

**REQUEST FOR PROPOSAL (RFP):
DESIGN, PERMIT, CONSTRUCT, AND OPERATE
LANDFILL GAS (LFG) BENEFICIAL USE
FACILITY by
Southeastern Chester County Refuse Authority
(SECCRA)**

**Dated
October 20, 2022**

1.0 Proposal Information

1.1 Purpose

The purpose of this RFP is for the SECCRA to select a Landfill Gas Development Partner to assist in the development of a Landfill Gas (LFG) Beneficial Use Project using LFG generated at the SECCRA Landfill.

1.2 Proposal Inquiries & Request for Clarifications

All inquiries, questions, or request for clarifications concerning the RFP shall be forwarded to Construction Manager Alan Roman (roman543@aol.com, 610-587-9240).

Any ambiguity, conflict, discrepancy, omissions or other error/s discovered in the RFP must be reported immediately to SECCRA in writing and a request made for modifications or clarification. Respondents are responsible for clarifying any ambiguity, conflict, discrepancy, omission or error in the RFP prior to submitting the proposal or it shall be deemed waived.

Any questions or request for clarification on the RFP must be submitted in writing by December 15, 2022. Any changes to the RFP will be issued in writing through an addendum to the RFP, documented and forwarded to all participating respondents as soon as possible.

1.3 Overview of Procurement and Implementation Process

The following is an approximate timeline of the planned procurement and implementation process:

- Advertise Request for Proposals – November 2022
- Pre-proposal Information Meeting – December 6, 2022
- Receive Proposals – January 3, 2023
- Evaluate Proposals – January 2023
- Short-list Interviews – Late January 2023
- Negotiate Contract with Selected Respondent – February/March 2023
- Award Contract – April 2023

1.4 Pre-Proposal Information Meeting and Site Tour

A pre-proposal informational meeting will be held on December 6, 2022 at 2:00pm in the Conference Room at the SECCRA Landfill, 219 Street Rd, West Grove, PA. A site visit will immediately follow the Pre-Proposal meeting. The purpose of the Informational Meeting and Site Tour is to familiarize respondents with the site, discuss the work to be performed, and answer questions. Attendance at the pre-proposal meeting is **mandatory**.

Before submitting proposals, prospective respondents shall carefully examine the RFP and related documents, inspect the site of proposed installations, acquaint themselves with all governing laws, ordinances, permits, etc. and otherwise thoroughly familiarize themselves with all matters which may affect the performance of the work. The act of submitting a proposal shall be considered as meaning that the respondent has so familiarized their self and, therefore, no concession will be granted by SECCRA because of any claim of misunderstanding or lack of information. Respondents are expected to read and study all specifications with special care and to observe all their requirements. Discrepancies, ambiguities, errors or omissions noted by respondents should be reported promptly to SECCRA for correction or interpretation before the date of the opening of proposal.

1.5 Proposal Submission

Proposals shall be submitted in a sealed envelope clearly marked **“RFP Landfill Gas Beneficial Use” no later than 2:00 p.m. on January 3, 2023**. No proposal will be accepted after 2:00 p.m. and all proposals shall be delivered to SECCRA Landfill, 219 Street Rd, West Grove, PA 19390. All material submitted will become the property of SECCRA and the only information available at the proposal opening will be the names of respondents submitting proposals. No facsimile of proposals will be accepted. The respondent shall submit their proposal in PDF format on a virus-free USB flash drive along with one (1) original and one (1) hard copy of their proposal. Failure to submit a proposal in this manner may be considered cause for rejection of the proposal as determined by SECCRA.

1.6 Cost Incurred by Respondent

SECCRA, or its agencies, is not liable in any way for any costs incurred by the respondents in the preparation of their proposals in response to the RFP, nor for the presentation of their proposals and/or participation in any discussion or negotiations.

1.7 Compliance with RFP, Exceptions to Format, and Rejection of Proposals

All proposals submitted shall be in strict compliance with the RFP and failure to comply with all provisions in the RFP may result in disqualification or rejection of the proposal.

SECCRA, or its agencies, reserves the right to accept in part or in whole any or all proposals submitted or to waive any technicality or minor irregularity in a proposal. Unreasonable failure of a respondent to promptly supply SECCRA with information with respect to responsibility may be grounds for a determination of non-responsibility. Proposals, are contingent upon budgetary constraints of SECCRA and approval by its Board of Directors.

1.8 Validity of Proposals

All proposals shall be valid for one hundred eighty (180) days from the date of the RFP opening and become the property of SECCRA. If negotiations result in modifications to the RFP, then one hundred eighty (180) days will commence from the date of the receipt of the new proposal. This period may be extended by mutual written agreement between the Respondent and SECCRA.

2.0 Background Information

2.1 Facility Information

SECCRA is a non-profit municipal authority responsible for the operation of the Facility. The SECCRA Community Landfill began operations in 1986 and serves 24 boroughs and townships in southern Chester County. Out of state or out of region waste is not accepted. Approximately 105,000 people reside in the SECCRA service area. The landfill currently operates under Pennsylvania Department of Environmental Protection (PADEP) Solid Waste Permit Number 101069, Title V Operating Permit (TVOP) Number 15-00060, and Air Quality Plan Approval Number 15-006G.

The SECCRA Facility is considered to be one landfill for the purposes of this RFP. However, the current landfill operations specifically include the North Cell, the South Cell, and the Willa Expansion site. Collectively, these three areas span approximately 86 acres. Bulk waste was first deposited at the North Cell in 1986, and the South Cell in 1999. Bulk waste was first deposited in the first cell of the new Willa Expansion area on October 13, 2014. SECCRA's current lifespan calculations suggest that closure of the landfill will occur in 2036 without planned expansions.

A Landfill Gas Collection and Control System (LFGCCS) that currently is comprised of 65 LFG extraction wells, 3 horizontal collectors, 5 cleanout connections, a gas collection lateral line, a header, and associated equipment collects LFG under vacuum and conveys the gas to SECCRA's on-site landfill gas-to-energy (LFGTE) facility .

The LFG collected by the LFGCCS is currently used as fuel to power the following two internal combustion (IC) engines/generators:

- Engine No. 1 (Source ID C05) - One 1,148 brake horsepower (bhp) engine/generator (Caterpillar Model 3516LE)
- Engine No. 3 (Source ID C08) - One 2,233 bhp engine/generator (Caterpillar Model 3520C)

An Enclosed Flare serves as a back-up LFG destruction device should one or both of the IC engines/generators be out of service.

Recent historical waste tonnage data indicates the landfill receives approximately 400-500 tons of waste per day (TPD). Annual tonnage in 2021 was 130,540 tons.

Leachate from the cells is collected and conveyed to an onsite leachate treatment plant. The treatment plant is a reverse osmosis type system. All rejected wastewater is returned to the south area landfill footprint for recirculation.

The North Area is 25 acres and was capped in 2015. SECCRA expects to do additional capping in the coming years, including, but not limited to, 10-15 acres in 2023.

2.2 LFG Collection and Control System (LFGCCS)

SECCRA currently operates an active collection and control system in the North , South and Willa disposal areas. In general, the LFGCCS is comprised of LFG extraction wells, a gas collection lateral line, a header, and associated equipment that collect LFG for use as fuel to power SECCRA's two IC engines/generators. The LFGCCS meets or exceeds U.S. EPA's specifications outlined in 40 CFR §60.759 for active collection systems, as discussed in the following subsections.

2.3 Current and Anticipated LFG Production

LFG flow measurements are collected on a daily basis. An Excel spreadsheet can be provided if requested.

SECCRA is not guaranteeing any maximum or minimum quantity or quality of landfill gas now or in the future. Data is provided for information purposes only. It is the Proposer's responsibility to assess the quantity and quality of gas.

2.4 Current and Sludge Acceptance

At this time, the current acceptance of treated sewage sludge is approximately 2.5% by weight of waste.

3.0 Scope of Work

SECCRA is interested in exploring viable options for LFG beneficial use. SECCRA is most interested in receiving and evaluating proposals to implement the preferred option described below, however, proposals detailing alternate options will also be accepted and considered.

SECCRA is not specifying a specific LFG beneficial use. SECCRA is willing to consider technologies to convert the LFG to a usable, commercially viable form of energy such as electricity, thermal energy, natural gas quality, direct use or other energy products.

For the purpose of this RFP, the scope of services shall include full financing of the project by the respondent including, planning, permitting, design, construction, operation and maintenance of facilities associated with the beneficial use of LFG from the Landfill. In addition, the scope of services includes the marketing, sale and distribution of the full market value of the LFG including environmental attributes (i.e. greenhouse gas credits, renewable energy credits, etc.), tax credits, and tax incentives, that may be applicable.

Any product or service that is not specifically addressed in the Scope of Work, but which is necessary to provide functional capabilities proposed by the respondent, must be included in the proposal.

All plans, permits, and design documents must be prepared by a licensed engineer or architect, as applicable, and approved by SECCRA prior to construction of the beneficial use facility and must meet all local, state, and federal laws, regulations, and codes applicable to the project. The respondent shall be responsible for all related fees and costs associated with any required permits.

The LFG beneficial use facility shall be designed to be ADA compliant and meet an aesthetic standard that is consistent with the surrounding site and existing facilities. The respondent shall design, construct, operate and maintain any structures, components, equipment, systems or other facilities necessary to maintain the decibel noise level of the LFG beneficial use facility below fifty five (55) decibels at the landfill property line.

The Respondent shall at all times operate and maintain the Landfill Gas to Energy Facilities in a good, environmentally sound, reliable, safe, neat, clean and substantially litter-free manner so as to not create any odor, litter, noise, or other adverse environmental effects constituting, with respect to each of the foregoing, a nuisance condition under applicable law or environmental compliance requirement. Should any such nuisance condition occur, the Respondent shall expeditiously remedy the condition, make all changes in operating and management practices necessary to prevent a recurrence of the nuisance condition, and indemnify and hold harmless SECCRA from any loss-and-expense relating thereto.

The respondent must perform routine inspections and preventive maintenance on the LFG beneficial use facility, so the entire system remains in good condition. Equipment or parts showing signs of significant wear or otherwise in poor condition must be replaced prior to failure. These inspections, the assessments of each inspection, and all preventative maintenance must be documented.

The respondent will assume full responsibility for the continuous management of the LFG beneficial use facility throughout the term of the contract and provide necessary staffing, resources and equipment to assure full compliance with applicable regulations for the safe and environmentally responsible management of the landfill gas. In the event the LFG beneficial use facility is not operational, the system must be integrated such that the existing flare station automatically begins operating and managing the landfill gas. Should any situation arise where the LFG is not appropriately managed or controlled, the respondent must immediately alert appropriate SECCRA contacts (to be specified in the Agreement). In such situations, the respondent must mobilize whatever resources are necessary to restore proper management of the LFG beneficial use facility within 24 hours or alternative arrangement by written agreement from SECCRA. The respondent will be responsible for the costs of all emergency repairs needed.

The respondent will cooperate with SECCRA if an emergency or collection system malfunction requires the shutdown of the LFG beneficial use system.

SECCRA's responsibilities shall generally include the following:

- Operation and maintenance of the LFG collection and control system (Note: it is SECCRA's intent to operate the collections system in a manner that provides compliance with all regulatory requirements and allows for the minimization of odors. SECCRA will not compromise this standard in order to maximize the amount of LFG collected or improve the quality of LFG other than within the limits of being able to achieve the established standard. It will be expected that the respondent will cooperate with

SECCRA if an emergency or malfunction requires the shutdown of the collection system and will not assess a financial penalty for such event.

- **SECCRA WILL MAKE NO COMMITMENT OF QUALITY OR QUANTITY OF LFG.**
- Perform periodic expansion of the collection system, as needed.
- Provide a suitable location at the landfill for the beneficial use facility, no more than 1 acre. SECCRA will lease provided property to the respondent for \$1 per year for the length of the Agreement. Proposed site location to be shown in the proposal.
- Cooperation with the respondent in securing necessary permits and other approvals.

4.0 Proposed Agreement Provisions

4.1 Form of Agreement

For the purpose of comparison, each respondent should submit a proposed form of agreement which may be appropriate for the beneficial use technology proposed. The proposed agreement should address the use and occupancy of real property at the landfill. Such agreement may include, but not necessarily be limited to, lease of property, gas purchase agreement, and utility or other easements. In the event of a breach or default in contractual obligation, SECCRA shall retain ownership of all property improvements, equipment, and gas rights.

SECCRA reserves the right to negotiate any and all terms and conditions of any agreement in connection with the LFG beneficial use project. The terms and conditions of any agreement must be satisfactory to SECCRA prior to selection of a successful respondent.

4.2 Parties to the Agreement

The agreement shall be entered into as a result of this RFP and shall be by and between the Proposer as the “Contractor” and SECCRA as the “Owner”.

4.3 Term of the Agreement

The agreement term shall be for a twenty (20) year period after the acceptance date. At the sole option of SECCRA, the Agreement may be renewed for up to two (2) additional five (5) year terms.

4.4 Landfill Gas Delivery Point

The LFG delivery point will be defined, by SECCRA, in the agreement. It is anticipated that the LFG delivery point will be a marked location downstream of SECCRA owned blower and LFG flow meter.

4.5 Ownership of Assets, Financing, and Revenue Sharing

SECCRA is looking for the Contractor to have Ownership of the facility Assets. SECCRA will retain ownership of the LFG collection and control system. Ownership and control of the LFG collection and control system is **NON-NEGOTIABLE**.

4.6 Right to Terminate Agreement

At all times, SECCRA retains the right to terminate the Agreement with the respondent either for convenience or for failure to perform as agreed. Default of the respondent can include, but not be limited to, (a) failure to operate and maintain the LFG facilities in full compliance with all applicable law and environmental compliance requirements; (b) operating the LFG facilities in a manner that creates a noncompliance event for the SECCRA's landfill facilities, (c) operating the LFG facilities in a manner that creates a nuisance condition, (d) failure to make timely and full payments to SECCRA and (e) failure to operate the LFG facilities in a manner that maximizes the beneficial use of the landfill gas, as defined below.

If the Contractor utilizes less than 50 percent of LFG made available by SECCRA, as measured on a 12-month rolling average, SECCRA retains the right to either sell excess landfill gas to another entity (excess to be defined as the average quantity of LFG not utilized over the 12-month period), or if revised terms cannot be negotiated with the Contractor, terminate the agreement.

4.7 Right of First Refusal

If, at any time, the respondent receives a bona fide offer to sell the LFG facilities to a third party purchaser, and the Company decides to sell the LFG facilities pursuant to such offer, SECCRA shall have the first right to purchase the LFG facilities. The Company shall provide to SECCRA a notice of such offer within ten (10) business days after receiving it. The offer notice shall include the pricing and the purchase terms included in the offer.

Upon receiving the offer notice from the Company, SECCRA will have 30 days to respond.

5.0 Proposal Requirements

5.1 Proposal Organization

Each proposal shall be submitted in an organized, clear, and concise manner and conform to the format outlined below:

- Letter of Transmittal
- Table of Contents
- Project Team
- Relevant Experience, Qualifications, and Financial Capability
- Project Approach
- Financial Proposal
- Implementation Schedule

- Indemnity/Hold Harmless Agreement
- Proposal Certification

As discussed in the following sections, past project descriptions and the respondent's proposed Agreement format should be included as attachments to the respondent's proposal.

5.2 Letter of Transmittal

The Letter of Transmittal shall be prepared on the letterhead of the firm that would execute the agreement with SECCRA. The Letter of Transmittal is intended to introduce the Respondent and it should contain at least the following information:

- A summary of the firm's interest and commitment to implementing a LFG beneficial use project at the Landfill;
- A statement noting receipt of each addendum and the associated date of receipt;
- A signature from a representative authorized to bind the firm to perform as per the contract, if the firm is awarded a contract by SECCRA.

5.3 Project Team

This section shall designate the contact person (supplying name, address, telephone number, FAX number and e-mail address) to which SECCRA and its consultants will send and receive all communication. This section shall also include at least the following information:

- A short business history of the Respondent;
- Detailed information on the Respondent, including organization, parent companies, affiliates, subsidiaries, and subcontractors which would assist in performing the scopes of services.
- An organizational chart and brief resumes of key individuals and subcontractors.

5.4 Relevant Experience, Qualifications, and Financial Capability

The respondent shall have a minimum of five (5) year's experience developing alternate energy beneficial use projects. The respondent shall include a list of all LFG utilization projects for which the Respondent has been the principal firm (U.S.A. projects only). A short project description of at least two (but not more than five) of the most relevant projects should be provided. At a minimum, at least one of the projects must have two consecutive years of operation by the respondent. Project descriptions shall include the following:

- Project name and location;
- Site owner and operator name(s), point(s) of contact, and contact information (i.e., phone number, e-mail address, and mailing address.);
- Type of alternate energy project and equipment used;
- Type of contractual relationship/agreement between the firm and the owner (i.e., turnkey provider, gas user only, equity partner, etc.); and

- Financing used to implement and operate the alternate energy utilization project.

Respondents shall demonstrate financial capability by submitting audited financial statements for the previous three years. Financial statements will be kept confidential upon written requests from the Respondents. The Respondent shall finance or provide financing for all work proposed. Proposals shall include a specific statement of intent to provide financing for the scope of work offered. The source of financing should be included, -. If the Respondent expects any preconditions on financing, these shall be identified and fully explained.

5.5 Project Approach

This section must include a thorough description of the approach to implementing and executing the preferred option and any alternate options. The description shall provide sufficient detail to demonstrate the Respondent's understanding of the issues and constraints associated with the project's development and implementation. At a minimum the Respondent must include the following as part of this section:

- A description of the processes that are proposed to be used to convert LFG to a beneficial use;
- A description of the proposed enhancements to the existing LFG collection system, if any;
- Performance data of the particular technologies, equipment, and/or system(s) proposed;
- The plan for obtaining energy revenues. The entity or entities which will be the buyers of the LFG-derived beneficial use end product should be identified if known.
- A plan for initiating and obtaining required permits. Any statutory or regulatory issues that could affect the implementation of the proposal, and resolution of the issue should be included;
- The roles and responsibilities of the Respondent and any subcontractors;

Respondents submitting proposals that identify alternate options must additionally include a detailed scope of services that is being offered under that option.

5.6 Financial Proposal

Each Respondent shall submit a detailed financial pro forma for a minimum 20 year project life showing anticipated levels for significant costs and revenues, best and worst case. As a minimum, the pro forma should address, in detail, the following items:

- Capital costs associated with the installation of the various phases of the proposed system.
- Operating and maintenance costs for the collection and processing facilities.
- Tax credits should they become available.
- Escalation provisions.
- Grant opportunities.
- Charges for specific on-site/off-site services or construction related activities.
- Revenue sharing and/or payments to be made to SECCRA.
- Describe in detail how the Respondent is expecting to establish the present and future gas values and the methodology for making periodic adjustments

- based on an accepted index.
- Describe in detail how the Respondent will maximize the value of all environmental and renewable energy assets and discuss both ownership and how revenue from these assets will be shared with SECCRA.
- Describe in detail the “buy-back” provisions, to include any terms and conditions that will be available to SECCRA at the termination of the contract and/or any agreed upon time extensions.

5.7 Implementation Schedule

This section must include a proposed schedule for planning, permitting, constructing, and beginning operation of a LFG beneficial use project. Respondents should provide detailed project schedules that are realistically obtainable based on past experience. The discussion of approach should list only the major milestones and dates.

5.8 Indemnity/Hold Harmless Agreement and Proposal Certification

The respondent shall execute the Indemnity/Hold Harmless Agreement and Proposal Certification located within the General Conditions included in Attachment A and return them with their proposal.

6.0 Proposal Evaluation

6.1 Evaluation Committee

The proposals will be evaluated by SECCRA’s Staff and Consultants.

6.2 Evaluation Criteria

Members of the Evaluation Committee will review and rate all responsive proposals based on the following criteria:

- Qualifications, Experience, and Financial Capability (20 points)
- Project Approach (30 points)
- Financial Proposal (20 points)
- Implementation Schedule (10 points)
- Overall benefit to SECCRA (20 points)

6.3 Evaluation Process

The following sections provide a brief description of the evaluation process to be used by SECCRA.

6.3.1 Review of Proposals

An initial review of all proposals will be performed to determine if they are responsive to the requirements and guidelines of the RFP. Responsive proposals will be reviewed and rated based on the above defined criteria. Upon completion of the proposal review and rating, a short list of firms will be developed. Depending on the quality of proposals received, the short list may include as few as a single respondent or as many deemed

qualified for further consideration by the Evaluation Committee.

6.3.2 Short List Interviews

Respondents selected for the short list will be interviewed by the Evaluation Committee. Respondents will be asked to provide a brief presentation of their proposal. In addition, interviews will be used to ask questions about the respondent's proposal and to obtain additional information to make a full evaluation.

6.3.3 Contract Negotiation

After interviews are completed, the Evaluation Committee will rank the short-listed respondents. SECCRA will then begin negotiation of a contract agreement with the top ranked firm. In the event that the negotiation of specific terms, conditions, and compensation prove unsuccessful with the selected firm, the Evaluation Committee will then attempt to negotiate an agreement with the second ranked firm. The Evaluation Committee will continue negotiations until an agreement can be executed that is in the best interest of SECCRA. If an agreement cannot be negotiated to the satisfaction of the Evaluation Committee, SECCRA reserves the right to reject all proposals.

ATTACHMENT A
GENERAL CONDITIONS

GENERAL CONDITIONS

GENERAL

These General Conditions shall govern the submission of proposals and award of a subsequent contract. SECCRA reserves the right to reject any proposal that takes exception to these conditions.

METHOD OF AWARD

The method of award shall be as defined in the RFP.

SECCRA reserves the right to reject any or all proposals.

SECCRA will attempt to execute an Agreement within 180 days from the date of opening proposals.

BASIS OF AWARD

The basis of award shall be as defined in the RFP.

The Agreement may be awarded to the selected responsible respondent whose proposal complies with all the requirements prescribed in the RFP. Minor irregularities found in a proposal that are immaterial or inconsequential in nature may be waived whenever it is deemed to be appropriate. In acceptance of the proposal, SECCRA will be guided by consideration of the interests of the public.

SECCRA also reserves the right to negotiate further with one or more of the respondents as to the features of their proposal and to accept modifications when such action will be in the best interest of SECCRA.

NOTICE TO PROCEED

Once an Agreement is executed the respondent shall proceed within thirty (30) calendar days after receipt of such notice. Failure to proceed within the thirty (30) calendar day period may result in SECCRA terminating the Agreement.

PROSECUTION OF WORK

After the work has been started, it shall be prosecuted within the timeframes defined in the Contract Agreement. Failure to prosecute the work within the timeframe specified may result in SECCRA assessing liquidated damages or termination of the Contract and use any method deemed necessary to complete the Contract.

GENERAL CONDITIONS

FAILURE TO COMPLETE WORK ON TIME

Should the Contractor fail to complete fully and to all intents and purposes, the work as specified in the proposal and contract on or before the contract completion time, the Contractor shall be required to pay to SECCRA such sum as is specified in the paragraph entitled "LIQUIDATED DAMAGES".

LIQUIDATED DAMAGES

It is hereby understood and mutually agreed, by and between the Contractor and SECCRA, that the date of beginning and the time for completion as specified in the Contract of the work to be done hereunder are Essential Conditions of the Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the "Notice to Proceed".

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and SECCRA, that the time for the completion of the work described herein, is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial and economic conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by SECCRA, then the Contractor does hereby agree, as a part, consideration for the awarding of this Agreement, to pay to SECCRA the damages for such breach of Contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the Agreement for completing the work. The said amount is fixed and agreed upon by and between the Contractor and SECCRA because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages SECCRA would in such event sustain, and said amount is agreed to be the amount of damages which SECCRA would sustain and said amount be retained from time to time by SECCRA from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of the Agreement and of the request for proposals, wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Agreement, additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Agreement. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when SECCRA determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to SECCRA; provided further that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- a) To any preference, priority, or allocation order duly issued by the Government;

GENERAL CONDITIONS

- b) To unforeseeable cause beyond the control and without the fault of negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of SECCRA, acts of another Contractor in the performance of a contract with SECCRA, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
- c) To any delays of subcontractors or supplies occasioned by any of the causes specified in subsections (a) and (b) of this article;

Provided further, that the Contractor shall, within three (3) days from the beginning of such delay, unless SECCRA shall grant a further period of time prior to the date of final settlement of the Contract, notify SECCRA, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

Provided further, that the amount of liquidated damages shall **TBD** per calendar day.

CONTRACT PAYMENT AND PERFORMANCE BOND

Once a successful respondent is selected and Contract negotiations are completed, the successful respondent will be required to furnish a Contract Payment and Performance Bond.

RESPONSIBILITY FOR COMPLETE PROJECT

It is the responsibility of the Contractor to construct the work under the Agreement so that it will be completed and finished in every detail. If mention has been omitted in the Contract Documents of any items of work or materials usually furnished or necessary for the completion or proper functioning of the project, it will be included without extra payment.

WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

The Contractor shall take out and maintain during the life of the Agreement the Statutory Worker's Compensation and Employer's Liability Insurance for all employees to be engaged in work on the project under the Contract.

In case any portion of the project is sublet, the Contractor shall require all of the subcontractors similarly to take out and maintain during the entire life of the Agreement the Statutory Worker's Compensation and Employer's Liability Insurance for all of their employees to be engaged in work in the project under the Agreement.

The Contractor and the subcontractor shall not begin work until the Contractor has first filed with SECCRA, satisfactory evidence that insurance of the above nature is in full force and effect (receipt of Certificate of Insurance naming SECCRA and it's Consultants as an additional insured).

GENERAL CONDITIONS

BODILY INJURY, LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE

The Contractor shall take out and maintain during the life of the Contract, Bodily Injury Liability and Property Damage Liability Insurance to protect him and any subcontractor performing work covered by the Contract from claims for damages for personal injury, including accidental death, as well as claims for property damage, which may arise from operations under the Contract, whether such operations be by the Contractor or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amount of such insurance shall not be less than amounts shown in the following chart:

- General Liability:	\$5,000,000 Annual Aggregate
	\$2,000,000 Each Occurrence
	\$2,000,000 Products and Completed Operations
	\$2,000,000 Personal Injury and Advertising
- Automobile Liability:	\$1,000,000 Combined Single Limit
- Worker's Compensation:	-- Statutory
- Excess	\$2,000,000 Each Occurrence
- Professional Liability:	\$1,000,000 (AS REQUIRED)

(Upon award of contract, the Contractor shall provide a copy of a Certificate of Insurance with SECCRA and its Consultants named as an Additional Insured to liability coverage on the certificate, for the duration of the contract.)

All contractors performing services for SECCRA are required to provide notification of Certificate of Insurance cancellation 30 – 60 days prior to cancellation. The Contractor shall provide a "Certificate of Insurance" naming SECCRA and its Consultants as an "Additional Insured" and showing the levels of Worker's Compensation and all Liability Coverage.

DAMAGES

The Contractor shall be responsible for any and all injuries to persons and damages to property resulting from the performance of the work specified, materials applied and/or equipment used.

TEMPORARY SUSPENSION OF THE WORK

SECCRA shall have authority to suspend the work wholly or in part for such period or periods as it may deem necessary, due to conditions as considered unfavorable for the prosecution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or to perform any or all provisions of the

GENERAL CONDITIONS

Contract. The Contractor shall immediately comply with the written order of SECCRA to suspend work wholly or in part. In all cases of suspension of construction operations, the work shall not be resumed again until SECCRA gives written permission.

ANNULMENT OF Agreement

Should the Contractor fail to make satisfactory progress, or to comply with orders of SECCRA, or should neglect or refuse to remove materials, or to perform anew such work as has been rejected as defective and unsuitable, or if the Contractor shall become insolvent or be declared bankrupt, or shall make an assignment for the benefit of creditors or from any other cause shall not carry on the work in an acceptable manner, SECCRA shall have the right to annul its Agreement without process or action at law, and to turn over to the surety for completion, or in case performance is guaranteed by negotiable securities, to take over the work and complete it, either by day labor or by re-letting all or any part of the work. Upon receiving notice to this effect, the Contractor shall vacate possession and give up the said work, or the parts thereof specified in said notice, peaceably to SECCRA. Neither by taking over of the work by SECCRA, nor by the annulment of the Contract shall SECCRA forfeit the right to recover damages from the Contractor or the Surety for failure to complete the Contract. Should the cost of completing the work be in excess of the original Contract price, the Contractor and the Surety shall be held responsible for such excess cost.

EXAMINATION OF SITE AND DATA

Before submitting proposals, prospective respondents should carefully examine the Request for Proposal Documents, inspect the site of the proposed project, acquaint themselves with all governing laws, ordinances, etc., and otherwise thoroughly familiarize themselves with all matters which may affect the performance of the work.

The act of submitting a proposal shall be considered as meaning that the respondent has so familiarized himself and, therefore, no concession will be granted by SECCRA because of any claim of misunderstanding or lack of information.

PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all fees, and give all notices necessary, for the lawful prosecution of the work.

The selected respondent will be required to register to do business within the Commonwealth of Pennsylvania prior to execution of a Contract Agreement.

SAFETY

All practices, materials, supplies, and equipment shall comply with Federal, State, and/or local safety or environmental regulation, ordinance, or code.

GENERAL CONDITIONS

SUBLETTING OF CONTRACT

The Contractor shall not sublet, sell or assign all or any portion of the Contract, or the work provided therein, without the written consent of SECCRA.

IDEMNITY AND HOLD HARMLESS

The respondent shall execute the Indemnity/Hold Harmless Agreement.

PROPOSAL CERTIFICATION

The respondent shall execute the Proposal Certification following these General Conditions and return the executed form with their proposal.

Southeastern Chester County Refuse Authority
219 Street Rd
West Grove, PA 19390

Indemnity/Hold Harmless Agreement

To the fullest extent permitted by law, the undersigned Organization agrees to indemnify and hold the Southeastern Chester County Refuse Authority, its elected and appointed officials, employees, and volunteers, and others working on behalf of the Southeastern Chester County Refuse Authority, harmless from and against all loss, cost, expense, damage, liability or claims, whether groundless or not, arising out of the bodily injury, sickness or disease (including death resulting at any time therefrom) which may be sustained or claimed by any person or persons, or the damage or destruction of any property, including the loss of use thereof, based on any act or omission, negligent or otherwise, of the Organization, or anyone acting on its behalf in connection with or incident to **RFP: Design, Permit, construct and Operate Landfill Gas Beneficial Use Facility dated October 20, 2022,** except that the Organization shall not be responsible to the Southeastern Chester County Refuse Authority on indemnity for damages caused by or resulting from the Southeastern Chester County Refuse Authority's sole negligence; and the Organization shall, at it own cost and expense, defend any such claims and any suit, action, or proceeding which may be recovered in any suit, action, or proceeding, and any and all expense including, but not limited to, costs, attorney's fees and settlement expenses, which may be incurred therein.

Name of Organization: _____

Authorized Signature: _____

Address of Organization: _____

Phone: _____ Date: _____

Return this letter with Proposal

Proposal Certification

The statements contained in this proposal are certified to be true and accurate and our Organization has the technical expertise, resources, and financial capacity to perform the scope of work proposed. I certify that I have thoroughly reviewed the information contained within the RFP and satisfactorily understand the scope of work, site conditions and limitations, and terms and conditions thereof.

Dated this _____ day of _____, 201_.

By: _____

(Title of Person Signing)

(Name of Organization)

State of _____

County of _____, ss.

_____ being duly sworn, states they are _____ of
(Name) (Office within Organization)
_____ (Name of Organization) and that their proposal
complies with all terms and conditions contained within the RFP and all statements
therein contained are true and correct.

Sworn to before me this _____ day of _____ 201_.

Notary Public

(My Commission Expires: _____)

(NOTARY SEAL)

ATTACHMENT B

MISCELLANEOUS INFORMATION

- 1. Landfill Gas Collection and Control System Plan
(dated March 2017)**
- 2. PaDEP Emission Inventory Production Report
(dated March 10, 2022)**
- 3. Drawing – ROMAN-167E001, dated 8/12/20 -
Landfill Gas Management System Complied As-
Built (Updated May 2021)**
- 4. An Excel spreadsheet can be provided with daily
gas flow if requested**

LANDFILL GAS COLLECTION AND CONTROL SYSTEM PLAN

PREPARED IN ACCORDANCE WITH 40 CFR PART
60, SUBPART WWW

MARCH 2017

Prepared by:



Southeastern Chester County Refuse Authority
219 Street Road
West Grove, PA 19390

Version 1.0



ALL4 Contact Information: info@all4inc.com | 610.933.5246 | www.all4inc.com

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1. INTRODUCTION

Southeastern Chester County Refuse Authority (SECCRA) owns and operates the SECCRA Community Landfill in London Grove Township, Chester County, PA (Facility). The Facility is required to maintain a gas collection and control system design plan (GCCS Plan) in accordance with applicable Federal and Pennsylvania regulations. This document represents SECCRA's GCCS Plan for the Facility.

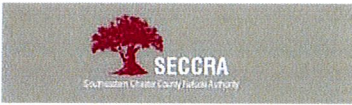
The Federal requirements that apply to the Facility are codified at 40 CFR Part 60, Subpart WWW [Standards of Performance (NSPS) for Municipal Solid Waste (MSW) Landfills]. Included within 40 CFR Part 60, Subpart WWW is a requirement for each owner or operator of an MSW landfill having a calculated non-methane organic compound (NMOC) emission rate equal to or greater than 50 megagrams per year to submit a GCCS Plan to the U.S. EPA Administrator. This document represents SECCRA's current GCCS Plan for the Facility.

The remainder of the GCCS Plan contained herein includes the following sections:

- Section 2: Certification
- Section 3: Existing Site Description
- Section 4: Future Site Development
- Section 5: GCCS Plan Requirements and Methods of Demonstrating Compliance
- Section 6: Alternative Requirements
- Section 7: Revision History
- Appendix A: Definitions
- Appendix B: LFGCCS Site Plans
- Appendix C: LFGCCS Construction Details
- Appendix D: Surface Monitoring Specifications
- Appendix E: Higher Operating Value (HOV) Guidance Documents



The Facility has prepared this GCCS Plan in accordance with the requirements of 40 CFR Part 60, Subpart WWW. The GCCS Plan will be updated in cases when the specifications for active collection change (if any) or, for example, in cases where a Higher Operating Value (HOV) is established. The GCCS Plan will serve as a usable document that can be referenced by the appropriate Facility personnel to ensure that activities associated with the landfill gas (LFG) collection and control system regulated under 40 CFR Part 60, Subpart WWW are completed in a manner consistent with the applicable requirements.



2. CERTIFICATION

I certify that the GCCS as described in this GCCS Plan adequately addresses the design requirements specified in 40 CFR Part 60, Subpart WWW. I further certify that this document was prepared by me or under my direct supervision, and that I am a duly registered Professional Engineer.

[Nicholas Leone, P.E.]



3. EXISTING SITE DESCRIPTION

This section of the GCCS Plan provides a general description of the existing Facility. SECCRA recognizes that additional operations at the Facility could become subject to the GCCS Plan requirements, and SECCRA will update this section and other sections of the GCCS Plan in cases where the specifications for active collection change or, for example, in cases where an HOV is established.

3.1 LANDFILL BACKGROUND

SECCRA is a non-profit municipal authority responsible for the operation of the Facility. The landfill began operations in 1986 and serves 24 boroughs and townships in southern Chester County. Out of state or out of region waste is not accepted by the landfill. Approximately 90,000 people reside in the SECCRA service area. The landfill currently operates under Pennsylvania Department of Environmental Protection (PADEP) Solid Waste Permit Number 101069, Title V Operating Permit (TVOP) Number 15-00060, and Plan Approval Number 15-006G.

The SECCRA Facility is considered to be one landfill for the purposes of this GCCS Plan. However, the current landfill operations specifically include the North Cell, the South Cell, and the Willa Expansion site. Collectively, these three areas span approximately 86 acres. Bulk waste was first deposited at the landfill in 1986. Bulk waste was first deposited in the first cell of the new Willa Expansion area on October 13, 2014. SECCRA's current lifespan calculations suggest that closure of the landfill will occur in 2036.

A Landfill Gas Collection and Control System (LFGCCS) that currently is comprised of 58 LFG extraction wells, a gas collection lateral line, a header, and associated equipment collects LFG under vacuum and conveys the gas to SECCRA's on-site landfill gas-to-energy (LFGTE) facility (SECCRA Power). Site plans depicting SECCRA's LFGCCS are included in Appendix B. The



LFG collected by the LFGCCS is used as fuel to power the following two internal combustion (IC) engines/generators:

- Engine No. 1 (Source ID C05) - One 1,148 brake horsepower (bhp) engine/generator (Caterpillar Model 3516LE)
- Engine No. 3 (Source ID C08) - One 2,233 bhp engine/generator (Caterpillar Model 3520C)

Engine No. 1 and Engine No. 3 serve as primary LFG destruction devices. Engine No. 1 was installed in January 2007. An Enclosed Flare (Source ID C07) began operation during 2011 and serves as a back-up LFG destruction device should one or both of the IC engines/generators be out of service. The Enclosed Flare also prepares the Facility in the event that LFG generation exceeds the capacity of the IC engine/generators.

Prior to 2011, SECCRA utilized historic “Generator 2” for primary destruction of LFG and utilized a temporary flare as a back-up LFG destruction device. However, Generator 2 and the temporary flare are no longer in use at the Facility and were replaced by Engine No. 3 and the enclosed flare, respectively, in 2011.

3.2 LANDFILL GAS COLLECTION AND CONTROL SYSTEM

SECCRA currently operates an active collection and control system in the North and South disposal areas. In general, the LFGCCS is comprised of LFG extraction wells, a gas collection lateral line, a header, and associated equipment that collect LFG for use as fuel to power SECCRA’s two IC engines/generators. The LFGCCS meets or exceeds U.S. EPA’s specifications outlined in 40 CFR §60.759 for active collection systems, as discussed in the following subsections.



3.2.1 Component Construction and Siting

40 CFR §60.759(a) requires each owner or operator submitting a GCCS Plan to the Administrator to site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the procedures outlined in 40 CFR §60.759(a)(1) through (3) unless alternative procedures are approved as provided in 40 CFR §60.752(b)(2)(i)(C) and (D). The design and siting of SECCRA's primary LFGCCS components (i.e., vertical extraction wells, horizontal collectors, supplemental gas collection points, landfill gas collection piping, condensate management equipment, and gas control system equipment) are discussed in subsections 3.2.1.1 through 3.2.1.6, and also presented within the site plans and construction details included within Appendices B and C.

3.2.1.1 Vertical Extraction Wells

The LFGCCS is currently comprised of 58 vertical extraction wells. As indicated in the construction details included in Appendix C, the vertical extraction wells comprising SECCRA's LFGCCS are typically constructed using either high-density polyethylene (HDPE) or polyvinyl chloride (PVC) piping. These materials are utilized due to the corrosion- and heat-resistant properties that make them suitable for LFG well installations; however, alternate materials may be used.

The vertical extraction wells were typically installed within 30-inch diameter boreholes. At the time of well construction, the depth of each existing well was set in order to maintain a 15-foot isolation layer above the top of the landfill's protective liner. Well depths vary across the site according to waste depth, but generally range from 15 to 72 feet below grade.

The bottom portion of each vertical extraction well was constructed of 4-inch diameter, 0.5-inch perforated, Schedule 80 PVC well screen in order to provide a pathway for LFG collection. At each well, the perforated well screen was flush-joined to 4-inch diameter, solid Schedule 80 PVC riser. The annular space between the borehole wall and the PVC well casing was filled with a gravel filter pack using American Association of State Highway and Transportation Officials



(AASHTO) No. 3 non-carbonate stone (or a similar) to a minimum of one foot above the PVC well screen. The annular space above the gravel filter pack was filled with a 4-foot hydrated bentonite seal (i.e., lower seal), followed by six inches of soil backfill, followed by a hydrated bentonite plug (i.e., upper seal). Each wellhead is equipped with flexible horizontal piping composed of 2-inch Standard Dimension Ratio (SDR)-17 HDPE that connects the wellhead with the adjacent vacuum source (i.e., the header piping). Each wellhead includes a valve to control the applied vacuum, as well as monitoring ports to measure static pressure, LFG quality (i.e., oxygen or nitrogen), and temperature. As indicated in Sheet 510 within Appendix C, depending upon the depth to final intermediate grade at the time of construction, the wells were completed with either a 4-inch diameter, solid Schedule 80 PVC well riser stick-up and a 24-inch removable well cap composed of either PVC or HDPE (which provides access to the interior of the well pipe for maintenance or other reasons) or horizontal lateral piping composed of 2-inch SDR that connects the wellhead to the header piping.

As indicated in the site plans included within Appendix B, the vertical extraction wells are typically spaced approximately 200 feet apart, and SECCRA confirms the adequacy of this spacing through quarterly methane surface monitoring of the LFGCCS. Additional wells are added to the LFGCCS in accordance with the requirements of 40 CFR Part 60, Subpart WWW.

3.2.1.2 Horizontal Collectors

As discussed in Section 3.2.1, the LFGCCS includes horizontal header piping that supplements LFG collection from the vertical extraction wells. As depicted in the construction details included in Appendix C, the horizontal collectors are typically constructed of HDPE, although other materials may be used. Use of HDPE provides a high level of corrosion- and heat-resistance and is therefore suitable for horizontal collector installations.

As indicated in the site plans included within Appendix B, the location of the horizontal collectors can vary due to variability of vertical well siting, collector depth, liner presence, landfill geometry, historic fill locations, waste permeability, etc.; however, the spacing of the horizontal



collectors is typically between 100 feet and 250 feet horizontally, and typically between 20 feet and 60 feet vertically (when used solely in lieu of vertical wells). In general, the horizontal collectors are typically installed a minimum of 20 feet above the bottom liner and a minimum of 50 feet below final grade to prevent air infiltration. The horizontal collectors are installed within either (1) trenches backfilled with a porous material or (2) directly within the waste mass or intermediate cover material.

Each horizontal collector includes one or more wellheads equipped with a valve that controls the applied vacuum. The wellheads are also equipped with monitoring ports to measure static pressure, LFG quality (i.e., oxygen or nitrogen), and temperature. Flexible HDPE piping connects the wellhead with the adjacent vacuum source (i.e., the header piping) to accommodate landfill settlement. A boot is also typically installed at collector penetrations of the membrane cap to seal the penetration.

3.2.1.3 Supplemental Gas Collection Points

In addition to collecting LFG through the installation and operation of vertical extraction wells and horizontal collectors, supplemental LFG collection may also be performed from collectors that are not part of the specific GCCS design, but which do provide supplemental gas control on an intermittent basis. Since SECCRA monitors all active GCCS collection points (including supplemental gas collectors), the supplemental gas collection points are discussed herein for completeness. However, it should be noted that LFG collected at supplemental gas collection points, if any, is often of poor quality (with high oxygen and low methane levels) and/or with low or intermittent gas production and intermittent positive pressure.

Examples of supplemental LFG collection points that could exist at the site include wells and/or collectors that are installed ahead of the schedule mandated by 40 CFR Part 60, Subpart WWW or those that are not installed within the perimeter of the landfill waste. Wells installed outside the perimeter of the landfill waste would not meet the definition of “interior wells” as the term is defined in 40 CFR Part 60, Subpart WWW and would thus not be included as part of the GCCS



design. LFG collection from these supplemental collection points would not be subject to the operational standards of 40 CFR Part 60, Subpart WWW. SECCRA may add vacuum to the leachate and/or condensate collection system in the future, and these points would be classified as 'supplemental' points.

3.2.1.4 Landfill Gas Collection Piping

As presented in Appendices B and C, the LFGCCS is interconnected via a gas header piping network that supplies vacuum to each of the gas collection devices and directs LFG to SECCRA's on-site LFGTE facility, SECCRA Power. Permanent HDPE piping exists below grade; however, temporary piping may be installed above grade using either HDPE or PVC pipe in areas of active operation, or areas yet to be capped where the piping will ultimately be buried above a flexible membrane liner (FML) cap.

As depicted in Appendix C, piping diameters vary but are generally designed to minimize gas velocities and head loss within the piping.

The LFG collection piping was designed to have a minimum slope of 2% in order to account for consolidation and uneven settlement of the waste over time and also allow for continual flow of condensed liquid.

In order to isolate discrete sections of the LFGCCS, valves were installed throughout the piping network for purposes of system adjustment, troubleshooting, or maintenance. Future expansion of the LFGCCS can occur because tees and blind flanges have been incorporated into the existing piping network to accommodate such changes.

3.2.1.5 Condensate Management Equipment

Liquid condensate is formed in the gas piping when moist or saturated gas extracted from the landfill undergoes both temperature reduction and pressure changes (induced by



blowers/compressors). The following condensate management techniques are implemented throughout SECCRA's LFGCCS:

- The LFG piping is designed with minimum slope requirements in order to allow condensate to drain by gravity to a series of low points throughout the LFGCCS.
- The condensate collected in the landfill piping gravity drains to a series of condensate traps, which direct the collected condensate to leachate cleanouts within the leachate collection system from which landfill gas is collected and directed to the main header within the LFGCCS.
- The condensate collected in piping located outside the landfill footprint gravity drains to a series of pump houses which are then pumped to SECCRA's leachate storage tanks to be treated with the leachate generated on-site.

3.2.1.6 Gas Control System Equipment

SECCRA operates an LFG flaring system in accordance with the requirements of 40 CFR Part 60, Subpart WWW. SECCRA Power is connected to the PJM Interconnection, Inc. (PJM) grid through a transmission system maintained by PECO Energy and has the capacity to produce approximately 2.4 Megawatts of power by combusting the LFG in the two IC engines. The LFG flaring system typically operates in parallel with SECCRA Power and includes the following equipment:

- An Enclosed Flare (Source ID C07) designed to combust up to 1,200 standard cubic feet per minute (scfm) of LFG, and to achieve a minimum 98 percent destruction efficiency of NMOCs and/or reduce NMOC outlet concentration to less than 20 parts per million by volume (ppmv), dry basis as hexane at 3 percent oxygen.
- LFG blowers designed to apply a vacuum to the wellfield and deliver LFG to the flare.
- Automatic control valve designed to shut down immediately upon the flare shutting down to prevent uncombusted LFG from exhausting through the flare stack.
- Flow and temperature monitoring and recordkeeping equipment.
- Moisture/condensate removal vessel.
- Flame arrester to prevent flame propagation from the flare back into the LFG piping.
- Gas pilot system.



The Enclosed Flare began operation during 2011 and serves as a back-up LFG destruction device should one or both of the IC engines/generators be out of service. The Enclosed Flare also prepares the Facility in the event that LFG generation exceeds the capacity of the IC engine/generators. The Enclosed Flare and both IC engines/generators meet the minimum control requirements set forth in Subpart WWS and TVOP No. 15-00060.

3.2.2 Control of Surface Gas Emissions

Pursuant to 40 CFR §60.759(a)(1), SECCRA's collection devices within the interior and along the perimeter areas were certified by a professional engineer to achieve comprehensive control. Depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat are discussed in the following subsections, as also required by 40 CFR §60.759(a)(1).

3.2.2.1 Depths of Refuse

Refuse depths are accounted for prior to the installation of gas system components and are determined during the design phase by subtracting the elevation of the liner system from the landfill surface elevations. To prevent damage to the landfill liner, vertical wells are designed with a minimum of 15 feet of separation between the bottom of the well and the top of the liner or leachate system.

3.2.2.2 Refuse Gas Generation Rates and Flow Characteristics

The active collection and control system in the North, South, and Willa disposal areas can collect gas at a rate of up to 1,200 scfm (the design LFG generation rate), which SECCRA considers a sufficient extraction rate for maintaining a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a



result of expansion or excess surface emissions, for the life of the blower based on the current system design.

3.2.2.3 Cover Properties

SECCRA employs final cover in areas of the landfill where filling has ceased and the area is at final grade. Currently, final cover is comprised of organic material (i.e., soil). The organic cover minimizes water and air intrusion into the landfill, in addition to minimizing the release of LFG to atmosphere. Where filling is still active, SECCRA employs daily and intermediate cover soils per its solid waste permit requirements. The integrity of the landfill cover is monitored regularly and repairs are performed as deemed necessary.

3.2.2.4 Gas System Expandability

The current GCCS design incorporates features such as tees and blind flanges that permit expansion of the system. As discussed in Section 4, SECCRA anticipates that filling activities will continue until 2036. Until this time, installation of additional GCCS components will be coordinated as needed and as otherwise required in accordance with the provisions of 40 CFR Part 60, Subpart WWW, and the guidelines and design criteria outlined in this GCCS Plan.

In some cases (including, but not limited to, the Willa Expansion project), expansion may be accomplished ahead of the regulatory schedule mandated by the NSPS. In this instance, the components of the gas collection system are not subject to the requirements of 40 CFR Part 60, Subpart WWW until they meet the criteria outlined in the NSPS regarding waste age and cell closure status. That is, the components of the gas collection system are not subject to the requirements of the NSPS until after waste has either been in place for five years if the cell is still active, or within two years of reaching cell closure or final grade (2 & 5 Year Rule). SECCRA will update this section and other sections of the GCCS Plan to accommodate such cases.



3.2.2.5 Leachate and Condensate Management

As presented in Appendix C, a leachate collection zone exists between the waste that is in place and the landfill's protective soil cover. As moisture from precipitation leaches through the waste deposited in the landfill, it is collected within this leachate collection zone. Generally, the leachate collection zone exists six to 10 inches beneath the bottom of the waste that is in place. The protective soil cover that exists beneath the leachate collection zone is 18 inches deep, and is situated above the landfill's primary liner. The primary liner is comprised of 80 mil HDPE and serves to minimize any moisture from entering a leachate detection zone. The leachate detection zone is composed of geocomposite material and serves as a flow zone between the primary and secondary liner in order to detect, collect, and transmit liquid to the leachate storage tanks. The secondary 80 mil HDPE liner, a 24-inch layer of compacted clay, and a 6-inch compacted sub-base exist beneath the leachate detection zone to further prohibit leachate from exiting the disposal cell.

The leachate collection system includes a network of perforated 6-inch HDPE pipes which direct leachate and collected condensate to a leachate storage tank. As discussed in Section 3.2.1.5 and as presented in Appendix C, condensate drains via gravity to a series of condensate traps, which direct the collected condensate back into the landfill or to the leachate storage tanks. Condensate collected in piping located outside the landfill footprint gravity drains to a series of condensate storage tanks/manholes, from which it is pumped to the leachate storage tanks.

As the LFGCCS expands, additional leachate and condensate management features will be installed in accordance with these approaches.

3.2.2.6 Accessibility

The LFGCCS is easily accessible for operations, monitoring, and maintenance. A network of roads within SECCRA's property boundaries provides access to the LFGCCS components. The LFGCCS components (e.g., wellheads and monitoring ports) are installed in accessible areas of the landfill. Wellheads, piping risers, valves, and monitoring ports are installed above grade, or



within vaults, in order to maintain accessibility. Landfill gas header piping crosses beneath access roads, so that the design and function of the access roads are not impacted.

3.2.2.7 Compatibility with Filling Operations

The components of the LFGCCS are designed to be compatible with filling operations so that any potential damage that could occur to system components through active landfill operation is minimized. In general, vertical wells are installed as portions of the landfill reach final or intermediate grade and horizontal collectors are installed to supplement the gas collection that occurs by the vertical wells and/or in areas where they may be more suitable for use (e.g., in active fill areas where it may not yet be practical to install vertical extraction wells).

3.2.2.8 Integration with Closure End Use

SECCRA anticipates that the landfill will continue to be filled with approved waste until 2036. The final use of the landfill site is planned to be open space with limited access during the post-closure period ensured through security fencing. Should these plans change, SECCRA will ensure that future LFGCCS expansions are designed to consider final use plans.

3.2.2.9 Air Intrusion Control

The LFGCCS design accommodates air intrusion control in accordance with 40 CFR §60.759(a)(1). Pursuant to 40 CFR §60.753(b) and (c), SECCRA operates the LFGCCS with negative pressure at each wellhead without excess air intrusion except under the following conditions:

- A fire or increased well temperature.
- Use of a geomembrane or synthetic cover.
- A decommissioned well.
- Establishment of a higher operating temperature, nitrogen, or oxygen value (higher operating value, or HOV).



Design features such as (or equivalent to) intermediate and final cover systems, well seals, and gas collector membrane cap boot seals, as well as making wellfield adjustments (e.g., reducing vacuum applied to individual wells) in response to elevated oxygen or nitrogen measurements at specific wellheads, support SECCRA in controlling air intrusion. SECCRA uses the applicable default NSPS regulatory levels, which are currently five percent oxygen or 20 percent nitrogen; these levels are subject to change should U.S. EPA finalize its proposed updates to the NSPS for landfills and any such changes are automatically incorporated herein. In addition, as discussed in Section 6, SECCRA may establish HOVs for these parameters.

SECCRA measures gauge pressure in the gas collection header at each individual well at least monthly. If a positive pressure exists, action is initiated to correct the exceedance within five calendar days, except for the three conditions allowed under §60.753(b) which are previously mentioned above. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. SECCRA understands that any attempted corrective measure shall not cause exceedances of other operational or performance standards and that an alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

3.2.2.10 Corrosion Resistance

As presented in Appendix C, the components of the existing LFGCCS are comprised of the following corrosion-resistant materials:

- Header and lateral piping – typically HDPE, SDR 17.
- Well piping and fittings – typically PVC, Schedule 80.
- Well head and valves – typically PVC, HDPE fittings, PVC valves, and stainless steel clamps.
- Isolation valves – typically PVC bodies, nitrile or Viton seats and seals, and stainless steel stem and housing.
- Condensate vessels – typically HDPE pipe and fittings.



- Gas moving and control equipment – typically corrosion-resistant parts designed specifically for applications such as LFG.

These materials withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. When expanding the LFGCCS, SECCRA may elect to use new materials that meet or exceed the corrosion resistance of the existing LFGCCS components.

3.2.2.11 Fill Settlement

Specific design features are incorporated in order to minimize the potential effects of fill settlement or subsidence on the LFGCCS. The header and lateral system have minimum slope requirements to ensure that settlement can occur without condensate blockage or damage to the LFGCCS piping. Flexible pipe connections are utilized between the extraction wellheads and lateral piping. The wellbore seals used to minimize surface emissions and air intrusions around well bores consist of a strong flexible membrane with a collapsible stovepipe-shaped boot that clamps onto the well casing and extends above the surface (or equivalent). As landfill settlement occurs, the collapsed boot elongates and requires only occasional adjustment.

3.2.2.12 Resistance to Refuse Decomposition Heat

The corrosion-resistant materials identified in Section 3.2.2.10 have a demonstrated history of performance when subjected to the heat of decomposition under typical anaerobic landfill conditions. When expanding the LFGCCS, SECCRA may elect to use new materials that meet or exceed the heat resistance of the existing LFGCCS components.

3.2.3 Sufficient Density of Gas Collection Devices

Pursuant to 40 CFR §60.759(a)(2), SECCRA's LFG perimeter gas monitoring probes are designed and positioned to monitor and minimize possible off-site LFG migration. The adequacy of the wellfield density is evaluated on an ongoing basis during routine monitoring. On a monthly basis, SECCRA monitors the LFG extraction wells and influent gas to the control system for oxygen or nitrogen, temperature, and pressure. On a quarterly basis, SECCRA monitors the



perimeter gas monitoring probes and on-site buildings for methane and either oxygen or nitrogen content. An example of the manufacturer specifications for a portable gas analyzer to perform LFG monitoring is included in Appendix D. Construction details for SECCRA's perimeter gas monitoring probes are presented within Sheet 510 of Appendix C. If necessary, additional collection devices will be installed in accordance with 40 CFR Part 60, Subpart WWW requirements.

3.2.4 Asbestos, Non-Degradable Materials, and Non-Productive Areas

Regarding 40 CFR §60.759(a)(3), non-friable asbestos is accepted by SECCRA at the landfill; however, friable asbestos is not accepted. Non-friable asbestos and other non-degradable materials are not deposited in separate disposal areas and are incorporated with the rest of the waste. Since the non-friable asbestos and non-degradable materials are incorporated with the rest of the waste, no areas of the landfill are excluded from placement of GCCS components based upon a non-productive status.

3.2.5 Gas Collection Device Construction

Pursuant to 40 CFR §60.759(b), the components of the existing LFGCCS are comprised of the corrosion- and heat-resistant materials identified in Section 3.2.2.10. When expanding the LFGCCS, SECCRA may elect to use new materials that meet or exceed the corrosion- and heat-resistance of these existing LFGCCS components.

The collection system extends as necessary to comply with emission and migration standards. As described in Sections 3.2.1.1 and 3.2.1.2, collection devices such as wells and horizontal collectors are perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations are situated with regard to the need to prevent excessive air infiltration. Vertical wells are placed so as not to endanger underlying liners and address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors are of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel



backfill. Collection devices are designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations is of a dimension so as not to penetrate or block perforations. Collection devices are connected to the collection header pipes either below or above the landfill surface. The connector assemblies include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port.

Construction and installation details for SECCRA's wellheads, vertical extraction wells, horizontal collectors, supplemental gas collection points, and piping are presented in Section 3.2 and Appendix C.

3.2.6 Existing Landfill Gas Conveyance

The LFGCCS is currently comprised of 58 LFG extraction wells, a gas collection lateral line, a header, and associated equipment. The LFGCCS collects LFG under vacuum and conveys the gas in accordance with 40 CFR §60.752(b)(2)(iii) to SECCRA's on-site LFGTE plant, SECCRA Power. The gas mover equipment is sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment (i.e., 1,200 scfm). The design specifications and siting of SECCRA's primary LFGCCS components (i.e., vertical extraction wells, horizontal collectors, supplemental gas collection points, landfill gas collection piping, condensate management equipment, and gas control system equipment) are discussed in subsections 3.2.1.1 through 3.2.1.6. The existing LFG conveyance equipment has sufficient capacity to handle expected LFG flows. However, should it become necessary, additional control capacity will be added to the LFGCCS in accordance with this plan and 40 CFR Part 60, Subpart WWW.



4. FUTURE SITE DEVELOPMENT

SECCRA anticipates that the landfill will continue to be filled with approved waste in accordance with PADEP Solid Waste Permit Number 101069 until 2036. Until this time, installation of additional GCCS components will be coordinated with fill development activities and as otherwise required. Due to operational changes or changes to 40 CFR Part 60, Subpart WWW, the GCCS design may also be altered to maintain compliance with the provisions of 40 CFR Part 60, Subpart WWW and to accommodate field conditions at the time of construction. SECCRA will update this section and other sections of the GCCS Plan to accommodate these cases.

The current landfill operations specifically include the North Cell, the South Cell, and the Willa Expansion site. The Willa Expansion Site first accepted waste on October 13, 2014. SECCRA understands that, pursuant to 40 CFR §60.752(b)(2)(ii)(A)(2) - and independent of SECCRA's Commonwealth of Pennsylvania obligations to operate an interim gas collection system for the Willa Expansion area by October 13, 2016 - the existing collection and control system must collect LFG from cells in the Willa Expansion area after waste has either been in place in each respective Willa Expansion area cell for five years if the cell is still active, or within two years of reaching cell closure or final grade (2 & 5 Year Rule). SECCRA will update this GCCS Plan to reflect the Willa Expansion area after waste has either been in place in each respective Willa Expansion area cell for five years if the cell is still active, or within two years of reaching cell closure or final grade.

Note that SECCRA is required to install an interim landfill gas collection system in the Willa Expansion Area site pursuant to Commonwealth of Pennsylvania requirements for each cell, group of cells, or area, within 24 months from the start of placement of waste in the cell. The first cell in the Willa area began receiving waste on October 13, 2014; therefore, the interim collection system was required to be operational on or before October 13, 2016. The interim collection system has been designed to also meet the 40 CFR Part 60, Subpart WWW requirements for a gas collection and control system as it will be integrated with the existing



main LFGCCS; however, compliance with Commonwealth of Pennsylvania requirements does not depend upon the interim system being Subpart WWW-compliant. SECCRA reserves the right to employ non-Subpart WWW compliant design features or operational methods in order to be in compliance with Commonwealth of Pennsylvania requirements and will make adjustments to the interim system's design as necessary. Per SECCRA's Gas Control and Monitoring Plan there must be a minimum vertical separation of at least 15 feet between the bottom of a well and the top of the leachate collection system. It is unclear as to when there will be sufficient waste in place to provide the minimum depth necessary to drill wells for an interim landfill gas collection in the Willa area. In addition, it is possible that the amount and quality of the landfill gas produced will make collection difficult and possibly inadvisable for overall landfill gas management. SECCRA will update this GCCS Plan upon the finalization of the design details for the system and may submit a Request for Determination (RFD) to PADEP in order to obtain a variance from this requirement due to technical infeasibility.

SECCRA recognizes that additional operations at the Facility could become subject to the GCCS Plan requirements, and SECCRA will update this section and other sections of the GCCS Plan in cases where the specifications for active collection change.



5. GCCS PLAN REQUIREMENTS AND METHODS OF DEMONSTRATING COMPLIANCE

The specific Federal requirements pertaining to a GCCS Plan, as well as the means by which SECCRA demonstrates compliance with each requirement, are presented within Section 5 and Table 5-1.

SECCRA currently operates an active collection and control system in the North and South disposal areas pursuant to 40 CFR Part 60, Subpart WWW. Table 5-1 includes the methods by which SECCRA currently demonstrates compliance with the active collection and control system requirements for the North and South disposal areas. The methods by which SECCRA plans to demonstrate compliance with the future collection and control system requirements for the Willa Expansion area were previously discussed in Section 4.



Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
40 CFR §60.752(b)(2)(i)	Submit a gas collection and control system design plan prepared by a professional engineer to the Administrator within 1 year of the calculated NMOC emission rate equaling or exceeding 50 Mg per year.	Pursuant to 40 CFR §60.752(b)(2)(i) and 40 CFR §60.4(b), SECCRA has submitted this GCCS Plan, which was prepared by a professional engineer, to both the U.S. EPA Administrator and PADEP.
40 CFR §60.752(b)(2)(i)(A)	The collection and control system as described in this plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.	The Facility's collection and control system meets the design requirements of paragraph 40 CFR §60.752(b)(2)(ii), as described in the Method of Demonstrating Compliance for §60.752(b)(2)(ii).
40 CFR §60.752(b)(2)(i)(B)	The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions of §60.753 through §60.758 as proposed by the owner/operator.	Other than certain PADEP-approved HOVs included in Appendix E, SECCRA has not proposed any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping, or reporting provisions of 40 CFR §60.753 through §60.758 at this time. SECCRA will update this GCCS Plan as needed should alternatives be proposed in the future.
40 CFR §60.752(b)(2)(i)(C)	The collection and control system design plan shall either conform with specifications for active collection systems in §60.759, or include a demonstration to the Administrator's satisfaction of the sufficiency of alternative provisions under §60.759.	This GCCS Plan conforms with the specifications for active collection systems in 40 CFR §60.759. Active collection wells, horizontal collectors, or other extraction devices are sited at a sufficient density throughout all gas producing areas using the procedures of 40 CFR §60.759(a). Gas collection devices are constructed using the equipment and procedures specified in 40 CFR §60.759(b). LFG is conveyed to the control system that is in compliance with 40 CFR §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment is sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the procedures of 40 CFR §60.759(c).
40 CFR §60.752(b)(2)(i)(D)	The Administrator shall review the information submitted under this section, and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with LFG system design,	Pursuant to 40 CFR §60.752(b)(2)(i) and 40 CFR §60.4(b), the U.S. EPA Regional Administrator and/or PADEP are responsible for reviewing this GCCS Plan.



Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
	alternative systems may be necessary. A wide variety of system designs are possible such as vertical wells, horizontal trenches, combination horizontal and vertical collection systems, leachate collection components, and passive systems.	
40 CFR §60.752(b)(2)(ii)	Install a collection and control system within 30 months after the NMOC emission rate equals or exceeds 50 Mg per year.	<p>SECCRA currently operates an active collection and control system in the North and South disposal areas. Pursuant to §60.752(b)(2)(ii)(A)(2), and independent of SECCRA's Commonwealth of Pennsylvania obligations to operate an interim gas collection system by October 13, 2016, SECCRA will ensure that the existing collection and control system collects LFG from cells in the Willa Expansion area after waste has either been in place in each respective Willa Expansion area cell for five years if the cell is still active, or within two years of reaching cell closure or final grade (2 & 5 Year Rule).</p> <p>SECCRA's Commonwealth of Pennsylvania obligations to operate an interim gas collection system by October 13, 2016 are separate and additive to its requirements to install a 40 CFR Part 60, Subpart WWW-compliant collection and control system in accordance with the 2 & 5 Year Rule.</p>
40 CFR §60.752(b)(2)(ii)(A)(1)	An active collection system shall be designed to handle the maximum expected flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment.	The active collection system for the North, South, and Willa disposal areas was designed to handle the maximum expected LFG flow rate of 1,200 scfm through the estimated landfill closure date of Calendar Year 2036.
40 CFR §60.752(b)(2)(ii)(A)(2)	The GCCS shall collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active, or 2 years or more if closed or at final grade.	SECCRA currently operates an active collection and control system in the North and South disposal areas. Pursuant to 40 CFR §60.752(b)(2)(ii)(A)(2), and independent of SECCRA's Commonwealth of Pennsylvania obligations to operate an interim gas collection system by October 13, 2016, SECCRA will ensure that the existing collection and control system captures LFG from cells in the Willa Expansion area after waste has either been in place in each



**Table 5-1
 Federal GCCS Plan Requirements
 SECCRA - West Grove, PA Facility**

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
		respective Willa Expansion area cell for five years if the cell is still active, or within two years of reaching cell closure or final grade (2 & 5 Year Rule).
40 CFR §60.752(b)(2)(ii)(A)(3)	The GCCS shall collect gas at a sufficient extraction rate.	The active collection and control system in the North, South, and Willa disposal areas collects gas at a rate of up to 1,200 scfm (the maximum expected LFG generation rate), which SECCRA considers a sufficient extraction rate for maintaining a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.
40 CFR §60.752(b)(2)(ii)(A)(4)	The GCCS shall be designed to minimize off-site migration of subsurface gas.	The GCCS is designed to collect and combust the LFG generated within the landfill. LFG perimeter gas monitoring probes are designed and positioned to monitor and minimize possible off-site LFG migration. On a monthly basis, SECCRA monitors the LFG extraction wells and influent gas to the control system for oxygen or nitrogen, temperature, and pressure. On a quarterly basis, SECCRA monitors the perimeter gas monitoring probes and on-site buildings for methane and oxygen content. An example of the manufacturer specifications for a portable gas analyzer to perform LFG monitoring is included in Appendix D.
40 CFR §60.752(b)(2)(iii)	The Landfill shall route all collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii)(A), (B) or (C) of this section.	SECCRA routes all collected gas to a primary control system, consisting of two LFGTE engine/generator sets, that complies with the requirements in 40 CFR §60.752(b)(2)(iii)(B) and TVOP Number 15-00060. In the event that the primary control system is out of service, SECCRA routes all collected gas to an enclosed flare that complies with the requirements in 40 CFR §60.752(b)(2)(iii)(B).
40 CFR §60.752(b)(2)(iii)(A)	Collected gas may be routed to an open flare designed and operated in accordance with §60.18.	Not Applicable – In the event that the Facility’s primary control system is out of service, SECCRA routes all collected gas to an enclosed (rather than an open) flare.

**Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility**

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
40 CFR §60.752(b)(2)(iii)(B) and TVOP Number 15-00060	<p>Collected gas may be routed to a control system designed and operated to reduce NMOC by 98 percent weight, or when an enclosed combustion device is used for control, to either reduce NMOC by 98 percent or to reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane, at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test, required under §60.8, using the test methods specified in §60.754(d).</p> <ol style="list-style-type: none"> (1) If a boiler or process heater is used as a control device, the landfill gas stream shall be introduced into the flame zone. (2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.756. 	<p>SECCRA routes all collected gas to a primary control system, consisting of two LFGTE engine/generator sets, that complies with the requirements in 40 CFR §60.752(b)(2)(iii)(B) and TVOP Number 15-00060 (which allows for either reducing NMOC by 98 percent or reducing the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane, at 3 percent oxygen). In the event that the Facility's primary control system is out of service, SECCRA routes all collected gas to an enclosed flare that reduces NMOC by 98 percent or reduces the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane, at 3 percent oxygen.</p> <p>The LFGTE engine/generator sets are operated within the 40 CFR §60.756(d) parameter ranges established during the September 6, 2007 performance test (Engine No. 1), the June 4, 2014 performance test (Engine No. 3) as established in TVOP Number 15-00060. The enclosed flare is operated within the 40 CFR §60.756(b) parameter ranges established during the August 23, 2011 performance test.</p>
40 CFR §60.752(b)(2)(iii)(C) and TVOP Number 15-00060	<p>Collected gas may be routed to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii)(A) or (B) of this section.</p>	<p>SECCRA routes all collected gas to one or more control systems. The emissions from these control systems vents are subject to the requirements of 40 CFR §60.752(b)(2)(iii)(B) and TVOP Number 15-00060.</p>
40 CFR §60.753(a)	<p>Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:</p>	<p>SECCRA collects gas from each area, cell, or group of cells in the MSW landfill according to the 2 & 5 Year Rule.</p>

**Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility**

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
	<p>(1) 5 years or more if active; or (2) 2 years or more if closed or at final grade</p>	
40 CFR §60.753(b)	<p>Operate the collection system with negative pressure at each wellhead except under the following conditions:</p> <p>(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in §60.757(f)(1).</p> <p>(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan.</p> <p>(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator.</p>	<p>SECCRA maintains negative pressure at each wellhead, except as described in 40 CFR §60.753(b)(1) through (3).</p> <p>SECCRA will record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR §60.757(f)(1).</p> <p>The provisions regarding use of a geomembrane or synthetic cover do not apply because SECCRA applies organic material as cover.</p> <p>SECCRA has not decommissioned any approved wells, and any future decommissioning efforts will be in accordance with the requirements and procedures as detailed in this GCCS Plan.</p> <p>In the event that positive pressure exists and none of the exceptions provided by paragraph (b)(1) through (3) apply, SECCRA will record instances of pressure in order to avoid a fire and, pursuant to Plan Approval No. 15-0060G, Section D, Source 105, Condition #004(1), action will be initiated to correct the exceedance within five calendar days. If a negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first positive measurement, the gas collection system will be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure.</p>
40 CFR §60.753(c)	<p>Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The</p>	<p>SECCRA operates each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent.</p>



**Table 5-1
 Federal GCCS Plan Requirements
 SECCRA - West Grove, PA Facility**

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
	<p>owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value (HOV) demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.</p> <p>(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.</p> <p>(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:</p> <p>(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;</p> <p>(ii) A data recorder is not required;</p> <p>(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;</p> <p>(iv) A calibration error check is not required;</p> <p>(v) The allowable sample bias, zero drift, and calibration drift are ± 10 percent.</p>	<p>Note: SECCRA understands that a higher operating temperature, nitrogen, or oxygen value at a particular well may be established by submitting a demonstration showing that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. The owner/operator shall not use the HOV until approval is received. Pursuant to Plan Approval No. 15-0060G, Section D, Source 105, Condition #002(1)(a), SECCRA would submit such a demonstration to PADEP for approval. SECCRA will maintain a current list of HOV wells with this GCCS Plan.</p>
40 CFR §60.753(d)	Operate the collection system so that the methane concentration is less than 500 parts per million	The LFGCCS is operated so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. SECCRA

**Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility**

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
	<p>above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.</p>	<p>performs quarterly landfill surface gas monitoring, including fugitive emissions monitoring to monitor and record off-site gas migration and gas accumulation on and off-site. SECCRA monitors the perimeter gas monitoring probes and on-site buildings for methane on a quarterly basis. SECCRA monitors in a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover, but excluding areas with steep slopes and other dangerous areas. A topographical map depicting SECCRA's methane surface testing route is included as Appendix D.</p>
<p>40 CFR §60.753(e) and (f)</p>	<p>(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and</p> <p>(f) Operate the control or treatment system at all times when the collected gas is routed to the system.</p>	<p>All collected gases are vented to the LFGCCS designed and operated in compliance with 40 CFR §60.752(b)(2)(iii) and TVOP Number 15-00060 and which is operated at all times when the collected gas is routed to the system. In the event that the collection or control system is inoperable, SECCRA shuts down the gas mover system and all valves in the collection and control system contributing to venting of the gas to the atmosphere are closed within one hour.</p>
<p>40 CFR §60.753(g)</p>	<p>(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this</p>	<p>In the event that monitoring demonstrates that the operational requirements in 40 CFR §60.753(b), (c), or (d) are not met, SECCRA would take corrective</p>

Table 5-1
Federal GCCS Plan Requirements
SECCRA - West Grove, PA Facility

Regulatory Citation	Regulatory Requirement	Method of Demonstrating Compliance
	<p>section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.</p>	<p>action as specified in 40 CFR §60.755(a)(3) through (5) or §60.755(c) and understands that if corrective actions are taken as specified in 40 CFR §60.755, the monitored exceedance is not a violation of the operational requirements in this section.</p>



6. ALTERNATIVE REQUIREMENTS

Pursuant to 40 CFR §60.753(c), SECCRA understands that a higher operating temperature, nitrogen, or oxygen value (higher operating value, or HOV) at a particular well may be established by submitting a demonstration showing that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. This is consistent with the requirements of Plan Approval No. 15-0060G, Section D, Source 105, Condition #002(1)(a), which also requires submission of a demonstration to PADEP for approval of HOVs. Included in this plan are the specific procedures to be used by SECCRA to request an HOV, as well as approved HOV alternatives established by PADEP guidance, including conditions for each approval, that may be used by SECCRA. Details concerning the process for requesting HOVs are included in Appendix E, and the approved HOV alternatives are included under Alternative 4 within Appendix E. SECCRA will attach a list of all HOV approvals to this GCCS Plan as applicable.



7. REVISION HISTORY

The General Manager of SECCRA will review this plan upon each update for adequacy and applicability. Documentation of reviews and updates will be retained in the General Manager files for five years.

The revision history of this Plan is presented in Table 7-1.

Table 7-1
GCCS Plan Revision History

Revision	Date	Purpose
0	3/31/17	Original combined plan replacing separate historic GCCS and Gas Monitoring and Control (GMC) plans.

APPENDIX A - DEFINITIONS

DEFINITIONS

Pursuant to 40 CFR §60.752:

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under §60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with §60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under §257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or MSW landfill emissions means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of §60.754.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 *et seq.*).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

**APPENDIX B -
LFGCCS SITE PLANS**



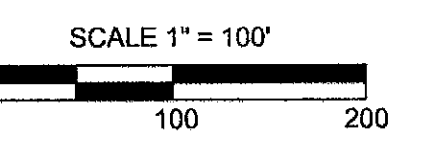
LEGEND

- TOPOGRAPHIC CONTOUR (EXISTING 2' INTERVAL)
- TOPOGRAPHIC CONTOUR (EXISTING 10' INTERVAL)
- SECCRA PROPERTY LINE
- RIGHT-OF-WAY
- ROAD
- EXISTING SOLID WASTE PERMIT AREA BOUNDARY
- PROPOSED SOLID WASTE PERMIT AREA BOUNDARY
- EXISTING LANDFILL GAS HEADER PIPE TRENCH
- PROPOSED LANDFILL GAS HEADER PIPE TRENCH
- EXISTING LANDFILL GAS HEADER PIPE (TO BE ABANDONED)
- EXISTING LANDFILL GAS LATERAL
- PROPOSED LANDFILL GAS LATERAL
- EXISTING EDGE OF SOUTH AREA CAP
- PROPOSED FINAL LANDFILL CAP GRADES
- EXISTING SOUTH AREA CAP GRADES
- EXISTING UTILITY TRENCH
- STREAM
- WETLANDS
- GRID COORDINATES LINES WITH STATE PLANE NORTHING/EASTING
- EXISTING GAS EXTRACTION WELL LOCATION AND ID
- PROPOSED GAS EXTRACTION WELL LOCATION AND ID
- EXISTING GAS EXTRACTION WELL LOCATION AND ID (TO BE EXTENDED WITHIN SLOPE RELEVELING AREA)
- EXISTING LANDFILL GAS HEADER VALVE
- EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
- PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUT
- EXISTING LEACHATE CLEANOUTS TO BE REMOVED
- EXISTING GAS EXTRACTION VALVE STATION
- NEW GAS EXTRACTION VALVE STATION
- FENCE

155
 220
 137

N 199,250
 600

- NOTES**
- EXACT LOCATION OF GAS EXTRACTION WELLS & LAYOUT OF GAS PIPING MAY BE ALTERED BY SECCRA BASED UPON FIELD CONDITIONS.
 - TOPOGRAPHY AND SITE FEATURES OBTAINED FROM "2005 ANNUAL TOPOGRAPHIC SURVEY FOR THE SOUTHEASTERN CHESTER COUNTY REFUSE AUTHORITY", FROM LAKE, ROEDER, HILLARD & ASSOCIATES, DATED JANUARY 7, 2005.
 - SOUTH AREA CLEANOUT LOCATIONS OBTAINED FROM SOUTH AREA PHASE IV, PREPARED FOR SECCRA LANDFILL, DRAWING NO. 1 OF 1 PREPARED BY ROGER C. WATSON SURVEYING SERVICES, INC. DATED 12/26/98, AND SOUTH AREA LEACHATE COLLECTION / DETECTION PIPING LAYOUT, PREPARED FOR SECCRA COMMUNITY LANDFILL, DRAWING NO. 89368220, SHEET 220, PREPARED BY WALTER B. SATTERTHWAITE ASSOC., INC., DATED 10/21/1998.
 - PROVIDE LFG CONDENSATE KNOCKOUTS AT LEACHATE LATERAL AND HEADER LOCATIONS AT LOW POINTS IN GAS PIPING WHERE LFG CONDENSATE MAY ACCUMULATE.
 - INDIVIDUAL GAS WELLS, OR A GROUP OF GAS EXTRACTION WELLS, WILL BE PIPED THROUGH GAS LATERALS TO GAS EXTRACTION VALVE STATIONS.
 - PROPOSED GAS EXTRACTION WELLS WILL HAVE THE OPTION TO CONSTRUCT AND TIE-IN NEW LFG LATERAL PIPE AS WARRANTED FROM SLOPE RELEVELING OPERATIONS.
 - SOUTH AREA CAP FINAL GRADING OBTAINED FROM SOUTH AREA GRADING AND DRAINAGE PLAN, PREPARED FOR SECCRA COMMUNITY LANDFILL, DRAWING NO. 89368214, SHEET 1 OF 2, PREPARED BY WALTER B. SATTERTHWAITE ASSOCIATES, INC., DATED 1/14/2003.
 - THE EXACT LOCATIONS OF GAS WELL PIPING AND RELATED STRUCTURES APPROVED BY PREVIOUS PERMITS MAY BE SHIFTED TO ACCOMMODATE THE EXPANSION AREA CAPPING AND OPERATIONS AS SHOWN ON THIS PLAN.
 - THE PROPOSED LEACHATE COLLECTION CLEANOUT PIPE WILL TIE-IN AT ITS INTERSECTION WITH THE LANDFILL GAS HEADER PIPE AS SHOWN IN DETAIL 4, SHEET 272.
 - TYPE 2 CONDENSATE KNOCKOUTS MAY BE INSTALLED IN AREAS WHERE CONDITIONS WARRANT. REFER TO DETAIL 2, SHEET 511.
 - IN ADDITION TO EXTRACTION WELLS SHOWN, LANDFILL GAS COLLECTION TRENCHES MAY BE INSTALLED AS CONDITIONS WARRANT TO ENSURE EFFICIENT GAS COLLECTION AND ODOR CONTROL AS SHOWN ON DETAIL 6, SHEET 511.
 - ADDITIONAL WELLS MAY BE ADDED, AND LOCATIONS MAY CHANGE, TO ENSURE EFFICIENT GAS COLLECTION.
 - REFER TO SHEETS 510 AND 511 FOR DETAILS OF LEACHATE CLEAN-OUT TIE-IN TO GAS COLLECTION HEADER PIPE.



LANDFILL GAS SYSTEM PLAN

SECCRA COMMUNITY LANDFILL

LONDON GROVE TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

BRICKHOUSE ENVIRONMENTAL
 PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
 515 S. FRANKLIN STREET, WEST CHESTER, PA 19382
 PHONE: 610.692.5770 FAX: 610.692.8650
 WWW.BRICKHOUSE-ENVIRONMENTAL.COM

PROJECT NO: 89-0368.36

SHEET NO: 500

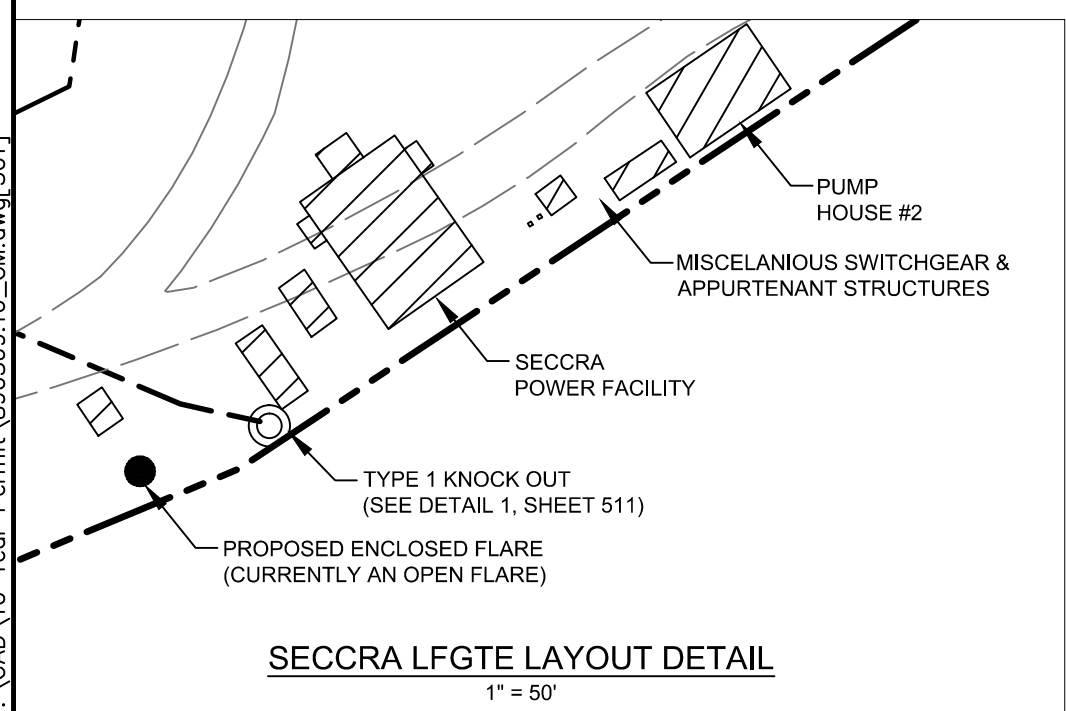
DATE: 07/07/2011

SCALE: 1" = 100'

500

Plotted: 3-08-16 02:48pm By: stave

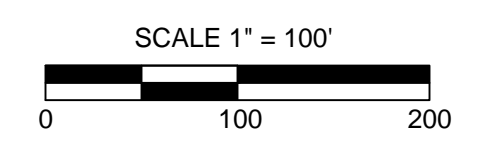
F:\CAD\10 Year Permit\890369.16_GM.dwg (5/01)



LEGEND

- PECO RIGHT OF WAY
- EXISTING SOLID WASTE PERMIT BOUNDARY
- OUTER PROPERTY LINE
- SECCRA OWNED PROPERTY
- STREAMS AND IMPONUMENTS
- EXISTING BUILDINGS
- LFG LATERAL (SEE DETAIL 4, SHEET 510)
- LFG HEADER (SEE DETAILS 3 & 5, SHEET 510)
- EXISTING GAS MONITORING PROBES (SEE DETAIL 4, SHEET 510)
- EXISTING AS-BUILT GAS WELL WITH ID (SEE DETAILS 1 & 1A, SHEET 510)
- PROPOSED GAS WELL
- LFG HEADER ISOLATION VALVE (SEE DETAIL 2, SHEET 510)
- 2' TOPOGRAPHIC CONTOUR (EXISTING)
- 10' TOPOGRAPHIC CONTOUR (EXISTING)
- LIMITS OF DISPOSAL

- NOTES:**
- EXISTING TOPOGRAPHY AND LOCATION OF SITE FEATURES OBTAINED FROM 2006 ANNUAL TOPOGRAPHIC SURVEY MAP.
 - WELLHEAD, VALVE AND FITTING LOCATIONS MAY BE ADJUSTED FOR FIELD CONDITIONS.
 - ALL PIPES ARE INSTALLED TO MAINTAIN MINIMUM 2% SLOPE.
 - AS-BUILT INFORMATION OBTAINED FROM AS-BUILT LANDFILL GAS MANAGEMENT SYSTEM LAYOUT PREPARED BY BLAZOSKY ASSOCIATES, INC. DATED 11/08/06

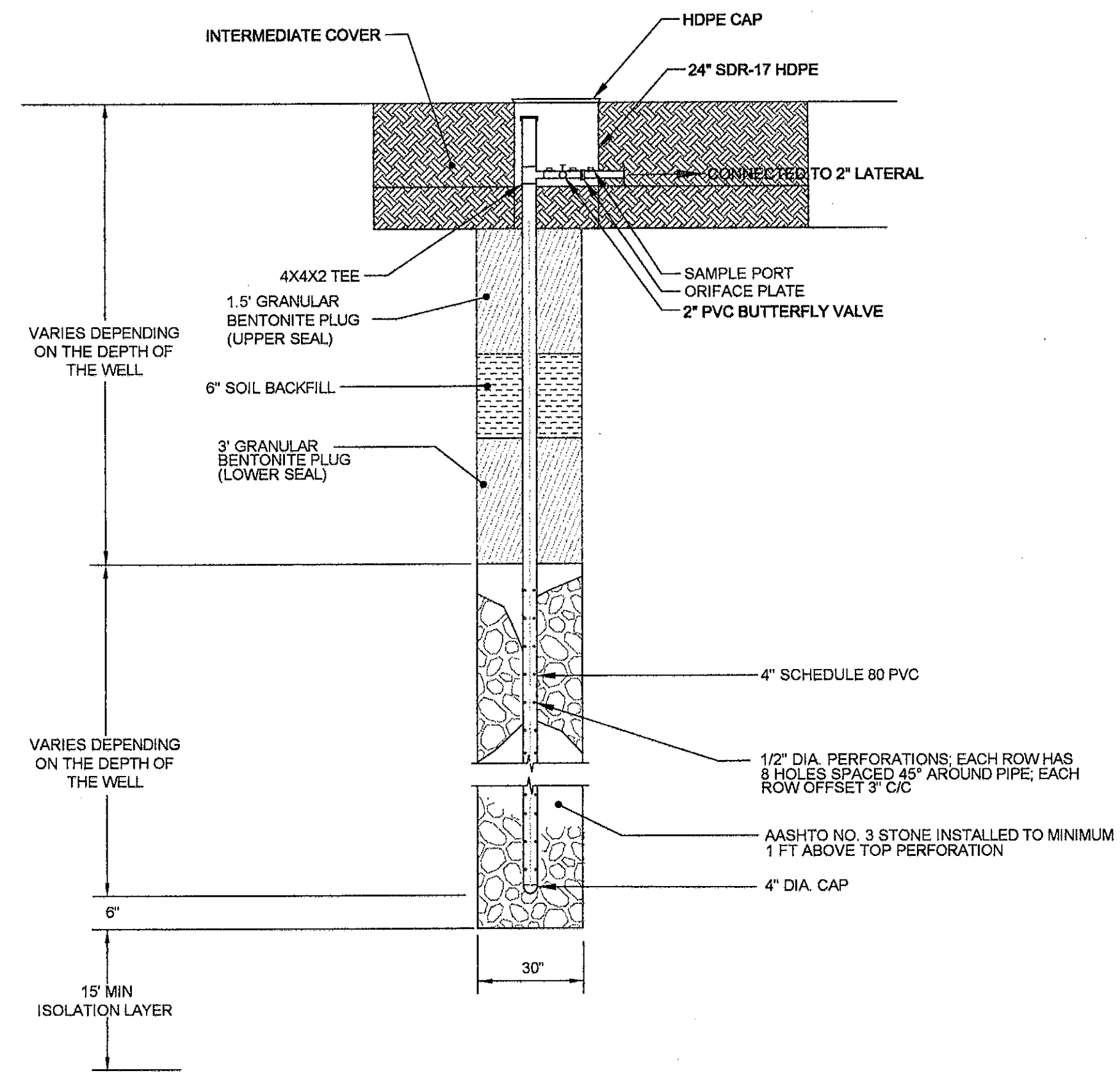


NOTE:
EXCEPT AS NOTED, NO CHANGES FROM PREVIOUSLY APPROVED PERMIT.

REVISION NO.	1.0
DATE	08/22/2008
DESIGNED BY	AMY
CHECKED BY	DWE
DESCRIPTION	SUB
PROJECT NO.	89-0369.16
PROJECT TITLE	LANDFILL GAS MANAGEMENT SYSTEM LAYOUT
CLIENT	SECCRA COMMUNITY LANDFILL
LONDON GROVE TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA	
BRICKHOUSE ENVIRONMENTAL MAIN OFFICE: 515 S. FRANKLIN STREET, WEST CHESTER, PA 19382 BRANCH OFFICE: 232 DUGAN ROAD, OWEGO, NY 13827 PHONE: 610.692.5770 FAX: 610.692.8650 www.brickhouse-environmental.com	
SEAL:	ALFRED M. YATES, P.E. PE061973 PROJECT NO: 89-0369.16 FILE NO: 890369.16_GM DATE: 08/22/2008 SHEET NO: 501

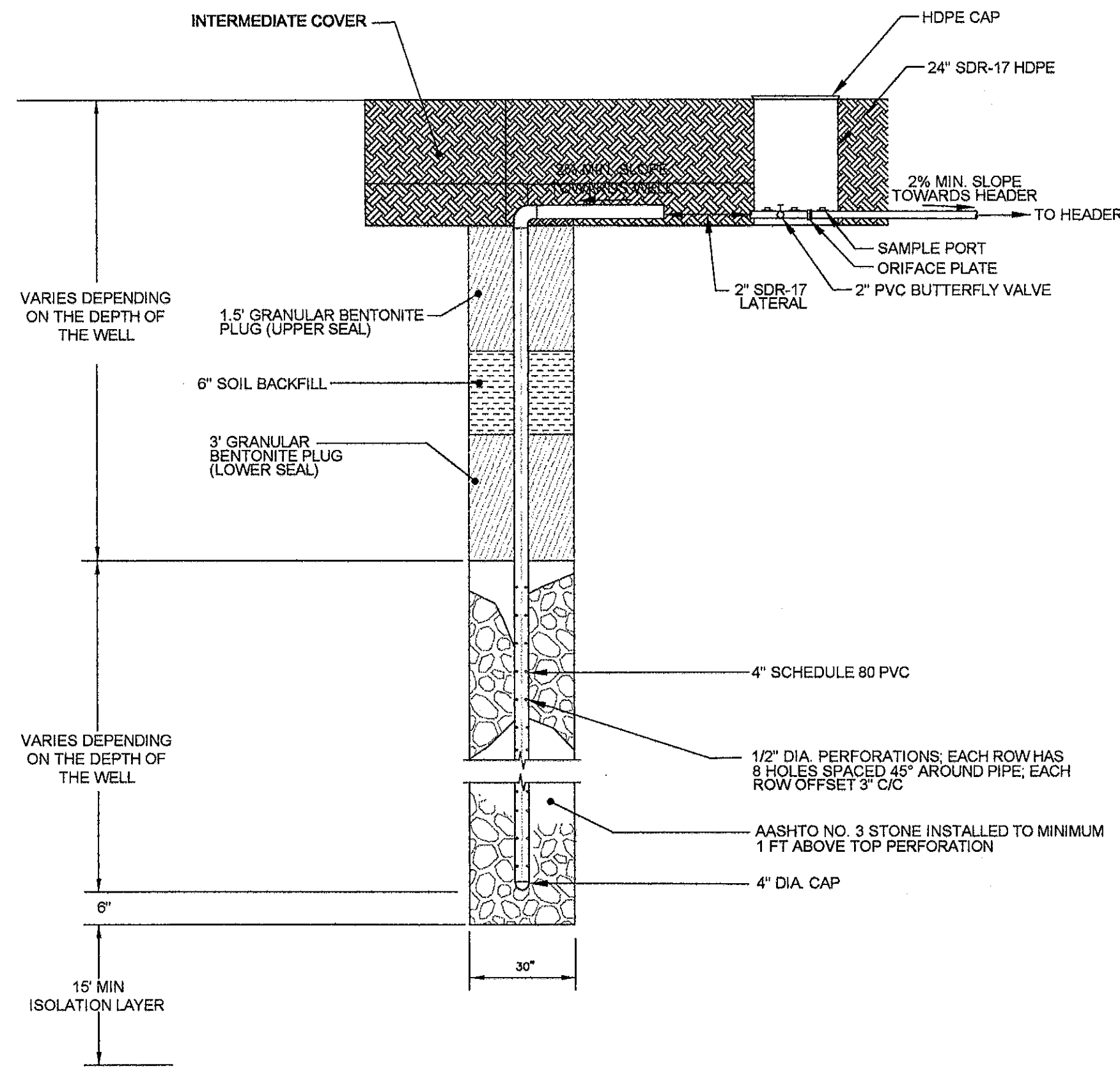
**APPENDIX C -
LFGCCS CONSTRUCTION DETAILS**

Plotted: 7-07-11 0:0:58am By: abum



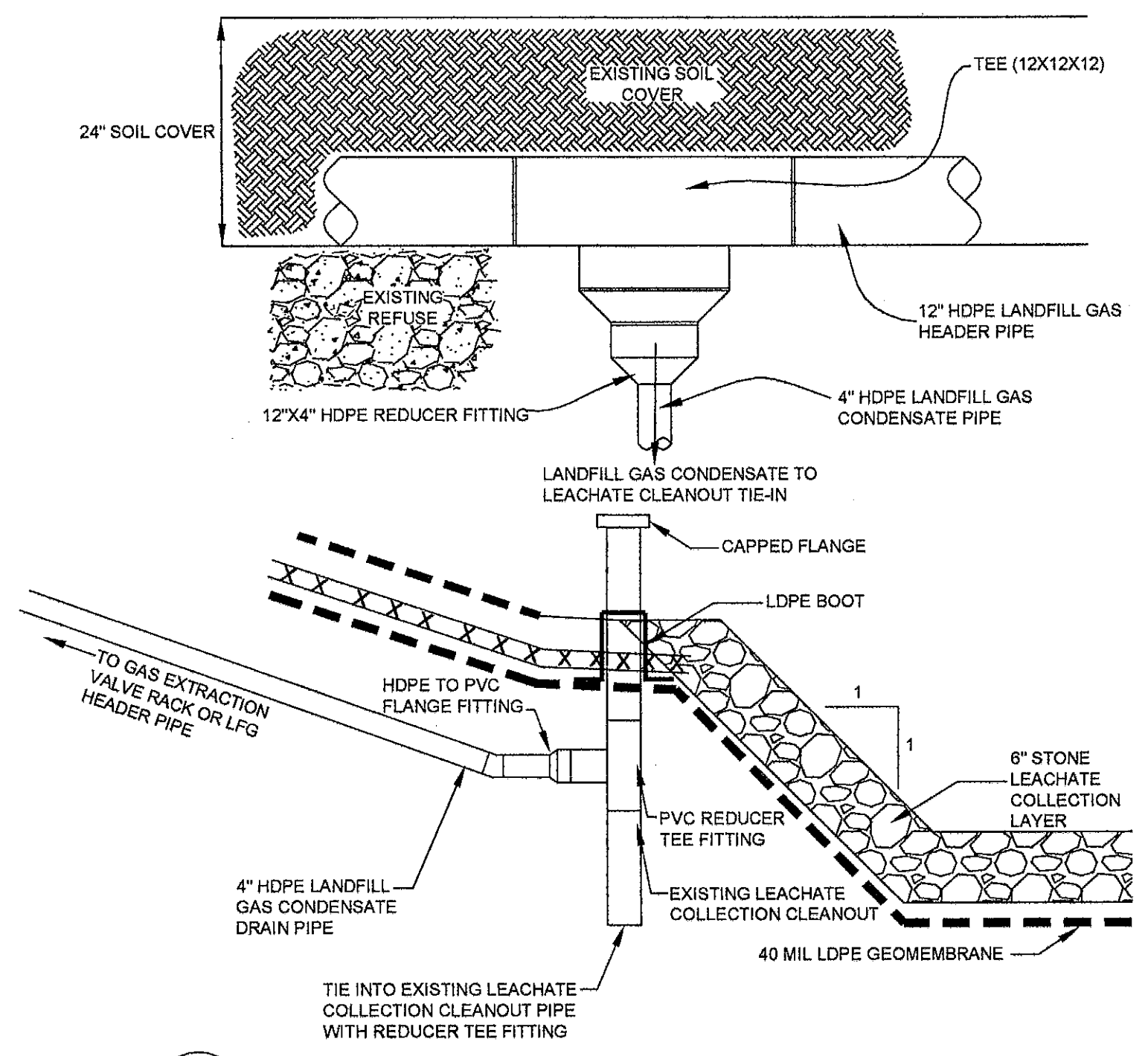
1 NEW GAS EXTRACTION WELL DETAIL
(FOR WELLS LOCATED AT FINAL INTERMEDIATE GRADES)

1
SHEET 501
NOT TO SCALE



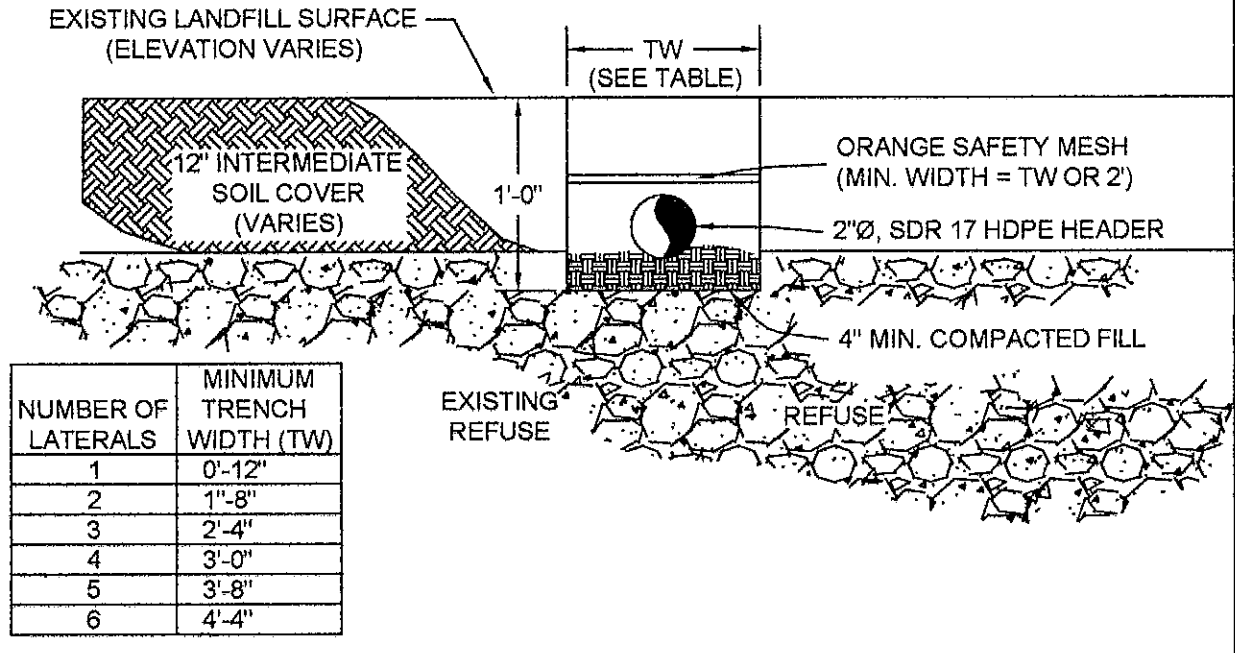
1A GAS EXTRACTION WELL DETAIL
(FOR WELLS LOCATED AT GRADES LOWER THAN FINAL INTERMEDIATE GRADES)

1A
SHEET 501
NOT TO SCALE

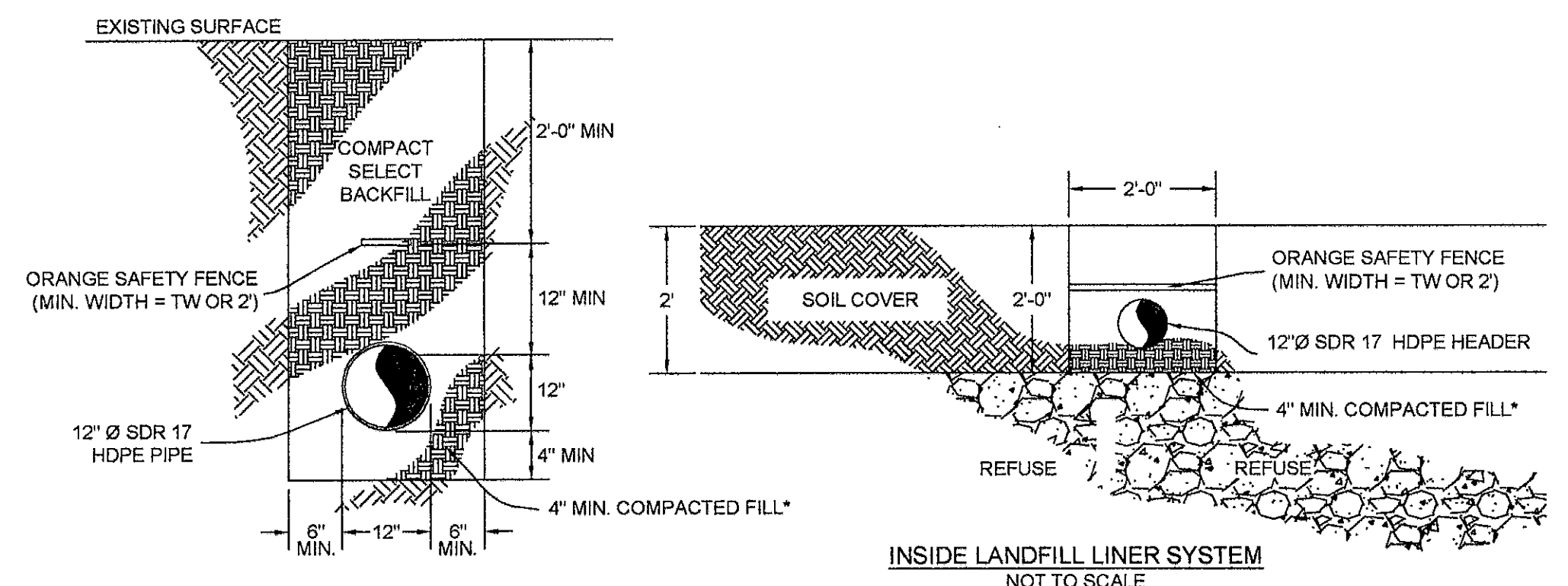


2 TIE-IN TO EXISTING LEACHATE CLEANOUTS
(TYPE 3 CONDENSATE KNOCKOUT)

2
SHEET 500
NOT TO SCALE

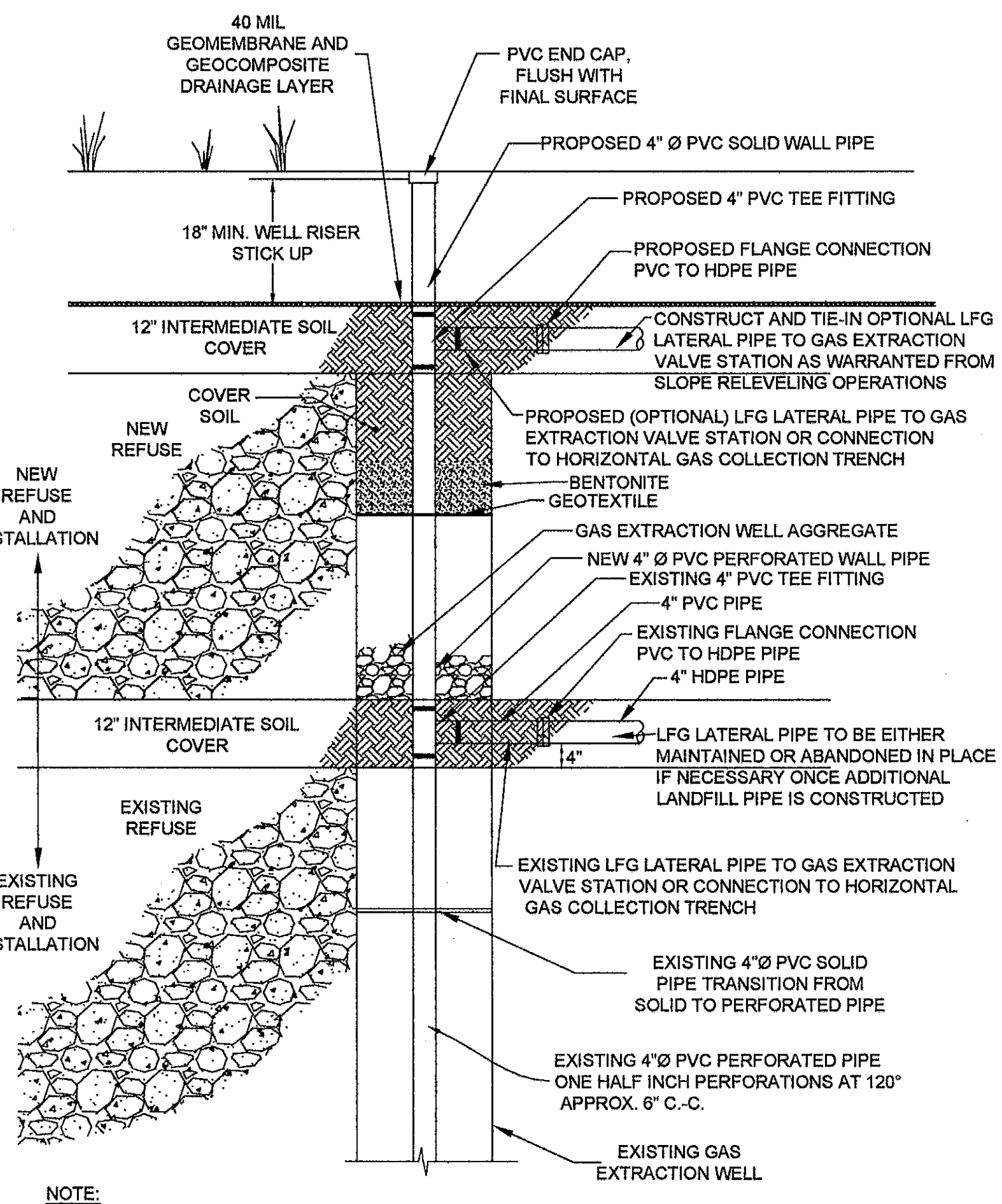


NOTE: 1. MULTIPLE LATERALS MAY BE RUN IN THE SAME TRENCH PROVIDED 4" OF COMPACTED STRUCTURAL FILL IS PLACED BETWEEN INDIVIDUAL LATERAL PIPES.
2. USE SAND WHERE REFUSE IS ENCOUNTERED AT THE BOTTOM OF THE TRENCH.



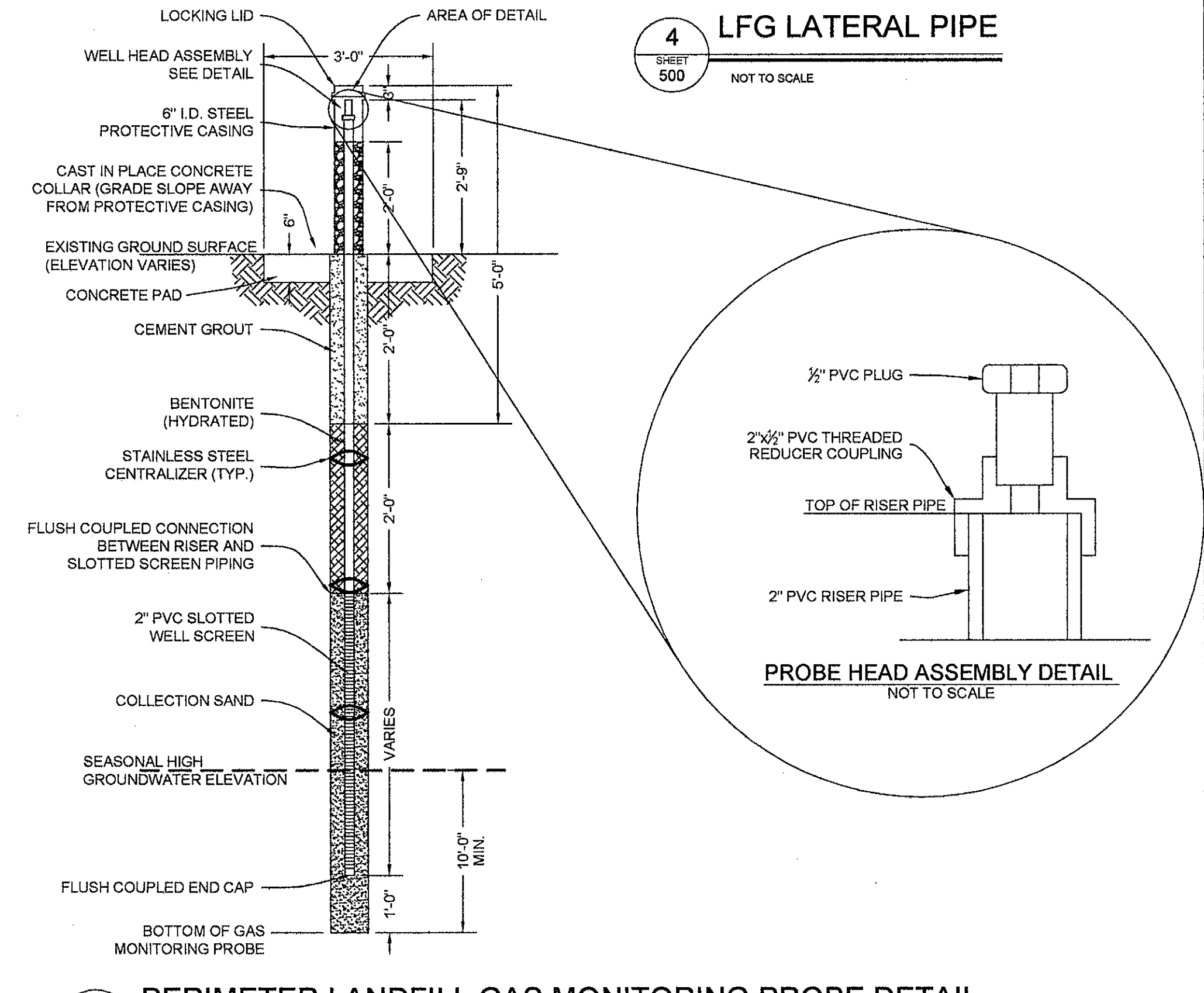
3 TYPICAL LFG HEADER PIPE INSTALLATION

3
SHEET 500
NOT TO SCALE



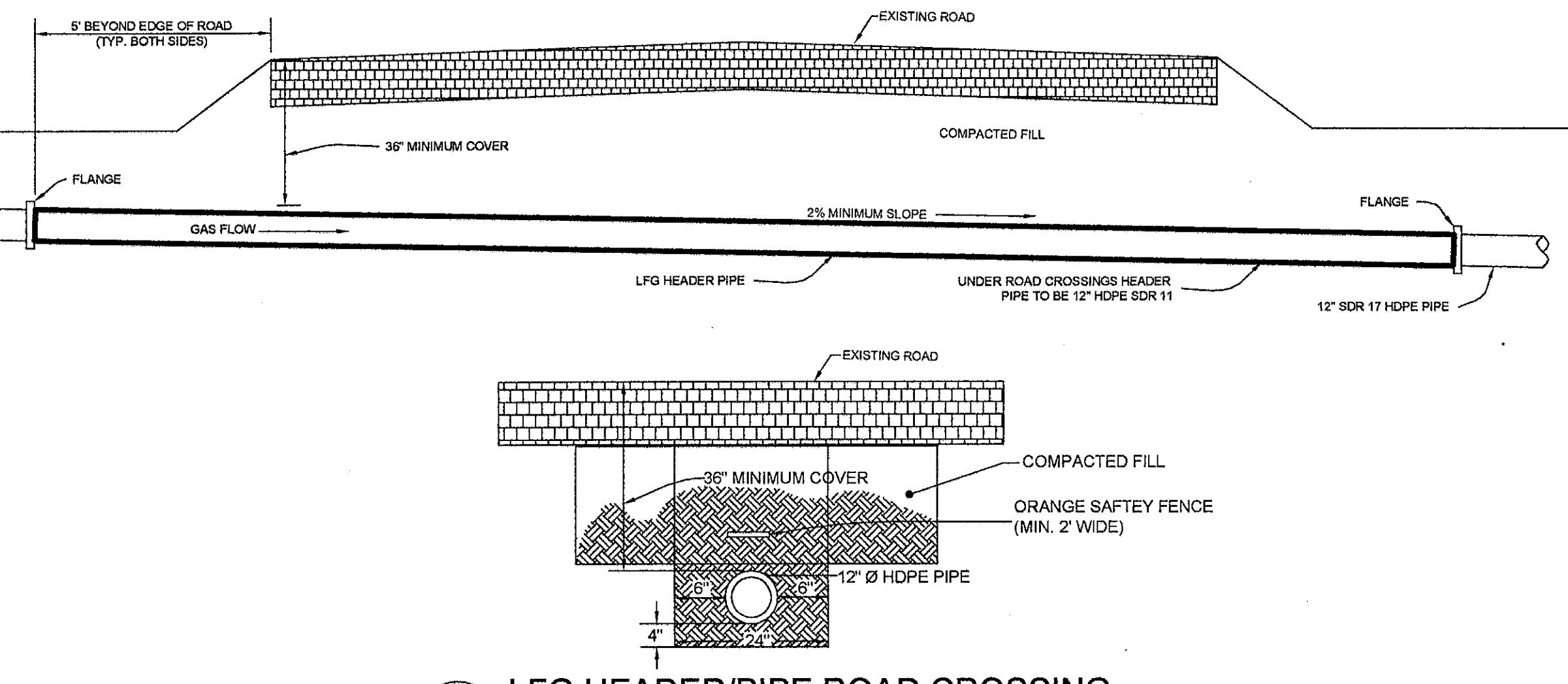
6 GAS EXTRACTION WELL - SLOPE RELEVELING AREA DETAIL

6
SHEET 500
NOT TO SCALE



7 PERIMETER LANDFILL GAS MONITORING PROBE DETAIL

7
SHEET 501
NOT TO SCALE



5 LFG HEADER/PIPE ROAD CROSSING

5
SHEET 500
NOT TO SCALE

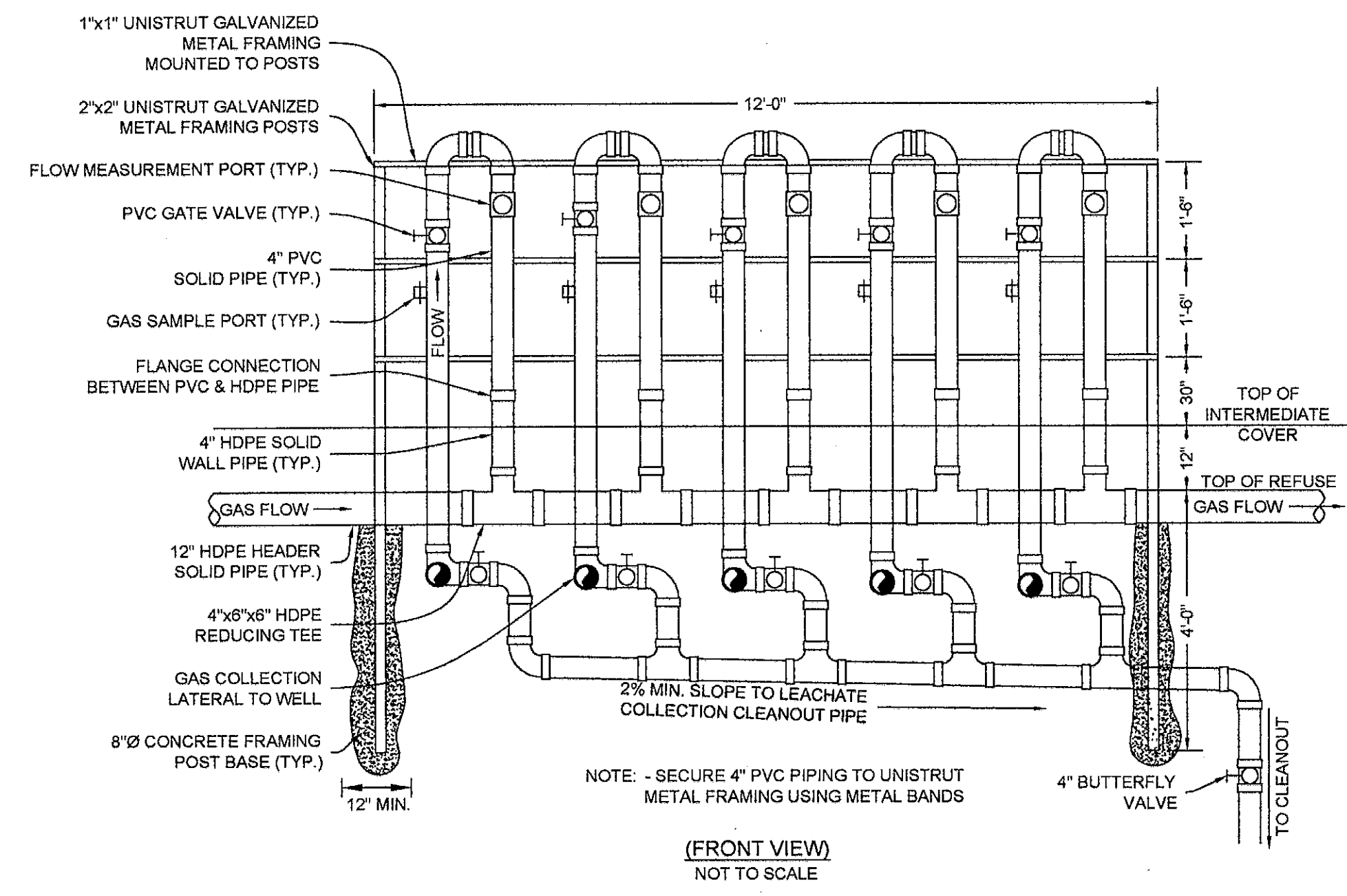
PROJECT NO.	89-0369.36
FILE NO.	SHEET 510-511
DATE	07/07/2011
SHEET NO.	510
CLIENT	SECCRA COMMUNITY LANDFILL
LOCATION	LONDON GROVE TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
DESIGNED BY	AMY
CHECKED BY	DWE
DATE	
SCALE	NTS
REVISIONS	
APP'D	

BRICKHOUSE ENVIRONMENTAL
PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
515 S. FRANKLIN STREET, WEST CHESTER, PA 19382
PHONE: 610.692.5770 FAX: 610.692.8650
WWW.BRICKHOUSE-ENVIRONMENTAL.COM

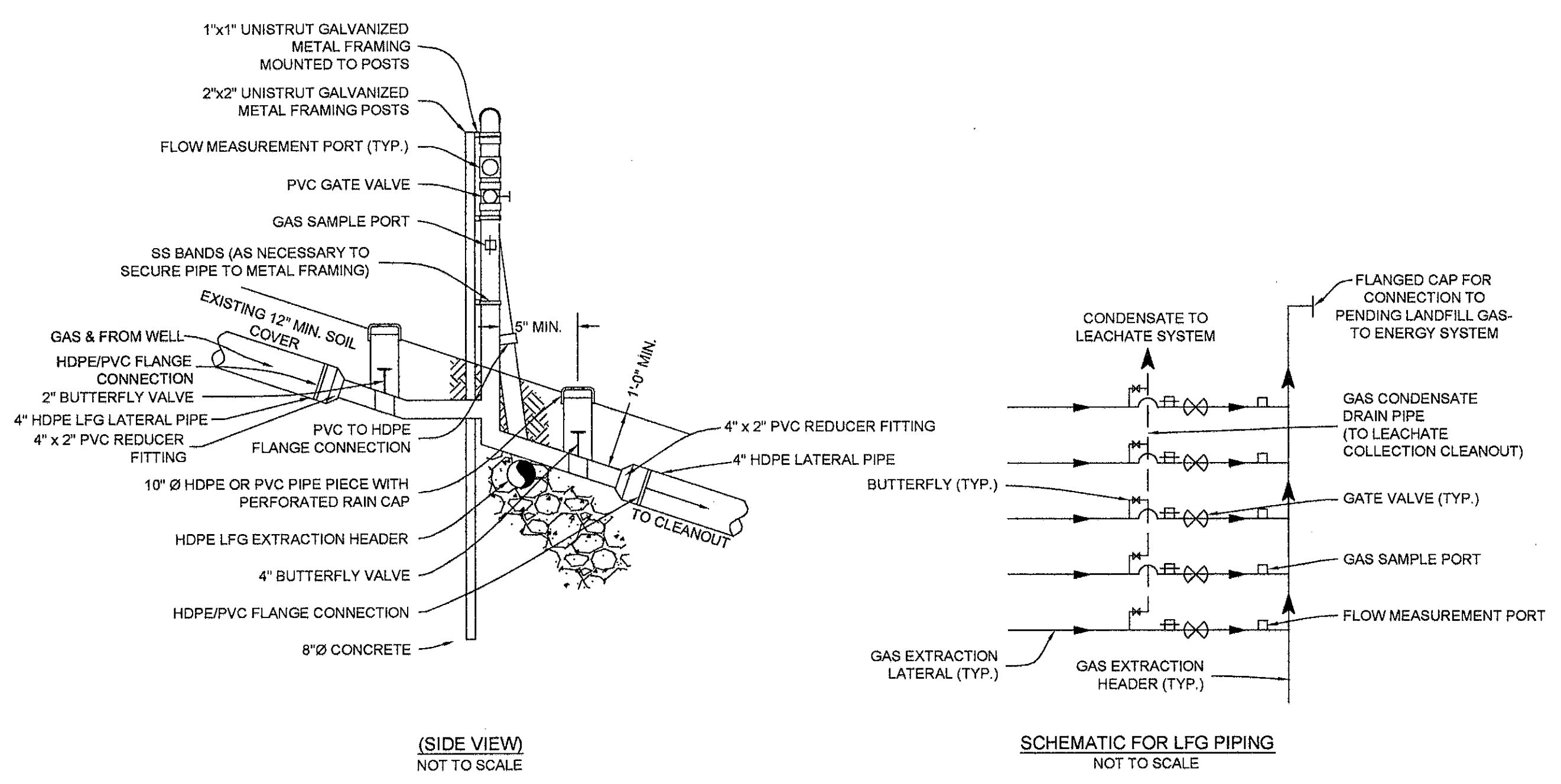
REGISTERED PROFESSIONAL
ALFRED W. YATES
ENGINEER
No. 081975
ALFRED W. YATES, P.E.
PE081975

Plotted: 7-07-11 @ 0:56am By: aburn

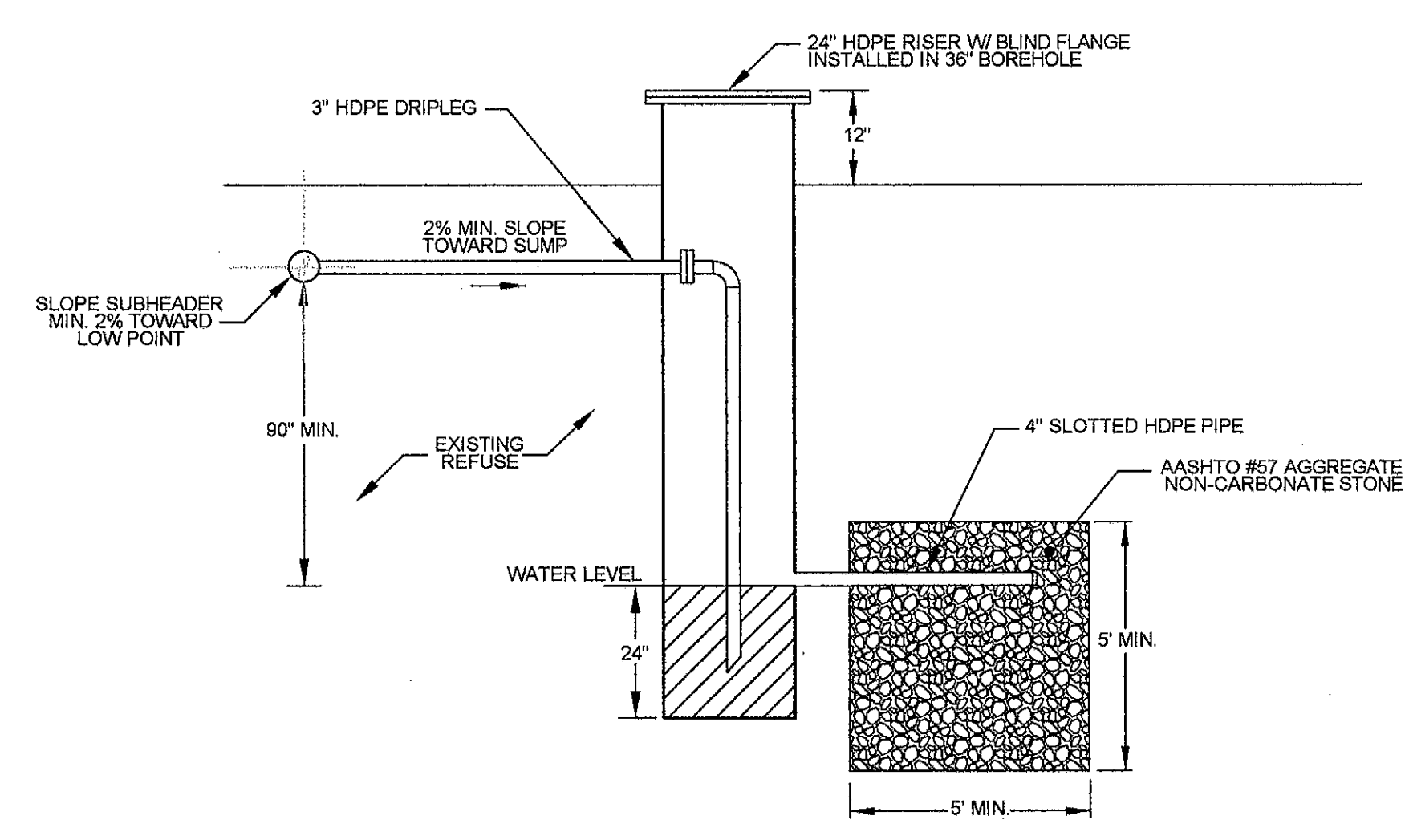
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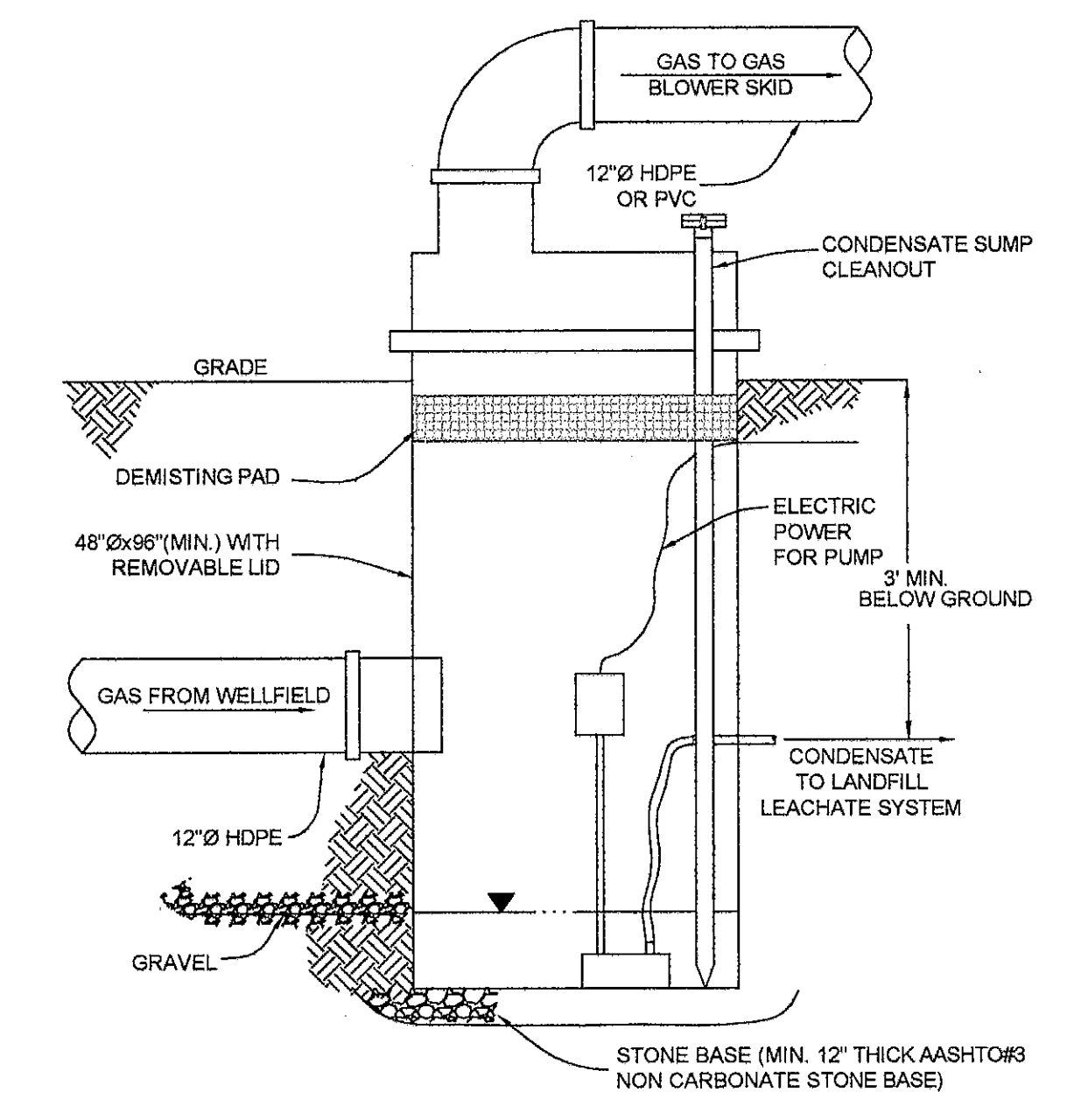
1 GAS EXTRACTION VALVE STATION DETAIL
SHEET 500 NOT TO SCALE



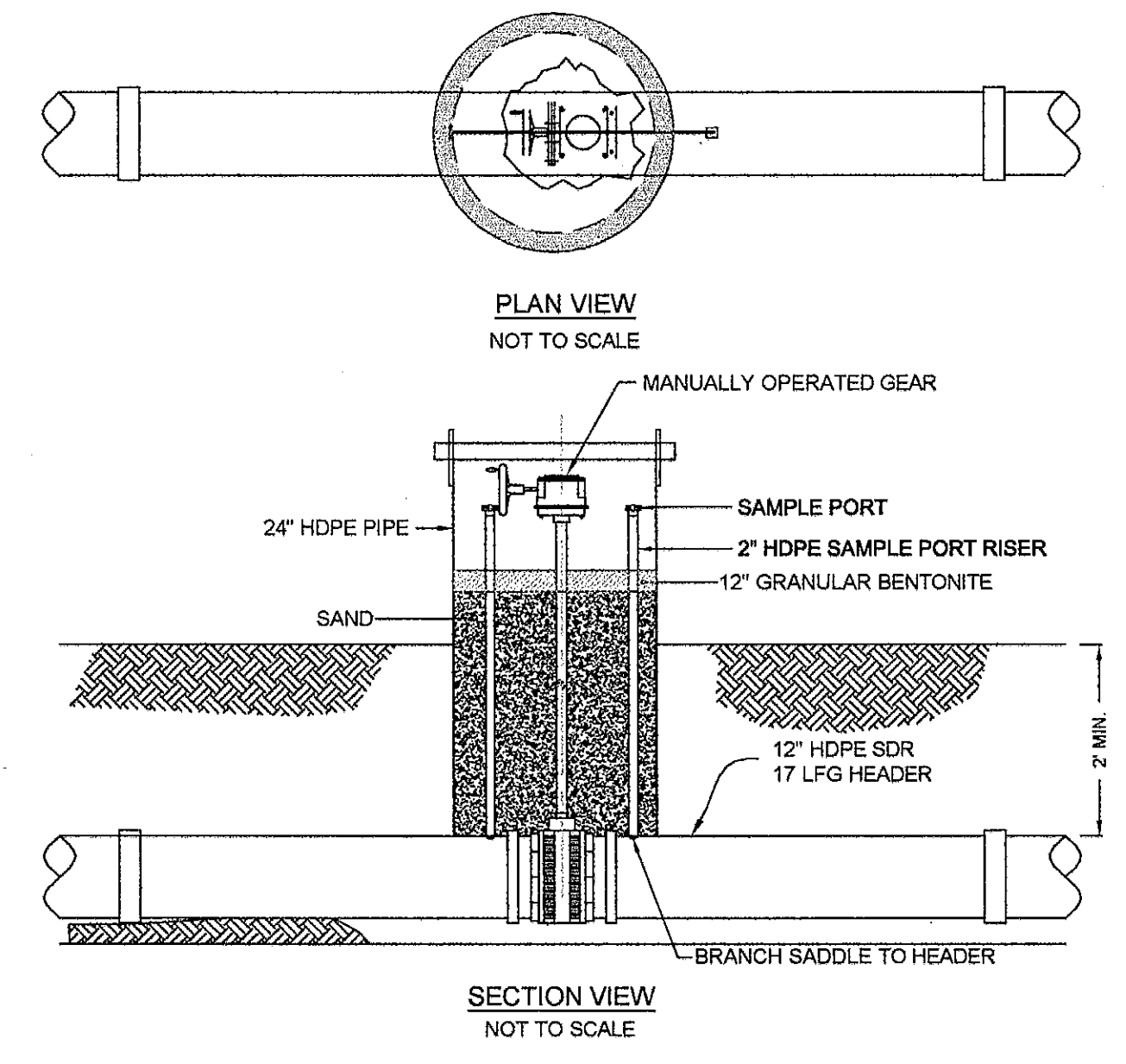
2 TYPE 2 CONDENSATE KNOCKOUT DETAIL
SHEET 500 NOT TO SCALE



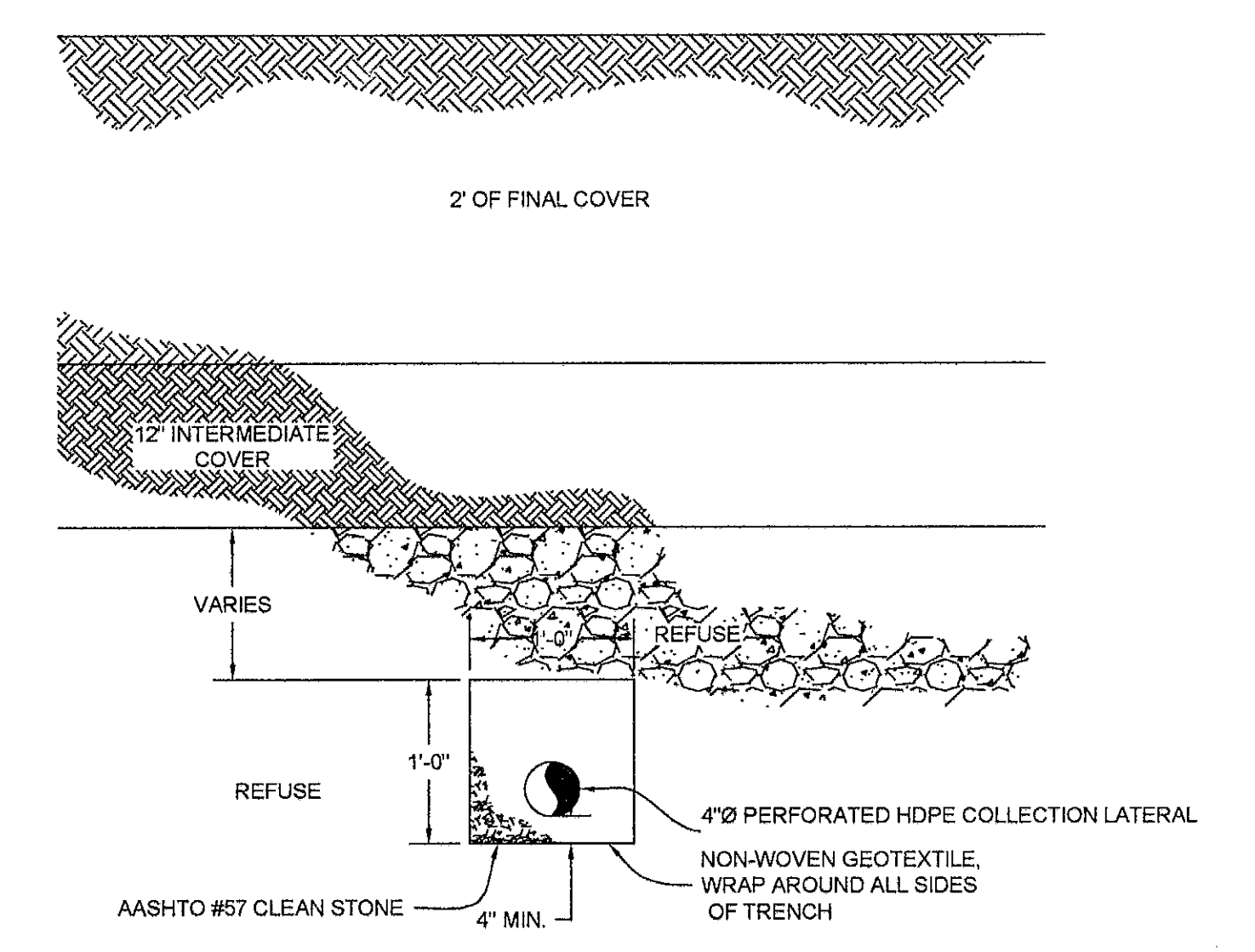
3 SCHEMATIC TYPE 1 CONDENSATE KNOCK-OUT POT
SHEET 500 NOT TO SCALE



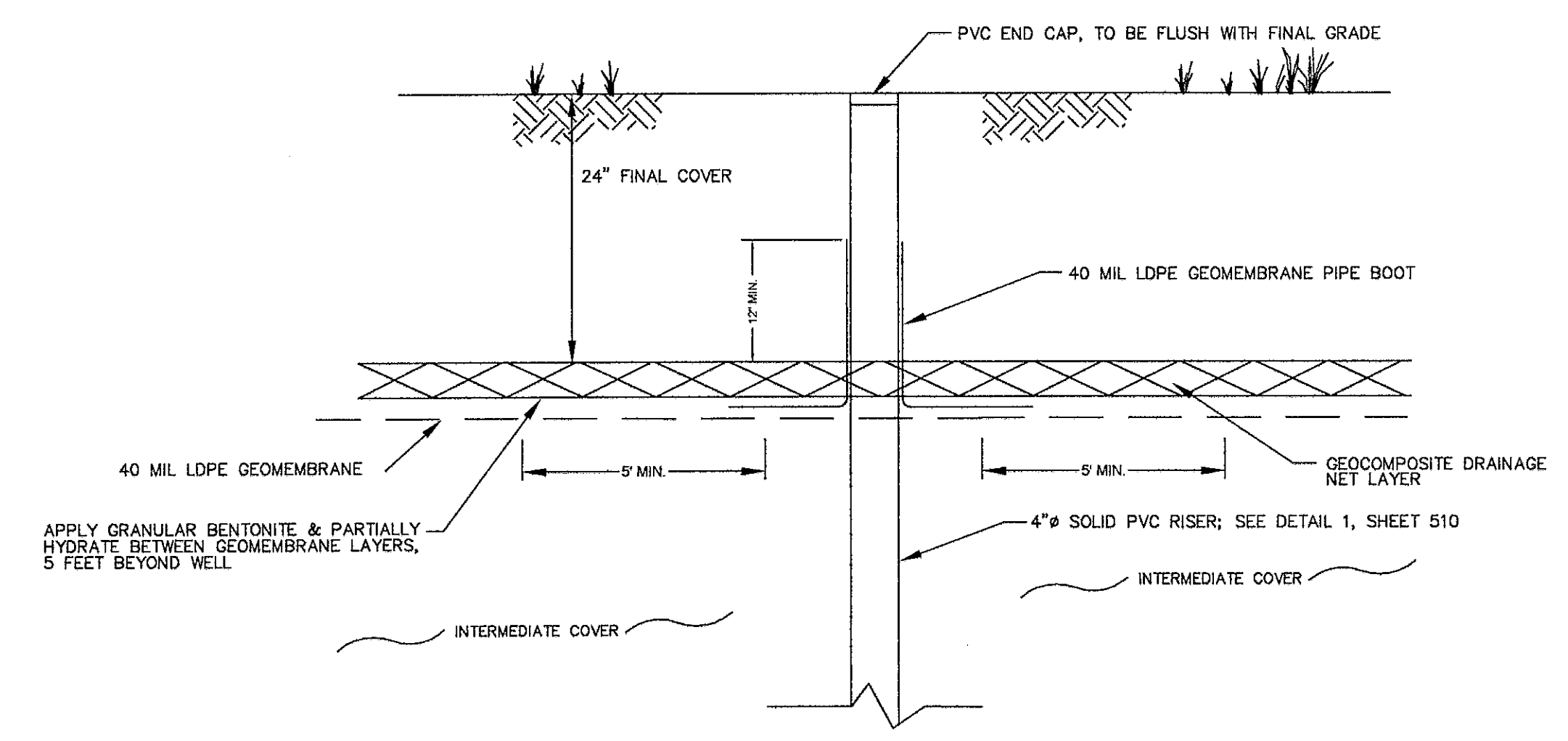
4 LINER PENETRATION DETAIL
SHEET 500 NOT TO SCALE



5 LFG COLLECTION TRENCH
SHEET 500 NOT TO SCALE



6 LFG HEADER VALVE
SHEET 500 NOT TO SCALE



7 LFG COLLECTION TRENCH
SHEET 500 NOT TO SCALE

NOTE 1: HORIZONTAL GAS COLLECTION TRENCHES WILL EXTEND FOR A MAXIMUM OF 300 FEET FROM CONNECTION TO GAS EXTRACTION WELLS.
 NOTE 2: COLLECTION TRENCH MAY BE INSTALLED AS CONDITIONS WARRANT TO ENSURE EFFICIENT GAS COLLECTION, ODOR CONTROL, AND CONDENSATE DRAINAGE.

PROJECT NO.	89-0369.36
FILE NO.	SHEET 510-511
DATE	07/07/2011
SHEET NO.	511
CLIENT	SECCRA COMMUNITY LANDFILL
LOCATION	LONDON GROVE TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA
DESIGNER	AMY NTS
CHECKED BY	DWE
APPROVED	

BRICKHOUSE ENVIRONMENTAL
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ALFRED M. YATES
 REGISTERED PROFESSIONAL ENGINEER
 No. 061973
 PENNSYLVANIA
 ALFRED M. YATES, P.E.
 PE061973

**APPENDIX D -
SURFACE MONITORING SPECIFICATIONS**

Plotted: 7-07-11 @ 10:57am By: abum

L:\893663_36\Phase 2 Resubmission\PADEP RTG June 2011\dogal\Sheet 501.dwg(501)

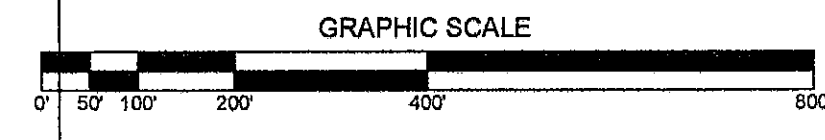


LEGEND

- PECO RIGHT OF WAY
- - - EXISTING SOLID WASTE PERMIT BOUNDARY
- OUTER PROPERTY LINE
- - - SECCRA OWNED PROPERTY
- - - STREAMS AND IMPOUNDMENTS
- - - EXISTING BUILDINGS
- - - PROPOSED SOLID WASTE PERMIT BOUNDARY
- ⊕ PROPOSED GAS MONITORING PROBE
- ⊕ GAS MONITORING PROBE PROPOSED IN PENDING LANDFILL GAS-TO-ENERGY APPLICATION BEFORE PADEP (TO BE ABANDONED)
- ⊕ GAS MONITORING PROBE PROPOSED IN PENDING LANDFILL GAS-TO-ENERGY APPLICATION (PENDING)
- 2' TOPOGRAPHIC CONTOUR (EXISTING)
- 10' TOPOGRAPHIC CONTOUR (EXISTING)
- - - EDGE OF PROPOSED LANDFILL CAP
- - - FILL LIMIT BOUNDARY (EXISTING)

NOTES:

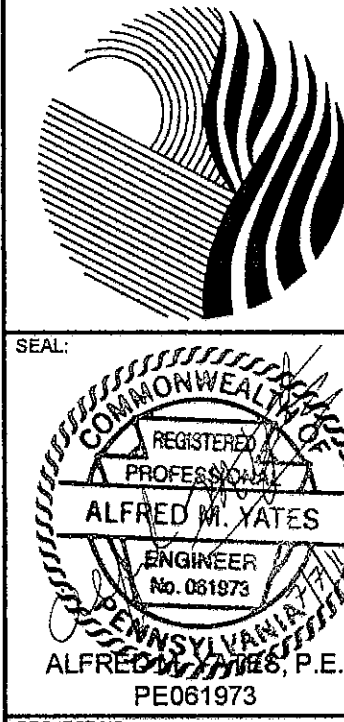
1. TOPOGRAPHY AND SITE FEATURES OBTAINED FROM 2005 ANNUAL TOPOGRAPHIC SURVEY FOR THE SOUTHEASTERN CHESTER COUNTY REFUSE AUTHORITY, FROM LAKE, ROEDER, HILLARD & ASSOCIATES DATED JANUARY 7, 2005 AND REVISED AUGUST 2, 2005.
2. NUMBER AND LOCATION OF GAS MONITORING PROBES MAY BE REVISED BASED UPON FIELD CONDITIONS.
3. THE CHESTER COUNTY HEALTH DEPARTMENT MUST BE NOTIFIED IN WRITING WITHIN 30 DAYS OF WELL ABANDONMENT. A WELL IN UNCONSOLIDATED DEPOSITS SHALL BE FILLED WITH NEAT CEMENT GROUT OR CONCRETE GROUT. THE SECTION OF A WELL IN CONSOLIDATED ROCK SHALL BE FILLED WITH NEAT CEMENT GROUT, CONCRETE GROUT, OR SAND.
4. THE FOUR GAS MONITORING PROBES WITHIN THE WILLA EXPANSION AREA FOOTPRINT, THAT ARE PROPOSED WITHIN THE PENDING LANDFILL GAS-TO-ENERGY PADEP APPLICATION, WILL BE ABANDONED PRIOR TO CONSTRUCTION OF THE LANDFILL EXPANSION. THESE PROBES ARE IDENTIFIED ON THIS PLAN.



PROJECT NO.	89-0369.36
FILE NO.	SHEET 501
DATE	07/07/2011
SHEET NO.	501
DESIGNED BY	AMY
CHECKED BY	DWE
DATE	
DESCRIPTION	
SCALE	1" = 200'
REVISION NO.	

GAS MONITORING PROBE LOCATIONS
SECCRA COMMUNITY LANDFILL
 LONDON GROVE TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

BRICKHOUSE ENVIRONMENTAL
 PROFESSIONAL GEOLOGISTS, SCIENTISTS AND ENGINEERS
 515 S. FRANKLIN STREET, WEST CHESTER, PA 19382
 PHONE: 610.692.5770 FAX: 610.692.8650
 WWW.BRICKHOUSE-ENVIRONMENTAL.COM

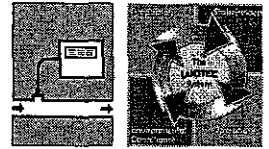


PROJECT NO: 89-0369.36
 FILE NO: SHEET 501
 DATE: 07/07/2011
 SHEET NO: 501



GEM™500

PORTABLE GAS ANALYZER
INSTRUMENTATION



The GEM™500 Integrates Nine Landfill Gas Field Instruments with On-Board Computer

The **GEM™500** was specifically designed by **LANDTEC** for use on landfills to monitor landfill gas (LFG) migration control systems, gas extraction systems, flares, migration probes, LEL levels, subsurface fires, and more.

The lightweight, portable unit integrates nine field instruments with an on-board computer. The versatile monitor provides landfill technicians with an array of analysis and computation functions. The results can be stored, printed and later downloaded to a personal computer to provide error-free data management.

Multi-Functional Features

The **GEM™500** automatically samples and analyzes the methane, carbon dioxide and oxygen content of landfill gas. The easy to read LCD screen shows the results as percentages of CH₄, CO₂, O₂, and "balance" gas (typically nitrogen). The **GEM™500** also calculates and displays gas flow rate, Btu content, temperature, pressures and LEL (Lower Explosive Limit).

In addition, the user can recall prior data stored at up to 500 monitoring points for contrast with current data. Alarms can easily be set for Methane and Oxygen.

The **GEM™500** can automatically calculate gas flow rates, adjusted to standard temperature and pressure (STP). The results can be displayed in either Imperial (USA) or SI (metric) units.

LANDTEC's versatile **GEM™500** can be used with Orifice plates and Pitot tubes, but most effectively on **LANDTEC's Accu-Flo wellheads**, which incorporates a built-in gas conditioning device and quick-connect sample ports.

The **Accu-Flo wellhead** and **GEM™500** were designed to work together to expedite the time required to accurately sample and adjust LFG wellheads.

Rugged, User-Friendly Design

The **GEM™500** is an all-weather, self-contained portable monitor which uses a self-compensating infrared gas analyzer, rechargeable power supply for all day use, an internal sample pump capable of drawing a gas sample at up to 80" vacuum. WC.

An easy to follow, on-screen menu guides the operator through the sampling process which can be completed, in less than a minute. I.D. codes allow the user to store and recall prior

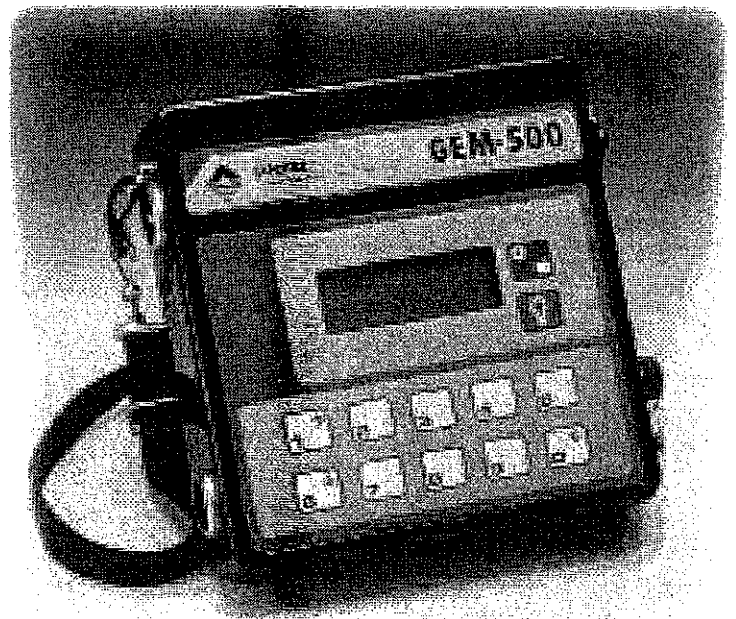
measurements for each monitoring point. Preset maintenance codes can be used to note field work required. The stored data can be later retrieved for viewing or downloaded to a personal computer for use in a database.

Time Saving Conveniences

Users will readily appreciate the built-in, time-saving conveniences provided by the **GEM™500** instead of fumbling with data sheets, temperature gauges, flow meters, methane/oxygen/carbon dioxide analyzers, pressure gauges, calculators and other field equipment, the **GEM™500** provides it all, and more, in an easy to carry light-weight case.

LANDTEC's Family of Landfill Products

The **GEM™500** is part of a family of products developed by **LANDTEC** for the solid waste industry. These products are based on over a decade of operating and regulatory experience at multiple client sites along with years of field proven reliability.



LANDTEC's GEM™ 500 Analyzer Provides a Convenient Link Between Your Landfill Data and Office Computer

Key GEM™500 Features Multi-Functional Analyzer ... provides automatic sampling and analysis of gas composition (% by volume CH₄ (100% & LEL), CO₂, O₂ and Balance Gas, temperatures, pressures. Also calculates gas flow rates as well as Btu content.

Diverse Field Applications ... monitors migration control systems, gas extraction systems, flares, migration probes, temperatures, and more.

Light-Weight Compact Size ... is easy to carry. Weighs less than five pounds.

Quick Analysis ... completes sampling and displays gas analysis and flow results in usually less than one minute.

Infrared Gas Analyzer ... provides high-tech accurate measurements of methane (CH₄), and carbon dioxide (CO₂).

Reference Beam ... provided by infrared analyzer for self-compensation.

Durable Oxygen Sensor ... provided by the galvanic cell principle, unaffected by other gases such as CH₄, CO₂ or H₂S.

User Friendly On-Screen Menu ... guides the user step-by-step through all functions and options available.

PC Data Downloading ... using RS232 interface and DataField CS software (Release 3.0 or later).

Data Storage/Retrieval ... stores prior measurements taken for each monitoring point, over 500 monitoring points total.

Prior Data Recall ... allows user to recall prior data for each monitoring point.

Methane Analysis ... displayed as either %CH₄ by volume or LEL (Lower Explosive Limit).

Durable Construction ... built of strong, durable plastic material suitable for harsh landfill environments. Sealed tactile keyboard.

All Weather Use ... designed to operate in hot/wet weather extremes from 32°F to 104°F. Weather tight case.

Built-In Adjustable Alarms ... allows user to set alarm limits for CH₄ and O₂.

Rechargeable Batteries ... provides all day field use

Battery Check ... monitors battery life remaining.

Monitoring Point I.D. Codes ... provides alphanumeric identification of monitoring points for data storage and recall.

Maintenance Codes ... allows user to note typical maintenance needs using eight preset or eight user defined maintenance codes.

Date/Time Stamp ... recorded for all stored data.

Imperial vs. SI Units ... displays measurements in Imperial (USA) or SI (metric) units.

Interfaces to DataField Management Software ... which provides statistical analysis and reporting of LFG data.

Multiple Flow Meter Analysis ... supported to calculate gas flow rates from Accu-Flo Wellheads, orifice plates and pitot tubes.

Gold Warranty Service Program ... ensures that your analyzer is properly maintained for optimum performance. (Optional).

GEM™500 Packs Nine LFG Instruments and Computer into Five Pound Case

The highly accurate and reliable GEM™500 provides field technicians with the most commonly used LFG instrumentation, linked to an on-board computer for quick data calculations, storage and retrieval - all within a compact, all-weather case the size of a dictionary. The GEM™500 was designed by LANDTEC to support the ever-increasing instrumentation requirements of LFG monitoring. The multi-functional unit expedites the analysis and storage of field data. Software allows easy downloading of stored data to a personal computer for further analysis and reporting.

Couple the GEM™500 with a LANDTEC Accu-Flo landfill gas wellhead, and field monitoring becomes more accurate and more efficient. With the GEM™500 and Accu-Flo combination, you can forget about carrying analyzers for Methane, Carbon Dioxide and oxygen. You can also eliminate handling high and low pressure and temperature sensors, Pitot tube, Orifice plate or other cumbersome flow meters, vacuum pump, flow calculator and data sheets.

Additional Information

Detailed product specifications and installation drawings are available for all LANDTEC products including Accu-Flo Wellheads, LAPS™ Automated Pumping Station, the KO line of Condensate Knockouts, and Wellbore Seals. LANDTEC also has standard designs available for electrically driven LAPS™ and KO's, as well as centrifugal or submersible pumps. Brochures are available for our full line of landfill gas instrumentation including GEM™2000 and GEM™500 as well as DataField, the ultimate landfill gas data management software, available on the [web. www.ces-landtec.com](http://www.ces-landtec.com)

GEM™500 TYPICAL ACCURACY

<u>CONCENTRATION</u>	<u>%CH₄ by VOLUME</u>	<u>%CO₂ by VOLUME</u>	<u>%O₂ by VOLUME</u>
5% (LEL CH ₄)	± 0.3%	± 0.3%	± 1.0%
Full Scale	± 3.0% (70%)	± 3.0% (40%)	± 1.0% (25%)

SPECIFICATIONS

	<u>SENSOR RANGE</u>	<u>RESOLUTION</u>
Methane- CH ₄	0-70%	0.1%
Carbon Dioxide- CO ₂	0-40%	0.1%
Oxygen- O ₂	0-25%	0.1%
Pressures (Diff)	0-10" W.C.	0.01" W.C.
(Static)	0-100" W.C.	0.1" W.C.

- Pump Flow Rate - 500 cc/min. @ nominal flow, 250cc/min @ 80" W.C.
- Vacuum - Up to 80" W.C.



An involved and contributing member of the Solid Waste Association of America

Western Sales Office
(800) 821-0496 • Fax (909) 825-0591

Eastern Sales Office
(800) 390-7745 • Fax (301) 391-6546



**APPENDIX E -
HIGHER OPERATING VALUE (HOV) GUIDANCE DOCUMENTS**

SECCRA

Alternative Landfill HOV, and Temporary and Permanent Well Decommission Gas Management Plan Provisions

If SECCRA is unable to bring any of its landfill gas wells into compliance with the operating specifications of 40 CFR Part 60, Subpart WWW, §60.753 due to positive gas pressure, high operating temperatures, or high nitrogen or oxygen levels within the 15 calendar days specified in Subpart WWW, SECCRA will notify the PADEP SE Regional Office within 30 days of such determination. The purpose of the notification will be to inform PADEP that SECCRA will begin collecting information to determine if corrective action is possible, or if higher operating values (HOVs) are appropriate as they are not causing excess emissions and are not detrimental to the normal operation of the landfill gas collection system. If it is determined that an expansion of the well field is necessary, or if corrective actions are appropriate for proper operation of the gas collection system, then a notification of such determination will be made to the PADEP SE Regional Office. Additionally, if there is a proposed correction or an expansion of the well field that cannot be completed within 120 days of the initial notification to PADEP, then an alternative timeline for compliance or a request for additional time in order to determine if HOVs are needed will be submitted to PADEP.

Once corrective actions have been completed and operating values have returned to compliance levels, or once it is determined that HOVs will be necessary and are representative of normal operation for the particular well at the landfill, SECCRA will provide such notification to the PADEP SE Regional Office within 120 days of the initial notification made to PADEP. The notification to PADEP will provide information as to what measures were taken to resolve the high values, OR will provide a justification for HOVs that will be determined through additional measurements. Such a demonstration for HOVs will show that the HOVs are still representative of good operation of the gas collection system and are not causing a detrimental situation for the good operation of the landfill gas collection system.

Higher Operating Values ("HOV")

For wellhead positive pressure readings and temperature, nitrogen, or oxygen readings above the values specified in 40 CFR §60.753 of Subpart WWW, SECCRA will provide notification to the PADEP SE Regional Office within 30 days if corrective actions were not able to return these measured levels to those specified in Subpart WWW. A request for HOVs for temperature, nitrogen, or oxygen will be submitted within 120 days of the initial notification of exceedance(s). All efforts for corrective actions will have been taken prior to requesting an HOV. Those efforts would include, but are not limited to, adjusting vacuum, making repairs or improvements to cover soils, adding pumps to remove leachate from extraction wells, and fixing loose connections in the gas collection and control system.

Should HOVs be necessary, a request for an HOV will be provided to PADEP with sufficient information to allow PADEP to make a determination. This information will include:

1. The date the exceedance was initially detected.
2. Sufficient collected data for the well in question for whatever values are out of specification (e.g., temperature, % methane, % oxygen, % carbon dioxide, % nitrogen, and pressure).
3. A summary of historical data for the well in question. This data will include a description of the well, the cover in the area, the age and type of waste, leachate level in the well, and other pertinent information for the well in question.
4. A narrative of corrective actions that have been taken to correct the exceedance.
5. A reason why an HOV is being requested.
6. A narrative supporting the position that the elevated parameter does not increase the risk of a fire or significantly inhibit anaerobic decomposition.
7. A suggested HOV.

Temporary and Permanent Well Decommissions

If landfill gas collection wells are to be temporarily or permanently decommissioned, a request will be submitted to PADEP for approval prior to decommissioning of the well. Reasons for requesting well decommission may include poor gas quality, reduced gas generation, influence from a well in close proximity, collapsed well, water in well, etc. The following information will be included with the request:

1. A description of the well to include depth of well, type of well, the cover in the area, the age and type of waste, leachate level in well, and other pertinent information.
2. Six (6) months of the following data for the well in question: temperature, % methane, % oxygen, % nitrogen, % carbon dioxide, flow, and pressure.
3. Results of the most recent surface monitoring conducted in the area around the well.
4. Determination as to whether or not the subject well is within the radius of influence of adjacent wells.
5. A justification as to why the requested action will improve the overall efficiency of the gas collection system.

Landfill Alternatives

Alternative 1: This alternative operation applies to:

- Shallow horizontal or vertical wells, in uncapped areas, that do not extend into waste that is at least five (5) years old.
- Leachate collection piping with vacuum directly applied to it.

The above wells and piping may be operated at an oxygen level higher than 5% by volume, as long as the wellhead temperatures are below 131°F, since the majority of air intrusion occurs directly from the ground surface and not through the waste mass. Wellhead monitoring will be performed to ensure that the HOV does not cause an adverse reaction or combustion within the waste mass, and that degradation of the anaerobic decomposition is not occurring. In the event that wellhead monitoring indicates temperatures above 131°F, the well will be adjusted or shut down. If the temperature does not subside to an acceptable level within five (5) days, carbon monoxide (CO) monitoring (to ensure a CO level below 100 ppmv) will be conducted to verify that combustion in the waste mass is not occurring. Additionally, SECCRA will visually inspect the area around the well for signs of settlement or distressed vegetation and will inspect the wellhead for soot or other indications of combustion. If the wellhead temperature remains above 131°F for more than five (5) days, this alternative no longer applies, and standard remediation actions for temperature and oxygen exceedances as specified in 40 CFR Part 60, Subpart WWW will be taken or HOVs will be applied for.

SECCRA will include in its semi-annual report the following information: a list of wells that are being operated under this alternative, the date the well started operating under this alternative, and pressure, temperature, and oxygen (PTO) data for the well during the semi-annual period.

Alternative 2. Temporarily Decommissioned Wells:

A low producing well where persistent oxygen exceedances are not the result of operations and/or maintenance may be put on the inactive list if it exhibits either:

1. Methane quality that is consistently below 40% by volume and an oxygen level that is consistently above 5% by volume while the valve is either closed (the well may still exhibit negative pressure due to influence of other wells) or slightly open with a negative pressure applied to the well from the valve of less than one inch of water column.
2. Flow that is three scfm or less.

The following conditions apply to this alternative:

- The monthly monitoring will be conducted for these wells, but a positive pressure or elevated oxygen concentration will not be considered an exceedance.
- The alternative will only be utilized if the efficiency of the gas collection system is not compromised.
- If the monthly monitoring indicates that pressure has built up in the well but the oxygen is above 5% by volume and the methane is below 40% by volume OR the low flow condition has not increased, the well will be opened to relieve pressure and will be shut down until it is monitored the next month.
- If the monthly monitoring indicates that gas quality OR the low flow has improved, i.e., the oxygen has dropped to below 5% by volume or the methane has increased above 40% by volume and the flow has increased, the well will be brought online until the gas quality or quantity declines again.
- Monthly surface monitoring will be conducted for these wells. Standard remediation steps including evaluating the need to return the wells to service will be followed if exceedances of the 500 ppm methane surface concentration are detected.
- SECCRA will include in its semi-annual report the following: a list of the inactive wells, the reason for placing them on the inactive list, the monthly PTO monitoring data, the surface monitoring data, the flow data for wells that were inactivated, the date the wells were deemed inactive, and the date the wells were put back in service (if applicable).

For wells that do not meet the above criteria, but for which SECCRA would like to inactivate for other reasons, a request for decommission will be submitted to PADEP for review. If the well must be inactivated immediately for safety reasons a notification will be submitted to PADEP within three business days of inactivation.

Alternative 3:

A well in an area of active waste placement that is inaccessible due to casing height (generally having a casing height of five (5) feet or higher) may have to be temporarily placed on the inactive list, whereby the well would be exempt from wellhead monitoring requirements until filling around the well allows for safe access. No more than 5% of the total wells at the landfill will be placed into this status. This alternative will not be utilized for longer than one month without notification to PADEP.

Alternative 4:

A well may be operated at temperatures higher than 131°F, but no higher than 150°F, if the well exhibits a methane quality over 40% by volume and an oxygen level that is consistently below 5% by volume and a methane to carbon dioxide ratio of greater than 1.0, provided the following steps are taken:

- (a) Upon observation of a well temperature greater than 131°F, SECCRA will initially adjust the well valve to either reduce or eliminate the vacuum applied to the well. This corrective action will be taken within five (5) days of the observation of an elevated reading.
- (b) If the reduction of vacuum favorably lowers the temperature but appears to be detrimental to gas collection, SECCRA will adjust the well to the benefit of gas collection. If as a result, the temperature at the well climbs above 131°F, or if the temperature remains elevated throughout the well adjustments, carbon monoxide monitoring (to ensure carbon monoxide levels below 100 ppmv) will be conducted to verify that combustion within the waste mass is not occurring. In addition to measuring the temperature and carbon monoxide levels, SECCRA will visually inspect the area around the well for signs of settlement or distressed vegetation, and will inspect the well for soot or other indications of combustion.

- (c) If the elevated temperatures persist at a well, and there are no signs of combustion or detrimental effects on anaerobic activity, SECCRA will consider the well to be under observation for the purpose of collecting data to support a submittal for a new higher temperature value for that well.

- (d) At such time when the landfill has acquired sufficient background data, a new maximum operating temperature will be selected for the well. The new temperature and supporting data will be provided to PADEP. If no objections are received from PADEP within 15 days of the letter submittal date, SECCRA will continue using the alternative temperature as a compliant temperature, and it will not be considered as a deviation. Carbon monoxide monitoring of the well and visual inspection of the wellhead and the area immediately surrounding the wellhead will be conducted with the regular monthly monitoring.

SECCRA will include in its semi-annual compliance report the following: a list of wells that are being operated under any of the four listed alternatives, the date the well started operating under this alternative, the selected HOV, and the PTO and CO data for these wells during the semi-annual reporting period.

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Region: NORRISTOWN **County:** Chester **Municipality:** London Grove Twp
SIC: 4953 - Trans. & Utilities - Refuse Systems
NAICS: 562212 - Solid Waste Landfill

Contact	Name	Address	Telephone
INSP	S Mengle	219 Street Rd, West Grove, PA - 19390-9230	610-869-2452
PRMT	S Burn	219 Street Rd, West Grove, PA - 19390-9230	610-869-2452
REOFF	S Mengle	219 Street Rd, West Grove, PA - 19390-9230	610-869-2452
FIRM	S Mengle	219 Street Rd, West Grove, PA - 19390-9230	610-869-2452
LOCAD		219 Street Rd, West Grove, PA - 19390-9230	--

FACILITY LOCATION INFORMATION

Map: -. **Latitude:** 39 deg, 49 min, 15.28 sec N **UTM Coordinates:** **North:** 4408
Elevation(Ft): **Longitude:** -75 deg, 49 min, 46.50 sec W **Zone:** 18 **East:** 429

**FACILITY POLLUTANT SUMMARY
(SUM OF INDIVIDUAL AND MISCELLANEOUS SOURCES)
EMISSION ESTIMATES (0.0 TONS/YEAR)**

Ammonia	0.0000
CO	23.2120
Carbon Dioxide	12,297.1662
Lead	0.0000
Methane	3,937.8472
NOX	6.4043
Nitrous Oxide	0.1488
PM-CON	0.0012
PM10	8.5191
PM2.5	2.3432
SOX	3.3601
VOC	3.7834
Ethane	1.4032
Formaldehyde	2.6406
Hazardous Air Pollutants	3.3387

FUEL USAGE SUMMARY

Fuel Type	Total Use
#2 Oil	96.32 Gal
Diesel Fuel	512.3 Gal
Landfill Gas	383.09 MMCF
By-Product	95.05 MMCF

SUB FACILITIES INCLUDED

Type	SF	Name
PRO	102	Emergency Generator (102 Hp)
PRO	105	Msw Landfill (North, South Cell & Willa Expansion)
CD	C05	Ic Engine/Generator Caterpillar G3516le
CD	C07	Enclosed Flare
CD	C08	Ic Engine/Generator Caterpillar G3520c (Pa60f)

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Sub Facility: 102 Emergency Generator (102 Hp)	SF Type: PRO
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Material:

Fuel: #2 Oil	Fuel Data Based on FML:
SCC: 20300101 - Internal Combustion Engines;Commercial/Institutional;Distillate Oil (Diesel);Reciprocating Burned	

%ASH 0 %SULFUR 0 BTU/Lb-Gal-CuFt 1050

Monthly Throughputs in Gal			
SCHEDULE 1	JAN:	7.31	JUL:
	FEB:	8.17	AUG:
Date Effective: 01/01/2021	MAR:	6.88	SEP:
Date End: 12/31/2021	APR:	10.75	OCT:
Total Days: 27	MAY:	9.46	NOV:
Total Hours: 22	JUN:	7.31	DEC:
Days Per Week: 1			

Actual Emission Estimates (Tons/Yr) For Emission Fees And Emission Statements:

Pollutant	CAS	Emission Amt (0.0 TPY)	Calculation Method	Use Factor
Ammonia	7664417	0.0000	NO FACTOR AVAILABLE	
* CO	630080	0.0063	AP-42 LATEST AVAILABLE	
* Carbon Dioxide	124389	1.0761	SEE COMMENT	
Lead	7439921	0.0000	NO FACTOR AVAILABLE	
* Methane	74828	0.0000	SEE COMMENT	
* NOX	10102440	0.0291	AP-42 LATEST AVAILABLE	
* Nitrous Oxide	10024972	0.0000	SEE COMMENT	
PM-CON		0.0002	SEE COMMENT	
* PM10		0.0018	AP-42 LATEST AVAILABLE	
PM2.5		0.0018	AP-42 LATEST AVAILABLE	
* SOX	7446095	0.0018	AP-42 LATEST AVAILABLE	
* VOC		0.0023	AP-42 LATEST AVAILABLE	

* **SCC Factor Exists**

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Sub Facility: 105 Msw Landfill (North, South Cell & Willa Expansion) **SF Type:** PRO

Material: municipal waste

Fuel: **Fuel Data Based on FML:**

SCC: 49099999 - Petrol./Solvent Evapor.;Organic Solvent Evaporation;Misc. Volatile Org. Compound Evaporation;Identify The Pr

Monthly Throughputs in Tons			
SCHEDULE 1	JAN: 9,930.00	JUL: 11,442.00	
Date Effective: 01/01/2021	FEB: 7,627.00	AUG: 11,207.00	
Date End: 12/31/2021	MAR: 11,539.00	SEP: 11,744.00	
Total Days: 365	APR: 11,296.00	OCT: 11,180.00	
Total Hours: 8760	MAY: 10,693.00	NOV: 11,131.00	
Days Per Week: 7	JUN: 12,384.00	DEC: 10,367.00	

Actual Emission Estimates (Tons/Yr) For Emission Fees And Emission Statements:

Pollutant	CAS	Emission Amt (0.0 TPY)	Calculation Method	Use Factor
Ammonia	7664417	0.0000	NO FACTOR AVAILABLE	
CO	630080	0.2056	SEE COMMENT	
Carbon Dioxide	124389	0.0000	NO FACTOR AVAILABLE	
Lead	7439921	0.0000	NO FACTOR AVAILABLE	
Methane	74828	3,937.0916	SEE COMMENT	
NOX	10102440	0.0000	NO FACTOR AVAILABLE	
Nitrous Oxide	10024972	0.0000	NO FACTOR AVAILABLE	
PM-CON		0.0000	NO FACTOR AVAILABLE	
* PM10		0.0000	NO FACTOR AVAILABLE	
PM2.5		0.0000	NO FACTOR AVAILABLE	
SOX	7446095	0.0000	NO FACTOR AVAILABLE	
* VOC		1.0485	SEE COMMENT	
Ethane	74840	1.4032	SEE COMMENT	

* **SCC Factor Exists**

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Sub Facility: C05 Ic Engine/Generator Caterpillar G3516e	SF Type: CD
Fuel: By-Product	Fuel Data Based on FML:
SCC: 20100802 - Internal Combustion Engines;Electric Generation;Landfill Gas;Reciprocating	

%ASH 0 %SULFUR 0 BTU/Lb-Gal-CuFt 559

Monthly Throughputs in MMCF			
SCHEDULE 1	JAN:	3.18	JUL: 1.70
Date Effective: 01/01/2021	FEB:	7.19	AUG: 4.07
Date End: 12/31/2021	MAR:	6.91	SEP: 6.77
Total Days: 173	APR:	0.76	OCT: 0.00
Total Hours: 2484	MAY:	1.52	NOV: 0.00
Days Per Week: 7	JUN:	2.81	DEC: 0.00

Actual Emission Estimates (Tons/Yr) For Emission Fees And Emission Statements:

Pollutant	CAS	Emission Amt (0.0 TPY)	Calculation Method	Use Factor
CO	630080	7.4520	CO. STACK TEST APPROVED BY DEP	
Carbon Dioxide	124389	1,119.9734	SEE COMMENT	
Lead	7439921	0.0000	NO FACTOR AVAILABLE	
Methane	74828	0.0688	SEE COMMENT	
NOX	10102440	1.7885	CO. STACK TEST APPROVED BY DEP	
Nitrous Oxide	10024972	0.0136	SEE COMMENT	
PM-CON		0.0000	NO FACTOR AVAILABLE	
* PM10		0.1463	AP-42 LATEST AVAILABLE	
PM2.5		0.1463	AP-42 LATEST AVAILABLE	
SOX	7446095	0.3052	CO. STACK TEST APPROVED BY DEP	
VOC		0.7887	CO. STACK TEST APPROVED BY DEP	
Formaldehyde	50000	0.7825	CO. STACK TEST APPROVED BY DEP	
Ammonia	7664417	0.0000	NO FACTOR AVAILABLE	

* **SCC Factor Exists**

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Sub Facility: C07 Enclosed Flare	SF Type: CD
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Fuel: **Fuel Data Based on FML:**
SCC: 50200601 - Waste Disposal;Solid Waste Disposal - Commercial/Inst.;Landfill Dump;Waste Gas Flares
 ** (Use 5-01-004-10) Waste Gas Burned

Monthly Throughputs in MMCF			
SCHEDULE 1	JAN:	7.72	JUL: 33.47
Date Effective: 01/01/2021	FEB:	9.66	AUG: 28.07
Date End: 12/31/2021	MAR:	10.38	SEP: 17.70
Total Days: 365	APR:	24.17	OCT: 40.07
Total Hours: 6939	MAY:	19.18	NOV: 34.49
Days Per Week: 7	JUN:	20.12	DEC: 42.99

Actual Emission Estimates (Tons/Yr) For Emission Fees And Emission Statements:

Pollutant	CAS	Emission Amt (0.0 TPY)	Calculation Method	Use Factor
Ammonia	7664417	0.0000	NO FACTOR AVAILABLE	
CO	630080	0.7921	CO. STACK TEST APPROVED BY DEP	
Carbon Dioxide	124389	9,241.6284	SEE COMMENT	
Lead	7439921	0.0000	NO FACTOR AVAILABLE	
Methane	74828	0.5680	SEE COMMENT	
Nitrous Oxide	10024972	0.1118	SEE COMMENT	
PM-CON		0.0000	NO FACTOR AVAILABLE	
* PM10		1.2076	AP-42 LATEST AVAILABLE	
PM2.5		1.2076	AP-42 LATEST AVAILABLE	
SOX	7446095	2.5187	CO. STACK TEST APPROVED BY DEP	
* VOC		0.0645	CO. STACK TEST APPROVED BY DEP	
NOX	10102440	2.3763	CO. STACK TEST APPROVED BY DEP	

* **SCC Factor Exists**

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

Sub Facility: C08 Ic Engine/Generator Caterpillar G3520c (Pa60f)	SF Type: CD
Fuel: By-Product	Fuel Data Based on FML:
SCC: 20100802 - Internal Combustion Engines;Electric Generation;Landfill Gas;Reciprocating	

%ASH 0 %SULFUR 0 BTU/Lb-Gal-CuFt 559

Monthly Throughputs in MMCF				
SCHEDULE 1	JAN:	14.70	JUL:	5.57
Date Effective: 01/01/2021	FEB:	4.63	AUG:	0.00
Date End: 12/31/2021	MAR:	8.48	SEP:	7.23
Total Days: 176	APR:	3.00	OCT:	0.00
Total Hours: 2266	MAY:	6.24	NOV:	2.15
Days Per Week: 7	JUN:	6.93	DEC:	1.22

Actual Emission Estimates (Tons/Yr) For Emission Fees And Emission Statements:

Pollutant	CAS	Emission Amt (0.0 TPY)	Calculation Method	Use Factor
Ammonia	7664417	0.0000	NO FACTOR AVAILABLE	
CO	630080	14.7290	CO. EFFICIENCY OF CONTROL DEVICE	
Carbon Dioxide	124389	1,929.8409	SEE COMMENT	
Lead	7439921	0.0000	NO FACTOR AVAILABLE	
Methane	74828	0.1186	SEE COMMENT	
NOX	10102440	2.0847	CO. STACK TEST APPROVED BY DEP	
Nitrous Oxide	10024972	0.0233	SEE COMMENT	
PM-CON		0.0000	NO FACTOR AVAILABLE	
* PM10		0.2522	AP-42 LATEST AVAILABLE	
PM2.5		0.2522	AP-42 LATEST AVAILABLE	
SOX	7446095	0.5260	CO. STACK TEST APPROVED BY DEP	
VOC		1.8695	CO. STACK TEST APPROVED BY DEP	
Formaldehyde	50000	1.8581	CO. STACK TEST APPROVED BY DEP	

* **SCC Factor Exists**

Input Form For: 2021

Tax ID/Plant Code: 23-1695190-1

SECCRA LDFL/LONDON GROVE TWP

PF ID: 549239

OTHER MISCELLANEOUS SUB FACILITY EMISSIONS (Criteria/ HAPs/ Non-Criteria)

SF (Optional Name)	Pollutant	CAS	Emission Amt (0.0 TPY)	Calc. Method
Kohler Generator	VOC		0.0100	AP-42 LATEST AVAILABLE
Kohler Generator	Methane	74828	0.0002	SEE COMMENT
Kohler Generator	PM2.5		0.0088	AP-42 LATEST AVAILABLE
Landfill Roadways	PM2.5		0.7264	AP-42 LATEST AVAILABLE
Kohler Generator	Carbon Dioxide	124389	4.6474	SEE COMMENT
Kohler Generator	PM-CON		0.0010	AP-42 LATEST AVAILABLE
Kohler Generator	Nitrous Oxide	10024972	0.0000	SEE COMMENT
Kohler Generator	CO	630080	0.0271	AP-42 LATEST AVAILABLE
Kohler Generator	NOX	10102440	0.1257	AP-42 LATEST AVAILABLE
Kohler Generator	PM10		0.0088	AP-42 LATEST AVAILABLE
Landfill Roadways	PM10		6.9023	AP-42 LATEST AVAILABLE
Kohler Generator	SOX	7446095	0.0083	AP-42 LATEST AVAILABLE

NOTE: Most pollutants need to be reported if greater than 0.5 TPY. The following pollutants need to be reported if greater than the amounts listed:

- Polychlorobiphenols (PCB) 0.01 TPY
- Lead (Pb) 0.01 TPY
- Polycyclic Organic Mater (POM) 0.01 TPY
- Dioxins (submit Lbs/Yr only) 0.02 TPY
- Furans (submit Lbs/Yr only) 0.02 Lbs/Yr
- Mercury (Hg):**
- Coal fired electric generating units (EGU) 0.0001 TPY
- Non-coal fired EGUs 0.0005 TPY
- All other sub facilities 0.01 TPY

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

NOTES

From: Sean Cunningham **Date:** 02/14/2022

Subject: MSW Landfill (Source ID 105) SCC Code

Message:

Please note that the SCC Code for the MSW Landfill (Source ID 105) is currently incorrect. Please update the code to SCC: 50100402 (Solid Waste Disposal-Government - ; - Landfill Dump - ; - Fugitive Emissions).

From: Sean Cunningham **Date:** 02/14/2022

Subject: PM-CON for Source ID 102

Message:

PM-CON for Source ID 102 was calculated by taking the ratio of condensable PM to total PM emissions factors in AP-42 for large RICE (Chapter 3.4) and multiplying that by the AP-42 total PM emissions factor for small RICE (Chapter 3.3).

From: Sean Cunningham **Date:** 02/14/2022

Subject: GHG Emissions Factors

Message:

All greenhouse gas emissions factors for the facility are from 40 CFR Part 98.

From: Sean Cunningham **Date:** 02/14/2022

Subject: Landfill Emissions Source

Message:

Non-GHG landfill emissions are determined through U.S. EPA's LandGEM model for 2021.

From: Sean Cunningham **Date:** 02/14/2022

Subject: Stack Test for C05 and C07

Message:

Emissions factors for formaldehyde (Source C05), VOC, NOX, SO2, and CO were taken from the August 2017 stack test.

From: Sean Cunningham **Date:** 02/14/2022

Subject: HAP Emissions for C07

Message:

HAP emissions were calculated by taking the total landfill HAP generation as calculated by LandGEM, proportionally adjusting for LFG flowrate to the flare with respect to the total LFG flowrate, and applying a 98% control efficiency.

From: Sean Cunningham **Date:** 02/14/2022

Subject: Stack Test for C08

Message:

Emissions Factors for VOC, NOx, and CO for Source C08 were taken from the August 2020 stack test. All other stack test emissions factors for Source C08 were taken from the August 2017 stack test.

From: Sean Cunningham **Date:** 02/14/2022

Subject: Fuel Usage Summary

Message:

The fuel usage summary for "by-product" could not be removed in AES*Online. Therefore, the "by-product" includes the landfill gas fired for only the engines in 2021. The total landfill gas fired at the facility in 2021 is 383.09 MMSCF, which is documented under "Landfill Gas" in the fuel usage summary.

Input Form For: 2021	Tax ID/Plant Code: 23-1695190-1
SECCRA LDFL/LONDON GROVE TWP	PF ID: 549239

NOTES

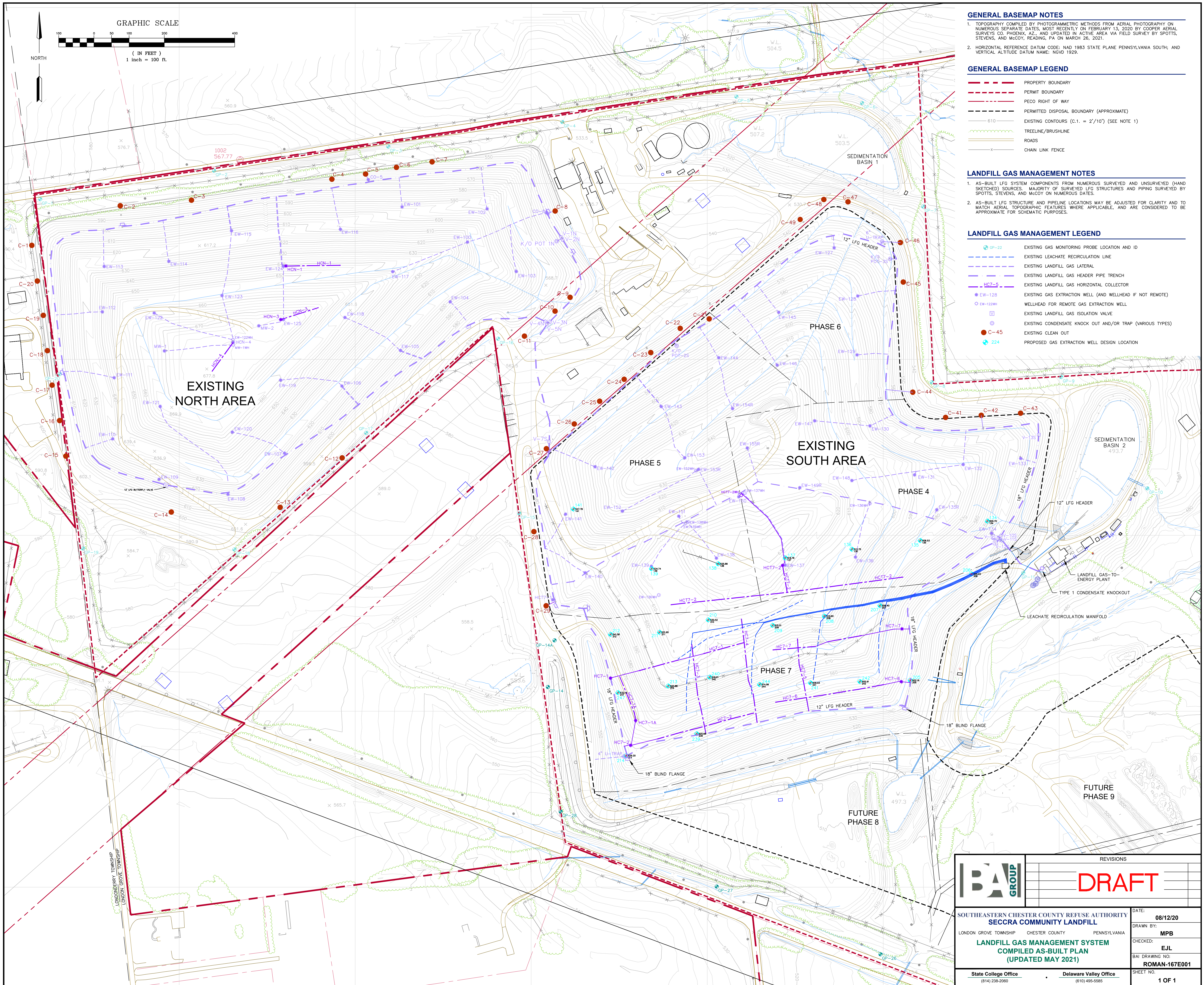
From: Sean Cunningham **Date:** 02/22/2022
Subject: No 2 Fuel Oil vs Diesel Fuel

Message:
 Please note that the facility fires diesel fuel for both the emergency generators. Reported numbers under "No. 2 Fuel Oil" in the Fuel Usage Summary correspond to diesel fuel usage in 2021 for Source ID 102 - Emergency Generator. The reported numbers under "Diesel Fuel" in the Fuel Usage Summary correspond to the total diesel fuel usage in 2021 for Source IDs 102 - Emergency Generator and 111 - Kohler Generator.

ATTACHMENT(S) TO THIS REPORT

File Name	Document Type	Document Description	File Size
Cover Letter and Supporting Information (2-18-22).pdf	VOC Worksheet	Cover Letter and Supporting Information	501.07 KB

Combined file size of all attachments: 501.07 KB



GENERAL BASEMAP NOTES

1. TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY ON NUMEROUS SEPARATE DATES, MOST RECENTLY ON FEBRUARY 13, 2020 BY COOPER AERIAL SURVEYS CO. PHOENIX, AZ, AND UPDATED IN ACTIVE AREA VIA FIELD SURVEY BY SPOTTS, STEVENS, AND MCCOY, READING, PA ON MARCH 26, 2021.
2. HORIZONTAL REFERENCE DATUM CODE: NAD 1983 STATE PLANE PENNSYLVANIA SOUTH; AND VERTICAL ALTITUDE DATUM NAME: NGVD 1929.

GENERAL BASEMAP LEGEND

- PROPERTY BOUNDARY
- PERMIT BOUNDARY
- PECO RIGHT OF WAY
- PERMITTED DISPOSAL BOUNDARY (APPROXIMATE)
- 610 --- EXISTING CONTOURS (C.1. = 2'/10' (SEE NOTE 1))
- TREELINE/BRUSHLINE
- ROADS
- x --- CHAIN LINK FENCE

LANDFILL GAS MANAGEMENT NOTES

1. AS-BUILT LFG SYSTEM COMPONENTS FROM NUMEROUS SURVEYED AND UNSURVEYED (HAND SKETCHED) SOURCES. MAJORITY OF SURVEYED LFG STRUCTURES AND PIPING SURVEYED BY SPOTTS, STEVENS, AND MCCOY ON NUMEROUS DATES.
2. AS-BUILT LFG STRUCTURE AND PIPELINE LOCATIONS MAY BE ADJUSTED FOR CLARITY AND TO MATCH AERIAL TOPOGRAPHIC FEATURES WHERE APPLICABLE, AND ARE CONSIDERED TO BE APPROXIMATE FOR SCHEMATIC PURPOSES.

LANDFILL GAS MANAGEMENT LEGEND

- GP-22 --- EXISTING GAS MONITORING PROBE LOCATION AND ID
- EXISTING LEACHATE RECIRCULATION LINE
- EXISTING LANDFILL GAS LATERAL
- EXISTING LANDFILL GAS HEADER PIPE TRENCH
- HCT-5 --- EXISTING LANDFILL GAS HORIZONTAL COLLECTOR
- EW-128 --- EXISTING GAS EXTRACTION WELL (AND WELLHEAD IF NOT REMOTE)
- EW-122WH --- WELLHEAD FOR REMOTE GAS EXTRACTION WELL
- EXISTING LANDFILL GAS ISOLATION VALVE
- EXISTING CONDENSATE KNOCK OUT AND/OR TRAP (VARIOUS TYPES)
- C-45 --- EXISTING CLEAN OUT
- 224 --- PROPOSED GAS EXTRACTION WELL DESIGN LOCATION

	DRAFT	
	REVISIONS	
SOUTHEASTERN CHESTER COUNTY REFUSE AUTHORITY SECRCA COMMUNITY LANDFILL LONDON GROVE TOWNSHIP CHESTER COUNTY PENNSYLVANIA LANDFILL GAS MANAGEMENT SYSTEM COMPILED AS-BUILT PLAN (UPDATED MAY 2021)	DATE: 08/12/20 DRAWN BY: MPB CHECKED: EJL BAI DRAWING NO: ROMAN-167E001	STATE COLLEGE OFFICE (814) 238-2060
DELAWARE VALLEY OFFICE (610) 495-5585	SHEET NO. 1 OF 1	