liner will be collected. Note drilling costs are covered under sampling conducted for *Subtask D*. At each boring location, one composite sample will be created from representative soil samples collected at depths from the top of the waste through the bottom of waste. One additional soil sample will also be collected from native soil below the waste in each boring. Following collection, samples will be analyzed by toxicity characteristic leaching procedure (TCLP) for VOCs by SW-846 Method 8260, semivolatile organic compounds (SVOCs) by SW-846 Method 8270, inorganic hazardous substances by SW-846 Method 6020 (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc), mercury by Method 7470, and iron by SW-846 Method 6020. Samples will also be analyzed by synthetic precipitation leaching procedure (SPLP) for 1,4-dioxane by Method 8260 SIM. A copy of Appendix B of the Unit Guidelines (November 2015) has been provided to the laboratories as a reference for the required analytical parameters. ATC proposes to collect one duplicate sample per day (estimated one day of sampling). Therefore, costs for a total of 11 samples are included in this work plan.

Subtask F – Asbestos Sampling

Test pits will be excavated at five locations (Test Pit 1 through Test Pit 5) in the waste disposal area. Waste has been encountered in the disposal area at depths ranging from 2 inches to 17 feet bgs. Therefore, test pit sampling activities are expected to include the use of a track mounted excavator with a reach of up to 19 feet. A moderate degree of site clearing is anticipated to provide access to the planned excavation area. At each test pit, the nature of the waste will be characterized and applicable depths and dimensions will be recorded. In addition, samples will be collected at each test pit from the top and bottom portions of the waste and at 2-foot intervals from within the waste (until natural soils are encountered) for analysis of asbestos. If suspected-asbestos containing materials are observed outside of the 2-foot intervals, samples will also be collected from those materials.

In addition to the test pit asbestos sampling, ATC will conduct a surface waste survey across the site. During the survey, ATC will collect samples representative of suspected asbestos containing materials for laboratory analysis. ATC will also provide a volume estimate of suspected asbestos containing materials in the surface waste. See *Subtask G* for further details regarding the volume estimate.

Samples will be initially submitted under a 24-hour turnaround for asbestos laboratory analysis using the standard polarized light microscopy (PLM) Bulk Building Materials by EPA Method 600/R-93116. Based on review of the analytical results for the initial analyses, samples may also be submitted for asbestos laboratory analysis using the PLM analytical technique CARB 435 Level A. If the CARB 435 Level A analysis is deemed warranted, ATC will contact the Unit for approval prior to authorizing the laboratory to run the additional analysis.

Asbestos sampling will be performed under the direction of a North Carolina accredited asbestos inspector. ATC's costs assume that up to 12 samples per test pit (six CARB 435 Level A samples and six Bulk Building Materials samples) and up to 10 samples of surface waste (five CARB 435 Level A samples and five Bulk Building Materials samples) will be submitted for analysis of asbestos. For quality assurance/quality control, one duplicate sample will also be collected for each day of sampling.

Subtask G – Estimate of Waste Volumes

This subtask includes labor for estimation of the volume of subsurface waste and surface waste at the site. The estimation of surface waste will be derived from a visual reconnaissance of the waste throughout the site. The estimation of subsurface waste will be derived from a review of recent and historical subsurface investigation results. ATC will also provide an estimated volume of suspected asbestos containing materials identified within the surface waste.

Subtask H – Investigative Derived Waste

Investigative derived waste (IDW) generated during the investigation will include soil/waste cuttings from the waste characterization borings, soil/waste excavated from the test pits, and decontamination waste water. During borehole abandonment and test pit backfilling, ATC will attempt to emplace soil/waste back into the boreholes and test pits. For soil that does not fit back into the boreholes or test pits and for decontamination waste water, if the IDW shows no field indications of contamination it will be spread on the unpaved ground surface around the boring

locations. If IDW shows field indications of contamination, it will be containerized. However, all landfill debris that does not fit back into the boreholes or test pits will be containerized.

If containerization is required per the criteria listed above, IDW will be containerized in 55-gallon steel drums (estimate of one). IDW will be temporarily stored on wooden pallets inside of a secured area on-site. The secured area will consist of a 12 feet wide by 6 feet tall chain link fence compound that will be secured with a lock. Note that ATC’s costs assume that the waste disposal facility will accept the landfill debris and/or soil drums as non-hazardous based on historical analytical data. If the disposal facility requires additional sampling for waste characterization, ATC will request a cost adjustment.

Subtask I – Project Management, Coordination, and Support

This subtask includes labor for scheduling personnel, correspondence with the laboratories and subcontractors, coordination with field personnel and the Unit, evaluation of data collected in the field, development of site-specific sampling forms and logs, pre-loading the GPS unit, and general laboratory completeness checks.

Task Order 730DP-6 – Compilation of the Remedial Investigation – Wetland Determination and Media Sampling

This subtask is for compilation of a letter report once the field work is completed for *Task Order 730DP-5*. The report will include one or more CAD drawn site maps showing the locations of the waste characterization samples and test pits with background topographic contours in light grey. Additional maps will show media exceedences (if detected). In addition, the report will include tables summarizing the analytical data. Lastly, field notes including calibration logs, boring construction logs, field readings, and procedures will also be included as appendices.

3.0 PROPOSED STAFFING AND SCHEDULE

The following tables detail our proposed staffing and schedule for the project.

STAFFING	
Level	Proposed Staff
Senior Project Manager	Genna Olson, P.G.
Project Manager	Justin Ballard, P.G.
Staff Scientists	Robert Broda, Jeff Corson (Asbestos), Robert Harrell, and/or Andrew McMillan

Note: Technician, CAD, and administrative level staff not specified.

Task 730DP-5 – Proposed Field Services Schedule & Level of Effort					
Schedule	Subtask	ATC On-Site Staff			Others On-Site
		Project /PM	Staff	Tech	
Week 1, Day 1	B,C,D,E – Wetlands and Floodway Determination, Topographic and Boundary Survey, Soil/Waste Sampling	1	2	1	Driller, Surveyor
Week 1, Day2	C,F,G – Topographic and Boundary Survey, Asbestos Sampling, Estimate of Waste Volumes		2		Excavation Contractor, Surveyor
Week 1, Day 3	C,F – Topographic and Boundary Survey, Asbestos Sampling		1		Excavation Contractor, Surveyor
Week 1, Days 4-5, Week 2, Days 1-5, and Week 3, Days 1-5	C – Topographic and Boundary Survey			1	Surveyor
Week X, Day 1	E – Investigative Derived Waste		1		Waste Disposal Contractor

The field work will begin within five weeks following approval of this work plan by the Unit. Laboratory analyses will require an additional two weeks. ATC requests four weeks to review lab data, request changes if needed, and compile tables and figures. Per this schedule, a package which includes field notes, boring logs, sample sheets, laboratory reports, tables, and figures will be provided to the Unit within 11 weeks of authorization to proceed. The final report will be submitted within two weeks following Unit approval of the initial submittal.

4.0 COST ESTIMATE

A proposal spreadsheet showing the breakdown of estimated costs for *Task Orders 730DP-5 and 6* is included in ***Attachment 1***.

If you have questions or require additional information, please do not hesitate to contact Justin Ballard or Genna Olson at (919) 871-0999.

Sincerely,
ATC Associates of North Carolina, P.C.



Justin C. Ballard, P.G.
Project Manager



Genna K. Olson, P.G.
Program Manager

Attachment 1 – Cost Breakdown
Attachment 2 – Unit Figure
Attachment 3 – Subcontractor Quotes

ATTACHMENT 2

Unit Figure

1846500

1847000

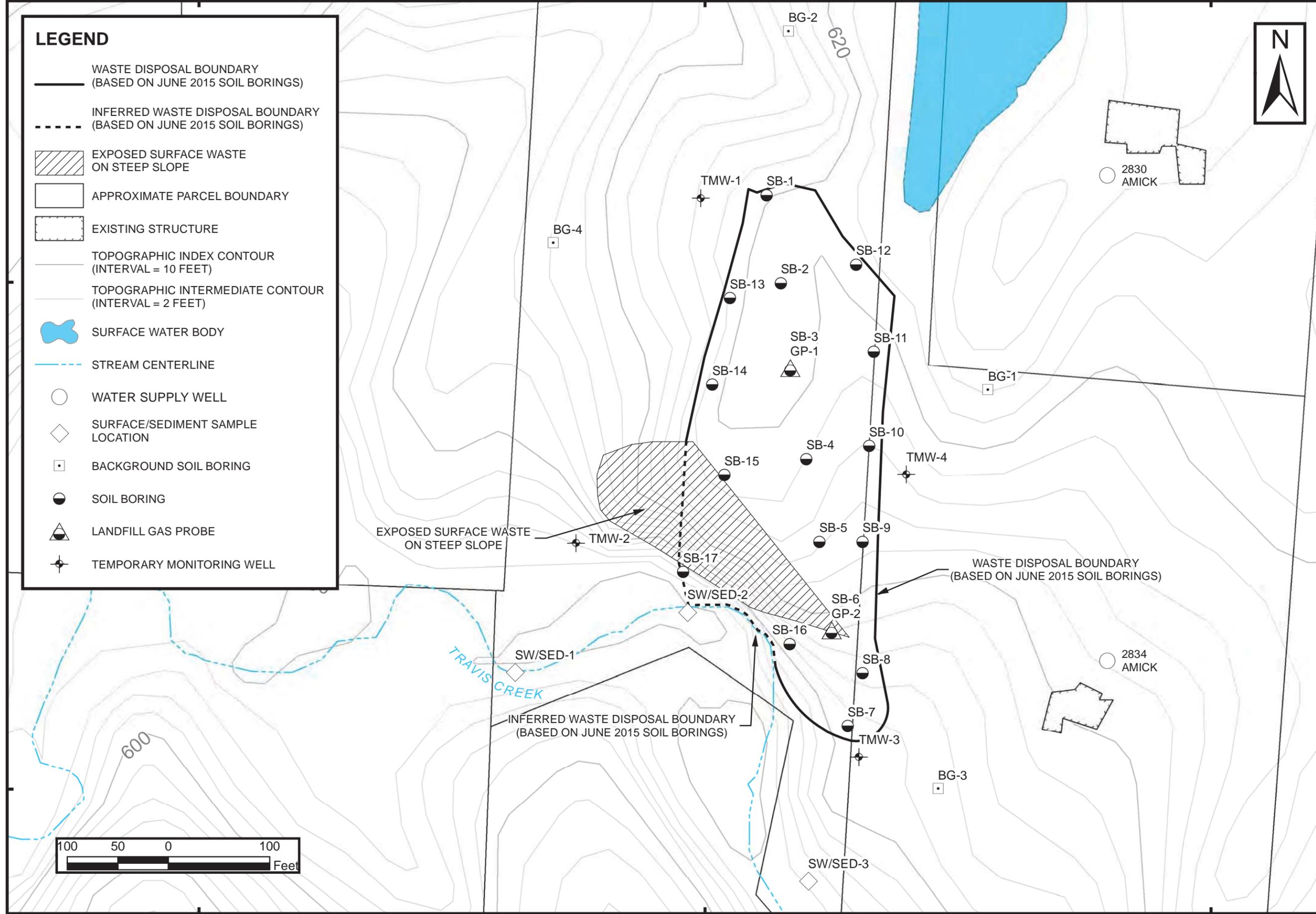
1847500

LEGEND

-  WASTE DISPOSAL BOUNDARY (BASED ON JUNE 2015 SOIL BORINGS)
-  INFERRED WASTE DISPOSAL BOUNDARY (BASED ON JUNE 2015 SOIL BORINGS)
-  EXPOSED SURFACE WASTE ON STEEP SLOPE
-  APPROXIMATE PARCEL BOUNDARY
-  EXISTING STRUCTURE
-  TOPOGRAPHIC INDEX CONTOUR (INTERVAL = 10 FEET)
-  TOPOGRAPHIC INTERMEDIATE CONTOUR (INTERVAL = 2 FEET)
-  SURFACE WATER BODY
-  STREAM CENTERLINE
-  WATER SUPPLY WELL
-  SURFACE/SEDIMENT SAMPLE LOCATION
-  BACKGROUND SOIL BORING
-  SOIL BORING
-  LANDFILL GAS PROBE
-  TEMPORARY MONITORING WELL

865000

865000



TITLE: FIGURE 2 - SAMPLE LOCATION MAP
ELON COLLEGE LDFL - AMICK RD
NONCD0000730
ELON, ALAMANCE COUNTY, NORTH CAROLINA

NOTES:
 Features shown are not an authoritative location, nor are they presented to a stated accuracy.

DATA SOURCES:
 Alamance County GIS Department

COORDINATE SYSTEM:
 NAD 1983 North Carolina State Plane FIPS 3200,
 US Survey Feet



VATC
 ATC Associates of North Carolina, P.C.
 Raleigh, North Carolina, 27604
 (919) 871-0999

MAP FILE: Fig2SampleLocationMap.mxd
PREP: SMN
REV: JB
SCALE: 1" = 90'
DATE: 12/23/2015
PROJECT NO.: PRLU0730G