



PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MICHAEL SCOTT
Director

May 12, 2016

Mr. Jerry Paul
S&ME, Inc.
32012 Spring Forest Road
Raleigh, NC 27616

Re: Request for *Description* – Task Order 744DP-9A, 9B, 9C, 10, 11
City of Winston-Salem
Winston-Salem, Forsyth County
ID # NONCD0000744

Dear Mr. Paul:

Submit a task work plan and cost estimate to perform remedial investigation-contaminant delineation phase activities at the above referenced site. Conduct these activities in accordance with State Contract No. N10003S.

Investigation Goals: Use field instruments to measure for the presence of landfill gas at the 14 probes monthly for 3 months, conduct a soil cover investigation, collect samples from 5 landfill gas probes for laboratory analysis, install and sample 1 permanent soil gas probe.

General Activities

- Prepare a work plan in accordance with S&ME's approved standard operating procedures dated July 2010 and include a schedule of daily activities.
- Submit an itemized cost estimate that identifies personnel and materials involved.
- Reference the most recent Guidelines for Addressing Pre-Regulatory Landfills and Dumps for details regarding procedures.
- Ensure personnel in the field are qualified to identify contaminated material and landfill waste and comply with OSHA-required health and safety training. Before task activities begin, photograph areas or objects that may be disturbed. If needed, photograph affected areas and objects, restoration efforts, and noteworthy items encountered during task activities. Submit these photographs upon completion of the activities, and a review will determine if any need to be included in the report.
- For any invasive activities, provide a plan to properly manage investigation derived waste (IDW). If sampling results indicate non-hazardous IDW, spread within the waste disposal area. If sampling results indicate hazardous IDW, analyze containerized waste as required by waste hauler and include details of sampling and disposal of drums in the proposal. Remove all drummed waste and associated fencing from site within 90 days after field activities are concluded.

- For any field work, minimize the clearing of vegetative material to enable access to proposed sampling points. Using hand tools for clearing is the preferred method, otherwise an explanation must be provided for use of heavy equipment.
- Submit soil samples to a North Carolina-certified laboratory and analyze for the following parameters by the most current U.S. EPA Contract Laboratory Program Target Compound List: volatile organic compounds by SW-846 method 8260, 1,4-dioxane by Method 8260SIM, semi-volatile organic compounds by SW-846 method 8270, 14 metals by SW-846 method 6020, mercury by method 7471, ammonia by SM 4500, and nitrate and sulfate by EPA Method 300. Please note that any alternate method should be the U.S. EPA Method having the lowest detection limit and that at least achieves the detections equivalent to the 15A NCAC 2L standards or where these are not available, then federal maximum contaminant limits (MCLs). Soil analysis methods must meet the IHSB Preliminary Soil Remediation Goals Table.

Scope of Work for Task Orders 744DP-9A, 9B, and 9C:

Monthly Landfill Gas Probe Screening

- Conduct three monthly field screening events of the landfill gas probes. Screen the landfill gas probes (GP-1 to GP-9, GP-11 to GP-15) using field instruments for VOCs, methane, oxygen, carbon dioxide, and hydrogen sulfide.
- Compare landfill gas probe screening results with the IHSB Non-Residential Vapor Intrusion Sub-Slab and Exterior Soil Gas Screening levels.
- Do not abandon the gas probes following screening.
- Submit a monthly letter report documenting any variances, with the results of the field screening tabulated and mapped.

Scope of Work for Task Order 744DP-10:

Soil Cover Investigation

- Advance (hand auger or direct push) soil borings to determine thickness and composition of the existing cover soils. Advance borings in a 100-foot grid on unpaved surfaces and in a 200-foot grid on paved surfaces. Install the borings to a depth of 3 feet or waste if encountered first.
- Where cover is greater than or equal to 6 inches, collect a sample at 6 inches below ground surface (bgs). Where cover is greater than or equal to 2 feet, collect one sample at 6 inches and one sample at 18 inches bgs.

Landfill Gas Probe Sampling

- Collect gas samples from landfill gas probes GP-1, GP-2, GP-5, GP-7, and GP-15 for laboratory analysis.

- Landfill gas probes GP-1, GP-2, GP-5, GP-7, and GP-15 will be analyzed for VOC's by Method TO-15 using individually certified Summa canisters.
- Landfill gas probes GP-1, GP-2, GP-5, GP-7, and GP-15 will be analyzed for Mercury by NIOSH 6009.
- Landfill gas probes GP-1, GP-2, GP-5, GP-7, and GP-15 will be analyzed for Hydrogen Sulfide by US EPA 918 Method 15.
- Collect landfill gas probe samples for laboratory analysis prior to collection of landfill gas probe field screening measurements.
- Following collection of laboratory samples, collect landfill gas probe field screening measurements for methane, hydrogen sulfide, oxygen and carbon dioxide.
- Compare landfill gas probe screening results with the IHSB Residential Vapor Intrusion Screening levels.

Exterior Building Vapor Intrusion Soil Gas Probe Installation and Sampling

- Install one permanent exterior soil gas probe (GP-16) located as presented in the attached map to investigate potential for vapor intrusion within the associated structure. The gas probe should be located outside of the waste on the parcel at 1806 Funtime Blvd (PIN 6824-56-9123). Refer to the most recent version of the Inactive Hazardous Sites Program *Guidelines for Addressing Pre-Regulatory Landfills and Dumps* (Guidelines) and *Supplemental Guidelines for the Evaluation of Structural Vapor Intrusion Potential for Site Assessment and Remedial Actions Under the Inactive Hazardous Sites Branch* for details on probe construction, sampling requirements and quality assurance/quality control (QA/QC) protocol.
- Collect a soil gas sample for analysis of VOC's by Method TO-15 using an individually certified Summa canister. The sampler should direct the laboratory to test only for contaminants of concern detected unless only a limited site assessment has been conducted. TO-15 SIM should be used if the TO-15 detection limits are not lower than the IHSB Indoor Air Vapor Screening Levels.
- Collect a soil gas sample for analysis of Hydrogen Sulfide by US EPA 918 Method 15.
- Collect soil gas probe samples for laboratory analysis prior to collection of soil gas probe field screening measurements that include methane, oxygen, and carbon dioxide.
- Compare soil gas probe sampling results with the IHSB Sub-Slab Gas and Exterior Soil Gas Vapor Intrusion Screening levels.

Scope of Work for Task Order 744DP-11:

Report Compilation

Compilation of the report will be approved as a separate task order. The Report will be titled "Remedial Investigation – Soil Cover and Vapor Intrusion Assessment".

The report is to contain the following items:

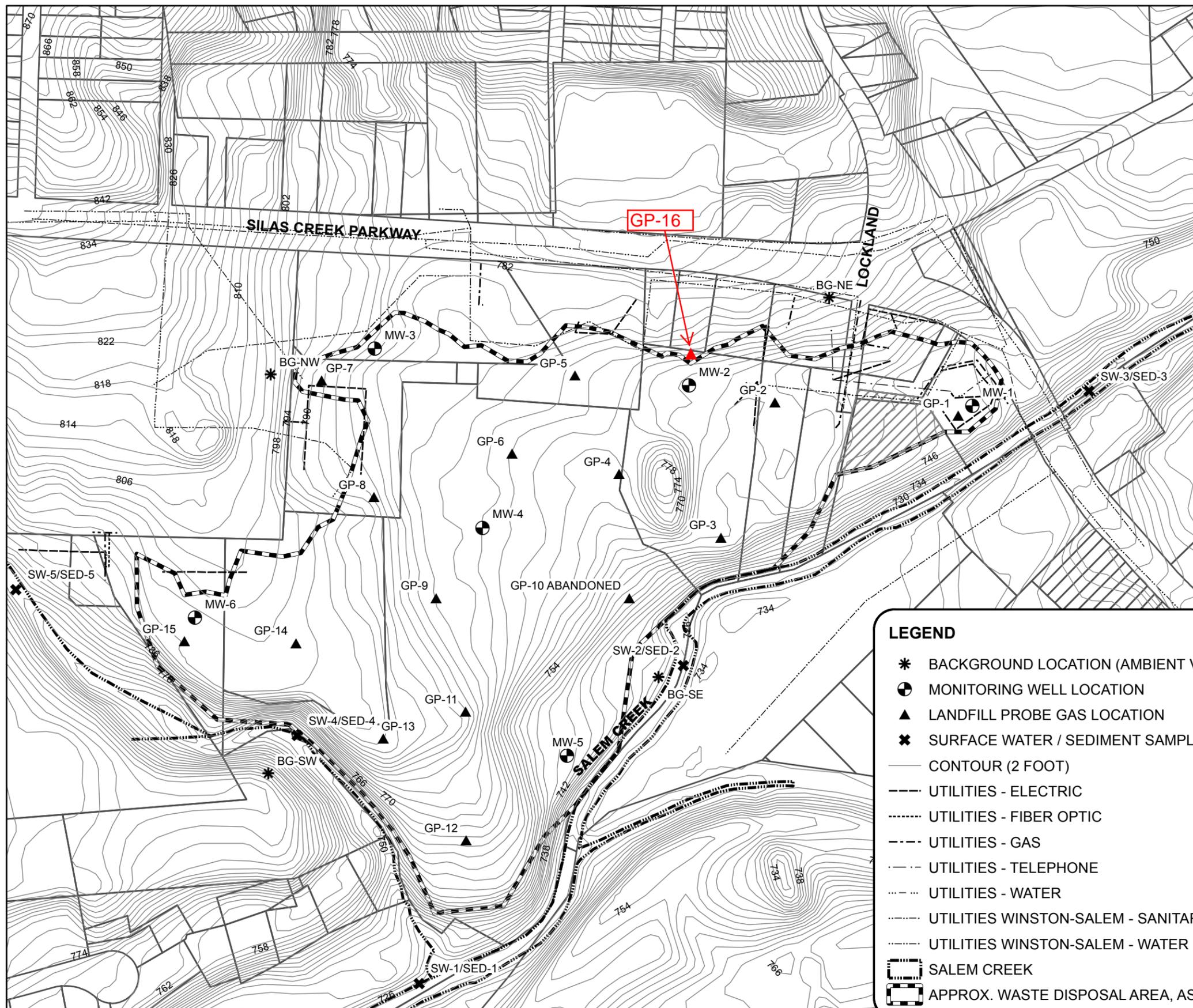
- Text, tables, and figures to adequately summarize task activities
- A section concerning any variations from the work plan or your SOPs.

Provide the work plan and cost estimate by May 25. A task authorization to begin work will be issued based on the approved proposal. Do not proceed with tasks prior to receiving this authorization. If you have any questions or concerns, contact me at (919)707-8340.

Sincerely,

A handwritten signature in black ink that reads "Matthew Aufman". The signature is written in a cursive, flowing style.

Matthew Aufman, Engineer
Division of Waste Management – NCDEQ



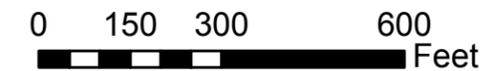
PARCEL SOURCE:
CITY OF WINSTON SALEM GIS, DATED JAN. 2011

ROAD NAMES:
CITY OF WINSTON SALEM GIS, DATED MARCH 2011

UTILITY DATA:
WATER & SANITARY FEATURES, WINSTON-SALEM
ELECTRIC, TELEPHONE, GAS & FIBER OPTIC,
BATEMAN CIVIL SURVEY

TOPO SOURCE:
NCDOT LIDAR, DATED 2007

ONE PARCEL (6824-66-4053) 1794 SILAS CREEK PKW
WAS EXCLUDED FROM THE GEOPHYSICAL SURVEY
AND WASTE DELINEATION BORINGS DUE TO LACK
OF PERMISSION FROM THE PROPERTY OWNER.



LEGEND

- * BACKGROUND LOCATION (AMBIENT VAPOR SCREENING)
- ⊕ MONITORING WELL LOCATION
- ▲ LANDFILL PROBE GAS LOCATION
- ✕ SURFACE WATER / SEDIMENT SAMPLE LOCATION
- CONTOUR (2 FOOT)
- - - UTILITIES - ELECTRIC
- ⋯ UTILITIES - FIBER OPTIC
- · - · UTILITIES - GAS
- · - · UTILITIES - TELEPHONE
- · - · UTILITIES - WATER
- · - · UTILITIES WINSTON-SALEM - SANITARY
- · - · UTILITIES WINSTON-SALEM - WATER
- ▭ SALEM CREEK
- ▭ APPROX. WASTE DISPOSAL AREA, AS DEFINED BY EM SURVEY AND SOIL BORINGS

DATE: MARCH 2016	SCALE: 1" = 300'	
DRAWN BY: BTR	PROJECT NO: 1054-11-1024	
CHECKED BY:	DRAWING NUMBER: B-2573	
	NC ENG. LICENSE #F-0176 3201 SPRING FOREST RD., RALEIGH, NC 27616	
SITE MAP		
CITY OF WINSTON SALEM - TASK ORDER 744DP-8 WINSTON SALEM, NORTH CAROLINA		
FIGURE NO.	1	