

OFFICE

110 North Street
Wilkesboro, NC 28697
Phone: (336) 651-7582

GERMANTOWN LANDFILL

580 Poplar Grove Road
Wilkesboro, NC 28697



REQUEST FOR PROPOSALS

Project Title: Wilkes County LFG Beneficial Use Project

Proposals will be received at the following location, subject to the conditions attached hereto until **2:00 PM EST, May 11, 2011**. Proposals should be submitted to the attention of Edward Barnes, Planning Director, and labeled "Wilkes County LFG Beneficial Use Project".

Where to submit Proposals: Attn: Mr. Edward Barnes
Wilkes County Planning Director
110 North Street
Wilkesboro, NC 28697
Phone: (336) 651-7582

Permit No.	Date	Document ID No.
97-01	May 3, 2011	13761

RECEIVED
May 3, 2011 via an e-mail
Solid Waste Section
Raleigh Central Office

SCHEDULE OF EVENTS

- | | |
|---|----------------|
| 1. Issue/Advertise RFP | April 11, 2011 |
| 2. Pre-submittal meeting at landfill 10:00 AM EST | April 27, 2011 |
| 3. Pre-submittal questions due by 5:00 PM EST* | May 4, 2011 |
| 4. Response to pre-submittal questions | May 6, 2011 |
| 5. Proposals due by 2:00 PM EST | May 11, 2011 |

*Questions should be submitted via e-mail to Edward Barnes (Wilkes County Planning Director) ebarnes@wilkescounty.net and copied to Steve Cowie (Joyce Engineering, Inc.) scowie@joyceengineering.com

Acknowledgement of Addenda

Addenda received and used in preparing proposal (check all that apply):

Addendum No. 1 _____ Addendum No. 2 _____ Addendum No. 3 _____

Acknowledgement of Grant Conditions

This project is being funded by American Recovery & Reinvestment Act (ARRA) stimulus grant funding. As such, certain terms and conditions apply, and Bidders must attest that they have read, are aware of and will comply with these conditions. Specific grant conditions are included in Appendix 1. Check the box below to attest.

I hereby attest that I am aware of and will comply with the conditions presented in Appendix 1.

COMPLETE AND RETURN THIS PAGE WITH PROPOSAL
(Submittal Form Page 1 of 3)

Cost Summary

Proposals may be submitted for Component 1, Component 2, Component 3, Component 4, or for any combination of these components. Proposers may submit a proposal to complete all of the components. Complete this section as applicable, in addition to providing the information requested in Section 1.2. Details regarding the line items summarized below are presented in the RFP Section 3. The County will evaluate all proposals for the option and proposal that best meets the County’s goals. After the initial evaluation of proposals, the County may choose to have discussions and negotiate with one or more Proposer, and may or may not enter a contract with a Proposer.

COMPONENT 1: Landfill Gas Collection System

Item No.	Description	Cost (\$)	
	Provide pricing for collecting gas using only the existing 4 wells AND for the option of collecting gas from 4 additional wells→	Use Only Exist. 4 Gas Wells	Connect to 4 Addit. Gas Wells
1	Landfill Gas Delivery Piping to Generator		
2	Landfill Gas Delivery Piping to Fire Training Facility (~300’ of pipe trenching)		
3	Blower/Flare		
Total Cost for COMPONENT 1 only			

COMPONENT 2: Landfill Gas-to-Electricity Facility

Item No.	Description	Cost (\$)	
1	Electricity Generation Equipment		
2	Heat Recovery from Electricity Generation Equipment		
3	Distribute Generated Electricity to Onsite Structures		
Total Cost for COMPONENT 2 only			

COMPONENT 3: Monitoring Equipment & Data Acquisition

Item No.	Description	Cost (\$)	
1	Supply and Install Continuous Gas Analyzer, 3 Flow Meters, Digital Chart Recorder & Telemetry System		
Total Costs for COMPONENT 3 only			

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(Submittal Form Page 2 of 3)**

COMPONENT 4: Greenhouse(s)

Item No.	Description	Cost (\$)	
		1 Greenhouse	2 Greenhouses
Provide Pricing for 1 Greenhouse AND for 2 Greenhouses →			
1	Supply and Install Greenhouse (not including heating system)		
2	Provide (Install) Heating System		
Total Costs for COMPONENT 4 only			

Proposers who would like to perform the entire project may offer a price for the entire project that is different than the sum of the separate components. For such cases, complete the tables for all components in addition to provided the total project cost below.

	Using Only Exist. 4 Gas Wells	Connect to 4 Addit. Gas Wells
Total cost to perform entire project (1 Greenhouse)		
Total cost to perform entire project (2 Greenhouses)		

In compliance with this Request for Proposal (RFP), and to all the conditions imposed herein, the undersigned offers and agrees to complete all requirements and conditions in accordance with the attached signed proposal or as mutually agreed upon by subsequent negotiations.

Submitting Firm Name and Address:

 Telephone: (____) _____

 Fax: (____) _____

Signature: _____ Date: _____
 Title: _____

**COMPLETE AND RETURN THIS PAGE WITH PROPOSAL
 (Submittal Form Page 3 of 3)**

WILKES COUNTY LFG BENEFICIAL USE PROJECT

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- Appendix 1 – Grant Conditions
- Appendix 2 – Specifications

DRAWING

- 1 – Conceptual Site Plan

PART 1: REQUIREMENTS

1.1 PURPOSE & SCOPE OF SERVICES

Purpose

Wilkes County, North Carolina (the County), is requesting proposals for the design and construction of a facility to use landfill gas at the closed Germantown Landfill to generate electricity and heat for one or more greenhouses to be built onsite, as well as provide electricity to an existing onsite office building. Additionally, the County would like to supply landfill gas to a fire fighter training facility onsite. The existing site conditions and a conceptual layout of the desired facility are provided as Drawing 1, attached to this RFP. The project has been broken into four main components:

- **Component 1 – Landfill Gas Collection System:** Includes a blower, flare and HDPE pipe system to deliver landfill gas to an electricity generator and to a firefighter training facility (~300' of pipe anticipated for delivery to firefighter training facility).
- **Component 2 – Landfill Gas-to-Electricity Facility:** Includes electricity generation equipment capable of producing enough electricity and heat to sustain one or more proposed greenhouses and electricity for an existing office building. The electricity generator should be equipped as necessary to allow for capture and re-use of radiant heat in greenhouses, distribution of generated electricity to onsite greenhouse(s) and an office building. This component also includes any conditioning that may be required to treat the landfill gas (other than moisture removal with a knockout pot and filter which are included in Component 1).
- **Component 3 – Monitoring Equipment & Data Acquisition:** Includes three landfill gas flow meters, a continuous gas analyzer, a digital chart recorder and a telemetry system with a web based interface to allow for viewing and downloading data.
- **Component 4 – Greenhouse(s):** Includes the design, supply and installation of either one or two greenhouses at the landfill. The greenhouses must be designed to be heated in a way that utilizes landfill gas as fuel, or electricity generated from landfill gas, or heat recovered from generators run on landfill gas, or a combination thereof.

Proposers may submit a proposal for Component 1, Component 2, Component 3, Component 4, or for any combination of these components, including an option to propose to complete the entire project. The County will evaluate all proposals, seeking the option and proposal that best meets the County's goals. After the initial evaluation of proposals, the County may choose to have discussions and negotiate with one or more Proposer, and may or may not enter a contract with a Proposer.

Project Goals:

- Build at least one greenhouse and meet or exceed the electricity and heating requirements of the greenhouse utilizing landfill gas,
- Provide electricity to the existing office building on site,

- Provide landfill gas to a firefighter training facility (The gas supplied to the firefighter training facility will only be used a few days of the year and will not be in competition with other uses of the gas.),
- Monitor the gas quality, flow and proof of combustion (flare thermocouple) of landfill gas,
- Have a landfill gas beneficial use project that is relatively simple to operate, requiring minimal maintenance.

Scope of Services

COMPONENT 1

Comprehensive services to establish a fully functional, ready to operate, landfill gas collection system are required, including but not necessarily limited to:

- Landfill Gas Collection Wells and Piping
- Skid Mounted Blower and Flare
- Gas Line to Generators
- Gas Line to Fire Training Facility
- Start-up and training

COMPONENT 2

Comprehensive services to establish a fully functional, ready to operate, electricity generation system fueled by landfill gas, including but not necessarily limited to:

- Engineering design of the electricity generation facility,
- Electricity generation equipment (including landfill gas conditioning, if required),
- Onsite distribution of generated electricity,
- Installation and construction of equipment,
- Building/enclosure for electricity generation facility,
- Civil sitework,
- Start-up and training

COMPONENT 3

Comprehensive services to establish a fully functional, ready to operate, remote monitoring and data acquisition system, including but not necessarily limited to:

- Continuous landfill gas analyzer,
- 3 Flow meters,
- Digital chart recorder,
- Telemetry system for remote monitoring and data acquisition, and
- Installation, start-up and training.

COMPONENT 4

- Engineering design of the greenhouse(s),
- Delivery/shipping,
- Building erection/installation,

- Heating system design and installation (heating system must be designed to utilize landfill gas as fuel, electricity generated from landfill gas, heat recovered from generators run on landfill gas, or a combination thereof),
- Electrical connections and lighting,
- Obtaining all necessary building permits for the greenhouse(s), and
- Start-up and Training

1.2 PROPOSAL RESPONSE FORMAT

As a minimum, each proposal should include the following:

- A. Submittal Forms – Complete the provided Submittal Forms (Pages 1-3) and include with submittal.
- B. Executive Summary – Provide a brief introduction of the company and the proposed services to be provided.
- C. Qualifications & Experience – Provide a description of your company’s background, its focus, and the scope and nature of services provided on other similar projects. Also provide an outline of the main personnel that would make up the project team for this specific project, along with the background, experience and roles that each individual would have. At least one (1) client references should be provided in this section, including: name of client, client contact information, and brief description of service performed on project.
- D. Scope & Schedule – Provide an outline of the services that will be provided to deliver the end product. Also, provide a timeline for completion of major project components and an estimate of overall time to complete the project.
- E. Facility Description – Provide a detailed description of the layout and components of the facility you propose, including (as applicable):

COMPONENT 1

- a. Detailed listing of the components of the blower/flare skid, including makes, models and rated capacities, materials used, etc.

COMPONENT 2

- a. Maximum rated electricity generating capacity (kW),
- b. Minimum required landfill gas flow rate and methane content,
- c. Make/model of generator(s),
- d. Description of heat recovery equipment and/or process,
- e. Description of building/enclosure,
- f. Description of proposed pre-treatment of LFG,
- g. Description of proposed flare system and monitoring equipment,

h. Operating procedures,

Separate Item (Not to be included in price submittal for Component 1, but to be provided for informational purposes)

i. Maintenance items and schedule of maintenance for generators (if your company offers an annual maintenance service contract, please describe that service including maintenance items required over at least a 10-year period).

COMPONENT 3

a. Detailed listing of the components of the blower/flare skid, including makes, models and rated capacities, materials used, etc.

COMPONENT 4

a. Provide specifications for the proposed greenhouse(s) as outlined in Part 3.4.

b. Provide a detailed description of the proposed heating system, including minimum required energy input (Btu/hr, kW).

c. Provide electricity requirements for lighting system.

F. Price – Provide pricing on Submittal Form Pages 2 and 3.

G. List of Strengths – Provide a summary explanation of the competitive advantages the proposed facility would have, and why it is in the best interest of the County to select the proposal.

1.3 PROPOSAL SUBMISSION

Proposers shall submit three (3) hard copies of their response to this RFP. The complete proposal shall be placed in a sealed envelope or box having the name and address of the Proposer and the statement “Proposal for: Wilkes County LFG Beneficial Use Project”. The sealed envelope or box shall then be placed in another sealed envelope or box which should be addressed to: Mr. Edward Barnes, Wilkes County Planning Director, 110 North Street, Wilkesboro, NC 28697. Wilkes County is not responsible for the timeliness of any parcel or mail delivery service. Proposals may be hand delivered to the address provided above, or sent via Fed Ex or UPS. All proposals must be received prior to the time specified herein.

1.4 AWARD

The County will evaluate the proposals and assess whether or not any one or multiple proposals meets their goals. The County may then negotiate terms and enter into a contract with the Proposer that they feel has submitted the proposal that is in their best interest. The County reserves the right to reject all proposals if they do not feel that any of the proposals is in their best interest.

PROPOSAL EVALUATION CRITERIA AND SELECTION PROCESS:

The selection committee will evaluate each proposal based on the following criteria:

- A. Project definition and approach;
- B. Proposer's qualifications and demonstrated ability to manage the project;
- C. Qualifications of project team and relevant experience;
- D. Project schedule; and
- E. Cost.

The selection committee may interview short listed firms as a part of the selection process. The selection committee reserves the right to perform any due diligence necessary to ensure that the Proposer is capable of implementing the project. After interviews have been conducted, the selection committee may begin negotiations with the Proposer, which, in its opinion, is the most qualified and has the best proposal.

In the event that a single proposer is uniquely qualified, or clearly more highly qualified than other firms offering proposals for this service, Wilkes County may so state this fact, give a reasonable explanation for this decision and enter into negotiations with the uniquely qualified proposer.

In the event negotiations of specific terms and conditions prove unsuccessful with the selected proposer, the selection committee may choose another Proposer with which to begin negotiations.

1.5 GENERAL CONDITIONS

- A. **APPROVAL OF PROJECT:** All construction drawings, plans, construction specifications, equipment specifications, site plans, construction schedules, startup and operational procedures, and permit applications must be reviewed by and approved by Wilkes County prior to implementation or application. Compliance with Federal, State, and local laws, codes, and regulations affecting the operation of the landfill shall take precedence over all aspects of the project.
- B. **COLLUSION:** By submitting a proposal in response to this Request for Proposal, the Proposer represents that in the preparation and submission of this proposal, said Proposer did not, either directly or indirectly, enter into any combination or arrangement with any person, Proposer or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free competitive bidding.
- C. **PREPARATION:** Wilkes County intends that responses to this RFP be concise, informative, and inexpensive for the Proposer to prepare. Proposals should be organized in the order in which the requirements are presented in this RFP. An authorized representative with the authority to bind the Proposer shall sign the proposal. All information requested shall be submitted. Failure to submit all information requested may result in the purchasing agent or selection committee requiring prompt submission of

missing information and/or giving a lowered evaluation of the proposal. Proposals which are substantially incomplete or lack key information may be rejected by the purchasing agent or selection committee. Each copy of the proposal shall be bound or contained in a single volume where practical.

D. **WILKES COUNTY RESERVES THE RIGHT TO:** reject any and all proposals and to waive any informality or technical defects if, in its judgment, the best interests of the County will be served.

F. **ADDITIONAL GENERAL TERMS AND CONDITIONS:**

1. **TERMS:** In the event there is a conflict between the general terms and conditions and any special terms and conditions which may be included in this solicitation for use in a particular procurement, the special terms and conditions shall apply.
2. **CLARIFICATION:** If any prospective Proposer has questions about the specifications or other solicitation documents, the prospective Proposer should submit the questions via e-mail to Edward Barnes (Wilkes County Planning Director) ebarnes@wilkescounty.net and copied to Steve Cowie (Joyce Engineering, Inc.) scowie@joyceengineering.com prior to 5:00 PM EST, April 29, 2011.
3. **QUALIFICATIONS OF OFFERORS:** The County may make such reasonable investigations as deemed proper and necessary to determine the ability of the Proposer to perform the work and the Proposer shall furnish to the County all such information and data for this purpose as may be requested. The County reserves the right to inspect the Proposers physical facilities prior to award to satisfy questions regarding the Proposers capabilities. The County further reserves the right to reject any proposal if the evidence submitted by, or investigations of, such Proposer fails to satisfy the County that such Proposer is properly qualified to carry out the obligations of the contract and to complete the work/furnish the item(s) contemplated therein.
4. **ASSIGNMENT OF CONTRACT:** A contract shall not be assignable by the Proposer in whole or in part without the prior written consent of Wilkes County.
5. **ETHICS IN PUBLIC CONTRACTING:** By submitting a proposal, all Proposers certify that their proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other Proposer, supplier, manufacturer or subcontractor in connection with their proposal.

6. ANTI-DISCRIMINATION: By submitting a proposal, all Proposers certify to Wilkes County that they will conform to the provisions of Presidential Order #11246, the Federal Civil Rights Act of 1964, as amended, and that during the performance of this contract, the Proposer agrees as follows:

a. The Proposer will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by the state law relating to discrimination in employment, except when there is bona fide occupational qualification reasonably necessary to the normal operation of the Proposer. The Proposer agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

b. Notices, advertisements and solicitations placed by or on behalf of the Proposer will state that such contractor is an equal opportunity employer.

c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

d. The Proposer will include the provisions of the fore mentioned paragraphs in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

7. MINORITY AND WOMEN-OWNED BUSINESSES: In accordance with Presidential Executive Orders #12138 & #11625, Wilkes County actively solicits both minority and women-owned businesses to respond to all Invitations for Bid and Requests for Proposal, and if not already on the County's mailing list, you may request application for inclusion on the list.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees.

8. DRUG-FREE WORKPLACE: During the performance of this contract, the Proposer agrees to (i) provide a drug-free workplace for the Proposer's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violation of such prohibition; (iii) state in all solicitations or

advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, “drug-free workplace” means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

9. ANTI-DISCRIMINATION - FAITH BASED ORGANIZATIONS:

It is the policy of Wilkes County not to (i) discriminate against a faith-based organization on the basis of the organization’s religious character or (ii) impose conditions that (a) restrict the religious character of the faith-based organization, except for sectarian worship, instruction, or proselytizing; however, this prohibition shall not apply to expenditures pursuant to contracts, if any, for the service of chaplains, or (b) impair, diminish, or discourage the exercise of religious freedom by the recipients of such goods, services, or disbursement.

10. INSPECTION OF PROCUREMENT RECORDS: Proposals submitted may be subject to public inspection in accordance with applicable codes.

11. COSTS OF PROPOSAL PREPARATION: Any costs incurred by the Proposer in preparing or submitting proposals are the Proposer’s responsibility. Wilkes County will not reimburse any Proposer for any costs incurred as a result of a response to this Request for Proposals.

12. OWNERSHIP OF MATERIAL: Ownership of all data, material and documentation originated and prepared for Wilkes County pursuant to the RFP shall belong exclusively to Wilkes County and be subject to public inspection.

13. TRADE SECRETS OR PROPRIETARY INFORMATION: Trade secrets or proprietary information submitted by a Proposer in response to this Request for Proposals shall not be subject to public disclosure; however, the Proposer must invoke the protection of this section prior to or upon submission of data or materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary.

14. CANCELLATION OF CONTRACT: Wilkes County reserves the rights to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the contractor.

15. INSURANCE: Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the Authority shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Contracting Officer prior to beginning work and must provide for a 30-day prior notice of cancellation, nonrenewal or material change of conditions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. Proof of insurance is required for the following:

a. Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by applicable laws.

b. Professional Liability Insurance: in an amount of not less than \$1,000,000 each claim for errors and omissions with at least Best's Guide Rating-A-VIII or better.

c. Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of \$1,000,000 combined single limit per occurrence.

d. Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of \$500,000 combined single limit per occurrence.

e. Failure to supply satisfactory proof of insurance within the time required will cause the County to declare the bidder nonresponsive and to reject the proposal.

16. OBLIGATION OF PROPOSER: By submitting a proposal, the Proposer covenants and agrees that he has satisfied himself, from his own investigation of the conditions to be met, that he fully understands his obligation and that he will not make any claim for, or have right to cancellation or relief from the contract because of any misunderstanding or lack of information.

PART 2: BACKGROUND INFORMATION

2.1 GENERAL

2.1.1 Location

The Germantown Landfill address is:
580 Poplar Grove Road
Wilkesboro, NC 28697

2.1.2 Landfill History

The Germantown Landfill is a closed municipal solid waste (MSW) landfill. The landfill ceased daily operations in 1993.

2.1.3 Landfill Gas Collection & Control System

Refer to the attached drawing as reference for this section. Closure of the landfill included 6 shallow passive gas vents. In 2003, 4 additional deep gas wells were installed and were fitted with Landtec wellheads. In 2004, these wells were connected to a 6" diameter below-ground HDPE pipe system designed to collect the landfill gas. A condensate trap was installed toward the base of the landfill to capture condensate. The HDPE pipe was further extended along the edge of the access road and a second condensate trap was installed at a low point in the line. In 2009, an above-ground section of 6" diameter HDPE pipe was added to bring the pipe system to its current location, which is approximately 100 feet from the proposed location of the electricity generation facility.

2.1.4 Electric Power Supply and Other Site Features

The site is serviced with single phase overhead electric power lines. Existing power poles are shown on the attached drawing.

2.2 SCHEDULE

The County intends to have contracts in place for development of the LFG Beneficial Use Project by June of 2011, with the goal of completing the project by the end of the calendar year.

2.3 LANDFILL GAS QUANTITY

Between May 22, 2009 and August 10, 2009 pilot testing was performed at the site by the Appalachian State University Energy Center in cooperation with Wilkes County and KSD Enterprises to test the feasibility of running an engine-generator at the site. During the 90 day test period the following gas quality and flows were measured.

Average LFG Quality & Flow Readings (2009)

Source: "Wilkes County Germantown Landfill Gas Pump Test & Demonstration Using KSD Enterprises Methane Buster Technology", by Appalachian State University Energy Center & Wilkes County, NC.

Date	CH4	CO2	O2	Bal	SP	1	2	3	4	Total
5/22	49.0	35.9	2.8	12.3	8.5	14.5	18.5	21.0	19.5	73.5
5/23	50.7	37.7	2.2	9.3	10.0	13.0	15.0	24.0	7.0	59.0
5/26	48.8	37.4	1.9	12.0	10.0	14.0	14.0	25.0	3.0	56.0
5/29	51.1	38.7	0.7	10.3	10.3	15.0	12.0	25.0	0.0	52.0
6/8	43.4	35.7	1.0	20.0	9.5	14.0	9.0	23.0	3.0	49.0
6/9	42.7	34.4	1.2	21.7	9.3	-----	-----	-----	-----	-----
6/25	43.1	34.7	1.3	21.1	10.1	13.5	5.0	23.0	4.0	45.5
7/3	42.8	35.3	1.3	20.7	10.3	12.0	5.0	25.0	-----	42.0
8/10	44.2	35.7	1.2	19.0	14.3	17.0	6.3	26.5	1.8	58.0
Ave from 6/8-8/10	43.2	35.2	1.2	20.5	11.0	14.1	6.3	26.5	1.8	48.6

Notes:

- Headings - CH4 is methane%, CO2 is carbon dioxide%, O2 is oxygen%, Bal is balance gases (mostly nitrogen), SP is the static pressure in the gas lines (measured in inches of water column), 1,2,3,4 are wells numbers, Total is the total flow (cfm) for all four wells on that date.
- **Numbers in red are those readings taken while the system was still balancing out and were not figured in the averages.**
- Last row in chart are the averages from 6/8-8/10
- We used **58.0, the total in blue on 8/10** as the expected flow from the existing four wells.

As part of the report referenced above, Appalachian State University estimated that an additional 29 standard cubic feet per minute (scfm) of flow would be available if 4 additional of the existing landfill gas vents were connected to the collection system.

The energy content of methane is approximately 1000 Btu/scf. The energy content of landfill gas depends on % methane content. If the % methane in the landfill gas is 45%, the energy content will be approximately 450 Btu/scf.

2.4 LANDFILL GAS QUALITY

Testing has not been done to determine the concentration of siloxanes or hydrogen sulfide in the landfill gas.

PART 3: ADDITIONAL PROJECT GUIDELINES

3.1 COMPONENT 1 – LANDFILL GAS COLLECTION SYSTEM

HDPE Pipe (See attached specifications 02221, 02200, 02100, 02618, 02936, and 01720)

The main gas delivery pipes shall be 6" diameter HDPE, SDR 17, installed in a trench with a minimum of 12" of compacted soil cover. For road crossings, the pipe shall be encased in 16 gauge galvanized steel corrugated pipe for protection, and shall be installed in a trench with a minimum of 30" of compacted soil cover.

The gas pipe for the firefighter training facility is expected to be approximately 300 feet in length.

Lateral pipes used to connect wells to the main header pipe shall be 4" diameter HDPE, SDR 17, installed in a trench with a minimum of 12" of compacted soil cover.

All newly installed HDPE landfill gas pipe shall be installed with a 5% minimum slope for pipe on the landfill, and a 1% minimum slope for pipe outside the landfill to allow for condensate to drain out of the collection pipes to designed low points for removal.

Valve (See attached Specification 02636)

One butterfly valve should be installed on the main landfill gas pipe prior to the inlet of the blower. The valve will allow the blower, landfill gas electricity facility and flare to be isolated from the landfill gas for maintenance.

Wellheads (See attached Specification 13911)

For the option of connecting to additional existing gas wells, lateral pipe should be connected to the wells with a wellhead assembly.

Blower/KOP (See attached specification 02900)

The purpose of the blower is to create a vacuum and extract landfill gas from the existing wells in the landfill and deliver the gas through the HDPE pipe network to the proposed electricity generation facility.

A knock-out pot (KOP) is required to remove moisture, condensate from the gas.

Flare (See attached Specification 02900)

A flare is needed to combust any excess gas that is collected, or to combust collected gas during periods when the electricity generation facility is not operating.

3.2 COMPONENT 2 – LANDFILL GAS-TO-ELECTRICITY FACILITY

Electricity Generation Equipment

Engineering design for the electricity generation equipment is to be provided by the Proposer.

The electricity generated should be adequate to meet the peak electricity demands of the existing facility office building as well as two new greenhouses and the new blower and electricity generation facility. Additionally, the system must provide recovered radiant heat, or adequate Btu's from landfill gas to heat two greenhouses. The electricity and heating demands of these facilities are as follows.

	Approx. Electric Demand (kW)		Approx. Heat Demand (Btu/hr)	
	Peak	Average	Peak	Average*
Existing Office Bldg.	9	8		
Blower/Electric Facility				
Greenhouse 1	20	14	300,000	77,885
Greenhouse 2	20	14	300,000	77,885
TOTAL			600,000	155,770

*Average heat requirement for greenhouses applies to months of November – March.

Heat Recovery from Electricity Generation Equipment

Engineering design of equipment needed to allow radiant heat to be recovered from the generator is to be provided by the Proposer. Ductwork required to distribute radiant heat to the greenhouses is not included in this section, but is part of the greenhouse component.

Distribution of Generated Electricity to Onsite Structures

The generated electricity will need to be distributed for use onsite. Required onsite uses of the electricity include: an existing office building, the proposed blower and electric generation facility, and the proposed greenhouses.

Engineering design of equipment needed to perform this part of the project is to be provided by the Proposer.

3.3 COMPONENT 3 – MONITORING EQUIPMENT & DATA ACQUISITION

Monitoring Equip. & Data Acquisition System (See attached Specification 02900)

The County would like to have the capability to continuously monitor the gas quality (methane and oxygen content), total flow of landfill gas, flow of landfill gas to the electricity generation facility, flow of landfill gas to the flare, and flare flame temperature.

3.4 COMPONENT 4 – GREENHOUSE(S)

Supply & Install Greenhouse

The supplied greenhouse(s) should have the following features or equivalent.

- A. Snow Arch: 30' x 96' (Quantity = 1)
 - a. Posts: 2.197 x 12 gauge (mechanical)
 - b. Bows: 1.900 x 14 gauge (mechanical) 55,000 psi yield
 - c. Purlins: 5 runs 1.315 x 17 gauge
 - d. Trusses: "W" style truss every other bow
 - e. Side Wall Height: 6 feet
 - f. Bow Spacing: 4 feet
 - g. Hardware: Complete Hardware Package for Frame Assembly
 - h. Gutter: N/A
 - i. Wind Load (WL): 90 mph, 3 second gust
 - j. Snow Load (SL): 12 lbs. psf, Ground Snow

- B. Free Standing Steel Frame Endwall Kits (Quantity = 2)
 - a. Include wall studs, horizontal framing and all attaching hardware (L-brackets, Tek-screws, etc.)

- C. 8mm Twin Wall Polycarbonate Endwall Covering (Quantity = 1)
 - a. 7 sheets of 6' x 10' twin wall PCSS
 - b. 1 foil tape 2" x 150'
 - c. 80 feet of aluminum H-splice extrusions
 - d. 90 feet of 8mm base extrusions
 - e. 50 feet of gable flash wirelock with wire
 - f. 100 of #12 x 1" Tek screws for gable flash
 - g. 140 of #12 x 1-1/2" Tek screws with washers for PCSS covering

- D. Greenhouse Poly Covering System
 - a. 2 rolls of 48' x 100' 4-yr. clear, 6 mil poly
 - b. 1 inflation system (blower, mounting bracket, baffle – pre-assembled)
 - c. 1 roll of 3" premium poly patch

- E. Locking System

- a. 96 feet of wire lock base with wire – end bows
- b. 96 feet of extra wire
- c. 200 feet of wire lock base with wire – ends and openings
- d. 200 feet of single wide lock with snap cap (10' long pieces)
- e. 192 feet of galvanized hat base (large) in 12'-3" pcs. (to be used as a toeboard)
- f. 900 of #12 x 1" Tek – drill point screw

F. Ventilation System

- a. Horizontal Air Flow
 - i. 4 of 18" horizontal air flow fans complete with 3 blades, guard and split capacitor 115 volt 60Hz, 2.5 amp motor, capable of producing 3815 cfm.
- b. Exhaust Fans
 - i. 2 of 48" Quietaire GCS Slant Wall Exhaust Fan: 1 HP, 13.3 amps, capable of producing 19563 cfm at 0.10 SP. All galvanized construction for corrosion resistance, equipped with shutter and guard.
 - ii. 1 of 2 speed motor option for exhaust fan
- c. Shutters
 - i. 1 of 39" motorized Quietair Shutter, made of heavy duty aluminum with aluminum pivot rods and nylon bearing, counter balanced blades.
- d. Self Contained Cooling Pad System
 - i. 1 of stainless steel evaporative cooling system with 6" pad by 5' tall by 20' long, with enough water capacity that a sump tank is not required.
 - ii. 1 of 20 foot long evaporative cool cell framing kit, including 2" sq. framing for top sides and trough brackets with hardware.
- e. Automatic Wall Vent for Cooling Pad
 - i. 1 automatic wall vent for 5' by 20' cooling pad system
 - ii. 1 of 8mm twin wall covering for above wall vent system
 - iii. 1 tube motor and mounts

G. Controls

- a. 3 of Johnson 2 stage thermostat control, 30 to 110 F set temperature range with 3-5 degree differential between ranges
- b. 1 of Johnson single stage thermostat control, weather resistant, for both heating and cooling applications with 30 to 110 F temperature range

H. Doors

- a. 1 of 42" by 6'-8" insulated door, pre-hung in aluminum frame, with ¾ glass, includes lockset and chain

I. Ground Cover & Accessories

- a. 1 of 12' x 300' rolls of premium grade 3.2 oz. black woven polypropylene ground fabric with pot lines 12" apart
- b. 1 box of sod pins, 1" x 6" (1000 per box)

Provide (Install) Heating System

Engineering design of equipment needed to perform this part of the project is to be provided by the Proposer.

The greenhouses must be designed to be heated in a way that utilizes landfill gas as fuel, or electricity generated from landfill gas, or heat recovered from generators run on landfill gas, or a combination thereof.

APPENDIX 1

Grant Conditions

Grant Subrecipient
Flowdown Requirements

ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT PROGRAM**DOE AWARD AGREEMENT DE-EE0000771****SUBRECIPIENT OR SUBCONTRACTOR FLOWDOWN REQUIREMENTS**

Subawardees who receive federal funds under an assistance agreement shall comply with the flow down requirements for subawardees specified in the “Special Provisions Relating to Work Funded under American Recovery and Reinvestment Act of 2009” which apply to this award. Additionally, as required by 10 CFR 600.2(b), 10 CFR 600.236, and 10 CFR 600.237, any new, continuation, or renewal award and any subsequent subaward shall comply with any applicable Federal statute, Federal rule, Office of Management and Budget (OMB) Circular and Government-wide guidance in effect as of the date of such award. These requirements include, but are not limited to the following:

- a. DOE Assistance Regulations, 10 CFR Part 600 at <http://ecfr.gpoaccess.gov>.
- b. In addition to 10 CFR 600, Appendix A, Generally Applicable Requirements, the National Policy Assurances to Be Incorporated as Award Terms in effect on date of award at http://management.energy.gov/business_doe/1374.htm apply.
- c. 2 CFR 215, “Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations (OMB Circular A-110).”
- d. OMB Circular A-102, “Grants and Cooperative Agreements with State and Local Governments” Common Rules.
- e. OMB Circular A-21, “Cost Principles for Educational Institutions,” OMB Circular A-87, “Cost Principles for State , Local, and Indian Tribal Governments,” OMB Circular A-122, “Cost Principles for Non-Profit Organizations,” or FAR at 48 CFR Part 31, “Contract Cost Principles and Procedures,” for Profit Organizations, as applicable.
- f. OMB Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations.”
- g. Subawardee Application/proposal as approved by DOE.

Recipients and subrecipients are also advised that all contracts must include the provisions in 10 CFR 600.236, “Procurement”, Section (i) “Contract Provisions”, numbers 1-13.

**SUBGRANT FLOWDOWN PROVISIONS FOR EECBG FINANCIAL ASSISTANCE
AWARDS**

SPECIAL TERMS AND CONDITIONS

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1. RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator for guidance.

2. CEILING ON ADMINISTRATIVE COSTS

STATES

- a. State Recipients may not use more than 10 percent of amounts provided under the program for administrative expenses (EISA Sec 545 (c)(4)). These costs should be captured and summarized for each activity under the Projected Costs Within Budget: Administration.
- b. Recipients are expected to manage their administrative costs. DOE will not amend an award solely to provide additional funds for changes in administrative costs. The Recipient shall not be reimbursed on this project for any final administrative costs that are in excess of the designated 10 percent administrative cost ceiling. In addition, the Recipient shall neither count costs in excess of the administrative cost ceiling as cost share, nor allocate such costs to other federally sponsored project, unless approved by the Contracting Officer.

LOCAL GOVERNMENT (Cities & Counties) and INDIAN TRIBES

- a. Local government and Indian Tribe Recipients may not use more than 10 percent of amounts provided under this program, or \$75,000, whichever is greater (EISA Sec 545 (b)(3)(A)), for administrative expenses, excluding the costs of meeting the reporting requirements under Title V, Subtitle E of EISA. These costs should be captured and summarized for each activity under the Projected Costs Within Budget: Administration.
- b. Recipients are expected to manage their administrative costs. DOE will not amend an award solely to provide additional funds for changes in administrative costs. The Recipient shall not be reimbursed on this project for any final administrative costs that are in excess of the designated 10 percent administrative cost ceiling. In addition, the Recipient shall neither count costs in excess of the administrative cost ceiling as cost share, nor allocate such costs to other federally sponsored project, unless approved by the Contracting Officer.

3. LIMITATIONS ON USE OF FUNDS

- a. By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, for gambling establishments, aquariums, zoos, golf courses or swimming pools.

- b. Local government and Indian tribe Recipients may not use more than 20 percent of the amounts provided or \$250,000, whichever is greater (EISA Sec 545 (b)(3)(B)), for the establishment of revolving loan funds.
- c. Local government and Indian tribe Recipients may not use more than 20 percent of the amounts provided or \$250,000, whichever is greater (EISA Sec 545 (b)(3)(C)), for subgrants to nongovernmental organizations for the purpose of assisting in the implementation of the energy efficiency and conservation strategy of the eligible unit of local government or Indian tribe.

4. REIMBURSABLE INDIRECT COSTS AND FRINGE BENEFIT COSTS

- a. The Recipient is expected to manage their final negotiated project budgets, including their indirect costs and fringe benefit costs. DOE will not amend an award solely to provide additional funds for changes in the indirect and/or fringe benefit costs or for changes in rates used for calculating these costs. DOE recognizes that the inability to obtain full reimbursement for indirect or fringe benefit costs means the Recipient must absorb the underrecovery. Such underrecovery may be allocated as part of the Recipient's cost share.
- b. If actual allowable [indirect and/or fringe benefit] costs are less than those budgeted and funded under the award, the Recipient may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, the Recipient must refund the difference.

5. USE OF PROGRAM INCOME

If you earn program income during the project period as a result of this award, you may add the program income to the funds committed to the award and used to further eligible project objectives.

6. STATEMENT OF FEDERAL STEWARDSHIP

DOE will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the award objectives have been accomplished.

7. SITE VISITS

DOE's authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical

assistance, if required. You must provide, and must require your subawardees to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work.

8. REPORTING REQUIREMENTS

- a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.
- b. Additional Recovery Act Reporting Requirements are found in the Provision below labeled: “REPORTING AND REGISTRATION REQUIREMENTS UNDER SECTION 1512 OF THE RECOVERY ACT.”

9. PUBLICATIONS

- a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.
- b. An acknowledgment of DOE support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: “This material is based upon work supported by the Department of Energy [National Nuclear Security Administration] [add name(s) of other agencies, if applicable] under Award Number(s) [enter the award number(s)].”

Disclaimer: “This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.”

10. FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS

You must obtain any required permits, ensure the safety and structural integrity of any repair, replacement, construction and/or alteration, and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

11. LOBBYING RESTRICTIONS

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

12. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) REQUIREMENTS

You are restricted from taking any action using Federal funds, which would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to DOE providing either a NEPA clearance or a final NEPA decision regarding this project.

If you move forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

If this award includes construction activities, you must submit an environmental evaluation report/evaluation notification form addressing NEPA issues prior to DOE initiating the NEPA process.

13. HISTORIC PRESERVATION

Prior to the expenditure of Project funds to alter any historic structure or site, the Recipient or subrecipient shall ensure that it is compliant with Section 106 of the National Historic Preservation Act (NHPA), consistent with DOE's 2009 letter of delegation of authority regarding the NHPA. Section 106 applies to historic properties that are listed in or eligible for listing in the National Register of Historic Places. If applicable, the Recipient or subrecipient must contact the State Historic Preservation Officer (SHPO), and the Tribal Historic Preservation Officer (THPO) to coordinate the Section 106 review outlined in 36 CFR Part 800. SHPO contact information is available at the following link: <http://www.ncshpo.org/find/index.htm>. THPO contact information is available at the following link: <http://www.nathpo.org/map.html>. Section 110(k) of the NHPA applies to DOE funded activities.

If applicable, the Recipient or subrecipient certifies that it will retain sufficient documentation, to demonstrate that the Recipient or subrecipient has received required approval(s) from the SHPO or THPO for the Project. Recipients or subrecipients shall avoid taking any action that results in an adverse effect to historic properties pending compliance

with Section 106. The Recipient or subrecipient shall deem compliance with Section 106 of the NHPA complete only after it has received this documentation. The Recipient or subrecipient shall make this documentation available to DOE on DOE's request (for example, during a post-award audit).

Grantee acknowledges that the Recipient has entered into a Memorandum of Agreement (MOA) with the SHPO and the DOE dated May 2010 governing the rights and obligations of the parties regarding Section 106 compliance. The Recipient hereby assigns and the Grantee assumes the rights and obligations of the Recipient under the MOA, as the same may be modified from time to time.

14. WASTE STREAM

The Recipient assures that it will create or obtain a waste management plan addressing waste generated by a proposed Project prior to the Project generating waste. This waste management plan will describe the Recipient's or subrecipient's plan to dispose of any sanitary or hazardous waste (e.g., construction and demolition debris, old light bulbs, lead ballasts, piping, roofing material, discarded equipment, debris, and asbestos) generated as a result of the proposed Project. The Recipient shall ensure that the Project is in compliance with all Federal, state and local regulations for waste disposal. The Recipient shall make the waste management plan and related documentation available to DOE on DOE's request (for example, during a post-award audit).

15. DECONTAMINATION AND/OR DECOMMISSIONING (D&D) COSTS

Notwithstanding any other provisions of this Agreement, the Government shall not be responsible for or have any obligation to the Recipient for (i) Decontamination and/or Decommissioning (D&D) of any of the Recipient's facilities, or (ii) any costs which may be incurred by the Recipient in connection with the D&D of any of its facilities due to the performance of the work under this Agreement, whether said work was performed prior to or subsequent to the effective date of the Agreement.

16. SUBGRANTS AND LOANS

- a. The Recipient hereby warrants that it will ensure that all activities by sub-grantee(s) and loan recipients to accomplish the approved Project Description or Statement of Project Objectives are eligible activities under 42 U.S.C. 171534(1)-(13). State recipients hereby warrant that they will ensure that all activities by sub-grantee(s) and loan recipients pursuant to 42 U.S.C. 17155(c)(1)(A) to accomplish the approved Project Description or Statement of Project objects are eligible activities under 42 U.S.C. 171534(3)-(13).
- b. Upon the Recipient's selection of the sub-grantee(s) and loan recipients, the Recipient shall notify (i.e. approval not required) the DOE Contracting Officer with the following information for each, regardless of dollar amount:
 - Name of Sub-Grantee
 - DUNS Number
 - Award Amount

- Statement of work including applicable activities

State recipients shall notify the DOE Contracting Officer with the above information within 180 days of the award date in Block 27 of the Assistance Agreement Cover Page.

- c. In addition to the information in paragraph b. above, for each sub-grant and loan that has an estimated cost greater than \$2,000,000, the recipient must submit for approval by the Contracting Officer, a SF424A Budget Information – Nonconstruction Programs, and PMC 123.1 Cost Reasonableness Determination for Financial Assistance (available at <http://www.eere-pmc.energy.gov/forms.aspx>).

17. JUSTIFICATION OF BUDGET COSTS

- a. In the original application, the recipient did not provide sufficient information to justify the approval or release of funds for the proposed **activities**. In order to receive reimbursement for the costs associated with the **activities** listed in the approved Statement of Project Objectives (SOPO), a justification for all proposed costs must be submitted to the DOE Contracting Officer.
- b. The Recipient must provide justification for the following costs:

Personnel Costs:

The Recipient must submit cost justification for the following personnel costs: for approval by the Contracting Officer.

Fringe Benefit Costs:

The Recipient must submit a fringe benefit rate proposal/agreement for approval by the Contracting Officer.

Travel Costs:

The Recipient must submit cost justification for the following travel costs: for approval by the Contracting Officer.

Equipment Costs:

The Recipient must submit vendor quotes for equipment with an individual item cost of \$50,000 or more, for approval by the Contracting Officer.

Supplies Costs:

The Recipient must submit cost justification for the following supplies costs: for approval by the Contracting Officer.

Contractual Costs:

1. The recipient shall provide the following information for each individual or company that will receive EECBG funding, regardless of dollar amount:

- Name
- DUNS Number

- Award Amount
- Statement of work including applicable activities
- NEPA documentation, as applicable

2. In addition to the information in paragraph 1. above, for each individual or company that has an estimated cost greater than \$2,000,000, the Recipient must submit a separate SF424A Budget Information – Nonconstruction Programs, and Budget Justification. The DOE Contracting Officer may require additional information concerning these individuals or companies prior to providing written approval.

Other Direct Costs:

The Recipient must submit cost justification for the following other direct costs: for approval by the Contracting Officer.

Indirect Costs:

The Recipient must submit an indirect rate proposal/agreement for approval by the Contracting Officer.

- c. Upon written notification and/or approval by the Contracting Officer, the Recipient may then receive payment for the activities listed in the approved SOPO for allowable costs incurred in accordance with the payment provisions contained in the Special Terms and Conditions of this agreement. These written notifications and/or approvals will be incorporated into the award by formal modification at a future date.

18. ADVANCE UNDERSTANDING CONCERNING PUBLICLY FINANCED ENERGY IMPROVEMENT PROGRAMS

The parties recognize that the Recipient may use funds under this award for Property-Assessed Clean Energy (PACE) loans, Sustainable Energy Municipal Financing, Clean Energy Assessment Districts, Energy Loan Tax Assessment Programs (ELTAPS), or any other form or derivation of Special Taxing District whereby taxing entities collect payments through increased tax assessments for energy efficiency and renewable energy building improvements made by their constituents. The Department of Energy intends to publish "Best Practices" or other guidelines pertaining to the use of funds made available to the Recipient under this award pertaining to the programs identified herein. By accepting this award, the Recipient agrees to incorporate, to the maximum extent practicable, those Best Practices and other guidelines into any such program(s) within a reasonable time after notification by DOE that the Best Practices or guidelines have been made available. The Recipient also agrees, by its acceptance of this award, to require its sub-recipients to incorporate to the maximum extent practicable the best practices and other guideline into any such program used by the sub-recipient.

19. SPECIAL PROVISIONS RELATING TO WORK FUNDED UNDER AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (May 2009)

Preamble

The American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act) was enacted to preserve and create jobs and promote economic recovery, assist those most impacted by the recession, provide investments needed to increase economic efficiency by spurring technological advances in science and health, invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive State and local tax increases. Recipients shall use grant funds in a manner that maximizes job creation and economic benefit.

The Recipient shall comply with all terms and conditions in the Recovery Act relating generally to governance, accountability, transparency, data collection and resources as specified in Act itself and as discussed below.

Recipients should begin planning activities for their first tier subrecipients, including obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR).

Be advised that Recovery Act funds can be used in conjunction with other funding as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related guidance. For projects funded by sources other than the Recovery Act, Contractors must keep separate records for Recovery Act funds and to ensure those records comply with the requirements of the Act.

The Government has not fully developed the implementing instructions of the Recovery Act, particularly concerning specific procedural requirements for the new reporting requirements. The Recipient will be provided these details as they become available. The Recipient must comply with all requirements of the Act. If the recipient believes there is any inconsistency between ARRA requirements and current award terms and conditions, the issues will be referred to the Contracting Officer for reconciliation.

Definitions

For purposes of this clause, Covered Funds means funds expended or obligated from appropriations under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5. Covered Funds will have special accounting codes and will be identified as Recovery Act funds in the grant, cooperative agreement or TIA and/or modification using Recovery Act funds. Covered Funds must be reimbursed by September 30, 2015.

Non-Federal employer means any employer with respect to covered funds -- the contractor, subcontractor, grantee, or recipient, as the case may be, if the contractor, subcontractor, grantee, or recipient is an employer; and any professional membership organization, certification of other professional body, any agent or licensee of the Federal government, or any person acting directly or indirectly in the interest of an employer receiving covered funds; or with respect to covered funds received by a State or local government, the State or local government receiving the funds and any contractor or subcontractor receiving the funds

and any contractor or subcontractor of the State or local government; and does not mean any department, agency, or other entity of the federal government.

Recipient means any entity that receives Recovery Act funds directly from the Federal government (including Recovery Act funds received through grant, loan, or contract) other than an individual and includes a State that receives Recovery Act Funds.

Special Provisions

A. Flow Down Requirement

Recipients must include these special terms and conditions in any subaward.

B. Segregation of Costs

Recipients must segregate the obligations and expenditures related to funding under the Recovery Act. Financial and accounting systems should be revised as necessary to segregate, track and maintain these funds apart and separate from other revenue streams. No part of the funds from the Recovery Act shall be commingled with any other funds or used for a purpose other than that of making payments for costs allowable for Recovery Act projects.

C. Prohibition on Use of Funds

None of the funds provided under this agreement derived from the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

D. Access to Records

With respect to each financial assistance agreement awarded utilizing at least some of the funds appropriated or otherwise made available by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1988 (5 U.S.C. App.) or of the Comptroller General is authorized --

(1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract that pertain to, and involve transactions that relate to, the subcontract, subcontract, grant, or subgrant; and

(2) to interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.

E. Publication

An application may contain technical data and other data, including trade secrets and/or privileged or confidential information, which the applicant does not want disclosed to the

public or used by the Government for any purpose other than the application. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

Notice of Restriction on Disclosure and Use of Data

The data contained in pages ---- of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data here to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

Information about this agreement will be published on the Internet and linked to the website www.recovery.gov, maintained by the Accountability and Transparency Board. The Board may exclude posting contractual or other information on the website on a case-by-case basis when necessary to protect national security or to protect information that is not subject to disclosure under sections 552 and 552a of title 5, United States Code.

F. Protecting State and Local Government and Contractor Whistleblowers.

The requirements of Section 1553 of the Act are summarized below. They include, but are not limited to:

Prohibition on Reprisals: An employee of any non-Federal employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee's duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the employer who has the authority to investigate, discover or terminate misconduct), a court or grand jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of:

- gross management of an agency contract or grant relating to covered funds;
- a gross waste of covered funds;
- a substantial and specific danger to public health or safety related to the implementation or use of covered funds;
- an abuse of authority related to the implementation or use of covered funds; or
- as violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds.

Agency Action: Not later than 30 days after receiving an inspector general report of an

alleged reprisal, the head of the agency shall determine whether there is sufficient basis to conclude that the non-Federal employer has subjected the employee to a prohibited reprisal. The agency shall either issue an order denying relief in whole or in part or shall take one or more of the following actions:

- Order the employer to take affirmative action to abate the reprisal.
- Order the employer to reinstate the person to the position that the person held before the reprisal, together with compensation including back pay, compensatory damages, employment benefits, and other terms and conditions of employment that would apply to the person in that position if the reprisal had not been taken.
- Order the employer to pay the employee an amount equal to the aggregate amount of all costs and expenses (including attorneys' fees and expert witnesses' fees) that were reasonably incurred by the employee for or in connection with, bringing the complaint regarding the reprisal, as determined by the head of a court of competent jurisdiction.

Nonenforceability of Certain Provisions Waiving Rights and Remedies or Requiring Arbitration: Except as provided in a collective bargaining agreement, the rights and remedies provided to aggrieved employees by this section may not be waived by any agreement, policy, form, or condition of employment, including any predispute arbitration agreement. No predispute arbitration agreement shall be valid or enforceable if it requires arbitration of a dispute arising out of this section.

Requirement to Post Notice of Rights and Remedies: Any employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, shall post notice of the rights and remedies as required therein. (Refer to section 1553 of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, www.Recovery.gov, for specific requirements of this section and prescribed language for the notices.). A form of the notice that meets the requirements of this section is located at the following internet address: <http://www.recovery.gov/Contact/ReportFraud/Documents/Whistleblower+Poster.pdf>

G. Reserved

H. False Claims Act

Recipient and sub-recipients shall promptly refer to the DOE or other appropriate Inspector General any credible evidence that a principal, employee, agent, contractor, sub-grantee, subcontractor or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity or similar misconduct involving those funds.

I. Information in Support of Recovery Act Reporting

Recipient may be required to submit backup documentation for expenditures of funds under the Recovery Act including such items as timecards and invoices. Recipient shall provide copies of backup documentation at the request of the Contracting Officer or designee.

J. Availability of Funds

Funds obligated to this award are available for reimbursement of costs until 36 months after the award date.

K. Additional Funding Distribution and Assurance of Appropriate Use of Funds

Certification by Governor – For funds provided to any State or agency thereof by the American Reinvestment and Recovery Act of 2009, Pub. L. 111-5, the Governor of the State shall certify that: 1) the state will request and use funds provided by the Act; and 2) the funds will be used to create jobs and promote economic growth.

Acceptance by State Legislature -- If funds provided to any State in any division of the Act are not accepted for use by the Governor, then acceptance by the State legislature, by means of the adoption of a concurrent resolution, shall be sufficient to provide funding to such State.

Distribution -- After adoption of a State legislature's concurrent resolution, funding to the State will be for distribution to local governments, councils of government, public entities, and public-private entities within the State either by formula or at the State's discretion.

L. Certifications

With respect to funds made available to State or local governments for infrastructure investments under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, the Governor, mayor, or other chief executive, as appropriate, certified by acceptance of this award that the infrastructure investment has received the full review and vetting required by law and that the chief executive accepts responsibility that the infrastructure investment is an appropriate use of taxpayer dollars. Recipient shall provide an additional certification that includes a description of the investment, the estimated total cost, and the amount of covered funds to be used for posting on the Internet. A State or local agency may not receive infrastructure investment funding from funds made available by the Act unless this certification is made and posted.

20. REPORTING AND REGISTRATION REQUIREMENTS UNDER SECTION 1512 OF THE RECOVERY ACT

(a) This award requires the recipient to complete projects or activities which are funded under the American Recovery and Reinvestment Act of 2009 (Recovery Act) and to report on use of Recovery Act funds provided through this award. Information from these reports will be made available to the public.

(b) The reports are due no later than ten calendar days after each calendar quarter in which the Recipient receives the assistance award funded in whole or in part by the Recovery Act. Unless the SEO notifies the Grantee in writing that the SEO delegates the reporting responsibility to the Grantee, the SEO will assume responsibility for submitting these reports

on behalf of Grantee; thus, Grantee shall submit its reports to the SEO no later than five calendar days after each calendar month in which Grantee receives the assistance award.

(c) Recipients and their first-tier subrecipients must maintain current registrations in the Central Contractor Registration (<http://www.ccr.gov>) at all times during which they have active federal awards funded with Recovery Act funds. A Dun and Bradstreet Data Universal Numbering System (DUNS) Number (<http://www.dnb.com>) is one of the requirements for registration in the Central Contractor Registration.

(d) The Recipient shall report the information described in section 1512(c) of the Recovery Act using the reporting instructions and data elements that will be provided online at <http://www.FederalReporting.gov> and ensure that any information that is pre-filled is corrected or updated as needed.

21. NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

*Special Note: Definitization of the Provisions entitled, “REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009” and “REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS (COVERED UNDER INTERNATIONAL AGREEMENTS) – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009” will be done upon definition and review of final activities.

22. REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

If the Recipient determines at any time that any construction, alteration, or repair activity on a public building or public works will be performed during the course of the project, the Recipient shall notify the Contracting Officer prior to commencing such work and the following provisions shall apply.

(a) *Definitions.* As used in this award term and condition—

(1) *Manufactured good* means a good brought to the construction site for incorporation into the building or work that has been—

(i) Processed into a specific form and shape; or

(ii) Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.

(2) *Public building and public work* means a public building of, and a public work of, a governmental entity (the United States; the District of Columbia; commonwealths, territories, and minor outlying islands of the United States; State and local governments; and multi-State, regional, or interstate entities which have governmental functions). These buildings and works may include, without limitation, bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals, and the construction, alteration, maintenance, or repair of such buildings and works.

(3) *Steel* means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

(b) *Domestic preference.* (1) This award term and condition implements Section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act) (Pub. L. 111–5), by requiring that all iron, steel, and manufactured goods used in the project are produced in the United States except as provided in paragraph (b)(3) of this section and condition.

(2) This requirement does not apply to the material listed by the Federal Government as follows:

To Be Determined

(3) The award official may add other iron, steel, and/or manufactured goods to the list in paragraph (b)(2) of this section and condition if the Federal Government determines that—

(i) The cost of the domestic iron, steel, and/or manufactured goods would be unreasonable. The cost of domestic iron, steel, or manufactured goods used in the project is unreasonable when the cumulative cost of such material will increase the cost of the overall project by more than 25 percent;

(ii) The iron, steel, and/or manufactured good is not produced, or manufactured in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(iii) The application of the restriction of section 1605 of the Recovery Act would be inconsistent with the public interest.

(c) *Request for determination of inapplicability of Section 1605 of the Recovery Act .* (1)(i) Any recipient request to use foreign iron, steel, and/or manufactured goods in accordance with paragraph (b)(3) of this section shall include adequate information for Federal Government evaluation of the request, including—

(A) A description of the foreign and domestic iron, steel, and/or manufactured goods;

(B) Unit of measure;

(C) Quantity;

(D) Cost;

(E) Time of delivery or availability;

(F) Location of the project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign iron, steel, and/or manufactured goods cited in accordance with paragraph (b)(3) of this section.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed cost comparison table in the format in paragraph (d) of this section.

(iii) The cost of iron, steel, and/or manufactured goods material shall include all delivery costs to the construction site and any applicable duty.

(iv) Any recipient request for a determination submitted after Recovery Act funds have been obligated for a project for construction, alteration, maintenance, or repair shall explain why the recipient could not reasonably foresee the need for such determination and could not have requested the determination before the funds were obligated. If the recipient does not submit a satisfactory explanation, the award official need not make a determination.

(2) If the Federal Government determines after funds have been obligated for a project for construction, alteration, maintenance, or repair that an exception to section 1605 of the Recovery Act applies, the award official will amend the award to allow use of the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is nonavailability or public interest, the amended award shall reflect adjustment of the award amount, redistribution of budgeted funds, and/or other actions taken to cover costs associated with acquiring or using the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is the unreasonable cost of the domestic iron, steel, or manufactured goods, the award official shall adjust the award amount or redistribute budgeted funds by at least the differential established in 2 CFR 176.110(a).

(3) Unless the Federal Government determines that an exception to section 1605 of the Recovery Act applies, use of foreign iron, steel, and/or manufactured goods is noncompliant with section 1605 of the American Recovery and Reinvestment Act.

(d) *Data.* To permit evaluation of requests under paragraph (b) of this section based on unreasonable cost, the Recipient shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Items Cost Comparison

Description	Unit of measure	Quantity	Cost (dollars)*
<i>Item 1:</i>			
Foreign steel, iron, or manufactured good	_____	_____	_____
Domestic steel, iron, or manufactured good	_____	_____	_____
<i>Item 2:</i>			
Foreign steel, iron, or manufactured good	_____	_____	_____
Domestic steel, iron, or manufactured good	_____	_____	_____

List name, address, telephone number, email address, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

*Include all delivery costs to the construction site.

23. REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS (COVERED UNDER INTERNATIONAL AGREEMENTS) – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

(a) *Definitions.* As used in this award term and condition—

Designated country — (1) A World Trade Organization Government Procurement Agreement country (Aruba, Austria, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of), Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom);

(2) A Free Trade Agreement (FTA) country (Australia, Bahrain, Canada, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Mexico, Morocco, Nicaragua, Oman, Peru, or Singapore); or

(3) A United States-European Communities Exchange of Letters (May 15, 1995) country: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, and United Kingdom.

Designated country iron, steel, and/or manufactured goods — (1) Is wholly the growth, product, or manufacture of a designated country; or

(2) In the case of a manufactured good that consist in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different manufactured good distinct from the materials from which it was transformed.

Domestic iron, steel, and/or manufactured good — (1) Is wholly the growth, product, or manufacture of the United States; or

(2) In the case of a manufactured good that consists in whole or in part of materials from another country, has been substantially transformed in the United States into a new and different manufactured good distinct from the materials from which it was transformed. There is no requirement with regard to the origin of components or subcomponents in manufactured goods or products, as long as the manufacture of the goods occurs in the United States.

Foreign iron, steel, and/or manufactured good means iron, steel and/or manufactured good that is not domestic or designated country iron, steel, and/or manufactured good.

Manufactured good means a good brought to the construction site for incorporation into the building or work that has been—

(1) Processed into a specific form and shape; or

(2) Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.

Public building and *public work* means a public building of, and a public work of, a governmental entity (the United States; the District of Columbia; commonwealths, territories, and minor outlying islands of the United States; State and local governments; and multi-State, regional, or interstate entities which have governmental functions). These buildings and works may include, without limitation, bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals, and the construction, alteration, maintenance, or repair of such buildings and works.

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

(b) *Iron, steel, and manufactured goods.* (1) The award term and condition described in this section implements—

(i) Section 1605(a) of the American Recovery and Reinvestment Act of 2009 (Pub. L. 111–5) (Recovery Act), by requiring that all iron, steel, and manufactured goods used in the project are produced in the United States; and

(ii) Section 1605(d), which requires application of the Buy American requirement in a manner consistent with U.S. obligations under international agreements. The restrictions of section 1605 of the Recovery Act do not apply to designated country iron, steel, and/or manufactured goods. The Buy American requirement in section 1605 shall not be applied where the iron, steel or manufactured goods used in the project are from a Party to an international agreement that obligates the recipient to treat the goods and services of that Party the same as domestic goods and services. This obligation shall only apply to projects with an estimated value of \$7,443,000 or more.

(2) The recipient shall use only domestic or designated country iron, steel, and manufactured goods in performing the work funded in whole or part with this award, except as provided in paragraphs (b)(3) and (b)(4) of this section.

(3) The requirement in paragraph (b)(2) of this section does not apply to the iron, steel, and manufactured goods listed by the Federal Government as follows:

To Be Determined

(4) The award official may add other iron, steel, and manufactured goods to the list in paragraph (b)(3) of this section if the Federal Government determines that—

(i) The cost of domestic iron, steel, and/or manufactured goods would be unreasonable. The cost of domestic iron, steel, and/or manufactured goods used in the project is unreasonable when the cumulative cost of such material will increase the overall cost of the project by more than 25 percent;

(ii) The iron, steel, and/or manufactured good is not produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality;
or

(iii) The application of the restriction of section 1605 of the Recovery Act would be inconsistent with the public interest.

(c) *Request for determination of inapplicability of section 1605 of the Recovery Act or the Buy American Act.* (1)(i) Any recipient request to use foreign iron, steel, and/or manufactured goods in accordance with paragraph (b)(4) of this section shall include adequate information for Federal Government evaluation of the request, including—

(A) A description of the foreign and domestic iron, steel, and/or manufactured goods;

(B) Unit of measure;

(C) Quantity;

(D) Cost;

(E) Time of delivery or availability;

(F) Location of the project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign iron, steel, and/or manufactured goods cited in accordance with paragraph (b)(4) of this section.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed cost comparison table in the format in paragraph (d) of this section.

(iii) The cost of iron, steel, or manufactured goods shall include all delivery costs to the construction site and any applicable duty.

(iv) Any recipient request for a determination submitted after Recovery Act funds have been obligated for a project for construction, alteration, maintenance, or repair shall explain why the recipient could not reasonably foresee the need for such determination and could not have requested the determination before the funds were obligated. If the recipient does not submit a satisfactory explanation, the award official need not make a determination.

(2) If the Federal Government determines after funds have been obligated for a project for construction, alteration, maintenance, or repair that an exception to section 1605 of the Recovery Act applies, the award official will amend the award to allow use of the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is nonavailability or public interest, the amended award shall reflect adjustment of the award amount, redistribution of budgeted funds, and/or other appropriate actions taken to cover costs associated with acquiring or using the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is the unreasonable cost of the domestic iron, steel, or manufactured goods, the award official shall adjust the award amount or redistribute budgeted funds, as appropriate, by at least the differential established in 2 CFR 176.110(a).

(3) Unless the Federal Government determines that an exception to section 1605 of the Recovery Act applies, use of foreign iron, steel, and/or manufactured goods other than designated country iron, steel, and/or manufactured goods is noncompliant with the applicable Act.

(d) *Data*. To permit evaluation of requests under paragraph (b) of this section based on unreasonable cost, the applicant shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Items Cost Comparison

Description	Unit of measure	Quantity	Cost (dollars)*
<i>Item 1:</i>			
Foreign steel, iron, or manufactured good	_____	_____	_____
Domestic steel, iron, or manufactured good	_____	_____	_____
<i>Item 2:</i>			
Foreign steel, iron, or manufactured good	_____	_____	_____
Domestic steel, iron, or manufactured good	_____	_____	_____

List name, address, telephone number, email address, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

*Include all delivery costs to the construction site.

24. WAGE RATE REQUIREMENTS UNDER SECTION 1606 OF THE RECOVERY ACT

(a) Section 1606 of the Recovery Act requires that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the Recovery Act shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code.

Pursuant to Reorganization Plan No. 14 and the Copeland Act, 40 U.S.C. 3145, the Department of Labor has issued regulations at 29 CFR parts 1, 3, and 5 to implement the Davis-Bacon and related Acts. Regulations in 29 CFR 5.5 instruct agencies concerning application of the standard Davis-Bacon contract clauses set forth in that section. Federal agencies providing grants, cooperative agreements, and loans under the Recovery Act shall ensure that the standard Davis-Bacon contract clauses found in 29 CFR 5.5(a) are incorporated in any resultant covered contracts that are in excess of \$2,000 for construction, alteration or repair (including painting and decorating).

(b) For additional guidance on the wage rate requirements of section 1606, contact your awarding agency. Recipients of grants, cooperative agreements and loans should direct their initial inquiries concerning the application of Davis-Bacon requirements to a particular

federally assisted project to the Federal agency funding the project. The Secretary of Labor retains final coverage authority under Reorganization Plan Number 14.

25. RECOVERY ACT TRANSACTIONS LISTED IN SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS AND RECIPIENT RESPONSIBILITIES FOR INFORMING SUBRECIPIENTS

(a) To maximize the transparency and accountability of funds authorized under the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5) (Recovery Act) as required by Congress and in accordance with 2 CFR 215.21 “Uniform Administrative Requirements for Grants and Agreements” and OMB Circular A-102 Common Rules provisions, recipients agree to maintain records that identify adequately the source and application of Recovery Act funds. OMB Circular A-102 is available at <http://www.whitehouse.gov/omb/circulars/a102/a102.html>.

(b) For recipients covered by the Single Audit Act Amendments of 1996 and OMB Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations,” recipients agree to separately identify the expenditures for Federal awards under the Recovery Act on the Schedule of Expenditures of Federal Awards (SEFA) and the Data Collection Form (SF-SAC) required by OMB Circular A-133. OMB Circular A-133 is available at <http://www.whitehouse.gov/omb/circulars/a133/a133.html>. This shall be accomplished by identifying expenditures for Federal awards made under the Recovery Act separately on the SEFA, and as separate rows under Item 9 of Part III on the SF-SAC by CFDA number, and inclusion of the prefix “ARRA-” in identifying the name of the Federal program on the SEFA and as the first characters in Item 9d of Part III on the SF-SAC.

(c) Recipients agree to separately identify to each subrecipient, and document at the time of subaward and at the time of disbursement of funds, the Federal award number, CFDA number, and amount of Recovery Act funds. When a recipient awards Recovery Act funds for an existing program, the information furnished to subrecipients shall distinguish the subawards of incremental Recovery Act funds from regular subawards under the existing program.

(d) Recipients agree to require their subrecipients to include on their SEFA information to specifically identify Recovery Act funding similar to the requirements for the recipient SEFA described above. This information is needed to allow the recipient to properly monitor subrecipient expenditure of ARRA funds as well as oversight by the Federal awarding agencies, Offices of Inspector General and the Government Accountability Office.

26. DAVIS-BACON ACT AND CONTRACT WORKHOURS AND SAFETY STANDARD ACT

Definitions: For purposes of this provision, “Davis Bacon Act and Contract Work Hours and Safety Standards Act,” the following definitions are applicable:

(1) “Award” means any grant, cooperative agreement or technology investment agreement made with Recovery Act funds by the Department of Energy (DOE) to a Recipient. Such Award must require compliance with the labor standards clauses and wage rate requirements of the Davis-Bacon Act (DBA) for work performed by all laborers and mechanics employed by Recipients (other than a unit of State or local government whose own employees perform the construction) Subrecipients, Contractors, and subcontractors.

(2) “Contractor” means an entity that enters into a Contract. For purposes of these clauses, Contractor shall include (as applicable) prime contractors, Recipients, Subrecipients, and Recipients’ or Subrecipients’ contractors, subcontractors, and lower-tier subcontractors. “Contractor” does not mean a unit of State or local government where construction is performed by its own employees.”

(3) “Contract” means a contract executed by a Recipient, Subrecipient, prime contractor, or any tier subcontractor for construction, alteration, or repair. It may also mean (as applicable) (i) financial assistance instruments such as grants, cooperative agreements, technology investment agreements, and loans; and, (ii) Sub awards, contracts and subcontracts issued under financial assistance agreements. “Contract” does not mean a financial assistance instrument with a unit of State or local government where construction is performed by its own employees.

(4) “Contracting Officer” means the DOE official authorized to execute an Award on behalf of DOE and who is responsible for the business management and non-program aspects of the financial assistance process.

(5) “Recipient” means any entity other than an individual that receives an Award of Federal funds in the form of a grant, cooperative agreement, or technology investment agreement directly from the Federal Government and is financially accountable for the use of any DOE funds or property, and is legally responsible for carrying out the terms and conditions of the program and Award.

(6) “Subaward” means an award of financial assistance in the form of money, or property in lieu of money, made under an award by a Recipient to an eligible Subrecipient or by a Subrecipient to a lower-tier subrecipient. The term includes financial assistance when provided by any legal agreement, even if the agreement is called a contract, but does not include the Recipient’s procurement of goods and services to carry out the program nor does it include any form of assistance which is excluded from the definition of “Award” above.

(7) “Subrecipient” means a non-Federal entity that expends Federal funds received from a Recipient to carry out a Federal program, but does not include an individual that is a beneficiary of such a program.

(a) Davis Bacon Act

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and, without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, *provided* that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The Contracting Officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(2) The classification is utilized in the area by the construction industry;
and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Department of Energy or the Recipient or Subrecipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the Department of Energy, Recipient, or Subrecipient, may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Department of Energy if the agency is a party to the Contract, but if the agency is not such a party, the Contractor will submit the payrolls to the Recipient or Subrecipient (as

applicable), applicant, sponsor, or owner, as the case may be, for transmission to the Department of Energy. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Department of Energy if the agency is a party to the Contract, but if the agency is not such a party, the Contractor will submit them to the Recipient or Subrecipient (as applicable), applicant, sponsor, or owner, as the case may be, for transmission to the Department of Energy, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the Recipient or Subrecipient (as applicable), applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the

classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 3729 of title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Department of Energy or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees—

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a

locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination.

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

(6) Contracts and Subcontracts. The Recipient, Subrecipient, the Recipient's, and Subrecipient's contractors and subcontractor shall insert in any Contracts the clauses contained herein in (a)(1) through (10) and such other clauses as the Department of Energy may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The Recipient shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of the paragraphs in this clause.

(7) Contract termination: debarment. A breach of the Contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Recipient, Subrecipient, the Contractor (or any of its subcontractors), and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(b) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No Contractor or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Department of Energy or the Recipient or Subrecipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Contracts and Subcontracts. The Recipient, Subrecipient, and Recipient's and Subrecipient's contractor or subcontractor shall insert in any Contracts, the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The Recipient shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(5) The Contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the Contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records to be maintained under this paragraph shall be made available by the

Contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Department of Energy and the Department of Labor, and the Contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

(c) Recipient Responsibilities for Davis Bacon Act

(1) On behalf of the Department of Energy (DOE), Recipient shall perform the following functions:

- (i) Obtain, maintain, and monitor all Davis Bacon Act (DBA) certified payroll records submitted by the Subrecipients and Contractors at any tier under this Award;
- (ii) Review all DBA certified payroll records for compliance with DBA requirements, including applicable DOL wage determinations;
- (iii) Notify DOE of any non-compliance with DBA requirements by Subrecipients or Contractors at any tier, including any non-compliances identified as the result of reviews performed pursuant to paragraph (ii) above;
- (iv) Address any Subrecipient and any Contractor DBA non-compliance issues; if DBA non-compliance issues cannot be resolved in a timely manner, forward complaints, summary of investigations and all relevant information to DOE;
- (v) Provide DOE with detailed information regarding the resolution of any DBA non-compliance issues;
- (vi) Perform services in support of DOE investigations of complaints filed regarding noncompliance by Subrecipients and Contractors with DBA requirements;
- (vii) Perform audit services as necessary to ensure compliance by Subrecipients and Contractors with DBA requirements and as requested by the Contracting Officer; and
- (viii) Provide copies of all records upon request by DOE or DOL in a timely manner.

(d) Rates of Wages

The prevailing wage rates determined by the Secretary of Labor can be found at <http://www.wdol.gov/>.

Grant Special Terms

Special Terms & Conditions

Reporting and Registration Requirements

The Contractor is notified that this project will be financed with *American Recovery and Reinvestment Act of 2009* (hereinafter, "ARRA") Funds. The Contractor shall ensure that all subcontracts and other contracts for goods and services for an ARRA-funded project have the mandated provisions of this directive in their contracts. Pursuant to Title XV, Section 1512 of the ARRA, the State shall require that the Contractor provide reports and other employment information as evidence to document the number of jobs created or jobs retained by this contract from the Contractor's own workforce and any sub-contractors. No direct payment will be made for providing said reports, as the cost for same shall be included in the various items in the contract.

For reporting purposes, Contractor must maintain current registrations in the Central Contractor Registration (<http://www.ccr.gov>) at all times during which they have active federal awards funded with Recovery Act funds. A Dun and Bradstreet Data Universal Numbering System (DUNS) Number (<http://www.dnb.com>) is one of the requirements for registration in the Central Contractor Registration.

Posting with the Local Employment Security Commission

In addition to any other job postings the Contractor normally utilizes, pursuant to the requirements of the OERI, the Contractor and its subcontractors shall post with the local Employment Security Commission Office all positions for which he intends to hire workers as a result of being awarded this contract. Labor and semiskilled positions must be posted for at least 48 hours before the hiring decision. All other positions must be posted a minimum posting of five days before the hiring decision. The Contractor and its subcontractors shall report the new hires in the manner prescribed by the Employment Security Commission and the OERI in the format provided to Contractor.

Required Contract Provision to Implement ARRA Section 902

Section 902 of the ARRA requires that each contract awarded using ARRA funds must include a provision that provides the U.S. Comptroller General and his representatives with the authority to:

- (1) examine any records of the contractor or any of its subcontractors, or any State or local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and
- (2) interview any officer or employee of the contractor or any of its subcontractors, or of any State or local government agency administering the contract, regarding such transactions.

Accordingly, the Comptroller General and his representatives shall have the authority and rights prescribed under Section 902 of the ARRA with respect to contracts funded with recovery funds made available under the ARRA. Section 902 further states that nothing in 902 shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

Authority of the Inspector General

Section 1515(a) of the ARRA provides authority for any representatives of the United States Inspector General to examine any records or interview any employee or officers working on this contract. The contractor is advised that representatives of the Inspector General have the authority to examine any record and interview any employee or officer of the contractor, its subcontractors or other firms working on this contract. Section 1515(b) further provides that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of an Inspector General.

Buy American provision

Section 1605 of the ARRA requires that iron, steel and manufactured goods used in public buildings or public works projects be produced in the United States. Contractor and its subcontractors agrees to abide by Section 1605, shall secure documentation that purchases meet the requirements of Section 1605, and shall maintain records of such purchases for inspections by authorized agents of the State of North Carolina and federal agencies. The Contractor and its subcontractors must obtain written exception from this provision from the agency issuing the contract. The Contractor must supply this documentation upon request.

Davis-Bacon Requirements

Refer to the document “Davis Bacon Contract Clauses”

Availability and Use of Funds

Contractors understand and acknowledge that any and all payment of funds or the continuation thereof is contingent upon funds provided solely by ARRA or required state matching funds. Pursuant to Section 1604 of the ARRA, contractors agree not to undertake or make progress toward any activity using recovery funds that will lead to the development of such activity as casinos or other gambling establishments, aquariums, zoos, golf courses, swimming pools or any other activity specifically prohibited by the Recovery Act.

Whistleblower Provisions

Contractor and its subcontractors understand and acknowledge that Article 14 of Chapter 124, NCGS 126-84 through 126-88 (applies to the State and state employees), Article 21 of Chapter 95, NCGS 95-240 through 95-245 (applies to anyone, including state employees), and Section 1553 of the Recovery Act (applies to anyone receiving federal funds), provide protection to State, Federal and contract employees. Specifically, the Recovery Act provides that an employee of any non-Federal employer receiving Recovery Act funds, may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee’s duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the

employer who has the authority to investigate, discover or terminate misconduct, a court or grant jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of:

- gross management of an agency contract or grant relating to covered funds;
- a gross waste of covered funds
- a substantial and specific danger to public health or safety related to the implementation or use of covered funds;
- an abuse of authority related to the implementation or use of covered funds; or
- as violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds.

Any employer receiving Recovery Act funds shall post notice of the rights and remedies as required therein. (Refer to section 1553 of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, www.Recovery.gov, for specific requirements of this section and prescribed language for the notices.). A form of the notice that meets the requirements of this section is located at the following internet address:

<http://www.recovery.gov/Contact/ReportFraud/Documents/Whistleblower+Poster.pdf>

Outsourcing outside the USA without Specific Prior Approval Provision

Contractor and its subcontractors agree not to use any recovery funds from a contract or any other performance agreement awarded by the State of North Carolina, its agencies, or political subdivisions for outsourcing outside of the United States, without specific prior written approval from the agency issuing the contract.

Federal, State and Local Tax Obligations

By submission of a proposal, contractors and subcontractors assert and self-certify that all Federal, State and local tax obligations have been or will be satisfied prior to receiving recovery funds.

Anti-Discrimination and Equal Opportunity

Pursuant to Section 1.7 of the guidance memorandum issued by the United States Office of Management and Budget on April 3, 2009, Recovery Act funds must be distributed in accordance with all anti-discrimination and equal opportunity statutes, regulations, and Executive Orders pertaining to the expenditure of funds.

Office of State Budget and Management Access to Records

The Contractor and its subcontractors agree to allow the Office of State Budget and Management internal auditors and state agency internal auditors access to records and employees pertaining to the performance of any contract awarded by a public agency.

Use of Recovery Funds for Travel

Contractor and its subcontractors are specifically prohibited from using Recovery Act funds for travel outside the service area or county in which the project is located. The exceptions are for travel specifically mandated by the Recovery Act or approved by the senior management of the State Energy Office.

Davis Bacon Contract Clauses

Template: FA-Special Terms and Conditions

8-20-2009 FINAL (APPROVED BY DOL)

FA-TC-0050

Prescription: Include for ARRA Awards when WAGE RATE REQUIREMENTS UNDER SECTION 1606 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT ("RECOVERY ACT") Clauses are required.

CLAUSE XX. DAVIS BACON ACT REQUIREMENTS

A. Definitions. For purposes of this Clause, Clause XX, Contract Work Hours and Safety Standards Act, and Clause XX, Recipient Functions, the following definitions are applicable:

(1) *Award* means the Award by the Department of Energy (DOE) to a Recipient that includes a requirement to comply with the labor standards clauses and wage rate requirements of the Davis-Bacon Act (DBA) for work performed by all laborers and mechanics employed by Subrecipients, Contractors and subcontractors on projects funded by or assisted in whole or in part by and through the Federal Government pursuant to the Recovery Act.

(2) *"Construction, alteration or repair"* means all types of work done by laborers and mechanics employed by the Subrecipient, construction contractor or construction subcontractor on a particular building or work at the site thereof, including without limitation—

(a) Altering, remodeling, installation (if appropriate) on the site of the work of items fabricated off-site;

(b) Painting and decorating; or

(c) Manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work.

(3) *Contract* means a written procurement contract executed by a Subrecipient for the acquisition of property and services for construction, alteration, and repair under a Subaward. For purposes of these Clauses, a Contract shall include subcontracts and lower-tier subcontracts under the Contract.

(4) *Contracting Officer* means the DOE official authorized to execute awards on behalf of DOE and who is responsible for the business management and non-program aspects of the financial assistance process.

(5) *Contractor* means an entity that enters into a Contract. For purposes of these Clauses, Contractor shall include subcontractors and lower-tier subcontractors.

(6) *Recipient* means any entity other than an individual that receives Recovery Act funds in the form of a grant directly from the Federal Government. The term includes the State that

receives an Award from DOE and is financially accountable for the use of any DOE funds or property, and is legally responsible for carrying out the terms and conditions of the program and Award.

(7) "*Site of the work*"—

(a) Means--

(i) The physical place or places where the construction called for in the Award, Subaward, or Contract will remain when work on it is completed; and

(ii) Any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the project;

(b) Except as provided in paragraph (c) of this definition, the site of the work includes any fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards, etc., provided—

(1) They are dedicated exclusively, or nearly so, to performance of the project; and

(2) They are adjacent or virtually adjacent to the site of the work as defined in paragraphs (7)(a)(i) or (7)(a)(ii) of this definition; and

(c) Does not include permanent home offices, branch plant establishments, fabrication plants, or tool yards of a Contractor or subcontractor whose locations and continuance in operation are determined wholly without regard to a particular contract or Federal Award or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, yards, etc., of a commercial or material supplier which are established by a supplier of materials for the project before opening of bids and not on the project site as defined in paragraphs (7)(a)(i) or (7)(a)(ii) of this definition, are not included in the "site of the work." Such permanent, previously established facilities are not a part of the "site of the work" even if the operations for a period of time may be dedicated exclusively or nearly so, to the performance of an Award, Subaward, or Contract.

(8) *Subaward* means an award of financial assistance in the form of money, or property in lieu of money, made under an award by a Recipient to an eligible Subrecipient or by a Subrecipient to a lower- tier subrecipient. The term includes financial assistance when provided by any legal agreement, even if the agreement is called a contract, but does not include the Recipient's procurement of goods and services to carry out the program nor does it include any form of assistance which is excluded from the definition of "Award" above.

(9) *Subrecipient* means a non-Federal entity that expends Federal awards received from a pass-through entity [Recipient] to carry out a Federal program, but does not include an individual that is a beneficiary of such a program. The term includes a Community Action Agency (CAA), local agency, or other entity to which a Subaward under the Award is made by a Recipient that includes a requirement to comply with the labor standards clauses and wage rate requirements of the DBA work performed by all laborers and mechanics employed by

contractors and subcontractors on projects funded by or assisted in whole or in part by and through the Federal Government pursuant of the Recovery Act.

B. Davis-Bacon Act

(1)(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached to the Subaward or Contract and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Recipient, a Subrecipient, or Contractor and such laborers and mechanics.

(i) Applicable to Recipient Only: Prior to the issuance of the Subaward or Contract, the Recipient shall notify the Contracting Officer of the site of the work in order for the appropriate wage determination to be obtained by the Contracting Officer from the Secretary of Labor.

(ii) If the Subaward or Contract is or has been issued without a wage determination, the Recipient shall notify the Contracting Officer immediately of the site of the work under the Subaward or Contract in order for the appropriate wage determination to be obtained by the Contracting Officer from the Secretary of Labor.

(b) Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the DBA on behalf of laborers or mechanics are considered wages paid to such laborers and mechanics, subject to the provisions of paragraph B(4) below; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period.

(c) Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the paragraph entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

(d) The wage determination (including any additional classifications and wage rates conformed under paragraph B(2) of this Clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Subrecipient and Contractor at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2)(a) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the Subaward or

Contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefore only when all the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination.
- (ii) The classification is utilized in the area by the construction industry.
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the Subrecipient (and Contractor, when applicable) and the laborers and mechanics to be employed in the classification (if known), or their representatives agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Subrecipient shall notify the Recipient. The Recipient shall notify the Contracting Officer of this agreement. If the Contracting Officer agrees with the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the:

Wage and Hour Division
Employment Standards Administration
U.S. Department of Labor
Washington, DC 20210

The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(c) In the event the Subrecipient (and Contractor, when applicable), and the laborers or mechanics to be employed in the classification, or their representatives, do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Subrecipient shall notify the Recipient. The Recipient shall notify the Contracting Officer of the disagreement. The Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(d) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs B(2)(b) or B(2)(c) of this Clause shall be paid to all workers performing work in the classification under the Award, Subaward, or Contract from the first day on which work is performed in the classification.

(3) Whenever the minimum wage rate prescribed in the Award, Subaward, or Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Subrecipient and Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Subrecipient or Contractor does not make payments to a trustee or other third person, the Subrecipient or Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Subrecipient or Contractor that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Subrecipient or Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

C. Rates of Wages

(1) The minimum wages to be paid laborers and mechanics under the Subaward or Contract involved in performance of work at the project site, as determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the pertinent locality, are included as an attachment to the Award, Subaward, or Contract.

(2) If the Subaward or Contract has been issued without a wage determination, the Recipient shall notify the Contracting Officer immediately of the site of the work under the Subaward or Contract in order for the appropriate wage determination to be obtained by the Contracting Officer from the Secretary of Labor.

D. Payrolls and Basic Records

(1) Payrolls and basic records relating thereto shall be maintained by the Recipient, Subrecipient and Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (4) of the provision entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Subrecipient or Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. The Subrecipient or Contractor employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and

certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2)(a) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Subrecipient. The Subrecipient shall submit weekly for each week in which any Subaward or Contract work is performed a copy of all payrolls to the Recipient. The Recipient shall submit weekly for each week in which any Subaward or Contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph D(1) of this Clause, except that the full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at

<http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site.

(b) The Recipient is responsible for the ensuring that all Subrecipients and Contractors submit copies of payrolls and basic records as required by paragraph D, Payrolls and Basic Records, of this Clause. The Subrecipient is responsible for ensuring all Contractors, including lower tier subcontractors submit copies of payrolls and basic records as required by paragraph D, Payrolls and Basic Records, of this clause. Subrecipients and Contractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request for transmission to the Contracting Officer, the Recipient, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. The Recipient shall also obtain and provide the full social security number and current address of each covered worker upon request by the Contracting Officer or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a Recipient to require a Subrecipient or Contractor to provide addresses and social security numbers to the Recipient for its own records, without weekly submission to the Contracting Officer.

(c) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Recipient, Subrecipient or Contractor or his or her agent who pays or supervises the payment of the persons employed under the Subaward or Contract and shall certify --

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph D(2)(a) of this Clause, the appropriate information is being maintained under paragraph D(1) of this Clause, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Subaward or Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Subaward or Contract.

(d) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph D(2)(c) of this Clause.

(e) The falsification of any of the certifications in Paragraph D, Payrolls and Basic Records, of this Clause may subject the Recipient, Subrecipient or Contractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(3) The Recipient, Subrecipient, or Contractor shall make the records required under paragraph D(1) of this Clause available for inspection, copying, or transcription by the Contracting Officer, authorized representatives of the Contracting Officer, or the Department of Labor. The Subrecipient or Contractor shall permit the Contracting Officer, authorized representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Recipient, Subrecipient, or Contractor fails to submit the required records or to make them available, the Contracting Officer may, after written notice to the Recipient, Subrecipient, or Contractor take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

E. Withholding of Funds

(1) The DOE Contracting Officer shall, upon his or her or its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Recipient or any other contract or Federal Award with the same Recipient, on this or any other federally assisted Award subject to Davis-Bacon prevailing wage requirements, which is held by the same Recipient so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Subrecipient or a Contractor the full amount of wages required by the Award or Subaward or a Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Award or Subaward or a Contract, the Contracting Officer may, after written notice to the Recipient take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(2) The Recipient shall, upon its own action or upon written request of the DOE Contracting Officer or an authorized representative of the Department of Labor, withhold or cause to be withheld from any Subrecipient or Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Subrecipient or Contractor the full amount of wages required by the Subaward or Contract. In the event of failure to pay any laborer or mechanic,

including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the Subaward or Contract, the Recipient may, after written notice to the Subrecipient or Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased or the Government may cause the suspension of any further payment under any other contract or Federal award with the same Subrecipient or Contractor, on any other federally assisted Award subject to Davis-Bacon prevailing wage requirements, which is held by the same Subrecipient or Contractor.

F. Apprentices and Trainees

(1) Apprentices.

(a) An apprentice will be permitted to work at less than the predetermined rate for the work they performed when they are employed—

(i) Pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer, and Labor Services (OATELS) or with a State Apprenticeship Agency recognized by the OATELS; or

(ii) In the first 90 days of probationary employment as an apprentice in such an apprenticeship program, even though not individually registered in the program, if certified by the OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

(b) The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Subrecipient or Contractor as to the entire work force under the registered program.

(c) Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph F(1) of this Clause, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(d) Where a Subrecipient or Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Subrecipient's or Contractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination.

(e) Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits,

apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(f) In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Subrecipient or Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) Trainees.

(a) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by (OATELS). The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by OATELS.

(b) Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship/training program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the OATELS shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed.

(c) In the event OATELS withdraws approval of a training program, the Subrecipient or Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this Clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

G. Compliance with Copeland Act Requirements

The Recipient, Subrecipient or Contractor shall comply with the requirements of 29 CFR Part 3 which are hereby incorporated by reference in the Award, Subaward or Contract.

H. Subawards and Contracts

(1) The Recipient, the Subrecipient and Contractor shall insert in the Subaward or any Contracts this Clause entitled "Davis Bacon Act Requirements" and such other clauses as the Contracting Officer may require. The Recipient shall be responsible for ensuring compliance by any Subrecipient or Contractor with all of the requirements contained in this Clause. The Subrecipient shall be responsible for the compliance by Contractor with all of the requirements contained in this Clause.

(2) Within 14 days after issuance of a Subaward, the Recipient shall deliver to the Contracting Officer a completed Standard Form (SF) 1413, Statement and Acknowledgment, for each Subaward and Contract for construction within the United States, including the Subrecipient's and Contractor's signed and dated acknowledgment that this Clause) has been included in the Subaward and any Contracts. The SF 1413 is available from the Contracting Officer or at [http://contacts.gsa.gov/webforms.nsf/0/70B4872D16EE95A785256A26004F7EA8/\\$file/sf1413_e.pdf](http://contacts.gsa.gov/webforms.nsf/0/70B4872D16EE95A785256A26004F7EA8/$file/sf1413_e.pdf) . Within 14 days after issuance of a Contract or lower- tier subcontract, the Subrecipient shall deliver to the Recipient a completed Standard Form (SF) 1413, Statement and Acknowledgment, for each Contract and lower-tier subcontract for construction within the United States, including the Contractor and lower- tier subcontractor's signed and dated acknowledgment that this Clause has been included in any Contract and lower- tier subcontracts. SF 1413 is available from the Contracting Officer or at [http://contacts.gsa.gov/webforms.nsf/0/70B4872D16EE95A785256A26004F7EA8/\\$file/sf1413_e.pdf](http://contacts.gsa.gov/webforms.nsf/0/70B4872D16EE95A785256A26004F7EA8/$file/sf1413_e.pdf) . The Recipient shall immediately provide to the DOE Contracting Officer the completed Standard Forms (SF) 1413.

I. Contract Termination -- Debarment

A breach of these provisions may be grounds for termination of the Award, Subaward, or Contract and for debarment as a Contractor or subcontractor as provided in 29 CFR 5.12.

J. Compliance with Davis-Bacon and Related Act Regulations

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in the Award, Subaward or Contract.

K. Disputes Concerning Labor Standards

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and shall not be subject to any other dispute provision that may be contained in the Award, Subaward, and Contract. Disputes within the meaning of this Clause include disputes between the Recipient, Subrecipient (including any Contractor) and the Department of Energy, the U.S. Department of Labor, or the employees or their representatives.

L. Certification of Eligibility.

(1) By entering into this Award, Subaward, or Contract (as applicable), the Recipient, Subrecipient, or Contractor, respectively certifies that neither it (nor he or she) nor any person or firm who has an interest in the Recipient, Subrecipient, or Contractor's firm, is a person, entity, or firm ineligible

to be awarded Government contracts or Government awards by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(2) No part of this Award, Subaward or Contract shall be subcontracted to any person or firm ineligible for award of a Government contract or Government award by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

M. Approval of Wage Rates

All straight time wage rates, and overtime rates based thereon, for laborers and mechanics engaged in work under an Award, Subaward or Contract must be submitted for approval in writing by the head of the federal contracting activity or a representative expressly designated for this purpose, if the straight time wages exceed the rates for corresponding classifications contained in the applicable Davis-Bacon Act minimum wage determination included in the Award, Subaward or Contract. Any amount paid by the Subrecipient or Contractor to any laborer or mechanic in excess of the agency approved wage rate shall be at the expense of the Subrecipient or Contractor and shall not be reimbursed by the Recipient or Subrecipient. If the Government refuses to authorize the use of the overtime, the Subrecipient or Contractor is not released from the obligation to pay employees at the required overtime rates for any overtime actually worked.

Clause XXX. Contract Work Hours and Safety Standards Act

This Clause entitled "Contract Work Hours and Safety Standards Act (CWHSSA)" shall apply to any Subaward or Contract in an amount in excess of \$100,000. As used in this CWHSSA Clause, the terms laborers and mechanics include watchmen and guards.

A. Overtime requirements. No Subrecipient or Contractor contracting for any part of the Subaward work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

B. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph B herein, the Subrecipient or Contractor responsible therefor shall be liable for the unpaid wages. In addition, such Subrecipient or Contractor shall be liable to the United States (in the case of work done under a Subaward or Contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the provision set forth in CWHSSA paragraph A, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (A) of this section.

C. Withholding for unpaid wages and liquidated damages.

(1) The DOE Contracting Officer shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Recipient on this or any other Federal Award or Federal contract with the same Recipient on any other federally-assisted Award or contract subject to the CWHSSA, which is held by the same Recipient such sums as may be determined to be necessary to satisfy any liabilities of such Recipient for unpaid wages and liquidated damages as provided in the clause set forth in CWHSSA, paragraph B of this Clause.

(2) The Recipient shall, upon its own action or upon written request of the DOE Contracting Officer or an authorized representative of the Department of Labor, withhold or cause from any moneys payable on account of work performed by the Subrecipient or Contractor on this or any other federally assisted subaward or contract subject to the CWHSSA, which is held by the same Subrecipient or Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Subrecipient or Contractor for unpaid wages and liquidated damages as provided in clause set forth in CWHSSA, paragraph B of this Clause.

D. Subcontracts. The Subrecipient shall insert in a Contract and a Contractor shall insert in any lower tier subcontracts, the clauses set forth in these CWHSSA paragraphs (A) through (D) and also a provision requiring the Contractors to include this CWHSSA Clause in any lower tier subcontracts. The Recipient shall be responsible for compliance by any Subrecipient or Contractor, with the CWHSSA paragraphs A through D. The Subrecipient shall be responsible for compliance by any Contractor (including lower- tier subcontractors).

E. The Subrecipient or Contractor shall maintain payrolls and basic payrolls in accordance with Clause XX, Davis- Bacon Act Requirements, for all laborers and mechanics, including guards and watchmen working on the Subaward or Contracts. These records are subject to the requirements set forth in Clause XX, Davis Bacon Requirements.

Clause XXXX. RECIPIENT FUNCTIONS

(1) On behalf of the Department of Energy (DOE), Recipient shall perform the following functions:

- (a) Obtain, maintain, and monitor all DBA certified payroll records submitted by the Subrecipients and Contractors at any tier under this Award;
- (b) Review all DBA certified payroll records for compliance with DBA requirements, including applicable DOL wage determinations;
- (c) Notify DOE of any non-compliance with DBA requirements by Subrecipients or Contractors at any tier, including any non-compliances identified as the result of reviews performed pursuant to paragraph (b) above;

- (d) Address any Subrecipient and any Contractor DBA non-compliance issues; if DBA non-compliance issues cannot be resolved in a timely manner, forward complaints, summary of investigations and all relevant information to DOE;
 - (e) Provide DOE with detailed information regarding the resolution of any DBA non-compliance issues;
 - (f) Perform services in support of DOE investigations of complaints filed regarding noncompliance by Subrecipients and Contractors with DBA requirements;
 - (g) Perform audit services as necessary to ensure compliance by Subrecipients and Contractors with DBA requirements and as requested by the Contracting Officer; and
 - (h) Provide copies of all records upon request by DOE or DOL in a timely manner.
- (2) All records maintained on behalf of the DOE in accordance with paragraph (1) above are federal government (DOE) owned records. DOE or an authorized representative shall be granted access to the records at all times.
- (3) In the event of, and in response to any Freedom of Information Act, 5 U.S.C. 552, requests submitted to DOE, Recipient shall provide such records to DOE within 5 business days of receipt of a request from DOE.

Waste Stream Provisions



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3305

February 4, 2010

Dear ARRA Recipient:

In your Energy Efficiency and Conservation Block Grant (EECBG) award, the current Special Terms and Conditions contain the provision entitled "Waste Stream". This provision required all recipients to provide documentation to the Department of Energy (DOE) Project Officer demonstrating that the recipient or subrecipient has prepared a disposal plan for sanitary or hazardous waste generated by the proposed activities, prior to the expenditure of Federal funds to dispose of sanitary or hazardous waste. DOE was subsequently required to provide written approval of the proposed disposal plan.

The provision has been revised to remove the requirement for submittal and approval of the waste management plan, and will be incorporated into your award through a modification in early 2010. The revised provision now reads as follows:

WASTE STREAM

The Recipient assures that it will create or obtain a waste management plan addressing waste generated by a proposed Project prior to the Project generating waste. This waste management plan will describe the Recipient's or subrecipient's plan to dispose of any sanitary or hazardous waste (e.g., construction and demolition debris, old light bulbs, lead ballasts, piping, roofing material, discarded equipment, debris, and asbestos) generated as a result of the proposed Project. The Recipient shall ensure that the Project is in compliance with all Federal, state and local regulations for waste disposal. The Recipient shall make the waste management plan and related documentation available to DOE on DOE's request (for example, during a post-award audit).

Please note that recipients are responsible for collecting and maintaining waste management plans for subrecipients as applicable. Until the modification is executed by DOE, this letter will serve as official notification of the change.

For questions or concerns regarding your award, please contact your cognizant DOE Project Officer.

Sincerely,

A handwritten signature in black ink that reads "Sara Wilson".

Sara Wilson
Contracting Officer



APPENDIX 2

Specifications

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The purpose of the record documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modifications to proceed without lengthy and expensive site investigation.
- B. Throughout progress of Work, maintain an accurate record of all revisions to the Work. Upon completion of Work, transfer the recorded changes to a set of record documents. This includes, but is not limited to, all modifications to piping, roads, utilities, grading, structures, limits of liner, and monitoring devices.
- C. Submit three (3) complete sets of record drawings, and one set of AutoCAD compatible files acceptable to the ENGINEER upon completion of the project.

1.02 SUBMITTALS

- A. Record documents shall be submitted to and deemed complete by the ENGINEER, for the OWNER, prior to the OWNER'S release of retainage and payment of final pay request.
- B. Accompany submittal with transmittal letter in duplicate, containing:
 - 1. Date;
 - 2. Project title and number;
 - 3. CONTRACTOR'S name and address;
 - 4. Title and number of each Record Document; and
 - 5. Signature of CONTRACTOR or his authorized representative.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 SURVEYOR

- A. Employ the services of a surveyor licensed in the State in which the project work is conducted to determine actual locations and elevations of installed items and to prepare the record drawings.
- B. Specifically, surveyed elevations are required for:
 - i. Landfill gas header, spot elevations of top of pipe at intervals of 1 per every 50 feet.
 - ii. Top of pipe elevations where lateral pipes connect to wellheads, and top of pipe elevations where lateral pipes connect to header pipes.

3.02 ACCURACY OF RECORDS

- A. Thoroughly coordinate all changes within the record documents, making adequate and proper entries on each page of the Specifications and each sheet of the Drawings and other documents where such entry is required to properly show the change. Record accuracy shall be such that future searches for the constructed features may reasonably rely on information obtained from record documents.

3.03 SUBMITTAL

- A. The ENGINEER'S approval of the current record documents shall be a prerequisite to the ENGINEER'S approval of requests for progress payment and request for final payment under the Contract.

3.04 FORMAT OF FINAL RECORD DRAWINGS

- A. Prepare Record Drawings in an AutoCAD file format acceptable to the ENGINEER. Provide digital record drawing to ENGINEER only when no exceptions are taken by ENGINEER should paper copies be submitted.
- B. Information to be included: vertical and horizontal locations of all structures, and improvements, including but not limited to, structural fill, access roads, utilities, permanent erosion and sediment control structures, manholes, and location and invert elevations for all risers, piping, underdrains and stormwater channels.

END OF SECTION 01720

SECTION 02100

SITE PREPARATION AND RESTORATION

PART 1 - GENERAL

1.01 SCOPE

- A. Provide personnel, equipment, materials, and supplies to clear and grub necessary areas of the project site.
- B. Provide protection as necessary to prevent damage to existing improvements not indicated to be removed, and improvements on adjoining properties.
- C. Restore all improvements damaged by this Work to their original condition, and acceptable to the OWNER or other parties or authorities having jurisdiction.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 UTILITIES

- A. Locate existing utilities, culverts, and structures above or below ground before any excavation starts. Coordinate Work with Owners of utilities. Protect, maintain service, and prevent damage to utilities not designated to be removed. When utilities are encountered and are not shown on the drawings, or when locations differ from those shown on the drawings, notify ENGINEER for instruction before proceeding.

3.02 SITE PROTECTION

- A. Protect benchmarks from damage or displacement.
- B. Protect OWNER'S property and adjoining properties from damage due to construction activities. Use barricades, coverings, and warning signs as appropriate.
- C. CONTRACTOR is responsible for correcting any damage caused by construction activities. Make repairs to the satisfaction of the OWNER or other parties having jurisdiction. All costs for repairs will be borne by the CONTRACTOR.
- D. The Contractor shall protect living trees designated to remain within the area of construction and those outside the construction area. Cut or scarred surfaces of trees or shrubs shall be treated with a paint prepared especially for tree wound dressing.

E. Conduct Work in accordance with the requirements of the project specifications.

3.03 CLEARING

A. Clear and grade areas required for access to site and execution of Work.

B. Remove from the site trees, brush, shrubs, downed timber, undergrowth, deadwood, rubbish, and other vegetation and incidental structures to allow for new construction.

C. Remove all trees, stumps, and roots within 10 feet of any proposed structure or pipeline.

D. Remove all stumps when such stumps will be less than five (5) feet below finished grade. Stumps of trees to be left in place shall be left no more than six (6) inches above original grade.

E. Clearing shall be limited to areas within the limits of construction that need to be cleared in order to execute the Work. Clearing may be required to obtain suitable materials in the borrow area. CONTRACTOR shall keep clearing to the minimum required to complete the Work. Any clearing performed in the borrow area shall be at no additional cost to the OWNER.

F. Do not disturb other areas outside the limits of construction shown on the Contract Drawings.

3.04 GRUBBING

A. Grub areas within a 10-foot zone bordering all proposed structures and pipelines.

B. In areas to be cleared, remove all stumps, roots ½-inch or larger, organic material, and debris to a depth of approximately one foot below existing grade, or one foot below the proposed subgrade elevation, whichever is lower.

C. Remove grassy vegetation in a manner that maximizes the separation of vegetative cover and topsoil or subsoil. Unless otherwise noted, grassy vegetation shall be removed from the site or disposed on-site as approved by landfill personnel.

D. Use hand methods for grubbing inside the drip lines of trees which are to remain.

E. Clean up debris resulting from site clearing operations continuously with the progress of the Work.

F. Stockpile topsoil material on site in areas designated by the ENGINEER or the OWNER.

G. Keep pavement and areas adjacent to site clean and free from mud, dirt, and debris.

3.05 REMOVAL AND DISPOSAL OF DEBRIS

- A. Unless otherwise noted, trees within the construction limits shall become the property of the CONTRACTOR and shall be removed from the site or disposed on-site as approved by landfill personnel.
- B. Remove other debris, rock, and extracted plant life from the site or dispose on-site as approved by the OWNER.
- C. Removal and disposal of debris, rock and extracted plant life shall be accomplished at no additional cost to the OWNER.
- D. Burning will be permitted when allowed by local ordinance and approved by the local fire marshal. No burning will be allowed within 100 feet of waste disposal areas or site access roads.
- E. CONTRACTOR shall obtain and comply with all required permits.

3.06 SITE RESTORATION

- A. At the end of the construction period, the CONTRACTOR shall restore to existing grade areas disturbed by construction activities. CONTRACTOR is also responsible for restoration of the sections of the borrow area utilized for the construction at no addition cost to the Owner. Areas to be filled shall be nominally compacted as may be achieved with construction equipment, graded to prevent ponding, and permanently seeded in accordance with the requirements of the project specifications.

END OF SECTION 02100

SECTION 02200

EARTHWORK

PART 1 -GENERAL

1.01 SCOPE

- A. The Work covered by this specification consists of furnishing all labor, equipment and materials to perform general grading; excavation; and placement and compaction of structural fill for foundations, perimeter berms, embankments and structures, as shown on the Drawings.
- B. All excavation shall be unclassified regardless of material encountered, except for Rock as defined in this specification.
- C. A layer is defined as a compacted stratum composed of several lifts constructed without joints. A lift is defined as a segment of a layer composed of the maximum thickness of soil permitted to be placed / compacted at one time.
- D. All fill materials shall be subject to the approval of the CQA Consultant.
- E. The CONTRACTOR is solely responsible for the placement of all fill material and shall not rely on the CQA Consultant for recommendations and directions. It is recommended the CONTRACTOR employs his own geotechnical consultant to provide construction assistance and recommendations.
- F. The CQA Consultant will perform field and laboratory testing as required and in accordance with the CQA Plan.
- G. The use of explosives is prohibited.

PART 2 - PRODUCTS

2.01 FILL MATERIAL

All fill material used to establish necessary grades as shown on the Drawings shall be free of debris, roots, stumps, brush, vegetation, frozen material, organic matter, rock, or gravel larger than two inches in any dimension, or other harmful matter, unless allowed by the CQA Consultant.

All fill materials shall be subject to the approval of the CQA Consultant. CONTRACTOR shall notify the CQA Consultant at least 10 working days in advance of intention to begin filling operations. Notification shall include designation of the proposed borrow source and all necessary laboratory testing data to demonstrate the adequacy of the material to perform its intended use. CONTRACTOR shall provide the CQA Consultant with 120 pounds of the proposed material in three, five-gallon, PVC, sample buckets with lids and handles at the time of notification. CONTRACTOR shall not initiate filling activities without the approval of the CQA Consultant to use the intended material for filling activities.

2.02 ROCK

Rock shall be construed as solid mineral material with a volume in excess of two (2) cubic yards or solid material that cannot be fractured and/or removed with conventional earth moving equipment. Conventional earth moving equipment shall be defined as a Cat D8L or equivalent tractor with a single-shank ripper, or Cat 330 sized or equivalent hydraulic excavator.

2.03 UNSUITABLE MATERIAL

Material such as clay mass, frozen materials, cinders, ashes, refuse, vegetation, organic material and muck shall be construed as unsuitable material for backfill. All unsuitable material under access roads, structural fills and berms shall be removed from the area to be filled.

PART 3 - EXECUTION

3.01 GENERAL

- A. Strip topsoil to full depth, and stockpile separate from other excavated materials and pile free of roots, stones, and other undesirable materials. Follow local erosion and sediment control guidelines to prevent erosion. Any depressions caused by removal of stumps of the clearing shall be excavated to firm subgrade.
- B. The CONTRACTOR shall perform all excavation described in whatever material encountered to dimensions and elevations shown on the Drawings.
- C. Existing utilities, structures, and fencing shall be protected during the construction period, and if damaged or removed by the CONTRACTOR in his operations, shall be repaired or replaced at the CONTRACTOR'S expense.
- D. Where unauthorized excavations have been carried below or beyond points required, restore these areas to the elevations and dimensions shown on the Drawings with material approved by CQA Consultant and compact as specified, at no additional cost to the OWNER.
- E. Material rendered not suitable for construction due to fault or negligence of the CONTRACTOR, shall be removed and replaced at no additional cost to the OWNER.

3.02 UTILITIES TO BE ABANDONED OR REMOVED

- A. When underground utilities are to be abandoned in place, plug, cap, or seal with concrete at the "Construction Limits" or at points designated by the CQA Consultant.
- B. Remove underground utilities indicated on the Drawings to be removed and backfill resulting excavation with suitable material, compacted as specified. Plug, cap or seal utilities with concrete at the construction limits or at points designated by the CQA Consultant.

3.03 PROOFROLLING

- A. Prior to the placement of any fill material, the subgrade, or bridge lift, shall be proofrolled.
- B. Prior to the placement of the liner system, the natural ground or excavated subgrade shall be proofrolled.
- C. Prior to the placement of the liner system, the top of fill shall be proofrolled
- D. Proofrolling shall be performed using a rubber-tired device having a static weight of at least 10 tons (such as a loaded tandem axle dump truck). This shall be performed during dry weather conditions and under the direction of the CQA Consultant. Areas that “pump” or otherwise exhibit instability shall be repaired as directed by the CQA Consultant.

3.04 WETLANDS PROTECTION

Prior to the placement of any fill material, the Best Management Practices (BMPs), such as stormwater conveyance channels, sediment basins, outlet protection, and silt fence, shown on the contract documents must be installed. In addition, the CONTRACTOR is responsible for flagging the maximum limits of disturbance prior to the start of on-site construction activities. At no time shall the CONTRACTOR impact any areas beyond the maximum limits of disturbance, without prior approval from the ENGINEER and CQA Consultant.

3.05 EXCAVATION

Areas that receive permanent seeding shall be graded below finished grades shown, leaving space for the vegetative support layer.

Stockpile excavated soil material satisfactory for backfill or fill until required. Place, grade and shape stockpiles for proper drainage. Proper erosion and sediment control measures shall be installed in conjunction with stockpile development.

- A. Remove existing pavement as required.

Dispose of materials unsatisfactory for backfill or fill continuously with the progress of work.

Dispose of trash and debris, and all excess material continuously with the progress of the work.

All excavation shall be dewatered as necessary to provide proper protection. The CQA Consultant may require excavation to be continuously dewatered 24 hours per day by adequate pumping or well-points satisfactory to the CQA Consultant until backfilling has been completed.

Where underground streams or springs are found, provide temporary drainage and notify ENGINEER and CQA Consultant.

- B. Extreme caution shall be taken when excavating in the vicinity of existing facilities. Any damage to the facilities will be repaired to original condition at no additional cost to the OWNER.

Excavate unsuitable soil materials encountered that extend below required elevations. The limits of the unsuitable material and depth of removal shall be determined by the CONTRACTOR, and agreed to by the ENGINEER and/or the CQA Consultant.

- C. Remove shoring and all form materials.
- D. Grade site to prevent surface water run-on into excavations.

3.06 EXCAVATION FOR STRUCTURES

- A. Conform to elevations and dimensions shown on the Drawings. Extend excavation sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, and for other required construction. Foundation concrete shall not be poured until the bearing stratum has been examined and found satisfactory for the design bearing capacity.
- B. Where rock is encountered, notify ENGINEER. When the entire structure will bear on rock, it shall be used to support the foundation. Where only a part of the foundation would bear on rock, excavate 12 inches below the entire structure and backfill with aggregate fill and thoroughly compact.
- C. Provide a 12-inch minimum clearance between rock excavation and walls of structure when forming is not used. Provide a two (2) feet clearance when forming is used.

3.07 ROCK REMOVAL

- A. Rock removal will be by mechanical method only unless prior approval is received from the OWNER, ENGINEER, and CQA Consultant.
- B. If Rock is encountered as defined in this specification, The CONTRACTOR will before proceeding:
 - 1. Demonstrate findings to the CQA Consultant;
 - 2. Determine limits of the rock above the base grade; and
 - 3. Quantify the rock and provide information, including limits, to the CQA Consultant for assessment.
- C. Remove rock at bottom of excavations to form level bearings.
- D. In utility trenches, excavate to 4 inches below invert elevation of pipe and to width indicated on Standard Details.
- E. Remove rock loosened by mechanical method. Over-excavation of six inches to one foot will be allowed.
- F. Correct unauthorized rock removal in accordance with backfilling and compaction requirements of the project specifications.
- G. Excavated rock will be removed from the site or segregated and stockpiled on-site as directed by the OWNER.

3.08 COMPACTION OF FILL

- A. Compaction of each layer shall be continuous over the entire area and the compaction equipment shall make sufficient trips to assure that the density has been obtained. Fill shall be placed and compacted in uniform lifts and shall not exceed 6 inches in compacted thickness. All fill shall be compacted to within 95 percent of maximum density (standard proctor) as determined by ASTM D698. This compaction method shall apply to earthwork performed outside of landfill waste fill footprint, including fills, berms, embankments, paved areas and for a distance of at least 25 feet beyond structures and at least five feet beyond fills, berms, embankments and paved areas. All other unpaved areas shall be compacted to within 90 percent of maximum density as determined by ASTM D698.
- B. Compaction equipment shall be of such design that it will be able to compact the fill to the specified density. Use power-driven hand tampers for compacting materials adjacent to structures.

3.09 COMPACTION TESTS

Field tests of the compaction of fill may be made by the CQA Consultant. If a test fails to meet the required compaction level or moisture content, then the area represented by that test shall be reworked and retested, at no additional cost to the OWNER, until a passing test results. The CONTRACTOR may elect at his own expense to remove the failing material.

3.10 SURFACE WATER

All excavations and fill areas shall be kept free of standing water. Grade surfaces and ditches to drain. Pumping of water shall be required to remove water from areas that cannot drain naturally.

3.11 FILL AND BACKFILL

- A. Remove vegetation, debris, unsatisfactory materials prior to placement of fill. Plow, strip or break up sloped surfaces steeper than 4 to 1 so that fill material shall bond with existing surface.
- B. Obtain clean earth fill from excavation or other approved sources. The material shall be compacted in accordance with these Specifications. Rock fragments and stones up to 2 feet in its greatest dimension may be placed in an embankment fill to within 10 feet of the top of the earth fill. The remainder of the embankment to within 2 feet of the top of the earth fill shall not contain rock more than 6 inches in its greatest dimension. The top 2 feet of the embankment shall not contain rock more than 2 inches in its greatest dimension. Rock, fines and earth shall be distributed throughout each lift so that voids are filled. Rock shall not be placed in the embankment where, piling, borings, monitoring wells or boundary probes are to be driven, drilled or constructed. Prevent nesting of large rocks and compact fill to prevent voids. Maximum rock size within 12 inches of footing elevations shall be 2 inch diameter.
- C. Provide borrow material when on-site excavation is not sufficient to grade site to contours and finished grade elevations shown on the Drawings. All necessary costs shall be included in Bid Price.
- D. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified percentage of maximum density.
- E. Do not backfill with or compact over frozen soil material.

- F. Soil material that has been removed as too wet to permit compaction may be stockpiled or spread to dry. When moisture content is reduced to a satisfactory value, soil material may be used as fill or backfill.
- G. Place clean earth fill to obtain elevations shown on the Drawings.
- H. Excavate depression caused by removed stumps or other clearing operations to firm subgrade, fill with clean earth and compact as specified.
- I. When the existing ground surface has been disturbed and has a density of less than that specified for the particular area, scarify the ground surface, adjust moisture content and compact to required depth and percentage of maximum density.
- J. Place backfill and fill materials in layers which, when compacted, shall not exceed six inches in lift thickness at depths less than four feet below finished grade and 12 inches in lift thickness at depths greater than four feet below finished grade. Each layer shall be spread evenly and shall be thoroughly bladed and mixed during the spreading to ensure uniformity of material in each layer. If required, the fill material shall be dried by aerating with a scarifier, disc harrow, blade or other equipment or by such other means as may be necessary. If required, the fill material shall be wetted by the use of water trucks. Dried or wetted fill material shall be thoroughly mixed to provide optimum moisture content. Compact each layer to the required density.
- K. Place backfill and fill materials evenly adjacent to structures. Prevent wedging of the backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.
- L. Place aggregate fill material under all structures as shown on the Drawings. Compact to density required for fill under buildings and structures.

3.12 GRADING

- A. Uniformly grade all areas within the limits designated on the Drawings, including adjacent transition areas. Finish surfaces within specified tolerances with uniform levels or slopes between points where elevations are shown and existing grades.
- B. Finish all surfaces free from irregular changes and grade to drain as shown on the Drawings.
- C. Finish areas to receive geosynthetic liner to within 0.10 feet of required subgrade elevations, unless approved in writing by ENGINEER.
- D. Shape subgrade under unpaved areas to line, grade and cross-section to within 0.25 feet of required subgrade elevation.
- E. Shape subgrade under pavement to line, grade, and cross-section to within 0.05 feet of required subgrade elevations.
- F. Grade for structures to required elevation within tolerance of 0.05 feet.

- G. Protect newly graded areas from traffic, erosion, desiccation or other damage. Repair and re-establish grade in settled, eroded, or rutted areas to the specified tolerances.
- H. Where compacted areas are disturbed by subsequent construction or adverse weather, scarify the surface, reshape and compact to the required density. Use hand tamper for recompaction over underground utilities. Portions of the fill damaged due to exposure shall be reworked to meet the project specifications or, at the discretion of the CQA Consultant, removed and replaced with conforming material at no additional cost to the OWNER.
- I. Place vegetative support layer to a minimum depth of 6 inches. Where existing on-site supply of topsoil is inadequate to provide the required amount, supply additional topsoil, meeting the specification for Topsoil, from off-site sources. Source and quality of additional material shall be approved by ENGINEER. Cost of off-site material shall be at no additional cost to OWNER. Reference shall be made to the project specifications for requirements of topsoil testing and topsoil amendment options.

3.13 GEOSYNTHETIC AREA PREPARATION

Surfaces to receive a geosynthetic material shall be kept smooth and free of debris, roots, sticks, bones and angular or sharp rocks larger than 3/8 inch in any dimension. The surface should provide a firm, unyielding foundation with no sudden, sharp, or abrupt changes or break in grade. No standing water or excessive moisture shall be allowed. Final compaction of any area to receive a geosynthetic shall be with smooth steel wheel roller. The CONTRACTOR shall certify in writing that the surface on which the material is to be installed is acceptable before commencing placement of geosynthetic materials.

3.14 SEASONAL LIMITS

No fill material shall be placed, spread, or rolled while the ground is frozen or thawing, or during unfavorable weather conditions. When the work is interrupted by inclement weather, fill operations shall not be resumed until approved by the CQA Consultant. Repairs from inclement weather must be corrected by the CONTRACTOR to the satisfaction of the CQA Consultant at no additional cost to OWNER.

END OF SECTION 02200

SECTION 02221

TRENCHING, BACKFILLING, AND COMPACTING FOR PIPELINES

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Excavating Trenches, backfilling and compacting for installation of HDPE Landfill gas and condensate drainage pipes.
- B. Dewatering, protection, and maintenance of trenches, support of existing structures, sheeting and shoring, hauling and disposal of excess excavated materials and fill.

1.02 REFERENCES

- A. OSHA 29 CFR Part 1926, Subpart P, Occupational Safety and Health Standards - Excavations.

PART 2 PRODUCTS

2.01 BACKFILL MATERIALS

- A. Re-use excavated soil for backfill.

PART 3 EXECUTION

3.01 PREPARATION AND RESTORATION

- A. Remove sod, topsoil, and other surface treatment and restore to original condition or better upon completion of the Work.
- B. Material from each distinct soil layer should be segregated and stockpiled separately from other soil layers during excavation.
- C. After excavation, all disturbed soil strata should be restored to their original composition, thicknesses, compaction level and moisture content.

3.02 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, or other methods required to prevent cave-in or loose soil from falling into excavation.

- B. Place excavated and other material 2 feet minimum back from edge of trench excavation.
- C. Minimum trench excavation slope to conform with OSHA 29 CFR Part 1926, Subpart P.
- D. Underpin adjacent structures which may be damaged by excavation Work, including utilities and piping.
- E. Notify OWNER and ENGINEER immediately of unexpected subsurface conditions.
- F. Protect bottom of excavations from frost.

3.03 TRENCHING

- A. Excavate to the required alignment and grade.
- B. No adjustment in compensation will be made for grade adjustments not in excess of 1 foot above or below the plan elevations.
- C. Remove any water that accumulates in trench, and construct ditches, flumes, and dams to direct water away from excavation.
- D. ENGINEER may limit the amount of open trench where field conditions or plant operations require.
- E. ENGINEER may order additional excavation where unsuitable soil conditions are encountered.
- F. Promptly dispose of excess excavation off-site or in area designated by OWNER.
- G. Bottom of trench shall be compacted prior to laying pipe, in accordance with Section 02200 Earthwork.

3.04 UTILITY TEST HOLES

- A. Where potential utility conflicts are anticipated, uncover utility lines well in advance of trench excavation.
- B. Determine grade of the utility line.
- C. Backfill and restore disturbed area to original condition.

3.05 BEDDING AND HAUNCHING

- A. Minimum bedding requirements for pipes: The HDPE pipe shall be placed on compacted soil bedding as shown on the Contract Drawings. If bedding material is necessary to obtain grades, it shall be of nature that will not damage the piping during placement and backfilling.

3.06 BACKFILLING

- A. Backfill immediately following completion of pipe installation.
- B. Take necessary precautions with backfill and construction operations to protect completed utility system from damage.
- C. Backfill with care around structures.
- D. Backfill to the original ground elevation unless shown otherwise on the Contract Drawings.
- E. Place and compact backfill in accordance with Section 02200.
- F. If surveying of pipe spot elevations is not performed prior to backfilling, allow for access to top of pipe for future surveying.

3.07 FIELD QUALITY CONTROL

- A. CONTRACTOR shall be responsible for quality control.

END OF SECTION 02221

SECTION 02618

HIGH-DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Landfill gas (LFG) piping

1.02 REFERENCES

- A. ASTM D1248 - High-density polyethylene (HDPE) weight resin for pipes and fittings.
- B. ASTM D2513 - Industrial molded fittings for high-density polyethylene (HDPE) pipes.
- C. ASTM D3261 - Butt fittings for high-density polyethylene (HDPE) pipes.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Protect pipe from sun, elements, and weather changes.
- B. Store pipe in areas that are safe from normal daily plant operations and from construction activities.

1.04 SUBMITTALS

- A. Submit product data prior to installation, including data on pipe materials, pipe fittings, and accessories.
- B. Inspect material a minimum of 7 days prior to installation, and indicate in writing any deficiencies to the OWNER.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers of LFG pipe include, but are not limited to:
1. Spirolite Corporation
4094 Blue Ridge Industrial Parkway
Norcross, GA 30071
 2. Plexco
3240 N. Mannheim Road
Franklin Park, IL 60131
 3. CRS PolyPipe
Drawer HH
Gainesville, TX 76240
 4. Phillips Driscopipe, Inc.
2929 North Central Expressway
Richardson, TX 75083

2.02 MATERIALS

- A. Pipe: All HDPE Pipe – SDR 17, PE3408, minimum 2% carbon black, cell classification 345444C (or other classification approved by the ENGINEER).
- B. Joints: Butt, heat fusion process as per manufacturer instruction. Joints at connections between phases may be electrofusion type couplings. Saddle connections by sidewall heat plate machine (not by extrusion).
- C. Fittings: Fittings may be molded or prefabricated by the manufacturer.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect pipe, fittings, and other appurtenances before installation to verify quality of material.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs.

- B. Remove dirt and other contaminants, inside and outside, from pipe and fitting materials before assembly.
- C. Make straight field cuts without chipping or cracking pipe.

3.03 INSTALLATION

- A. Make heat fusion joints in accordance with manufacturer's recommended procedures.
- B. Install pipe with a minimum slope of 1% for areas outside of landfill waste footprint, and a minimum of 5% for areas within waste footprint.
- C. Verify that installed grades meet requirements by providing a survey as specified in Section 01720.
- C. The maximum allowable tolerance for grade is 0.10 foot.
- D. Construct bedding material and general soils over pipe with care to avoid damage to pipe. Minimize traffic and turning of traffic over pipe.
- E. Backfill pipe in accordance with Section 02221.
- F. Compact pipe trenches by hand or mechanical tamping in 6 in. layers.

3.04 FIELD QUALITY CONTROL

- A. ENGINEER to observe all pipe, joints and fittings prior to backfilling.
- B. Flush pipe with sewer cleaning equipment when construction is completed. Submit details of flushing program to ENGINEER for approval. Provide detail of temporary flushing method that will allow free flow discharge of flush water from low end of pipe so that flush water may be observed by the ENGINEER. Flush until water runs clear. Flushing program is to remove all debris including HDPE cuttings, soil, gravel, and all contaminants from pipelines. CONTRACTOR to provide all water and equipment required to complete the flushing.
- C. Air testing: Air test the system in accordance with the pipe manufacturer's instructions and as follows, and submit all test results to ENGINEER.
 - 1. Pressure-test all pipe, fittings, and appurtenances except piping below landfill gas well heads. Mechanically plug the ends of pipelines to be tested and close gate valves at all wells. Apply either a positive or negative gauge pressure of 2.5 pounds per square inch (psi) or greater. Close the valve on the pressurizing unit, and monitor the pressure for a minimum of 30 minutes. A system pressure loss of less than 0.5 psi during the testing period shall be considered acceptable.
 - 2. Pressure tests shall be performed in the presence of the ENGINEER. Give 48-hour notice to ENGINEER prior to testing. A written report shall be prepared by the CONTRACTOR for each test and submitted to the ENGINEER. Provide all gauges, pumps, pipe, connections, and all other necessary apparatus to conduct tests.
 - 3. If results of tests performed do not conform to requirements as stated herein, CONTRACTOR shall make the necessary repairs and repeat tests, as required until satisfactory results are obtained.

END OF SECTION 02618

SECTION 02636

LFG BUTTERFLY VALVES

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Landfill gas pipe butterfly valve 6”.

1.02 REFERENCES

- A. Section 02618 HDPE Pipe and Fittings

1.03 SUBMITTALS

- A. Submit product data to OWNER.
- B. Inspect material a minimum of 7 days prior to installation and verify that there are no deficiencies.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- 1. Asahi-America Corporation
35 Green Street, P.O. Box 653
Malden, MA 02148
www.asahi-america.com

Other equivalent suppliers may be acceptable if approved by ENGINEER.

2.02 MATERIALS

- A. Valve shall be Asahi Type 57 Butterfly (or equivalent), lined body design and bubble-tight seal (meeting or exceeding Class VI as defined by American National Standard Institute) with gear operator. Liner shall be molded and formed around the body, functioning as gasket seals with convex ring design on each side of the valve for lower bolt tightening torque and valve body shall have molded body stops and seat relief area to prevent over tightening of mating flanges.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect valve, pipe, fittings, and other appurtenances before installation to verify quality of material.

3.02 INSTALLATION

- A. Connect valves to HDPE pipe with bolted flange connections. All backup rings shall be either stainless steel or ductile iron with stainless steel or zinc fasteners respectively.

3.03 FIELD QUALITY CONTROL

- A. ENGINEER to observe all valve installations prior to backfilling.

END OF SECTION 02636

SECTION 02900

LFG BLOWER/FLARE & MONITORING EQUIP.

PART 1 GENERAL

1.01 DESCRIPTION OF WORK, DEFINITIONS & RESPONSIBILITIES

A. System Description

The system shall consist of: a blower; electric motor; suction liquid knockout vessel; piping; controls; safety shutdowns, valves; on-skid electrical wiring; electric control panel; skid frame; 3 flow meters; utility flare; temperature monitoring device; digital chart recorder; continuous gas analyzer and a remote monitoring telemetry system with web access.

The layout must allow for accurate measurement of total flow, flow to the landfill gas flare and flow to the LFG-to-electricity facility. The continuous gas analyzer should sample gas prior to the branch off point.

The system shall be designed for outdoor installation. Design objectives shall strive to avoid complex control systems, facilitate ease of maintenance and to ensure a high degree of equipment reliability. Each piece of equipment shall be selected for its performance characteristics and proven satisfactory operation in landfill gas extraction applications.

B. Definitions

1. Vendor - Manufacturer/Supplier of the landfill gas flare skid system or components thereof.
2. Contractor - General Contractor or his Subcontractor performing installation and construction work at the jobsite.

C. Contractor Responsibility

Contractor shall be responsible for furnishing all labor, materials, equipment, freight, taxes and supervision for the design, fabrication, delivery, installation and startup of the equipment as described herein, with all appurtenances necessary to perform the specified function, whether expressly described or not, F.O.B. jobsite. Contractor shall provide all coordination with Vendor(s) for the flare skid system or system component design, manufacture, delivery, installation and startup.

1.02 SUBMITTALS

1. Customer drawings for the flare skid:
 - a. General arrangement plans and elevations with customer connections noted on a legend.
2. Equipment list, specifications and equipment flow charts.
3. Operation and Maintenance Manuals. Provide written instructions to enable the installation, operation and maintenance of the flare skid. This information shall be completed in manuals with title pages containing index sheets and section titles. The Operation and Maintenance Manual shall be prepared specifically for this installation.

PART 2 PRODUCTS

2.01 BLOWER

- A. Motor and blower housings shall be suitable for exterior service and be provided with nameplate information including manufacturer, model number, serial number, and capacity and rating information.
- B. The blower/motor assembly shall be a belt driven, single vane or multistage centrifugal blower capable of delivering 100 scfm at minus 40 inches of water column (w.c.). The blowers shall be as manufactured by HSI, Gardner Denver, Aerovent, New York Blower, or approved equal.
- C. Blower impellers shall be made of a non-sparking material such as aluminum.
- D. Motor shall be high efficiency, totally enclosed, fan cooled (TEFC), and shall be designed to run on single phase electricity.
- E. Blower shall be supplied with a factory applied phenolic coating to all internal parts that will be in contact with landfill gas.
- F. Provide a pressure gauge on the outlet piping of the blowers and vacuum gauges on the inlet and outlet piping of the knock-out pot.
- G. Provide expansion/vibration joints between the blower inlet and outlet and connected piping.

2.02 CONDENSATE KNOCK-OUT POT

- A. Condensate knock-out pot complete with the following:
 - HDPE, stainless steel (304/316) or carbon steel construction. Carbon steel to be internally coated with two (2) coats of a phenolic painting system. The carbon

steel exterior shall be prepared with an SSPC-SP-6 blast and primed with an epoxy primer.

- Flanged top, inlet and outlet for accessibility and maintenance.
- Drain connection.
- Stainless steel wire meshpad demister suitable for droplet removal to 6 microns diameter.
- A differential pressure gauge to be mounted on the vessel and connected to taps on the upstream and downstream side of the mesh pad.

2.03 STEEL SKID

1. Heavy duty AISC designed structural steel skid.
2. Skid to be completely galvanized after fabrication.

2.04 UTILITY FLARE

Flare shall be designed to continuously maintain a flame and to operate within a range of 10 to 100 scfm. Flare shall be equipped with:

- Wind screen,
- Thermocouple,
- Propane pilot fuel line,
- Ignitor, and
- Flame arrestor.

2.05 PIPING

1. Piping and piping fabrication shall be consistent with recognized industry specifications.
2. Gaskets shall be a synthetic fiber type with an NBR binder, Donex 660 or equal.
3. All stainless steel flanges to be 150# RFSO.
4. All piping to be fully assembled, mounted, and supported from the outlet of the knock out pot to the skid edge.
5. Piping wall thickness shall be designed for a minimum of 1.5 times the operating pressure.
6. Condensate drain lines shall be manifolded to one location on the skid with all necessary check valves at each vessel for safe operation.
7. Gas piping, where it is possible for liquids to collect, shall have drain connections (manual ball valves) and shall ensure complete drainage through low points without disassembly. Low points in gas piping are to be avoided.
8. Isolation valves shall be placed in piping around all components to avoid loss of gas pressure and fluids during scheduled or unscheduled maintenance of the components.
9. Instrument air lines shall have a pressure regulating gauge.
10. Landfill gas sampling ports shall be provided at the condensate knockout inlet and after the blower outlet. Sampling ports shall be chrome-plated 1/8" flow, 1/4" NPT, female, self-sealing, quick-connect fittings as manufactured by Colder Products Company, St. Paul, Minnesota.
11. Supply a flame arrestor compatible with the required LFG flow rate. Flame arrestor

shall be sized to match the blower discharge pipe or flare inlet pipe, whichever is larger. The housing construction shall be cast aluminum. The unit shall have inlet and outlet pressure taps, and pressure indicators with isolation valves, removable aluminum internals and condensate drain. Head loss through the flare arrester shall not exceed 2 inches w.c. under the specified operating conditions presented above.

2.06 FLOW METERS

- A. Provide three (3) insertion-type thermal mass flow meter capable of measuring wet landfill gas flows from 0-150 scfm (Landtec ACCU-FLOW or approved equivalent).
- B. Flow shall be reported in standard cubic feet per minute, and totaled.
- C. The flow meter element shall be mounted at the discharge side of the blowers, such that sufficient straight lengths of the pipe are present upstream and downstream of the flow meter in accordance with the manufacturers' specifications.
- D. Flow meter shall provide a 4-20 mA output signal.

2.07 LANDFILL GAS ANALYZER

- A. Provide one (1) inline analyzer capable of measuring methane, carbon dioxide and oxygen with tunable diode laser technology, manufactured by Landtec (FAU-TDL) with NEMA 4 enclosure and gas conditioning unit.
- B. Analyzer shall be installed under shelter.
- C. Analyzer sampling point shall be located along the pipe prior to the point of branching off of landfill gas.

2.08 CONTROLS AND DATA ACQUISITION SYSTEM

A. System Description

The controls and data acquisition equipment are to be located under a shelter. Equipment to be sheltered includes the electric control panel(s), chart recorder, and landfill gas analyzer. A wireless telemetry system is to be included with the system to allow remote monitoring and downloading of data.

B. Local Control Panel

1. General

- a. Control boxes shall be weatherproof.
- b. The panel shall be constructed in a UL shop and furnished with a UL label and constructed with an extremely operated (lockable) disconnect switch to remove all incoming power.
- c. Automatic start/stop logic sequencing initiated by a single system start or stop pushbutton.

- d. Each device mounted on the face of the control panel shall be identified with a phenolic laminated, engraved nameplate. The nameplates are to be black with white letters.
 - e. All wires, tubes and gauges in the rear or inside of the panel shall be clearly labeled or tagged with their respective termination point for ease of maintenance.
2. The following items shall be included in the flare skid control panel (but not limited to):
- a. One (1) push to start/stop flare skid.
 - b. One (1) alarm reset.
 - c. One (1) key switch (on/off control).
 - d. One (1) emergency shutdown.
 - e. Runtime hour meter.
 - f. Power On indicator light.

C. Chart Recorder

1. Provide one (1) Yokogawa DX-1012 paperless chart recorder, or approved equivalent, capable of recording up to twelve (12) inputs, with data storage on removable compact flash cards, an interface for USB flash drive. At a minimum, continuous flow rate, total flow (divided by 1000) and flare temperature shall be recorded.

D. Telemetry System

1. A wireless telemetry system shall be installed with a minimum capability of receiving inputs from the gas analyzer, thermocouple, and flow meter.
2. The data collected via the telemetry system must be viewable and downloadable from an internet website location.

PART 3 EXECUTION

3.01 CONSTRUCTION

- A. Piping and equipment arrangements shall be designed to provide adequate clearance areas and safe access for operation and maintenance.
- B. All utility flare units should be designed and constructed to meet relevant seismic guidelines and 100-mph wind loading requirements.
- C. Flare skid must be properly grounded.

- D. Blower discharge piping shall be equipped with a pressure safety relief valve (PSV) that is piped to an atmospheric vent.
- E. Clear overhead access shall be provided over all equipment that requires a hoist for removal.
- F. The fabrication of the skid shall conform in dimensions for installation on the site maps.

3.02 INSPECTION AND TESTING

- A. All testing protocols shall be submitted to Engineer for review and approval prior to the start of fabrication.
- B. Gas piping shall be hydro-tested prior to assembly to 1.5 times its operating pressure or to a minimum of 25 psi gauge pressure. Gas piping connections shall be air tested for flange leaks after assembly. The test shall be performed at operating pressure for a minimum of thirty (30) minutes to check for leaks.
- C. All safeties shall be checked and gauges proved operational for both temperature and pressure.
- D. The Engineer's representative shall have the right to reject any components that do not conform with the specifications. The Engineer's acceptance of shop test results shall not constitute waiver of Vendor's obligation to provide equipment which meets the design operating requirements of the flare skid.
- E. At completion, Contractor shall provide system start-up, to include a familiarization training session for Engineer and Owner on the complete system. Contractor shall be responsible for any necessary coordination and expenses relating to Vendor time and travel necessary for the start-up event.

3.03 WARRANTY

It shall be the responsibility of the Contractor to design and provide an integrated system which meets all requirements of the specifications. The flare skid shall be supplied as a complete and operable package and shall be warrantied as a single package for a minimum period of 18 months after shipment and 12 months after start-up.

3.04 INSTALLATION

Contractor will install the flare skid in accordance with the installation instructions provided by the Vendor.

- A. Install all equipment in accordance with manufactures requirements, approved

- submittals, and the Drawings.
- B. Maintain a minimum separation of 4 times the flare stack height from overhead power lines.
 - C. Provide neoprene isolation pads between the blower and the skid base.
 - D. Provide electrical installation in accordance with electrical codes and manufacturers requirements. Obtain electric permit, if required.
 - E. Install “Danger - No Smoking” signs on all four sides of the fence enclosure.
 - F. Touch-up any damaged coatings.

END OF SECTION 02900

SECTION 02936

SEEDING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Preparation of subsoil.
- B. Placing topsoil material.
- C. Fertilizing.
- D. Temporary seeding.
- E. Permanent seeding.
- F. Mulching.

1.02 RELATED SECTIONS

- A. 02200 - Earthwork

1.03 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.04 MAINTENANCE DATA

- A. Submit maintenance data for continuing Owner maintenance.
- B. Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging will not be acceptable.

- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- D. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

- A. Topsoil Material: Excavated from site and free of weeds.

2.02 ACCESSORIES

- A. Mulching material: Oat or wheat straw, dry, free from weeds and other foreign matter detrimental to plant life.
- B. Lime: Lime shall comply with applicable North Carolina state laws and shall be delivered in unopened bags or other convenient standard containers, each fully labeled with the manufacturer's guaranteed analysis. Lime shall be ground limestone containing not less than 85 percent total carbonates, and shall be ground to such fineness that 90 percent by weight will pass through a No. 20 mesh sieve and 50 percent by weight will pass through a No. 100 mesh sieve.
- C. Fertilizer: Fertilizer shall comply with applicable North Carolina state laws and shall be delivered in unopened bags or other convenient standard container, each fully labeled with the manufacturer's guaranteed analysis. Fertilizer shall contain not less than 10 percent nitrogen, 10 percent available phosphoric acid and 10 percent water soluble potash (N-P-K, 10-10-10). Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, will not be acceptable and shall be immediately removed from the job site.

PART 3 EXECUTION

3.01 GENERAL

- A. Areas where topsoil material is to be placed and areas to be seeded include all areas disturbed during construction which are not to be paved.
- B. Verify that prepared soil base is ready to receive the work of this Section, and seed all areas disturbed as a result of construction activities.

3.02 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove deleterious materials, such as weeds, and undesirable plants and their roots. Remove contaminated subsoil.
- C. Scarify subsoil to a depth of 3 inches where topsoil material is to be placed. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.03 PLACING TOPSOIL MATERIAL

- A. Place topsoil material during dry weather and on dry unfrozen subgrade 2 to 3 weeks prior to sowing seed.
- B. Spread topsoil material over area to be seeded. Finished thickness of topsoil material shall be 3 inches minimum after settling and nominal compaction caused by spreading equipment.
- C. Grade to eliminate rough, low, or soft areas, and to ensure positive drainage.
- D. Rake topsoil material and remove roots, vegetable matter, rocks, clods, and other non-organic material.

3.04 FERTILIZER AND LIME

- A. Apply lime and fertilizer according to soil tests, or apply lime at the rate of 90 lbs./1000 sq.ft. and fertilizer at the rate of 20 lbs./1000 sq.ft.
- B. Mix thoroughly into upper 4 inches of topsoil.
- C. Lightly water to aid the dissipation of fertilizer and lime.

3.05 SEEDBED PREPARATION

- A. Prepare seedbed to a depth of 4 to 6 inches.
- B. Remove loose rocks, roots and other obstructions so that they will not interfere with the establishment and maintenance of vegetation.

3.06 TEMPORARY SEEDING

A. Provide temporary seeding on any cleared, non-vegetated, or sparsely vegetated soil surface where vegetative cover is needed for less than one year or when seeding dates will prevent the establishment of vegetative cover if permanent seeding is attempted.

B. Seed in accordance with the following schedule and application rates:

Description	Seeding Dates	Seeding Mixture	Rate (lbs/acre)
Steep Slopes (3:1)	April 15 – August 20	German Millet	40
	October 25 – February 1	Rye Grain	120
Low Maintenance Areas	October 25 – February 1	Rye Grain	120
Areas requiring cover less than 1 year	February 1 – April 15	Rye Grain Kobe Lespedeza	120 50
	April 15 – August 20	German Millet	40
	August 20 – February 1	Rye Grain Kobe Lespedeza	120 50

C. To amend soil, follow recommendations of soil tests or apply 2000 lbs./acre ground agricultural limestone and 750 lbs./acre 10-10-10 fertilizer.

D. Mulch in accordance with the following schedule and application rates

1. Steep Slopes (3:1): In mid-summer, late fall, or winter, apply 100 lb/1000 ft² grain straw, cover with V netting and staple to the slope. In the spring or early fall, use 45 lb/1000 ft² wood fiber in a hydroseeder slurry.
2. Low Maintenance areas and areas requiring cover less than 1 year: Apply 90 lb/1000 ft² grain straw and tack with 11 gal/1000 ft².

E. Refertilize if growth is not fully adequate.

F. Reseed, refertilize and mulch immediately following erosion or other damage.

3.08 PERMANENT SEEDING

A. Seed in accordance with the following schedule and application rates:

Description	Seeding Dates	Seeding Mixture	Rate (lbs/acre)
Steep Slopes (3:1)	February 1 – April 15, August 20 – October 25	Tall Fescue Kobe Lespedeza Bahagrass Rye Grain	100 10 25 40
	February 1 – April 15, August 20 – October 25	Tall Fescue Rye Grain	200 40
Grassed Channels	February 1 – April 15, August 20 – October 25	Tall Fescue German Millet	200 10
	April 15 – August 20	Tall Fescue German Millet	200 10
Low Maintenance Areas	February 1 – April 15, August 20 – October 25	Tall Fescue Kobe Lespedeza Bahagrass Rye Grain	100 10 25 40
	April 15 – August 20	Tall Fescue Kobe Lespedeza Bermuda Grass German Millet	100 10 15 10

B. Compact seeded areas by means of a roller or other approved equipment immediately after sowing.

C. Mulch in accordance with the following schedule and application rates

1. Steep Slopes (3:1): In mid-summer, late fall, or winter, apply 100 lb/1000 ft² grain straw, cover with V netting and staple to the slope. In the spring or early fall, use 45 lb/1000 ft² wood fiber in a hydroseeder slurry.
2. Grassed Channels: Install excelsior mat in the channel to the top of the channel, and secure according to manufacturer’s specifications.
3. Low Maintenance areas: Apply 90 lb/1000 ft² grain straw and tack with synthetic mulch binder. Apply binder at rate recommended by manufacturer.

D. Refertilize in the second year unless growth is fully adequate. Reseed, refertilize, and mulch damaged areas immediately.

E. Apply erosion control matting (N.A.G. C125 or equiv.) after re-seeding the disturbed area along the drainage ditch where the 12” header pipe is installed.

END OF SECTION 02936

SECTION 13911
LANDFILL GAS WELLHEADS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Wellhead units.

1.02 SUBMITTALS

- A. Submit product data.
- B. Inspect material a minimum of 7 days prior to installation to ensure there are no deficiencies.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wellhead unit: Wellhead assemblies, valves and flex hose shall be as manufactured by LANDTEC, P.O. Box 237, Damascus, Maryland 20872, 2" Accu-Flo Model 200 or equal as approved by the ENGINEER.

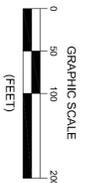
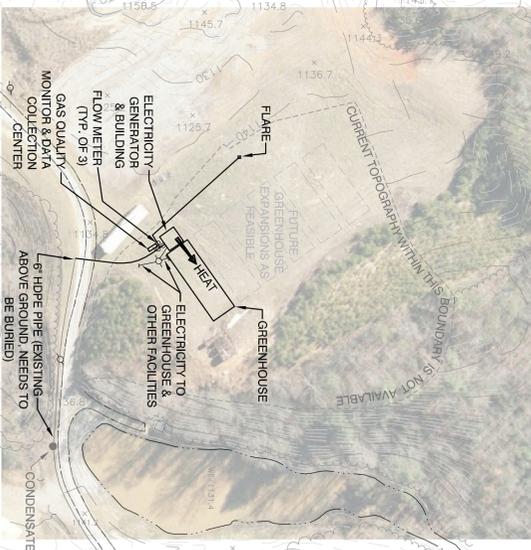
PART 3 EXECUTION

3.01 WELLHEAD

- A. Wellhead shall be attached to existing gas wells with a rubber Fernco type fitting. Flexhoses shall be used to connect the wellhead assembly to the lateral has extraction pipe. Flexhoses should be installed without sags.

END OF SECTION 13911

- NOTES:
1. THIS CONCEPTUAL DRAWING IS INTENDED TO PROVIDE PROPOSERS WITH KNOWLEDGE OF THE EXISTING SITE CONDITIONS AND TO CONVEY THE GENERAL OBJECTIVES OF THE PROJECT. DETAILED DESIGN OF THE ELECTRICITY GENERATION AND DISTRIBUTION SYSTEMS ARE TO BE PROVIDED BY THE PROPOSER.
 2. AREA WHERE GREENHOUSES AND ELECTRICITY FACILITY ARE SHOWN HAS BEEN GRADED AND IS RELATIVELY FLAT. MINIMAL ADDITIONAL GRADING, IF ANY, IS EXPECTED TO BE REQUIRED.



PROJECT NO. 356.1101.11	GERMANTOWN LANDFILL WILKESBORO, NC		RFP ENGINEERING, INC. 2211 W. MEADOWVIEW ROAD GREENSBORO, NC 27407 PHONE: (336) 323-0092 NC CORP LIC: C-0782	DESIGNED _____ DRAWN CADD/ CHECKED _____ APPROVED _____ DATE _____	CONCEPTUAL	DATE	REVISIONS AND RECORD OF ISSUE	NO	BY	CK	APP
	SCALE	LANDFILL GAS COLLECTION, CONTROL & BENEFICIAL USE PROJECT CONCEPTUAL DRAWING FOR RFP				DATE	REVISIONS AND RECORD OF ISSUE	NO	BY	CK	APP
AS SHOWN											
DRAWING NO. 1											

Chao, Ming-tai

From: Steve Cowie [scowie@joyceengineering.com]
Sent: Tuesday, May 03, 2011 9:48 AM
To: Chao, Ming-tai
Subject: Wilkes County Germantown Landfill - LFG Beneficial Use Project
Attachments: Wilkes Germantown_RFP for LFG Beneficial Use_final_040711.pdf

Ming,

Attached I have provided a request for proposals (RFP) that Wilkes County has issued seeking proposals for development of a landfill gas beneficial use project at the closed Germantown Landfill (Permit # 9701-MSWLF-1988). The purpose of this e-mail is to notify you of Wilkes County's intent to construct a landfill gas beneficial use project, and to seek approval from the Solid Waste Division to proceed with the construction of the beneficial use project. Background information, a conceptual drawing, and specification are provided in the RFP. Please let me know if you have questions or require additional information at this time. The contact for Wilkes County regarding this project is:

Mr. Edward Barnes
Wilkes County Planning Director
110 North Street
Wilkesboro, NC 28697
Phone: (336) 651-7582
ebarnes@wilkescounty.net

Stephen Cowie, P.E.
Sr. Project Consultant

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