DOE/EA 1762

FINAL
ENVIRONMENTAL ASSESSMENT

for the

WELLFORD LANDFILL METHANE AND GREENHOUSE GAS TO ENERGY PROJECT

SPARTANBURG COUNTY, SOUTH CAROLINA

U. S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Golden Field Office
Golden, Colorado

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COVER SHEET

Responsible Agency: U.S. Department of Energy (DOE)

Title: *Final Environmental Assessment for Wellford Landfill Methane and Greenhouse Gas to Energy Project, Spartanburg County, South Carolina* (DOE/EA 1762D)

Contact: For additional copies or more information about this environmental assessment (EA) please contact:

Melissa Rossiter
Environmental Protection Specialist
Golden Field Office
1617 Cole Boulevard
Golden, CO 80401
Desk Phone: 720.356.1566
Blackberry: 720.291.1602
melissa.rossiter@go.doe.gov

Abstract: DOE prepared this EA to evaluate the potential environmental consequences of providing an American Recovery and Reinvestment Act of 2009 (Recovery Act; Public Law 111-5, 123 Stat. 115) financial assistance grant to the county of Spartanburg, South Carolina to facilitate construction and operation of a landfill gas collection and pipeline system to recover waste energy at the Wellford Landfill in Spartanburg County, South Carolina.

DOE's Proposed Action would authorize Spartanburg County to use DOE funding to design, permit, construct, operate, and maintain a landfill gas (LFG) project to capture methane from the Wellford Landfill and use it to generate electricity for local industries. This landfill is the primary solid waste management facility for Spartanburg County. Currently, LFG, which is approximately 50 percent methane, is collected in a pipe network and then either flared or released to the atmosphere. To take advantage of the methane produced at the Wellford Landfill and to reduce greenhouse gas emissions, the County proposes to construct the infrastructure necessary to collect, treat, and transmit these gases to the Milliken Dewey Plant in Inman, SC where the gas can be used for fuel in the manufacturing process. The project would include construction of a gas collection system (GCS), an LFG treatment and pressurization facility, and a gas transmission pipeline to convey 500 cubic feet per minute (cfm) of LFG to the Milliken Dewey Plant.

This EA evaluates 12 resources areas and identifies no significant adverse environmental impacts for the proposed project. The proposed project could result in beneficial impacts to the nation's energy efficiency and the local economy and air quality. In addition to adding and retaining jobs in the Spartanburg County area, the project would convert waste energy from landfill gas which is currently flared or released to the atmosphere, to be used as a replacement fuel for some of the natural gas burned at the Milliken Dewey Plant. Any excess gas captured by the GCS and treatment/pressurization facility would be sent to the on-site generator system where it would be converted to power, sent to the electrical grid and sold to users by Lockhart Power.

Availability: The EA is available on DOE's Golden Field Office Reading Room website at http://www.eere.energy.gov/golden/Reading_Room.aspx

ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
AMSL	Above mean sea level
APE	Area of potential effect
ARRA	American Recovery and Reinvestment Act
ASTM	ASTM International (originally American Society for Testing and Materials)
BTU	British thermal unit
cfm	cubic feet per minute
CFR	Code of Federal Regulations
DOE	Department of Energy
EA	Environmental Assessment
EECBG	Energy Efficiency and Conservation Block Grants
FEMA	Federal Emergency Management Agency
FR	Federal Register
GCS	Gas collection system
HDD	Horizontal Directional Drill
HDPE	High-density polyethylene
ICWD	Inman Campobello Water District
LFG	Landfill gas
NEPA	National Environmental Policy Act
NHRP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
SCDAH	South Carolina Department of Archives and History
SHPO	State Historic Preservation Office
SJWD	Startex-Jackson-Wellford-Duncan Water District
THPO	Tribal Historic Preservation Office
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

CONTENTS

Section Page

1. INTRODUCTION ... 1
1.1 National Environmental Policy Act and Related Procedures ... 2
1.2 Purpose and Need ... 3
1.3 Public Scoping ... 3
1.4 Consultations and Public Comment-Response Process ... 5
1.4.1 Consultations ... 5
1.4.2 Comment-Response Process ... 6
2. DOE PROPOSED ACTION AND ALTERNATIVES ... 7
2.1 DOE's Proposed Action ... 7
2.2 Spartanburg County's Proposed Project ... 7
2.2.1 Engine/Generator ... 8
2.2.2 Equipment Detail ... 8
2.3 No-Action Alternative ... 11
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES ... 12
3.1 Environmental Resources Evaluated and Dismissed From Further Analysis ... 12
3.2 Air Quality ... 14
3.2.1 Existing Conditions ... 14
3.2.2 Discussion of Impacts ... 14
3.3 Geology / Soils ... 17
3.3.1 Existing Conditions ... 17
3.3.2 Discussion of Impacts ... 19
3.4 Water Resources ... 20
3.4.1 Existing Conditions ... 20
3.4.2 Discussion of Impacts ... 21
3.5 Biological Resources ... 23
3.5.1 Existing Conditions ... 23
3.5.2 Discussion of Impacts ... 24
3.6 Cultural Resources ... 25
3.6.1 Existing Conditions ... 25
3.6.2 Discussion of Impacts ... 25
4. CUMULATIVE IMPACTS ... 27
4.1 Area of Evaluation ... 27
4.2 Past and Present Actions ... 27
4.3 Reasonably Foreseeable Future Actions ... 27
4.4 Cumulative Effects Analysis ... 28
4.4.1 Air Quality ... 28
4.4.2 Biological Resources ... 28
4.4.3 Water Resources ... 28
4.4.4 Cultural Resources ... 28
5. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES ... 30
6. REFERENCES ... 31

LIST OF TABLES

Table Page

2-1 Right-of-Way Information 10
3-1 Comparison with Standards 16
3-2 Soils along the Transmission Pipeline Corridor 18
3-3 Surface Waters Regulated Under Section 404 of the Clean Water Act within the Project Area 21
4-1 Wellford Landfill Ongoing and Planned Projects 27

LIST OF FIGURES

Figure Page

1-1 Project Vicinity Map 2
1-2 Scoping Summary 4
2-1 Facility Site Plan 9
2-2 LFG Transmission Pipeline Route 10
3-1 Soils along the Transmission Pipeline Corridor 18
3-2 Surface Waters Regulated Under Section 404 of the Clean Water Act within the Project Area 20
3-3 Vegetation 23

APPENDICES

Appendix A: Scoping Letter and Distribution List
Appendix B: U.S. Department of Energy Consultation Letters and Responses
Appendix C: Regulatory Agency Coordination Letters and Responses

1. INTRODUCTION

The Energy Independence and Security Act of 2007 (Title V, Subtitle E) directed the U.S. Department of Energy (DOE) to establish an Energy Efficiency and Conservation Block Grant (EECBG) Program to help reduce energy use and emissions at the local and regional level. That program, which has been funded by the American Recovery and Reinvestment Act of 2009 (ARRA), represents a presidential priority to deploy the cheapest, cleanest, and most reliable energy technologies available—energy efficiency and conservation—across the country. Through formula and competitive grants, the EECBG Program empowers local communities to make strategic investments to meet the nation's long-term goals for energy independence and leadership on climate change.

The County of Spartanburg, South Carolina, is proposing to design, permit, construct, operate, and maintain a landfill gas (LFG) project to capture methane from the Wellford Landfill and use it to generate electricity for local industries. This landfill is the primary solid waste management facility for Spartanburg County. Currently, LFG, which is approximately 50 percent methane, is collected in a pipe network and then either flared or released to the atmosphere. To take advantage of the methane produced at the Wellford Landfill and to reduce greenhouse gas emissions, the County proposes to construct the infrastructure necessary to collect, treat, and transmit these gases to a manufacturing facility where the gas can be used for fuel in the manufacturing process. The project would include construction of a gas collection system (GCS), an LFG treatment and pressurization facility, and a gas transmission pipeline to convey 500 cubic feet per minute (cfm) of LFG to the Milliken Dewey Plant in Inman, SC. A generator would also be installed on the Wellford Landfill site by Lockhart Power to use any gas above the 500 cfm sent to the Milliken Dewey Plant. The excess gas captured by the GCS and treatment/pressurization facility would be sent to the on-site generator system where that gas would be converted to power and sent to the electrical grid. The electricity harnessed by the generator would be sold to users by Lockhart Power. The GCS, LFG treatment and pressurization facility, and generator would be located on the Wellford Landfill site. The LFG transmission pipeline would begin at the Wellford Landfill on the discharge end of the gas treatment and pressurization station and would end 6.6 miles away at the Milliken Dewey Plant in Inman, SC (Figure 1-1). The gas would then be used as a replacement fuel for some of the natural gas burned at the Milliken Dewey Plant. For purposes of this document, the potential effects of the generator at the Wellford Landfill are being included as a connected action pursuant to CEQ regulations 40 CFR 1508.25.

DOE has provided a grant to Spartanburg County under the EECBG Funding Opportunity Announcement titled *Recovery Act – Energy Efficiency and Conservation Block Grants – Formula Grants* (DE-FOA-0000013). Spartanburg County would use DOE funding to design, permit, and construct the landfill GCS, treatment and pressurization facility, and pipeline. The grant award to Spartanburg County for this project would be $2.22 million.

Federal funding of projects under the EECBG Program requires compliance with the National Environmental Policy Act of 1969, as amended (NEPA; 42 U.S.C. 4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508), and DOE NEPA implementing procedures (10 CFR Part 1021). Thus, DOE prepared this environmental assessment (EA) to evaluate the potential environmental consequences of authorizing the expenditure of funding. In compliance with NEPA and its implementing procedures, this EA examines the potential environmental consequences of DOE's Proposed Action (authorizing the expenditure of Federal funds under the grant), Spartanburg County's proposed project, and the No-Action Alternative (if DOE chooses not to provide financial assistance for this project, Spartanburg County may not proceed with the project). The EA's purpose is to inform DOE and the public of the potential environmental consequences of the proposed project and alternatives.

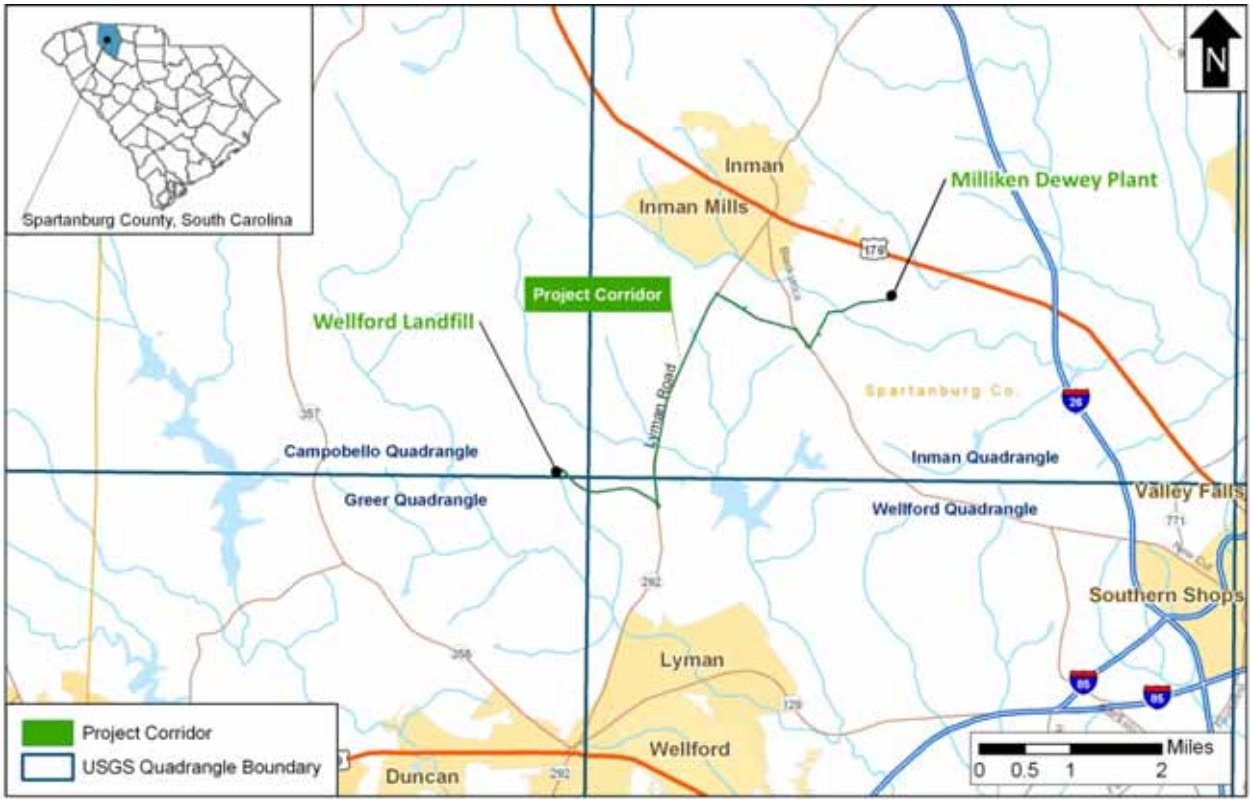

Figure 1-1. Project Vicinity Map

This EA is organized as follows. A Cover Sheet summarizing the project is located behind the Title Page. A list of Acronyms and Abbreviations used in this document is located behind the Table of Contents. Section 1 describes the Purpose and Need for the proposed DOE agency action and the scope of the analysis. Section 2 describes DOE's Proposed Action to provide EECBG funding for Spartanburg County's proposed project, and the No-Action Alternative. Section 3 describes the affected environment and potential environmental consequences of the Proposed Action and the No-Action Alternative. Sections 4 and 5 discuss Cumulative Impacts and Irreversible and Irretrievable Commitment of Resources that would result from the project. Section 6 of the EA provides references and background information to support the findings discussed in the document. Appendix A contains the distribution list for this document, Appendix B contains copies of DOE's consultation letters with other agencies, and Appendix C contains other correspondence from regulatory agencies.

1.1 National Environmental Policy Act and Related Procedures

In accordance with the DOE NEPA implementing procedures, DOE must evaluate the potential environmental impacts of its Proposed Action that may have a significant impact on human health and the environment, including decisions on whether to provide financial assistance to government agencies and private entities. In compliance with these regulations and DOE's procedures, this EA:

- Examines the potential environmental impacts of the Proposed Action and the No-Action Alternative;
- Identifies unavoidable adverse environmental impacts of the Proposed Action;

- Describes the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and

- Characterizes any irreversible and irretrievable commitments of resources that would be involved should DOE decide to implement its Proposed Action.

DOE must meet these requirements before it can make a final decision to proceed with any proposed Federal action that could cause adverse impacts to human health or the environment. This EA provides DOE and other decision-makers with the information needed to make an informed decision about the construction and operation of the proposed landfill GCS, treatment and pressurization facility, and pipeline. The EA evaluates the potential individual and cumulative impacts of Spartanburg County's proposed project. For purposes of comparison, this EA also evaluates the impacts that could occur if DOE did not provide funding (the No-Action Alternative), under which DOE assumes that Spartanburg County would not proceed with the project. No other action alternatives are analyzed.

1.2 Purpose and Need

The purpose of the Proposed Action is to support the mission of the EECBG grant program established by Congress and implemented by DOE to reduce energy use and emissions at the local and regional level. Providing funding as part of the EECBG Program would partially satisfy the need of that program to assist U.S. cities, counties, states, territories, and Indian tribes to develop, promote, implement, and manage energy efficiency and conservation projects and programs designed to:

- Reduce fossil fuel emissions;
- Reduce the total energy use of the eligible entities; and
- Improve energy efficiency in the transportation, building, and other appropriate sectors.

The EECBG received funding through the ARRA. That law was enacted in part to create jobs, restore economic growth, and strengthen America's middle class through measures that modernize the nation's infrastructure, enhance America's energy independence, expand educational opportunities, preserve and improve affordable health care, provide tax relief, and protect those in greatest need. Provision of funds under the EECBG Program would partially satisfy the needs identified under the ARRA.

1.3 Public Scoping

In accordance with applicable regulations and policies, DOE sent scoping letters to potentially interested local, state and Federal agencies, including the Governor of South Carolina, the South Carolina State Historic Preservation Office (SHPO), and the U.S. Fish and Wildlife Service. DOE also sent scoping letters to other potentially interested individuals and organizations to solicit public comment (Appendix A). The scoping letter described the Proposed Action and requested assistance in identifying potential issues to be evaluated in the EA. DOE published the scoping letter on the DOE internet site (http://www.eere.energy.gov/golden/PDFs/ReadingRoom/NEPA/Notice_of_Scoping_5-14-2010_Spartanburg%20County_South%20Carolina.pdf). Additionally, DOE sent consultation letters to key agency representatives. These letters are contained in Appendix B of this document.

In response to the scoping letter, DOE received comment letters from seven agencies and tribal organizations. Comments received along with responses, as necessary, are summarized in Table 1-1 below.

Table 1-2. Scoping Summary

Agency	Date of Correspondence	Summary of Comments	Summary of Response
SCDHEC Bureau of Air Quality	6/8/2010	No indication of potential for significant air quality environmental impacts provided that permits and any associated required mitigation are properly followed.	No response necessary.
Catawba Indian Nation, Tribal Historical Preservation Officer (THPO)	5/28/2010	Only concern is with ground disturbance. Need pictures of site, will send determination as soon as research has been completed.	A copy of the Final Cultural Resources Survey including photos has been provided to the Catawba THP officer.
SCDHEC Bureau of Water	6/3/2010	Several permits could be required for this project. These potentially include: Storm water Management and Sediment Control Permit, NPDES Permit, Section 401 Certification, Section 404 Permit, Construction in Navigable Waters Permit, Drinking Water Systems construction permit, Sewer System Construction permit, Wastewater Pretreatment Permit.	All permits noted that are applicable to the project have been obtained to date; however, it was verified that a Construction in Navigable Waters Permit would not be required.
US Fish and Wildlife Service (USFWS)	6/4/2010	Proposed project is not likely to adversely affect USFWS resources. No further action is required.	No response necessary.
United Keetoowah Band of Cherokee Indians in Oklahoma	6/16/2010	No objection to the referenced project. If any remains, artifacts or other items are inadvertently discovered, construction must cease and tribe contacted.	No response necessary.
State Historic Preservation Office (SHPO)	6/17/2010	No properties listed in or eligible for listing on the National Register of Historic Places (NRHP) will be affected.	No response necessary.
Catawba Indian Nation (THPO)	6/25/2010	Need topographic map, description of previous land use, list of all archaeological sites, copy of archaeological surveys, copy of SHPO letter, and photographs of site. Will send determination once research has been completed.	Additional information provided in previously submitted Final Cultural Resources Report. Clarification provided via email correspondence on 7/8/2010.
Eastern Band of the Cherokee Indians (THPO)	6/29/2010	The proposed undertaking will not result in any new ground disturbing activities which might adversely affect any sites eligible for the NRHP. The proposed project may proceed as planned.	No response necessary.

Table 1-2. Scoping Summary (continued)

Agency	Date of Correspondence	Summary of Comments	Summary of Response
Catawba Indian Nation (THPO)	7/22/2010	No immediate concerns with regard to traditional cultural properties, sacred sites or native American archaeological sites within the boundaries of the proposed project areas. Catawba are to be notified if Native American artifacts and/or human remains are located during the ground disturbance phase.	No response necessary.

SCDHEC = South Carolina Department of Health and Environmental Control.

1.4 Consultations and Public Comment-Response Process

1.4.1 CONSULTATIONS

DOE consulted with the South Carolina SHPO, the Catawba Indian Nation, Eastern Band of Cherokee Indians, Cherokee Nation, and the United Keetoowah Band of Cherokee Indians to comply with the requirements of Section 106 of the *National Historic Preservation Act*, as amended (16 U.S.C. 470 et seq.). DOE also communicated with the U.S. Fish and Wildlife Service (USFWS) to meet the requirements in the *Endangered Species Act of 1973*, as amended (16 U.S.C. 1531 et seq.). Copies of DOE's consultation correspondence are in Appendix B.

South Carolina State Historic Preservation Office

DOE sent a letter to the South Carolina SHPO on June 9, 2010, requesting information on historic properties within and near the proposed site at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, South Carolina. The SHPO responded via letter dated June 17 with its concurrence with DOE's assessment that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by the project. The letter further stated that if archaeological items were found at the site, that procedures codified under 36 CFR 800.13(b) will apply.

Tribes

On June 9, 2010, DOE sent a letter to the Catawba Indian Nation, Eastern Band of Cherokee Indians, Cherokee Nation, and the United Keetoowah Band of Cherokee Indians requesting information on properties of traditional religious and cultural significance within the vicinity of the proposed project. DOE also requested any comments or concerns the tribes might have on the potential for the proposed project to affect the properties. This information was requested to aid in the preparation of this EA and to meet the Department's obligations under Section 106 of the *National Historic Preservation Act* to take into account the effects of undertakings by Federal agencies on historic properties and cultural resources.

The Catawba Indian Nation responded by letter dated June 25, 2010, that it required further information before it could make such determination. That information was provided and the Catawba replied in a subsequent letter dated July 22, 2010, that the tribe had no immediate concerns with regard to traditional cultural properties, sacred sites, or Native American archaeological sites within the boundaries of the proposed project areas.

The Eastern Band of Cherokee responded by letter dated June 29, 2010, that the proposed project would not result in any new ground disturbing activities that might adversely affect any sites eligible for inclusion in the National Register of Historic Places.

United Keetoowah Band of Cherokee Indians responded with confirmation that it has no objections to the referenced project.

All three responses requested that if any artifacts were found during construction and operation of the project, that work would halt and the tribe would be contacted immediately.

DOE did not receive a response from the Cherokee Nation.

1.4.2 Comment-Response Process

DOE issued the EA for comment on September 1, 2010, and posted it on the Golden Reading Room web site (http://www.eere.energy.gov/golden/Reading_Room.aspx). DOE sent postcards announcing the availability of the EA and a 15-day public comment period. The comment period ended on September 15, 2010, and DOE received no comments on the EA.

2. DOE PROPOSED ACTION AND ALTERNATIVES

This section describes DOE's Proposed Action and Spartanburg County's associated proposed project (Section 2.1) and the No-Action Alternative (Section 2.2).

2.1 DOE's Proposed Action

Under the Proposed Action, DOE would authorize Spartanburg County to expend EECBG funding through the ARRA to design, permit, and construct a landfill GCS, treatment and pressurization facility, pipeline and generator.

2.2 Spartanburg County's Proposed Project

Spartanburg County would use DOE funding to design and build the gas treatment system and for the design, construction, and inspection of the gas pipeline. The County operates and maintains the Wellford Landfill, which is the primary solid waste management facility for Spartanburg County and has an existing LFG pipe network. With this network in place, the County saw the opportunity to improve energy efficiency and conservation by utilizing the methane in LFG to produce energy.

The GCS would be located on the Wellford Landfill site and would consist of extraction wells, headers and internal pipes. The landfill has five phases, or sections, and additional infrastructure would be added to each phase.

- Phases I and II currently have 10 wells approximately 24 feet deep. Twenty-two wells would be added to this phase, each 35 feet deep.

- Phases III and IV of the landfill currently have18 wells, ranging from 49 feet to 19 feet deep. An additional 16 wells are proposed to be added in this phase, each 35 feet deep.

- Phase V currently has 15 wells ranging from 44 feet to 12 feet deep. These wells are currently acting as passive vents and would be connected to the GCS system during construction, with the exception of some of shallow wells. An additional 36 wells are proposed in Phase V. These wells would range from 30 to 90 feet deep.

The existing LFG pipe network at the Wellford Landfill would remain in place as is and be kept independent of the new piping. This separation of piping would be necessary to differentiate the LFG flows of the existing older wells from the new wells.

The LFG treatment and pressurization system would treat and compress the gas to 34 pounds per square inch for transmission to the Milliken Dewey plant. Treatment of the gas in this case is for the purpose of removing unwanted compounds such as sulfur and siloxanes from the LFG in order for it to be used in a boiler or engine. The gas treatment and pressurization system would handle gas going both to the Milliken Dewey Plant and gas used on-site to power the generator. The first 500 cfm would be piped to Milliken as replacement fuel for the steam boiler used in the chemical manufacturing facility; the remainder, up to approximately 1,000 cfm, would be used in the new generator to be privately owned and operated by Lockhart Power at the Welford Landfill site. Any LFG not used as fuel by the generator, or otherwise beneficially employed, would be destroyed in the existing utility flare at the landfill. Construction and installation activities for the proposed project would take about 180 days.

2.2.1 Engine/Generator

The Lockhart Power engine facility would be comprised of a single Caterpillar G3520C engine/generator housed in a container structure. Exhaust would be discharged through a single 16 inch (1.33 feet) diameter stack. The stack would be located 20 feet above grade at an elevation of 910 feet above sea level. Additional detail on the emissions produced by the proposed engine/generator is discussed in Section 3.0.

2.2.2 Equipment Detail

The Caterpillar model G3520C engine/generator will be fueled by LFG produced by and collected at the Wellford Landfill. The engine/generator facility is comprised of the following major components:

- A 20-cylindar spark-ignited 2,233 horsepower, reciprocating engine/generator, Caterpillar model G3520C. The generator power is equal to 1,600 electrical kilowatts (ekW).

- A LFG pressurization and cooling skid – The purposes of the skid are to raise the pressure of the LFG to a pressure acceptable for use in the engine/generator and to remove moisture and particulate matter from the LFG.

- A radiator to provide cooling for the engine. The cooling medium that will be used in the radiator is a CAT Natural Gas Engine Coolant (NGEC). The cooling medium contains a 50/50 premix of coolant and deionizer water. The draining interval is every three years or 16,000 hours whichever comes first. Draining is performed via a collection method that would not result in the creation of discharge of fluids into the project area.

- A silencer on the engine exhaust to attenuate noise.

- Associated electrical equipment including switchgear, motor control center, transformers, and a main breaker.

The treatment and pressurization system and generator would be located at the Wellford Landfill next to the existing blower flare station as indicated in Figure 2-1.

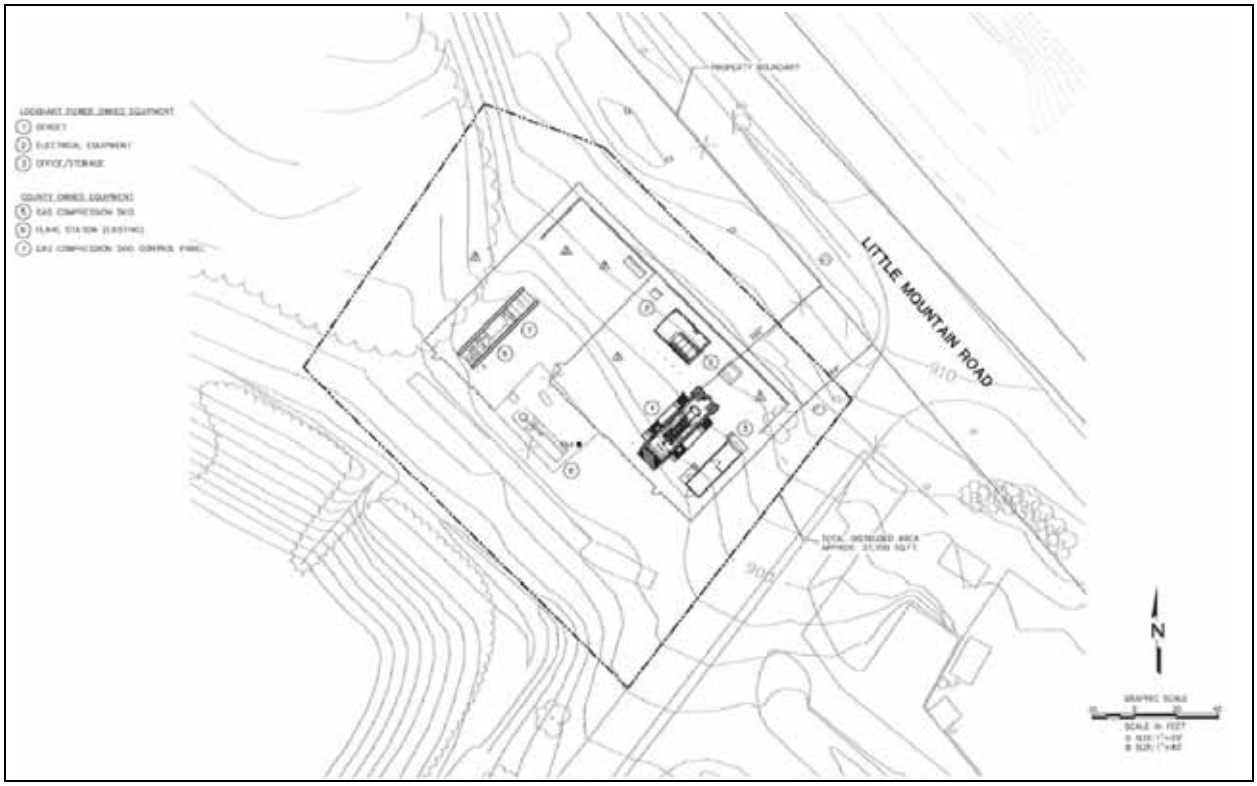

Figure 2-1. Facility Site Plan

Figure 2-1 depicts that the LFG treatment and pressurization facility and generator system would consist of the following equipment:

<u>Lockhart Power Owned Equipment</u>

1. GENSET – This is the generator itself, which would consist of an engine and an alternator.

2. Electrical Equipment – Switchgear enclosure, battery chargers and meters.

3. Office/Storage

<u>County Owned Equipment</u>

1. Gas Compression Skid – Consists of an inlet moisture separator, two multistage centrifugal blowers, gas/air after cooler, discharge moisture separator.

2. Flare Station (existing)

3. Gas Compression Skid Control Panel – unit to turn on/shut off gas compression skid.

The 6.6-mile-long LFG transmission pipeline would begin at the Wellford Landfill on the discharge end of the gas treatment and pressurization station and would end at the Milliken Dewey Plant in Inman, South Carolina. The proposed pipeline begins at the landfill's western terminus and parallels Little Mountain Road (S-42-217) for approximately 1.1 miles to Inman Road; it then follows Inman Road (SR 292) heading north for 2.4 miles; heading east it follows New Cut Road (S-42-52) for approximately 1.2 miles to Southfield Road (S-42-218); it then heads northeast on Southfield Road for 1.1 miles; the

pipeline then crosses into the Milliken property, follows Southfield Road extension and ties into the proposed boiler station located on the Milliken Dewey Plant site as indicated in Figure 2-2.

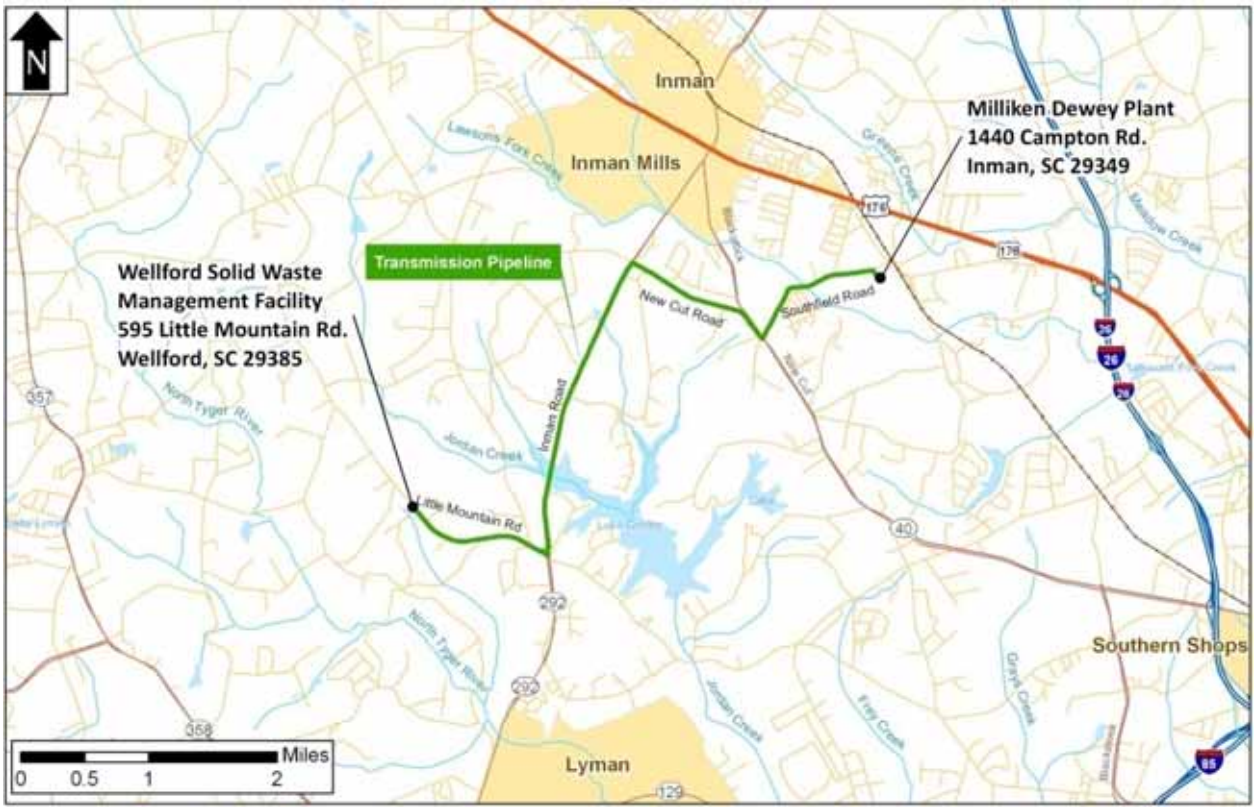

Figure 2-2. LFG Transmission Pipeline Route

The Milliken Dewey Plant, which would use the methane gas to replace some of the natural gas used there currently, was selected as the facility to receive and use the LFG due to proximity and the economics of building the gas transmission line to their site. This alignment is the shortest proposed and would be located within existing roadway right-of-ways to reduce the impacts associated with the construction of the project. The right-of-ways are maintained by the South Carolina Department of Transportation (SCDOT) and widths vary along the project. Table 2-1 describes the right-of-way information obtained from the SCDOT and/or Spartanburg County Records.

Table 2-1. Right-of-Way Information

Roadway	Right-of-way Width
Little Mountain Road	70 feet
Inman Road (SC-292)	70 feet; varies at intersections
Lyman Road (SC-292)	70 feet
New Cut Road	50 feet
Southfield Road	50 feet; varies

The design, construction and operation of the LFG transmission pipeline would be governed by 49 CFR 191 (Transportation of Natural and Other Gas by Pipeline: Annual Reports, Incident Reports, and Safety-related Condition Reports) to 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards). With the exception of the connection points at the landfill and Milliken Dewey Plant, the pipeline would be buried. The pipeline would consist of a 6-inch high-density polyethylene (HDPE) pipe meeting the requirements of ASTM International, "Standard Specification for Polyethylene Gas Pressure Pipe, Tubing, and Fittings" (ASTM D2513). Methods of construction and installation of the pipeline include trenching and directional bore.

The proposed pipeline would be constructed by open cut trenching in uplands and areas where there would be no impacts to wetlands, streams, and lakes. Directional boring, a trenchless method, would be utilized in all areas where jurisdictional and non-jurisdictional waters are encountered and at road crossings; these areas include the Lake Cooley crossing as well as the Lawson's Fork Creek crossing and possibly an unnamed tributary to Lake Cooley. There is the potential for the latter of these crossings to be completed within the existing roadway fill rather than directional boring below the stream due to the fill height of the roadway.

Due to the flexibility in construction technologies (open cut vs. directional drill), the exact area of disturbance along the pipeline route cannot be determined at this time. For this analysis, DOE assumed that the disturbed area would be an average of 8 feet wide (the width of a small backhoe) and the total area disturbed would be no more than 6.4 acres.

Sediment and erosion control measures would be employed on the project and grades would be returned to pre-construction contours. Seeding specifications for the project would be taken from the SCDOT Standard Specifications for Highway Construction (SCDOT, 2000).

2.3 No-Action Alternative

Under the No-Action Alternative, DOE would not authorize Spartanburg County to expend ARRA funding for the proposed LFG project. As a result, installation of the gas capture system and pipeline would be delayed while Spartanburg County looked for other funding sources, or abandoned if other funding sources could not be obtained. Furthermore, reductions in fossil fuel use and improvements in energy efficiency would not occur and DOE's ability to achieve its objectives under the EECBG Program and the ARRA would be impaired.

Although Spartanburg County's proposed project might proceed if DOE decided not to provide any form of financial assistance, DOE assumes for purposes of this EA that the project would not proceed without this financial assistance. If the project did proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's Proposed Action (that is, providing assistance that allows the project to proceed). In order to allow a comparison between the potential impacts of a project as implemented and the impacts of not proceeding with a project, DOE assumes that if it decided to withhold assistance from this project, final design and construction of Spartanburg County's proposed LFG project would not proceed.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Environmental Resources Evaluated and Dismissed From Further Analysis

This section of the EA examines in detail the potential environmental impacts of the proposed project and the No-Action Alternative for the following resource areas.

- Air Quality
- Geology/Soils
- Water Resources
- Biological Resources
- Cultural Resources

DOE EAs commonly address the following resource and subject areas. In an effort to streamline the NEPA process, this assessment did not examine these areas at the same level of detail as the resource areas listed above. The focus for the more detailed analysis was on those activities or actions that would require new or revised permits, have the potential for significant adverse environmental impacts, or have the potential for controversy. For the reasons discussed below, DOE concludes that Spartanburg County's proposed project would result in no or very minor impacts to the following resource areas, and the detailed description and analyses of these resources are not carried forward in this section.

- Land Use. The Proposed Action would be consistent with current land use practices within the project area. No private property, other than that on the Milliken Dewey Plant, would be directly affected as the project would be located in the roadway right-of-ways and or within uplands located within the existing landfill property. No changes to land use would occur as a result of the generator, gas collection system, or transmission pipeline construction, nor would a new right-of-way be needed as a result of the proposed project.

- Transportation and Traffic. Installation and operation of the project would not require modification of any roadways. Traffic control would be performed by the contractor during all phases of construction and would follow SCDOT requirements. The contractor would be required to obtain any necessary permits from SCDOT (i.e., right of way encroachment, lane closure permit, etc.). Because installation of the pipeline would take less than three months and would be conducted following SCDOT guidelines, the impact to the traveling public would be minimal. The generator to be placed within the existing landfill property would not impact transportation or traffic.

- Noise. During construction activities, noise levels would temporarily increase in the project area. This temporary increase in noise levels would cease upon completion of construction activity. In addition, operation of the compression system and generator would result in some noise. The generator would be housed within a container which would provide some noise abatement. Noise levels emitted by the equipment when contained have been assessed at approximately 75 dBA at 50 feet, free field, 6 feet above grade. The nearest receptor is a residence located on Bumblebee Lane approximately 765 feet or 0.15 mile away from the proposed location of this equipment. As a result of the predicted noise emitted and proximity of the nearest receptor, noise levels are anticipated to attenuate to within regulatory limits and not warrant the need for any further noise

abatement measures. Based on these findings, there would be no permanent appreciable increases in ambient noise levels to nearby residences as a result of the Proposed Action

- Aesthetics. The gas transmission line to be constructed from the landfill to the Milliken Dewey Plant would be underground and would not create a visual impact other than ground disruption during construction. Because the pipeline would be located adjacent to existing roadways, this visual impact would be minimal. In addition, the generator and compression system would be placed within an area where existing landfill facility equipment is located and as such, no appreciable changes to aesthetics in this area would be realized.

- Hazardous Materials and Waste. Operation of the GCS, generator, and LFG pipeline system would not result in new hazardous waste streams or require hazardous materials for operation. The project would not cause an increase in nonhazardous solid waste production at the Milliken Plant. Due to placement within a previously disturbed area, the generator to be placed within the existing landfill property would not impact any solid waste disposal areas.

- Utilities and Infrastructure. Spartanburg County's proposed project would result in a small beneficial increase in regional availability of electricity, as LFG would be used as a replacement fuel at the Milliken Dewey plant and electricity generated by the Lockhart Power generator would be provided to the regional grid. No changes to utilities or infrastructure, other than those described in Chapter 2 to directly support this project, would be required.

- Health and Safety. Construction and operation of the GCS, LFG treatment and pressurization facility, and gas transmission pipeline would involve common industrial practices such as trenching and installation of a pipeline, management of pressurized and flammable gasses, and production of electricity. Although these activities have inherent risks to workers and the public, there are well-developed industry standards that would be implemented to minimize those risks. Therefore, DOE anticipate that the health and safety risks of the proposed project would be low and similar to that experienced at ongoing projects that involve pressurized and flammable gasses and production of electricity.

- Socioeconomics. It is estimated that the project would create 24 new, temporary construction jobs and 1 new permanent job for operation of the LFG collection and treatment systems at the landfill, and would aid in retaining 115 jobs at the Milliken facility by reducing operating costs for the plant. Construction of this project would not affect any community facilities and would not change the overall manner in which the Wellford Landfill or Milliken Dewey Plant are operated, thus the project would have a beneficial impact on the area's current socioeconomic condition by creating and retaining jobs in the community.

- Environmental Justice. The evaluation of impacts to environmental justice is dependent on demonstrating that significant, adverse impacts from the proposed project are not disproportionately borne by any low-income or minority groups in the affected community. At the time of the 2000 Census, the minority population in the local census tract was approximately 10% (US Census Bureau, 2000). In terms of low income households, 8.9% of the population was below the poverty line in 2000. It is not expected that any major changes in the minority or low income population have taken place since the 2000 census. As illustrated in this EA, no substantial adverse impacts would occur to any members of the communities in or near the project area; therefore, there would be no adverse and disproportional impacts to minority or low-income populations.

3.2 Air Quality

3.2.1 EXISTING CONDITIONS

Spartanburg County is in attainment for the National Ambient Air Quality Standards outlined in the Clean Air Act (last amended in 1990 (40 CFR §50). These include standards for ozone (8 hour), carbon monoxide, lead, nitrogen dioxide, sulfur dioxide, particulate matter (PM 2.5), and particulate matter (PM 10). The County is not in attainment for ozone (1 hour); however, regulations (73 FR 17898) state the 1-hour ozone standard no longer applies in the 13 Early Action Compact Areas as of April 15, 2009. Spartanburg County is part of the Greenville-Spartanburg-Anderson, SC, Subpart 1 Early Action Compacts.

3.2.2 DISCUSSION OF IMPACTS

3.2.2.1 Proposed Action

Once the Proposed Action is in place, the LFG entering the generator would be combusted. In comparison, without an operating generator system, LFG would be routed to the existing utility flare where it is burned and released into the atmosphere as carbon dioxide (CO_2) and water vapor, However when combusted in the generator, LFG would be burned to a point where between 86% - 98% of the pollutants are destroyed (SCS, 2009). Based on this data, it is anticipated that the proposed project would have a beneficial impact on air quality by capturing methane now released to the atmosphere, resulting in a reduction of greenhouse gas emissions equivalent to 86,155 tons of CO_2 annually. The estimated reduction in CO_2 equivalents was developed by the County and Joyce Engineering (Kelly, 2008) and is based on estimated LFG recovery from the system of 866 cfm/year.

Using the U.S. Environmental Protection Agency's SCREEN3 model, air dispersion modeling was completed for the LFG fired generator by Lockhart Power. Compliance with each of the three South Carolina air dispersion modeling standards was evaluated:

- SC Regulation No. 62.5 – Standard No. 2 – Ambient Air Quality Standards (AAQS)
- SC Regulation No. 62.5 – Standard No. 7 – Class II Prevention of Significant Deterioration
- SC Regulation No. 62.5 – Standard No. 8 – Toxic Air Pollutants

AAQS would not be exceeded and the overall reduction in air pollution emissions would be a net benefit of the overall proposed project. Based on the air dispersion modeling performed by Lockhart Power, the generator would result in a more controlled, complete combustion of the methane than the current utility flare and would result in fewer emissions. For each emission source pollutant modeled, the landfill is within standards. Based on the modeled results, DOE does not anticipate any long-term adverse effects on air quality. Table 3-1 presents a comparison of the modeling results for the landfill with applicable AAQS and illustrates that compliance with each of State standards has been demonstrated.

On August 24, 2009, SCDHEC has issued a legally binding air quality permit for the project. Therefore, according to the State, the engine portion of the project satisfies all current applicable State and Federal air emission standards.

LFG is approximately 50 percent methane, a greenhouse gas that contributes to global climate change. The proposed LFG project would reduce the amount of greenhouse gas entering the atmosphere by collecting those gases in a gas collection system and transferring them for conversion to energy via a compressor unit, pipeline, and a steam boiler resulting in a net long-term benefit to air quality. This

methane would then be sold to Milliken as replacement fuel to fire an existing steam boiler at their Dewey Plant in Inman, South Carolina, and any excess methane would be used to power the new generator operated by Lockhart Power at the Wellford Landfill. Milliken would be required to modify their existing air quality permit and Lockhart Power would be required to obtain a new SCDHEC Bureau of Air Quality construction and operation permit for the generator.

DOE anticipates that the impacts to air quality from construction of the Wellford Landfill Methane and Greenhouse Gas to Energy Project would be short-term and minor. Those impacts primarily would be the result of diesel exhaust from operation of the generator and fugitive dust emissions during construction. Temporary localized impacts to air quality could result from operation of construction equipment. Dust control measures would be employed during construction, and burning of vegetative or construction materials would not be permitted.

Table 3-1. Comparison with Standards

Pollutant	Ave. Time	Source Conc. Lockhart Engine ($\mu g/m^3$)	Source Conc. Wellford Landfill [a] ($\mu g/m^3$)	Total Source Conc. ($\mu g/m^3$)	Background Conc.[b] ($\mu g/m^3$)	Background Conc. Source	Total Conc.[c] ($\mu g/m^3$)	Allowable Conc.[c] ($\mu g/m^3$)	In Compliance?
SC Regulation No. 62.5 – Standard No. 2 – Ambient Air Quality Standards									
SO_2	3 hrs	88.49	17.58	106.07	47.1	Taylors, Greenville County	153.2	1,300	Yes
	24 hrs	39.33	7.81	47.14	23.6		70.7	365	Yes
	annual	4.92	0.98	5.90	4.5		10.4	80	Yes
CO	1 hr	1,128	483	1,611	1,947	Taylors, Greenville County	3,558	40,000	Yes
	8 hrs	789.6	338	1,128	1,260		2,388	10,000	Yes
NO_2	annual	9.83	4.45	14.28	16.2	Taylors, Greenville County	30.5	100	Yes
TSP	annual	2.95	0.55	3.50	31.0	Spartanburg City Hall	34.5	75	Yes
PM_{10}	24 hrs	23.57	4.38	27.95	46	Spartanburg City Hall	74.0	150	Yes
	annual	2.95	0.55	3.50	23.7		27.2	50	Yes
SC Regulation No. 62.5 – Standard No. 7 – Class II Prevention of Significant Deterioration									
PM_{10}	24 hrs	23.57	4.38	27.95	N/A	N/A	27.95	30	Yes
	annual	2.95	0.55	3.50	N/A	N/A	3.50	17	Yes
NO_2	annual	9.83	4.45	14.28	N/A	N/A	14.28	25	Yes
SC Regulation No. 62.5 – Standard No. 8 – Toxic Air Pollutants									
Hydrochloric acid	24 hrs	46.20	11.25	57.45	N/A	N/A	57.45	175.00	Yes
Hydrogen sulfide	24 hrs	2.88	0.0089	2.89	N/A	N/A	2.89	140.00	Yes

Note: The South Carolina State Implementation Plan did not require evaluation of $PM_{2.5}$ at the time this analysis was conducted. Because emissions are from a combustion source, the emission rate of PM_{10} can conservatively be used to estimate $PM_{2.5}$ emissions. PM_{10} = 3.13 tons/yr; $PM_{2.5}$ = 3.13 tons/yr.

a. Background concentrations were obtained from SCDHEC's website and are from the year 2007 Background concentrations are not considered for toxic air pollutants.

b. Total Concentration = Source Concentration + Background Concentration.

c. Allowable Concentrations are the allowable ambient air concentrations as found in 61-62.5, Standard No. 8, Toxic Air Pollutants.

3.2.2.2 No-Action Alternative

Currently, greenhouse gases produced by the landfill are being captured and burned off at the Wellford Landfill via a candle flare located on-site. Under the No-Action Alternative, DOE would not provide funding to Spartanburg County for their proposed project, and DOE assumes for the purposes of this EA that the project would not proceed without this assistance. There would be no change to existing air quality conditions, nor would there be a reduction in greenhouse gas emissions.

3.3 Geology / Soils

3.3.1 EXISTING CONDITIONS

Spartanburg County lies just southeast of the Blue Ridge Mountains within the Piedmont physiographic region of South Carolina and, more specifically, within the Southern Outer Piedmont Ecoregion (Griffith 2002). The Southern Outer Piedmont Ecoregion is described as having gneiss, schist, and granite as typical rock types, covered with deep saprolite and mostly red, clayey subsoils. Common soils in this region include the Cecil, Appling, and Madison series.

Thirteen geologic formations are found in Spartanburg County, but over 95 percent of the county is in five major formations. These formations are made up of alluvium, fine-grained rocks, medium-grained rocks, fine-grained to coarse-grained rocks, and coarse-grained rocks. Alluvium consists of material recently deposited on floodplains. The fine-grained rocks are quartzite, diabase, taluca quartz monzonite, and sericite schist. The medium-grained rocks are granite, biotite gneiss, and migmatite. The fine-grained to coarse-grained rocks are biotite schist, Yorkville quartz monzonite, and hornblende schist. The coarse-grained rocks are hornblende gneiss, coarse-grained granite, and muscovite pegmatite dikes. The project area lies within the Inner Piedmont belt, a major subdivision of crystalline rocks in the Piedmont province. For much of the county, the hard crystalline rock has weathered to a soft clayey or sandy material (saprolite), which maintains many of the original rock structures and extends from ground surface to depths of as much as 140 feet (Spartanburg County, 1998).

The highest point along the transmission pipeline corridor is approximately 970 feet above mean sea level (AMSL) at the corner of Lyman Road and New Cut Road, and the lowest elevation is approximately 805 feet AMSL at Lake Cooley.

3.3.1.1 Prime or Unique Farmlands

The Natural Resources Conservation Service document “Important Farmlands of South Carolina” was reviewed to determine the presence of soils that have potential for agriculture (USDA, 2010). This list includes all farmlands categorized as prime, unique, or of statewide importance. Criteria used for determining the prime and unique categories were published in the Federal Register on January 31, 1978, and amended on June 17, 1994. Six soil series within the transmission pipeline corridor are considered prime or unique farmlands (Figure 3-1 and Table 3-2).

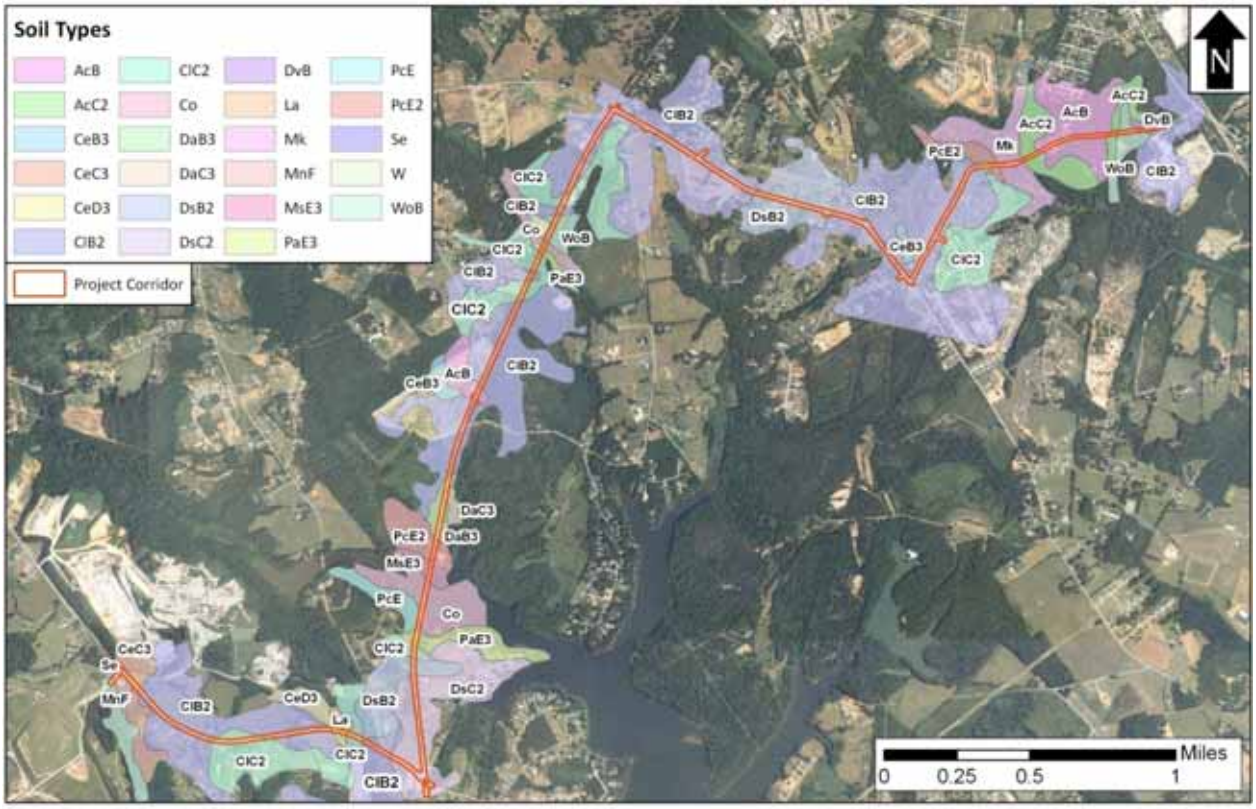

Figure 3-1. Soils along the Transmission Pipeline Corridor

Table 3-2. Soils along the Transmission Pipeline Corridor

Soil Symbol	Soil Series Name	% of Project	Hydric Rating	Prime Farmland or Farmland of Statewide Importance
AcB	Appling and Cecil sandy loams, 2 to 6 percent slopes	4.2	No	Prime Farmland
AcC2	Appling and Cecil sandy loams,6 to 10 percent slopes, eroded	1.2	No	--
CeC3	Cecil clay loam, 6 to 10 percent slopes, severely eroded	2.1	No	--
CeD3	Cecil clay loam, 10 to 15 percent slopes, severely eroded	0.9	No	--
ClB2	Cecil sandy loam, 2 to 6 percent slopes, eroded	51.6	No	Prime Farmland
ClC2	Cecil sandy loam, 6 to 10 percent slopes, eroded	8.2	No	--
Co	Congaree soils	3.5	No	--
DaB3	Davidson clay loam, 2 to 6 percent slopes, severely eroded	3.2	No	--
DaC3	Davidson clay loam, 6 to 10 percent slopes, severely eroded	0.4	No	--
DsB2	Davidson sandy clay loam, 2 to 6 percent slopes, eroded	5.5	No	Prime Farmland
DsC2	Davidson sandy clay loam, 6 to 10 percent slopes, eroded	9.5	No	--

Table 3-2. Soils along the Transmission Pipeline Corridor (continued)

Soil Symbol	Soil Series Name	% of Project	Hydric Rating	Prime Farmland or Farmland of Statewide Importance
DvB	Durham loamy sand, 2 to 6 percent slopes	0.8	No	Prime Farmland
Mk	Mixed alluvial land, wet	1.3	Yes	Farmland of Statewide Importance
MnF	Moderately gullied land, friable materials, 10 to 40 percent slopes	0.4	No	--
MsE3	Musella clay loam, 10 to 25 percent slopes, severely eroded	1.0	No	--
PaE3	Pacolet clay loam, 15 to 25 percent slopes, severely eroded	1.3	No	--
PcE	Pacolet clay loam, 15 to 25 percent slopes	0.1	No	--
PcE2	Pacolet clay loam, 15 to 25 percent slopes, eroded	1.7	No	--
Se	Severely gullied land	0.1	No	--
WoB	Worsham fine sand loam, 0 to 6 percent slopes	2.9	No	Farmland of Statewide Importance

3.3.2 DISCUSSION OF IMPACTS

3.3.2.1 Proposed Action

The majority of the soils along the proposed corridor have been disturbed by construction of the existing roadways and placement of existing utilities. The prevalent soil series found in the transmission pipeline corridor is Cecil sandy loam, 2 to 6 percent slopes, eroded (Table 3-2, Soils along the Transmission Pipeline Corridor). According to the soil survey for Spartanburg County (USDA, 2010), other soil types within the transmission pipeline corridor include Appling and Cecil, Congaree, Davidson, Durham, Musella, Pacolet and Worsham. These soils are minor in extent compared to Cecil sandy loam.

Construction of the project would impact approximately 0.9 acre of land at the landfill site. As stated in Section 2.1.2, no more than 6.4 acres of soil would be disturbed in total along the pipeline route; however, soils along or adjacent to the transmission pipeline corridor have been disturbed due to existing utilities and roadways. The Proposed Action would not result in the permanent loss of any lands which are currently being cultivated and no loss of prime or unique farmlands would occur as a result of this project. Land use adjacent to the project would not be impacted, and post-construction grades along the gas transmission pipeline would be returned to pre-construction conditions.

3.3.2.2 No-Action Alternative

Under the No-Action Alternative, no soil disturbing activities would occur and there would be no impacts to geologic features or soils.

3.4 Water Resources

3.4.1 EXISTING CONDITIONS

3.4.1.1 Ground Water

According the United States Geological Society, the project site is located within the Piedmont and Blue Ridge crystalline-rock aquifers (Miller, 1990). The Piedmont and Blue Ridge aquifers consist of indurated metamorphic rocks, such as gneiss and schist, and igneous rocks, such as granite, that underlie the rolling hills of the Piedmont physiographic province and the mountains of the Blue Ridge physiographic province. Water is present in these rocks in fractures, but locally a large volume of water is stored in the regolith, or blanket of weathered material that overlies the rock.

3.4.1.2 Wetlands and Waters of the U.S.

The United States Army Corps of Engineers (USACE), through Section 404 of the Clean Water Act, has regulatory authority over waters of the United States, including wetlands. This authority empowers the USACE to identify wetland/upland boundaries and to regulate the placement of fill material into jurisdictional wetlands. These boundaries are established in accordance with the methodology in the 1987 USACE Wetlands Delineation Manual (USACE, 1987). Six potential jurisdictional waters of the United States were identified within the Study Area. As seen in Figure 3-2 and described in Table 3-3, these include three stream crossings, two open water bodies (including Lake Cooley), and one wetland on the Milliken Dewey Plant site.

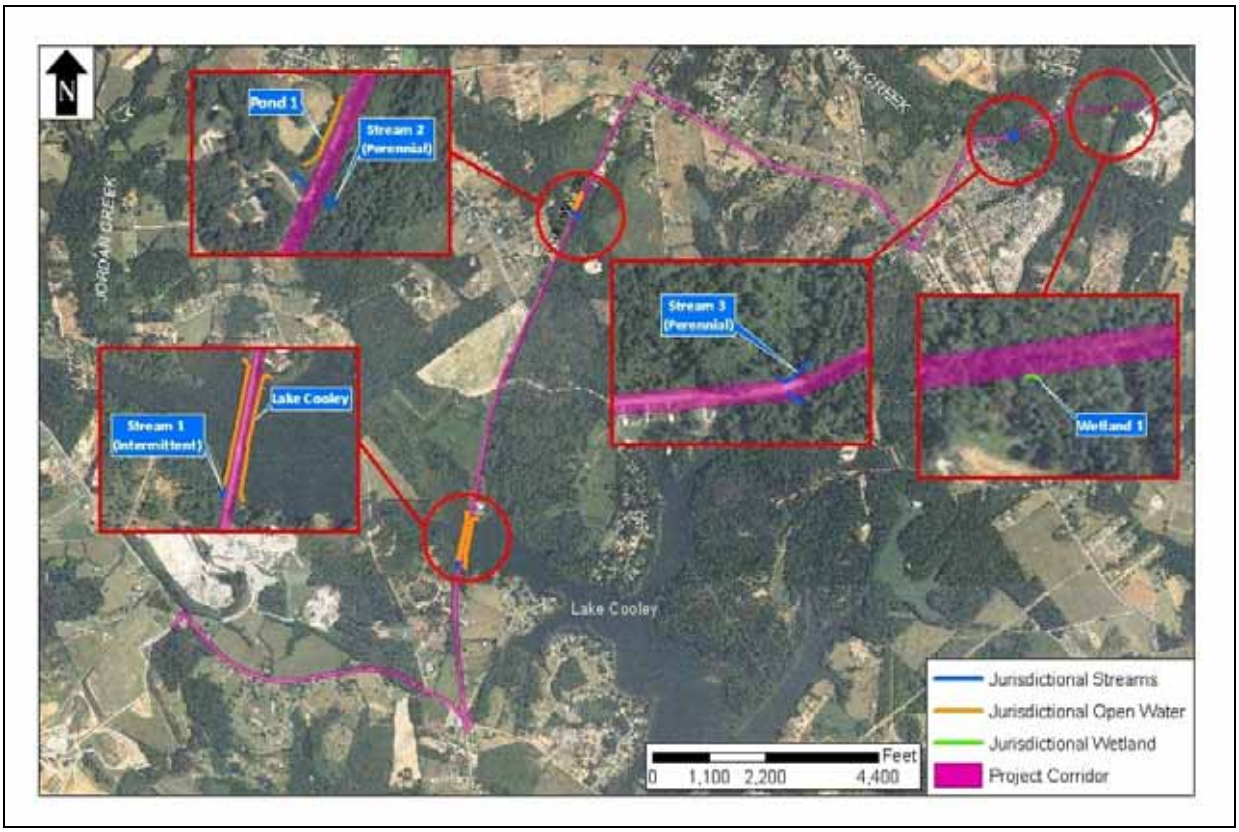

Figure 3-2. Surface Waters Regulated Under Section 404 of the Clean Water Act within the Project Area

Table 3-3. Surface Waters Regulated Under Section 404 of the Clean Water Act within the Project Area

Feature ID	Description
Stream 1	Intermittent, Unnamed Tributary to Lake Cooley, sand/silt substrate, 2 ft wide – would not be impacted as the pipeline would be constructed on the opposite side of the highway.
Stream 2	Perennial, Unnamed Tributary to Lake Cooley, rock, gravel, and sand substrate, 3-6 feet wide – would not be impacted due to directional bore or possible construction within the roadway fill above the stream elevation.
Stream 3	Perennial, Lawson's Fork Creek, sand/silt substrate, 8-15 feet wide – would not be impacted due to directional bore.
Pond 1	Manmade, adjacent to Stream 2 – would not be impacted as the pipeline would be constructed on the opposite side of the highway.
Wetland 1	Milliken site, depression, likely created during construction of the adjacent fence – outside of area to be disturbed for pipeline and would not be impacted by the project.
Lake Cooley	Manmade, water supply, recreational – would not be impacted due to directional bore.

3.4.1.3 Water Supply Sources

There are no public water supply wells within the project area; however; groundwater is the principal source for rural homes and farms in Spartanburg County according to the Spartanburg County Comprehensive Plan (Spartanburg County, 1998). Lake Cooley is one of the water supply sources for the Startex-Jackson-Wellford-Duncan Water District (SJWD). The SJWD service area covers approximately 128 square miles of western Spartanburg County (from Highway 417 in the south, to Highway 11 in the north, and from I-26 in the east to the Greenville County line in the west). Water from the SJWD reservoirs, including Lake Cooley, is treated at the SJWD Filtration Plant on Groce Road in Lyman, South Carolina. Along the transmission pipeline corridor, about 75 feet are serviced by SJWD. SJWD stated in email communication dated May 5, 2010 (Cothran, 2010) that they were not aware of any privately owned wells in their service area along the corridor. The area north of Lake Cooley along Inman Road to the Milliken Dewey Plant is serviced by the Inman Campobello Water District (ICWD). ICWD stated in email communication dated May 7, 2010 (Johnson, 2010) that existing waterlines are present along the project roadways from Lake Cooley on Inman Road (SC 292) to the end of the project on Southfield Road. ICWD does not require homes to be connected to their system and some residences along this portion of the project may be using private water supply wells.

3.4.1.4 Stormwater

The Wellford Landfill and Milliken Dewey Plant maintain on-site stormwater management structures. At the landfill, stormwater in the area of the proposed gas pressurization facility is directed through ditches and ephemeral channels to a large sediment basin. A similar structure is maintained at the Milliken site, where stormwater is directed to a large basin. When the basin becomes full, the water is tested to determine if there are any pollutants which have reached the basin. In the event that pollutants have reached the basin, the water is pumped to an on-site treatment facility. If there are no pollutants, the stormwater is pumped to the neighboring pond on-site. Both facilities maintain grass coverage or forest coverage in areas that are not being utilized.

3.4.2 DISCUSSION OF IMPACTS

3.4.2.1 Proposed Action

Installation of the pipeline at all road crossings and water body crossings would be accomplished via horizontal directional drill (HDD) construction; thus, no fill would be placed in regulated waters of the

United States and adverse effects on jurisdictional waters would be avoided. HDD construction utilizes bentonite slurry, a fine clay material as a drilling lubricant. Crossings of waters and tributaries of the U.S. would be directionally drilled while maintaining a minimum of 100 feet from the edge of such waters in an effort to avoid impacts. In addition, water crossings including that of Lake Cooley, would be executed with a requirement to maintain a minimum of 4 feet of clearance beneath the existing lake or stream bottom to reduce the chance of frac-outs. A frac-out is defined as a fracture in the drill hole which creates potential for drilling mud to escape. In addition to the limitations on drilling of water crossings, a drilling plan has been developed to define the strategy for execution of directional drilling on the project. The plan includes a frac-out contingency plan with defined measures to be followed during HDD construction and in the event of a frac-out.

Coordination of the Proposed Action was conducted with each of the regulatory agencies with jurisdiction over Lake Cooley and other waters of the U.S. within the project area. Upon review of the proposed design for the project including the use of directional bore techniques for installation of the pipeline, the USACE issued a finding of no permit required dated December 8, 2009. Upon review of the proposed design, the SCDHEC issued a letter dated June 17, 2010 stating that a permit to construct within a navigable waterway would not be required. Lastly, upon review of the proposed design, on September 18, 2009 the SJWD Water District issued a letter approving the proposed method of crossing Lake Cooley as acceptable provided a minimum of 4 feet of clearance from the lake bottom is met and installation of proper erosion control measures are employed. A copy of the agency coordination and response letters is included in Appendix C.

At the landfill site and in upland areas along the pipeline corridor that would be trenched, best management practices such as silt fence, rock check dams, and seeding and mulching per SCDOT specifications would be installed to manage soil erosion and stormwater runoff during construction. An SCDHEC Construction General Permit would be required to regulate stormwater, under the National Pollutant Discharge Elimination System Act Phase II. Where there is a disturbance of more than one acre of land, as would be the case with this project, a SCDHEC Notice of Intent for Stormwater Discharges from Large and Small Construction Activities would be filed with SCDHEC prior to any land disturbing activities. Spartanburg County and the City of Inman (where the Milliken Dewey Plant is located) are regulated small municipal separate storm sewer systems (MS4s) in South Carolina and as such would be responsible for compliance with National Pollutant Discharge Elimination System Act Phase II. Construction of the facilities indicated in Figure 2-1 would result in a small increase in impervious surface area at the Wellford Landfill. It is anticipated however, that the increased stormwater runoff due to the increase in impervious area can be accommodated by the existing capacity of the stormwater management system and detention basin located adjacent to the proposed facilities.

The entire study area falls within Zone C, areas with minimal flooding located outside of the 500-year floodplain (FEMA, 2010). Therefore, the proposed construction would have no impact on the 100-year or the 500-year floodplain.

Based on these findings, DOE concludes that the Proposed Action would not permanently nor adversely affect water resources in the area.

3.4.2.2 No-Action Alternative

Under the No-Action Alternative, no new pipelines would be installed for collecting and distributing the methane gas currently being burned off at the Wellford Landfill; therefore, there would be no impacts to water resources.

3.5 Biological Resources

3.5.1 EXISTING CONDITIONS

3.5.1.1 Vegetation

Areas of natural vegetation occur on the Wellford Landfill site and within the transmission pipeline corridor along stream crossings (Figure 3-3, Vegetation). These areas include hardwood forests as well as mixed pine hardwood forests. The areas adjacent to streams contain several exotic species including Chinese privet (*Ligustrum sinense*), autumn olive (*Elaeagnus umbellata*), and bamboo species. Other disturbed areas along the corridor have early successional species along with invasive species that have established as a result of prior disturbances. Species in those areas include grasses, blackberry (*Rubus* sp.), multiflora rose (*Rosa multiflora*), and Japanese honeysuckle (*Lonicera japonica*).

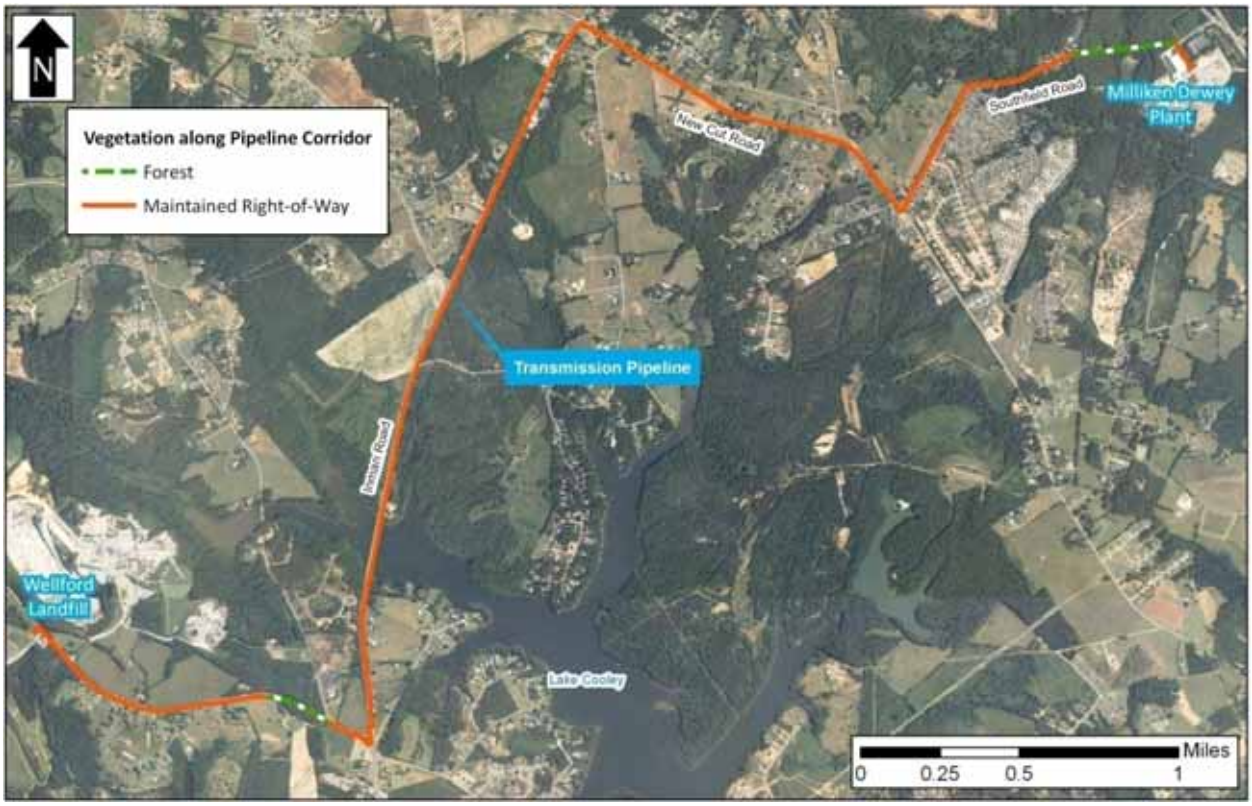

Figure 3-3. Vegetation

3.5.1.2 Fish and Shellfish

The streams crossed by the project are first or second order perennial streams which can provide habitat for shellfish and fish if the water quality is sufficient. The ephemeral streams along the transmission pipeline corridor are non-jurisdictional channels with flows only associated with rain events. The ephemeral streams have little or no flow during most of the year, which limits the aquatic life within those streams.

Fish are present in the perennial water bodies including Lake Cooley, Stream 2 (Unnamed Tributary to Lake Cooley), and Stream 3 (Lawson's Fork Creek); however, because the proposed project would not

directly affect the lake, no sampling was performed to confirm their presence. Mussel species were noted at Lake Cooley; however, specific searches for mussel species were not conducted.

3.5.1.3 Wildlife

Due to the proximity of the project to existing roadways, the landfill, and the Milliken Dewey Plant industrial site, minimal suitable habitat for wildlife species occurs in the project area. The area offers corridors for animal movement along streams or forested areas that are adjacent to the project.

3.5.1.4 Threatened, Endangered, or Candidate Species and Critical Habitats

There is one Federally protected species listed in Spartanburg County identified by the U. S. Fish and Wildlife Service (USFWS) – dwarf-flowered heartleaf (*Hexastylis naniflora*) (USFWS, 2010). Critical habitat has not been identified or published for this protected plant (USFWS, 2010a). According to the South Carolina Rare, Threatened, and Endangered Species Inventory, a population is located approximately one mile north of the northern end of the project on Greene Creek (SCDNR, 2006). Dwarf-flowered heartleaf habitat includes bluffs and nearby slopes, hillsides and ravines, and boggy areas adjacent to creek heads and streams (USFWS, 2010a). Soil type has been documented as the most important habitat requirement for the species and associated soils include areas of Pacolet, Madison, or Musella types (USFWS, 2010b). Minimal suitable habitat was found adjacent to Lake Cooley, the unnamed tributary to Lake Cooley, and Lawson's Fork Creek where small areas of Pacolet and Musella soils occur (HDR, 2010). A field survey utilizing visual inspection of the areas that met the ecological requirements of the listed species was conducted in March 2010. No occurrences of the dwarf-flowered heartleaf were discovered within the project area. There are no additional state listed species within Spartanburg County (SCDNR, 2009).

The bald eagle is no longer endangered or threatened, but it is protected under the Bald Eagle and Golden Eagle Protection Act. Suitable habitat for the bald eagle could occur in the area around Lake Cooley.

3.5.2 DISCUSSION OF IMPACTS

3.5.2.1 Proposed Action

It is anticipated that a total of about 0.9 acre, including forested areas, may be permanently impacted due to the construction of infrastructure for this project. Impacts to existing natural vegetation along the project transmission pipeline corridor would be minimal due to its placement in already maintained right-of-ways along existing roadways near existing buried utilities. Approximately 92 percent of the transmission pipeline corridor is mowed, with the remaining 8 percent forested. Of the 8 percent, 5 percent is located on the Southfield Road extension, which is closed at the Milliken property and no longer used. Vegetation along that road would not be impacted as the pipeline is to be placed along the edge of the dirt roadway.

Most aquatic habitat along the transmission pipeline corridor has been previously disturbed by the construction of the existing roadway and other human activities. No permanent impacts to aquatic species would occur as a result of this project because trenchless construction methods would be used at Lake Cooley, the unnamed tributary to Lake Cooley, and Lawson's Fork Creek.

Visible evidence of animal tracks and scat indicate that rabbits, raccoons, deer, frogs, snakes, and songbirds may inhabit the area. The construction of the project may temporarily impact these species. Construction noise could cause wildlife to temporarily avoid construction areas, resulting in short-term, minor, adverse affects.

Surveys conducted for the Federally protected dwarf-flowered heartleaf and bald eagle did not result in any occurrences of these species (HDR.2010). The only areas of suitable habitat for the dwarf-flowered heartleaf within the pipeline corridor occur along Lake Cooley, the unnamed tributary to Lake Cooley and Lawson's Fork Creek. No eagles or eagle nesting areas were noted during field surveys or in the database reviews in the area of Lake Cooley. During construction, these areas would be directionally bored, and there would be no ground disturbing activities in the areas that meet the ecological requirements of the species. Based on this information, DOE concludes that the Proposed Action would not affect the dwarf-flowering heartleaf or any other Federally protected species.

3.5.2.2 No-Action Alternative

Under the No-Action Alternative, no new pipelines would be installed for collecting and distributing the methane gas currently being burned off at the Wellford Landfill; therefore, there would be no impacts to biological resources.

3.6 Cultural Resources

3.6.1 EXISTING CONDITIONS

The National Historic Preservation Act, Section 106, requires that Federally funded, licensed, or permitted projects be reviewed for their potential impact on historic properties. Authorized under the National Historic Preservation Act of 1966, the National Register of Historic Places (NRHP) houses the formal repository of information pertaining to historic structures and districts worth preservation. That database lists two structures within 0.5 mile of the project, Shiloh Methodist Church and Site Number 711. An additional historic property, the Bush Homeplace, is adjacent to the pipeline route and was also noted as NRHP eligible.

A cultural resources survey was completed for the project in March/April 2010. The survey indicated that no listed structures, historic districts, or properties are present within the proposed project footprint (Fletcher et al., 2010). The cultural resource survey also included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed transmission pipeline corridor. The South Carolina Department of Archives and History determined an architectural survey would not be required because the proposed pipeline would be buried and would not affect above-ground cultural resources (Fletcher et al., 2010).

3.6.2 DISCUSSION OF IMPACTS

3.6.2.1 Proposed Action

Information provided in the cultural resources survey stated that no archaeological sites or isolated finds were found during the field review and no previously recorded cultural resources were present within the project footprint (Fletcher et al., 2010). As a result, DOE concludes that the Wellford Landfill Methane and Greenhouse Gas to Energy Project would not affect any historic properties. In addition, a letter from the SHPO states "Based on the description of the Area of Potential Effect (APE) and the identification of historic properties within the APE, our office concurs with the assessment that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project" (Dobrasko, 2010). The South Carolina SHPO would be contacted if archaeological resources were encountered during construction for the proposed project.

3.6.2.2 No-Action Alternative

Under the No-Action Alternative, no new construction of LFG collection, treatment, and distribution facilities would occur; thus, no impacts to cultural resources would be anticipated.

4. CUMULATIVE IMPACTS

The term "cumulative effect" is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). This section defines the area considered in the cumulative effects analysis, provides an overview of relevant past and present actions in the project vicinity, presents the reasonably foreseeable actions in the area of consideration, and concludes with the cumulative effects analysis.

4.1 Area of Evaluation

As stated in Section 2.1.2, the proposed project begins at the Wellford Landfill and parallels Little Mountain Road (S-42-217) for approximately 1.1 miles to Inman Road; it then follows Inman Road (SR 292) heading north for 2.4 miles; heading east it follows New Cut Road (S-42-52) for approximately 1.2 miles to Southfield Road (S-42-218); it then heads northeast on Southfield Road for 1.1 miles; the pipeline then crosses into the Milliken property, follows Southfield Road extension and ties into the proposed boiler station located on the Milliken Dewey Plant site. Past, present, future projects along the above described project route were considered for cumulative impacts analysis.

4.2 Past and Present Actions

The project area is mostly agricultural and forested land along the transmission line route with industrial areas at the project beginning (Wellford Landfill) and ending (Milliken Dewey Plant) locations. The northern portion of the project area is mixed low density residential. Past installation of the landfill, water and sewer utilities, transportation corridors, the local road network, and other developments have contributed to an integrated arrangement of social, residential, and economical uses in a transitioning environment within the project area. Spartanburg County's Department of Public Works has several projects ongoing at the Wellford site. A list of the ongoing projects at the Wellford landfill is included in Table 4-1.

4.3 Reasonably Foreseeable Future Actions

Spartanburg County's Department of Public Works has several projects planned at the Wellford site. A list of the planned projects at the Wellford landfill is also included in Table 4-1.

Table 4-1. Wellford Landfill Ongoing and Planned Projects

Project	Anticipated Start	Anticipated Complete
Office/Shop Relocation	August 2009	June 2010
Recycle Yard Relocation	August 2009	June 2010
Road Improvements	August 2009	June 2010
Permitting Phase VII	January 2010	June 2010
C & D Landfill Expansion	January 2010	December 2010
Phase V Closure	January 2010	December 2010
Phase VI Cell 2 Construction	December 2010	December 2011

Additionally, as noted in Spartanburg County's Comprehensive Plan (Spartanburg County, 2008), the project area is an area transitioning to industrial and urban land use. Expansion of the utility infrastructure and road network to support growth in the area is likely to occur.

4.4 Cumulative Effects Analysis

This section analyzes the cumulative effects from the past, present, and reasonably foreseeable future projects in conjunction with the Spartanburg County LFG project. This analysis addresses only the resources to which detailed analysis was provided for in Section 3.0, Affected Environment and Environmental Consequences. The rationale for dismissing detailed analysis of other resource areas can be found in Section 3.1.

4.4.1 GEOLOGY AND SOILS

Past and ongoing urbanization and development in Spartanburg County have adversely affected some geological and soils resources. However, the proposed project would be conducted on a developed landfill and within maintained road right of ways and would not contribute to any loss of prime farmland or other cumulative adverse effects to other soil or geological resources.

4.4.2 AIR QUALITY

Spartanburg County currently meets the National Ambient Air Quality Standards as outlined in the Clean Air Act (last amended in 1990 (40 CFR Part 50). Some reasonably foreseeable actions in the area could cause an increase in fugitive emissions. When considered cumulatively, the implementation of the expanded gas collection system at the Wellford Landfill would reduce fugitive emissions of methane (a potent greenhouse gas) and other organic compounds. It is estimated that an annual average of 866 cfm of methane gas can be recovered from the landfill for thirty years, equal to 26 million British thermal units (BTU) per hour. The estimated reduction in CO_2 equivalents was developed by the County and Joyce Engineering (Kelly, 2008) and was based on estimated LFG recovery from the system of 866 cfm/year. The beneficial impacts of reduced greenhouse gas emissions from the project would offset cumulative impacts of other past, present and reasonably foreseeable future actions at the Wellford landfill. Thus, no cumulative impacts to air quality are anticipated.

4.4.3 BIOLOGICAL RESOURCES

Because the project would be implemented primarily within existing roadways, the landfill, and the Milliken Dewey Plant industrial site, minimal habitat for biological resources would be disturbed and impacts of the Proposed Action on biological resources would be small. Although future actions discussed in Section 4.3 are likely to reduce habitat availability within and near the project area, the contribution of the proposed project to the cumulative future loss of habitat, and associated adverse impacts to biological resources, would be negligible.

4.4.4 WATER RESOURCES

The project area contains several streams and water bodies including Lake Cooley, one of the water supply sources for the SJWD. The reasonably foreseeable future actions as presented in Section 4.3 would not substantially alter or affect water resources. The proposed project would result in a small increase in impervious area; however, increased runoff realized would be accommodated by the existing stormwater management system on site. Therefore considering past, present, and foreseeable future actions, would have no cumulative impacts to water resources.

4.4.5 CULTURAL RESOURCES

Two structures listed in the National Register of Historic Places occur within 0.5 mile of the project, Shiloh Methodist Church and Site Number 711. An additional historic property, Bush Homeplace, was

also noted as NRHP eligible. Although future actions are anticipated within the project area, when considered with past, present and foreseeable future actions, no cumulative impacts to cultural resources are anticipated, as Spartanburg County's proposed project would have little or no effects on cultural resources.

5. Irreversible and Irretrievable Commitment of Resources

This section includes an analysis of irreversible and irretrievable commitment of resources. These resource impacts are those that are considered impacts to non-renewable resources. For the Proposed Action, most resource commitments are neither irreversible nor irretrievable and are considered short term and temporary.

However, some wildlife habitat, as it presently exists, would be irretrievably lost or altered. Removal of about 0.9 acre of forested areas along the pipeline corridor would result in making this natural resource unavailable for future use.

In addition, resources consumed during construction of the project, including fossil fuels and construction materials, would be committed for the life of the project. Non-renewable fossil fuels would be irretrievably lost through the use of gasoline and diesel powered construction equipment during demolition and construction.

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APPENDIX A

SCOPING LETTER AND DISTRIBUTION LIST

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

May 13, 2010

SUBJECT: Notice of Scoping – Wellford Landfill Methane and Greenhouse Gas-to-Energy project, Spartanburg County, South Carolina (DOE/EA-1762)

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Spartanburg County, South Carolina (the County). The County is proposing to use Federal and cost-share funds construct and operate a landfill gas-to-energy project at the Wellford Landfill. This project would include a new methane gas line from the Wellford County Landfill to the Milliken Dewey Plant in Spartanburg County, South Carolina. Details of the proposed project and its location are contained in the attachment. Pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provision of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021). DOE is preparing a draft Environmental Assessment (EA) to:

- Identify any adverse environmental effects that cannot be avoided should this proposed project be implemented.
- Evaluate viable alternatives to the proposed project.
- Describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.
- Characterize any irreversible and irretrievable commitments of resources that would be involved should this proposed project be implemented.

Probable Environmental Effects/Issues Scoped for the Environmental Assessment

The EA will describe and analyze any potential impacts on the environment that would be caused by the project and will identify possible mitigation measures to reduce or eliminate those impacts that may result to:

- Land Use
- Air Quality
- Biological Resources
- Cultural Resources
- Noise and Odor
- Safety and Occupational Health
- Socioeconomics and Environmental Justice
- Utilities
- Traffic and Transportation
- Aesthetics
- Waste Management and Hazardous Materials
- Water Resources

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Development of a Reasonable Range of Alternatives

DOE is required to consider a reasonable range of alternatives to the proposed action during an environmental review. The definition of alternatives is governed by the "rule of reason." An EA must consider a reasonable range of options that could accomplish the agency's purpose and need and reduce environmental effects. Reasonable alternatives are those that may be feasibly carried out based on environmental, technical, and economic factors.

The No Action Alternative will be addressed. The need for project redesign, or a project alternative, will be determined during the course of environmental review.

Public Scoping

The DOE will make this letter available to all interested federal, state, and local agencies to provide input on issues to be addressed in the EA. Agencies are invited to identify the issues, within their statutory responsibilities that should be considered in the EA. The general public is also invited to submit comments on the scope of the EA.

No formal public scoping meeting is currently planned for this project. This letter as well as the draft EA, when it is available, will be posted in the DOE Golden Field Office online reading room: http://www.eere.energy.gov/golden/Reading_Room.aspx.

The DOE Golden Field Office welcomes your input throughout our NEPA process. Please provide any comments on this scoping letter on or before June 7, 2010 to:

Melissa Rossiter
NEPA Document Manager
Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401
Melissa.rossiter@go.doe.gov

We look forward to hearing from you.

Sincerely,

Steve Blazek
NEPA Compliance Officer

Attachment

Attachment

Wellford Landfill Methane and Greenhouse Gas-to-Energy Proposed Project Description and Location

The U.S. Department of Energy (DOE) is proposing to provide up to $2.2 million to Spartanburg County, South Carolina. The DOE funding for this proposed project would be paid for by the American Recovery and Reinvestment Act of 2009. The County proposes to design, permit, construct, operate, and maintain a landfill gas-to-energy project to use methane gas generated at the county's landfill at 595 Little Mountain Road in Wellford, South Carolina. This landfill is the primary solid waste management facility for the County and currently has an existing landfill-to-gas (LFG) pipe network. A proposed 6.6-mile-long underground landfill gas transmission pipeline running from the Wellford Landfill to the Milliken Dewey Plant would be constructed by the County and would be located predominately within the existing road right-of-way between the two locations.

The project proposed by the County is to construct:

- Gas Collection System
- Landfill Gas Treatment and Pressurization
- Landfill Gas Transmission Line

The **Gas Collection System** would be located on the Wellford Landfill site and would consist of extraction wells, headers, and internal pipes. The landfill has five phases and additional infrastructure would be added to each phase. Phases I and II currently have 10 wells approximately 24 feet deep. Twenty-two wells would be added to this phase, each 35 feet deep. Phases III and IV of the landfill currently have 18 wells, ranging from 49 feet to 19 feet deep. An additional 16 wells are proposed to be added in this phase, each 35 feet deep. Phase V currently has 15 wells ranging in depth from 44 feet to 12 feet. These wells are currently acting as passive vents and would be connected to the Gas Collection System during construction, with the exception of some of the shallower wells. An additional 36 wells are proposed in Phase V. These wells would range from 90 feet to 30 feet in depth.

The existing LFG pipe network at the Wellford Landfill would remain in place as is and kept independent of the new piping. This would be done to differentiate the LFG flows from the existing, older wells and the new wells.

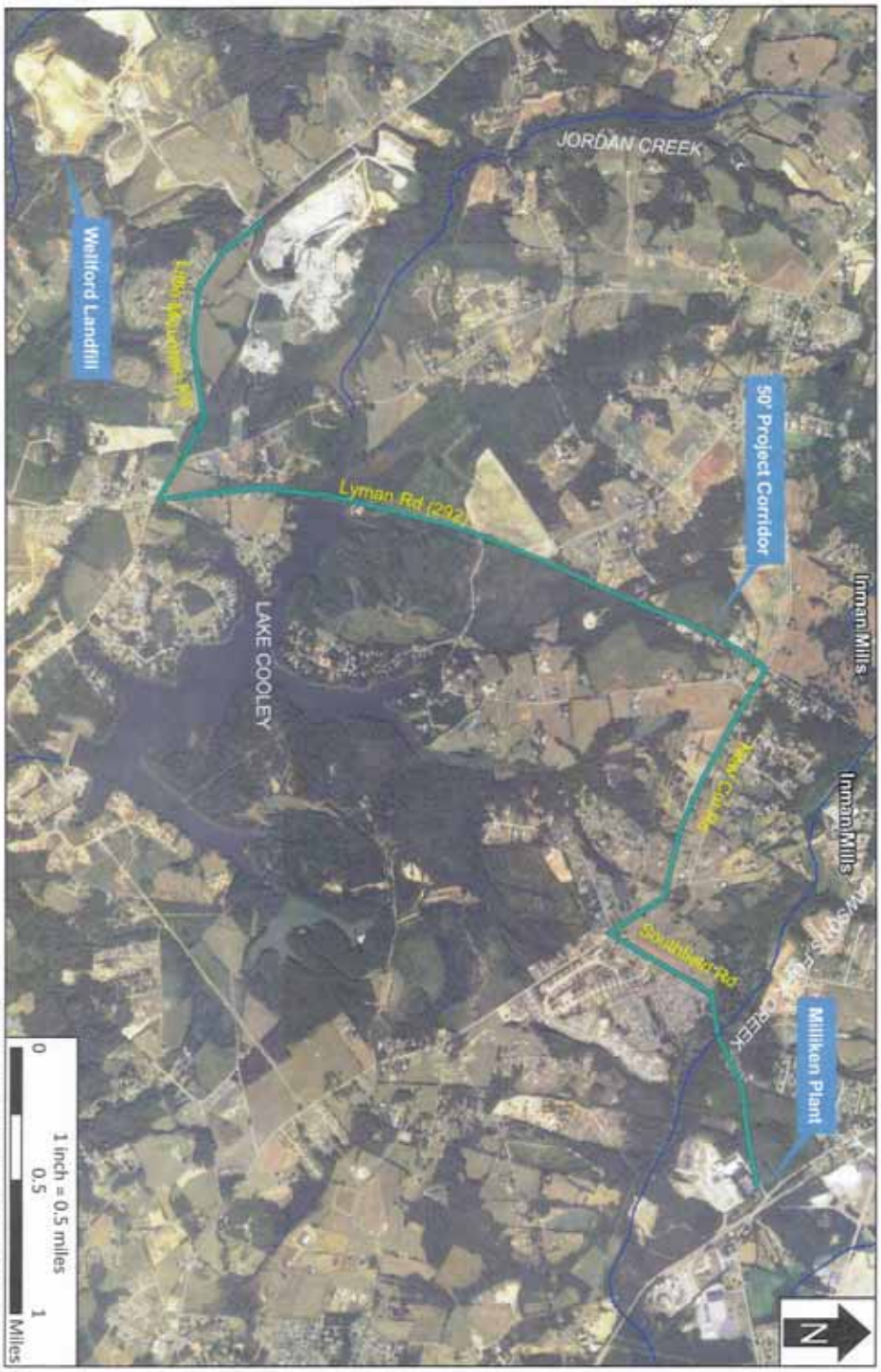
The **Landfill Gas Treatment and Pressurization** system would treat and compress the collected gas to 34 pounds per square inch (psi) to send it to the gas transmission line and on to the Milliken plant. This system would be located at the Wellford Landfill, adjacent to the existing blower flare station.

The **Landfill Gas Transmission Line** would begin at the Wellford Landfill on the discharge end of the gas treatment and pressurization station and would end 6.6 miles away at the Milliken Dewey Plant in Inman, SC. The proposed routing would begin at the landfill's western terminus

and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles; it would head east, following New Cut Road for approximately 1.2 miles; it would head northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow Southfield Road Extension and tie into the proposed boiler station located on the Milliken plant site.

The gas transmission line would be constructed using a combination of trenching and directional drilling methods to avoid roads, streams, and lake crossings. Trenches would be backfilled and revegetated. Crossings of waters and tributaries of the U.S. and wetlands would be directionally drilled beneath the waters and wetlands while maintaining a minimum of 100 feet from edge of the waters and wetlands to minimize impacts.

A map of the pipeline route is attached.



Proposed Project Corridor
Exhibit 1

SCOPING DISTRIBUTION LIST

Department of Agriculture
Mr. Mark Plank
Rural Utilities Service
U.S. Department of Agriculture
Room 2242, Mail Stop 1571
1400 Independence Avenue, SW
Washington, DC 20250-1571

Department of Commerce
Mr. Frank Monteferrante, Ph.D.
Economic Development Administration
U.S. Department of Commerce
H.C. Hoover Building, Room 7816
14th Street and Constitution Avenue, NW
Washington, DC 20230

Department of Homeland Security
Mr. David Reese
USM/OCAO/Occupational Safety
and Environmental Programs
Department of Homeland Security
Washington, DC 20528

Department of the Interior
Mr. Willie R. Taylor
Director
Office of Environmental Policy and Compliance
U.S. Department of the Interior
1849 C Street, NW, Mail Stop 2462
Washington, DC 20240

USFWS (Department of Interior)
Ms. Cynthia Dohner
Southeast Regional Director
U.S. Fish and Wildlife Service
1875 Century Blvd., Suite 400
Atlanta, GA 30345

Mr. Jay Harrington
U.S. Fish and Wildlife Service
176 Croghan Spur Rd., Suite 200
Charleston, SC 29407

Advisory Council on Historic Preservation
Mr. Reid Nelson
Director, Office of Federal Agency Programs
Advisory Council on Historic Preservation
Old Post Office Building, Room 803
1100 Pennsylvania Avenue, NW
Washington, DC 20004

Department of Transportation
FHWA
Mr. Robert Lee
Division Administrator
FHWA
1835 Assembly Street, Suite 1270
Columbia, SC 29201-2483

Federal Energy Regulatory Commission
Mr. Jeff C. Wright
Director, Office of Energy Projects
Federal Energy Regulatory Commission
888 First Street, NE, Room 6A-01, PJ-1
Washington, DC 20426

Environmental Protection Agency
Mr. Heinz Mueller
Chief
US Environmental Protection Agency, Region 4
Office of the Environmental Assessment
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Mr. Bob Lord
US Environmental Protection Agency, Region 4
Wetlands Regulatory Section
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

USACE
Mr. Mark Matusiak
Civil Works Policy and Policy Compliance
Division
Office of Water Project Review
441 G Street, NW
Washington, DC 20314-1000

USACE (continued)
U.S. Army Corps of Engineers
Lt. Colonel Jason A. Kirk
US Army Corps of Engineers, Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

National Congress of American Indians
Ms. Jacqueline Pata
Executive Director
National Congress of American Indians
1516 P Street, NW
Washington, DC 20036

USHUD
Mr. Jim Chaplin
Columbia Field Office Director
US Housing and Urban Development
1835 Assembly Street
Columbia, SC 29201

South Carolina NEPA Contact
Mr. Les Boles
Director
State Clearinghouse
Office of State Budget
1201 Main Street, Suite 870
Columbia, SC 29201

SC Governor
Governor Mark Sanford
Office of the Governor
PO Box 12267
Columbia, SC 29211
Phone: 803-734-2100
Fax: 803-734-5167

SCSHPO
Ms. Carolina Dover Wilson
S.C. Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
S.C. Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905Dr.

Mr. Jonathan M. Leader
South Carolina State Archaeologist
S.C. Department of Archaeology and Anthropology
1321 Pendleton Street
University of South Carolina
Columbia, SC 29208

SCDNR
Mr. John Frampton
Director
South Carolina Dept. of Natural Resources
Rembert C Dennis Building
PO Box 167
Columbia, SC 29202

Ms. Susan Davis
South Carolina Dept. of Natural Resources
P.O. Box 12559
Charleston, SC 29412

Mr. Greg Mixon
South Carolina Dept. of Natural Resources
Land, Water and Conservation Division
5 Geology Road
Columbia, SC 29212-3549

Mr. Bob Perry
Director of Environmental Programs
South Carolina Dept. of Natural Resources
PO Box 167
Columbia, SC 29202

SCDHEC
Mr. David Wilson, P.E.
Bureau Chief
S.C. Dept. of Health and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201

Ms. Myra Reece
Bureau Chief
S.C. Dept. of Health and Environmental Control
Bureau of Air Quality
2600 Bull Street
Columbia, SC 29201

SCDHEC (continued)
Ms. Daphne Neel
Chief
S.C. Dept. of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

Alicia M. Rowe
Project Manager
S.C. Dept. of Health and Environmental Control
Water Quality Certification and Wetlands Section
2600 Bull Street
Columbia, SC 29201

S.C. Dept. of Parks, Recreation & Tourism
Mr. Chad Prosser
Director
S.C. Department of Parks, Recreation and Tourism
1205 Pendleton St.
Edgar A. Brown Building
Columbia, SC 29201

S.C. Human Affairs Commission
Mr. Jesse Washington Jr.
Commissioner of Human Affairs
P.O. Box 4490
Columbia, SC 29204

S.C. Department of Commerce
Mr. Joe E. Taylor, Jr.
S.C. Secretary of Commerce
1201 Main St. 16th Floor
Columbia, SC 29201-3200

S.C. Department of Agriculture
Mr. Hugh Weathers
Commissioner
S.C. Department of Agriculture
P.O. Box 11280
Columbia, SC 29211

S.C. Wildlife Federation
Mr. Ben Gregg
Executive Director
S.C. Wildlife Federation
215 Pickens St.
Columbia, SC 29205

S.C. Forestry Commission
Mr. Brad Bramlett
S.C. Piedmont Regional Office
39 General Henderson Road
Newberry, SC 29108

Water Districts
Kermit Johnson, Project Manager
Inman-Campobello Water District
5 Prospect Street
Inman, SC 29349

Billy Y. Cothran III, P.E., Director of Engineering
Startex-Jackson-Wellford-Duncan Water District
307 Spartanburg Highway
Wellford, SC 29385

S.C. Legislature
Representative Merita A. Allison
402C Blatt Bldg
Columbia, SC 29201

Representative Steve A. Parker
404D Blatt Bldg
Columbia, SC 29201

Senator Glenn G. Reese
502 Gressette Bldg
Columbia, 29201

Senator Lee Bright
502 Gressette Bldg
Columbia, 29201

U.S. Legislature
U.S. Senator Lindsey Graham
140 East Main Street, Suite 110
Rock Hill, SC 29730

U.S. Senator James Demint
105 North Spring Street, Suite 109
Greenville, SC 29601

U.S. Representative Bob Inglis
464 East Main Street, Suite 8
Spartanburg, SC 29302

Indian Tribes
Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

Mr. Russell G. Townsend
Tribal Historic Preservation Office
Eastern Band of Cherokee Indians
PO Box 455
Cherokee, NC 28719

Mr. George Wickliffe
Tribal Historic Preservation Office
United Keetoowah Band of Cherokee
18623 West Keetoowah Circle
Tahlequa, OK 74464

Dr. Richard L. Allen
Tribal Historic Preservation Officer
Cherokee Nation
P.O. Box 948
Tahlequah, OK 74465-0948

APPENDIX B

U.S. DEPARTMENT OF ENERGY CONSULTATION LETTERS AND RESPONSES

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

June 9, 2010

Dr. Wenonah G. Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730-9535

Dear Dr. Haire,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County is proposing to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, SC. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

The landfill currently has an existing landfill-to-gas pipe network. This project would include a new 6.6-mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

DOE does not have any reason to believe the project in Spartanburg County, SC would cause any effects to tribal resources. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor.

The South Carolina Department of Archives and History determined that there is no need for an architectural survey because the proposed buried pipeline would not affect above-ground cultural resources.

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An environmental assessment (EA) is currently being prepared for the proposed landfill-to-energy project by the Department's Golden Field Office to meet the requirements of the *National Environmental Policy Act*.

DOE is initiating consultation and requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns you have on the potential for this proposed project to affect those properties.

This information is being requested to aid in the preparation of that Environmental Assessment and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990. If you have any such information, require additional information, or have any questions or comments about that project, please contact Ms. Melissa Rossiter of the Golden Field Office as soon as possible at the following:

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305
Email: melissa.rossiter@go.doe.gov
Phone: 720-356-1566

DOE will include correspondence with your tribe in an appendix to the EA. DOE will send a copy of the draft EA to your office and respond to any specific comments you may have. At this time we anticipate a 15-day public comment period for this proposed project.

Thank you in advance for your consideration.

Sincerely,

Steve Blazek

NEPA Compliance Officer

Attachments

Exhibit 1. Proposed Project Corridor

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

June 9, 2010

Mr. Michell Hicks, Chief
Eastern Band of Cherokee Indians
P.O. Box 455
Cherokee, NC 28719-0455

Dear Mr. Hicks,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County is proposing to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill. The landfill, located at 595 Little Mountain Road in Wellford, SC, currently has an existing landfill-to-gas pipe network. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

The project would include a new 6.6 mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

DOE does not have any reason to believe the project in Spartanburg County, SC would cause any effects to tribal resources. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor.

The South Carolina Department of Archives and History determined that there is no need for an architectural survey because the proposed buried pipeline would not affect above-ground cultural resources.

Federal Recycling Program Printed on Recycled Paper

An environmental assessment (EA) is currently being prepared for the proposed landfill-to-energy project by the Department's Golden Field Office to meet the requirements of the *National Environmental Policy Act*.

DOE is initiating consultation and requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns you have on the potential for this proposed project to affect those properties. This information is being requested to aid in the preparation of that Environmental Assessment and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990. If you have any such information, require additional information, or have any questions or comments about that project, please contact Ms. Melissa Rossiter of the Golden Field Office as soon as possible at the following:

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305
Email: melissa.rossiter@go.doe.gov
Phone: 720-356-1566

DOE will include correspondence with your tribe in an appendix to the EA. DOE will send a copy of the draft EA to your office and respond to any specific comments you may have. At this time we anticipate a 15-day public comment period for this proposed project.

Thank you in advance for your consideration.

Sincerely,

Steve Blazek

NEPA Compliance Officer

Attachments

Exhibit 1. Proposed Project Corridor

CC: Mr. Russell C. Townsend
Tribal Historic Preservation Office

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

June 9, 2010

Mr. Chadwick Smith, Chief
Cherokee Nation
P.O. Box 948
Tahlequah, OK 74465-0948

Dear Mr. Smith,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County is proposing to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, SC. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

The landfill currently has an existing landfill-to-gas pipe network. This project would include a new 6.6 mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

DOE does not have any reason to believe the project in Spartanburg County, SC would cause any effects to tribal resources. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor.

The South Carolina Department of Archives and History determined that there is no need for an architectural survey because the proposed buried pipeline would not affect above-ground cultural resources.

An environmental assessment (EA) is currently being prepared for the proposed landfill-to-energy project by the Department's Golden Field Office to meet the requirements of the *National Environmental Policy Act*.

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DOE is initiating consultation and requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns you have on the potential for this proposed project to affect those properties.

This information is being requested to aid in the preparation of that Environmental Assessment and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990. If you have any such information, require additional information, or have any questions or comments about that project, please contact Ms. Melissa Rossiter of the Golden Field Office as soon as possible at the following:

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305
Email: melissa.rossiter@go.doe.gov
Phone: 720-356-1566

DOE will include correspondence with your tribe in an appendix to the EA. DOE will send a copy of the draft EA to your office and respond to any specific comments you may have. At this time we anticipate a 15-day public comment period for this proposed project.

Thank you in advance for your consideration.

Sincerely,

Steve Blazek

NEPA Compliance Officer

Attachments

Exhibit 1. Proposed Project Corridor

CC: Dr. Richard L. Allen
Tribal Historic Preservation Officer
Cherokee Nation
P.O. Box 948
Tahlequah, OK 74465-0948

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

June 9, 2010

Mr. George Wickliffe, Chief
United Keetoowah Band of Cherokee Indians
18623 West Keetoowah Circle
Tahlequah, OK 77464

Dear Mr. Wickliffe,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County is proposing to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, SC. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

The landfill currently has an existing landfill-to-gas pipe network. This project would include a new 6.6-mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

DOE does not have any reason to believe the project in Spartanburg County, SC would cause any effects to tribal resources. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor.

The South Carolina Department of Archives and History determined that there is no need for an architectural survey because the proposed buried pipeline would not affect above-ground cultural resources.

An environmental assessment (EA) is currently being prepared for the proposed landfill-to-energy project by the Department's Golden Field Office to meet the requirements of the *National Environmental Policy Act*.

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DOE is initiating consultation and requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns you have on the potential for this proposed project to affect those properties.

This information is being requested to aid in the preparation of that Environmental Assessment and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990. If you have any such information, require additional information, or have any questions or comments about that project, please contact Ms. Melissa Rossiter of the Golden Field Office as soon as possible at the following:

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305
Email: melissa.rossiter@go.doe.gov
Phone: 720-356-1566

DOE will include correspondence with your tribe in an appendix to the EA. DOE will send a copy of the draft EA to your office and respond to any specific comments you may have. At this time we anticipate a 15-day public comment period for this proposed project.

Thank you in advance for your consideration.

Sincerely,

Steve Blazek

NEPA Compliance Officer

Attachments

Exhibit 1. Proposed Project Corridor

CC: Ms. Lisa LaRue
Tribal Historic Preservation Office
United Band of Keetoowah of Cherokee Indians

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

June 9, 2010

Ms. Caroline Dover Wilson
Review and Compliance Coordinator
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

Dear Ms. Wilson,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County proposes to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, SC. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

This project would include a new 6.6-mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

A search of the National Register of Historic Places (NRHP) database listed two structures within 0.5 mile of the project, Shiloh Methodist Church and Site Number 711. An additional property, Bush Homeplace, was noted as being NRHP eligible. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor. That survey report and the South Carolina Department of Archives and History, State Historic Preservation Office Section 106 Project Review Form for this project were submitted to your office on April 21, 2010 by Brockington and Associates. In a letter dated May 4, 2010, the State Historic Preservation Office concurred with the conclusion of that report that no properties listed in or eligible for listing in the NRHP will be affected by the project.

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Based on the cultural resource survey and the NRHP database review, DOE has determined that no historic properties within the Area of Potential Effects would be affected by this proposed project. In compliance with 36 CFR Part 800.4(d) (1), the Department of Energy asks the South Carolina Department of Archives and History, State Historic Preservation Office for its concurrence of this finding.

DOE's Golden Office is preparing a draft environmental assessment (EA) for this project. DOE will include correspondence with your office in an appendix to the EA. DOE will send you a copy of the draft EA and respond to any specific comments you may have. At this time, we anticipate implementing a 15-day public comment period for this proposed project.

Please forward the results of your review and any requests for additional information, to Ms. Melissa Rossiter of the Golden Field Office as soon as possible at the following:

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305
Email: melissa.rossiter@go.doe.gov
Phone: 720-356-1566

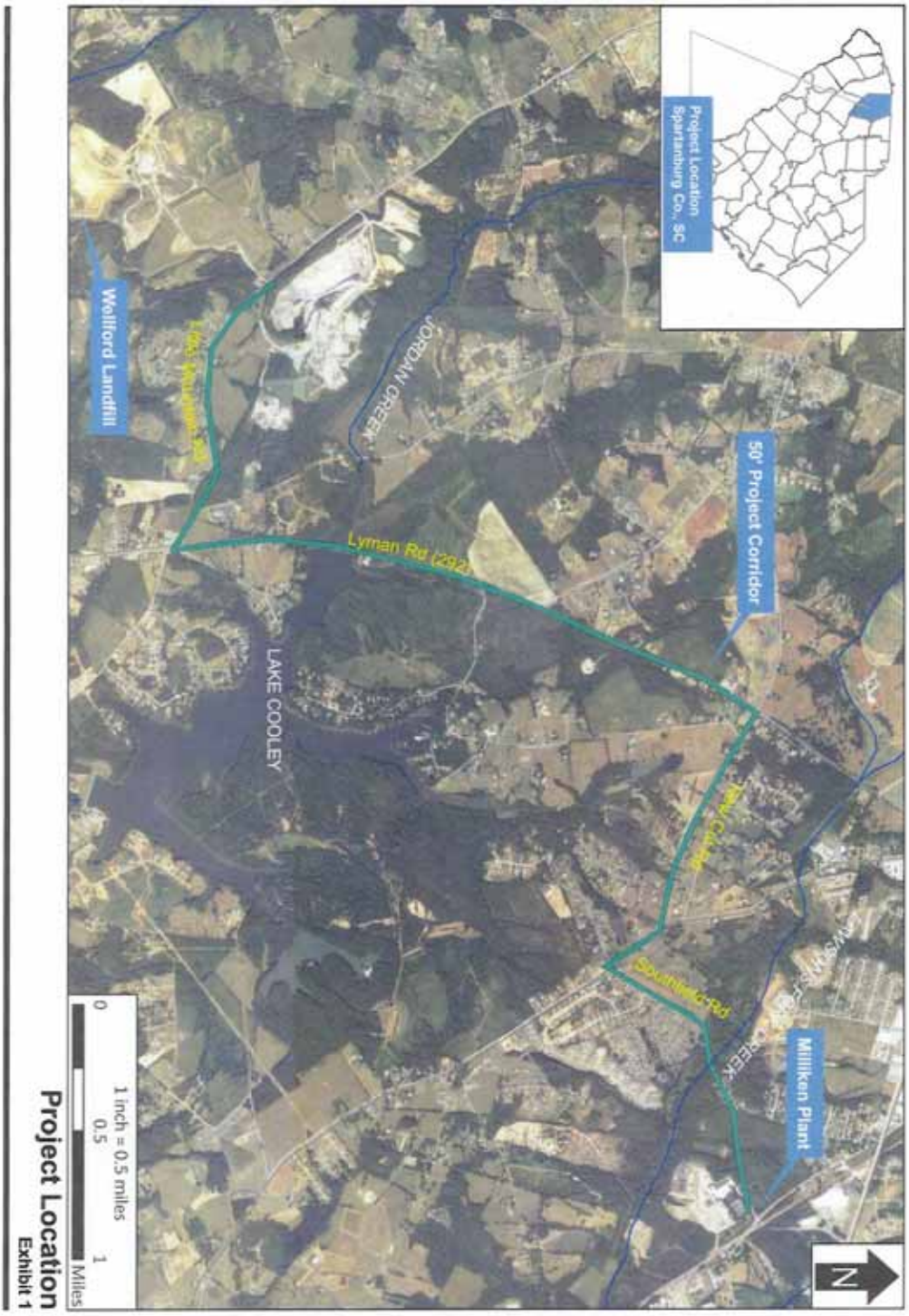
Sincerely,

Steve Blazek

NEPA Compliance Officer

Attachments

1. Exhibit 1. Proposed Project Corridor



Project Location
Exhibit 1

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

June 25, 2010

Attention: Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305

Re. THPO #	TCNS #	Project Description
2010-510-3		Construct and operate a landfill gas-to-energy project at the Wellford Landfill

Dear Ms. Rossiter,

We have received your request for comments regarding the presence of historic properties or traditional cultural, religious, and/or sacred sites of the Catawba Indian Nation that may be impacted by the above referenced undertakings. We will send you our determination as soon as our research process has been completed.

We need the following information:

- A topographic map with the project site clearly marked.
- A description of previous land use. Has the property been graded or paved to subsoil? If the ground has been previously disturbed, will the new ground disturbance be any deeper or wider than the initial ground disturbance? This applies to highway and water/sewer line rights-of-way, as well as old structural foundation trenches.
- A list of all archaeological sites within a half-mile radius of the project area (historic and pre-contact) whether or not they are on the National Register of Historic Places.
- A copy of any archaeological surveys done within a half mile of the project area.
- A copy of the State Historic Preservation Office's letter of concurrence.
- Photographs of the project area, facing north, south, east, and west. We are primarily interested in ground disturbance and do not need detailed information or photographs of historic structures in the project area.

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Totherow for

Wenonah G. Haire
Tribal Historic Preservation Officer

June 17, 2010

Ms. Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Blvd.
Golden, CO 80401-3304

Re: Wellford Landfill Methane and Greenhouse Gas to Energy Project
Inman, Spartanburg County, South Carolina
SHPO Project No. 10-CC0049

Dear Ms. Rossiter:

Thank you for your letter of June 9, which we received on June 14, regarding the above-referenced project. We also received a final copy of the *Cultural Resources Survey of the Wellford Landfill Methane and Greenhouse Gas to Energy Project, Spartanburg County* on June 9 and as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to the Department of Energy pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

Based on the description of the Area of Potential Effect (APE) and the identification of historic properties within the APE, our office concurs with your assessment that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials. The federal agency or the applicant receiving federal assistance should contact our office immediately.

Our office **does not** need a hard copy of the Environmental Assessment on this project. If you have any questions, please contact me at (803) 896-6183 or dobrasko@scdah.state.sc.us.

Sincerely,

Rebekah Dobrasko

Rebekah Dobrasko
Supervisor of Compliance, Tax Incentives, and Survey
State Historic Preservation Office

cc: Josh Fletcher, Brockington and Associates

S. C. Department of Archives & History • 8301 Parklane Road • Columbia • South Carolina • 29223-4905 • (803) 896-6100 • http://scdah.sc.gov

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

May 28, 2010

Attention: Melissa Rossiter
NEPA Document Manager
Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401

Re. THPO #	TCNS #	Project Description
2010-510-1		Wellford Landfill Methane and Greenhouse Gas-to-Energy project, Spartanburg Co., SC

Dear Ms. Rossiter,

We have received your request for comments regarding the presence of historic properties or traditional cultural, religious, and/or sacred sites of the Catawba Indian Nation that may be impacted by the above referenced undertakings. We will send you our determination as soon as our research process has been completed.

Our only concern is with the ground disturbance. We need actual pictures of the site.

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Totherow for
Wenonah G. Haire
Tribal Historic Preservation Officer

Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
P.O. Box 455
Cherokee, NC 28719
Ph: 828-554-6852 Fax 828-488-2462

DATE: June 29, 2010

TO: Melissa Rossiter
NEPA Document Manager
Dept. of Energy
1617 Cole Boulevard
Golden, Colorado 80401

PROJECT(s): **Comments regarding proposed Wellford Landfill Methane & Greenhouse Gas to Energy project, Spartanburg County, SC (COE/EA-1762).**

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians (EBCI THPO) would like to thank you for the opportunity to comment on this proposed section 106 activity under §36 C.F.R. 800.

It is the opinion of the EBCI THPO that the proposed undertaking will not result in any new ground disturbing activities which might adversely affect any sites eligible for inclusion on the National Register of Historic Places. As such, the EBCI THPO believes that the proposed project may proceed as planned. In the event that project plans change, or cultural resources or human remains are discovered, all work should cease, and this office should be contacted to continue government to government consultation as defined under Section 106 of the National Historic Preservation Act of 1966, as amended.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 554-6852.

Sincerely,

Tyler Howe
Tribal Historical Preservation Specialist
Eastern Band of Cherokee Indians

Department of Energy
Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

The United Keetoowah Band of Cherokee Indians in Oklahoma has no objection to the referenced project. However, if any remains, artifacts or other items are inadvertnetly discovered, please cease construction immediately and contact us at 918-456-6533 or by letter.

Lisa C. Stopp, Tribal NAGPRA POC 6.16.10 Date

June 9, 2010

Mr. George Wickliffe, Chief
United Keetoowah Band of Cherokee Indians
18623 West Keetoowah Circle
Tahlequah, OK 77464

Dear Mr. Wickliffe,

The U.S. Department of Energy (DOE) is proposing to provide Federal funding to Spartanburg County, South Carolina (County). The County is proposing to use Federal and Cost-share funds to design, permit, construct and operate a landfill gas-to-energy project at the Wellford Landfill, located at 595 Little Mountain Road in Wellford, SC. This facility would make efficient use of the methane generated at the landfill and improve air quality in the region.

The landfill currently has an existing landfill-to-gas pipe network. This project would include a new 6.6-mile underground methane gas line from the Wellford County Landfill, the County's primary waste management facility, to the Milliken Dewey Plant in Inman, SC in Spartanburg County. The new line would be located predominately within the existing road right-of-way between the two locations.

The proposed routing would begin at the Wellford Landfill's western terminus and parallel Little Mountain Road for approximately 1.1 miles to Inman Road; it would follow Inman Road north for 2.4 miles, then head east following New Cut Road for approximately 1.2 miles; it would go northeast following Southfield Road for 1.1 miles; the pipeline would then cross into the Milliken property, follow the Southfield Road extension, and tie into the proposed boiler station on the Milliken Plan site. Exhibit 1 provides an aerial map showing the corridor for the proposed project gas line.

DOE does not have any reason to believe the project in Spartanburg County, SC would cause any effects to tribal resources. A cultural resource survey completed for the project in March/April 2010 included a review of previous cultural resource investigations in the project area and the excavation of shovel tests at 100-foot intervals along the proposed pipeline corridor. The cultural resources survey stated that no archeological sites or isolated finds were found during the review and no previously recorded cultural resources were present in the project corridor.

The South Carolina Department of Archives and History determined that there is no need for an architectural survey because the proposed buried pipeline would not affect above-ground cultural resources.

An environmental assessment (EA) is currently being prepared for the proposed landfill-to-energy project by the Department's Golden Field Office to meet the requirements of the *National Environmental Policy Act*.

Federal Recycling Program Printed on Recycled Paper

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

July 22, 2010

Attention: Melissa Rossiter
NEPA Document Manager
U.S. Department of Energy
1617 Cole Boulevard
Golden, Colorado 80401-3305

Re. THPO #	TCNS#	Project Description
2010-510-3		Construct and operate a landfill gas-to-energy project at the Wellford Landfill

Dear Ms. Rossiter,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,
Caitlin Totherow for
Wenonah G. Haire
Tribal Historic Preservation Officer

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

June 4, 2010

Ms. Melissa Rossiter
NEPA Document Manager
Department of Energy
1617 Cole Boulevard
Golden, CO 80401

Re: Notice of Scoping- Wellford Landfill Methane and Greenhouse Gas-to-Energy Project, Spartanburg County, South Carolina
FWS Log No. 2010-I-0385

Dear Ms. Rossiter:

The U.S. Fish and Wildlife Service (Service) has reviewed the plans for this proposed project. Based on our review and the information received:

☐ The proposed action will have no effect on resources under the jurisdiction of the Service that are currently protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act). Therefore, no further action is required under Section 7(a)(2) of the Act.

☒ The proposed action is not likely to adversely affect resources under the jurisdiction of the Service that are currently protected by the Act. Therefore, no further action is required under Section 7(a)(2) of the Act.

If the proposed project will impact wetlands, please contact the U.S. Army Corps of Engineers, Charleston District. If you have any questions, please contact Ms. Morgan Wolf at (843)727-4707, ext. 219 and reference FWS Log No. 2010-I-0385.

Sincerely,

Jay B. Herrington
Field Supervisor

JBH/MKW

TAKE PRIDE IN AMERICA

APPENDIX C

REGULATORY AGENCY COORDINATION LETTERS AND RESPONSES

From: Alicia M. Rowe [mailto:ROWEAM@dhec.sc.gov]
Sent: Thursday, June 17, 2010 2:03 PM
To: Glenn, Albert
Subject: Re: Spartanburg County Landfill Gas to Energy Pipeline Project

Mr. Glenn,
The South Carolina Department of Health and Environmental Control has determined that no State Construction in Navigable Waters Permit will be required for the subject project, based on the description of the project in the materials you provided. A letter stating such is attached, and the original is in the mail. Let me know if you have any questions, and have a great day!

Alicia M. Rowe
Project Manager
Water Quality Certification and Wetlands Section
Water Quality Division
Bureau of Water
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
Ph: (803) 898-4333
roweam@dhec.sc.gov

>>> "Glenn, Albert" <AGlenn@scsengineers.com> 6/16/2010 5:05 PM >>>

Ms. Rowe,

As discussed on the telephone on June 15, 2010 attached is the information and drawings for the Spartanburg County Landfill Gas-to-Energy Pipeline project in Wellford, SC for a determination on the need for a "Construction in Navigable Waters Permit" for this project. As a summary to our conversation and the project: a review was completed for the project by the Bureau of Water in relation to a request by Ms. Melissa Rossiter, NEPA Document Manager with the Department of Energy (see attached letter dated June 3, 2010). This project will be funded through a Energy Efficiency and Conservation Block Grant administered by the Department of Energy and as such a Environmental Assessment (EA) is required to be completed. A Jurisdictional Determination Request was submitted to Mr. Les Parker with the Army Corps of Engineers-Charleston District on November 13, 2009 for this project (see attached JDR documentation dated November 13, 2009). A determination from the Army Corps of Engineers that this project will not involve work in Navigable Waters of the US nor does it involve placement of fill material in wetlands or Navigable Waters of the US was made in a letter from Mr. Les Parker dated December 8, 2009 (see attached letter).

Also based on our telephone conversation this project will not need a "Construction in Navigable Waters Permit". If additional information, full size construction drawings, or the need for a permit is required please let me know.

Albert D. Glenn, P.E.
SCS Engineers
2520 Whitehall Park Drive, Suite 450

Charlotte, North Carolina 28273
Office: (704) 504 - 3107
Fax: (704) 504 - 3174
Mobile: (704) 787 - 3074
aglenn@scsengineers.com

Environmental Consultants
and Contractors

SCS Engineers, P.C.
2520 Whitehall Park Drive
Suite 450
Charlotte, NC 28273-3557

704 504-3107
FAX 704 504-3174
www.scsengineers.com

SCS ENGINEERS, PC

November 10, 2009
File No. 02208322.00

Mr. Les Parker
U.S. Army Corps of Engineers-Charleston District
Northwest Branch
1835 Assembly Street, Room 865-B1
Columbia, South Carolina 29201

Re: Jurisdictional Determination Request for a
Landfill Gas (LFG) Transmission Pipeline Project
Spartanburg County, Wellford, South Carolina

Dear Mr. Parker:

On behalf of Spartanburg County, SCS Engineers (SCS) is submitting the attached "Jurisdictional Determination Request" for construction of approximately 6.1 miles of underground landfill gas (pressurized gas) transmission pipeline. The pipeline is to be constructed within the SCDOT and Spartanburg County road right-of-way from the Spartanburg County Wellford Solid Waste Management Facility in Wellford to the Milliken Dewey Plant in Inman. Please find attached two (2) signed Jurisdictional Determination Request forms, two (2) sets of figures, and two (2) sets of full-size project construction drawings.

The transmission pipeline project is to be paid for by the American Recovery and Reinvestment Act of 2009 through an Energy Efficiency and Conservation Block Grant number DE-EE0000951. To comply with the grant requirements a letter from the Corps of Engineers is needed stating this project does not impact any waters of the U.S., tributaries or wetlands and permitting through the Corps is not required. Confirmation documentation of the grant is included as an attachment to this letter.

Spartanburg County is proposing to construct an underground landfill gas transmission pipeline (pressurized gas) from the Wellford Solid Waste Management Facility to the Milliken Dewey Plant as part of a Landfill Gas-to-Energy project. The pipeline will be approximately 6.1 miles in length of 6-inch diameter and 8-inch diameter HDPE pipe and appurtenances. The pipeline will be constructed using a combination of trenching and directional drilling methods, mainly directional drilling methods, within the South Carolina Department of Transportation (SCDOT) and Spartanburg County road right-of-way. The extent of work for this project will be kept to within the SCDOT and Spartanburg County road right-of-way, mainly in the roadway shoulder with some paved road crossings and crossings of waters and tributaries of the U.S. Since the extent of work for this project will be kept to within the road right-of-way wetlands are not expected to be encountered for this project. Crossings of waters and tributaries of the U.S. and wetlands, if encountered, will be directionally drilled beneath the waters, tributaries or wetlands while maintaining a minimum of 100 foot from the edge of the waters and wetlands as to not to impact them.

In consideration of the American Recovery and Reinvestment Act of 2009 intent to expedite projects into the construction phase quickly, we ask that any expedience in completing the Jurisdictional Determination Request be afforded to this project. We ask that a letter be issued from the Corps of Engineers stating this project does not impact waters of the U.S., tributaries or wetlands and permitting through the Corps is not required. If you have any questions or require further information, please call either of the undersigned at 704-504-3107.

Sincerely,

Albert D. Glenn, P.E.	Steven C. Lamb, P.E.
Project Manager	Vice President
SCS ENGINEERS	**SCS ENGINEERS**

cc: Mike Garrett, P.E., Spartanburg County

Attachments (2 sets):

Signed Jurisdictional Determination Request form.
Figure 1: Site Location Map.
Figure 2: USGS Map.
Figure 3: Pipeline Route.
Figure 4: USDA Soils Map.
Figure 5: Lake and Stream Crossing Detail.
Confirmation documentation for the Energy Efficiency and Conservation Block Grant number DE-EE0000951.
Full-size project construction drawings.

M:\PROJECT FILES\02208322.00 - Spartanburg\Milliken Pipeline Plans & Specs\Correspondence\Corp JD Request Letter_11-10-09.doc

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69-A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

December 8, 2009

RECEIVED
DEC 10 2009

Regulatory Division

Mr. Albert D. Glenn
SCS Engineers
2520 Whitehall Park Drive, Suite 450
Charlotte, North Carolina 28273

SUBJECT: SAC-2009-01288

Dear Mr. Garrett:

This is in response to your recent letter on behalf of Mr. Michael N. Garrett, Spartanburg County, wherein you inquired as to the necessity of obtaining a Department of the Army permit for a proposed project referenced as Spartanburg County Landfill Gas Transmission Pipeline, extending from the Wellford Solid Waste Management Facility in Wellford to the Milliken Dewey Plant in Inman, Spartanburg County, South Carolina. The project area is depicted on the drawings you submitted which were prepared by your office, SCS Engineers, dated June 2009, entitled "WELLFORD SOLID WASTE MGMT. FACILITY LFG TRANSMISSION PIPELINE", Drawing No. 1-3 of 3, P1-P12 of P12, PA-PD of PD and D1-D3 of D3.

A review of the information you provided indicates that the work will not involve work in a Navigable Water of the United States, nor will it entail the placement of fill material in wetlands/waters of the United States. Therefore, a Department of the Army permit is not required, and you may proceed with the project.

In future correspondence concerning this matter, please refer to SAC-2009-01288. You may need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Bureau of Water. A copy of this letter is being forwarded to that agency for their information.

If you have any questions concerning this matter, please contact me at 803-253-3444.

Respectfully,

Leslie L. Parker
Watershed Manager

Enclosures:

Customer Service Survey

Copy Furnished:

Mr. Chuck Hightower
South Carolina Department of
Health and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

2

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June 17, 2010

Albert D. Glenn, P.E.
SCS Engineers
2520 Whitehall Park Drive, Suite 450
Charlotte, NC 28273

Re: SAC-2009-01288
Spartanburg County Landfill Gas Transmission Pipeline

Dear Mr. Glenn:

This is in response to your June 16, 2010, email inquiring about the need for a State Construction in Navigable Waters Permit from the South Carolina Department of Health and Environmental Control for the installation of a new landfill gas transmission line in Spartanburg County, South Carolina, using a combination of trenching and directional drill methods. All proposed aquatic crossings associated with this project will be accomplished using directional drill methods. A review of the information you provided indicates that no work will occur in a State Navigable Water, therefore, a State Construction in Navigable Waters Permit is not required for the proposed project. Additionally, as stated in a letter from the United States Army Corps of Engineers dated December 8, 2009, the project will not involve work in a Navigable Water of the United States, nor will the project entail the placement of fill material in wetlands/waters of the United States. A Department of the Army permit is not required for the installation of the proposed 6.1-mile transmission pipeline, and therefore, a Section 401 Water Quality Certification will not be required for the project. If you have any questions concerning this matter, please contact me at (803) 898-4333, or at roweam@dhec.sc.gov.

Sincerely,

Alicia M. Rowe

Alicia M. Rowe
Project Manager
Water Quality Certification and Wetlands Section

cc: SCDHEC EQC Regional Office
Les Parker, U.S. Army Corps of Engineers

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
2600 Bull Street • Columbia, SC 29201 • Phone: (803) 898-3432 • www.scdhec.gov

SJWD Water District

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Commissioner

P.O. BOX 607, LYMAN, SOUTH CAROLINA 29365 / TELEPHONE (864) 439-4423 / FAX (864) 949-3511

September 18, 2009

Ms. Fran Creel
Spartanburg County
Public Works Department
9039 Fairforest Rd.
Spartanburg, SC 29301

Re: Wellford Landfill Gas Main Crossing Lake Cooley

Dear Ms. Creel,

SJWD Water District has reviewed the submitted plans for the above referenced project and offers the following comments.

The Lake Crossing Detail (Sheet D1) appears to be an acceptable method of crossing Lake Cooley. Please take all necessary steps to ensure that the pipeline does maintain the 4 ft. minimum cover under the lake bottom. Additionally, please coordinate with Mitch Turner (SJWD Water Resources) regarding location of silt fence and other erosion control methods installed near the lake.

Please contact me once the directional bore has been scheduled. If you need additional information or have any questions, please feel free to contact me at (864) 949-2804.

Sincerely,

Billy Y. Cothran III, P.E.
Director of Engineering
SJWD Water District

Cc: Mitch Turner (SJWD)

SERVING WESTERN SPARTANBURG COUNTY
Startex - Jackson - Wellford - Duncan Water District