

CITY OF HIGH POINT

AGENDA ITEM



Title: Kersey Valley Landfill Area Permit to Construct Design and Application

From: Terry Houk – Public Services Director
Robby Stone – Asst. Director Public Services

Meeting Date: February 17, 2020

Public Hearing: N/A

Advertising Date: N/A
Advertised By: On-Call

Attachments: Attachment A – Scope of Services

PURPOSE:

The City budgets annually for future expansion and upgrades at the Kersey Valley Landfill. The proposed life expectancy of the landfill is anticipated to extend to 2035. In order to achieve this longevity, Area 3 (the area along Kersey Valley Road) will have to be developed which will merge the existing two landfill areas. The Permit to Construct will consist of engineering and environmental services that will allow construction and expansion of the landfill as required by the NC Department of Environmental Quality Division of Waste Management (DWM).

BACKGROUND:

The professional engineering services to be provided for this project involve work associated with Facility plan, Engineering plan, Construction Quality Assurance plan, Operation plan, Closure and Post-Closure plan, Design Hydrogeologic Investigation and report, Water Quality and LFG Monitoring plan updates, review and submittal of permit application, and response to regulatory review comments. These tasks are anticipated to take five months to complete.

BUDGET IMPACT:

Funds for the construction administration are in the Kersey Valley Landfill Solid Waste Funds.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for the Council to award the professional engineering services to Smith Gardner, Inc. in the amount of \$122,000.00.

February 7, 2020

Mr. Robby Stone, P.E.
Assistant Director
City of High Point - Department of Public Services
211 South Hamilton Street
High Point, NC 27260

**RE: City of High Point - Solid Waste Management
Engineering & Environmental Services Proposal
Area 3 Permit to Construct Application**

Dear Robby:

Smith Gardner, Inc. (S+G) is pleased to provide this proposal for engineering and environmental services to be performed by S+G related to the Permit to Construct Application for the future Area 3 (Phases 6-10) municipal solid waste (MSW) landfill unit.

The following presents our proposed scope (by task) of services, schedule, and budget for this work.

SCOPE OF SERVICES

S+G will prepare and submit a Permit to Construct Application for the Area 3 MSW landfill unit (approx. 19.2 acres). The scope of work is broken into tasks as follows:

- 1.0 Facility Plan
- 2.0 Engineering Plan
- 3.0 Construction Quality Assurance (CQA) Plan
- 4.0 Operation Plan
- 5.0 Closure and Post-Closure Plan
- 6.0 Design Hydrogeologic Investigation and Report
- 7.0 Water Quality and LFG Monitoring Plan Updates
- 8.0 Review and Submittal of Permit Application
- 9.0 Response to Regulatory Review Comments

Our proposed Scope of Services for this work is provided as **Attachment A**. Each task includes a description of the task objective, S+G activities, task deliverables, key understandings, planned meetings, and information and services provided by others.

SCHEDULE

S+G is prepared to begin work immediately upon the City's authorization. S+G estimates that the Permit to Construct Application will take approximately 4 to 5 months to complete and be ready for submittal.

Mr. Robby Stone, P.E.

February 7, 2020

Page 2 of 2

BUDGET

S+G proposes to undertake the above scope on a time and materials basis for the not to exceed budget amount as shown in the table below. Please also refer to our current fee schedule which is provided as **Attachment B**. Note that the proposed budgets do not include any permitting fees which may be required. S+G will keep the City informed of our budget status and will not exceed the proposed budget without prior approval.

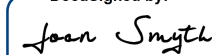
Task	Budget
Area 3 Permit to Construct Application	
1.0-5.0 Facility & Engineering, CQA, Operation, & Closure/P-Closure Plans	\$75,000
6.0 Design Hydrogeologic Investigation and Report	\$30,000
7.0 Water Quality & LFG Monitoring Plan Updates	\$4,000
8.0 Review and Submittal (Includes Meetings)	\$5,500
9.0 Response to Regulatory Comments	\$7,500
<i>Total Budget:</i>	<i>\$122,000</i>

Smith Gardner, Inc. is pleased to be of continued service to the City of High Point. If you should have any questions, or require additional information, please contact us at your earliest convenience.

Sincerely,

SMITH GARDNER, INC.

DocuSigned by:



B9779EBA711F488...

Joan A. Smyth, P.G.

Vice President Senior Hydrogeologist

joan@smithgardnerinc.com

DocuSigned by:



5B6B31996A674D7...

Pieter K. Scheer, P.E.

Vice President, Senior Engineer

pieter@smithgardnerinc.com

Attachments: A. Scope of Services
B. S+G Fee Schedule

Attachment A

Scope of Services

This page intentionally left blank.

A. PTC Application - Scope of Services

This Scope of Services outlines S+G's approach in providing the proposed engineering, geological, and related services required to complete the Permit to Construct Application for the Area 3 MSW landfill unit for submittal to and approval of regulatory agencies. This Scope of Services is divided into tasks as follows. Rule numbers shown below refer to applicable State Solid Waste Rules enforced by the North Carolina Department of Environmental Quality, Division of Waste Management (NCDWM), Solid Waste Section.

Area 3 Permit to Construct Application (Rule .1617)

- 1.0 Facility Plan (Rule .1619)
- 2.0 Engineering Plan (Rule .1620)
- 3.0 Construction Quality Assurance (CQA) Plan (Rule .1621)
- 4.0 Operation Plan (Rule .1625)
- 5.0 Closure and Post-Closure Plan (Rule .1629)
- 6.0 Design Hydrogeologic Report Updates (Rule .1623)
- 7.0 Monitoring Plan Updates (.1626, .1630, .1631, .1632, and .1633)
- 8.0 Review and Submittal of Permit Applications (Permit to Construct & E&SC Plan)
- 9.0 Response to Regulatory Review Comments (NCDWM & NCDEMLR)

1.0 Facility Plan (Rule .1619)

Objective: To prepare the Facility Plan for the NCDWM review and approval.

S+G Activities: The Facility Plan will specify the comprehensive landfill facility development for the life of the facility. S+G will prepare the Facility Plan encompassing the following major components:

- Facility Drawings, depicting
 - Landfill unit boundaries
 - Phases of construction
 - Estimated base grades
 - Landfill contours at transitional and final capacities
 - Liquid storage facilities
 - Limits of construction activities
 - Buffer zones
 - Permanent features
 - Roads and other design features
- Facility Report, discussing
 - Calculated design capacities
 - Specified disposal rates
 - Types of waste specified for disposal
 - Specific service area
 - Equipment requirements
 - Description of environmental control systems
 - Leachate & stormwater management.

Task Deliverables: Completed Facility Plan for submittal to the NCDWM.

A. PTC Application - Scope of Services

Key

Understandings: S+G expects to compile much of the Facility Plan from existing information, and items such as landfill operation and analysis of waste stream will be coordinated closely with City staff. The Facility and Engineering Plans may be combined into one document.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

Information and Services Provided

by Others: Input from City staff regarding operations information.

2.0 Engineering Plan (Rule .1620)

Objective: To prepare an Engineering Plan for the Area 3 MSW landfill unit.

S+G Activities: The detailed design of the landfill is performed during this task. The Engineering Plan includes a Report and Drawings which will clearly illustrate to the NCDWM the intent of the design. Work in this task will closely follow Rule .1624, which relates the minimum construction requirements for new landfill facilities. A list of the major work tasks includes:

- Engineering Drawings
 - Existing conditions
 - Grading plans
 - Base liner system
 - Leachate collection system
 - Storm water segregation system
 - Final cover system
 - Erosion control plans
 - Demonstration of vertical separation
 - Additional engineering features and details
- Engineering Report
 - Foundation design
 - Material compatibility and stability
 - Base liner system design
 - Final cover system
 - Leachate storage and treatment facilities
 - Analytical methods and assumptions
 - Technical references
 - Location restrictions
 - Materials of construction and construction practices
 - Closure requirements.

Related to the Engineering Plan, the following documents will be prepared:

- Erosion and Sedimentation Control Plan; and
- Slope Stability, Settlement, and Bearing Capacity Evaluation.

A. PTC Application - Scope of Services

Task Deliverables: Completed Engineering Plan for submittal to the NCDWM.

Key

Understandings: The Engineering Plan will be prepared so as to minimize the additional effort required to produce construction level documents. The Facility and Engineering Plans may be combined into one document.

The Erosion and Sedimentation Control Plan will update the existing approved plan(s) for the facility.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

**Information and
Services Provided
by Others:**

Input from City staff.

3.0 Construction Quality Assurance (CQA) Plan (Rule .1621)

Objective: To prepare a CQA Plan for the NCDWM approval and to serve as the guidance document to insure quality construction of the landfill.

S+G Activities: The CQA Plan will follow the outline provided in Rule .1621 and the minimum criteria established in Rule .1624. The CQA Plan will be prepared for the construction of the MSWLF unit, liquid storage facility and related environmental control system components. The plan will include the following key elements:

- Responsibilities and authorities of each organization
- Field and laboratory testing methodology
- Inspection activities and procedures
- Sampling frequencies, calibrations, and protocol
- Criteria for acceptance and rejection
- Procedures for test failures
- Documentation and reporting requirements.

Task Deliverables: Completed CQA Plan for submittal to the NCDWM.

Key

Understandings: A complete and well-prepared CQA Plan is the key to successful construction monitoring and quality workmanship.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

**Information and
Services Provided
by Others:**

None.

A. PTC Application - Scope of Services

4.0 Operation Plan (Rule .1625)

Objective: To prepare an Operation Plan for submittal to the NCDWM that clearly depicts the daily operational procedures at the landfill.

S+G Activities: Prepare an Operation Plan for each phase of landfill development. The Plan will include operation drawings and a narrative discussing the drawings and providing a description of the facility operations. The Plan will relate the following information:

- Operation drawings
 - Drawings for landfill development
 - Existing conditions, including limits of existing disposal areas
 - Progression of construction cells for incremental construction
 - Progression of operation, initial waste placement, daily operations, transition contours, and final contours
 - Leachate and stormwater controls for active and inactive waste units
 - Special waste areas within the MSWLF unit
 - Buffer zones, restricted use areas
 - Stockpile and borrow areas
- Operation report, providing a narrative discussion addressing the operational requirements of the landfill (Rule .1626), including:
 - Waste acceptance and disposal requirements
 - Cover material requirements
 - Vector control
 - Explosive gases control
 - Air quality compliance
 - Access and safety requirements
 - Erosion and sedimentation control requirements
 - Drainage control and water protection requirements
 - Liquids restrictions
 - Recordkeeping requirements
 - Spreading and compacting requirements
 - Leachate management plan.

Task Deliverables: Completed Operation Plan for submittal to the NCDWM.

Key Understandings: Close coordination with City staff is anticipated during preparation of the Operation Plan, in order to incorporate into the Plan the preferences of the staff. The Operation Plan will be used as the base document for staff training.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

Information and Services Provided by Others: Input from City staff regarding operational preferences.

A. PTC Application - Scope of Services

5.0 Closure and Post-Closure Plan (Rule .1629)

Objective: To prepare a Closure and Post-Closure Plan for approval by the NCDWM.

S+G Activities: A written Closure Plan will be prepared that describes the steps necessary to close all MSWLF units at any point during the active life of the facility. The following key elements comprise the Closure Plan:

- Description of the final cover system and procedures to be used during installation
- An estimate of largest area of the unit requiring final cover
- An estimate of maximum inventory of wastes on-site over the active life of the facility
- Schedule for completing all closure activities.

A written Post-Closure Plan will be prepared that describes the steps necessary for the 30-year post-closure care of the facility. The following key elements comprise the Post-Closure Plan:

- Description of the monitoring and maintenance activities required and the frequency to be performed
- Name, address and telephone number of the office to contact during the post-closure period
- Description of the recommended planned uses of the property during the post-closure period.

Cost estimates will be prepared for the following as part of the Closure and Post-Closure Plan:

- Closure Construction
- Post-Closure Activities
- Potential Assessment and Corrective Action (PACA).

Task Deliverables: Completed Closure and Post-Closure Plan for submittal to the NCDWM.

Key

Understandings: The cost estimate for potential assessment and corrective action will be based on NCDWM guidance.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

**Information and
Services Provided
by Others:**

None.

A. PTC Application - Scope of Services

6.0 Design Hydrogeologic Report (Rule .1623)

Objective:	To prepare a Design Hydrogeologic Report to assess the geologic and hydrogeologic characteristics of Area 3.
S+G Activities:	<p>Field activities will include field reconnaissance and oversight of the excavation of test pits in select locations to confirm subgrade separation from groundwater and bedrock.</p> <p>The Design Hydrogeologic Report will include the technical information outlined below:</p> <ul style="list-style-type: none"> • Summary of information from the Site Hydrogeologic Report • Groundwater contour map of the estimated long term seasonal high water table including the location of all borings • Three dimensional groundwater flow net or detailed hydrogeologic cross-sections • Discussion of the groundwater flow regime for the area, including groundwater flow paths, horizontal and vertical components of flow, flow direction, horizontal and vertical gradients, flow rates, and groundwater recharge and discharge areas • Certification by a Licensed Geologist that all borings at the site that have not been converted to permanent monitoring wells will be properly abandoned in accordance with the procedures for permanent abandonment of wells, as delineated in 15A NCAC 2C Rule .0113(a)(2) • Certification of the final water quality monitoring plan by a Licensed Geologist that the plan is effective in providing early detection of any release of hazardous constituents to the uppermost aquifer, so as to be protective of public health and the environment.
Task Deliverables:	Completed Design Hydrogeologic Report for submittal to the NCDWM.
Key Understandings:	<p>Prior to performing any field investigations for this task, a Work Plan will be prepared for the NCDWM review and approval to ensure that all required data is obtained.</p> <p>From discussions with the NCDWM, we do not anticipate the need to install additional borings and/or piezometers for this submittal; however, excavation of test pits may be required to confirm that the design meets subgrade separation requirements. We anticipate two days of field time to complete this task. It is assumed that City staff can assist with the excavation of test pits.</p>
Planned Meetings:	Meetings will be incorporated into Task 8.0 below.
Information and Services Provided by Others:	Excavation of test pits by City staff.

A. PTC Application - Scope of Services

7.0 Monitoring Plan Updates (Rules .1626, .1630, .1631, .1632 and .1633)

Objective: To prepare updated water quality and landfill gas (LFG) monitoring plans for the facility.

S+G Activities: Prepare an updated water quality monitoring plan. This plan will include information on the proposed groundwater monitoring system, sampling and analysis requirements, and detection monitoring requirements.

Prepare an updated LFG monitoring plan including information on the proposed LFG monitoring system, monitoring requirements, etc.

Task Deliverables: Completed monitoring plans for submittal to the NCDWM.

Key Understandings: None.

Planned Meetings: Meetings will be incorporated into **Task 8.0** below.

Information and Services Provided by Others: Review of plans by City staff.

1.8 Review and Submittal of Permit Applications (Permit to Construct & E&SC Plan)

Objective: To ensure that the City is kept informed of the permit application preparation progress and that comments from the City are incorporated before submission to regulatory agencies.

To ensure that a complete permit applications are submitted to the NCDWM and the NC Division of Energy, Mineral, and Land Resources (NCDEMLR) in a timely fashion.

S+G Activities: S+G will maintain communication with City staff throughout the preparation of the Permit to Construct Application and will meet with City staff as needed at the 25% and 90% completion stages to review the contents of the Application.

Comments received during formal review progress meetings will be incorporated into the Application.

S+G will deliver the Permit to Construct Application to the NCDWM and the City.

S+G will deliver the Erosion and Sedimentation Control Plan to the NCDEMLR and the City.

Task Deliverables: A draft Permit to Construct Application will be prepared for the City.

The completed Permit to Construct Application will be submitted to the NCDWM for approval.

A. PTC Application - Scope of Services

The completed Erosion and Sedimentation Control Plan will be submitted to the NCDEMLR for approval.

Key

Understandings: The Permit to Construct Application and the Erosion and Sedimentation Control Plan will be submitted to the NCDWM and NCDEMLR, respectively, after the Application has been reviewed by the City and review comments incorporated into the documents.

S+G assumes that all permitting fees will be paid directly by the City unless specifically stated otherwise.

Planned Meetings: Two (2) meetings, one-half day duration, with City staff at the 25% and 90% completion stages for review and input. One (1) meeting, one-half day duration, to review with regulatory review staff if necessary.

Information and Services Provided by Others:

Comments will be provided by City staff during review/progress meetings.

9.0 Response to Regulatory Review Comments (NCDWM & NCDEMLR)

Objective: To respond to the NCDWM's technical comments from their review of the Permit to Construct Application.

To respond to the NCDEMLR's technical comments from their review of the Erosion Control Plan.

S+G Activities: Respond to technical issues raised by the NCDWM and NCDEMLR.

Prepare responses to the regulatory comments and submit revisions to the City for review prior to submitting responses to the NCDWM and NCDEMLR.

Task Deliverables: Pending approval by the City, responses to regulatory comments will be submitted for approval.

Key

Understandings: The City will review and comment on any responses prepared to address regulatory comments prior to submitting responses to the regulatory agency.

Depending on the nature and type of comments from the regulatory agencies, additional budget may be required by S+G for this task.

Planned Meetings: Two (2) meetings, one-half day duration each, to discuss technical issues and/or responses with the City and/or regulatory staff.

Information and Services Provided by Others:

None.

Attachment B

S+G Fee Schedule

This page intentionally left blank.

2019 FEE SCHEDULE

Staff Professional

Hourly Billing Rates*

President , Senior Engineer - Stacey A. Smith, P.E.**	\$210/hour
Vice President , Senior Project Manager - John M. Gardner, P.E.**	\$200/hour
Vice President , Senior Engineer - Pieter K. Scheer, P.E.**	\$185/hour
Vice President , Senior Hydrogeologist - Joan A. Smyth, P.G.**	\$150/hour
Principal , Senior Project Engineer - Gregory G. Mills, P.E.**	\$125/hour
Principal , Senior Civil Designer - Christopher T. Jones**	\$125/hour
Senior Project Manager - W. Michael Brinchek, P.E.**	\$160/hour
Project Manager, Senior Geologist - C. Kevin Anderson, P.G.**	\$150/hour
Senior Electrical Engineer – Herman B. Thio, P.E.	\$150/hour
Senior Scientist - Matthew S. Lamb**	\$125/hour
Project Engineer - John R. Fearington, P.E.**	\$120/hour
Project Engineer - Spencer W. Hollomon, P.E.**	\$110/hour
Civil Designer – Robert L. Maynard	\$100/hour
Management Consultant – D. Scott Bost	\$100/hour
Field Services Manager - Britt P. Ransom** (AAI)	\$95/hour***
Staff Engineer – Jesse C. Li, EI	\$90/hour
Staff Engineer – Matthew J. Crowley, EI	\$90/hour
CAD Designer – Lloyd "Hal" Blevins	\$90/hour
Staff Geologist – Clyde A. L."CAL" Easter, G.I.T.	\$90/hour
Field Services Manager - Byron S. Hackney**	\$85/hour
Staff Geologist - Seth C. Rickerts	\$65/hour
Environmental Technician – Joshua C. Rue	\$60/hour
Staff Technician	\$50/hour
Systems Administrator - Sam T. Spencer** (UAS)	\$100/hour
Clerical/Administrative Secretary	\$50/hour
Expert Witness/Legal Services	Negotiated

Reproduction Expenses

Small Format (B size or smaller)	Black & White	\$0.10 per page
	Color	\$0.40 per page
Large Format (C size or larger)		\$4 per sheet

Equipment

see Rate Sheet

Expenses & Fees

Direct Project Expenses	Cost + 10%
-------------------------	------------

* Rates are subject to review annually.

**Employee Owner

***Accredited Asbestos Inspector (AAI) Services

**FAA Small Unmanned Aircraft Systems (UAS) Certificate & NC Commercial UAS Operator Permit Holder

+ \$15/hour to rate

This page intentionally left blank.