Region 2000 Services Authority

Electronic Meeting: GoToMeeting

May 27, 2020 | 2:00 p.m.

How to Access Region 2000 Services Authority Electronic Meeting via GoToMeeting

The May 27, 2020 Region 2000 Services Authority electronic meeting will be conducted via GoToMeeting. The information below provides links and call-in numbers for participants, as well as instructions and guides to connecting via GoToMeeting.

How to access and use GoToMeeting

GoToMeeting is a free video conferencing service that can be accessed via computer, smartphone or tablet. GoToMeeting can be downloaded and used on a Mac or Windows desktop or accessed in the Apple App Store, Google Play, or Windows Phone Store. Alternatively, participants can join a GoToMeeting via web browser or by using the provided call-in number and password.

GoToMeeting Quick Guide

GoToMeeting Video Tutorial

May 27 Meeting Information:

Region 2000 Services Authority Meeting
Wed, May 27, 2020 2:00 PM - 3:30 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.
https://global.gotomeeting.com/join/222367573

You can also dial in using your phone.
United States: +1 (872) 240-3212

Access Code: 222-367-573

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Region 2000 Services Authority

Electronic Meeting: GoToMeeting

Date | Time
May 27, 2020
2:00 p.m.

AGENDA

1. **Welcome**..... Bonnie Svrcek, Chair

2. **Resolution to Authorize Electronic Meetings**.....Bonnie Svrcek, Chair
   (Attached)

3. **Public Comment**.....Bonnie Svrcek, Chair
   (Attached)
   Individual citizens are requested to limit their remarks to three (3) minutes each and to those matters that are within the scope and authority of the Services Authority. The Authority may elect to extend this time period with approval of a majority of its members.

4. **Approval of January 22, 2020 Meeting Minutes**..... Bonnie Svrcek, Chair
   (Attached)

5. **Financials Update**.....Rosalie Majerus & Clarke Gibson

   a) Year to date financial update
      (Attached)
   b) Approval of 2020-2021 budget
      (Attached)
   c) Waiving finance charges and other late fees for March/April invoices
   d) Review of projected revenue/expenditures through 2031
      (Attached)

6. **Consideration of a Renegotiated Rate for Balance of 2011 Bond**.....Ted Cole, Davenport LLC
   (Attached)

7. **Installation of Phase IV Landfill Gas Collection System Project at the Livestock Road Landfill using 2015 Bond Funds**..... Clarke Gibson
   (Attached)

8. **Review of Proposals for Sale/Use of Livestock Rd Landfill Gas**..... Clarke Gibson
   (Attached)

9. **Consideration of Five Year Update/Minor Amendment to the Region's Solid Waste Management Plan..**
   ..... Clarke Gibson
   (Attached)

10. **Director's Report**..... Clarke Gibson

    a) Odor Complaint Activity Report
       (Attached)
    b) Tonnage Chart
       (*Attached*)
    c) Hazardous Household Waste Collection Schedule

11. **Other Business from Staff or Authority Members** ..... Bonnie Svrcek, Chair

12. **Election of Offices for 2020-2021** ..... Bonnie Svrcek, Chair
    (Attached)

13. **Next Meeting:** August 26, 2020, 2 p.m.

14. **Adjourn**

RESOLUTION OF REGION 2000 SERVICES AUTHORITY

AUTHORIZING THE USE OF ELECTRONIC MEETINGS TO DISCUSS TIME SENSITIVE AND CRITICAL BUSINESS RELATED TO THE COVID-19 PANDEMIC DISASTER

WHEREAS, on March 12, 2020, Governor Ralph S. Northam issued Executive Order Fifty-One declaring a state of emergency for the Commonwealth of Virginia arising from the novel Coronavirus (COVID-19) pandemic; and

WHEREAS, Executive Order Fifty-One acknowledged the existence of a public health emergency which constitutes a disaster as defined by Virginia Code § 44-146.16 arising from the public health threat presented by a communicable disease anticipated to spread; and

WHEREAS, Executive Order Fifty-One ordered implementation of the Commonwealth of Virginia Emergency Operations Plan, activation of the Virginia Emergency Operations Center to provide assistance to local governments, and authorization for executive branch agencies to waive "any state requirement or regulation" as appropriate; and

WHEREAS, on March 13, 2020, the President of the United States declared a national emergency, beginning March 1, 2020, in response to the spread of COVID-19; and

WHEREAS, on March 11, 2020, the World Health Organization declared the COVID-19 outbreak a pandemic; and

WHEREAS, the governing bodies of the members of the Region 2000 Services Authority, being the City of Lynchburg and the Counties of Appomattox, Campbell, and Nelson have made individual declarations of a local emergency, specifically finding that the COVID-19 Pandemic constitutes a "disaster" as defined in Virginia Code § 44-146.16, being a "communicable disease of public health threat"; and

WHEREAS, through their Emergency Ordinances, the member jurisdictions specifically found that COVID-19 constitutes a real and substantial threat to public health and safety and constitutes a "disaster" as defined by Virginia Code § 44-146.16 being a "communicable disease of public health threat" and

WHEREAS, through their Emergency Ordinances, the member jurisdictions further found that the COVID-19 pandemic makes it unsafe to assemble in one location a quorum for public bodies including the School Board, the Planning Commission and all local and regional boards, commissions, committees and authorities created by the member jurisdictions or to which the member jurisdictions appoint all or a portion of its members (collectively "Public Entities" and individually "Public Entity"), or for such Public Entities to conduct meetings in accordance with normal practices and procedures; and

WHEREAS, failure of the Region 2000 Services Authority to act in a timely manner would lead to significant harm to individuals and businesses who use our services and to the region's response to the COVID-19 crisis, and

WHEREAS, in addition to the above actions, the Virginia General Assembly on April 22, 2020, on the Governor's recommendation, adopted budget language stating that notwithstanding any other provision of law, any public body, including any state, local, regional or regulatory body may meet by electronic communication means without a quorum present or any member physically assembled when the Governor has declared a state of emergency, provided that the nature of the emergency makes it impracticable or unsafe for the governing body to assemble in a single location, the purpose of the meeting is to discuss or transact the business statutorily required or necessary to continue the operations of the public body, the

public body shall make available a recording or transcript of the meeting on its website (the "Budget Amendment).

NOW, THEREFORE, BE IT RESOLVED that the Region 2000 Services Authority hereby will conduct electronic meetings giving proper notice through e-mail, websites and other means practical.

BE IT FURTHER RESOLVED that the Region 2000 Services Authority hereby authorizes and directs its officers and staff to take all steps reasonably necessary or appropriate to develop any specific procedures as applicable and appropriate for the Region 2000 Services Authority, provided that such specific procedures are consistent with the terms and conditions of the Emergency Ordinances and Budget Amendment; and

BE IT FURTHER RESOLVED that this Resolution shall take effect immediately upon adoption and shall remain in effect during the pendency of the Emergency Ordinances including for any applicable period upon the re-adoption of the Emergency Ordinances by the members, or when the state of emergency has ended, whichever is later.

ADOPTED by the _____.

APPROVED

_____

ATTEST:

_____

Region 2000 Services Authority

Electronic Meeting: GoToMeeting

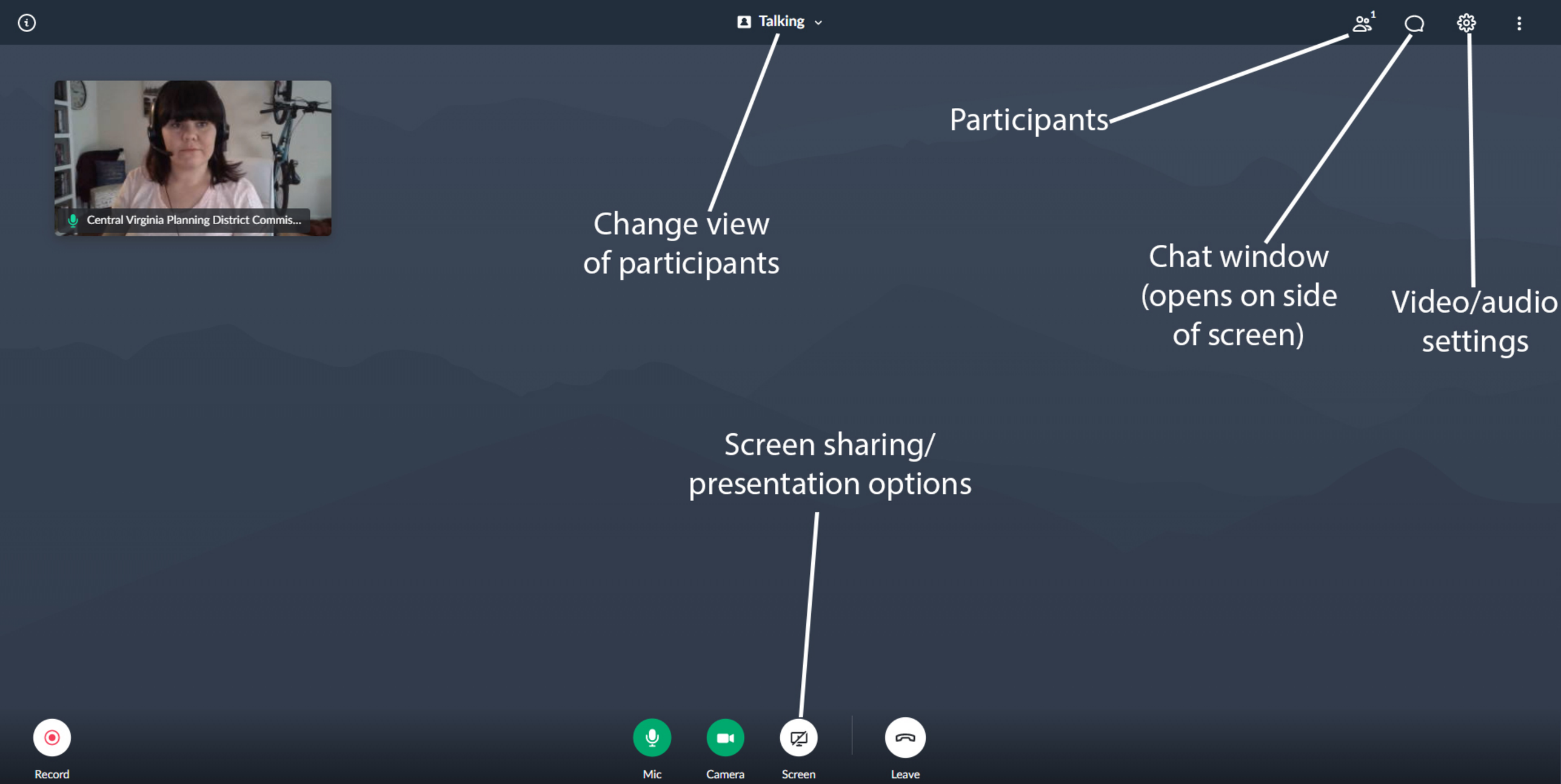
May 27, 2020 | 2:00 p.m.

Electronic Meeting Public Comment Procedure

The Region 2000 Services Authority welcomes public comments. In order to provide an opportunity for all those interested in providing public comments, the following procedure will be practiced during electronic meetings:

1. Individuals that wish to share a public comment are directed to the chat feature (see visual guide) to identify themselves by typing their name in the chat dialogue box.
2. All submissions will be recorded by staff. During the public comment period, staff will read the names of those provided in the order received and each participant will be allowed to share their comments.

Public comments will still abide by the standard three (3) minute time period, which can be extended at the Authority's discretion with approval of a majority of its members.


Talking
Central Virginia Planning District Commis...
Change view of participants
Participants
Chat window (opens on side of screen)
Video/audio settings
Screen sharing/ presentation options
Record
Mic
Camera
Screen
Leave

Region 2000 Services Authority

Location
Regional Landfill Office Bldg.
361 Livestock Road
Rustburg, VA 24588

Date | Time
January 22, 2020
2:00 p.m.

Minutes

Board Members Present

Susan Adams.....Appomattox County
Steve Carter ..... Nelson County
Frank Rogers..... Campbell County
Gaynelle Hart (alternate for Bonnie Svrcek).....City of Lynchburg

1. Welcome

Frank Rogers, Vice Chair, welcomed everyone and opened the meeting at 2:00 p.m.

2. Public Comment

Ms. Judy Doering commented:

- The Authority should have permitted Mr. Jon Hardie to attend the closed session meeting as the leader of the citizen's committee
- The Wheelabrator Request will create dust and cause additional pollution for residents
- Requested the Authority to add a second public comment period during meetings after all other general agenda items so that residents have additional opportunities to provide input

3. Approval of December 18, 2019 Meeting Minutes

Upon a motion by Mr. Carter, seconded by Ms. Adams, the Authority approved the December 18, 2019 minutes.

4. Financial Update

Rosalie Majerus reported that revenue is slightly ahead of projections, and expenses are currently slightly better than planned. There were no major issues reported and all financials are tracking well.

5. 2020-2021 Proposed Budget Presentation

Solid Waste Director Clarke Gibson reported that tonnage projections for FY 2021 are not increasing.

Revenue and expenses will be remaining the same as FY 2020. Member and market rate disposal costs will also remain the same.

Mr. Gibson requested the consideration of a 3% merit-based salary increase for employees, as this will help with maintaining employee retention. Health insurance costs have been estimated, but will be updated when final numbers are received in March.

Mr. Gibson reviewed the Capital Equipment Fund schedule 7, noting a slight increase to prepare for equipment purchases that will be necessary in the coming years.

Tipping fees are on an incremental increase schedule through FY 2031.

The pro forma budget, provided by Burns & McDonnell, was reviewed by Mr. Gibson to the Authority.

Frank Rogers recommended deferring approval of the proposed budget until May to chart tonnage as long as possible.

6. Wheelabrator Waste Disposal Request

Mr. Gibson reported Wheelabrator Technologies in Bedford is looking for a service to dispose of the company's slag and high density dust. Laboratory analysis on the materials are acceptable for a Subtitle D landfill, and the waste is not considered hazardous. Dust would be a factor to remain mindful of if the Authority chooses to proceed, and if necessary, dust measures could also be added. There are currently other acceptable materials received that contain dust, but no dust complaint has ever been received from the public.

Mr. Rogers asked about language within the potential contract, and Bill Hefty affirmed that a clause could be added to allow for contract termination provisions.

Ms. Adams asked for clarity on the space needed for the materials, and Mr. Gibson explained that it will fill in voids already present in the landfill and will take up very little space.

A motion was made by Mr. Carter, seconded by Ms. Hart, to authorize the Executive Director to approach Wheelabrator Technologies with a contract regarding disposal service with appropriate protections included in the document.

The vote was:
Susan Adams: Nay
Steve Carter: Aye

Gaynelle Hart: Aye
Frank Rogers: Nay

The motion failed.

7. Review of proposals for use of Livestock Road landfill gas

Mr. Gibson reported that an RFP was issued in the fall regarding landfill use of beneficial gas at the Livestock Road facility. Two proposals from two companies were received. The first proposal is from a company using the gas to power generators and electricity at their facilities. The second proposal involved processing the gas on site, and tanking it to another facility offsite.

There will be an interview with each company in the next month, and staff intends to come back with a recommendation at the next board meeting. The potential revenue could be $100,000-$200,000 annually.

Mr. Carter asked about a projected timeline, and Mr. Gibson reported that it could likely begin before the end of the year.

8. Director's Report

a) Odor Update: Mr. Gibson reported that odor complaints have remained consistent since the last board meeting, with an average month including 4-5 complaints. In December, there were 10 complaints, in January there were 0 complaints at the time of the board meeting.

b) Tonnage Chart: Tonnage remains on track from where it was in the last year, and is on budget.

c) Update to the Solid Waste Management Plan: An updated Solid Waste Management Plan is required every five years and is currently in progress. This plan does require a public hearing, and will be updated by the next board meeting.

d) Hazardous Household Waste Collection Schedule: The remaining dates for this year are April 11, June 13, and October 10.

9. Other Business

A motion was made by Mr. Carter, seconded by Ms. Adams, to have the March Services Authority Meeting at the PDC office in Lynchburg. The vote was:

Susan Adams – Aye
Steve Carter – Aye
Gaynell Hart – Aye
Frank Rogers – Nay

The motion carried.

10. Adjourn – There being no further business, the meeting adjourned at 2:48 p.m.

The next meeting will be on March 25, 2020, at the Central Virginia Planning District Commission Office.

Region 2000 Services Authority

Attachment #5A

FY 2020 Disposal Fee Revenue through 04/30/2020

Schedule 1

	FY2020 Rates $30.25/$40.25				FY2021 Rates $30.25/$40.25		
	(A)	(B)	(C)	(D)			
Tonnage	**FY 2020 Approved Budget**	**Actuals Though 04/30/2020**	**Budget Amount Remaining (A - B)**	**Budget % Remaining (C / A)**	**FY 2021 Preliminary Budget**	**FY 2021 amount change from FY 2020**	**% Change FY20 to FY21 Budget**
Tonnage From Member Jurisdictions							
Lynchburg	35,160	29,878	5,282	15.02%	35,160	0	0.00%
Campbell	20,412	18,035	2,377	11.64%	20,412	0	0.00%
Nelson	9,984	8,869	1,115	11.17%	9,984	0	0.00%
Appomattox	5,354	4,984	370	6.91%	5,354	0	0.00%
Subtotal Member Jurisdictions	70,910	61,767	9,143	12.89%	70,910	0	0.00%
Lynchburg Contracts & Other Waste	-	-	-	0.00%	-		
Market Rate Tonnage	121,976	96,371	25,605	20.99%	121,976	0	0.00%
Subtotal Contract and Market Rate	121,976	96,371	25,605	20.99%	121,976	0	0.00%
Subtotal Revenue Generating Tonnage	192,886	158,138	34,748	18.01%	192,886	0	0.00%
Other Tonnage at No Charge (inert/brush/slag)	12,176	9,091	3,085	25.34%	12,176	0	0.00%
Total Tonnage	205,062	167,230	37,832	18.45%	205,062	0	0.00%

Disposal Fee Revenue	**FY 2020 Approved Budget**	**Actuals Though 04/30/2020**	**Budget Amount Remaining (A - B)**	**Budget % Remaining (C / A)**	**FY 2021 Preliminary Budget**	**FY 2021 amount change from FY 2020**	**% Change FY20 to FY21 Budget**
From Member Jurisdictions							
Lynchburg	$ 1,063,590	$ 880,562	$ 183,028	17.21%	$ 1,063,590	0	0.00%
Campbell	$ 617,463	$ 545,703	$ 71,760	11.62%	$ 617,463	0	0.00%
Nelson	$ 302,016	$ 268,292	$ 33,724	11.17%	$ 302,016	0	0.00%
Appomattox	$ 161,959	$ 150,780	$ 11,179	6.90%	$ 161,959	0	0.00%
Subtotal Member Jurisdictions	$ 2,145,028	$ 1,845,337	$ 299,691	13.97%	$ 2,145,028	0	0.00%
Market Rate Tonnage	$ 4,909,537	$ 3,881,781	$ 1,027,756	20.93%	$ 4,909,537	(0)	0.00%
Subtotal Contract and Market Rate	$ 4,909,537	$ 3,881,781	$ 1,027,756	20.93%	$ 4,909,537	(0)	0.00%
Total	$ 7,054,565	$ 5,727,117	$ 1,327,447	18.82%	$ 7,054,565	0	0.00%

Per Ton Disposal Fees	**FY 2020 Approved Budget**	**YTD Average Through 04/30/20**	**Budget Amount Remaining (A - B)**	**% Difference (C / A)**	**FY 2021 Preliminary Budget**	**FY 2021 amount change from FY 2020**	**% Change FY20 to FY21 Budget**
Member Disposal Fee	$ 30.25	$ 29.876	$ 0.374	1.24%	$ 30.250	0.00	0.00%
Cost of Service (COS) Tipping Fee	$ 30.25	$ 29.798	$ 0.452	1.49%	$ 30.250	0.00	0.00%
Market Rate	$ 40.25	$ 40.279	$ (0.029)	-0.07%	$ 40.250	0.00	0.00%

Region 2000 Services Authority

FY 2020 Expenses through 04/30/2020

Schedule 2

Attachment #5A

	FY2020 Rates $30.25/$40.25				FY2021 Rates $30.25/$40.25		
	(A)	(B)	(C)	(D)			
Expenses	FY 2020 Approved Budget	Actuals Though 04/30/2020	Budget Amount Remaining (A - B)	Budget % Remaining (C / A)	FY 2021 Preliminary Budget	FY 2021 amount change from FY 2020	% Change FY20 to FY21 Budget
Personnel (Schedule 3)	$ 1,566,246	$ 1,240,165	$ 326,080	20.8%	$ 1,603,265	$ 37,019	2.36%
Landfill O & M (Schedule 4)	$ 1,574,630	$ 1,217,424	$ 357,206	22.7%	$ 1,600,555	$ 25,925	1.65%
Landfill Equipment Replacement Reserve	$ 426,385	$ 355,320	$ 71,064	16.7%	$ 500,000	$ 73,615	17.27%
Closure and Post-Closure Reserve	$ 390,000	$ 325,000	$ 65,000	16.7%	$ 353,546	$ (36,454)	-9.35%
Future Disposal Planning Reserve	$ 25,000	$ 20,833	$ 4,167	16.7%	$ -	$ (25,000)	-100.00%
O & M Reserve	$ 75,000	$ 62,500	$ 12,500	16.7%	$ -	$ (75,000)	-100.00%
Annual Debt Service -2011 Bond Debt	$ 853,303	$ 711,059	$ 142,244	16.7%	$ 854,442	$ 1,139	0.13%
2015 Bond Debt	$ 1,112,497	$ 918,042	$ 194,455	17.5%	$ 1,112,212	$ (285)	-0.03%
Internal Loan	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
Annual Debt Service Subtotal	$ 1,965,800	$ 1,629,101	$ 336,699	17.1%	$ 1,966,654	$ 854	0.04%
Operating Expenses	$ 6,023,060	$ 4,850,344	$ 1,172,717	19.5%	$ 6,024,020	$ 960	0.02%
Reimbursable Personnel Costs (Schedule 5)	$ (45,756)	$ (33,138)	$ (12,619)	27.6%	$ (46,716)	$ (960)	2.10%
Reimbursable O & M Costs (Schedule 5)	$ (121,500)	$ (70,941)	$ (50,559)	41.6%	$ (121,500)	$ -	0.00%
Late fees/Recycling Revenue/Fin charges	$ (20,000)	$ (29,391)	$ 9,391	-47.0%	$ (20,000)	$ -	100.00%
Interest Income-Operating (19% of Actual)	$ (1,000)	$ (4,683)	$ 3,683	-368.3%	$ (1,000)	$ -	0.00%
Late Fee, Recycling & Int Income	$ (21,000)	$ (34,074)	$ 13,074	-62.3%	$ (21,000)	$ -	0.00%
Net Cost of Service Operating Expense Total	$ 5,834,804	$ 4,712,190	$ 1,122,614	19.2%	$ 5,834,804	$ (0)	0.00%
Airspace Reserve	**FY 2020 Approved Budget**	**Actuals Though 04/30/2020**	**Budget Amount Remaining (A - B)**	**Budget % Remaining (C / A)**	**FY 2021 Preliminary Budget**	**FY 2021 amount change from FY 2020**	**% Change FY20 to FY21 Budget**
Airspace Reserve Subtotal	$ 1,219,761	$ 1,010,115	$ 209,646	17%	$ 1,219,761	$ -	0.00%
O & M Reserve Contribution	$ -	$ 4,812	$ (4,812)		$ -	$ -	
Total Expenses	$ 7,054,565	$ 5,727,117	$ 1,327,448	19%	$ 7,054,565	$ (0)	0.00%
Total Revenue Generating Tonnage	192,886	158,138	34,748	18.0%	192,886	-	0.00%
Disposal Cost per Ton	$ 30.2500	$ 29.798	$ 0.452	1.5%	$ 30.2500	$ (0.0000)	0.00%

Personnel
Schedule 3

Attachment #5A

		(A)	(B)	(C)	(D)			
	Account	**FY 2020 Approved Budget**	**Actuals Though 04/30/2020**	**Budget Amount Remaining (A - B)**	**Budget % Remaining (C / A)**	**FY 2021 Preliminary Budget**	**FY 2021 amount change from FY 2020**	**% Change FY20 to FY21 Budget**
	Solid Waste Staff							
	Management							
41111	**Salaries - Solid Waste Director**	$ 130,495	$ 108,746	$ 21,749	16.7%	$ 130,495	$ 0	0.00%
41112	**Salaries-Environ Compl & Safety**	$ 56,041	$ 48,196	$ 7,846	14.0%	$ 60,525	$ 4,484	8.00%
41129	**Salaries-Environ Technician**	$ 47,697	$ 41,020	$ 6,678	14.0%	$ 51,513	$ 3,816	8.00%
41113	**Salaries-Business Manager**	$ 65,905	$ 54,921	$ 10,984	16.7%	$ 65,905.00	$ 0	0.00%
41114	**Salaries-Finance Associate**	$ 33,882	$ 28,234	$ 5,648	16.7%	$ 33,882.00	$ (0)	0.00%
41115	**Salaries-Administrative Assist**	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
	Management	$ 334,021	$ 281,116	$ 52,905	15.8%	$ 342,320	$ 8,299	2.48%
	Salaries & Wages-Operations							
41121	**Salaries & Wages-Opeations Mgr**	$ 68,635	$ 57,196	$ 11,439	16.7%	$ 68,636.00	$ 1	0.00%
41122	**Salaries-Recycling Program Mgr**	$ -	$ -	$ -	0.0%	$ -	$ -	#DIV/0!
41123	**Salaries&Wages-Scale Operator**	$ 90,162	$ 71,697	$ 18,465	20.5%	$ 87,910.00	$ (2,252)	-2.50%
41124	**Salaries&Wages-Supervisor**	$ 50,941	$ 42,451	$ 8,490	16.7%	$ 50,942.00	$ 1	0.00%
41124	**Salaries&Wages-Operator IV**	$ -	$ -	$ -	0.0%	$ -	$ -	#DIV/0!
41125	**Salaries&Wages-Operator**	$ 303,037	$ 212,400	$ 90,637	29.9%	$ 292,748.00	$ (10,289)	-3.40%
41126	**Salaries&Wages-Operator II**	$ -	$ -	$ -	0.0%	$ -	$ -	#DIV/0!
41127	**Salaries&Wages- Maint Worker**	$ 27,077	$ 47,342	$ (20,264)	-74.8%	$ 30,405.00	$ 3,328	12.29%
41128	**Salaries&Wages-Mechanic**	$ 91,773	$ 75,065	$ 16,708	18.2%	$ 89,955.00	$ (1,818)	-1.98%
	Operations	$ 631,626	$ 506,151	$ 125,475	19.9%	$ 620,596	$ (11,030)	-1.75%
	Salary	$ 965,647	$ 787,267	$ 178,379	18.5%	$ 962,916	$ (2,731)	-0.28%
41100	**Salaries&Wages-3% increase for FY21**					$ 28,887	$ 28,887	0.00%
	Total Salaries	$ 965,647	$ 787,267	$ 178,379	18.5%	$ 991,803	$ 26,157	2.71%
	Employee Benefits							
42210	**VRS-Retirement (6.49% ER + VLDP)(fy19=4.71%+VLDP)**	$ 51,179	$ 38,028	$ 13,152	25.7%	$ 51,951	$ 771	1.51%
42220	**VRS Life Insurance (1.34%)**	$ 12,650	$ 10,304	$ 2,346	18.5%	$ 13,290	$ 640	5.06%
42300	**Employer Cost-Health Insurance (+10% FY21 Est)**	$ 204,000	$ 170,194	$ 33,806	16.6%	$ 212,631	$ 8,631	4.23%
42310	**Employer Cost-Dental Insurance**	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
42700	**Employer Cost-Worker's Comp**	$ 37,000	$ 30,419	$ 6,581	17.8%	$ 35,000	$ (2,000)	-5.41%
42100	**Employer Cost-FICA**	$ 76,932	$ 58,702	$ 18,230	23.7%	$ 78,627	$ 1,695	2.20%
42600	**Unemployment Insurance**	$ 8,000	$ -	$ 8,000	100.0%	$ 8,000	$ -	0.00%
	Employee Benefits Subtotal	$ 389,761	$ 307,646	$ 82,116	21.1%	$ 399,498	$ 9,737	2.50%
	Overtime							
41200	**Salaries and Wages - Overtime**	$ 40,000	$ 21,545	$ 18,455	46.1%	$ 36,000	$ (4,000)	-10.00%
	Overtime Subtotal	$ 40,000	$ 21,545	$ 18,455	46.1%	$ 36,000	$ (4,000)	-10.00%
	Total Personnel Costs-Services Authority Staff	$ 1,395,408	$ 1,116,458	$ 278,950	20.0%	$ 1,427,302	$ 31,894	2.29%
	Local Government Council Staff							
43131	**Prof Services-LGC-Salaries**	$ 70,812	$ 63,977	$ 6,836	9.7%	$ 72,937	$ 2,124	3.00%
43132	**Prof Services-LGC-Benefits**	$ 40,795	$ 35,566	$ 5,229	12.8%	$ 42,019	$ 1,224	3.00%
43133	**Prof Services-LGC Overhead**	$ 59,230	$ 24,165	$ 35,065	59.2%	$ 61,007	$ 1,777	3.00%
	Total Personnel Costs-Region 2000 Staff	$ 170,838	$ 123,708	$ 47,130	27.6%	$ 175,963	$ 5,125	3.00%
	Total Personnel Costs	$ 1,566,246	$ 1,240,165	$ 326,080	20.8%	$ 1,603,265	$ 37,019	2.36%

Landfill Operating and Maintenance Expenses

Schedule 4

Attachment #5A

Account	Operations and Maintenance Cost Type	(A) FY 2020 Approved Budget	(B) Actuals Though 04/30/2020	(C) Budget Amount Remaining (A - B)	(D) Budget % Remaining (C / A)	FY 2021 Preliminary Budget	FY 2021 amount change from FY 2020	% Change FY20 to FY21 Budget
	Contractual Services							
43166	Software support-Paradigm	$ 25,000	6,780	$ 18,220	73%	$ 45,311	$ 20,311	81.24%
43321	Communications M&R Service/Radio	$ 13,000	14,206	$ (1,206)	-9%	$ 13,000	$ -	0.00%
43313	Building M & R Services	$ 6,000	2,580	$ 3,420	57%	$ 6,000	$ -	0.00%
43171	Site Maintenance-Concord Turnpike	$ -	270	$ (270)	0%	$ -	$ -	0.00%
43172	Site Maintenance-Livestock Road	$ 35,000	50,545	$ (15,545)	-44%	$ 35,000	$ -	0.00%
43170	Sedimentation Basin Cleaning	$ -	-	$ -	0%	$ -	$ -	0.00%
43169	Janitorial Services	$ 7,800	5,850	$ 1,950	25%	$ 7,800	$ -	0.00%
43110	Med/Dental/Pharm/Lab Services	$ -	-	$ -	0%	$ -	$ -	0.00%
43150	Legal Services	$ 30,000	25,000	$ 5,000	17%	$ 30,000	$ -	0.00%
43120	Accounting and auditing service	$ 9,000	8,800	$ 200	2%	$ 9,000	$ -	0.00%
43140	Engineering/Monitoring Services-Lynchburg	$ -	3,367	$ (3,367)	0%	$ -	$ -	0.00%
43140a	Engineering/Monitoring Services-Campbell	$ 125,000	121,983	$ 3,017	2%	$ 125,000	$ -	0.00%
43141	Professional Consulting Service	$ -	-	$ -	0%	$ -	$ -	0.00%
43160	Environmental Lab Services-Lynchburg	$ -	270	$ (270)	0%	$ -	$ -	0.00%
43160a	Environmental Lab Services-Campbell	$ 8,000	11,439	$ (3,439)	-43%	$ 8,000	$ -	0.00%
43200	Temporary Help Service Fees	$ 30,000	7,044	$ 22,956	77%	$ 30,000	$ -	0.00%
43600	Advertising	$ 6,000	-	$ 6,000	100%	$ 6,000	$ -	0.00%
43176	Software Purchases-Other	$ 3,000	1,700	$ 1,300	43%	$ 3,000	$ -	0.00%
43167	Pest Control services	$ 1,000	800	$ 200	20%	$ 1,000	$ -	0.00%
43168	Investigative Services	$ 100	72	$ 29	29%	$ 100	$ -	0.00%
46011	Uniform Rental Services / Clothing Allowance beginning FY2020	$ 10,070	9,425	$ 645	6%	$ 10,000	$ (70)	-0.70%
43161	Tire Shredding Services	$ 5,000	2,100	$ 2,900	58%	$ 5,000	$ -	0.00%
43165	Misc Contractual Services	$ 1,000	1,563	$ (563)	-56%	$ 1,000	$ -	0.00%
43177	Website, Media & Public Communications	$ 2,500	2,148	$ 353	14%	$ 2,500	$ -	0.00%
42850	Employee Med Exp-drug tests, ph	$ 1,500	903	$ 597	40%	$ 1,500	$ -	0.00%
46031	Heavy Equipment-Outside Repair	$ 70,000	40,722	$ 29,278	42%	$ 70,000	$ -	0.00%
43173	Mechanical M&R Services	$ 4,000	1,535	$ 2,465	62%	$ 4,000	$ -	0.00%
43121	Payroll support services	$ 12,000	10,500	$ 1,500	13%	$ 12,000	$ -	0.00%
46017	Software Maint Contract-Accounting	$ 800	1,100	$ (300)	-37%	$ 800	$ -	0.00%
43162	HHW Disposal	$ -	24,936	$ (24,936)	0%	$ -	$ -	0.00%
43163	Wood Waste Grinding	$ 10,000	-	$ 10,000	100%	$ 10,000	$ -	0.00%
	Contractual Services Subtotal	$ 415,770	355,639	$ 60,131	14%	$ 436,011	$ 20,241	4.87%
	Supplies & Materials							
46001	Office Supplies/Audio Visual Supplies	$ 6,000	4,807	$ 1,193	20%	$ 6,000	$ -	0.00%
46002	Forms & Stationary	$ 1,500	403	$ 1,097	73%	$ 1,500	$ -	0.00%
46005	Custodial Supplies	$ 2,500	2,263	$ 237	9%	$ 2,500	$ -	0.00%
46033	Apparel/Protective Wear/Personal Protective Equipment	$ 3,000	2,075	$ 925	31%	$ 3,000	$ -	0.00%
46012	Books & Publications	$ -	-	$ -	0%	$ -	$ -	0.00%
46013	Subscriptions	$ -	-	$ -	0%	$ -	$ -	0.00%
46018	Safety Supplies	$ 3,000	1,581	$ 1,419	47%	$ 3,000	$ -	0.00%
46019	Awards & Recognitions	$ -	202	$ (202)	0%	$ -	$ -	0.00%
46020	Grounds Maintenance Supplies	$ 3,000	725	$ 2,275	76%	$ 3,000	$ -	0.00%
46026	Food & Dietary Supplies	$ -	-	$ -	0%	$ -	$ -	0.00%
46022	Minor Equipment-Tools	$ 7,000	5,872	$ 1,128	16%	$ 7,000	$ -	0.00%
46021	Chemicals/gases	$ 500	395	$ 105	21%	$ 500	$ -	0.00%
43310	R & M- Office	$ -	2,545	$ (2,545)	0%	$ -	$ -	0.00%
46009	Vehicle M&R Equipment Parts	$ 150,000	118,110	$ 31,890	21%	$ 155,684	$ 5,684	3.79%
46007	R&M Supplies-Building	$ 5,000	4,970	$ 30	1%	$ 5,000	$ -	0.00%
43312	R & M-Mechanical-Materials	$ -	-	$ -	0%	$ -	$ -	0.00%
46016	Odor Control Operations & Materials	$ 100,000	91,225	$ 8,775	9%	$ 100,000	$ -	0.00%
46032	Communications M & R Materials	$ 2,000	-	$ 2,000	100%	$ 2,000	$ -	0.00%
46025	Haul Road M&R Materials	$ 180,000	103,887	$ 76,113	42%	$ 180,000	$ -	0.00%
46027	Daily Cover/Posi-Shell	$ 110,000	95,254	$ 14,746	13%	$ 110,000	$ -	0.00%
45210	Postal Services	$ 2,000	1,775	$ 225	11%	$ 2,000	$ -	0.00%
45220	Messenger Services	$ -	-	$ -	0%	$ -	$ -	0.00%
43500	Printing & Binding	$ 1,000	-	$ 1,000	100%	$ 1,000	$ -	0.00%
46035	Shop Supplies	$ 15,000	19,716	$ (4,716)	-31%	$ 15,000	$ -	0.00%
42820	Education-Tuition Assistance	$ -	-	$ -	0%	$ -	$ -	0.00%
46023	Computer Materials & Repair	$ 10,000	7,918	$ 2,082	21%	$ 10,000	$ -	0.00%
46024	Mechanical M&R Materials	$ -	-	$ -	0%	$ -	$ -	0.00%
	Supplies & Materials Subtotal	$ 601,500	463,723	$ 137,777	23%	$ 607,184	$ 5,684	0.94%
	Gas/Diesel Fuel/Oil & Grease	$ 250,000		$ 250,000	100%	$ 250,000	$ -	0.00%
46008	Vehicle & Equipt Fuel-Diesel	$ -	141,697	$ (141,697)	0%	$ (10,000)	$ (10,000)	0.00%
46028	Vehicle & Equipt Fuel-Gasoline	$ -	2,850	$ (2,850)	0%	$ -	$ -	0.00%
46029	Vehicle & Equipt/Oil & Grease	$ -	12,768	$ (12,768)	0%	$ -	$ -	0.00%
	Gas/Diesel Fuel/Oil & Grease Subtotal	$ 250,000	157,315	$ 92,685	37%	$ 240,000	$ (10,000)	-4.00%
								0.00%
	Rentals & Leases							0.00%
45410	Lease/Rent of Equipment-Office (Copier/postal meter)	$ 5,500	4,649	$ 851	15%	$ 5,500	$ -	0.00%
45411	Lease/Rent of Equipment-Landfill	$ 10,000	-	$ 10,000	100%	$ 10,000	$ -	0.00%
45420	Lease/Rent of Buildings	$ -	-	$ -	0%	$ -	$ -	0.00%
	Rentals & Leases Subtotal	$ 15,500	4,649	$ 10,851	70%	$ 15,500	$ -	0.00%

Landfill Operating and Maintenance Expenses

Schedule 4

Attachment #5A

Account	Operations and Maintenance Cost Type	FY 2020 Approved Budget	Actuals Though 04/30/2020	Budget Amount Remaining (A - B)	Budget % Remaining (C / A)	FY 2021 Preliminary Budget	FY 2021 amount change from FY 2020	% Change FY20 to FY21 Budget
	Utilities & Natural Gas							
45230	Telephone/Internet	$ 20,000	14,290	$ 5,710	29%	$ 20,000	$ -	0.00%
45110	Electrical Services	$ 35,000	29,922	$ 5,078	15%	$ 35,000	$ -	0.00%
45130	Water & Sewer	$ 1,500	1,177	$ 323	22%	$ 1,500	$ -	0.00%
45120	Utilities - Propane Gas	$ -	7,446	$ (7,446)	0%	$ 10,000	$ 10,000	0.00%
45231	Cellular Services & Pager	$ 3,960	1,650	$ 2,310	58%	$ 3,960	$ -	0.00%
	Utilities Subtotal	$ 60,460	54,485	$ 5,975	10%	$ 70,460	$ 10,000	16.54%
							$ -	0.00%
45500	Travel & Training-Includes Continuing Education	$ 4,000		$ 4,000	100%	$ 4,000	$ -	0.00%
45510	Travel Mileage-Personal Vehicle	$ -	190	$ (190)	0%	$ -	$ -	0.00%
45530	Travel-Subsistence & Lodging	$ -	1,593	$ (1,593)	0%	$ -	$ -	0.00%
45540	Off-Site Training	$ -	2,288	$ (2,288)	0%	$ -	$ -	0.00%
46014	On-Site Training	$ 4,000	2,390	$ 1,610	40%	$ 4,000	$ -	0.00%
	Travel & Training Subtotal	$ 8,000	7,452	$ 548	7%	$ 8,000	$ -	0.00%
	Miscellaneous							
45800	Miscellaneous	$ 3,500	960	$ 2,540	73%	$ 3,500	$ -	0.00%
45810	Dues and Assoc Membership-Misc	$ 1,800	960	$ 840	47%	$ 1,800	$ -	0.00%
45801	Bank Service Charges	$ 3,600	2,622	$ 978	27%	$ 3,600	$ -	0.00%
45802	Cash Overage and (Shortage)	$ -	(1)	$ 1	0%	$ -	$ -	0.00%
45803	Finance Charges paid to vendors	$ -	-	$ -	0%	$ -	$ -	0.00%
45804	Bad Debt Expense	$ 3,000	14,011	$ (11,011)	-367%	$ 3,000	$ -	0.00%
45840	VDEQ landfill fee - Misc	$ 28,000	30,272	$ (2,272)	-8%	$ 28,000	$ -	0.00%
	Misc Expenses Subtotal	$ 39,900	48,824	$ (8,924)	-22%	$ 39,900	$ -	0.00%
	Payments to Other Entities							
43164a	Leachate Treatment-LR facility	$ 20,000	10,825	$ 9,175	46%	$ 20,000	$ -	0.00%
45308	General Liability insurance	$ 42,000	43,569	$ (1,569)	-4%	$ 42,000	$ -	0.00%
	Payments to Other Entities Subtotal	$ 62,000	54,394	$ 7,606	12%	$ 62,000	$ -	0.00%
	Sub-Total SA O & M Expenses	$ 1,453,130	1,146,482	$ 306,648	21%	$ 1,479,055	$ 25,925	1.78%
	Reimbursable O & M Expenses (see Reimbursable Schedule for Detail)	$ 121,500	70,941	$ 50,559	42%	$ 121,500	$ -	0.00%
	Grand Total Operations and Maintenance Cost	$ 1,574,630	$ 1,217,424	$ 357,206	23%	$ 1,600,555	$ 25,925	1.65%

Reimbursable Landfill Operating and Maintenance Expenses Personnel Costs

Attachment #5A

Schedule 5

		(A)	(B)	(C)	(D)			
Account	Operations and Maintenance Cost Type	FY 2020 Approved Budget	Actuals Though 04/30/2020	Budget Amount Remaining (A - B)	Budget % Remaining (C / A)	FY 2021 Preliminary Budget	FY 2021 amount change from FY 2020	% Change FY20 to FY21 Budget
	Reimbursable Landfill O & M Expenses							
	City of Lynchburg							
43140	Engineering/Monitoring Services	$ 60,000	$ 50,528	$ 9,472	15.8%	$ 60,000	$ -	0.00%
43160	Environmental Lab Services	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
43162	HHW Disposal	$ 28,050	$ -	$ 28,050	100.0%	$ 28,050	$ -	0.00%
	City of Lynchburg Subtotal	$ 88,050	$ 50,528	$ 37,522	42.6%	$ 88,050	$ -	0.00%
	Amherst County							
43162	HHW Disposal	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
	Nelson County							
43162	HHW Disposal	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
	Appomattox County							
43162	HHW Disposal	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
	Campbell County							
43140a	Engineering/Monitoring/Remediation Services	$ 22,840	$ 17,223	$ 5,617	24.6%	$ 22,840	$ -	0.00%
43160a	Environmental Lab Services	$ 5,000	$ 3,190	$ 1,810	36.2%	$ 5,000	$ -	0.00%
43162	HHW Disposal	$ 5,610	$ -	$ 5,610	100.0%	$ 5,610	$ -	0.00%
43164a	Leachate Treatment	$ -	$ -	$ -	0.0%	$ -	$ -	0.00%
	Campbell County Subtotal	$ 33,450	$ 20,413	$ 13,037	39.0%	$ 33,450	$ -	0.00%
	Reimbursable Landfill O & M Expenses	**$ 121,500**	**$ 70,941**	**$ 50,559**	**41.6%**	**$ 121,500**	**$ -**	**0.00%**
	Reimbursable Landfill Personnel Costs							
	City of Lynchburg							
	Concord Turnpike Personnel Costs	$ 39,756	$ 33,138	$ 6,619	16.6%	$ 40,716	$ 960	2.41%
	City of Lynchburg Subtotal	$ 39,756	$ 33,138	$ 6,619	16.6%	$ 40,716	$ 960	2.41%
	Campbell County							
	Environmental Compliance & Safety	$ 6,000	$ -	$ 6,000	100.0%	$ 6,000	$ -	0.00%
	Campbell County Subtotal	$ 6,000	$ -	$ 6,000	100.0%	$ 6,000	$ -	0.00%
	Reimbursable Landfill Personnel Costs	**$ 45,756**	**$ 33,138**	**$ 12,619**	**27.6%**	**$ 46,716**	**$ 960**	**2.10%**

Region 2000 Services Authority
Balance Sheet

Assets		4/30/2020	
Cash - 2015 Bond Funds			
Cash-US Bank-Bond Balance		$	125,390.66
Cash-US Bank-Bond Fund Payments		$	191,496.58
Total 2015 Bond Funds		$	316,887.24
Cash - 2011 Bond Funds			
Cash-US Bank-Bond Fund Payments		$	362,929.81
Total 2011 Bond Funds		$	362,929.81
Cash - Closure/Post-Closure			
Cash -SunTrust Closure/Post-Closure		$	55,228.29
	Total C/PC Concord Tpk	$	55,228.29
LGIP-Concord Tpk - C/PC		$	2,449,463.17
	Total Closure/PC - Concord Tpk	$	2,504,691.46
LGIP-Livestock Road - Purchased Contribution C/PC		$	1,108,209.30
LGIP-Livestock Road - SA Contribution C/PC thru FY19		$	628,461.08
	Total Closure/PC - Livestock Rd	$	1,736,670.38
	Total Closure/Post Closure	$	4,241,361.84
Cash-Operating Accounts			
Total Bank of the James Depository Account		$	15,596.82
Total SunTrust Operating Account		$	1,228,495.43
LGIP-Environmental Remediation - FY2009 thru FY2017		$	482,590.41
LGIP-O&M Reserve		$	835,111.72
LGIP-Year End Fund Balance		$	1,412,545.23
	Total Cash and LGIP	$	8,895,518.50
		.	
All Receivables for Operations		$	620,758.75
Receivable from City for CT Post Closure Care		$	626,508.33
Internal Loan Receivable		$	1,551,135.19
GASB 68 Deferred Pension Outflow & OPEB GLI		$	62,457.00
Prepaid Expenses		$	1,220.00
All Fixed Assets -less depreciation		$	15,472,921.36
	Total Assets	$	27,230,519.13
Liabilities			
Accounts Payable		$	41,976.66
Accrued OPEB Liabilities		$	450,099.55
GASB 68 Deferred Pension & OPEB Liabilities		$	126,841.00
Net Pension Liability		$	(552,463.00)
Accrued Interest Payable		$	99,608.41
Accrued Vacation Pay		$	75,074.23
Accrued Other Liabilities		$	18,300.00
	Total Current Liabilities	$	259,436.85
Accrued P/C Cost-Concord Tpk - City of Lynchburg (71.6%)		$	2,068,265.90
Accrued P/C Cost-Concord Tpk - SA (28.4%)		$	820,389.39
Accrued Closure-P/C Cost-Livestock Road		$	4,902,069.04
	Total Closure/Post-Closure	$	7,790,724.33
Debt			
Internal Loan Payable		$	1,551,135.19
2015 Bond Payable		$	5,217,000.00
2011 Bond Payable		$	3,791,000.00
	Total Liabilities	$	18,609,296.37
Reserves			
Restricted - Environmental Remediation Reserve		$	450,000.00
Restricted - YE Fund Balance Reserve		$	1,407,595.00
Restricted - Equipment Replacement Reserve		$	623,170.30
Restricted - Future Disposal Planning Reserve		$	61,242.38
Restricted - O & M Reserve		$	832,001.03
	Total Reserves	$	3,374,008.71
Fund Balance			$5,247,214.05
	Total Liabilities & Equity	$	27,230,519.13 $ -

Region 2000 Services Authority

4/30/2020
Schedule 7

Capital Equipment Fund

FY2020 Approved Capital Equipment Items	Average Cost Estimate	Fund Balance
Balance @ 6/30/2019		$ 615,570
FY 2020 Preliminary Purchases		
CAT D6XE Dozer (Actual)	$ 480,839	
CAT 336 Excavator (Volvo EC350E-Actual)	$ 291,878	
Stop Light (Actual)	$ 9,090	
Tires for Off-Road Dump Truck (Actual)	$ 17,892	
Subtotal	$ 799,699	
Transfer from Operating Fund for FY2020		$ 426,385
Estimated Balance @ 6/30/2020		$ 242,256

FY2021 Capital Equipment Items (Preliminary)	Cost	Fund Balance
Estimated Balance @ 6/30/2020		$ 242,256
FY 2021 Preliminary Purchases		
GPS System for D6XE	$ 40,000	
Pickup Truck	$ 40,000	
UTV	$ 25,000	
Digital Road Sign	$ 9,000	
3 New Mobile (Equipment) Radios	$ 8,000	
New Undercarriage for 963 K and D6N	$ 55,000	
Computer Replacement	$ 5,000	
Subtotal	$ 182,000	
Estimated Transfer from Operating Fund for FY2021		$ 500,000
Estimated Balance @ 6/30/2021		$ 560,256

FY 2020 & FY 2021 Estimated Post-Closure Costs for Concord Turnpike Facility	Average Cost Estimate per Year
Estimated Cost of Contracted Services per year	$ 125,000

FY 2021 Proposed Budget Summary Update

Revenue Tonnage Projection:

192,886 tons, no increase

Revenue:

$7,054,565

Operating Expenses:

$5,834,804

Total Expenses (includes airspace reserve expense):

$7,054,565

Proposed Employee Salary Increase:

A 3% employee salary increase has been included in the proposed FY 2021 budget. We believe this increase is justified to help continue the good employee retention rate we have experienced over the last several years as well as recognize the fine performance of our employees who all contribute to the efficiencies of landfill operations that help keep your member rate one of the lowest solid waste disposal rates in Virginia.

Disposal Cost of service:

$30.25 per ton
No increase

Proposed Tipping Fee:

Member Rate: $30.25 per ton, no increase
Market Rate: $40.25 per ton, no increase

Airspace Reserve:

$1,219,761

$373,247 proposed to be distributed to City of Lynchburg, $846,514 proposed to be distributed to Campbell County.

Major Adjustments from proposed budget submitted at January 30, 2019 meeting:

- Increase revenue $60,339.
- Increase operating expense $10,336

- Increase excess revenue $50,000

Other Important Notes:

- We are approaching the date that the volume of available airspace at the time our original member use agreement was approved by all members will be consumed, Therefore, the annual vote to distribute the airspace reserve funds to Campbell County and Lynchburg based on the percentage of that volume that was initially available at the Livestock Road Landfill and the Concord Turnpike landfill will no longer be required after we reach this milestone. We are projecting that we will reach this important milestone during FY 2022. Once this milestone is passed, the current adopted financial policy indicates 25% of the airspace reserve is to be used for landfill operations and 75% be distributed to Campbell County, the host community. The "lateral expansion" the Board approved several years ago has provided an additional 8 to 9 years of landfill capacity, through 2030-2031.
- Expect future increases in the closure/post closure reserve contribution due to increased closure construction costs and adding the build-out of the LFG collection to the closure estimate.
- Repayment of internal loan and annual contribution to closure/post closure reserve deferred to FY 2025. Approximately $2 million of closure/post closure funds were used to purchase the Bennett property several years ago.
- As shown in the attached "pro-forma" budget, we can expect cost of service fees to increase through FY 2031 to around $35 - $36 per ton. This does not take into account variables such as the impact County Waste may have on the Authority's budget by diverting approximately 50,000 tons to a private landfill through the proposed Appomattox transfer station or the impact of additional tons that are or have been considered. Also, this pro-forma budget does not factor in the potential revenue from a LFG to energy project being considered.

Financial Pro Forma
Region 2000 Services Authority
Financial Pro Forma - Baseline

Attachment #5D

		Actual FY 2009	Actual FY 2010	Actual FY 2011	Actual FY 2012	Actual FY 2013	Actual FY 2014	Actual FY 2015	Actual FY 2016	Actual FY 2017	Actual FY 2018	Approved FY 2019	Projected FY 2020
1	**Disposal Rates**												
2	Cost of Service Rate	$22.62	$22.15	$25.50	$27.95	$25.98	$28.02	$28.75	$29.57	$30.68	$30.20	$28.89	$30.25
3	Member Rate	$25.00	$25.03	$25.03	$27.04	$28.03	$28.18	$28.75	$28.76	$28.77	$30.26	$30.27	$30.25
4	Other Contracts	$28.56	$28.25	$29.13	$29.59	$31.53	$34.02	$36.00	$38.15	$38.75	$40.25	$38.89	$40.25
5	Market Rate (Private Haulers)	$34.83	$34.94	$35.03	$37.00	$37.89	$37.98	$38.75	$38.75	$38.75	$40.26	$40.30	$40.25
6	Inert	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
7													
8	**Operating Revenue**												
9	Member Cities	$2,137,667	$2,245,735	$2,283,851	$2,265,005	$2,176,730	$2,128,711	$2,191,706	$2,130,813	$2,115,109	$2,175,953	$2,213,395	$2,145,028
10	Lynchburg Contracts & Other Waste	$870,645	$1,146,292	$751,732	$887,096	$887,293	$874,370	$909,338	$487,898	$0	$0	$0	$0
11	Market Rate and Other Contract Tonnage	$3,614,392	$3,692,249	$3,452,718	$3,972,934	$5,162,917	$3,902,163	$4,061,766	$4,430,738	$4,582,148	$4,833,731	$4,974,168	$4,909,537
12	Total Operating Revenue	$6,622,704	$7,084,276	$6,488,301	$7,125,035	$8,226,940	$6,905,244	$7,162,810	$7,049,449	$6,697,257	$7,009,684	$7,187,563	$7,054,565
13													
14	**Operating Expenditures**												
15	Personnnel	$1,077,668	$1,176,899	$1,154,400	$1,171,431	$1,260,128	$1,310,327	$1,318,903	$1,329,463	$1,419,579	$1,461,075	$1,482,722	$1,566,246
16	Landfill O&M	$1,156,838	$1,220,182	$1,444,126	$1,348,614	$1,335,570	$1,583,454	$1,399,379	$1,777,472	$1,524,150	$1,554,748	$1,570,122	$1,574,630
17	Equipment Replacement Reserve Contribution	$406,524	$434,982	$457,941	$457,941	$307,941	$300,000	$400,000	$408,000	$366,160	$450,000	$438,049	$426,385
18	Equipment Lease Payments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Authority Closure and Post-Closure Contributions	$465,732	$406,661	$518,702	$900,000	$985,000	$781,111	$790,252	$704,905	$649,511	$600,237	$389,567	$390,000
20	O&M Reserve Contribution	$0	$0	$0	$188,850	$200,000	$141,716	$0	$0	$0	$0	$73,324	$75,000
21	Environmental Remediation Reserve	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$0	$0	$0
22	Future Disposal Planning Reserve	$50,000	$50,000	$50,000	$0	$0	$0	$0	$0	$50,000	$40,000	$36,278	$25,000
23	Debt Service Reserve					$67,000	$0	$0	$0	$0	$0	$0	$0
24	Subtotal Operating Expenses	$3,206,762	$3,338,724	$3,675,169	$4,116,836	$4,205,639	$4,166,608	$3,958,534	$4,269,840	$4,059,400	$4,106,060	$3,990,062	$4,057,261
25	Interest and Other Income	($132,462)	($37,931)	($31,503)	($17,895)	($42,102)	($20,609)	($11,733)	($12,538)	($23,557)	($21,250)	($34,069)	($21,000)
26	Closure Liability Accrual from Lynchburg				($429,600)								
27	Revenue Offset from Reserves												
28	LFG Project Revenue												
29	Reimburable Expenses	($271,835)	($282,384)	($346,673)	($177,969)	($243,041)	($364,640)	($245,186)	($375,383)	($224,373)	($248,783)	($232,186)	($167,256)
30	**Total Operating Expenditures**	$2,802,465	$3,018,409	$3,296,994	$3,491,372	$3,920,496	$3,781,359	$3,701,615	$3,881,919	$3,811,470	$3,836,027	$3,723,807	$3,869,005
31													
32	**Revenues Available for Debt Service**	$3,820,239	$4,065,867	$3,191,307	$3,633,663	$4,306,444	$3,123,885	$3,461,195	$3,167,530	$2,885,787	$3,173,657	$3,463,756	$3,185,560
33													
34	**Debt Service (DS)**												
35	Series 2008 Debt (payment to escrow account)	$1,768,309	$2,209,522	$2,202,162	$2,200,609	$1,738,376	$0	$0	$0	$0	$0	$0	$0
36	Series 2011 Debt (payment to escrow account)	$0	$0	$0	$487,625	$628,583	$1,979,303	$2,101,854	$955,852	$852,128	$851,373	$850,352	$853,303
37	Property Acquisition (Internal Loan)	$0	$0	$0	$0	$0	$0	$223,172	$304,462	$109,409	$0	$0	$0
38	Phase IV Landfill (payment to escrow account)	$0	$0	$0	$0	$0	$0	$16,677	$807,517	$1,111,197	$1,109,942	$1,105,378	$1,112,497
39	Phase V Landfill	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
40	**Total Debt Service**	$1,768,309	$2,209,522	$2,202,162	$2,688,233	$2,366,960	$1,979,303	$2,341,703	$2,067,831	$2,072,734	$1,961,315	$1,955,730	$1,965,800
41													
42	**Total Expenses**												
43	Subtotal Operating Expenses and Debt Service	$4,570,774	$5,227,931	$5,499,156	$6,179,605	$6,287,456	$5,760,662	$6,043,318	$5,949,750	$5,884,204	$5,797,342	$5,679,537	$5,834,805
44	Offset from Prior Year Net Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
45	Total Operating Expenses and Debt Service	$4,570,774	$5,227,931	$5,499,156	$6,179,605	$6,287,456	$5,760,662	$6,043,318	$5,949,750	$5,884,204	$5,797,342	$5,679,537	$5,834,805
46													
47	**Distibution of Airspace Reserve**												
48	City of Lynchburg	$547,331	$604,284	$302,678	$289,298	$363,317	$354,051	$398,350	$354,847	$291,861	$369,507	$430,738	$373,247
49	Campbell County	$900,635	$994,352	$686,467	$656,120	$823,993	$802,978	$903,447	$804,784	$661,932	$838,033	$976,902	$846,513
50	Total	$1,447,966	$1,598,636	$989,145	$945,418	$1,187,310	$1,157,029	$1,301,797	$1,159,631	$953,793	$1,207,540	$1,407,640	$1,219,760
51													
52	**Net Operating Revenues**	$603,964	$257,709	$0	$12	$752,174	($12,447)	($182,305)	($59,932)	($140,740)	$4,802	$100,386	($0)
53	**Additional Reserve Contributions (Withdrawals)**	$0	$0	$0	$0	($752,174)	$0	$182,305	$0	$0	($4,802)	$0	$0
54	**Net Operating Revenues after Reserve Contr.**	$603,964	$257,709	$0	$12	$0	($12,447)	$0	($59,932)	($140,740)	$0	$100,386	($0)

Financial Pro Forma
Region 2000 Services Authority
Financial Pro Forma - Baseline

Attachment #5D

		Projected FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030	Projected FY 2031
1	**Disposal Rates**											
2	Cost of Service Rate	$29.70	$30.26	$30.82	$31.38	$31.97	$32.52	$33.10	$33.65	$34.19	$34.72	$35.27
3	Member Rate	$29.70	$30.26	$30.82	$31.38	$31.97	$32.52	$33.10	$33.65	$34.19	$34.72	$35.27
4	Other Contracts	$39.70	$40.26	$40.82	$41.38	$41.97	$42.52	$43.10	$43.65	$44.19	$44.72	$45.27
5	Market Rate (Private Haulers)	$39.70	$40.26	$40.82	$41.38	$41.97	$42.52	$43.10	$43.65	$44.19	$44.72	$45.27
6	Inert	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
7												
8	**Operating Revenue**											
9	Member Cities	$2,145,028	$2,150,880	$2,196,289	$2,241,945	$2,289,417	$2,334,646	$2,382,798	$2,428,019	$2,473,553	$2,517,710	$1,815,752
10	Lynchburg Contracts & Other Waste	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Market Rate and Other Contract Tonnage	$4,909,537	$4,922,650	$5,003,818	$5,085,419	$5,170,149	$5,251,031	$5,336,946	$5,417,829	$5,499,258	$5,578,325	$4,018,901
12	Total Operating Revenue	$7,054,565	$7,073,530	$7,200,108	$7,327,364	$7,459,565	$7,585,677	$7,719,743	$7,845,848	$7,972,811	$8,096,035	$5,834,652
13												
14	**Operating Expenditures**											
15	Personnnel	$1,603,265	$1,635,330	$1,668,037	$1,701,398	$1,735,426	$1,770,134	$1,805,537	$1,841,648	$1,878,480	$1,916,050	$1,387,287
16	Landfill O&M	$1,600,555	$1,632,566	$1,665,217	$1,698,522	$1,732,492	$1,767,142	$1,802,485	$1,838,535	$1,875,305	$1,912,811	$1,384,942
17	Equipment Replacement Reserve Contribution	$500,000	$580,000	$640,000	$680,000	$760,000	$200,000	$150,000	$100,000	$0	$0	$0
18	Equipment Lease Payments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	Authority Closure and Post-Closure Contributions	$353,500	$450,000	$360,000	$540,000	$860,000	$1,930,000	$2,050,000	$2,160,000	$2,320,000	$2,375,000	$1,475,000
20	O&M Reserve Contribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
21	Environmental Remediation Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22	Future Disposal Planning Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
23	Debt Service Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24	Subtotal Operating Expenses	$4,057,320	$4,297,896	$4,333,254	$4,619,919	$5,087,918	$5,667,276	$5,808,023	$5,940,184	$6,073,789	$6,203,861	$4,247,228
25	Interest and Other Income	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($21,000)	($14,907)
26	Closure Liability Accrual from Lynchburg											
27	Revenue Offset from Reserves											
28	LFG Project Revenue	($105,333)	($116,918)	($131,742)	($139,788)	($148,539)	($157,238)	($161,607)	($165,242)	($169,349)	($173,545)	($178,238)
29	Reimburable Expenses	($168,216)	($171,580)	($175,012)	($178,512)	($182,082)	($185,724)	($189,439)	($193,227)	($197,092)	($201,034)	($145,555)
30	**Total Operating Expenditures**	$3,762,771	$3,988,398	$4,005,500	$4,280,619	$4,736,296	$5,303,314	$5,435,977	$5,560,715	$5,686,348	$5,808,283	$3,908,528
31												
32	**Revenues Available for Debt Service**	$3,291,794	$3,085,132	$3,194,607	$3,046,745	$2,723,269	$2,282,363	$2,283,766	$2,285,133	$2,286,463	$2,287,753	$1,926,124
33												
34	**Debt Service (DS)**											
35	Series 2008 Debt (payment to escrow account)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
36	Series 2011 Debt (payment to escrow account)	$854,442	$855,241	$855,849	$857,050	$71,430	$0	$0	$0	$0	$0	$0
37	Property Acquisition (Internal Loan)	$0	$0	$0	$0	$221,591	$221,591	$221,591	$221,591	$221,591	$221,591	$221,591
38	Phase IV Landfill (payment to escrow account)	$1,112,212	$1,112,462	$1,112,891	$1,112,820	$370,913	$0	$0	$0	$0	$0	$0
39	Phase V Landfill	$0	$0	$0	$154,411	$1,134,565	$1,133,690	$1,132,775	$1,131,819	$1,130,819	$1,129,774	$1,128,681
40	**Total Debt Service**	$1,966,654	$1,967,703	$1,968,741	$2,124,281	$1,798,498	$1,355,281	$1,354,366	$1,353,410	$1,352,410	$1,351,364	$1,350,271
41												
42	**Total Expenses**											
43	Subtotal Operating Expenses and Debt Service	$5,729,425	$5,956,101	$5,974,241	$6,404,900	$6,534,795	$6,658,595	$6,790,343	$6,914,124	$7,038,758	$7,159,647	$5,258,800
44	Offset from Prior Year Net Revenue	$0	($105,380)	$0	($306,467)	($307,233)	($308,001)	($308,771)	($309,543)	($310,317)	($311,092)	($311,870)
45	Total Operating Expenses and Debt Service	$5,729,425	$5,850,721	$5,974,241	$6,098,433	$6,227,562	$6,350,594	$6,481,572	$6,604,582	$6,728,441	$6,848,555	$4,946,930
46												
47	**Distibution of Airspace Reserve**											
48	City of Lynchburg	$373,247	$374,180	$0	$0	$0	$0	$0	$0	$0	$0	$0
49	Campbell County	$846,513	$848,630	$919,400	$921,698	$924,003	$926,313	$928,628	$930,950	$933,277	$935,610	$665,792
50	Total	$1,219,760	$1,222,809	$919,400	$921,698	$924,003	$926,313	$928,628	$930,950	$933,277	$935,610	$665,792
51												
52	**Net Operating Revenues**	$105,380	$0	$306,467	$307,233	$308,001	$308,771	$309,543	$310,317	$311,092	$311,870	$221,931
53	**Additional Reserve Contributions (Withdrawals)**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
54	**Net Operating Revenues after Reserve Contr.**	$105,380	$0	$306,467	$307,233	$308,001	$308,771	$309,543	$310,317	$311,092	$311,870	$221,931

Refinancing of Solid Waste Revenue Bond, Series 2011

Region 2000 Services Authority

May 12, 2020

DAVENPORT & COMPANY
Member NYSE | FINRA | SIPC

Potential Refunding Opportunity

Solid Waste Revenue Bond, Series 2011 - Overview

- On April 28, 2011, the Authority issued a $10,000,000 Solid Waste Revenue Bond, Series 2011 (the "2011 Bond") through a Direct Bank Loan with BB&T, now Truist.

- The proceeds of the 2011 Bond were used to purchase property, construct Cells 6 & 7 at the Campbell County landfill facility, and make site improvements to the Campbell County landfill facility.

- A summary of the key terms and conditions of the 2011 Bond is shown below:
  - Original Issue Amount: $10,000,000
  - Current Amount Outstanding: $3,791,000
  - Final Maturity: August 1, 2024
  - Interest Rate: 4.15%
  - Prepayment Provisions: Principal of the bond may be prepaid at the option of the Authority, in whole on a scheduled payment date, with a 1% premium.

Truist Refunding Proposal

- On May 1, 2020, Truist provided a proposal to refinance the existing 2011 Bonds.

- As part of the proposal, Truist waived the requirement to prepay on a payment date, and offered to reduce the prepayment premium to 0.5%.

- Summary of Proposed Refunding Terms and Conditions:
  - Not-to-Exceed Amount: $3,950,000
  - Final Maturity: August 1, 2024
  - Interest Rate: 2.44%
  - Bank Counsel Costs: up to $5,000
  - Prepayment Provisions: Prepayable in whole at any time with a 0.5% penalty.

- The Truist Proposal will expire on June 15, 2020; closing must occur prior to this date.

Summary of Estimated Refunding Results

1	**Bonds Refunded**		
2	Par Refunded	$	3,791,000
3	Coupon		4.150%
4	Call Date		6/5/2020
5	Call Price		100.50%
6	Maturities Refunded		8/1/2020 - 8/1/2024
7			
8	**Refunding Bonds**		
9	Bond Par Amount	$	3,909,500
10	Final Maturity		8/1/2024
11	Bank Rate		2.44%
12			
13	**Savings**		
14	**Gross Savings**	**$**	**79,251**
15	**Net PV Savings**	**$**	**74,832**
16	**Net PV Savings %**		**1.974%**
17	Average Annual Savings	$	15,850

Estimated Annual Savings

Year	Net Prior Bond Debt Service	Net Refunding Debt Service	Annual Savings
6/30/2021	838,885	823,141	15,744
6/30/2022	839,378	823,381	15,997
6/30/2023	839,606	823,702	15,903
6/30/2024	839,526	823,561	15,966
6/30/2025	840,077	824,437	15,640
Total	**$ 4,197,472**	**$ 4,118,221**	**$ 79,251**

	Amount
Financial Advisor (Davenport)	20,000.00
Bond Counsel (Sands Anderson PC)	19,100.00
Lender's Counsel (McGuireWoods)	5,000.00
Trustee (U.S. Bank)	900.00
Total	**45,000.00**

Municipal Advisor Disclosure

FOURTH SUPPLEMENTAL TRUST AGREEMENT

between

THE REGION 2000 SERVICES AUTHORITY

and

U.S. Bank National Association,
as Trustee

Dated as of June 1, 2020

TABLE OF CONTENTS

THIS FOURTH SUPPLEMENTAL TRUST AGREEMENT dated as of the 1st day of June, 2020, by and between **THE REGION 2000 SERVICES AUTHORITY**, a public body politic and corporate of the Commonwealth of Virginia **(the "Authority")**, and U.S. Bank National Association, as trustee (in such capacity, together with any successor in such capacity, herein called **the "Trustee"**), provides:

WHEREAS, the Authority and the Trustee have entered into a Master Trust Agreement, dated as of June 20, 2008 **(the "Master Trust Agreement")**, pursuant to which the Authority may issue from time to time its revenue bonds or notes and use the proceeds thereof to pay for the Cost of a Project (as such term is defined in the Master Trust Agreement) or to refund other Bonds; and

WHEREAS, the Authority and the Trustee have entered into a First Supplemental Trust Agreement, dated as of June 20, 2008 **(the "First Supplemental Agreement")** supplementing the Master Trust Agreement, and pursuant to the Master Trust Agreement and First Supplemental Agreement the Authority issued its $10,000,000 Solid Waste Revenue Bond, Series 2008 **(the "Series 2008 Bond")**, which Series 2008 Bond is no longer outstanding; and

WHEREAS, the Authority and the Trustee have entered into a Second Supplemental Trust Agreement, dated as of April 1, 2011 **(the "Second Supplemental Agreement")** supplementing the Master Trust Agreement, and pursuant to the Master Trust Agreement and Second Supplemental Agreement the Authority issued its $10,000,000 Solid Waste Revenue Bond, Series 2011 **(the "Series 2011 Bond")**; and

WHEREAS, the Authority and the Trustee have entered into a Third Supplemental Trust Agreement, dated as of May 1, 2015 **(the "Third Supplemental Agreement")** supplementing the Master Trust Agreement, and pursuant to the Master Trust Agreement and Third Supplemental Agreement the Authority issued its $9,000,000 Solid Waste Revenue Bond, Series 2015 **(the "Series 2015 Bond")**; and

WHEREAS, in accordance with the Master Trust Agreement, as amended by the First Supplemental Trust Agreement and the Second Supplemental Trust Agreement, and the provisions of this Fourth Supplemental Trust Agreement, the Authority desires to issue the Series 2020 Bond in the aggregate principal amount of [$4,000,000] to refund and finance the outstanding principal amount of the Series 2011 Bond (**the "Refunded Bond"**); and

WHEREAS, the Authority and Truist Bank (f/k/a Branch Banking and Trust Company) **(the "Purchaser")** have entered into a Financing Agreement, dated as of June 1, 2020 **(the "Financing Agreement")**, pursuant to which the Purchaser has agreed to purchase the Series 2020 Bond on terms as set forth in the Financing Agreement; and

WHEREAS, the Authority has taken all necessary action to make the Series 2020 Bond, when authenticated by the Trustee and issued by the Authority, a valid and binding limited obligation of the Authority and to constitute this Fourth Supplemental Trust Agreement a valid and binding agreement authorizing and providing for the details of the Series 2020 Bond;

NOW THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the parties hereto agree as follows:

ARTICLE I

FOURTH SUPPLEMENTAL AGREEMENT

Section 1.1. Authorization of Fourth Supplemental Agreement. This Fourth Supplemental Agreement is authorized and executed by the Authority and delivered to the Trustee pursuant to and in accordance with Articles III and X of the Master Trust Agreement. All terms, covenants, conditions and agreements of the Master Trust Agreement shall apply with full force and effect to the Series 2020 Bond and to the holders thereof, except as otherwise provided in this Fourth Supplemental Agreement.

Section 1.2. Definitions. Except as otherwise defined in this Fourth Supplemental Agreement, words defined in the Master Trust Agreement are used in this Fourth Supplemental Agreement with the meanings assigned to them in the Master Trust Agreement. In addition, the following words shall have the following meanings unless a different meaning clearly appears from the context:

"Refunded Bond" shall mean the outstanding principal amount of the Authority's $10,000,000 Solid Waste Revenue Bond, Series 2011, issued pursuant to the Second Supplemental Agreement.

"Series 2020 Bond" shall mean the Authority's [$4,000,000] Solid Waste Revenue Refunding Bond, Series 2020, authorized to be issued pursuant to this Fourth Supplemental Agreement.

"Fourth Supplemental Agreement" shall mean this Fourth Supplemental Trust Agreement between the Authority and the Trustee, which supplements and amends the Master Trust Agreement.

Section 1.3. Rules of Construction. The following rules shall apply to the construction of this Fourth Supplemental Agreement unless the context otherwise requires:

(a) Words importing the singular number shall include the plural number and vice versa.

(b) Words importing the redemption or calling for redemption of the Series 2020 Bond shall not be deemed to refer to or connote the payment of the Series 2020 Bond at its stated maturity.

(c) Unless otherwise indicated, all references herein to particular Articles or Sections are references to Articles or Sections of this Fourth Supplemental Agreement.

(d) The headings herein and Table of Contents to this Fourth Supplemental Agreement herein are solely for convenience of reference and shall not constitute a part of this Fourth Supplemental Agreement nor shall they affect its meaning, construction or effect.

(e) All references herein to payment of the Series 2020 Bond are references to payment of principal of and premium, if any, and interest on the Series 2020 Bond.

ARTICLE II

AUTHORIZATION, DETAILS AND FORM OF SERIES 2020 BOND

Section 2.1. Authorization of Series 2020 Bond and Refunding of the Refunded Bond. There is hereby authorized to be issued the Series 2020 Bond in an aggregate principal amount of [$4,000,000] to (a) finance the refunding of the Refunded Bond and (b) finance costs incident to issuing the Series 2020 Bond.

Section 2.2. Details of Series 2020 Bond. (a) The Series 2020 Bond shall be designated "Solid Waste Revenue Refunding Bond, Series 2020," shall be dated the date of its issuance, shall be issuable only as a fully registered bond in the denomination of [$4,000,000,] shall be numbered R-1 and shall bear interest at the rate of two and eleven hundredths percent (2.11%) per year payable in semi-annual installments of interest each February 1 and August 1, commencing August 1, 2020 and annual installment payments of principal commencing August 1, 2020 and ending August 1, 2024, all as set forth on Schedule A to the attached form of Series 2020 Bond.

(b) The Series 2020 Bond shall bear interest from its date of issuance.

(c) The final payment of principal of and premium, if any, on the Series 2020 Bond shall be payable to the registered holder(s). Scheduled payments of principal and interest on the Series 2020 Bond shall be payable by check or draft mailed to the registered owners at their addresses as they appear on the applicable Bond Payment Date on the registration books kept by the Trustee. Principal, premium, if any, and interest shall be payable in lawful money of the United States of America. Interest shall be calculated on the basis of a 360-day year with twelve 30-day months.

Section 2.3. Form of Series 2020 Bond. The Series 2020 Bond shall be in substantially the form set forth in **Exhibit A** with such appropriate variations, omissions and insertions as are permitted or required by the Master Trust Agreement and this Fourth Supplemental Agreement.

Section 2.4. Delivery of Series 2020 Bond. The Trustee shall authenticate and deliver the Series 2020 Bond when there have been filed with or delivered to it all items required by Section 303 of the Master Trust Agreement.

ARTICLE III

REDEMPTION OF SERIES 2020 BOND

Section 3.1. Redemption Dates and Prices. The Series 2020 Bond may be redeemed at the option of the Authority, in whole only on any date, upon payment of interest accrued to the redemption date plus of the outstanding principal amount of Series 2020 Bond. In addition, the Series 2020 Bond is subject to extraordinary optional redemption upon damage or destruction to the System or condemnation or loss of title to the System as provided for in the Financing Agreement.

Section 3.2. (Reserved).

Section 3.3. Notice of Redemption. Notice of redemption of the Series 2020 Bond shall be given by not less than 20 days' written notice from the Authority to the Trustee and 15 days' written notice from the Trustee to the holder or holders of the Series 2020 Bond.

ARTICLE IV

APPLICATION OF PROCEEDS OF SERIES 2020 BOND

Section 4.1. Application of Proceeds of Series 2020 Bond. (a) The proceeds of the Series 2020 Bond shall be applied as follows, without the necessity of a requisition or deposit with the Trustee:

(1) Costs of issuance of the Series 2020 Bond shall be paid as directed in the Closing Memorandum prepared by the Authority's Financial Advisor and approved by the Authority; and

(2) The remaining proceeds of the Series 2020 Bond shall be paid to Branch Banking and Trust Company as holder of the Refunded Bond to refund the Refunded Bond on the Closing Date.

ARTICLE V

CREATION OF CERTAIN SUBACCOUNTS

Section 5.1. Creation of Principal and Interest Subaccounts. Pursuant to Section 604 of the Master Trust Agreement there is hereby created the Series 2020 Interest Subaccount of the Bond Fund **(the "Series 2020 Interest Subaccount")** and the Series 2020 Principal Subaccount of the Bond Fund **(the "Series 2020 Principal Subaccount")**.

ARTICLE VI

SECURITY FOR SERIES 2020 BOND

Section 6.1. Security for Series 2020 Bond. The Series 2020 Bond shall be equally and ratably secured under the Master Trust Agreement with the unrefunded portion of the Series 2011 Bond, if any, the Series 2015 Bond and any other series issued pursuant to Article III of the Master Trust Agreement, without preference, priority or distinction of any Bond over any other Bonds, provided, however, that the moneys in each Series Debt Service Reserve Account shall secure only the applicable Series of Bonds, and that any Series of Bonds may be paid, prepaid, redeemed or refunded from proceeds of any Series of Bonds, and provided further that any Series of Bonds may have other security pledged to its payment, all as provided in the Master Trust Agreement. The Series 2020 Bond is not secured by any Series Debt Service Reserve Account. The Series 2020 Bond shall be a limited obligation of the Authority payable solely from the Revenues derived from the ownership or operation of the System as provided in the Master Trust Agreement, except to the extent payable from the proceeds of the Series 2020 Bond, the income, if any, derived from the investment thereof, income from investments pursuant to the Master

Trust Agreement or the proceeds of insurance, and shall not constitute a debt or pledge of the faith and credit of the Commonwealth of Virginia or any political subdivision thereof, including the Authority, other than the limited obligation of the Authority. The Authority shall charge Tipping Fees (as defined in the Use Agreement) for use of the System in compliance with Section 5.1 of the Use Agreement, for as long as the Series 2020 Bond is Outstanding.

Section 6.2. Financial Assurance Not Pledged. The Authority may be required by law to provide financial assurance mechanisms or otherwise pay, including by trust funds or other reserve funds or special accounts, dedicated toward the payment of costs of closure, post-closure care and corrective action, or any of such costs, related to the System **("Financial Assurance Obligations")**. In no event shall any such funds, money or assets, including earnings thereon or investment income therefrom, be pledged or applied toward the payment of the Series 2020 Bond, but in all cases such funds, money or assets shall be utilized for Financial Assurance Obligations or, if allowed by law, for Operation and Maintenance Expense. Under current law, any such financial assurance assets may be utilized only for Financial Assurance Obligations, until such time as such Financial Assurance Obligations are no longer outstanding. To the extent permitted by law, once such assets are not required for Financial Assurance Obligations, such amounts shall be included in Revenues pledged hereunder. The Authority expects that such Financial Assurance Obligations related to the System shall remain outstanding until after the maturity date of the Series 2020 Bond.

ARTICLE VII

MISCELLANEOUS

Section 7.1. Limitations on Use of Proceeds. The Authority covenants with the holder or holders of the Series 2020 Bond not to take any action that would adversely affect, and to take all action within its power necessary to maintain, the exclusion of interest on the Series 2020 Bond from gross income for Federal income taxation purposes. Proceeds of the Series 2020 Bond shall be utilized only for the costs of refunding the Refunded Bond and not for funding any Financial Assurance Obligation related to any portion of the System.

Section 7.2. Limitation of Rights. With the exception of rights herein expressly conferred, nothing expressed or mentioned in or to be implied from this Fourth Supplemental Agreement or the Series 2020 Bond is intended or shall be construed to give to any person other than the parties hereto and the holder or holders of the Series 2020 Bond any legal or equitable right, remedy or claim under or in respect to this Fourth Supplemental Agreement or any covenants, conditions and agreements herein contained since this Fourth Supplemental Agreement and all of the covenants, conditions and agreements hereof are intended to be and are for the sole and exclusive benefit of the parties hereto and the holders of Series 2020 Bond as herein provided.

Section 7.3. Severability. If any provision of this Fourth Supplemental Agreement shall be held invalid by any court of competent jurisdiction, such holding shall not invalidate any other provision hereof and this Fourth Supplemental Agreement shall be construed and enforced as if such illegal provision had not been contained herein.

Section 7.4. Successors and Assigns. This Fourth Supplemental Agreement shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 7.5. Applicable Law. This Fourth Supplemental Agreement shall be governed by the applicable laws of the Commonwealth of Virginia.

Section 7.6. Patriot Act Requirements of the Trustee. To help the government fight the funding of terrorism and money laundering activities, Federal law requires all financial institutions to obtain, verify, and record information that identifies each person who opens an account. For a non-individual person such as a business entity, a charity, a trust, or other legal entity, the Trustee will ask for documentation to verify such non-individual person's formation and existence as a legal entity. The Trustee may also ask to see financial statements, licenses, identification and authorization documents from individuals claiming authority to represent the entity or other relevant documentation.

Section 7.7. Counterparts. This Fourth Supplemental Agreement may be executed in several counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the Authority and the Trustee have caused this Fourth Supplemental Agreement to be executed in their respective corporate names as of the date first above written.

THE REGION 2000 SERVICES AUTHORITY

By: _____
Chairman

U.S. BANK NATIONAL ASSOCIATION,
as Trustee

By: _____

Its: _____

Exhibit A

No. R-1 [$4,000,000.00]

UNITED STATES OF AMERICA
COMMONWEALTH OF VIRGINIA
THE REGION 2000 SERVICES AUTHORITY

Solid Waste Revenue Refunding Bond, Series 2020

INTEREST RATE	**MATURITY DATE**	**DATED DATE**	**ISSUE DATE**
2.11%	August 1, 2024	_____ ___, 2020	_____ ___, 2020

THE REGION 2000 SERVICES AUTHORITY, a public body politic and corporate of the Commonwealth of Virginia (the **"Authority"**), for value received, hereby promises to pay, solely from the revenues hereinafter described and pledged to the payment thereof, to **TRUIST BANK (F/K/A BRANCH BANKING AND TRUST COMPANY)**, Charlotte, North Carolina **(the "Purchaser")** or registered assigns, the principal amount of

____ MILLION AND 00/100 DOLLARS
[($4,000,000.00)]

together with interest on the unpaid principal amount from the date hereof until payment of the entire principal sum, at the rate per year, and payable in semi-annual installments of interest each February 1 and August 1, commencing August 1, 2020 and annual payments of principal commencing August 1, 2020 and ending August 1, 2024, all as set forth on Schedule A attached hereto. Installments of both principal and interest shall be payable in lawful money of the United States of America by check or draft mailed to the registered owner at its address as it appears on the registration books kept for that purpose at the office of U.S. Bank National Association as Trustee **(the "Trustee")**. If a payment date or date fixed for prepayment or redemption is not a business day for banks in the Commonwealth of Virginia or for the Commonwealth of Virginia, then the payment of the principal of and interest and premium, if any, on this Bond shall be made in immediately available funds at or before 11:00 a.m. on the business day next succeeding the scheduled payment date or date fixed for prepayment or redemption. This Bond shall be registered as to principal and interest. Interest on this Bond will be computed on the basis of a year of 360 days and twelve 30-day months. The final installment of principal shall be payable upon presentation and surrender hereof at the office of the Trustee.

This Bond has been authorized by a resolution adopted by the Authority on March __, 2020, **(the "Resolution"**), and is issued pursuant to the Virginia Water and Waste Authorities Act (Chapter 51, Title 15.2, Code of Virginia, 1950, as amended) **(the "Act"**), a Master Trust Agreement, dated as of June 20, 2008 **(the "Master Trust Agreement")** as supplemented by a First Supplemental Trust Agreement, dated as of June 20, 2008 **(the "First Supplemental Agreement")**, a Second Supplemental Trust Agreement, dated as of April 1, 2011 (**the "Second Supplemental Agreement"),** a Third Supplemental Trust Agreement dated as of May 1, 2015 **(the**

"Third Supplemental Agreement") and a Fourth Supplemental Trust Agreement, dated as of June 1, 2020 **(the "Fourth Supplemental Agreement")**, each between the Authority and the Trustee (**together, the "Trust Agreement"**) and a Financing Agreement, dated as of June 1, 2020 **(the "Financing Agreement")** between the Authority and the Purchaser to refund the Refunded Bond and to pay certain costs of issuance of this Bond. Copies of the Resolution, the Trust Agreement and the Financing Agreement are on file at the office of the Executive Director of the Authority. Reference is hereby made to the Resolution, the Trust Agreement and the Financing Agreement and any amendments thereto for the definitions and provisions, among others, describing the pledge and covenants securing this Bond, the nature and extent of the security, the terms and conditions upon which this Bond is issued, and the rights and obligations of the Authority and the rights of the Bondholder(s). Unless otherwise defined herein, words and terms defined in the Trust Agreement shall have the same meaning when used in this Bond.

Both principal of and interest on this Bond are payable solely from the Revenues derived from the ownership or operation of the System as provided in the Trust Agreement and the Financing Agreement, except to the extent payable from the proceeds of this Bond, and the income, if any, derived from the investment thereof, and nothing herein or in the Resolution, the Trust Agreement or the Financing Agreement shall be deemed to create or constitute an indebtedness of or a pledge of the faith and credit of the Commonwealth of Virginia or of any county, city, town or other political subdivision of the Commonwealth. The lien on Revenues of the System securing this Bond is on a parity with the similar lien on such Revenues securing any unrefunded portion of the Authority's $10,000,000 Solid Waste Revenue Bond, Series 2011 **(the "Series 2011 Bond")**, issued pursuant to the Master Trust Agreement and the Second Supplemental Agreement and its $9,000,000 Solid Waste Revenue Bond, Series 2015 issued pursuant to the Master Trust Agreement and the Third Supplemental Agreement. The Series 2011 Bond, the Series 205 Bond and the Bonds that may in the future be issued pursuant to the Master Trust Agreement are and shall be equally and ratably secured without preference, priority or distinction with this Bond, provided, however, that such Bonds may be paid, prepaid, redeemed or refunded from proceeds of a Series of Bonds and provided further that any Series of Bonds may have other security pledged to its payment, all as provided in the Master Trust Agreement.

THIS BOND IS A LIMITED OBLIGATION OF THE AUTHORITY AND IS PAYABLE SOLELY FROM CERTAIN REVENUES TO BE DERIVED FROM THE OWNERSHIP OR OPERATION OF THE AUTHORITY'S SOLID WASTE DISPOSAL SYSTEM AS THE SAME MAY FROM TIME TO TIME EXIST, WHICH REVENUES HAVE BEEN PLEDGED PURSUANT TO THE BOND RESOLUTION, THE TRUST AGREEMENT AND THE FINANCING AGREEMENT TO SECURE THE PAYMENT HEREOF. NEITHER THE COMMONWEALTH OF VIRGINIA NOR ANY POLITICAL SUBDIVISION THEREOF, INCLUDING THE AUTHORITY, SHALL BE OBLIGATED TO PAY THE PRINCIPAL OF AND THE PREMIUM, IF ANY, OR INTEREST ON THIS BOND OR OTHER COSTS INCIDENT THERETO EXCEPT FROM THE REVENUES PLEDGED THEREFOR, AND NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE COMMONWEALTH OF VIRGINIA OR ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF PRINCIPAL OF OR INTEREST ON THIS BOND OR OTHER COSTS INCIDENT THERETO. THE AUTHORITY HAS NO TAXING POWER.

This Bond may be redeemed at the option of the Authority, in whole only on any date, upon 15 days' written notice to the holder hereof, upon payment of interest accrued to the redemption date plus the outstanding principal amount of this Bond. In addition, this Bond is subject to extraordinary optional redemption upon damage or destruction to the System or condemnation or loss of title to the System as provided for in the Financing Agreement.

Bonds secured equally and ratably with this Bond may be issued from time to time under the conditions, limitations and restrictions set forth in the Trust Agreement, to finance the Cost of a Project, or to refund this Bond, any other Bonds or for any or all of such purposes.

Transfer of this Bond may be registered upon books maintained for that purpose by the Trustee. Prior to due presentment for registration of transfer the Trustee shall treat the registered owner as the person exclusively entitled to payment of principal and interest and the exercise of all other rights and powers of the owner.

All acts, conditions and things required by the Constitution and statutes of the Commonwealth of Virginia to happen, exist or be performed precedent to and in the issuance of this Bond have happened, exist and have been performed.

IN WITNESS WHEREOF, the Authority has caused this Solid Waste Revenue Refunding Bond, Series 2020 to be signed by its Chairman or Vice Chairman, to be countersigned by its Secretary, its seal to be affixed hereto and to be dated as of _____ __, 2020.

THE REGION 2000 SERVICES AUTHORITY

By _____
Name: _____
Title: Chairman

COUNTERSIGNED:

_____
Secretary or Executive Director,
The Region 2000 Services Authority

(SEAL)

CERTIFICATE OF AUTHENTICATION

This Bond is the Series 2020 Bond described in the within mentioned Fourth Supplemental Trust Agreement.

U.S. Bank National Association, as Trustee

By: _____
Its: Authorized Representative

TRANSFER OF BOND

Transfer of this Bond may be registered by the registered owner or his duly authorized attorney upon presentation hereof to the Trustee who shall make note of such transfer in its books kept by the Trustee for that purpose and in the registration blank below:

Date of Registration	Name of Registered Owner	Signature of Trustee
_____	_____	_____
_____	_____	_____
_____	_____	_____

SCHEDULE A

Attachment #6C

FINANCING AGREEMENT

BETWEEN

BRANCH BANKING AND TRUST COMPANY

AND

THE REGION 2000 SERVICES AUTHORITY

Dated as of June 1, 2020

Relating to The Region 2000 Services Authority
[$4,000,000] Principal Amount of
Solid Waste Revenue Refunding Bond, Series 2020

TABLE OF CONTENTS

EXHIBITS

FINANCING AGREEMENT

THIS FINANCING AGREEMENT is dated as of the 1st day of June, 2020, between TRUIST BANK (F/K/A BRANCH BANKING AND TRUST COMPANY), Charlotte, North Carolina **(the "Purchaser")**, and THE REGION 2000 SERVICES AUTHORITY, a political subdivision of the Commonwealth of Virginia **(the "Authority")**.

Pursuant to Chapter 51, Title 15.2 of the Code of Virginia (1950), as amended **(the "Act")**, the member jurisdictions of the Authority, which are the County of Appomattox, Virginia, the County of Campbell, Virginia, the City of Lynchburg, Virginia and the County of Nelson, Virginia **(each a "Member Jurisdiction" and together the "Member Jurisdictions")** created the Authority as an authority under the Act.

The Authority intends to issue and sell to the Purchaser its solid waste revenue refunding bond, Series 2020, in the principal amount of $9,000,000 **(the "Series 2020 Bond")** to provide for the refunding of the Refunded Bond (defined herein) and the costs of issuing the Series 2020 Bond.

In this Financing Agreement, the Authority and the Purchaser desire to set forth certain terms and conditions with respect to the issuance of the Series 2020 Bond by the Authority to the Purchaser and the purchase of the Series 2020 Bond by the Purchaser.

ARTICLE I

DEFINITIONS

Section 1.1. Definitions. The capitalized terms contained in this Agreement and not defined above shall have the meanings set forth below unless the context requires otherwise and any capitalized terms not otherwise defined herein shall have the meaning assigned to such terms in the Master Trust Agreement:

"Additional Payments" means the payments required by Section 6.1.

"Agreement" means this Financing Agreement between the Purchaser and the Authority, together with any amendments or supplements hereto.

"Authority Resolution" means all resolutions or ordinances adopted by the governing body of the Authority approving the transactions contemplated by and authorizing the execution and delivery of this Agreement and the execution, issuance and delivery of the Series 2020 Bond.

"Authorized Authority Representative" shall mean any authorized officer of the Authority, including but not limited to its Chairman and Executive Director.

"Closing Date" means the date of the delivery of the Series 2020 Bond to the Purchaser.

"Consulting Engineer" shall have the meaning given such term in the Master Trust Agreement.

"Default" means an event or condition the occurrence of which would, with the lapse of time or the giving of notice or both, become an Event of Default.

"Event of Default" shall have the meaning set forth in Section 11.1.

"Fiscal Year" shall have the meaning given such term in the Master Trust Agreement.

"Master Trust Agreement" means the Agreement of Trust between the Authority and U.S. Bank National Association, dated as of June 20, 2008, as amended and supplemented by its terms from time to time.

"Net Proceeds" means the gross proceeds from any insurance recovery or condemnation award remaining after payment of attorneys' fees and expenses of the Purchaser and all other expenses incurred in the collection of such gross proceeds.

"Operation and Maintenance Expense" shall have the meaning given such term in the Master Trust Agreement.

"Opinion of Bond Counsel" means a written opinion of Sands Anderson PC as Bond Counsel to the Authority, or other nationally recognized bond counsel, selected by the Authority and acceptable to the Purchaser.

"Parity Bonds" means any Bonds (as defined in the Master Trust Agreement) issued under Article III of the Master Trust Agreement.

"Refunded Bond" shall mean the outstanding principal amount of the Authority's $10,000,000 Solid Waste Revenue Bond, Series 2011, issued pursuant to the Master Trust Agreement and the Second Supplemental Agreement.

"Revenues" shall have the meaning given such term in the Master Trust Agreement.

"Second Supplemental Agreement" means the Second Supplemental Trust Agreement, dated as of April 1, 2011, supplementing the Master Trust Agreement.

"Series 2020 Bond" means the bond in substantially the form provided for in the Fourth Supplemental Agreement, issued by the Authority under the Fourth Supplemental Agreement and purchased by the Purchaser pursuant to this Agreement.

"Series 2020 Bond Proceeds" means the proceeds of the sale of the Series 2020 Bond to the Purchaser pursuant to this Agreement.

"Subordinate Bonds" shall have the meaning given such term in the Master Trust Agreement.

"System" shall have the meaning given such term in the Master Trust Agreement.

"Fourth Supplemental Agreement" means the Fourth Supplemental Trust Agreement, dated as of May 1, 2020, supplementing the Master Trust Agreement.

"Trustee" means U.S. Bank National Association, as Trustee under the Master Trust Agreement.

"Use Agreement" shall have the meaning given such term in the Master Trust Agreement.

Section 1.2. Rules of Construction; References to Master Trust Agreement. The following rules shall apply to the construction of this Agreement unless the context requires otherwise:

(a) Singular words shall connote the plural number as well as the singular and vice versa.

(b) All references in this Agreement to particular Sections or Exhibits are references to Sections or Exhibits of this Agreement unless otherwise indicated.

(c) The headings and table of contents as used in this Agreement are solely for convenience of reference and shall not constitute a part of this Agreement nor shall they affect its meaning, construction or effect.

(d) References in this Agreement to sections and subsections in the Master Trust Agreement shall be read to include the defined terms used in such sections and subsections.

ARTICLE II

REPRESENTATIONS

Section 2.1. Representations by Authority. The Authority makes the following representations as the basis for its undertakings under this Agreement:

(a) The Authority is a duly created and validly existing authority (as such term is defined in Section 15.2-5101 of the Act) of the Commonwealth of Virginia and is vested with the rights and powers conferred upon it by Virginia law.

(b) The Authority has full right, power and authority to (i) adopt the Authority Resolution and execute and deliver this Agreement, the Fourth Supplemental Agreement and the other documents related thereto, (ii) issue, sell and deliver its Series 2020 Bond to the Purchaser, (iii) own and operate the System, (iv) refund, redeem and defease the Refunded Bond, and (v) carry out and consummate all of the transactions contemplated by the Authority Resolution, this Agreement, the Master Trust Agreement, the Fourth Supplemental Agreement and the Series 2020 Bond.

(c) This Agreement, the Fourth Supplemental Agreement and the Series 2020 Bond were duly authorized by the Authority Resolution and are in substantially the same form as presented to the governing body of the Authority at its meeting at which the Authority Resolution was adopted.

(d) No material adverse change has occurred in the financial condition of the Authority as indicated in the information furnished to the Purchaser.

Section 2.2. Representations by Purchaser. The Purchaser makes the following representations in connection with its purchase of the Series 2020 Bond:

(a) It is purchasing the Series 2020 Bond for its own account for investment and has no present intention of reselling or disposing of the Series 2020 Bond or engaging in any "distribution" thereof (as that term is used in the Securities Act of 1933, as amended, and the regulations of the Securities and Exchange Commission thereunder).

(b) It has been provided with such information concerning the operations and financial condition of the Authority and the Member Jurisdictions as it has requested, and it has made such inquiries as it deems appropriate in connection with the purchase of the Series 2020 Bond.

(c) It is capable of evaluating the merits and the risks of the purchase of the Series 2020 Bond.

ARTICLE III

ISSUANCE AND DELIVERY OF THE SERIES 2020 BOND

Section 3.1. Loan to Authority and Purchase of the Series 2020 Bond. The Authority agrees to issue the Series 2020 Bond in the principal amount of $9,000,000 and to sell the same to the Purchaser and the Purchaser agrees to purchase the Series 2020 Bond in exchange for the purchase price thereof of $9,000,000 to be paid to the Trustee for the benefit of the Authority and deposited as set forth in the Fourth Supplemental Agreement. The Authority's obligation shall be evidenced by the Series 2020 Bond, which shall be issued pursuant to Article III of the Master Trust Agreement in substantially the form provided for in the Fourth Supplemental Agreement and delivered to the Purchaser on the Closing Date.

Section 3.2. Conditions Precedent to Purchase of the Series 2020 Bond. The Purchaser shall not be required to make the loan to Authority and purchase the Series 2020 Bond unless the Purchaser shall have received the following, all in form and substance satisfactory to the Purchaser:

(a) The Series 2020 Bond, this Agreement and the Fourth Supplemental Agreement.

(b) A certified copy of the Authority Resolution, the Master Trust Agreement and the Use Agreement.

(c) The certificates, statements and documents required by Section 303 of the Master Trust Agreement, as applicable.

(d) A certificate or certificates of appropriate officials of the Authority as to the matters set forth in Section 2.1 and such other matters as the Purchaser may reasonably require.

(e) An Opinion of Bond Counsel, substantially in the form of Exhibit A, addressed to the Authority and the Purchaser.

(f) An Opinion of Authority Counsel, substantially in the form of Exhibit B, addressed to the Authority and the Purchaser.

ARTICLE IV

USE OF SERIES 2020 BOND PROCEEDS AND REFUNDING OF REFUNDED BOND

Section 4.1. Application of Proceeds. The Authority agrees to apply, and the Purchaser agrees to disburse, the Series 2020 Bond Proceeds in accordance with Section 4.1 of the Fourth Supplemental Agreement.

Section 4.2. Agreement to Accomplish Series 2020 Project. The Authority agrees to cause the Refunded Bond to be refunded as provided in the Fourth Supplemental Agreement and costs of issuance to be paid as provided in the Closing Memorandum prepared by Davenport & Company, LLC, as financial advisor to the Authority. The Authority agrees to maintain complete and accurate books and records of the costs of issuance and permit the Purchaser through its duly authorized representatives to inspect such books and records at any reasonable time.

ARTICLE V

PLEDGE, REVENUE COVENANT AND BUDGET

Section 5.1. Pledge; Revenue Covenant. (a) The Revenues are pledged to secure the payment of the principal of and interest on the Series 2020 Bond and the payment and performance of the Authority's obligations under this Agreement in accordance with the terms, provisions and limitations of the Master Trust Agreement and the Fourth Supplemental Agreement. This pledge shall be valid and binding from and after the execution and delivery of this Agreement and the

Fourth Supplemental Agreement. The Revenues, as received by the Authority, shall immediately be subject to the lien of this pledge without any physical delivery of them or further act.

(b) The Authority covenants and agrees that, as long as the Series 2020 Bond is Outstanding, it will fix and collect rates, fees and other charges for the use of and for services furnished or to be furnished by the System, and will from time to time revise such rates, fees and other charges so that in each Fiscal Year the Revenues will satisfy the Authority's revenue covenant contained in Section 5.1 of the Use Agreement.

Section 5.2. Annual Budget. The Authority shall furnish a copy of the Annual Budget (as defined in the Master Trust Agreement) and any amendments or supplements thereto to the Purchaser promptly upon its preparation and shall otherwise comply with the provisions of Section 601 of the Master Trust Agreement.

ARTICLE VI

PAYMENTS

Section 6.1. Payments of Series 2020 Bond and Additional Payments. The required payments of principal of and interest on the Series 2020 Bond are as provided for in Section 2.2 of the Fourth Supplemental Agreement. In addition, the Authority agrees to pay on demand of the Purchaser the following Additional Payments:

(1) The costs of the Purchaser in connection with the enforcement of this Agreement; and

(2) All expenses, including reasonable attorneys' fees, relating to any amendments, waivers, consents or collection or enforcement proceedings pursuant to the provisions hereof.

ARTICLE VII

PREPAYMENTS

Section 7.1. Prepayment of Series 2020 Bond. The Authority may prepay the Series 2020 Bond in accordance with the provisions of Article III of the Fourth Supplemental Agreement.

ARTICLE VIII

OPERATION AND USE OF SYSTEM

Section 8.1. Operation of Series 2020 Project and System. The Authority shall comply with the terms and conditions set forth in Section 803(a) and (b) of the Master Trust Agreement.

Section 8.2. Sale or Encumbrance. No part of the System shall be sold, exchanged, leased, mortgaged, encumbered or otherwise disposed of except as provided in Section 803(c) of the Master Trust Agreement.

Section 8.3. Collection of Revenues. The Authority shall comply with the terms and conditions set forth in Section 803(d) of the Master Trust Agreement.

Section 8.4. Lawful Charges. The Authority shall comply with the terms and conditions set forth in Section 803(e) of the Master Trust Agreement.

Section 8.5. Inspection of System and Authority's Books and Records. The Purchaser and its duly authorized representatives and agents shall have such reasonable rights of access to the System as may be necessary to determine whether the Authority is in compliance with the requirements of this Agreement and shall have the right at all reasonable times and upon reasonable prior notice to the Authority to examine and copy the books and records of the Authority insofar as such books and records relate to the System.

ARTICLE IX

INSURANCE, DAMAGE AND DESTRUCTION

Section 9.1. Insurance. The Authority continuously shall maintain or cause to be maintained the insurance required by Section 804 of the Master Trust Agreement, and all such insurance shall satisfy the requirements set forth in Section 805 of the Master Trust Agreement. The Purchaser shall not have any responsibility or obligation with respect to (i) the procurement or maintenance of insurance or the amounts or the provisions with respect to policies of insurance, or (ii) the application of the proceeds of insurance. The Authority shall provide upon the written request of the Purchaser a certificate or certificates of the respective insurers evidencing the fact that the insurance required by this Section is in force and effect.

Section 9.2. Damage or Destruction. The Authority shall promptly provide the Purchaser with a copy of any notice delivered to the Trustee pursuant to Section 806 of the Master Trust Agreement. If all or any part of the System is destroyed or damaged by fire or other casualty, and the Authority shall not have exercised its option to prepay in full the Series 2020 Bond pursuant to Article VII, the Authority shall restore promptly the property damaged or destroyed to substantially the same condition as before such damage or destruction, with such alterations and additions as the Authority may determine and which will not impair the capacity or character of the System for the purpose for which it then is being used or is intended to be used. If such Net Proceeds are not sufficient to pay in full the cost of such restoration, the Authority shall pay so much of the cost as may be in excess of such Net Proceeds.

Section 9.3. Condemnation and Loss of Title. If title to or the temporary use of all or any part of the System shall be taken under the exercise of the power of eminent domain or lost because of failure of title, and the Authority shall not have exercised its option to prepay in full the Series 2020 Bond pursuant to Article VII, the Authority shall cause the Net Proceeds from any such

condemnation award or from title insurance to be applied to the restoration of the System to substantially its condition before the exercise of such power of eminent domain or failure of title. If such Net Proceeds are not sufficient to pay in full the cost of such restoration, the Authority shall pay so much of the cost as may be in excess of such Net Proceeds.

ARTICLE X

SPECIAL COVENANTS

Section 10.1. Maintenance of Existence; Financial Records and Certificates. The Authority shall comply with the terms and conditions set forth in Sections 807, 808 and 809 of the Master Trust Agreement, and shall promptly deliver to the Purchaser a copy of any and all opinions, certificates, reports, financial statements and other information required to be delivered to the Trustee pursuant to such sections.

Section 10.2. Additional Indebtedness. The Authority shall not incur any indebtedness or issue any bonds, notes or other evidences of indebtedness secured by a pledge of Revenues, except Subordinate Bonds or Parity Bonds.

Section 10.3. Parity Bonds. The Authority may issue Parity Bonds upon the terms and conditions set forth in Article III of the Master Trust Agreement. The Authority shall give notice to the Purchaser of the issuance of any Parity Bonds and shall provide the Purchaser with a copy of the supplemental resolution authorizing such issuance, within 30 days of the issuance of such debt.

Section 10.4. Further Assurances. The Authority shall to the fullest extent permitted by law pass, make, do, execute, acknowledge and deliver such further resolutions, acts, deeds, conveyances, assignments, transfers and assurances as may be necessary or desirable for the better assuring, conveying, granting, assigning and confirming the rights, Revenues and other funds pledged or assigned by this Agreement, or as may be required to carry out the purposes of this Agreement. The Authority shall at all times, to the fullest extent permitted by law, defend, preserve and protect the pledge of the Revenues and other funds pledged under this Agreement and all rights of the Purchaser under this Agreement against all claims and demands of all persons.

Section 10.5. Assignment by Authority. The Authority may not assign its rights under this Agreement without the prior written consent of the Purchaser. If the Purchaser consents to the proposed assignment, the Authority may proceed with the proposed assignment, but such assignment shall not become effective until the Purchaser is furnished (i) an assumption agreement in form and substance satisfactory to the Purchaser by which the assignee agrees to assume all of the Authority's obligations under the Series 2020 Bond and this Agreement, and (ii) an Opinion of Counsel to the assignee, subject to customary exceptions and qualifications, that the assumption agreement, the Series 2020 Bond and this Agreement constitute legal, valid and binding obligations of the assignee enforceable against the assignee in accordance with their terms and that the assignment and assumption comply in all respects with the provisions of this Agreement. Notwithstanding the foregoing, the assignment of the rights of the Authority under the Series 2020 Bond and this Agreement or the assumption of the obligations thereunder by the assignee shall in no way be construed as releasing the Authority's obligations.

Section 10.6 Compliance with Master Trust Agreement and Use Agreement. The Authority shall comply with all material provisions of the Master Trust Agreement and the Use Agreement and furnish to the Purchaser a copy of any amendments or supplements thereto promptly upon the execution and delivery thereof.

ARTICLE XI

DEFAULTS AND REMEDIES

Section 11.1. Events of Default. Each of the following events shall be an "Event of Default":

(a) The failure to pay when due any payment of principal or interest due hereunder or to make any other payment required to be made under the Series 2020 Bond or this Agreement;

(b) The Authority's failure to perform or observe any of the other covenants, agreements or conditions of the Series 2020 Bond or this Agreement and the continuation of such failure for a period of thirty (30) days after the Purchaser gives the Authority written notice specifying such failure and requesting that it be cured, unless the Purchaser shall agree in writing to an extension of such time prior to its expiration; provided, however, if the failure stated in the notice is correctable but cannot be corrected within the applicable period, the Purchaser will not unreasonably withhold its consent to an extension of such time if corrective action is instituted by the Authority within the applicable period and diligently pursued until the Default is corrected;

(c) Any warranty, representation or other statement by or on behalf of the Authority contained in this Agreement or in any instrument furnished in compliance with or in reference to this Agreement or in connection with the issuance and sale of the Series 2020 Bond is false or misleading in any material respect;

(d) The occurrence of an "Event of Default" under the Master Trust Agreement;

(e) An order or decree shall be entered, with the Authority's consent or acquiescence, appointing a receiver or receivers of the System or any part thereof or of the Revenues thereof, or if such order or decree, having been entered without the Authority's consent or acquiescence, shall not be vacated, discharged or stayed on appeal within sixty (60) days after the entry thereof;

(f) Any proceeding shall be instituted, with the Authority's consent or acquiescence, for the purpose of effecting a composition between the Authority and its creditors or for the purpose of adjusting the claims of such creditors, pursuant to any federal or state statute now or hereafter enacted, if the claims of such creditors are under any circumstances payable from Revenues; or

(g) Any bankruptcy, insolvency or other similar proceeding shall be instituted by or against the Authority under any federal or state bankruptcy or insolvency law now or hereinafter in effect and, if instituted against the Authority, is not dismissed within sixty (60) days after filing.

Section 11.2. Notice of Default. The Authority agrees to give the Purchaser prompt written notice if any order, decree or proceeding referred to in Section 11.1(e), (f) or (g) is entered or instituted against the Authority or of the occurrence of any other event or condition which constitutes a Default or an Event of Default immediately upon becoming aware of the existence thereof.

Section 11.3. Remedies on Default. Subject to the applicable provisions of the Master Trust Agreement, whenever any Event of Default referred to in Section 11.1 shall have happened and be continuing, the Purchaser shall, in addition to any other remedies provided herein or by law, have the right, at its option without any further demand or notice, to take one or both of the following remedial steps:

(a) Declare immediately due and payable all payments due or to become due on the Series 2020 Bond and under this Agreement, and upon notice to the Authority, the same shall become immediately due and payable by the Authority without further notice or demand; and

(b) Take whatever other action at law or in equity may appear necessary or desirable to collect the payments then due and thereafter to become due on the Series 2020 Bond and under this Agreement or to enforce any other of the Purchaser's rights under this Agreement or to enforce performance by the Authority of its covenants, agreements or undertakings contained herein or in the Series 2020 Bond.

Section 11.4. Delay and Waiver. No delay or omission to exercise any right or power accruing upon any Default or Event of Default shall impair any such right or power or shall be construed to be a waiver of any such Default or Event of Default or acquiescence therein, and every such right or power may be exercised from time to time and as often as may be deemed expedient. No waiver of any Default or Event of Default under this Agreement shall extend to or shall affect any subsequent Default or Event of Default or shall impair any rights or remedies consequent thereto.

ARTICLE XII

MISCELLANEOUS

Section 12.1. Successors and Assigns. This Agreement shall be binding upon, inure to the benefit of and be enforceable by the parties and their respective successors and assigns.

Section 12.2. Amendments. The Purchaser and the Authority, with the written consent of the Trustee, shall have the right to amend from time to time any of the terms and conditions of this Agreement, provided that all amendments shall be in writing and shall be signed by or on behalf of the Purchaser and the Authority.

Section 12.3. Liability of Officials, etc. No present or future director, official, officer, employee or agent of the Authority shall be liable personally in respect of this Agreement or the

Series 2020 Bond or for any other action taken by such individual pursuant to or in connection with the financing provided for in this Agreement or the Series 2020 Bond.

Section 12.4. Applicable Law. This Agreement shall be governed by the applicable laws of Virginia.

Section 12.5. Severability. If any clause, provision or section of this Agreement shall be held illegal or invalid by any court, the illegality or invalidity of such clause, provision or Section shall not affect the remainder of this Agreement which shall be construed and enforced as if such illegal or invalid clause, provision or section had not been contained in this Agreement. If any agreement or obligation contained in this Agreement is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Purchaser and the Authority, as the case may be, only to the extent permitted by law.

Section 12.6. Notices. Unless otherwise provided for herein, all demands, notices, approvals, consents, requests, opinions and other communications under the Series 2020 Bond or this Agreement shall be in writing and shall be deemed to have been given when delivered in person or mailed by first class registered or certified mail, postage prepaid, addressed as follows:

Purchaser:	[BB&T Governmental Finance] 5130 Parkway Plaza Boulevard, Building #9 Charlotte, NC 28217 (Attn: Roxanne Crouch, Assistant Vice President).
Trustee:	U.S. Bank National Association 1021 East Cary Street, Suite 1850 Richmond, Virginia 23219 Attention: Corporate Trust Services-Southeast Region
Authority:	The Region 2000 Services Authority 828 Main Street, 12th Floor Lynchburg, VA 24505 Attention: Executive Director

A duplicate copy of each demand, notice, approval, consent, request, opinion or other communication given by any party named in this Section shall also be given to each of the other parties named. The Purchaser, the Trustee and the Authority may designate, by notice given hereunder, any further or different addresses to which subsequent demands, notices, approvals, consents, requests, opinions or other communications shall be sent or persons to whose attention the same shall be directed.

Section 12.7. Right to Cure Default. If the Authority shall fail to make any payment or to perform any act required by it under the Series 2020 Bond or this Agreement, the Purchaser without prior notice to or demand upon the Authority and without waiving or releasing any obligation or

default, may (but shall be under no obligation to) make such payment or perform such act. All amounts so paid by the Purchaser and all costs, fees and expenses so incurred shall be payable by the Authority as an additional obligation under this Agreement.

Section 12.8. Headings. The headings of the several articles and sections of this Agreement are inserted for convenience only and do not comprise a part of this Agreement.

Section 12.9. Term of Agreement. This Agreement shall be effective upon its execution and delivery, provided that the Series 2020 Bond shall have been previously or simultaneously executed and delivered. Except as otherwise specified, the Authority's obligations under the Series 2020 Bond and this Agreement shall expire upon payment in full of the Series 2020 Bond and all other amounts payable by the Authority under this Agreement.

Section 12.10. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be an original and all of which together shall constitute but one and the same instrument.

WITNESS the following signatures, all duly authorized.

TRUIST BANK (F/K/A BRANCH BANKING AND TRUST COMPANY)

By: _____

Its: _____

THE REGION 2000 SERVICES AUTHORITY

By: _____
Its: Chairman

EXHIBIT A

OPINION OF AUTHORITY'S BOND COUNSEL
THE REGION 2000 SERVICES AUTHORITY

EXHIBIT B

OPINION OF AUTHORITY'S COUNSEL
THE REGION 2000 SERVICES AUTHORITY

RESOLUTION OF REGION 2000 SERVICES AUTHORITY APPROVING ISSUANCE OF A SOLID WASTE REVENUE REFUNDING BOND IN A PRINCIPAL AMOUNT NOT TO EXCEED $4,000,000

WHEREAS, the Region 2000 Services Authority **(the "Authority")** and U.S. Bank National Association, as Trustee **(the "Trustee")**, have entered into a Master Trust Agreement dated as of June 20, 2008 **(the "Master Trust Agreement")** pursuant to which the Authority may issue from time to time its revenue bonds or notes under supplemental trust agreements, which Master Trust Agreement was authorized by the resolution of the Authority adopted on May 28, 2008; and

WHEREAS, on or about June 20, 2008, the Authority issued its $10,000,000 Solid Waste Revenue Bond, Series 2008 **(the "Series 2008 Bond")** pursuant to the Master Trust Agreement and a First Supplemental Agreement of Trust, dated June 20, 2008 between the Authority and the Trustee **(the "First Supplemental Trust Agreement"),** which Series 2008 Bond is no longer outstanding; and

WHEREAS, on or about April 28, 2011, the Authority issued its $10,000,000 Solid Waste Revenue Bond, Series 2011 **(the "Series 2011 Bond")** pursuant to the Master Trust Agreement and a Second Supplemental Agreement of Trust, dated as of April 1, 2011 between the Authority and the Trustee **(the "Second Supplemental Trust Agreement")**; and

WHEREAS, on or about May 28, 2015, the Authority issued its $9,000,000 Solid Waste Revenue Bond, Series 2015 **(the "Series 2015 Bond")** pursuant to the Master Trust Agreement and a Third Supplemental Agreement of Trust, dated as of May 1, 2015 between the Authority and the Trustee **(the "Third Supplemental Trust Agreement")**; and

WHEREAS, the Authority, to further the purposes of the Authority and to accomplish certain purposes of the Virginia Water and Waste Authorities Act **(the "Act")**, desires to issue, offer and sell its not to exceed $5,000,000 Solid Waste Revenue Refunding Bond, Series 2020 **(the "Series 2020 Bond")** to refund the Series 2011 Bond; and

WHEREAS, the Series 2020 Bond shall be secured by the Revenues (as defined in the Master Trust Agreement) on a parity basis with any unrefunded portion of the Series 2011 Bond, if any, the Series 2015 Bond and any other Bonds (as defined in the Master Trust Agreement) that the Authority may issue in accordance with the terms of the Master Trust Agreement; and

WHEREAS, Truist Bank, f/k/a Branch Banking and Trust Company, **("the Purchaser")** has agreed to purchase the Series 2020 Bond to refund and refinance the Series 2011 Bond; and

WHEREAS, there have been presented to this meeting drafts of the following documents **(the "Documents")** which the Authority proposes to execute, copies of which shall be filed with the records of the Authority:

(a) Fourth Supplemental Trust Agreement, between the Authority and the Trustee, dated as of June 1, 2020 **(the "Fourth Supplemental Trust Agreement" and**

together with the Master Trust Agreement and any preceding supplemental trust agreements, the "Trust Agreement");

(b) Financing Agreement, between the Authority and the Purchaser, dated as of June 1, 2020, **(the "Financing Agreement")** pursuant to which the Series 2020 Bond is to be issued;

(c) A form of the Series 2020 Bond, to be issued pursuant to the Trust Agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE REGION 2000 SERVICES AUTHORITY:

1. The Authority finds and determines that the undertaking of the refunding of the Series 2011 Bond for debt service savings will be consistent with the purposes of the Act and that the Authority will be able to pay the costs of the design, acquisition, construction, improvement, renovation and expansion of the Project only through the issuance of revenue bonds. Unless otherwise defined herein, words and terms defined in the Trust Agreement shall have the same meaning when used in this Resolution.

2. The Authority hereby authorizes the issuance of the Series 2020 Bond pursuant to the terms and conditions of the Documents and shall use the proceeds from the issuance of the Series 2020 Bond to pay the Cost (as such term is defined in the Trust Agreement) of the Project, including costs of issuance of the Series 2020 Bond. The Series 2020 Bond shall be issued in the original principal amount not to exceed $4,000,000, shall bear interest at the annual rate of 2.11%, shall be issued as a fully registered bond, without coupons, shall be payable in semi-annual installments of interest on each February 1 and August 1, commencing August 1, 2020 and annual payments of principal commencing August 1, 2020 and ending August 1, 2024, and shall otherwise be in accordance with the terms of the Trust Agreement, the Financing Agreement and form of Series 2020 Bond approved at this meeting. The Series 2020 Bond shall be subject to redemption in whole at any time, as approved by the Chairman or Vice Chairman of the Authority, his or her execution to constitute conclusive evidence of his or her approval thereof, and otherwise as provided in the Fourth Supplemental Agreement and the Financing Agreement.

3. The Series 2020 Bond is secured by a pledge of Revenues in accordance with the terms of the Trust Agreement, but in all events such pledge and granting of a security interest in the Revenues toward payment of the Series 2020 Bond shall be on a parity basis with the unrefunded portion of the Series 2011 Bond, if any, the Series 2015 Bond and any Bonds (as defined in the Trust Agreement) that the Authority may issue in the future. Such Bonds shall be secured equally and ratably with the unrefunded portion of the Series 2011 Bond, if any, the Series 2015 Bond and the Series 2020 Bond, without preference, priority or distinction, provided, however, that any Bond may have other security pledged to its payment and not to the payment of other Bonds, including, but not limited to a debt service reserve fund for such series of Bonds.

4. All costs and expenses in connection with the undertaking and issuance of the Series 2020 Bond, including the Authority's expenses and the fees and expenses of Bond Counsel,

Authority Counsel, the Financial Advisor, Engineers and Consultants, the Purchaser and Purchaser counsel shall be paid from the proceeds of the Series 2020 Bond or other funds of the Authority.

5. The Chairman or Vice Chairman of the Authority, or either of them, is hereby authorized and directed to execute the Documents, which shall be in substantially the forms submitted to this meeting, which are approved, with such completions, omissions, insertions and changes not inconsistent with this Resolution as may be approved by the officer executing them, his or her execution to constitute conclusive evidence of his or her approval of any such completions, omissions, insertions and changes, including but not limited to changes in payment dates, principal amortization amounts and maturity date.

6. The Chairman or Vice Chairman of the Authority, either of whom may act, are hereby authorized and directed to execute the Series 2020 Bond by manual or facsimile signature, and the Secretary or Executive Director, either of whom may act, are hereby authorized and directed to affix the seal of the Authority to or print a facsimile thereof on the Series 2020 Bond and attest the same by manual or facsimile signature, and the officers of the Authority are hereby authorized and directed to deliver the Series 2020 Bond to the Purchaser upon terms provided in the Trust Agreement.

7. The officers of the Authority are hereby authorized and directed to execute, deliver and file all certificates and documents and to take all such further action as they may consider necessary or desirable in their sole and absolute discretion in connection with the issuance, sale and delivery of the Series 2020 Bond, and any such action previously taken is hereby approved, ratified and confirmed. Such authorization includes but is not limited to (a) execution and delivery of a certificate setting forth the expected use and investment of the proceeds of the Series 2020 Bond to show that such expected use and investment will not violate the provisions of Section 148 of the Internal Revenue Code of 1986, as amended **(the "Code")**, and regulations thereunder, applicable to "arbitrage bonds," (b) making any elections that such officers deem desirable regarding any provision requiring rebate to the United States of "arbitrage profits" earned on investment of proceeds of the Series 2020 Bond, (c) providing for the Authority to pay any such rebate amount and (d) filing Internal Revenue Service Form 8038-G, and to take all such further action as they may consider necessary or desirable in connection with the issuance and sale of the Series 2020 Bond and the undertaking of the Project.

8. Any authorization herein to execute a document shall include authorization to deliver it to the other parties thereto and to record such document where appropriate.

9. The Authority designates all or a portion of the Series 2020 Bond as a "qualified tax-exempt obligation" for the purpose of Section 265(b)(3) of the Code and represents and covenants as follows:

(a) The Authority expects that most of the principal amount of the Series 2020 Bond will be "deemed designated" pursuant to Section 265(b)(3)(D)(ii). The Authority will in no event designate more than $10,000,000 of obligations as tax-exempt obligations in calendar year 2020 (excluding any bonds deemed designated

pursuant to the provisions of Section 265(b)(3)(D)(ii) of the Code), including the Series 2020 Bond, for the purpose of such Section 265(b)(3);

(b) The Authority has no "subordinate entities" within the meaning of such Section 265(b)(3) or entities that issue tax-exempt obligations on behalf of the Authority and the Authority has not issued, in the aggregate, more than $10,000,000 of tax-exempt obligations in calendar year 2020 (not including "private activity bonds" within the meaning of Code Section 141, other than "qualified 501(c)(3) bonds" within the meaning of Section 145 of the Code and further not including an obligation issued to refund, other than advance refund within the meaning of Code Section 149(d)(5), any obligation to the extent the amount of the refunding obligation does not exceed the outstanding amount of the refunded obligation);

(c) Barring circumstances unforeseen as of the date of delivery of the Series 2020 Bond, the Authority will not issue tax-exempt obligations if the issuance of such tax-exempt obligations would result in the Authority having issued a total of more than $10,000,000 of tax-exempt obligations in calendar year 2020 (not including "private activity bonds" within the meaning of Code Section 141, other than "qualified 501(c)(3) bonds" within the meaning of Section 145 of the Code and further not including an obligation issued to refund, other than advance refund within the meaning of Code Section 149(d)(5), any obligation to the extent the amount of the refunding obligation does not exceed the outstanding amount of the refunded obligation);

(d) It has no reason to believe that the Authority will issue tax-exempt obligations in calendar year 2020 in an aggregate amount that will exceed such $10,000,000 limit.

10. The Authority will not take or omit to take any action the taking or omission of which will cause the Series 2020 Bond to be an "arbitrage bond" within the meaning of Section 148 of the Code or a "private activity bond" within the meaning of Section 141 of the Code, or otherwise cause interest on the Series 2020 Bond to be includable in gross income for federal income tax purposes. Without limiting the generality of the foregoing, the Authority will comply with any Code provision that may require the Authority at any time to pay to the United States any part of the earnings derived from the investment of the proceeds of the Series 2020 Bond. The Authority shall pay from its legally available funds any amount required to be rebated to the United States of America pursuant to the Code.

11. All other acts of the officers, directors, agents and representatives of the Authority that are in conformity with the purposes and intent of this resolution and in furtherance of the issuance and sale of the Series 2020 Bond and the undertaking of the refunding of the 2011 Bond, whether such acts occurred before or after the adoption of this Resolution, are hereby approved and ratified. All other Authority resolutions or proceedings, or parts thereof, in conflict with this Resolution are repealed, to the extent of the conflict.

12. In accordance with the requirements of Section 15.2-5126 of the Code of Virginia, a

certified copy of this Resolution shall be filed with the clerk of a circuit court having jurisdiction over any of the political subdivisions that are members of the Authority, which is the Circuit Court of Lynchburg, Virginia.

13. This resolution shall take effect immediately.

ADOPTED: This ___ day of May, 2020.

The members of the Authority Board voted as follows on the adoption of this Resolution:

Ayes	**Nays**	**Absent**	**Abstentions**

CERTIFICATE

I, Gary F. Christie, the undersigned Secretary of the Region 2000 Services Authority **(the "Authority")**, hereby certify that attached hereto is a true and correct copy of a Resolution adopted by a majority of the members of the Authority during an open meeting held on May __, 2020, which Resolution has not been amended, modified or repealed as of the date hereof.

_____
Secretary
Region 2000 Services Authority

SEAL

Environmental Consultants

15521 Midlothian Turnpike
Suite 305
Midlothian, VA 23113-7313

804 378-7440
FAX 804 378-7433
www.scsengineers.com

SCS ENGINEERS

May 14, 2020
File No. 02195001.08

Mr. Clarke W. Gibson, PE
Solid Waste Director
Region 2000 Services Authority
361 Livestock Road
Rustburg, Virginia 24588

Subject: Design/Build Proposal for LFG Collection and Control System Expansion Project
Region 2000 Regional Landfill – Livestock Road Facility

Dear Clarke:

SCS Engineers (SCS) appreciates the opportunity to submit the enclosed Proposal (Proposal) to the Region 2000 Services Authority (Authority) for implementation of the Phase IV Landfill Gas Collection and Control System Design/Build Expansion Project at the Region 2000 Regional Landfill – Livestock Road Facility (Landfill) in Rustburg, Virginia. Our Proposal is structured as the third amendment to SCS' existing Comprehensive Agreement with the Authority for design, construction, and operation of a landfill gas collection and control system, dated 4/27/16.

The proposed Project involves the design, construction, and construction quality control (CQC) of the expansion of the existing landfill gas (LFG) collection and control system in Phase IV at the Landfill for the purpose of recovering LFG and reducing LFG-related odors from the Phase IV waste disposal unit at this Facility (referred to as the D/B Project). As you know, SCS has over 50 years of engineering and contracting experience involving LFG collection and control systems in Virginia. Similar to our previous D/B assignments for the Authority in 2016, 2017, and 2019 SCS will serve as a "one-stop shop" for LFG system design, construction, and CQC, thereby reducing the Authority's overall costs associated with administering a capital project.

Similar to our proposals for the previous D/B assignments, which were submitted to the Authority in accordance with the Implementation Procedures and Guidelines for the Public-Private Education Facilities and Infrastructure Act (PPEA), adopted by the Authority on 10/26/11, SCS requests that the Authority treat the information contained in the enclosed Proposal as non-releasable under the Virginia Freedom of Information Act (VFOIA) until such time as the enclosed Amendment to our existing Agreement has been executed.

Our Project Team includes the same professional engineering and construction staff who were engaged in SCS previous D/B assignments at the Landfill in 2016 and 2017. We believe this D/B Expansion Project at the Landfill represents an excellent opportunity for the Authority and SCS to continue our collaborative work to deliver innovative solutions at solid waste management facilities.

We are excited about this opportunity to continue our formal public-private partnership with the Authority related to implementation of this D/B Expansion Project.

If you have questions or require additional information, please do not hesitate to contact us at the letterhead address.

Sincerely,

Robert E. Dick, PE
Vice President
SCS ENGINEERS

Guy F. Lewis
Vice President
SCS FIELD SERVICES

Enclosures

AMENDMENT 3
TO THAT
COMPREHENSIVE AGREEMENT
between
REGION 2000 SERVICES AUTHORITY
and
SCS ENGINEERS
for
DESIGN, CONSTRUCTION AND OPERATION OF A LANDFILL GAS COLLECTION AND CONTROL SYSTEM AT THE LIVESTOCK ROAD LANDFILL

THIS AMENDMENT 3 (this "Amendment") is entered into as of May 27, 2020, between the REGION 2000 SERVICES AUTHORITY ("the Owner"), and STEARNS, CONRAD AND SCHMIDT, CONSULTING ENGINEERS, INC. d/b/a SCS ENGINEERS (the "Design-Builder") ("the Contract").

Recitals

1. The Owner and SCS have entered into a Contract dated April 27, 2016 for the construction of a Landfill Gas Collection and Control System ("the GCCS") at the Region 2000 Regional Landfill – Livestock Road Facility ("the Project").

2. Amendment 1 to that Contract dated October 6, 2017, expanded the GCCS in Phase III. Amendment 2 to that Contract dated October 4, 2019, expanded the GCCS in Phase IV. These portions of Project are substantially complete.

3. Owner now desires to expand the Project to include the additional expansion of the Phase IV GCCS as further described herein.

NOW THEREFORE, for and in consideration of the mutual promises, conditions and covenants herein set forth the Parties, for the purpose of this Amendment, agree that those sections from the Contract are modified and replaced in their entirety as follows:

§3. **General Scope.** The Design-Builder shall perform, provide or cause to be provided all design, permitting, construction, material, equipment, services and labor, necessary for the development of Phase IV GCCS Expansion as more fully set forth in Attachments A and B (Work Order, dated 5/14/20), which is made a part of this Amendment. The Design-Builder shall be responsible for obtaining all necessary federal, state, and local permits and approvals, conducting negotiations and entering access agreements with private landowners or other entities if necessary, and performing the Project in compliance with all applicable federal, state and local laws and regulations and the Contract Documents. It is the intent of the Owner and the Design-Builder that, unless otherwise specifically set forth in this Amendment, the Design-Builder shall perform or provide all design, permitting, construction and related services that are necessary to provide the Owner with a completed, fully functional Project.

§6. **Contract Price.**

a. **Contract Price.** The Owner shall pay the Design-Builder the amount which shall be One-Hundred Seventy One Thousand, Five Hundred Nine and 00/100 ($171,509.00) dollars, which shall include the Scope of Work in Attachments A and B. Unless otherwise provided in the Contract Documents, the Contract Price is deemed to include all sales, use, consumer and other taxes imposed by law or any governmental authority. The Design-Builder shall be wholly responsible to complete the Project at no compensation above the Contract Price, subject to any adjustments in the Contract Price made as a result of changes made in accordance with this Amendment.

§8. **Contract Time.**

a. **Date of Commencement.** The Work shall commence as of the date of this Amendment unless the Parties mutually agree otherwise in writing.

b. **Final Completion.** Final Completion of the Work shall be achieved as expeditiously as reasonably practicable, but in no event later than October 31, 2020, time being of the essence.

c. All construction provided or caused to be provided by the Design-Builder in compliance with all applicable Legal Requirements and applicable permits, both public and private.

This Amendment sets forth all of the covenants, promises, agreements, conditions and understandings between Design-Builder and the Owner concerning this Amendment 3 and there are no covenants, promises, agreements, conditions or understandings, either oral or written, between them other than are herein set forth. No alteration, amendment, change or addition to the Contract shall be binding upon the Design-Builder or the Owner unless reduced to writing in a formal amendment signed by each Party. This Amendment makes no other changes to the Contract.

IN WITNESS WHEREOF, the Parties have executed this Amendment 2 as of the day and year first above written.

REGION 2000 SERVICES AUTHORITY

By: _____
Name: Clarke W. Gibson
Title: Director

Approved as to Form:

_____
William H. Hefty, Counsel

STEARNS, CONRAD AND SCHMIDT, CONSULTING ENGINEERS. d/b/a SCS ENGINEERS

By: 
Name: Robert E. Dick
Title: Vice President

ATTACHMENT A

LANDFILL GAS COLLECTION AND CONTROL SYSTEM DESIGN & CONSTRUCTION QUALITY CONTROL

REGION 2000 REGIONAL LANDFILL

LIVESTOCK ROAD FACILITY

ENGINEERING SERVICES WORK ORDER

1. SCOPE OF SERVICES TO BE PERFORMED:

This scope of services outlines the engineering tasks to be performed by SCS Engineers (SCS) in conjunction with the implementation of the landfill gas (LFG) collection and control system Design/Build (DB) Project at the Region 2000 Regional Landfill – Livestock Road Facility (Facility) in Rustburg, Virginia.

The proposed DB Project involves the design, construction, and construction quality control (CQC) of the Phase IV LFG Collection and Control System (LFGCCS) expansion at the Landfill for the purpose of recovering LFG from the Phase IV waste disposal unit. The proposed scope of services is divided into the following tasks:

- Task 1 – Design of the Phase IV LFG Collection and Control System and Design Criteria Memorandum
- Task 2 – Preparation of Construction Documents for the Phase IV LFG System, including Issued for Construction Layout Drawing
- Task 3 – Construction Quality Control

The proposed Project may include subsequent task assignments that are consistent with the Authority's Implementation Procedures and Guidelines for the Public-Private Education Facilities and Infrastructure Act (PPEA), as directed by the Authority.

TASK 1 – PHASE IV LFG SYSTEM DESIGN DOCUMENTS

SCS will design the LFG collection and control system necessary to extract LFG from the appropriate portions of Phase IV where LFG extraction components were not installed during the initial Phase IV LFGCCS installation in accordance with the Authority's requirements. SCS will prepare construction level drawings and technical specifications suitable for the Design/Build format of the Project which will indicate the necessary construction methods and materials for a functional LFG system in these areas.

The objectives of the Phase IV LFG collection and control system expansion will consist of migration control, odor control, emissions control, fuel for a potential future LFGE project, and future compliance with NSPS and other existing Clean Air Act requirements. The final design will likely include, but is not limited to the following components:

- Eight total drainage pits (20' depth) dug to assist dewatering efforts of four horizontal collectors. Vertical caissons comprised of 8-inch riser pipes will be installed in a total of four of the drainage pits, each penetrating the landfill surface and equipped with a wellhead. The purpose of this is to have the ability to install a pump if necessary. The four vertical caissons will be connected to 8-inch horizontal collectors via expansion couplings.

- Four vertical caissons will generally be located along or near the crest of slope of the flat top deck area (2 on the north side and two on the south side) of the Phase IV Cell connected to a series of 4 horizontal collectors. The ideal configuration is to have a central high point, with the collectors sloping toward a terminus on the north and south sides of the cell at roughly 5 percent. Since fill placement operations are ongoing in this area, SCS-FS will coordinate with Landfill Operations Manager to insure the work area is free of landfilling operations throughout construction activities.

- Inclusion of LFG wellfield dewatering infrastructure with permanent LFG header piping to facilitate simultaneous dual extraction of liquids and gas from the future vertical LFG extraction wells in anticipation of elevated liquid levels within the waste mass. The LFG wellfield dewatering infrastructure also includes air and forcemain isolation valves.

- The LFG system layout drawing will depict the alignment of header and lateral pipes, which will transport collected LFG to the existing blower/flare station.

- A 4 percent minimum slope on LFG header pipes will be specified to allow for condensate drainage.

- Valves will be depicted to allow isolation of LFG collection system sections.

This task addresses the engineering efforts required to prepare design documents suitable for the Design/Build format of this Project. Our design engineering activities will involve the following:

- Prepare final design drawings for the expansion of the LFG control system to address LFG management (and future NSPS compliance) in the Phase IV fill area. We anticipate the drawings will include multiple layout sheets and several detail sheets.

- The design documents will include technical specifications for the LFG system. The specification sections will address earthwork, drainage pits, vertical caissons, horizontal collectors, condensate management, piping, and valves.

- Submit draft design documents to the Authority for review and comment. Meet with the Authority to review the draft design documents. Revise the draft documents to incorporate comments as appropriate. Submit 2 sets of final design documents (drawings and technical specifications), sealed by a licensed engineer, along with cost estimate.

TASK 2 – PHASE IV CONSTRUCTION DOCUMENTS

The final design drawings and technical specifications developed under Task 1 will be utilized for preparation of construction documents, suitable for issuing to SCS Field Services (SCS-FS) for construction. The construction documents will include the sealed, construction-level drawings and the technical specifications for the LFG collection and control system expansion. SCS will coordinate with the Authority personnel to stake out the drainage pit locations and layout of the 4 horizontal collectors, which may be relocated from the coordinates in the preliminary well schedule at the Authority's request. SCS will use the Authority's GPS data for proposed drainage pit locations to revise the drainage pit schedule and layout design drawing and specifications to be issued for construction.

TASK 3 – CONSTRUCTION QUALITY CONTROL AND CERTIFICATION

SCS will provide a qualified field engineer to perform on-site CQC activities during the expansion of the LFG collection and control system. The on-site staff will be supported in the office and field by the Project Engineer and Project Director. Under the design/build format with SCS-FS, many of these activities will be performed under an accelerated schedule. Our CQC services will include the following:

- Attend a pre-construction meeting with the Authority and SCS-FS Superintendent. Review any questions and discuss schedule, material substitutions, and other relevant issues. Prepare and distribute meeting minutes.

- Review shop drawings and material submittals, Subcontractor's requests for information, and other technical submittals. Recommend approval or rejection based on technical, contractual, and functional adequacy. Distribute approved submittals and/or review comments to appropriate parties. Review pre-drilling survey data from Subcontractor and adjust caisson schedule accordingly.

- Observe drainage pit excavation and vertical caisson install. SCS will maintain a full-time presence at the site during drainage pit excavation and caisson install activities to log pits/caissons and connection to horizontal collectors, monitor construction materials and methods, and verify general compliance with the construction documents.

- SCS will maintain a part-time presence at the site during LFG header pipe, air and forcemain, and horizontal collector installation to periodically observe system construction activities and to verify general compliance with construction documents.

- Monitor and document the pressure testing of the completed header and lateral piping network. Provide guidance during testing.

- Telephone calls among the SCS Project Director, SCS-FS Project Manager, SCS on-site personnel, and the Authority to answer questions, resolve issues, and coordinate interpretations of the plans and specifications. SCS on-site staff will handle some of these issues in person.

- Prepare sketches or outline approaches required to address field conditions impacting the LFG system.

- Maintain files for correspondence, reports, photographs, requests for information or clarification, and other construction project related documentation, and forward to the Authority and others, as appropriate.

- Conduct a final walk-through inspection of the project, document the substantial completion inspection, and provide a punch-list for completion and issuance of final payment. Distribute final close-out meeting minutes.

Our CQC services anticipate that the Authority will utilize their in-house GPS equipment to layout the LFG System components and record the As-Built locations necessary to document the system installation.

One of the advantages of a design/build format is an accelerated construction schedule. Accordingly, SCS believes the Contract Time for the construction phase of the expansion project under a design/build scenario will be approximately 3 consecutive calendar weeks. For budgeting purposes, we have assumed that installation of the LFG vertical caissons, drainage pits, horizontal collectors, collection piping, valves, wellhead connections, and dewatering features will require SCS field staff to be at the site 16 hours per week (on average), for 3 weeks. Because the nature of the LFG system construction project will likely involve periods of more intense construction efforts along with periods of relatively low levels of construction activity, the manpower resources are presented in terms of average weekly labor efforts during the Contract Time. As with any construction administration project, the level of effort required by SCS is directly dependent on the field conditions encountered during construction.

Upon completion of the LFG system installation and start-up, SCS will prepare a Construction Certification Report certifying that the LFG system expansion at the Landfill was installed in accordance with the construction drawings and specifications as well as the solid waste and air quality permit requirements. The final report will be signed and sealed by a Virginia Professional Engineer. The report will present the project objectives, a description of the roles and responsibilities of the parties involved, a discussion of the CQA activities performed, a section on adjustments or changes made in the field, and a review of the applicable permit conditions. The Construction Certification Report will also contain the following information:

- SCS Daily Logs
- Drainage Pits/Caisson Installation Logs
- Pressure Test Reports
- Construction Photographs
- Record Drawing

The SCS-FS surveyor will provide as-built coordinates and elevation shots for key features of the LFG collection system including drainage pits, vertical caissons, horizontal collectors, wellheads, valves, etc. SCS will incorporate the as-built markups into AutoCAD format and provide a Record Drawing showing the system layout in plan view as part of the Construction Certification Report. Furthermore, SCS-FS will provide redline markup drawings of the LFG collection system plan showing any project elements that deviated from the final construction drawings.

The Construction Certification Report will include an inventory of LFG system components that have been installed under this project which can be compared with the LFG system features described in the Closure Cost Estimate that reflects the amount of the Facility's financial assurance mechanism. If appropriate, the Facility may be in a position to request a reduction in

the projected closure costs since a portion of the LFG system will have been installed ahead of final closure.

2. WORK ORDER SCHEDULE:

SCS is available to commence work on the engineering tasks immediately upon receiving authorization to proceed. Based on our preliminary schedule, the duration for each Task is outlined below:

- Task 1 – Phase IV LFG System Design Documents — 2 weeks
- Task 2 – Phase IV Construction Documents — 2 weeks
- Task 3 – Construction Quality Control — 3 weeks

3. COMPENSATION:

☒ SCS will be compensated in the lump sum amounts as follows:

- Task 1 – Phase IV LFG System Design Documents — $ 6,000
- Task 2 – Phase IV Construction Documents — $ 4,000
- Task 3 – Construction Quality Control — $15,000

Total Amount of this Work Order = **$25,000**

Any work added to the Scope of Services to be performed shall be compensated at SCS' standard fee schedule in effect at the time of performance.

4. CONTRACT TERMS: These services will be performed in accordance with the terms of the Comprehensive Agreement between the parties.

ATTACHMENT A-1
BUDGETARY FEE ESTIMATE FOR PHASE IV LFGCCS EXPANSION PLANNING, DESIGN, & CQC
REGION 2000 REGIONAL LANDFILL - LIVESTOCK ROAD FACILITY

		SUBTASK 1		SUBTASK 2			
		PHASE IV LFG SYSTEM		CONSTRUCTION			
SCS ENGINEERS	Rate	DESIGN DOCUMENTS		QUALITY CONTROL		**TOTAL**	
LABOR CATEGORY	$/hr	Hours	Cost	Hours	Cost	Hours	Cost
Project Director I	$ 225	12	$ 2,700	8	$ 1,800	20	$ 4,500
Project Manager I	$ 155	22	$ 3,410	26	$ 4,030	48	$ 7,440
Senior Project Professional II	$ 140		$ -		$ -	0	$ -
Project Coordinator	$ 130	2	$ 260	6	$ 780	8	$ 1,040
Project Professional I	$ 115		$ -	32	$ 3,680	32	$ 3,680
Staff Professional I	$ 100	32	$ 3,200	32	$ 3,200	64	$ 6,400
TOTAL LABOR		68	$ 9,570	104	$ 13,490	172	$ 23,060
OTHER DIRECT COSTS							
Auto/Mileage			$ -		$ 285		$ 285
Per Diem			$ -		$ 825		$ 825
Telephone			$ 40		$ 45		$ 85
Postage/Freight			$ 50		$ 30		$ 79
Reproduction/Printing			$ 125		$ 30		$ 154
Computer			$ 160		$ 100		$ 259
TOTAL ESTIMATED ODC's BY TASK			$ 374		$ 1,313		$ 1,687
Administrative (15%)			$ 56		$ 197		$ 253
TOTAL			**10,000**		**15,000**		**$ 25,000**

Environmental Consultants

11260 Roger Bacon Drive
Suite 300
Reston, VA 20190-5282

703 709-0004
FAX 703 709-0268
www.scsengineers.com

SCS FIELD SERVICES

ATTACHMENT B

May 14, 2020

Email: BDick@scsengineers.com

Mr. Robert E. Dick, PE
Vice President
SCS Engineers
15521 Midlothian Turnpike, Suite 305
Midlothian, VA 23113

SUBJECT: Proposal for the Construction of the Phase IV Landfill 2020 GCCS Expansion
Region 2000 Regional Landfill - Livestock Rd Facility, Rustburg, VA

Dear Bob:

SCS Field Services (SCS-FS) is pleased to submit this Proposal for the construction of the above-referenced project.

SCOPE OF WORK

The scope of work is based on the Conceptual Phase IV Landfill LFG Collection and Control System Layout Drawings and the Conceptual Design Specifications prepared by SCS Engineers, dated 5/14/20. The scope of work is described below, in the Price Schedule Sheet and in the Assumptions and Conditions.

1	Mobilization/Demobilization	1	LS
LFG EXTRACTION COMPONENTS & WELLFIELD INFRASTRUCTURE			
2	LFG Extraction Wellheads - 2" Standard	4	EA
3	LFG Horizontal Collectors	1280	LF
4	4" Dia. LFG Collection Piping (Below Grade)	180	LF
5	8" Dia. LFG Collection Piping (Below Grade)	125	LF
6	12" Dia. LFG Collection Piping (Below Grade)	400	LF
LFG WELLFIELD DEWATERING SYSTEM INFRASTRUCTURE			
7	4" Forcemain and 2" airline in common trench with LFG header	400	LF
8	4" Dia Dewatering Forcemain Isolation Valve	1	EA
9	2" Dia. Airline Isolation Valve	1	EA
TIE-IN CONNECTIONS & TERMINATIONS			

10	Tie-In HC Wellheads to LFG Header	4	EA
11	Tie-In to Existing 12" Header w/ 12" LFG Isolation Valve	1	EA
12	Horizontal Collector Drainage Pits (2' W x 5' L x 20' D)	8	EA
MISCELLANEOUS			
20	Payment & Performance Bond	1	LS

COMPENSATION

SCS-FS would be pleased to construct the project as described for **$146,509.00** according to the unit prices included in the Price Schedule Sheet (Attachment B-1). The Unit Prices are based on the attached Assumptions and Conditions for Construction.

Please feel free to contact the undersigned if you have any questions.

Very truly yours,

Guy F. Lewis
Vice President
SCS FIELD SERVICES

ASSUMPTIONS AND CONDITIONS FOR THE CONSTRUCTION OF THE REGION 2000 - REGIONAL LANDFILL PHASE IV 2020 LANDFILL GAS COLLECTION AND CONTROL SYSTEM, RUSTBURG, VA

May 14, 2020

Dust control to be performed by others. If SCS-FS is required to perform dust control, additional fee will apply.

Our unit prices include the cost of all equipment necessary to complete the project.

Our price reflects the Authority is responsible for surveying for the As-Built drawing.

Handling or disposal of any hazardous material, including asbestos is excluded.

SCS will backfill and regrade all excavated areas. However, our price excludes revegetation.

SCS' proposal excludes costs due to conditions which differ materially from the information provided by the client, or conditions not reasonably anticipatable considering the nature of the work.

Work may be performed in OSHA Level D protection. Additional health and safety requirements can be provided with adjustment in our price.

This proposal and assumptions and conditions shall become part of a mutually satisfactory contract, agreement or purchase order.

ATTACHMENT B-1. LFG SYSTEM DESIGN & CONSTRUCTION

PHASE IV 2020 LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION
REGION 2000 REGIONAL LANDFILL - LIVESTOCK ROAD FACILITY

Date: 5/14/20

No.	Item Description	Quantity	Unit	Unit Price	Total Cost
1	Mobilization/Demobilization	1	LS	$14,800	$14,800
LFG EXTRACTION COMPONENTS & WELLFIELD INFRASTRUCTURE					
2	LFG Extraction Wellheads - 2" Standard	4	EA	$870	$3,480
3	LFG Horizontal Collectors	1,280	LF	$52	$66,560
4	4" Dia. LFG Collection Piping (Below Grade)	180	LF	$39	$7,020
5	8" Dia. LFG Collection Piping (Below Grade)	125	LF	$45	$5,625
6	12" Dia. LFG Collection Piping (Below Grade)	400	LF	$55	$22,000
LFG WELLFIELD DEWATERING SYSTEM INFRASTRUCTURE					
7	4" Forcemain and 2" airline in common trench with LFG header	400	LF	$12	$4,800
8	4" Dia. Dewatering Forcemain Isolation Valve	1	EA	$1,800	$1,800
9	2" Dia. Airline Isolation Valve	1	EA	$750	$750
TIE-IN CONNECTIONS & TERMINATIONS					
10	Tie-In HC Wellheads to LFG Header	4	EA	$540	$2,160
11	Tie-In to Existing 12" Header w/ 12" LFG Isolation Valve	1	EA	$4,764	$4,764
12	Horizontal Collector Drainage Pits (2' W x 5' L x 20' D)	8	EA	$1,450	$11,600
MISCELLANEOUS					
13	Payment & Performance Bond	1	LS	$1,150	$1,150
	TOTAL CONSTRUCTION COST				**$146,509**
	TOTAL ENGINEERING COST				**$25,000**
	TOTAL ENGINEERING AND CONSTRUCTION COST				**$171,509**

Note:

1. This estimated construction cost to install the LFG System is based on the Phase IV LFG System Layout Drawing and the Conceptual Design Specifications, prepared by SCS Engineers, dated 5/14/20, respectively.

2. SCS' proposal excludes costs due to conditions which differ materially from the information provided by the client, or conditions not reasonably anticipated considering the nature of the work.

3. Our unit prices include the cost of all equipment necessary to complete the project.

4. SCS will backfill and regrade all excavated areas. However, our price excludes revegetation.

5. SCS' proposal excludes costs associated with surveying (both pre-construction stakeout and post-construction as-built). We assume that the Authority will utilize their in-house GPS equipment as necessary to layout the LFG System components and record the As-Built locations.

Attachment #7

SUMMER 2020

MASTERPLAN WELL SCHEDULE HORIZONTAL COLLECTOR CALCULATIONS
REGION 2000 REGIONAL LANDFILL - LIVESTOCK ROAD FACILITY

Well ID	ELEV. (MSL)	ELEV. (MSL)	TOTAL LENGTH, "L" (FT)
HC-01	903	960	620
HC-02	950	960	604
HC-03	945	960	456
HC-04	962	972	583
HC-05	940	950	613
		Total (ft):	2882

Notes:
1. Horizontal Collectors HC-01, HC-02, and HC-03 also have horizontal collector wellheads HC-05, HC-07, and HC-08 respectively located at the end termina.
2. Horizontal Collectors HC-04 and HC-06 do not have wellheads at the end terminus.
3. Proposed final landfill surface elevations are based on Permit Drawing No. 7 - Final Closure Grades, by DAA, dated 3/6/15.
4. Phase III Top of liner system elevations are based on drawing Sheet 12 dated 10/3/2006 by Joyce Engineering, Inc.
5. Phase IV and V Top of liner System elevations are based on Permit Drawing No. 6 - Engineering Modification Grades, by DAA, dated 3/6/15.

GAS LINE 1 (12" LFG HEADER) CONNECTS INTO CS-2

12"X12"X6" TEE WITH 12" BLIND FLANGE FOR FUTURE PHASE V EXPANSION

12"ø ISOLATION VALVE, 4"ø FM VALVE, AND 2"ø AIR VALVE ADJACENT TO TIE-IN

12"LFG HEADER

END 8"ø LFG HEADER

PROPOSED 6"ø LFG HORIZONTAL COLLECTOR

2" AIRLINE AND 4"ø FM IN COMMON TRENCH WITH 12"ø LFG HEADER

4"ø LATERAL LFG HEADER

AIR AND FORCEMAIN TERMINATED WITH STUB-UPS AT CS-3

HC-1
HC-2
HC-6
HC-7

VC-7 TARGET ELEV. 946' (0')
VC-8 TARGET ELEV. 949' (0')
DP-04 TARGET ELEV. 956' (6.5')
DP-03 TARGET ELEV. 954' (9')
DP-02 TARGET ELEV. 956' (6')
DP-01 TARGET ELEV. 954' (4')
VC-02 TARGET ELEV. 946' (8')
VC-01 TARGET ELEV. 945' (7.5')

PHASE III

PHASE IV

V-9

WELL ID	NORTHING	EASTING	DRAINAGE PIT DEPTH
VC-01	3625620.96	11294190.29	13.5
VC-02	3625689.12	11294381.46	13.5
DP-01	3625777.75	11294108.68	20.0
DP-02	3625874.15	11294281.28	20.0
DP-03	3625983.46	11293998.22	20.0
DP-04	3626041.69	11294193.70	20.0
VC-03	3626134.30	11293916.90	20.0
VC-04	3626161.89	11294129.94	20.0
HC-1	3626134.30	11293916.90	
HC-2	3626161.89	11294129.94	
HC-6	3625620.96	11294190.29	
HC-7	3625689.12	11294381.46	

0 50 100 150
SCALE IN FEET

N

NOTES:
1. THE PROPOSED VERTICAL CAISSONS 1-4 AND DRAINAGE PITS 1-4 WITHIN PHASE IV ARE LABELED WITH THEIR TARGET DESIGN ELEVATIONS AND REMAINING FEET OF FILL (IN PARENTHESIS) AS OF 2/28/20.
2. THE DASHED HALF-TONE CONTOURS REPRESENT THE EXISTING GRADING FROM THE SURVEY DATED 2/28/2020 BY GEOLOGIC COMPUTER SYSTEMS.
3. THE CONTINUOUS FULL-TONE CONTOURS WITHIN PHASE IV REPRESENT THE TARGET SURFACE REQUIRED TO REACH THE HORIZONTAL COLLECTOR, DRAINAGE PIT, AND VERTICAL CAISSON TARGET ELEVATIONS.
4. THE ESTIMATED VOLUME OF FILL REQUIRED TO REACH THE TARGET ELEVATIONS (AS OF 2/28/20) IS APPROXIMATELY 81,100 CY. ASSUMING 180,000 TONS/YR AND 1650 LB/CY COMPACTION, THE FACILITY WILL RECEIVE SUFFICIENT WASTE TO ESTABLISH THE TARGET ELEVATIONS BY APPROXIMATELY MID-JULY 2020.
5. THE CONTINUOUS HALF-TONE CONTOURS WITHIN PHASE III REPRESENT THE GROUND ELEVATION PRIOR TO FINAL CAPPING OPERATIONS IN 2019.

NO.	REVISION	DATE

SHEET TITLE: TARGET ELEVATIONS: VERTICAL CAISSONS AND HORIZONTAL COLLECTORS

PROJECT TITLE: LFGCS HEADER EXTENSION LIVESTOCK ROAD FACILITY PHASE IV

CLIENT: REGION 2000 SERVICES AUTHORITY
RUSTBURG, VA 24588
361 LIVESTOCK ROAD

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
12001 MARKET STREET, SUITE 165, RICHMOND, VA 23113
PH: (804) 378-7440 FAX: (804) 378-7453

PROJ. NO: 02195001.07
DWN. BY: TRW
CHK. BY: DBK
QA REVIEW BY:
APP. BY: DBK

CADD FILE: 02195001.07
DATE: 5/15/2020
SCALE:
DRAWING NO. 1 of 1

M:\LFG\02195001.07\Dwgs\Caisson Elevation...

SCS ENGINEERS

Environmental Consulting & Contracting

May 19, 2020

DRAFT - Privileged and Confidential

File No. 02195001.07-10

Mr. Clarke Gibson, P.E.
Director
Region 2000 Services Authority
361 Livestock Road
Rustburg, VA 24588

Subject: Review of Landfill Gas-to-Energy Development Project Proposals
Region 2000 Regional Landfill – Livestock Road Facility – Rustburg, Virginia

Dear Mr. Gibson:

On behalf of the Region 2000 Services Authority (Authority), SCS Engineers (SCS) reviewed Proposals submitted to the Authority by potential developers of a Landfill Gas-to-Energy (LFGE) Project at the Region 2000 Regional Landfill – Livestock Road Facility (Landfill). These Proposals are in response to the Request for Proposal (RFP) issued by the Authority on November 4, 2019. The Authority received two proposals on December 19, 2019, and delivered copies of these documents to SCS for review. Following our initial review on January 10, 2020, SCS requested additional information from each Potential Developer, and received responses on or about January 16, 2020. These responses are attached to this correspondence as Attachments 1 and 2. SCS participated in interviews that the Authority conducted with both Developers on February 6, 2020. This memorandum summarizes our review of these Proposals and also includes a review of each Developer's responses, and statements made during the interviews, as described in our Work Order, dated December 11, 2019, listed as the task for Landfill Gas-to-Energy Contract Support.

The proposal submitted by the Renewable Natural Gas Company (RNGC) proposes a Project that utilizes landfill gas (LFG) to produce renewable natural gas (RNG) for subsequent sale to a natural gas utility company via delivery into the Williams Transco pipeline. The Project includes installation and operation of a gas processing and treatment system for purifying and compressing LFG at the Landfill and transporting the gas with tube-trailer trucks to a central processing facility for additional processing and injection into the pipeline. RNGC's proposal represents the sources of revenue to the Developer as generated by the Project to be the sale of RNG and the sale of Renewable Identification Numbers (RINs) under the Renewable Fuel Standard (RFS).

The proposal submitted by the Industrial Power Generating Company, LLC (INGENCO) proposes a Project that utilizes LFG as a fuel source to generate electricity for subsequent sale to the power company. The Project includes the construction of a 4-megawatt (MW) electric generation facility (power plant) at the Landfill. INGENCO's proposal represents the sources of revenue to the Developer as generated by the Project to be payments from the power company for energy and capacity, the sale of Renewable Energy Credits (RECs), the sale of emission and greenhouse gas (GHG) credits, and ancillary services.

The RFP issued by the Authority requires that specific information and documentation are included in acceptable proposals. Both proposals included the developer's qualifications and experience,

previous LFGE project references, a description of the LFGE project approach and proposed system, a Capital Improvement Plan, a LFG Payment Plan, and other required Forms. Both proposals were accompanied by proposal security (certified check) in the appropriate amount.

The attached Exhibit 1 summarizes the manner in which each Proposal demonstrated compliance with the RFP requirements.

The following sections summarize the content and information provided in each proposal.

RENEWABLE NATURAL GAS COMPANY (RNGC) PROPOSAL

The letter of intent presents the entities for the proposed Project to process LFG into RNG.

- RNGC – Prime LFGE Developer. Part-owner of the Project.
- Next Era Energy Marketing LLC – A marketing partner and part-owner of the Project.
- ET Design Build – Design/Build Contractor of the Project.
- Smith Gardner– Operations and Maintenance (O&M) Contractor of the Project.

In addition, to the above companies listed in the Proposal, RNGC listed two additional entities in their Response Documentation:

- Greenlane Biogas – Equipment fabricator of the RNG processing plant for the Project.
- Specialized Bio-Gas Services /Bill Held– Consultant for the Project.

Section 2 – Qualifications & Experience: The Proposal discloses that RNGC was formed less than two years ago and does not have any operational LFGE projects. Accordingly, the information provided in both the Proposal and/or the Response Documentation presents biographical resumes of the individual and identifies historical LFGE projects in which the various individual team members served some role in the development or operations of the subject projects during their tenure with a previous employer. The Proposal does not correlate the specific roles and responsibilities of the individual team members to each of the five projects listed. However, in their Response Documentation, RNGC provided additional information regarding the roles and responsibilities of the individual team members on the referenced historical LFGE projects.

The Proposal provides one reference for ET Environmental, and one for Next Era. References were not provided for any of the historical LFGE projects that are listed. References for Mr. Bill Held, Greenlane Biogas, and Smith Gardner were provided in the Response Documentation. The Greenlane project reference list includes one project in the USA, one in Brazil, and two in Canada that include processing of landfill gas to RNG for pipeline injection. The Statement of Qualifications for ET Environmental, describes several design/build projects in the USA, two of these projects (Millington, TN, and Winder, GA) which include treatment of LFG to RNG. The representative projects from Smith Gardner identifies construction and O&M for several LFG collection projects in and around Virginia, however, no projects listed include Operations and Maintenance of a LFG-to-RNG facility.

Section 3 – Notice of Violations: Since RNGC has no existing projects, this section is not applicable to this proposal.

Section 6 – Project Approach and Scope of Services Assumptions: The Proposal outlines the fundamental aspects of the proposed LFGE project, which are summarized as follows:

- Construct and operate a "water-wash" biogas upgrading plant at the Landfill to process LFG into a "product gas" (also termed "refined LFG"). This plant consists of three main processes: the biogas process, the water process, and the stripping air process. The equipment and infrastructure can generally be described to include a compressor skid, a process skid, scrubbing/flashing/stripping vessels, chillers, radiators, and a thermal oxidizer to destroy the system off-gas. The Response Documentation indicates the biogas upgrading plant will have a nameplate capacity of 1,500 standard cubic feet per minute (scfm) but is capable of handling 1,800 scfm.

- Construct a filling station at the Landfill in which the product gas would be compressed and transferred into tube trailers (trucks), which would be staged at the site and then used to transport the refined LFG by a third-party logistics company to an off-site location, referred to as the "Injection Point" or "Tap". Given that a typical tube trailer can transport approximately 300,000 cubic feet of product gas; thus, at a LFG flowrate of 1,500 scfm, the site would dispatch three trailers per day.

- Permit, construct, and operate a central gas processing facility to process the refined LFG into RNG and inject the RNG into the Williams Transco Pipeline at a location in Appomattox County. The processing facility involves a decanting station, compression equipment, de-oxygenation, and siloxane removal system.

The section briefly addresses the responsibilities of the O&M Contractor and anticipated permitting requirements for non-combustion Small Renewable Energy Projects. RNGC anticipates an air quality permit will be required for the thermal oxidizer. A summarized Project Schedule is also provided, which indicates a duration of approximately 11 months between contract execution and commercial operations.

The Response Documentation notes that the biogas upgrading plant at the Landfill will require approximately 10,000 gallons of water per day and will also produce 10,000 gallons of wastewater per day. The compressor equipment will be housed in a "noise-attenuated structure" to reduce sound levels.

In their Response Documentation, RNGC described that the facilities at the Landfill will operate unmanned and will be monitored by a SCADA system. Maintenance and emergency repairs will be completed by on-call personnel. During periods when the proposed biogas upgrading plant is shutdown, LFG will need to be diverted to the existing utility flare. RNGC states that all equipment will be removed from the site by the developer upon termination of the contract with the Authority.

Section 7 – Capital Improvement Plan: The Proposal provides a table showing the Project developer's intent to construct the facility to handle up to 1,650 scfm. In their Response Documentation, RNGC provided a short description of a capacity of up to 1,800 scfm based on their discussions with Greenlane Biogas.

Section 8 - LFG Payment Form: The form presented in the Proposal depicts the estimated annual payments to the Authority. Based on the Proposal, the Response Documentation, and discussions during the interview with RNGC, the following are relevant points of consideration:

- An initial payment of $100,000 upon execution of a contract to fund improvements to the Authority's existing LFG collection system;

- NextEra anticipates providing a minimum guaranteed price to RNGC for purchase of RNG at the Injection Point for either a 5-year or 7-year period, which enables RNGC to offer a firm pricing structure to the Authority for purchase of LFG as follows:

  - $0.75/MMBTU if LFG flowrate is 1,000 scfm or less (normalized to 50 percent methane and calculated on a 90-day average);

  - $0.85/MMBTU if LFG flowrate exceeds 1,000 scfm (normalized to 50 percent methane and calculated on a 90-day everage);

- The table shows the Developer projected revenues for the Project from the sale of RNG as well as the sale of RIN credits from 2027 through 2039, which makes assumptions for the sale of both commodities ($2.50/MMBTU for RNG and $11/MMBTU for RIN). The proposed payment to the Authority for purchase of LFG during this period conforms to the terms noted above (either $0.75/MMBTU or $0.85/MMBTU, depending on LFG quantities).

- No minimum annual payment is guaranteed to the Authority, and no guaranteed price is provided after 2027.

The Response Documentation states that RNGC will agree to purchase all LFG delivered to the point of delivery and will pay for LFG regardless of whether it is processed into product gas and sold or whether it is flared by the Authority.

For comparison purposes, the Henry Hub Natural Gas Spot Price recorded on 3/5/20 was $1.89/MMBTU and $1.73/MMBTU on 5/18/20.

INGENCO PROPOSAL

The letter of intent presents a basic overview description of INGENCOs qualifications and its understanding of the Project and the Landfill operations. As described in the letter of intent, INGENCO proposes to design, construct, own and operate an on-site LFG-fueled electrical generating facility (power plant) at the Landfill.

Section 1 – Parent Company Information: The Proposal presents information about INGENCO's parent company, Riverview Investment Holdings, LLC, and a description of its Corporate Structure. The Proposal includes a statement that INGENCO has authority to contract with the Authority on their own behalf.

Section 2 – Qualifications & Experience: The Proposal presents qualifications and experience for eight individual project team members. The section also provides a company overview and a summary of existing facilities. The proposal presents basic information pertaining to 14 existing INGENCO LFG-fueled power plants, ten of which are located in Virginia. The proposal also presents contact information for references at each of these landfills, most of which are familiar to SCS and Authority personnel. The example projects range from 500 to 4,500 cfm with power generation capacity ranging between 4 and 16 megawatts (MW).

Section 3 – Notice of Violations: The Proposal includes a list of notices of violations and warning letters at each of INGENCO's facilities identified in the previous section. Based on the list provided, it is noted that several of INGENCO's facilities have received at least one enforcement action (Warning Letter or Notice of Violation) related to environmental permit provisions over the last five years. Thus, it seems reasonable to anticipate that an INGENCO power plant operated at the

Livestock Road Facility could potentially be issued some form of enforcement action over the course of a 20-year contract.

Section 6 – Project Approach and Scope of Services Assumptions: The Proposal outlines the fundamental aspects of the proposed LFGE project, which are summarized as follows:

- Construct and operate a LFG-fueled power plant with an initial capacity of 4 MW to generate electricity for sale into the PJM Interconnection wholesale electricity market. The compression ignition engines are characterized as "dual-fueled", meaning they operate on liquid fuel (No. 2 fuel oil, which is diesel) and the LFG fuel is directed into the inlet-air stream of the gensets controlled via a single solenoid valve, thus, allowing them to operate as "dual fuel." Ingenco installs a proprietary Programmable Engine Control Module (ECM) to the gensets, which allows the operator to control the "pulse" of the No.2 fuel injector to a smaller rate to allow a mix of fuels into the engine. SCS understands this can achieve a maximum 94 percent LFG to 6 percent diesel fuel mixture. Thus, the engine generators can continue to operate during a potential shut-down of LFG from the Landfill given that the engines can maintain continuous operation using diesel as the exclusive fuel source. However, the engines must consume some de minimus amount of diesel continuously (i.e., they cannot utilize LFG as the exclusive fuel source).

- The dual-fueled nature of the engine gensets establishes the independence of the power plant from the landfill and has enabled INGENCO power plants in Virginia (and elsewhere) to obtain separate air quality permits instead of being aggregated with the landfill under the "common control" provisions of the Clean Air Act.

- The power plant will be designed in a modular configuration, which consists of a "six-pack" arrangement of the genset system, in which six gensets share a common control panel and switchgear, offers "plug and play" capabilities. One or more gensets can be isolated, repaired, and/or removed/replaced as necessary without interruption to the rest of the power plant systems. The power plant capacity can be increased (or decreased) in relatively small increments, since a six-pack represents 2 MW of generating capacity.

- The Proposal states that INGENCO's facilities are designed to operate on LFG with "negligible quality restrictions" and agrees that the Authority offers no guarantees regarding waste quantities or composition. SCS can confirm that INGENCO's LFGE projects at other landfills can accommodate LFG with relatively marginal LFG quality (around 40 percent methane).

- INGENCO requests that condensate produced by the LFGE Project Facilities be managed and disposed of by the Authority.

- The Proposal requests a modification to the LFG Metering and Billing Responsibilities such that INGENCO would assume these responsibilities (rather than the Authority) to qualify for renewable attributes and ensure compliance.

Section 7 – Capital Improvement Plan: The Proposal presents detailed information related to the power plant building and configuration of the engine gensets, specifically the modular arrangement of the initial 12 engine gensets, which would represent an LFG fuel demand of approximately 1,200 cfm (at 50 percent methane). The power plant building would be constructed to accommodate the potential expansion involving six additional engine gensets, which represents an additional LFG fuel

demand of 600 cfm. It was noted that language in Section 2 noted that the proposed LFGE project was not subject to any financing contingencies.

INGENCO provided additional information in the **Question and Response Section** regarding expansion of the power plant to accommodate a total of 24 engines, which corresponds to nameplate generating capacity of 8 MW and LFG fuel consumption of 2,400 cfm at full load.

Section 8 - LFG Payment Form: The form presented in the Proposal depicts the estimated annual payments to the Authority. Based on the Proposal, the Response Documentation, and discussions during the interview with INGENCO, the following are relevant points of consideration:

- INGENCO proposes a payment structure that is based on a revenue sharing arrangement and is equal to 10 percent of the total revenues of the LFGE power plant, including energy, capacity, ancillary services, emission and greenhouse gas credits, and renewable energy credits. Thus, the Authority would not realize a fixed purchase price for the LFG on a heat rate (per MMBTU) basis, but would participate in the wholesale market price fluctuations experienced by INGENCO.

- INGENCO offers a minimum annual payment to the Authority of $100,000 ($8,333 paid on a monthly basis) contingent on the average LFG delivered to the project being at least 700 scfm and 40 percent methane.

- The payment structure of 10 percent of total revenues is contingent on LFG quality specifications that consist of an oxygen standard (Maximum of 5 percent) and a methane standard (minimum of 40 percent). Non-conforming LFG quality would reduce the payments to only 5 percent of revenues.

- The LFG Payment Form reflects that the power plant will consume 95 percent of the LFG recovered from the Landfill. The Form also presents an estimated payment to the Authority on a per MMBTU basis in the range of $0.42 to $0.46/MMBtu that is derived from the expected power plant revenues and the quantity of LFG delivered to the plant. (This was done to enable comparison with other proposals and the proposed payment structure reflects a revenue sharing arrangement rather than a fixed purchase price.)

- The completed Form C table shows a total estimated payment to the Authority of $3.26 million over 20 years.

PROPOSAL REVIEW SUMMARY

A comparison of each developer and their proposed LFGE project on the basis of qualifications, proposed schedule, proposed payment structure, and risk to the Authority is discussed below.

Qualifications

RNGC: As noted previously, the Proposal submitted by RNGC outlines a proposed LFGE Project for processing and treating LFG to produce RNG that will be transported off-site via tube trailers and delivered into a gas utility pipeline. It is difficult to characterize the extent to which RNGC is qualified and experienced to execute the project considering: 1) the company was formed less than two years ago; 2) RNGC has not constructed or commenced operations on any LFGE projects to-date (although individual team members are certainly experienced in the LFGE industry); and, 3) The RNGC project will be funded by NextEra Marketing as a project co-owner/gas marketer, fabricated by Greenlane

Biogas, constructed by ET, and operated by Smith+Gardner. Accordingly, the Developer's qualifications are heavily dependent on the qualifications and experience presented for their various partners. While it is recognized that these partner companies (and the individual professionals employed by them) can demonstrate qualifications and project experience in LFG and/or biogas, SCS is not aware of any previous LFGE projects involving all of these parties in their respective roles.

INGENCO: As noted previously, the Proposal submitted by INGENCO outlines a proposed LFGE Project involving an electrical generation facility equipped with dual-fueled engine generators that will sell renewable electrical power and associated commodities into the PJM Interconnection wholesale electricity market. SCS is familiar with INGENCO's power plants operating at other landfills in the region. SCS understands that the company has designed and constructed LFG-power generation plants that it continues to own, operate, and maintain. INGENCO's qualifications and capability to execute the project are readily assessed by the 14 existing LFGE power plants in operation throughout the mid-Atlantic region (ten in Virginia), some of which are approaching 20 years of operation. The Proposal identifies numerous representative solid waste professionals from public-sector and private-sector landfill owners who serve as references for these existing LFGE power plant facilities. INGENCO proposes to contract directly with the Authority to solely design, construct, own, operate and maintain the LFGE Project. The Proposal represents that they "propose to finance this project through cash and credit facilities, without the need to solicit recourse or non-recourse debt or funding from other equity partners".

Schedule:

RNGC: The RNGC proposal includes a milestone schedule that is based on execution of an Agreement by 3/15/20. The schedule shows the completion of Construction by 10/1/20, and commercial operation by 2/1/21. During the interview, SCS inquired as to the anticipated schedule for permitting a "tap" into the Williams Transco pipeline and RNGC replied they estimated this duration to be 30 days. In general, based on our experience, SCS believes all elements of the schedule are substantially too optimistic and unrealistic. Considering the complexities and various aspects of the proposed project (a water-wash biogas upgrading plant at the Landfill, a filling station at the Landfill, and a central gas processing facility to inject the RNG into the Williams Transco Pipeline at an undisclosed location in Appomattox County), as well as the various parties and regulatory agencies, we suggest the Authority anticipate a schedule that reflects a duration of at least 36 months rather than 10 months.

INGENCO: The INGENCO proposal did not include a defined schedule. Based on INGENCO's responses in correspondence with SCS, the typical timeframe to obtain necessary permits and construct the power plant is 12 to 15 months. While we believe this timeframe is somewhat optimistic, it seems plausible that the Commencement Date of Operations of the proposed facility could occur within 18 months of execution of an Agreement.

Payment Structure

SCS has reviewed the proposed estimated financial payments to the Authority presented in each proposal. Based on our review of other LFGE contracts over the last 25 years, payment structure and the actual pricing rates to landfill owners vary based on the market value of natural gas and/or electricity, available tax credits, and the market value of applicable environmental attributes, all of which have experienced substantial fluctuations. Agreements may include a fixed price on a unit heat rate basis ($/MMBtu) for purchase of the LFG, or a combination of a fixed unit price *plus* a percentage of the Average Closing price of Natural Gas (NG). Prices of NG in other contracts may be indexed on a monthly or annual basis, depending on the individual agreement and based on market

values recorded by a particular index (such as Henry Hub). These contracts with payments indexed to the market value of natural gas sometimes stipulate a ceiling and floor price.

Alternatively, we are aware of Agreements in which the payment is structured based on a revenue sharing arrangement. Also, certain contracts include a fixed annual lease component of the payment to the landfill owner.

While it is difficult to provide the Authority with a current "market rate" in 2020 for the LFG produced at the Landfill, SCS can offer that LFG purchase payments which are based on fixed unit price, either with or without some form of indexing, have generally ranged between $0.15/MMBtu and approximately $1.00/MMBTU over the last 15 years or so. Agreements have different stipulations required for minimum LFG quality, payments for non-conforming LFG, or variable payments based on high and low flow conditions.

RNGC: The RNGC proposal identifies anticipated annual consumption of all (100 percent) LFG recovered at the Landfill, a fixed price on a unit heat rate basis for purchase of the LFG (either $0.75 or $0.85/MMBtu), and the projected annual payment to the Authority. The proposal Form C indicates an aggregate of $4.8 million in payments to the Authority over 20 years. In their Responses to Questions, RNGC will agree to purchase all gas delivered to the point of delivery and will pay for gas regardless of whether it is processed and sold or flared by the Authority. The Form depicts the breakdown of anticipated revenues that the LFGE Project will experience derived from different commodity components (RNG sales and RINs).

INGENCO: The INGENCO proposal identifies anticipated annual consumption of 95 percent of the LFG recovered from the Landfill, an equivalent fixed price on a unit heat rate basis that is derived from the estimated revenues of the power plant and the offered revenue sharing factor (10 percent), and the projected annual payment to the Authority. The proposal Form C indicates an aggregate of $3.2 million in payments to the Authority over 20 years. The proposal includes an annual guaranteed payment of $100,000, which is contingent on certain LFG quantities and quality specifications. The Form depicts the breakdown of payments to the Authority being derived from different commodity components (electricity sales, capacity, REC's, carbon credits, and ancillary services).

In summary, both proposals offer reasonable prices to purchase LFG, with values within the general range noted by SCS at other landfills over the past 15 years. Although the INGENCO proposal offers a lower equivalent fixed price on a unit heat rate basis, the opportunity to share a portion of the total revenues may or may not result in more advantageous payments than depicted in the proposal. INGENCO guarantees a minimum annual payment to the Authority over the 20-year contract term. The ability of the RNGC project to continue to offer payments to the Authority after the initial 5-year or 7-year period in which NextEra has offered a minimum guaranteed price is heavily dependent on the future price of RINs.

Based on the values provided by each proposal. The table below presents a comparison of LFG payments to the Authority.

	Renewable Natural Gas Company	INGENCO
Proposed Payment Structure	$0.75 - 0.85/ MMBtu	10% of Total Revenue
Payment for Flared Gas	$0.75 - 0.85/ MMBtu	$0/ MMBtu
Initial Price (2020)	$0.75	$0.42
Final Price (2040)	$0.85	$0.65
Maximum Price ($/MMBtu)	$0.85	$0.65
Initial Payment (2020)	$100,000	$0
Guaranteed Annual LFG Price or Flat Rate Payment [1), 2)]	LFG Price: $.075 (2021-2024), $0.85 (2024-2027) ($/MMBtu)	Flat Rate: $100,000
Projected Annual Payment 2021	$164,052	$105,333
Guaranteed Annual Payment Total (20 yrs Contract)	$0	$2,000,000
Projected Total 20-yr Payment	$4,822,127	$3,263,010

Notes:
1) RNGC guaranteed price provided by partner, NextEra from 2021 - 2027. RNGC provides initial payment of $100,000 in 2020.
2) INGENCO guaranteed price is $100,000 annualy for 20 years givan an average minimum delivery of 700 scfm and 40% methane.

Risk

RNGC: SCS has identified the following potential risks to the Authority based on our review of the Proposal and subsequent information submitted by RNGC as well as our participation in the interview:

1. RNGC has no existing virtual LFG-to-RNG pipeline projects (where LFG is transported from the landfill to a pipeline for injection via trucks) anywhere in the country. SCS is aware of very few existing virtual LFG-to-RNG pipeline projects in the USA, none of which are in Virginia or the surrounding mid-Atlantic region. SCS understands that two LFG-to-RNG virtual pipeline projects being developed by another company for Republic Services at landfills in North Carolina are substantially behind schedule to break ground, allegedly due to inability to secure financing. We caution that, while the concept is interesting and may be the only manner in which LFG-to-RNG is viable for relatively small or "stranded" landfills, there is certainly some degree of risk in being one of the first landfills to attempt to execute this strategy. Also, RNGC has represented that they have secured contracts with Meridian Waste to execute similar projects at the Tri-Cities Landfill in Petersburg and the Lunenburg Landfill. The Authority should be advised that there exists some potential that RNGC would not be able to justify the expense of the central processing facility and injection point "tap" without aggregating LFG from other landfills and may not deliver the LFGE Project.

2. SCS believes that the multiple partners and co-ownership between equity partners (RNGC and NextEra) could put the Authority in a somewhat difficult position during long-term operations. While it was not stated overtly, SCS believes RNGC appears to be positioned to immediately sell ownership to another party.

3. SCS is concerned that development of the injection point "tap" is more complicated than RNGC represented (although we do not have experience securing these on natural gas pipelines). We presume it would be subject to permitting by Williams Transco Pipeline and the end-use of LFG from the Landfill would be subject to demanding LFG quality specifications. RNGC recognized this and suggested one method to address this concern is to install a blending loop, which extracts high-BTU natural gas from the pipeline (we presume at a cost) and blends it with the inferior quality LFG-derived RNG before reinjecting it into the pipeline. SCS is unaware of this being a proven technique for addressing lower-quality LFG

concerns and we suspect this would significantly erode the economic viability of the project. Furthermore, we suspect the central processing facility would be subject to local government permitting under various Appomattox County ordinances. As noted above, we question whether the high cost for a polishing and processing facility at the injection point means the Authority's LFGE Project is likely contingent on Developer securing projects at other landfills.

4. SCS understands that the LFGE Project proposed by RNGC exerts a significant demand for water supply resources and wastewater handling and disposal. Although the water wash process is closed loop, the Developer estimates water consumption for replenishing will be nearly 10,000 gallons per day (gpd). This yields an equivalent 10,000 gpd of wastewater, which is equivalent to one tanker truck a day (if a direct discharge into the sanitary sewer cannot be obtained).

5. The Authority should recognize that construction of a filling station at the Landfill, in which the product gas would be compressed and transferred into tube trailers (trucks), would introduce staged compressed gas tankers at the site. This would appear to represent some potential risk from a health and safety standpoint and environmental compliance standpoint, but these could likely be managed as they are at similar facilities that store and transport compressed methane gas. It would also result in the site dispatching approximately three trailers per day, which is not necessarily a significant increase in facility traffic.

6. The guaranteed pricing is only for an initial period of five years, after which payment is based on both natural gas market value and RIN pricing, both of which depend on many factors. There exists some risk to the Authority that payments after the initial period may not materialize at the values estimated in the Proposal.

7. SCS is somewhat concerned that a LFGE project that attempts to produce high-BTU RNG at the Authority's Landfill may encounter challenges because of the marginal quality (lower methane and higher oxygen) of the recovered LFG, which is likely attributed to the Authority's aggressive wellfield operations to maximize odor control and mitigation. Implementation of a LFGE Project of this nature may cause the Authority to be in a position of conflicting objectives with the Developer.

8. SCS is somewhat uncertain regarding the ability of the proposed processing and treatment equipment and infrastructure and filling station to accommodate variable LFG quantities as the LFG flowrates are expected to increase during continued waste placement operations and then decrease upon cessation of waste filling activities. While it is likely that the equipment and infrastructure comprising the biogas upgrading plant can be operated below the nameplate capacity of 1,500 scfm, and is reportedly capable of handling 1,800 scfm, we suspect there may be some limitations on operating at partial load (say 50 percent capacity).

9. SCS did not identify specific potential material risks affiliated with the proposed LFGE project regarding odors, noise, or other nuisance issues.

INGENCO: SCS has identified the following potential risks to the Authority based on our review of the Proposal and subsequent information submitted by INGENCO as well as our participation in the interview:

1. The technological viability of LFG-to-electricity has been demonstrated at numerous landfills throughout the country for over 30 years. Although we recognize that the nuances of the interconnect with the local utility's electrical distribution system can present challenges, SCS considers the LFGE project proposed by INGECO to have relatively low risk from a technology implementation standpoint. Furthermore, implementation of the power plant at the Authority's Landfill does not appear to be contingent on INGENCO contracting with other landfills.

2. SCS believes that a long-term partnership with INGENCO, while certainly likely to require coordination related to integration of controls and other aspects of permitting, construction and operations, represents relatively low risk based on their ownership structure and long-term presence at numerous landfills in Virginia and throughout the region.

3. SCS believes the advantage of enabling separation of air permits, and the existence of 14 existing LFG-fueled power plant facilities, offers a relatively low risk related to successfully navigating local and environmental permitting requirements necessary to execute the project.

4. SCS understands that the LFGE Project proposed by INGENCO exerts a significant demand for water supply resources and wastewater handling and disposal. Although the cooling water is closed loop, the Developer estimates water consumption for replenishing will be nearly 20 gallons per minute (gpm). This yields approximately 5 gpm of wastewater, which is equivalent to about three-quarters of a tanker truck a day (if a direct discharge into the sanitary sewer cannot be obtained).

5. The revenue sharing arrangement represents an opportunity for the Authority to participate in the upside and downside of fluctuations in the electricity wholesale and environmental attributes marketplace. Obviously, there is some risk associated with this approach. Similarly, there is some risk associated with establishing a fixed LFG sales price with or without an indexed factor component. It is difficult to ascertain whether one approach presents a greater or lesser risk to the Authority than the other approach at this time. Certainly, electricity pricing is relatively low at this time, and there some risk to the Authority that payments may not materialize at the values estimated in the Proposal; however, SCS believes this represents less risk than the LFG-to-RNG scenario.

6. SCS believes that the INGENCO dual-fueled engine gensets offer a more suitable scenario due to their relative tolerance for marginal quality (lower methane and higher oxygen) of the recovered LFG at the Authority's Landfill. Implementation of a LFGE Project of this nature, which has relatively forgiving quality specifications (40 percent methane and 5 percent oxygen) offer less risk of conflicting objectives with the Developer.

7. SCS believes that the INGENCO dual-fueled engine gensets offer a more suitable scenario to accommodate variable LFG quantities as the LFG flowrates are expected to increase during continued waste placement operations and then decrease upon cessation of waste filling activities. INGENCO noted that the multiple engine gensets can be operated at varying loads and with varying quantities of liquid versus gaseous fuel. While there is some risk to the Authority that a certain portion of the LFG may be directed to the flare at certain times, and would not yield revenue, certain components of the power plant revenues, such as capacity

payments, will continue to enable the Authority to receive monies under the revenue sharing arrangement.

8. SCS suspects that the power plant could produce sound levels that may be audible off-site. We did not identify specific potential material risks affiliated with the proposed LFGE project regarding odors, dust, or other nuisance issues.

CONCLUSION

Based on SCS' review of the Proposals and subsequent additional information, our participation in the interviews, and consideration of the issues documented within this memorandum, SCS believes that the LFGE Project proposed by INGENCO offers a preferred scenario for the Authority's Landfill rather than the Project proposed by RNGC. This opinion considers the Developer's qualifications and experience, the inherent differences in the technologies associated with the two projects, the LFG characteristics, the proposed schedule and payment structure associated with each Proposal, and our perception of potential risks and benefits to the Authority affiliated with the two projects. While we recognize that the estimated financial payments to the Authority associated with the LFGE project proposed by RNGC appear to be greater than the project proposed by INGENCO, SCS believes the various potential risks are also greater and considered the INGENCO proposal to yield a greater probability of successful project implementation. Therefore, SCS recommends the Authority enter into contract negotiations with INGENCO to further evaluate the potential to develop a LFGE Project at the Landfill.

If you have questions or require additional information, please do not hesitate to contact us at the letterhead address.

Sincerely,

Robert E. Dick, PE, BCEE
Vice President
SCS Engineers

William A. Salomone, PE
Project Advisor
SCS Engineers

Enclosures

EXHIBIT 1 - PROPOSAL COMPLIANCE WITH THE RFP

REQUIRED SUBMITTALS	Renewable Natural Gas	INGENCO
Letter of Interest	Submitted	Submitted
- Idendification of Proposed Firms and Contractual Relationships	Included	Included
- Brief Description of the Scope of Work	Included, Sec 6	Included, Sec 6
Proposal Submittal Form (Form A)	Submitted	Submitted
SECTIONS		
1. Parent Company Confirmation	*Not Applicable* [1.]	Submitted
2. Qualifications and Experience	Submitted [2.]	Submitted [4.]
- Project Profiles, Contact Info for three current LFGE Projects	Included [2.]	Included
- Resumes for deisgn, build, operate and maintenance personnel.	Included	Included
- Contact information for landfill references	Included	Included [7.]
3. Notice of Violation and Actions	*Not Applicable* [3].	Submitted [3.]
4. Proposal Certification and Non-Collusion Affidavit (Form B)	Submitted	Submitted
5. Proposal Security	Submitted	Submitted
6. Project Approach and Scope of Services Assumptions	Submitted [6.]	Submitted [5.]
- Description of intended process(es)	Included	Included
- Approach to planning, permitting, design, construction and operation	Included	Included
- Expectations of the Authority	*Not Included*	Included
7. Capital Improvement Plan	Submitted	Submitted
- Plan for constructing or expanding LFGE facilities	Included	Included
- Plan for decommissing and removal of Facilities	Included	Included
- Demonstrate the approach to maximize utilization of gas	Included	Included
8. Landfill Gas Payment Form (Form C)	Submitted	Submitted
9. Environmental Permits and Documentation Requirements	Submitted	Submitted
10. Other Innovative Proposals	*Not Applicable*	*Not Applicable*
Addenda (Show receipt of two Addenda)	Not Included	Included

Notes

1. RNGC does not have a parent company. Proposal submitted as a joint effort with partnering companies.
2. RNGC does not have existing projects, therefore the qualifications and experience are for company personnel only. Project profiles for design, build and Operatations references are for RNGC's proposed partners.
3. INGENCO provides a list of warning letters and NOV's from 2015 to the present. RNGC has no current projects and therefore no NOV's are listed.
4. INGENCO'S qualifications and expereince includes both personnel and fourteen existing projects.
5. INGENCO's Project Approach includes use of LFG to generate electricity.
6. RNGC's Project Approach incudes the transportation and sale of purified and compressed CNG/RNG.
7. INGENCO's proposal provides fourteen references of landfill owners. RNGC provided references in the Responses

Attachment 1 – Correspondence with RNGC (SCS Questions and RNGC Responses)

Salomone, Bill

From: Salomone, Bill
Sent: Friday, January 10, 2020 4:32 PM
To: JCRAIG@RNGAS.COM
Cc: Clarke Gibson; Bob Dick (BDick@scsengineers.com)
Subject: Region 2000 LFGE Proposal- Request for Additional Information
Attachments: Memo - RNGC - Request for Additional Proposal Info.pdf

Mr. Craig,

Please see attached request for additional information regarding your proposal. Thank you in advance for your response.

Best Regards,

Bill

William A. Salomone, PE
Project Advisor
SCS Engineers
15521 Midlothian Turnpike, Suite 305
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January 10, 2020
File No. 02195001.07-T10

Jeffrey S. Craig
CEO
Renewable Natural Gas Company
123 West Main Street
Ligonier, PA 15658

Re: Review of Proposal for Landfill Gas-to-Energy Development Project - Request for Additional Information and Clarifications

Dear Mr. Craig:

On behalf of the Region 2000 Services Authority (Authority), SCS Engineers (SCS) appreciates the opportunity to review your Proposal submitted to the Authority for a Landfill Gas-to-Energy (LFGE) Project at Livestock Road Regional Landfill (Landfill). We request additional information and/or clarifications as listed below. Please provide response via email by close of business on Thursday January 16, 2020.

1. The Landfill Gas Payment form shows LFG utilization of an average of 100% of the gas generated at the landfill between FY 2032 and 2039. It is assumed that this approach requires LFG storage if the RNGC facility is temporarily shut down and the Landfill continues to produce LFG. Does the Project propose to temporarily store LFG delivered by the Landfill during periods of RNGC facility shut down, or is an alternate method proposed?

2. As required by the RFP, Each Prospective Proposer shall provide the following:

   > *"…project profiles as well as contact information of the landfill owner for at least three (3) currently operating Landfill Gas-to-Energy Facilities, where the Prospective Proposer served as the developer of the beneficial utilization and energy recovery project and currently serves as either the owner or operator of the Landfill Gas-to-Energy Facilities. To demonstrate qualifications, Prospective Proposers shall provide sufficient information for the three (3) facilities to make evident that they have been in operation at least five (5) years and are of similar size and scale (500 scfm or greater) as the LRF. For each reference provided Prospective Proposers are required to provide the landfill owner's name, project location and contact information (name, title, address, telephone number)."*

   Given the fact that RNGC was formed less than two years ago and presently has no operating projects, please provide the references as described above, specifically for projects at

Virginia or other landfills, as developed, owned, or operated by RNGC's project partners (e.g. NextEra, ET Design/Build, and Smith Gardner).

3. In a similar manner as required in Item 2 above, please provide a list of Violations and Compliance Actions as required by Section 3 of the RFP in regards to projects at Virginia or other landfills, as developed, owned, or operated by RNGC's project partners.

4. Section 6 briefly describes a General Layout and Process flow for a LFG processing facility. Please provide more details about the proposed facility specifically for the Livestock Road Landfill in reference to other processing facilities developed by RGNC's partners. Examples of information may include items such as: blower size, operational parameters, volume of off-gas anticipated by the thermal oxidizer, anticipated solid and liquid waste volume and handling and a description of future expansion and capability.

5. The Proposal provides a brief description of the Capital Improvement Plan. Based on the experience of RNGC's partners, please describe the specific steps that are required in order to execute the incremental expansions of 500 scfm.

6. Please describe and quantify the anticipated solid and liquid waste generation from the facility and describe how waste will be managed.

7. Please describe and quantify the anticipated off-gas from the facility and any permits required?

8. According to the letter of intent and Section 2, the Project "may" be jointly owned by RNGC and NextEra. The proposal also states that RNGC has a letter-of-intent agreement with NextEra Marketing as a "potential" project co-owner and gas marketer. Please explain the status of the contractual relationship between RNGC and NextEra.

9. Please explain the contractual relationships between the multiple owners and/ or team partners, or if any other owners are anticipated?

10. Please clarify if ET Design/Build is a project partner or a subcontractor to RNGC.

11. It appears that the treatment facility will be located on a skid, what is the anticipated noise generated by the facility?

12. Referring to Form C, it appears that NextEra will agree to pay for a minimum guaranteed price for the gas from FY 2021 through 2027. Please explain if the minimum guaranteed price is a rate per MMBtu, or a minimum annual flat rate payment. If the latter, please explain the conditions, such as average flow and concentration that are required for delivery. Is a minimum guaranteed price guaranteed after FY 2027.

13. Section 2 lists five projects LFG to CNG projects in Pennsylvania, Ohio, and Tennessee and states that "members of the team were directly involved with" these projects. Section 2 also

lists six team members that will be involved with the Project. The section does not relate any of the team members to the five projects listed, nor does it provide the specific roles and responsibilities of each team member. The RFP specifies that names and responsibilities for all project team members that will design, build, operate and maintain the facility, however only names and phone numbers are provided for contacts at the partnering entities. Please add cross-references for these projects.

14. Per the RFP, Section 7, the Proposal is required to submit a "…plan for decommissioning and removal of LFGE Project Facilities over time as landfill gas production decreases after landfill closure (and upon ultimate cessation of LFGE Project operations)" Please provide this information.

15. The diagram in section 6 shows a "Dehydration" process. What is the quantity of additional condensate that is anticipated to be generated from the facility and is the Authority expected to manage the additional liquids?

16. Provide some additional details regarding the anticipated operations by Smith Gardner. For example, what are the number of full-time employees that will operate the facility?

Thank you for taking time to respond to these comments.

Sincerely,

William A. Salomone, PE.
Project Advisor
SCS Engineers

cc: Clarke Gibson, PE (Region 2000)
Bob Dick, PE (SCS Engineers)

Salomone, Bill

From: Jeffrey Craig <jcraig@rngas.com>
Sent: Thursday, January 16, 2020 4:32 PM
To: Salomone, Bill
Cc: Clarke Gibson; Dick, Bob; Maxwell Craig
Subject: RE: Region 2000 LFGE Proposal- Request for Additional Information
Attachments: RNGC 1.19.20 Response.pdf; Greenlane RNGC.pdf; RNG- VA Schedule.pdf; ET SOQ - RNG 2019.pdf; S+G LFG Ops Experience.pdf; SBS Held projects 3-19 copy.pdf

Importance: High

Dear Bill: Please find attached the following.

1. Written responses to your questions.
2. Commercial proposal from Greenlane. You will note that the initial proposal was for 1,000 scfm. However, the final proposal will be for 1500 scfm name plate capacity, which has a maximum operating capacity of 1800 scfm. All the technical information about the process including heat and mass balance diagram is included. We have entered into an agreement to purchase 3 1500 scfm units.
3. Conceptual Schedule
4. ET Environment SOQ
5. Smith Gardner SOQ
6. Specialized BioGas Services project

We have entered into agreements for two other landfill sites in Virginia and are moving ahead with the development of those sites. We hope that Region 2000 will be the third.

Jeffrey Craig
Renewable Natural Gas Company LLC
123 West Main St
Ligonier Pa 15658
724.787.9320

RNGC - Response Appendix 1 - Responses

RNGC Responses 1.16

1. *The Landfill Gas Payment form shows LFG utilization of an average of 100% of the gas generated at the landfill between FY 2032 and 2039. It is assumed that this approach requires LFG storage if the RNGC facility is temporarily shut down and the Landfill continues to produce LFG. Does the Project propose to temporarily store LFG delivered by the Landfill during periods of RNGC facility shut down, or is an alternate method proposed?*

   No. The project will not have any temporary storage. Our proposal assumes RNGC will purchase all gas delivered to the Delivery Point. RNGC will pay for the gas regardless of whether it is processed and sold or flared. That alleviates any risk of loss of payment if the project is down, which is our responsibility

2. *Given the fact that RNGC was formed less than two years ago and presently has no operating projects, please provide the references as described above, specifically for projects at Virginia or other landfills, as developed, owned, or operated by RNGC's project partners (e.g. NextEra, ET Design/Build, and Smith Gardner).*

   In assessing a project, the most important criterion is the technical integrity and performance history of a processing plant and the experience of the project team. No amount of technical expertise can mitigate a poorly designed plant, or one with deficient or inadequate operating history.

   We have selected a deeply experienced project team that has many years of experience and multiple projects to its collective credit. In every case these are companies and individuals that we, or one of the team members has worked directly with in the past. We have included information on two members of the team (Greenlane and Bill Held of Specialized Gas Services) that we should have included in the initial submission as well as Statements of Qualification or reference lists for all the team members.

   Please advise us in advance of contacting any of the references so that we can alert each team member.

Greenlane

The processing plant will be fabricated by Greenlane. Greenlane is the global leader in biogas upgrading with 33 years of experience including 107 installations in 18 countries and the two largest biogas upgrading systems in the world. Attached As Appendix 1 in the Greenlane Commercial Proposal is a complete list of the biogas plants installed by Greenlane.

The reference plant processes 10,000 scfm of landfill gas into pipeline quality gas in Montreal Canada, which makes it one of the largest landfill gas to RNG plants in North America. The contact information is for that facility is set forth below.

Jean-Marc Viau

jean-marc.viau@wasteconnections.com
Directeur général
T: 450-474-2423| F: 450-474-1871 | C: 514-942-4250
Enviro Connexions | 3779 Chemin des Quarante-Arpents | Terrebonne, QC, J6V 9T6

BILL HELD – Specialized Bio-Gas Services

Specialized Bio Gas in the person of Bill Held is the project technical consultant including plant and landfill gas collection system optimization. Bill has 35 years' experience in the solid waste and renewable energy sectors. Bill and Jeff Craig have worked together on various projects for over 20 years. Bill has focused on landfill gas to energy projects for the last 20 years, working on all aspects of projects from the gas generation and collection, through project development to existing project management. Bill served as Republic Services Director of Renewable Energy, managing a portfolio of 70+ projects and developing new projects, and served as a senior member of 2 of the premier LFG consultants in the U.S. - SCS Engineers and Emcon/OWT. Bill holds B.S. and M.S. degrees in Biology and Civil and Environmental Engineering from the University of Cincinnati. Attached is a list of the projects Bill has worked on.

Reference Contacts

Chris Jaquet PE
Director of Engineering and Environmental Affairs
Rumpke Waste and Recycling Services
3990 Generation Drive
Cincinnati, OH 45251
734-652-2734
Chris A Jaquet Chris.Jaquet@rumpke.com

Ronald H. Strube, REM, PG
Corporate Director of Gas Operations
Waste Management
6615 Hunting Creek Drive
Liberty Township, Ohio 45044-9558
Cell 513 317 6160
rstrube@wm.com

ET Environmental

The ownership of the landfill gas facilities constructed by ET have in each case changed ownership since the project was constructed. ET was not able to find appropriate contacts with the new ownership over the past few day. There is attached a statement of qualifications that should establish their experience and qualifications.

Smith Gardner

Attached is a statement of qualifications for Smith Gardner. The contact information for each project is set forth in the SOQ.

3. *In a similar manner as required in Item 2 above, please provide a list of Violations and Compliance Actions as required by Section 3 of the RFP in regards to projects at Virginia or other landfills, as developed, owned, or operated by RNGC's project partners.*

   We enquired as to reported violations or compliance actions at any of the referenced facilities and were told there were none.

4. *Section 6 briefly describes a General Layout and Process flow for a LFG processing facility. Please provide more details about the proposed facility specifically for the Livestock Road Landfill in reference to other processing facilities developed by RGNC's partners. Examples of information may include items such as: blower size, operational parameters, volume of off-gas anticipated by the thermal oxidizer, anticipated solid and liquid waste volume and handling and a description of future expansion and capability.*

   Attached as Appendix 4 is the technical information, including general arrangement, heat and mass balance diagram specific to the Livestock Road Landfill. It is reasonably expected that the installed capacity of the plant will be sufficient to process all of the LFG produced by the site as set forth in #5 below. Below is a general description.

   The LFG is compressed and treated in the following sequence: 1. Water Wash Upgrading System The Water Wash Upgrading System includes compression, water scrubbing (with closed loop water regeneration), and a TSA dryer for fully automated and continuous CO2, H2S, VOC, siloxane and moisture reduction. 1.1 The gas first passes through the Raw Gas Compressor where it is compressed to the optimum process pressure to maximize efficiency and performance of the water wash process. This is a rotary vane compressor which provides optimum performance and long service life with no need for any upstream gas treatment. 1.2 The gas then flows upwards through the scrubbing tower where CO2, H2S and some VOCs are absorbed by the water. The water is used in a closed loop. From the scrubbing tower it goes to a flash tank where it is depressurized. This allows any carry over of methane to be separated and reinjected back into the process, thereby maximizing methane recovery (~99%). The water then flows through the stripping tower where it releases the absorbed CO2, H2S & VOCs into a stream of exhaust air. The water is then re-pressurized and reused. 1.3 The gas then passes through a TSA (Thermal Swing Adsorption) Dryer for dehydration to a dew point of approximately -112oF, which allows compression to virtually any injection pressure without condensate formation. For a detailed description of the Water Wash Biogas Upgrading System, please refer to "Appendix 4 – Water Wash Upgrading System".

5. The Proposal provides a brief description of the Capital Improvement Plan. Based on the experience of RNGC's partners, please describe the specific steps that are required in order to execute the incremental expansions of 500 scfm.

According to the information in the RFP, the maximum LFG flow is 1755 scfm in 2032, assuming an 85% collection efficiency. The plant will have a name plate capacity of 1500 scfm. In our prior submission we estimated the maximum operating capacity to be 110% or 1650 scfm. Greenlane has informed us that a reasonable maximum operating capacity is approximately 120% of name plate capacity, or 1800 scfm. Therefore, given the gas production model the plant will have sufficient capacity to handle the maximum projected gas flow.

6. Please describe and quantify the anticipated solid and liquid waste generation from the facility and describe how waste will be managed.

The plant does not produce any solid waste. As discussed below, the water wash system will produce approximately 10,000 gallons per day of wastewater, for which we expect to assume reasonability for disposal. Any dehydration condensate would be similarly disposed. Water required for processing and resulting disposal water is assumed to be trucked in and out unless the appropriate water supply and wastewater disposal systems are readily available.

7. Please describe and quantify the anticipated off-gas from the facility and any permits required?

The plant will produce a off-gas stream that will consist of some methane, carbon dioxide, non-methane organic compounds, trace amounts of Sulphur, siloxanes and other compounds in the LFG that are not removed in the gas processing (technical data). The quantity will approximate 45-50% of the total incoming LFG stream. The off gas will be incinerated in a thermal oxidizer, which is commonly used in landfill gas processing. Thermal oxidizers generally have a destruction efficiency in the 98-99% range, As the thermal oxidizer will be a new emissions source, an air permit from Virginia DEQ will be required.

8. *According to the letter of intent and Section 2, the Project "may" be jointly owned by RNGC and NextEra. The proposal also states that RNGC has a letter-of-intent agreement with NextEra Marketing as a "potential" project co-owner and gas marketer. Please explain the status of the contractual relationship between RNGC and NextEra.*

We held a series of meetings with NextEra over the past few days. We reasonably expect to execute agreements within the next 30 days that will provide for the purchase of the RNG from the project in Virginia, which we hope will included the Region 2000 site. We have executed agreements with other landfills in the area and the proposed RNG project is going to proceed on that basis. We also expect that those agreements will provide for NextEra to be an equity owner in the project.

9. Please explain the contractual relationships between the multiple owners and/ or team partners, or if any other owners are anticipated?

The project owners will be limited to RNGC and NextEra.

10. Please clarify if ET Design/Build is a project partner or a subcontractor to RNGC.

ET Design/Build is responsible for the engineering, procurement and construction of the project. They will not be a partner in the project.

11. It appears that the treatment facility will be located on a skid, what is the anticipated noise generated by the facility?

The processing facility will be skid mounted. The primary noise source will be the compressor that will compress the gas for injection into the trailer. The compressor will be housed in a noise attenuated structure such the decibel levels will be minimized and likely not audible outside the immediate project area.

12. Referring to Form C, it appears that NextEra will agree to pay for a minimum guaranteed price for the gas from FY 2021 through 2027. Please explain if the minimum guaranteed price is a rate per MMBtu, or a minimum annual flat rate payment. If the latter, please explain the conditions, such as average flow and concentration that are required for delivery. Is a minimum guaranteed price guaranteed after FY 2027.

The NextEra contract will provide for a minimum price per MMBtu.

13. Section 2 lists five projects LFG to CNG projects in Pennsylvania, Ohio, and Tennessee and states that "members of the team were directly involved with" these projects. Section 2 also lists six team members that will be involved with the Project. The section does not relate any of the team members to the five projects listed, nor does it provide the specific roles and responsibilities of each team member. The RFP specifies that names and responsibilities for all project team members that will design, build, operate and maintain the facility, however only names and phone numbers are provided for contacts at the partnering entities. Please add cross-references for these projects

Waste Management Valley Landfill and Monroeville Landfill Projects
These projects were developed by Allegheny Energy Resources. The projects, which were constructed in 1999 have for 20 years produced pipeline quality gas from landfill gas. The original installed equipment has operated continuously for over 20 years. Jeffrey Craig was the founder and President of Allegheny. He initiated the development of the projects, and was

intimately involved in every aspect of the development, financing, construction and. Rick O'Mahony of RNGC V.P. of RNGC the principal design, construction and operating engineer for the projects. Rick stayed with the projects when they were sold in 2003 and oversaw their operation until he joined RNGC in 2017.

Republic Imperial Project, Imperial Pa – Josh Whetzel of RNGC was an investor, financial and technical advisor during the development of the Imperial project. He was responsible for initiating the development of the project. He oversaw the development, construction and operation of the project. After the company was sold, he continued to advise the new owners on all aspects of the project development, financing and construction. The project was completed in 2010 and has operated continuously since then. The project was sold in 2014.

Rumpke Cincinnati OH Both Bill Held and Rick O'Mahony have had multiple roles over the past 20 years at Rumpke. Rick oversaw several expansions of the facility in the 2000's as well as its operation in his capacity of Vice President of Technology and Operations for Montauk. Bill has served as project advisor to Rumpke on landfill gas operations and related capacities.

Millington TN ET Environmental was responsible for the design engineering, and construction of the Millington plant which produced pipeline quality gas from landfill gas. A more complete description is contained in the SOQ, which is attached.

14. Per the RFP, Section 7, the Proposal is required to submit a "…plan for decommissioning and removal of LFGE Project Facilities over time as landfill gas production decreases after landfill closure (and upon ultimate cessation of LFGE Project operations)" Please provide this information.

Upon termination of the contract all processing equipment, compressors, thermal oxidizer and related equipment will be removed from the site. Concrete slabs can likewise be removed. The valve at the Delivery Point will be removed and replaced with linear connection to the flare. Leachate interconnections will be capped off and any underground piping removed. Any related project infrastructure including buildings, compressor housing, motor control center, electrical interconnects and fencing will be removed in order to restore the site to its "original" condition. This is typically provided for in the Landfill Gas Purchase and Sale Agreement.

15. The diagram in section 6 shows a "Dehydration" process. What is the quantity of additional condensate that is anticipated to be generated from the facility and is the Authority expected to manage the additional liquids?

Because the process employs water wash process, we expect to generate approximately 10,000 gallons per day of water for which we assume we will have the responsibility for disposal. If the Landfill leachate collection and disposal system is capable of handling that quantity of water, we

would negotiate a payment with the Authority for that service. If such capacity is not available, the wastewater will be trucked off-site.

16. Provide some additional details regarding the anticipated operations by Smith Gardner. For example, what are the number of full-time employees that will operate the facility?

The plant is designed to run un-attended. The plant SCADA system will provide for the plant to be operated remotely. There will be two qualified operators available to attend to normal plant maintenance and emergency call out if necessary. The schedule will likely be for plant visitation for visual inspection and perform normal maintenance several times a week. The SCADA system will notify the operations center, which will be monitored 24 hours a day, of any operating problems or issues. If at any time the plant shuts down, the plant gas valve will close and the gas will be diverted to the flare. One of the emergency procedures is to have an operator respond if for some reason the flare fails to ignite, which happens on occasion.

Mass Balance

Methane recovery is ~99% (guaranteed to exceed 98%), and plant availability / uptime is guaranteed to exceed 95% (higher uptime guarantees are available on request). For a detailed mass balance diagram please refer to Appendix 2 – Mass Balance Diagram.

Parameter Inlet Gas 1 Outlet Gas Specification Units

Gas Flow 1000 605 - scfm Gas Pressure ~ 1.5 116 - psig Methane (CH4) 50 81.8 - % Carbon Dioxide (CO2) 36.5 2.0 - % Nitrogen (N2) 8.0 13.5 - % Oxygen (O2) 1.5 2.6 - % Hydrogen Sulfide (H2S) 150 < 4 < 4 ppmv Moisture (H2O) 4.0% < 7 lbs/MMscf < 7 lbs/MMscf - Total Inerts 46 < 4.1 - % Heating Value 505 826 - MMBTU/scf

Parameter Inlet Gas 1 Outlet Gas Specification Units

Gas Flow 1000 605 - scfm Gas Pressure ~ 1.5 116 - psig Methane (CH4) 50 81.8 - % Carbon Dioxide (CO2) 36.5 2.0 - % Nitrogen (N2) 8.0 13.5 - % Oxygen (O2) 1.5 2.6 - % Hydrogen Sulfide (H2S) 150 < 4 < 4 ppmv Moisture (H2O) 4.0% < 7 lbs/MMscf < 7 lbs/MMscf - Total Inerts 46 < 4.1 - % Heating Value 505 826 - MMBTU/scf

RNGC - Response Appendix 2 - Example Greenlane Biogas Proposal

Attachment #8

GREENLANE BIOGAS™

Commercial Proposal

Proposal: E14085 r1

for

ET Environmental
Renewable Natural Gas Company

December 16th 2019

Table of Contents

Communication

Please direct all communication concerning this proposal to:

Primary Contact:

Brad Huxter, BSME
US Sales Manager
828-337-2621
Brad.Huxter@GreenlaneBiogas.com

Secondary Contact:

Brent Jaklin
VP Business Development & Technology
604-761-1923
Brent.Jaklin@GreenlaneBiogas.com

Confidentiality

Please note that the information contained in this proposal is confidential and proprietary and subject to the terms of a mutual non-disclosure agreement. For approval to share it with necessary third parties, please contact us as outlined above.

Revision History

Revision 0 – Budgetary Proposal – 18 November 2019
Revision 1 – Commercial Proposal – 16 December 2019

Experience & Qualifications

Greenlane is the global leader in biogas upgrading with 33 years of experience including 107 installations in 18 countries, the first upgrading system in 11 countries, and the two largest biogas upgrading systems in the world.

As the only provider to offer all three biogas upgrading technologies, including PSA, water wash and membranes, Greenlane has the unique ability to offer an unbiased comparison of each technology, and the ability to offer multiple technology solutions - ensuring you get the best and most cost effective solution possible for your application each and every time.

For this application, our exclusive water wash technology was determined to be the best and most cost effective solution to meet your flow and outlet gas quality specification. For further information or a cost comparison to other technologies, please contact us as outlined above.

The equipment outlined in this proposal is built to the highest standards of quality and has been extensively field proven. It is guaranteed to meet your outlet gas quality specifications as outlined herein.

For a complete list of references, refer to “Appendix 1 - Reference List”. Contact information is available on request.

Summary

This proposal includes using three (3) refurbished Greenlane Totara+ Water Wash Biogas Upgrading Systems, to provide LFG compression, upgrading and dehydration at three landfills. The resulting RNG will then be compressed and transported to an injection site where it will be further treated and compressed before being injected into a natural gas pipeline.

The upstream LFG blowers, and all downstream compression, truck filling, decanting, polishing, and re-compression are to be quoted separately or provided by others.

The Greenlane Water Wash process provides efficient removal of CO2, H2S, siloxanes, VOCs & H2O from biogas. This technological approach provides a solid, proven, and low risk approach with extremely high methane recovery and extremely low consumable costs. This solution is available only through Greenlane and provides the lowest possible overall life cycle costs, and the highest possible project revenue.

Design Basis

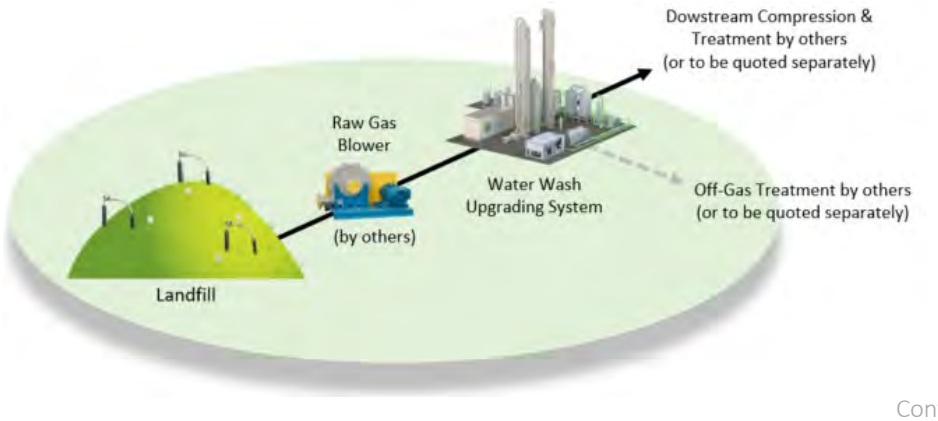
The equipment outlined in this proposal has been designed based on the information provided to Greenlane including the following:

- Feedstock: Landfill Gas
- End Use: Pipeline injection
- Pipeline Injection Pressure: TBD
- Site Location: TBD (Continental USA assumed)
- Ambient Temperature Range: TBD (35°F to 100°F assumed)
- Elevation: TBD (650 fasl assumed)

Process & Equipment Description

This proposal consists of the following primary equipment:

Equipment	Each Includes	Purpose	Achieves
1. Water Wash Biogas Upgrading Systems (x3)	1.1 Raw Gas Compressor	Compression	Optimum process pressure
	1. 2 Water Wash Upgrader	Upgrading	CO_2 & H_2S Reduction
	1.3 TSA Dryer	Dehydration	H_2O Reduction



All equipment is designed and built to the highest standards of quality and is extensively field proven in this application.

The process gas is compressed and treated in the following sequence:

1. Water Wash Upgrading System

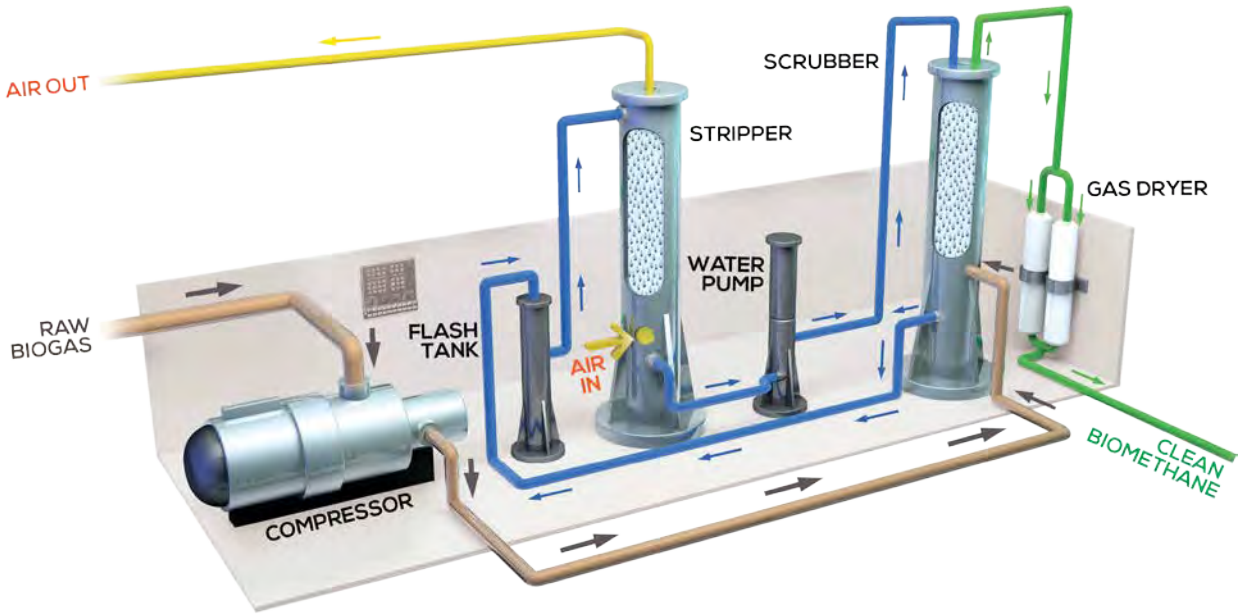
   The Water Wash Upgrading System includes compression, water scrubbing (with closed loop water regeneration), and a TSA dryer for fully automated and continuous CO2, H2S, VOC, siloxane and moisture reduction.

   1.1 The gas first passes through the Raw Gas Compressor where it is compressed to the optimum process pressure to maximize efficiency and performance of the water wash process. This is a rotary vane compressor which provides optimum performance and long service life with no need for any upstream gas treatment.

   1.2 The gas then flows upwards through the scrubbing tower where CO_2, H_2S and some VOCs are absorbed by the water. The water is used in a closed loop. From the scrubbing tower it goes to a flash tank where it is depressurized. This allows any carry over of methane to be separated and reinjected back into the process, thereby maximizing methane recovery (~99%). The water then flows through the stripping tower where it releases the absorbed CO2, H2S & VOCs into a stream of exhaust air. The water is then re-pressurized and reused.

   1.3 The gas then passes through a TSA (Thermal Swing Adsorption) Dryer for dehydration to a dew point of approximately -112°F, which allows compression to virtually any injection pressure without condensate formation.

   For a detailed description of the Water Wash Biogas Upgrading System, please refer to “Appendix 4 – Water Wash Upgrading System”.



Mass Balance

Methane recovery is ~99% (guaranteed to exceed 98%), and plant availability / uptime is guaranteed to exceed 95% (higher uptime guarantees are available on request). For a detailed mass balance diagram please refer to Appendix 2 – Mass Balance Diagram.

Parameter	Inlet Gas [1]	Outlet Gas	Specification	Units
Gas Flow	1000	605	-	scfm
Gas Pressure	~ 1.5	116	-	psig
Methane (CH_4)	50	81.8	-	%
Carbon Dioxide (CO_2)	36.5	2.0	-	%
Nitrogen (N_2)	8.0	13.5	-	%
Oxygen (O_2)	1.5	2.6	-	%
Hydrogen Sulfide (H_2S)	150	< 4	< 4	ppmv
Moisture (H_2O)	4.0%	< 7 lbs/MMscf	< 7 lbs/MMscf	-
Total Inerts	46	< 4.1	-	%
Heating Value	505	826	-	MMBTU/scf

Greenlane is suitable for the Purchaser's intended purpose. E&OE.

Plant Acceptance

Plant Acceptance occurs when Greenlane demonstrates that the product gas quality meets or exceeds the levels defined in the Performance Test (below). In the event the Performance Test cannot be completed within 90 days from Shipment (or Ready to Ship), due to reasons that are not the fault of Greenlane, the plant shall be deemed accepted and all remaining milestone payments are due. Furthermore, the plant shall be deemed accepted and handed over once the plant is in Commercial Use by the Purchaser. For the purposes of clarity, Commercial Use means gas being produced and sold.

Factory Acceptance Testing (FAT)

The main purpose of the FAT is to verify the installation, function, and compliance of installed components. A copy of the standard FAT manual can be provided upon request. Customers are welcome at their own expense to visit the factory near Vancouver, Canada for the Greenlane standard FAT.

Performance Test

Immediately at the completion of the commissioning process, Greenlane will verify the function and performance of the plant(s). This phase is carried out under surveillance by the client, and is to formally record that the expected performance levels are attained. The following procedure is observed:

- The Greenlane technician & Client's site manager will meet prior to the performance test commencing to discuss the test and any expectations or objectives.
- The plant will operate for a 48hr period and show to function as expected.
- Where accurate flow metering is installed or available, flow data will be averaged over an hour and taken each hour.
- If required by client, then gas bag samples will be taken at the start, midpoint and completion of the 48hr test period. Gas analysis of the bag tests are to be done at a mutually agreed lab at Client's cost. Should the test results be unsatisfactory, and the analysis show the plant is not performing, Greenlane will be given the opportunity to tune the plant operation further and re run the test.
- At the end of the performance test a final meeting will be held to review the test data and make a note of any future actions or punch list items required.

Performance Guarantee

Refer to Provision No. 23 to 39 in the Liability for Defects Section of the Orgalime Conditions for general liquidated damages which includes but is not limited to the following guarantee:

Biomethane Purity

Biomethane composition to comply with the mass balance based on the Biogas In composition. Biomethane purity guarantee is strictly based on the composition provided by the Purchaser stated as Biogas In composition in and does not allow for any contaminants that may affect the performance of the proposed Greenlane equipment. In the event contaminants are present in the foregoing composition, Greenlane shall immediately revoke such performance guarantee. Contaminants are defined as any gas component greater than what it is stated in the mass balance or any component that is not specifically stated in the foregoing mass balance.

Methane Recovery

Methane recovery is strictly based on the composition agreed mass balance finalized in the sales contract and does not allow for any contaminants that may affect the performance of the proposed Greenlane equipment. Methane recovery rate is calculated as follows:

$$\text{Methane recovery (\%)} = \frac{\text{(Biomethane flow rate * (SCFM) X Methane } CH_4 \text{ (\%))}}{\text{(Raw biogas flow rate (SCFM) X } CH_4 \text{ (\%))}}$$

Performance Guarantees will be demonstrated during the Performance Test.

APPENDIX 1

REFERENCE LIST

GREENLANE BIOGAS

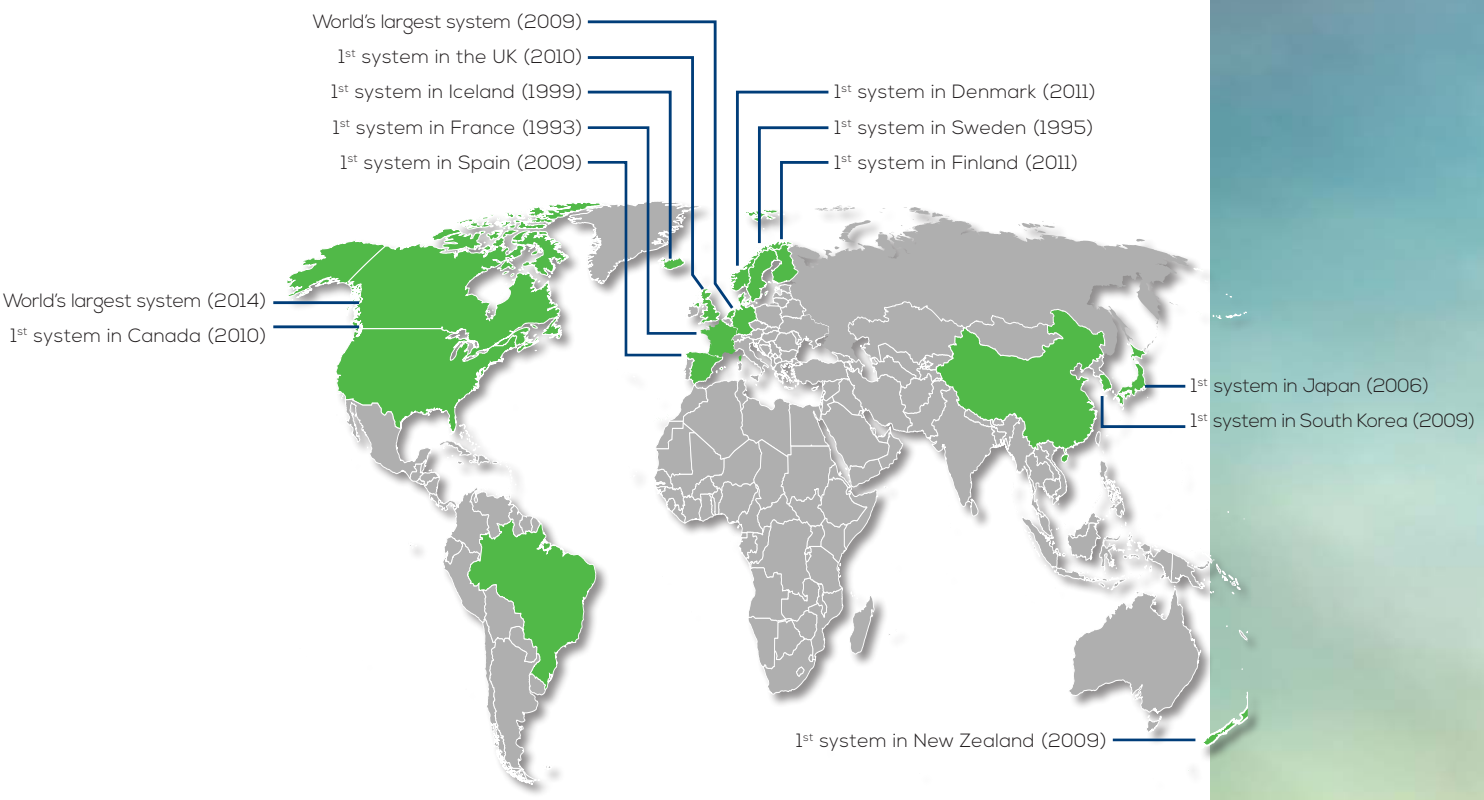
Attachment #8

Global Reference List

	installed	location	country	units	design flow scfm	design flow Nm³/hr	feedstock	end use
112	2020	Oregon	USA	1	500	800	Waste Water	Pipeline Injection
111	2020	British Columbia	Canada	1	270	450	Waste Water	Pipeline Injection
110	2020	Quebec	Canada	2	1600	2560	Municipal Waste	Pipeline Injection
108	2019	Washington	USA	1	800	1360	Ag Waste	Pipeline Injection
107	2018	São Paulo	Brazil	1	1550	2500	Landfill	LNG Vehicle Fuel
106	2018	Oregon	USA	1	1250	2000	Waste Water	Pipeline Injection
105	2018	Oregon	USA	1	680	1100	Waste Water	Pipeline Injection
104	2018	Sittingbourne	England	1	750	1200	Papermill Effluent	Pipeline Injection
103	2017	Bemmel	Netherlands	1	1250	2000	Ag Waste	Pipeline Injection
102	2017	Quebec	Canada	2	2500	4000	Waste Water	Pipeline Injection
100	2017	Rio	Brazil	1	1550	2500	Landfill	Pipeline Injection
99	2017	Tamatsu	Japan	1	190	300	Waste Water	CNG Vehicle Fuel
98	2017	Arizona	USA	1	3100	5000	Ag Waste	Pipeline Injection
97	2017	Oulu	Finland	1	190	300	Landfill	Heat & CNG
96	2016	British Columbia	Canada	1	500	800	Municipal Waste	Pipeline Injection
95	2016	British Columbia	Canada	1	150	240	Municipal Waste	Digester Purging
94	2016	Washington	USA	1	750	1200	Ag Waste	Pipeline Injection
93	2015	Oxfordshire	England	1	500	800	Ag Waste	Pipeline Injection
92	2015	Kent	England	1	1250	2000	Food Waste	Pipeline Injection
91	2015	Toba	Japan	2	370	600	Waste Water	CNG Vehicle Fuel
89	2015	Hénin-B	France	1	400	650	Municipal Waste	Pipeline Injection
88	2015	Colorado	USA	3	4700	7500	Organic Waste	Pipeline Injection
85	2015	British Columbia	Canada	1	160	250	Ag Waste	Pipeline Injection
84	2015	Scotland	Scotland	1	750	1200	Ag Waste	Pipeline Injection
83	2014	Scotland	Scotland	2	500	800	Ag Waste	Pipeline Injection
81	2014	Somerset	England	1	1250	2000	Organic Waste	Pipeline Injection
80	2014	Cheshire	England	1	1250	2000	Organic Waste	Pipeline Injection
79	2014	Colorado	USA	1	190	300	Organic Waste	Pipeline Injection
78	2014	Cabo Frio	Brazil	1	750	1200	Municipal Waste	CNG Vehicle Fuel
77	2014	Västerås	Sweden	1	500	800	Organic Waste	CNG Vehicle Fuel
76	2014	California	USA	1	1250	2000	Municipal Waste	CNG Vehicle Fuel
75	2014	California	USA	1	750	1200	Municipal Waste	Pipeline Injection
74	2014	Beijing	China	1	80	130	Ag Waste	CNG Vehicle Fuel
73	2014	Quebec	Canada	7	10000	16000	Landfill	Pipeline Injection
66	2014	Quebec	Canada	1	5000	8000	Landfill	Pipeline Injection
65	2014	Akureyri	Iceland	1	90	150	Municipal Waste	CNG Vehicle Fuel
64	2014	Kobe	Japan	2	370	600	Waste Water	CNG Vehicle Fuel
62	2014	Alteno	Germany	1	500	800	Organic Waste	Pipeline Injection
61	2013	Oslo	Norway	1	750	1200	Organic Waste	LNG Vehicle Fuel
60	2013	Zwickau	Germany	1	470	750	Crops & Manure	Pipeline Injection
59	2013	Michigan	USA	2	3100	5000	Landfill	Pipeline Injection
57	2013	Mörrum	Sweden	1	190	300	Municipal Waste	CNG Vehicle Fuel
56	2012	Anklam	Germany	2	2500	4000	Organic Waste	Pipeline Injection

	installed	location	country	units	design flow scfm	design flow Nm³/hr	feedstock	end use
54	2012	Vierverlaten	Netherlands	1	1370	2200	Organic Waste	Pipeline Injection
53	2012	Suffolk	England	1	190	300	Organic Waste	Pipeline Injection
52	2012	Indiana	USA	1	1550	2500	Ag Waste	Pipeline & CNG
51	2012	Stockport	England	1	190	300	Organic Waste	Pipeline Injection
50	2012	Borås	Sweden	1	190	300	Waste Water	CNG Vehicle Fuel
49	2012	Kobe	Japan	1	190	300	Waste Water	CNG Vehicle Fuel
48	2012	Skövde	Sweden	1	500	800	Organic Waste	CNG Vehicle Fuel
47	2012	Hitachi	Japan	2	140	225	Waste Water	CNG Vehicle Fuel
45	2011	Ontario	Canada	1	500	800	Waste Water	Pipeline Injection
44	2011	Gävle	Sweden	1	190	300	Waste Water	CNG Vehicle Fuel
43	2011	Dinteloord	Netherlands	1	1370	2200	Organic Waste	Pipeline Injection
42	2011	Dinteloord	Netherlands	1	780	1250	Organic Waste	Pipeline Injection
41	2011	Fredericia	Denmark	1	190	300	Waste Water	Pipeline Injection
40	2011	Kouvola	Finland	1	190	300	Waste Water	Pipeline Injection
39	2011	Seelow	Germany	1	1250	2000	Crops & Manure	Pipeline Injection
38	2011	Stresow	Germany	1	750	1200	Crops & Manure	Pipeline Injection
37	2011	Lidköping	Sweden	1	1250	2000	Organic Waste	LNG Vehicle Fuel
36	2010	Tarumi	Japan	2	200	330	Waste Water	CNG Vehicle Fuel
34	2010	Katrineholm	Sweden	1	500	800	Organic Waste	CNG Vehicle Fuel
33	2010	Ayrshire	Scotland	2	3106	5000	Waste Water	Pipeline Injection
31	2010	British Columbia	Canada	1	470	750	Ag Waste	Pipeline Injection
30	2010	Västervik	Sweden	1	80	130	Waste Water	CNG Vehicle Fuel
29	2009	Ueda	Japan	1	60	100	Waste Water	CNG Vehicle Fuel
28	2009	Redvale	New Zealand	1	50	80	Municipal Waste	CNG Vehicle Fuel
27	2009	Örebro	Sweden	1	1250	2000	Organic Waste	CNG Vehicle Fuel
26	2009	Lille	France	1	60	100	Waste Water	CNG Vehicle Fuel
25	2009	Motala	Sweden	1	50	80	Waste Water	CNG Vehicle Fuel
24	2009	Katrineholm	Sweden	1	50	80	Waste Water	CNG Vehicle Fuel
23	2009	Gustrow	Germany	5	6200	10000	Crops	Pipeline Injection
18	2009	Madrid	Spain	2	2500	4000	Municipal Waste	Pipeline & CNG
16	2009	Seoul	Korea	1	120	200	Waste Water	CNG Vehicle Fuel
15	2006	Kobe	Japan	2	410	660	Waste Water	CNG Vehicle Fuel
13	2006	Lille	France	2	750	1200	Municipal Waste	CNG Vehicle Fuel
11	2004	Kobe	Japan	1	90	150	Waste Water	CNG Vehicle Fuel
10	2000	Trollhättan	Sweden	1	250	400	Waste Water	CNG Vehicle Fuel
9	1999	Reykjavik	Iceland	1	60	90	Waste Water	CNG Vehicle Fuel
8	1998	Kalmar	Sweden	1	60	90	Waste Water	CNG Vehicle Fuel
7	1998	Uppsala	Sweden	1	60	90	Waste Water	CNG Vehicle Fuel
6	1997	Linköping	Sweden	2	410	660	Organic Waste	CNG Vehicle Fuel
4	1997	Bromma	Sweden	1	60	90	Waste Water	CNG Vehicle Fuel
3	1995	Trollhättan	Sweden	1	90	140	Waste Water	CNG Vehicle Fuel
2	1994	Sonzay	France	1	60	100	Waste Water	CNG Vehicle Fuel
1	1993	Lille	France	1	60	100	Waste Water	CNG Vehicle Fuel

The global leader in biogas upgrading



- **30+** years of experience
- **110+** installations
- **18** countries
- **1st** project in 11 countries
- **1st** largest project in the world

Also, as the only provider with water wash, PSA and membrane biogas upgrading technologies only Greenlane offers you an unbiased, multiple technology approach to product selection ensuring you get the best solution for every application, every time. Contact us today.

water wash

PSA

membrane

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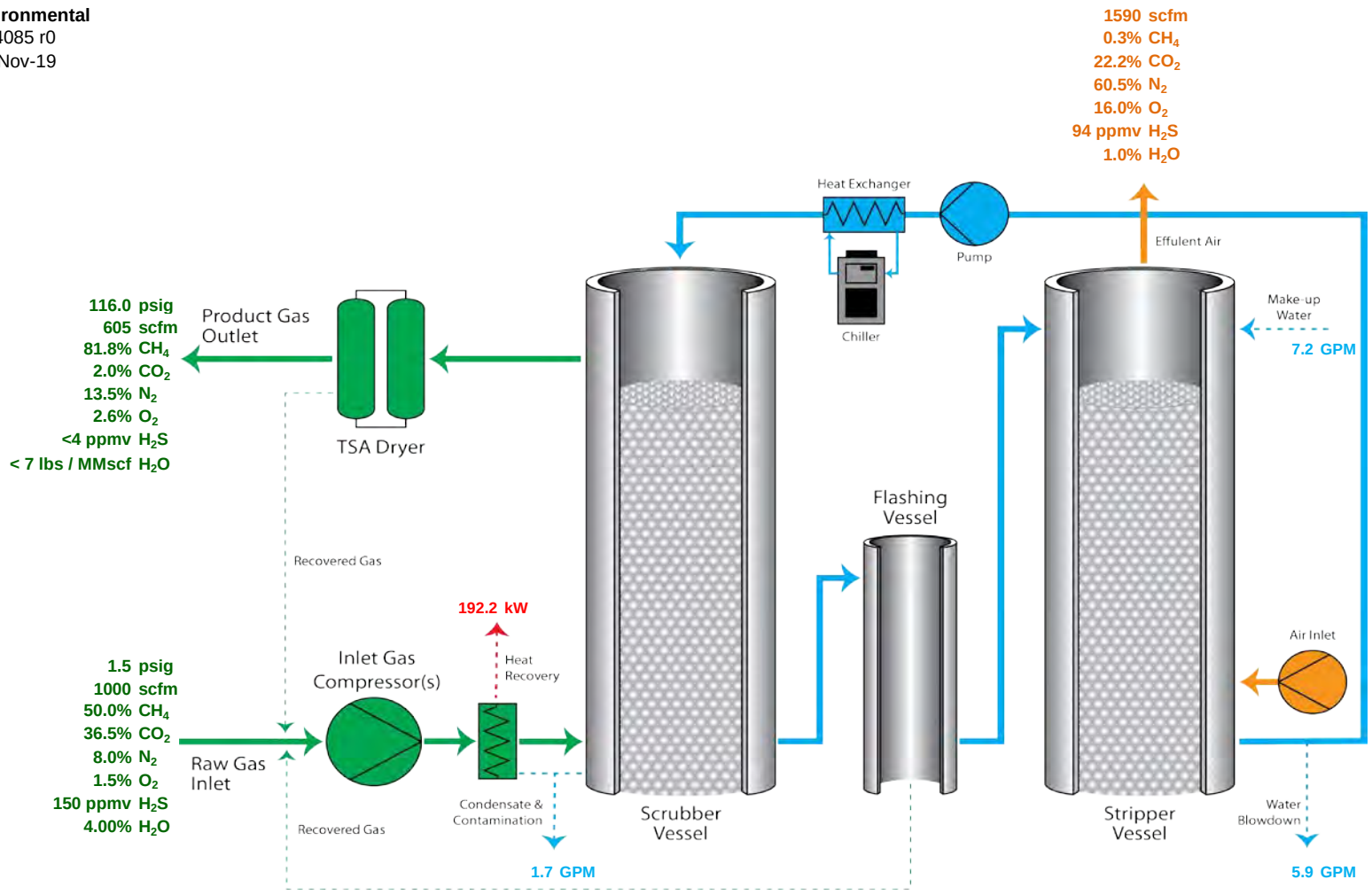
APPENDIX 2

MASS BALANCE DIAGRAM

ET Environmental
E14085 r0
18-Nov-19



Notes:

1. The information provided in this diagram is typical and to be used for preliminary information only.
2. Make-up water, condensate, contaminated water & blowdown flows are average annual volumes. Instantaneous flows may be considerably higher.
3. Effluent Air flow is estimate based on the raw gas composition entered. Changes in composition will effect effluent stream.
4. Consult Greenlane for sizing considerations for any downstream equipment, including exhaust air treatment. Do not rely on the numbers shown above.

ET Environmental
Biogas Upgrading System
Process Flow Diagram

GREENLANE BIOGAS

APPENDIX 3

PERFORMANCE & UTILITIES

System Performance

Client / Project Reference:	ET Environmental
Greenlane Reference:	E14085 r0
Date:	18 November 2019

Model & Nominal Capacity		
Model Selected	TOTARA	
Nominal* Inlet Capacity	1000	SCFM

Inlet (Raw Gas) Conditions		
Inlet Pressure	1.5	psig
Inlet Temperature	86	degF

Site Conditions		
Average Annual Ambient Temperature	68	degF
Relative Humidity @ Average Temperature	100	% RH
Design Ambient Temperature	95	degF
Site Elevation	656	fasl

Nominal Rating Design Conditions		
Biogas Inlet Pressure	100.0	psig
Biogas Inlet Temperature	86	degF
Elevation	650	fasl
Design Ambient	95	fasl
Design RH @ above Ambient	60	% RH
Methane Concentration range	50-65	Mol% Dry
Carbon Dioxide Concentration range	35-50	Mol% Dry
Carbon Dioxide Concentration, Product Gas	2	%

Biogas Composition	Wet Mol%	Dry Mol %
Methane	52.08%	50.00%
Carbon Dioxide	38.02%	36.50%
Nitrogen	8.33%	8.00%
Oxygen	1.56%	1.50%
H2S, (ppm)	156	150
H20	-	4.00%

Notes

- Variances to nominal conditions will affect the rated output of the upgrading plant. Please contact Greenlane for further information.

- Biogas flow is considered to be water saturated, but free from liquid slugs. The flowrate is based on the Mol% (Wet) composition. The gas supply is to be free from particulate, filtered to ensure removal of 90% of all dirt particles 10 microns or
- Power & Utility costs/unit provided in the P&U are estimates only for basis of calculating overall operating cost. Client can provide alternative figures for modelling if required.
- Make-up water, condensate & contaminated water and blowdown drains flows are average annual volumes, not instantaneous flows which may be considerably higher.
- For safety reasons ingress air levels in the biogas supply to the Greenlane plant must at all times be below 25% of UEL (upper explosive limit).
- Effluent Air flow is estimate based on raw gas composition entered as design case within Performance & Utilities. Varying composition will effect Effluent stream.
- The composition of effluent air stream is shown as steady state in mass balance. Any downstream equipment needs to be sized with margin on flow and also composition to account for variances in stability, ramping, start-up/shutdown occurances. It is essential Greenlane are consulted for input on any downstream equipment selection.

Revision: DRAFT

Utility Requirements

Client / Project Reference:	ET Environmental
Greenlane Reference:	E14085 r0
Date:	18 November 2019

Model & Nominal Capacity		
Model Selected	TOTARA	
Nominal* Inlet Capacity	1000	scfm

Inlet (Raw Gas) Conditions		
Inlet Pressure	1.5	psig
Inlet Temperature	86	degF

Cost		
Price of 1 kWh	0.08	USD
Price of 100 gallons of water	0.40	USD
Price of 1 gallon of oil	15.00	USD
Operating hours per year	8350	Hours

Power Consumption		
Compressor Power Draw	322.1	HP
Water Pump Power Draw	113.3	HP
Stripping Air Blower Draw	12.4	HP
TSA Regen Heater (24 hr avg)	4.8	HP
Cooling Systems*	88.0	HP
Ancillaries	4.0	HP
Total Power	544.7	HP

**68 degF average annual temperature*

Estimated Operating Cost		
Electricity cost	270537	USD /year
Electrical energy per unit raw gas	0.405	kWh/SCFM
Water cost	14473	USD /year
Lubrication oil cost	13932	USD /year
TOTAL COST	298942	USD /year
TOTAL COST per unit raw gas	0.60	USD/ 1000 SCF

Utilities Consumption		
Lubrication oil for compressor	0.111	GPH
Compressed Air	2.4	70-110 psig, CFM
Make-up Water	7.2	< 77°F, GPM

Effluent Streams		
Soiled Water & Blowdown Drains	7.6	GPM

Effluent Air, (Separated Gas)	1590	CFM

Optional Items		
Odourising Unit	227.7	lb/yr

Heat Recovery (Available)		
Heat Recovery*, available 130°F @ Max design capacity	192.2	kW

APPENDIX 4

WATER WASH UPGRADING SYSTEM

Contents

1 About Greenlane Biogas

Greenlane is the global leader in biogas upgrading with the highest global market share, 32 years of experience, 107 installations in 18 countries and the 2 largest biogas upgrading systems in the world. Also, as the only provider to offer all three upgrading technologies (PSA, water wash and membrane) only Greenlane offers unbiased head to head technology comparisons and multiple technology solutions - ensuring you get the best possible solution for every application.

2 Introduction

This document provides an overview of the Greenlane's exclusive water wash biogas upgrading systems. It provides a general description of the equipment and process. Specific manufacturer information relating to individual components is provided by Greenlane with the operating & maintenance documentation at delivery of the equipment.

The Greenlane biogas upgrading system separates gaseous components produced by various digestion processes. The system interfaces between the digestion process and the gas consumer, generally either a gas pipeline or a vehicle refueling process.

The Greenlane system upgrades raw biogas through the removal of CO_2, H_2S, VOCs, siloxanes and other soluble gases to produce clean and dry high purity methane gas. The gas process comprises of gas compression, gas upgrading and gas drying operations.

The biogas compression system compresses the raw biogas to a pressure suitable for processing. The biogas upgrading system consists of a scrubbing vessel for water scrubbing (absorption of CO_2 and other soluble gases into water), a flashing vessel for methane recovery, and a stripping vessel for regeneration of the process water. The drying system consists of a patented Pressure Swing/Temperature Swing adsorption (PSA/TSA) drier-purifier, which dries the upgraded gas after the scrubbing vessel making it suitable for injection into grid or use as a vehicle fuel. The Greenlane system eliminates virtually all H_2S from the product gas eliminating the need for any upstream H2S treatment.

2.1 Features and Benefits

Design Features	Benefits
Patented processes	Greenlane's patented TSA dryer achieves a methane gas dew point of -112°F. The product gas is compressible to 3600 psi(g) without risk of hydrates or ice formation, even in the coldest climates. Greenlane's patented technology ensures residual hydrogen sulfide (H_2S) levels in the product gas are reduced to ppm (part per million) levels eliminating corrosive gas and minimizing harm to the environment.
Turndown	Turndown by compressor variable speed control means the system is energy efficient across a broad range of operating conditions.
Reliability	Greenlane's rotary compressors eliminate compressor valves, rings and rod packing associated with reciprocating compressors. Fewer maintenance parts means less down time, high reliability and low operating costs.
Compact	A simple enclosed module / skid mounted design means all parts are easily accessed from the skid boundary, reducing maintenance time.

Energy efficiency	Greenlane offers the highest methane gas production to energy utilization ratio minimizing energy costs.
Utilities	Greenlane's process offers low utility consumption – important where water resources and effluent disposal is a concern.
Corrosion resistant materials	Process vessels and pipes with biogas and water contact are fabricated from stainless steel 316/316L, or FRP (Fiberglass Reinforced Plastic).
Remote management	Web-based condition monitoring and diagnostic reporting from anywhere in the world is available coupled with full service contract options. This makes preventative maintenance effective, resulting in high availability and reliable operation.
Energy recovery	Up to 90% of the heat of compression is recoverable for digester heating or other uses, and direct air cooling is available for low ambient conditions.

2.2 Performance Specifications

2.2.1 Inputs

Nominal design capacity of the upgrading sytem is based on an inlet pressure of 16.15 psi(a) and inlet gas temperature of 86°F. Operating capacity is automatically matched through use of variable speed drives which adjust the speed of the compressor and water pumps to match the actual design condition. The system is designed to operate with a gas inlet temperature ranging between 32°F and 104°F. Although the allowable gas composition is variable, it is typically (mol %) 50-65% CH_4 and 35-50% CO_2, with H_2S of up to 2500 ppm, as well as other traces of impurities. Inert gases such as air and nitrogen should be of very low quantity as their inclusion dilutes the product gas quality. The particulates in the biogas supply to the Greenlane system shall be filtered to ensure they do not exceed 10 microns.

A client input via a 4-20mA signal determines the operating capacity.

2.2.2 Outputs

The system is designed to deliver product gas consisting of 97-98% CH_4, with H_2S less than 3 ppm and dew point of less than –112°F. On a new system dew points gradually improve over first 3 months of operation as the system is thoroughly dried and cycled. The upgrading system does not remove inert gases such as nitrogen or oxygen, so if these gases are present in the raw gas, they will reduce the product gas methane content.

Refer to the Performance & Utilities Data for details on capacities and utility information.

A full suite of electrical signal outputs is available for integration into a DCS (Distributed Control System) via a network connection (Ethernet).

Output capacity of the Greenlane biogas upgrading systems is determined by efficient speed control of the compressor and water pump motors.

2.2.3 Energy Recovery

Heat recovery is available for off skid process water heating. Recoverable heat can be up to 90% of the compressors' main drive motor energy input. Utilization of recoverable energy depends on the system environment.

2.3 General Specifications

2.3.1 Design Standards

The mechanical and electrical systems are designed in accordance with the applicable codes for the region of installation. All systems for use in Europe are CE Marked with process vessels and piping designed in accordance with the Pressure Equipment Directive (PED). Instrumentation and electrical items in hazardous areas are ATEX certified.

For North America all process vessels are certified to ASME with piping to ANSI B31.3. Instrumentation and electrical meet local requirements such as CSA or UL.

2.3.2 Dimensions & Weight

Dimensions and weights: Refer to the General Arrangement Drawing.

2.3.3 Materials of Construction

Process vessels and piping in contact with raw biogas and product gas are fabricated from corrosion resistant materials such as stainless steel grade 316L or GRP (Glass Reinforced Plastic) to eliminate the risk of corrosion of vessels and pipe work. Valves and instrumentation have SS316L materials on process gas wetted surfaces.

All equipment must be securely mounted to a level properly designed concrete foundation of sufficient mass for rotating equipment. Both containerized and non-containerized compression package options are available depending on client requirements. For non-containerized units, electrical control cabinets, VSDs and switchgear are free issued to the client for installing in a non-hazardous, clean & dry area.

2.3.4 Additional Utilities & Safety Systems

Additional utilities required for the operation of the Greenlane biogas upgrading systems may include an odor reduction filter or similar for the treatment of the pungent stripper air/gas mixture, odorization equipment of the product gas, a gas flare, gas vent, fresh water supply and treatment, effluent drainage, flow meters, purge gas (N_2), compressed air for instruments and calibration gases for the gas analyzers. The client is responsible for providing these services as required to the upgrading equipment.

2.4 Greenlane AfterCare

Greenlane, through its Aftercare team, have a large dedicated team of installation, commissioning and service engineers spread around the world. Greenlane is able to provide full customer training and support via on site and classroom training of engineers, end users and maintenance personnel. Some of our services are listed below.

2.4.1 Site Assistance

Greenlane is able to offer and provide a site assistance package to ensure your plant is installed and operated correctly and most efficiently.

Our standard site assistance package is very flexible to meet individual client needs but normally would include:

- Installation Training
- Installation Inspection
- Commissioning Assistance
- Performance Testing
- Operator Training

2.4.2 Maintenance Contracts

Greenlane is able to offer full maintenance contracts including supply of spare parts These can cover one off service to dedicated preventative maintenance plans covering life of plant. We can provide a service plan to best meet your needs.

2.4.3 Remote Monitoring and Remote Management

Our Aftercare team provides remote monitoring and management options for your Greenlane Biogas upgrading plant. Monitoring & managing your upgrading plants operation will help ensure your plant is operating at its high efficiency as you require and expect. Hardware is installed for free with your new plant and different service plan choices are available. Refer to our Remote Monitoring and Management Document for more information.

3 Process Description

The Greenlane upgrading system consists of three main processes – the biogas process, the water process and the stripping air process

3.1 Biogas Process

Raw biogas is provided to the inlet isolation valve at the contract interface point.

The biogas flows through an inlet separator to the stage one compressor. Refer to Section 2.1.1 for details of compressor function. The compression process is two stage, complete with inter & after-cooling via water-cooled shell and tube heat exchangers. Temperature, pressure and level instrumentation monitor operation and provide control and safe operation. Discharge check valves are provided to prevent reverse flow of biogas when the system is stopped.

A condensate collector vessel and coalescing filter are provided following the stage 1 & stage 2 discharge coolers respectively. These devices collect and remove condensate and compressor lube oil from the biogas. The condensate collectors also act as receivers for the gas recovered from the flashing vessel. The coalescing filter discharge and scrubbing vessel weir decant drain lines are also connected to this collector vessel.

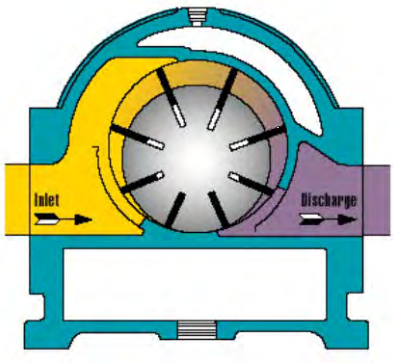
After compression, the biogas enters the bottom of the scrubbing vessel. Inside the vessel the biogas rises to the top, which is counter-flow to the process water flowing downwards. The water preferentially absorbs the more soluble gases such as CO_2 and H_2S. Product gas, which is now almost pure CH_4, exits from the top of the vessel. Packing balls and distributors inside the scrubbing vessel provide increased surface contact area between the gas and water to maximize absorption efficiency.

After the scrubbing vessel the product gas passes through a PSA/TSA adsorber. The molecular sieve media in the drier vessels adsorbs moisture and further purifies the product gas. The dried product gas passes through a filter and a pressure control valve, before being discharged at the skid boundary. The control valve maintains a steady set pressure at the scrubbing vessel, thus ensuring consistent CO_2 and H_2S absorption.

3.1.1 Gas Compression

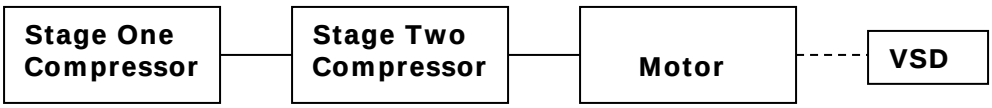
The RMTK series of upgrading plants utilize two stage rotary sliding vane compressors which are considered to be one of the most robust and reliable compressors on the market, ideally suited to dirty and corrosive gases such as wet biogas. The compressor has no valves which significantly reduces maintenance requirements and increases reliability and

availability. Spare parts and service are hence low cost, quick and simple compared to other compression technologies such as reciprocating.



Vane compressors feature a one-piece rotor eccentrically mounted inside a water-jacketed cylinder. The rotor is fitted with blades that are free to move radially, in and out of longitudinal slots. These blades are forced out against the cylinder wall by centrifugal force, creating individual pockets of gas, which are compressed as the rotor turns.

The two compressor stages are directly coupled to a common motor, which has Variable Speed Drive (VSD) to enable efficient capacity control. Drive layout is as follows:



More information on the compressor operation is provided in the RoFlo Operation & Maintenance manual which is provided with project documentation.

3.1.2 Compressor Cooling / Heat Recovery

Biogas is cooled in the stage 1 & stage 2 discharge coolers. These are shell & tube type heat exchangers with biogas in the tubes and cooling water in the shell. Manual valves are used to balance the water flow through the coolers to achieve optimum gas outlet temperatures. Manual isolation valves for the cooling water circuit are supplied.

[Option] Heat may be recovered from the compressor cooling water circuits by a remote system that normally comprises a plate heat exchanger and 3-way diverter valve with control or similar (client supply). Because full heat recovery cannot normally be relied on to provide sufficient cooling on a 100% continuous basis, a closed circuit water cooler can be provided to remove any excess heat or provide full cooling if required. Greenlane can provide connections for client to utilize this heat source upon request.

3.1.3 Gas Drying & Final Purification

After the biogas is upgraded in the scrubbing vessel, the water-saturated gas passes through a demister for removal of free moisture, and then to a Pressure Swing Adsorption/Temperature Swing Adsorption (PSA/TSA) adsorber that dries and purifies the final product gas. The gas dryer utilizes dual vessels filled with several stages of adsorbent media. One vessel is always active, drying and purifying the product gas, with the other vessel regenerating or on stand-by. A dew point analyzer monitors performance of the gas drying system. The vessels are switched when the dew point of the product gas reaches a pre-determined value.

3.1.4 Gas Pressure Control

A control valve located after the drier vessels controls and maintains gas pressure for the drying and scrubbing systems.

3.1.5 Gas Analyzers

Gas analyzers are installed at the outlet of the system to measure the quality of the product gas. Gas quality control criteria are determined by measuring CO_2, H_2S and dew point of the produced gas. If the gas does not meet specification it is sent to flare. Additional analyzers or metering may be available as options on request.

3.1.6 Gas Vent

Gas venting by Pressure Safety Valves (PSV's) prevents excess pressure build up in the system. PSV venting is not part of normal operation, and only occurs during over-pressure situations. It must be ensured by the client that the gas is vented to a safe place.

3.2 Process Water

The process water pump draws regenerated water from the base of the stripping vessel delivering it to the top of the scrubbing vessel. A distributor at the top of the scrubbing vessel ensures the water flows evenly down the vessel to maximize absorption efficiency.

The water, with dissolved CO_2 and H_2S, is collected at the base of the scrubbing vessel and discharged. A control valve on the discharge line maintains scrubbing vessel water level. The water level is maintained to form a liquid seal that prevents gas from discharging into the process water line. The water discharged from the scrubbing vessel is saturated with dissolved CO_2 and H_2S. It is necessary to regenerate the water by stripping it of these dissolved gases.

After being discharged from the scrubbing vessel, the water flows to the flashing vessel. This vessel operates at an intermediate pressure, lower than the scrubbing pressure, but higher than the stripping pressure. Inside the flashing vessel CH_4 that was absorbed by the water in the scrubbing vessel is flashed off, thus minimizing CH_4 slip. Recovered flash gas is fed back into the compressor. A back-pressure regulating valve on the flash gas line regulates the pressure in the flashing vessel. A control valve on the water discharge line controls the water level in the flashing vessel. The water level is maintained to form a liquid seal that prevents gas from discharging into the process water line.

The water discharged from the flashing vessel flows to the top of the stripping vessel. A hold-up device and distributor at the top of the stripping vessel ensures the water flows evenly to maximize stripping efficiency. The stripping vessel operates at approximately atmospheric pressure. In the stripping vessel atmospheric air passes upwards in counter-flow to the water falling downwards. Regeneration of the water takes place as the dissolved CO_2 and H_2S is released into the air stream. Packing balls inside the vessel provide increased surface contact area between the water and air, and maximizes stripping efficiency. Make up water is added into the vessel as required, to maintain the water level.

The regenerated water at the discharge of the vessel is fed to the process water pump, and the process water cycle repeats.

3.2.1 Water Scrubbing Process

The scrubbing process upgrades the biogas quality by preferentially absorbing the undesirable gases such as CO_2 and H_2S into water. The elevated pressure in the scrubbing vessel facilitates gas absorption. The scrubbing process is designed to operate with chilled process water.

The scrubbing vessel incorporates a weir decant system that skims off and removes the top layer of liquid in the vessel. This layer may contain light hydrocarbon fractions, sulfur, fats and other contaminants. This liquid is discharged into the stage one condensate collector and is disposed of via the soiled water line. Although the liquid is mainly water, care is advised on the disposal because it may carry contaminants from the biogas, thus being potentially hazardous.

Due to the scrubbing vessel weir decant and water blowdown functions, a continuous supply of clean make-up water is required for process water replenishment. Included with the biogas plant is a dosing pump to allow treatment of the water system to maintain good water quality and highest plant efficiency.

3.2.2 Process Water Chilling

Process water temperature is maintained at approximately 41°F to maximize the absorption of CO_2 and H_2S gases in the scrubbing vessel. Cooling is achieved via an industrial water chiller (shipped loose to be installed in a safe area), which absorbs heat from the process water. A closed circuit glycol loop via a plate heat exchanger is provided for transferring heat from the process system.

In conjunction with the water chiller, for installations subject to cold ambient conditions, an additional radiator can be supplied to provide direct air chilling and increase overall plant efficiency.

3.2.3 Make-up Water

Make up water must be free of active microbiology, solids that can deposit within the process system and other contaminants. Potable water is preferred, however clean process water may also be used. Care must be taken when choosing a water source that the mineral content (particularly chlorides) is not detrimental to stainless steel 316L.

It is the responsibility of the client to ensure that the process water system water quality is managed to avoid biological growth formation and/or scale build up, which can reduce the efficiency and capacity of the upgrading plant. Water quality, feedstock gas composition and other environmental factors at each site are always different.

Greenlane recommends the client to engage a water treatment specialist to provide analysis, advice and services, especially in cases where contamination or fouling is suspected. When process water quality is managed correctly the Greenlane upgrading plant should not foul or scale, and will provide consistent uninterrupted performance.

The Greenlane process operates at < 41°F water temperature and does not concentrate water-borne contaminants, so a minimal water treatment regime is expected to provide reliable operation, given:

(i) the raw biogas feedstock is free of liquids at point of supply to the Greenlane plant
(ii) the recommended compressor oil is used
(iii) the stripping air supply is properly filtered
(iv) the raw biogas particulates are less than 10 microns at point of supply to the Greenlane plant

Refer to the Performance & Utilities Data for typical make up water quantity requirements. Values provided are based on average water consumption over a 7 day period of running with steady raw biogas production.

3.2.4 Water Discharge

Process water is discharged when the water blow-down valve opens. The frequency for blow-down is based on observed requirements for water changes necessary to keep the process water quality satisfactory. Flow values stated in other documentation are average annual values, not peak instantaneous flows and will be site specific.

3.2.5 Condensate

Water contaminated with oil and/or condensate is discharged from the condensate collector. An (optional) oil separator may be used to collect lubrication lube oil that can be recycled by a used oil facility. The separated water can then be disposed of with the process water blow-down stream as in Section 2.2.4.

3.3 Stripping Air

Air is drawn through an air filter and inverted U-bend before entering the base of the stripping vessel. The inverted U-bend prevents water from discharging through the stripping air inlet in the event of vessel flooding. Inside the vessel, the air is drawn upwards in counter-flow to the water flowing downwards. The air strips the dissolved CO_2 and H_2S out of the water and the air/gas mixture exits from the top of the vessel.

Stripping air/gas is discharged continuously during operation, regardless of the operating capacity. This stream contains air, CO_2, H_2S and other gases, and must be sent to a safe disposal point. The air/gas mixture is usually discharged to a biological filter, such as a carbon, earth or bio-filter. Greenlane may be able to assist with options for this equipment if required. Thermal Oxidizer options are also available.

3.4 Integral Safety Systems

Protection devices fitted to the Greenlane biogas upgrading system include:

- Pressure transmitter at compressor suction to protect the compressor and prevent gas inlet pressure falling below atmospheric pressure, thus protecting against the possibility to draw air into the process and create an explosive mix. (Note: This device is secondary level protection. Primary level protection must be provided by the client, e.g. O_2 sensor following digesters.)
- Pressure transmitter and a temperature transmitter fitted at compressor gas discharge to protect from over pressure and over temperature.
- Pressure relief valve fitted to gas line at discharge of compressor.
- Pressure relief valve fitted to gas line at scrubbing vessel discharge.
- Over speed protection is controlled by the Variable speed drive (VSD) units

4 System Control

4.1 Introduction

A Programmable Logic Controller (PLC) manages the Greenlane biogas upgrading system. The PLC is installed in a control cabinet, which is located in the designated non-hazardous electrical room within a container (containerized solutions). For non-containerized solutions the electrical equipment is free issued to the client and must be installed in a non-hazardous, clean, dry and temperature controlled room, with cable schedule provided to client for them to provide site cabling.

Access to system control is either through the human machine interface (HMI) or the client's central control system (CCS) or SCADA. A Human Machine Interface (HMI) is provided which shows the current operating status and allows the operator to view process readings, the alarm and trip set points, and to reset any system trips. Pressure and temperature transmitters and other system instruments are connected to the PLC.

4.2 Program Logic Controller (PLC)

The Greenlane RMTK Series utilize a Siemens S7, 300 series safety PLC. This PLC performs the following control functions:

- Provide the means for the operators to start and stop the system
- Perform safety functions by monitoring the system and causing it to go to a safe condition if any faults are detected
- Provide dynamic control of the process to ensure that the delivery of clean, dry product gas is optimized
- Interface for remote monitoring and diagnostics

4.3 Human Machine Interface (HMI)

The HMI communicates with the PLC on a continual basis. It provides the following functions:

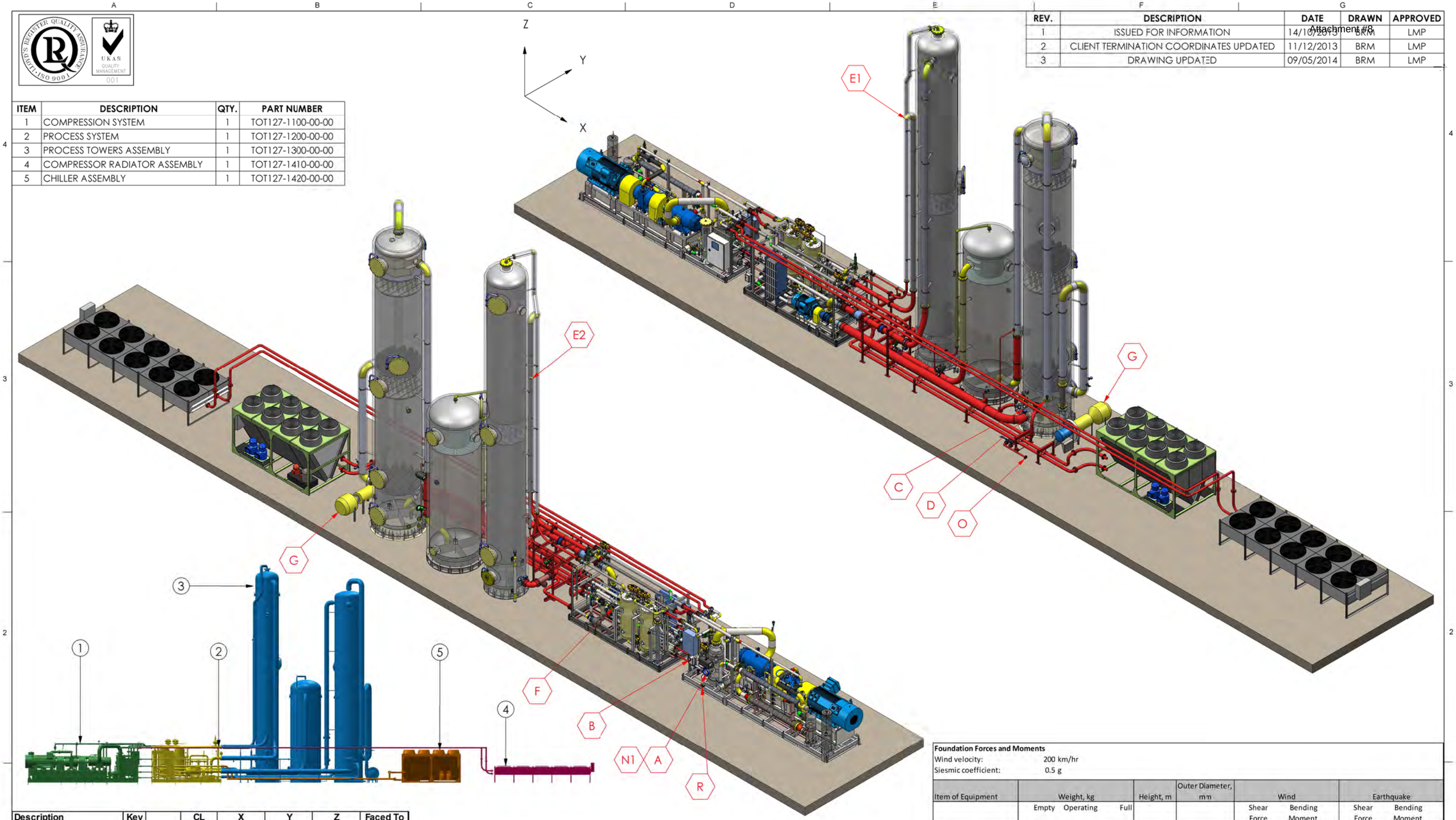
- Displaying monitored system process values
- Displaying package operating status
- Displaying event and alarm messages
- Providing a log of any alarm and trip messages, along with the time of occurrence
- Manual control of process and drain valves
- Manual entry of system alarm values (limited access)
- Manual entry of system trip values (controlled access)
- Resetting from a tripped state

4.4 Communication

Interface with the clients CCS or SCADA is via Ethernet TCP/IP protocol. Other forms of communication e.g. Profibus or Modbus are also available as priced option should client require communication in a different format. Communications list is available on request, which shows what is pre-configured in our PLC for data exchange with the client. Additional options from the standard plant that interface with the PLC are added to this list to match each specific project.

REV.	DESCRIPTION	DATE	DRAWN	APPROVED
1	ISSUED FOR INFORMATION	14/10/2013	BRM	LMP
2	CLIENT TERMINATION COORDINATES UPDATED	11/12/2013	BRM	LMP
3	DRAWING UPDATED	09/05/2014	BRM	LMP

ITEM	DESCRIPTION	QTY.	PART NUMBER
1	COMPRESSION SYSTEM	1	TOT127-1100-00-00
2	PROCESS SYSTEM	1	TOT127-1200-00-00
3	PROCESS TOWERS ASSEMBLY	1	TOT127-1300-00-00
4	COMPRESSOR RADIATOR ASSEMBLY	1	TOT127-1410-00-00
5	CHILLER ASSEMBLY	1	TOT127-1420-00-00



Description	Key		CL	X	Y	Z	Faced To Plane
Gas Inlet	A	DN250	#150	6 625	1 810	1 000	X-Z
Product Gas	B	DN80	#150	7 516	1 818	1 161	X-Z
Process Water Supply	C	DN80	#150	23 000	880	1 320	X-Z
Effluent Gas	D	DN250	#150	23 919	1 289	1 979	X-Y
Safety Vent	E1	DN150	--	17 054	526	13 691	--
Process Vent	E2	DN40	--	16 049	1 858	10 206	--
Gas to Flare	F	DN20	NPT	11 376	2 115	1 769	X-Z
Air In	G	--	--	24 683	3 702	660	--
Inert Gas	N1	DN15	NPT	6 786	1 609	1 000	Y-Z
Inert Gas	N3	DN15	NPT	-	-	-	--
Waste Water	O	DN50	#150	24 208	145	100	Y-Z
Soiled Water	R	DN25	NPT	6 719	1 777	270	X-Z

NOTE:
1. Client to supply piping and frames shown in red.

3

Foundation Forces and Moments

Wind velocity: 200 km/hr
Siesmic coefficient: 0.5 g

Item of Equipment	Weight, kg			Height, m	Outer Diameter, mm	Wind		Earthquake	
	Empty	Operating	Full			Shear Force	Bending Moment	Shear Force	Bending Moment
Compressor Skid		25,000		2917					
Process Skid		7,000		3419					
Scrubbing Vessel	10,200	11,700	37,000	15,343	1,760	47.7 kN	388.9 kNm	57.3 kN	593.2 kNm
Flashing Vessel	6,900	19,000	27,540	7,470	2,252	25.3 kN	95.5 kNm	93.1 kN	462.5 kNm
Stripping Vessel	5,900	9,900	27,800	13,898	2,275	48.4 kN	350.9 kNm	44.1 kN	407.8 kNm
Air Blower		500		1,090					
Radiator	1,050	1,500		1,775					
Chiller		3,590		2,349					

GREENLANE BIOGAS

Project name: TOTARA
BIOGAS UPGRADING PLANT

Drawing name: GENERAL ARRANGEMENT
GENERAL ASSEMBLY

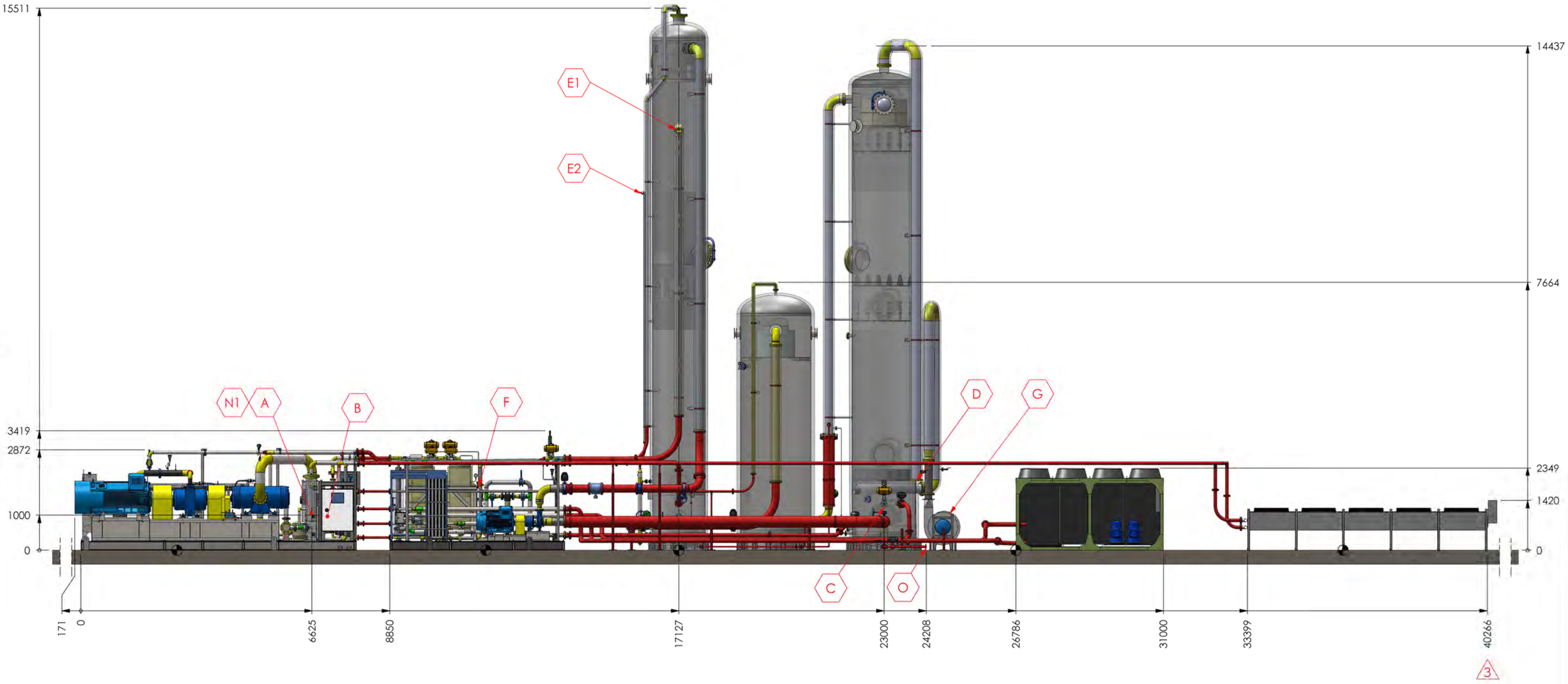
ALL DIMENSIONS IN MM

Drawn	B. McMASTER	11.10.2013
Checked	-	-
Signed	-	-

Fabrication tolerances to comply with "Flotech General Standard for Dimensional Tolerances" unless specified otherwise on the drawing.

Drawing No. TOT127-1000-00-00

A3 | Scale: 1:135 | SHEET 1 OF 4 | Material: | Weight: kg | Rev. 3



NOTE:
1. Client to supply piping and frames shown in red.

REV.	DESCRIPTION	DATE	DRAWN	APPROVED
3	DRAWING UPDATED	09/05/2014	BRM	LMP
2	CLIENT TERMINATION COORDINATES UPDATED	11/12/2013	BRM	LMP
1	ISSUED FOR INFORMATION	14/10/2013	BRM	LMP

GREENLANE BIOGAS

Project name: TOTARA
BIOGAS UPGRADING PLANT

Drawing name: GENERAL ARRANGEMENT
ELEVATION VIEW

ALL DIMENSIONS IN MM

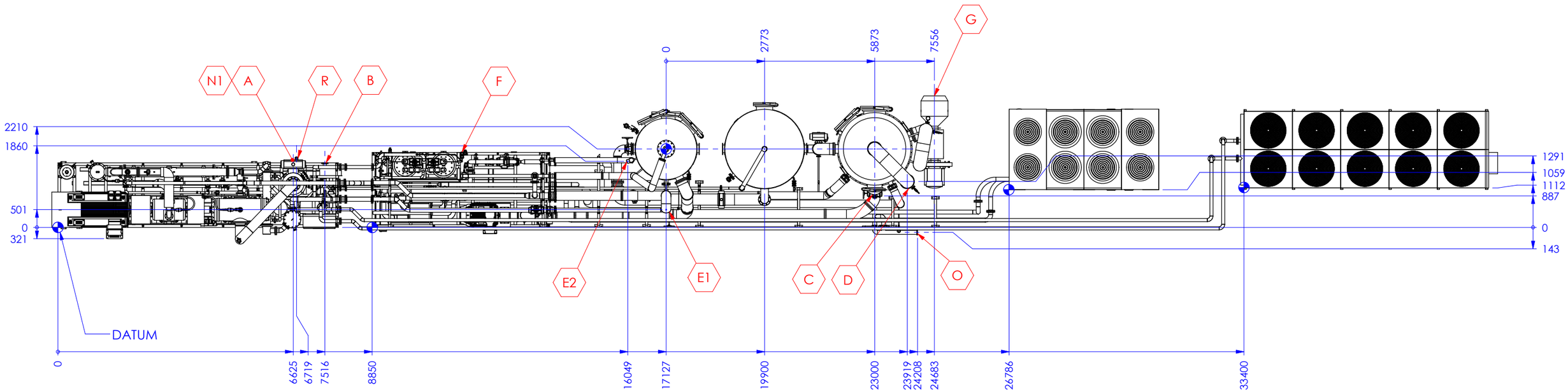
Drawn	B. McMASTER	11.10.2013
Checked	-	-
Signed	-	-

Fabrication tolerances to comply with "Flotech General Standard for Dimensional Tolerances" unless specified otherwise on the drawing.

Drawing No. TOT127-1000-00-00

A3 | Scale: 1:110 | SHEET 2 OF 4 | Material: | Weight: kg | Rev. 3

Attachment #8



REV.	DESCRIPTION	DATE	DRAWN	APPROVED
3	DRAWING UPDATED	09/05/2014	BRM	LMP
2	CLIENT TERMINATION COORDINATES UPDATED	11/12/2013	BRM	LMP
1	ISSUED FOR INFORMATION	14/10/2013	BRM	LMP

GREENLANE BIOGAS

Project name: TOTARA
BIOGAS UPGRADING PLANT

Drawing name: GENERAL ARRANGEMENT
EQUIPMENT SET-OUT DRAWING

Fabrication tolerances to comply with "Flotech General Standard for Dimensional Tolerances" unless specified otherwise on the drawing.

ALL DIMENSIONS IN MM

Drawn	B. McMASTER	11.10.2013
Checked	-	-
Signed	-	-

Drawing No.: TOT127-1000-00-00

A3 | Scale: 1:110 | SHEET 3 OF 4 | Material: | Weight: kg | Rev: 3

Attachment #8

Compressor Skid
16 x 7/8" UNC Threaded rod
Grade 8, Galvanised
Threaded rod to protrude
10" above concrete
Ref: TOT127-1111-00-01 - Sheet 2

Process Skid
8 x 7/8" UNC Threaded rod
Grade 8, Galvanised
Threaded rod to protrude
10" above concrete
Ref: TOT127-1111-00-01 - Sheet 2

Scrubbing Vessel
16 x 1-1/4" Threaded rod
Ø65-1/4" PCD
SAE J429 Grade 8, Galvanised
Threaded rod to protrude
10" above concrete

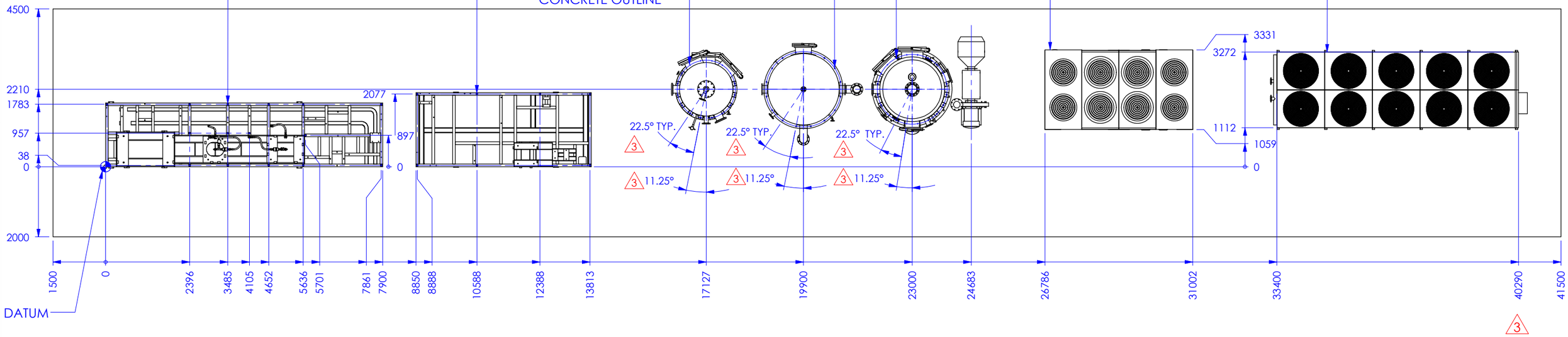
Flashing Vessel
16 x 1-1/8" Threaded rod
∅84-5/8" PCD
SAE J429 Grade 8, Galvanised
Threaded rod to protrude
12" above concrete

Stripping Vessel
16 x 1-3/8" Threaded rod
∅84-3/4" PCD
SAE J429 Grade 8, Galvanised
Threaded rod to protrude
12" above concrete

Chiller
Approximate location only.
Fix to concrete with theaded rod
and Chemset as appropriate.

Radiator
Approximate location only.
Fix to concrete with theaded rod
and Chemset as appropriate.

RECOMMENDED
CONCRETE OUTLINE



NOTE:
1. Vessel anchor bolts to be cast in concrete.
2. Other equipment to use threaded rod and chemset.
3. Hold down bolts to straddle centrelines.
4. Concrete plinth to be 100mm above surrounding landscape for drainage.

REV.	DESCRIPTION	DATE	DRAWN	APPROVED
3	DRAWING UPDATED	09/05/2014	BRM	LMP
2	CLIENT TERMINATION COORDINATES UPDATED	11/12/2013	BRM	LMP
1	ISSUED FOR INFORMATION	14/10/2013	BRM	LMP

GREENLANE BIOGAS

Project name: TOTARA
BIOGAS UPGRADING PLANT

Drawing name: GENERAL ARRANGEMENT
FOUNDATION DRAWING

Fabrication tolerances to comply with "Flotech General Standard for Dimensional Tolerances" unless specified otherwise on the drawing.

ALL DIMENSIONS IN MM

Drawn	B. McMASTER	11.10.2013
Checked	-	-
Signed	-	-

Drawing No. TOT127-1000-00-00

A3 | Scale: 1:110 | SHEET 4 OF 4 | Material: | Weight: kg | Rev. 3

APPENDIX 5

COMPANY & PRODUCT BROCHURES

Attachment #8

GREENLANE BIOGAS

Changing the nature of natural gas

the most experience

the global leader in biogas upgrading

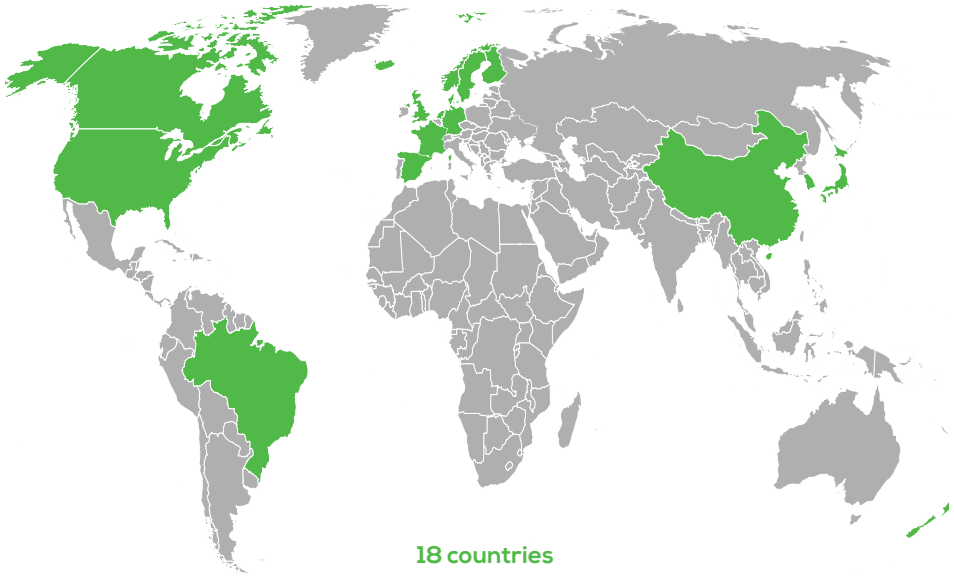
With more than 30 years of experience including more than 100 installations in 18 countries, the first upgrading system in 11 countries, and the largest upgrading system in the world, no one else even comes close.

100+ installations

30+ years of experience

multiple patented technologies

committed to sustainability



18 countries

the toughest applications

100% committed to biogas upgrading

We live and breathe biogas upgrading - it's all we do. We engineer, supply & service complete compression and treatment systems to turn any biogas source into high quality RNG for pipeline injection or vehicle fueling.

agricultural waste

waste water sludge

organics diversion

landfills

pipeline injection

vehicle fueling

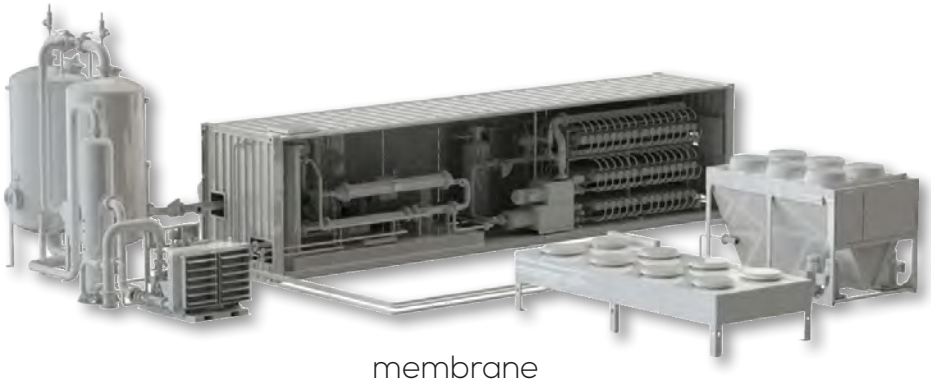
the best technologies

water wash, PSA and membrane technologies

As the only provider with all three biogas upgrading technologies, only Greenlane offers an unbiased, multiple technology approach to product selection ensuring you get the best solution for every application, every time.

water wash

PSA



membrane

with you all the way

complete life cycle support

With guaranteed performance, methane recovery and uptime, you know your system will meet your gas quality specifications every time and all the time. We stand behind our upgrading solutions for the life of your project.

treatment

upgrading

compression

engineering

commissioning

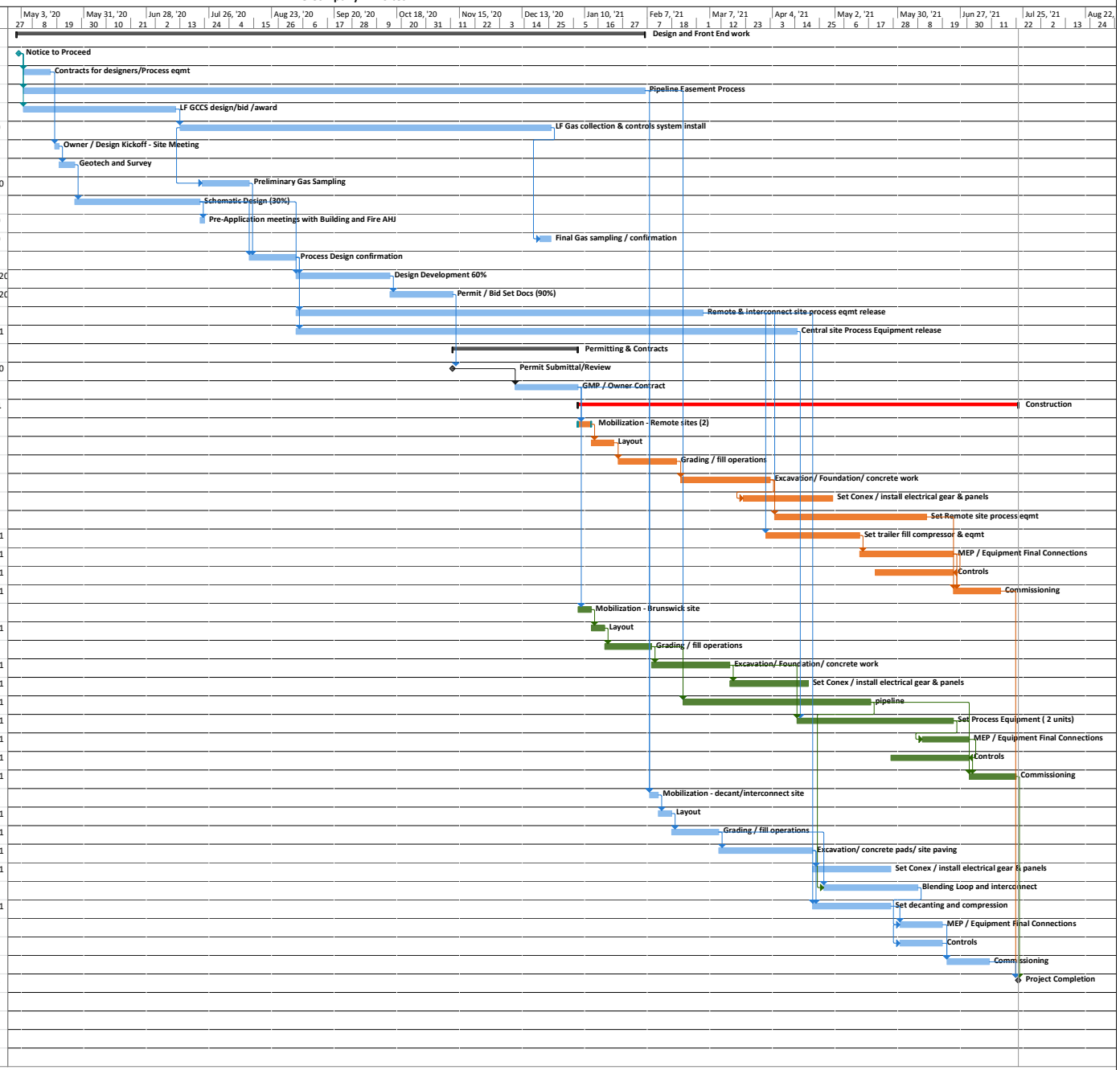
aftercare

RNGC - Response Appendix 3 - Conceptual Schedule

Attachment #8

ET Environmental Inc. — **RNG Company- VA Sites** — **RNG CO.**

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Design and Front End work**	**201 days**	**Fri 5/1/20**	**Fri 2/5/21**
2		Notice to Proceed	1 day	Fri 5/1/20	Fri 5/1/20
3		Contracts for designers/Process eqmt	10 days	Mon 5/4/20	Fri 5/15/20
4		Pipeline Easement Process	40 wks	Mon 5/4/20	Fri 2/5/21
5		LF GCCS design/bid /award	10 wks	Mon 5/4/20	Fri 7/10/20
6		LF Gas collection & controls system install	24 wks	Mon 7/13/20	Fri 12/25/20
7		Owner / Design Kickoff - Site Meeting	2 days	Mon 5/18/20	Tue 5/19/20
8		Geotech and Survey	1 wk	Wed 5/20/20	Tue 5/26/20
9		Preliminary Gas Sampling	15 days	Thu 7/23/20	Wed 8/12/20
10		Schematic Design (30%)	8 wks	Wed 5/27/20	Tue 7/21/20
11		Pre-Application meetings with Building and Fi	2 days	Wed 7/22/20	Thu 7/23/20
12		Final Gas sampling / confirmation	5 days	Mon 12/21/20	Fri 12/25/20
13		Process Design confirmation	15 days	Thu 8/13/20	Wed 9/2/20
14		Design Development 60%	6 wks	Thu 9/3/20	Wed 10/14/20
15		Permit / Bid Set Docs (90%)	4 wks	Thu 10/15/20	Wed 11/11/20
16		Remote & interconnect site process eqmt relea	26 wks	Thu 9/3/20	Wed 3/3/21
17		Central site Process Equipment release	32 wks	Thu 9/3/20	Wed 4/14/21
18		**Permitting & Contracts**	**40 days**	**Thu 11/12/20**	**Wed 1/6/21**
19		Permit Submittal/Review	4 wks	Thu 11/12/20	Wed 12/9/20
20		GMP / Owner Contract	4 wks	Thu 12/10/20	Wed 1/6/21
21		**Construction**	**141 days**	**Thu 1/7/21**	**Thu 7/22/21**
22		Mobilization - Remote sites (2)	4 days	Thu 1/7/21	Tue 1/12/21
23		Layout	8 days	Wed 1/13/21	Fri 1/22/21
24		Grading / fill operations	4 wks	Mon 1/25/21	Fri 2/19/21
25		Excavation/ Foundation/ concrete work	6 wks	Mon 2/22/21	Fri 4/2/21
26		Set Conex / install electrical gear & panels	6 wks	Mon 3/22/21	Fri 4/30/21
27		Set Remote site process eqmt	10 wks	Mon 4/5/21	Fri 6/11/21
28		Set trailer fill compressor & eqmt	6 wks	Thu 4/1/21	Wed 5/12/21
29		MEP / Equipment Final Connections	6 wks	Thu 5/13/21	Wed 6/23/21
30		Controls	5 wks	Thu 5/20/21	Wed 6/23/21
31		Commissioning	3 wks	Thu 6/24/21	Wed 7/14/21
32		Mobilization - Brunswick site	4 days	Thu 1/7/21	Tue 1/12/21
33		Layout	4 days	Wed 1/13/21	Mon 1/18/21
34		Grading / fill operations	3 wks	Tue 1/19/21	Mon 2/8/21
35		Excavation/ Foundation/ concrete work	5 wks	Tue 2/9/21	Mon 3/15/21
36		Set Conex / install electrical gear & panels	5 wks	Tue 3/16/21	Mon 4/19/21
37		pipeline	12 wks	Tue 2/23/21	Mon 5/17/21
38		Set Process Equipment (2 units)	10 wks	Thu 4/15/21	Wed 6/23/21
39		MEP / Equipment Final Connections	3 wks	Thu 6/10/21	Wed 6/30/21
40		Controls	5 wks	Thu 5/27/21	Wed 6/30/21
41		Commissioning	3 wks	Thu 7/1/21	Wed 7/21/21
42		Mobilization - decant/interconnect site	4 days	Mon 2/8/21	Thu 2/11/21
43		Layout	4 days	Fri 2/12/21	Wed 2/17/21
44		Grading / fill operations	3 wks	Thu 2/18/21	Wed 3/10/21
45		Excavation/ concrete pads/ site paving	6 wks	Thu 3/11/21	Wed 4/21/21
46		Set Conex / install electrical gear & panels	5 wks	Thu 4/22/21	Wed 5/26/21
47		Blending Loop and interconnect	6 wks	Tue 4/27/21	Mon 6/7/21
48		Set decanting and compression	5 wks	Thu 4/22/21	Wed 5/26/21
49		MEP / Equipment Final Connections	3 wks	Mon 5/31/21	Fri 6/18/21
50		Controls	3 wks	Mon 5/31/21	Fri 6/18/21
51		Commissioning	3 wks	Mon 6/21/21	Fri 7/9/21
52		Project Completion	1 day	Thu 7/22/21	Thu 7/22/21
53					
54					
55					
56					



Project: RNG CO. - VA
Date: Sun 1/12/20

Task — Summary — External Milestone — Inactive Summary — Manual Summary Rollup — Finish-only — Manual Progress
Split — Project Summary — Inactive Task — Manual Task — Manual Summary — Deadline — Manual Progress
Milestone — External Tasks — Inactive Milestone — Duration-only — Start-only — Progress

Attachment #8

RNGC - Response Appendix 4 - ET Environmental (Designer) SOQ

Overview of RNG Qualifications

TABLE of CONTENTS

SECTION 1 - OVERVIEW

ET Environmental is a national environmental services company that specializes in design and construction of waste processing and recycling facilities, alternative fueling and maintenance facilities, and landfill gas projects for the environmental industry. ET also manages turnkey remediation and redevelopment projects throughout the country.

OUR HISTORY

ET Environmental was founded in 1993 combining proven construction knowledge and management systems with environmental industry expertise and innovation. ET created a unique, integrated design/build model for the delivery of environmental services and construction management.

OUR VISION is to streamline environmental service delivery, offer a national network of support and single point accountability, and function as owner advocates — a vision that we have embraced for over 25 years.

PROJECT DELIVERY

Our mission is to deliver innovative contracting solutions to our clients to best manage environmental and construction risks within the regulatory, economic, and time constraints that drive each project. ET offers project delivery solutions through the following contracting methods:

- Design/Build
- Construction Management at Risk
- Agency Construction Management
- Program Management
- General Contracting

EVOLUTIONARY SERVICES

Since 1993, our company has completed nearly 1,600 environmental assignments ranging from small consulting assignments to multi-million dollar remediation projects. As an employee-owned company, ET represents Fortune 500 companies and government agencies across the United States with over 80% of our work coming from repeat customers. Balancing environmental consulting and construction needs, ET offers the following services:

ENERGY SERVICES

Alternative Gaseous Fuels Program
Conventional Fuels Program
Waste-to-Energy Plants
Green Power Initiatives
Landfill Gas Refining

CONSTRUCTION SERVICES

Planning and Design
Pre-Construction
Construction
Maintenance

ENVIRONMENTAL SERVICES

Environmental Assessments
Consulting and Training
Remediation Management
Decommissioning & Demolition
Brownfields Redevelopment
Agency Negotiation
Brownfields Consulting, Facilitation & Program Management

INFRASTRUCTURE SERVICES

Civil Construction Management
Transportation
Site Work & Development
Rail Hauling Infrastructure
Structural Concrete Construction

Construction Services

As a turnkey service provider, ET integrates all phases of environmental services and construction functions to offer our clients a single point of accountability for managing project performance. Whether it is construction, environmental or engineering services, or energy applications, our firm has the experience and skills to direct projects to successful completion. As owner-advocates, ET has implemented management programs for the following services:

Planning

- Feasibility Studies
- Concept Planning
- Master Plans
- Cost Estimating

Pre-Construction

- Design
- Green Building Design
- Permitting
- Logistics Planning
- Scheduling
- Construction Documents & Bid Specifications
- Purchasing/Procurement

Construction

- Construction Management
- General Contracting
- Field Supervision
- Site Safety
- Program Management

Facility Types

- Fleet Facilities
- Office Facilities
- Maintenance Facilities
- Transfer Stations
- Recycling and Greenwaste Facilities
- Material Recovery Facilities
- Wastewater/Leachate Treatment
- Landfill Gas Plants and Fields
- Scalehouses/Infrastructure

Energy Services

Through our current markets we have worked on traditional fossil fuel generating plants, alternative fueling facilities and landfill gas plants. We combine this expertise with the capability for alternative and conventional fuels delivery programs and new energy green power initiatives. ET offers the following energy related services:

Alternative Fuels Program

- Feasibility Studies (CNG, LNG, LFG)
- Design & Construction of Natural Gas Fueling Systems
- Design & Construction of Dispenser Systems
- Design & Construction of Compressor Station Facilities
- Upgrading of Existing Conventional Fuel Systems

Conventional Fuels Program

- Retail/Wholesale
- Gasoline/Diesel Systems

Waste-to-Energy Programs

- Landfill-Gas-to-Energy
- Biomass Fuels
- High BTU Gas Processing

The Azusa Transfer Station and Recycling Facility includes deep foundation elements and a methane gas collection system, a 120,000-sf operating floor, office and maintenance facilities, bale storage, and recycling systems for commercial, single-stream, and green waste.

SECTION 3 – SELECT EXPERIENCE

Landfill Gas Projects

NORTH SHELBY LANDFILL HIGH BTU PLANT
Millington, TN

ET provided design/build services for the fast-track construction of this landfill gas to high BTU (pipeline quality) natural gas processing facility. Site development included brush removal, placing over 1,850 cy of fill and the installation of underground utilities, including approximately 4,800 feet of water line. Work also encompasses the offloading and installation of all processing equipment, including a landfill gas compression system, flare, compressors, adsorption and storage vessels, thermal oxidizer and all the interconnecting piping, pipe supports and instrumentation. The processing plant also includes approximately 3,500 sf of office and storage space, along with nitrogen and propane systems, and the allocation of space for an interconnection with Memphis Light, Gas and Water.

WINDER OAK GROVE HIGH BTU GAS FACILITY
Winder, GA

ET provided design/build services for the construction of a landfill gas beneficial use project at the Oak Grove Landfill. The project was designed for processing capacity of 4,000 SCFM of landfill gas with a target gas quality of 955 BTU, which is delivered in the natural gas pipeline of the Municipal Gas Authority of Georgia supplying the cities of Winder and Buford. That gas distribution system supplies approximately 13,000 homes with natural gas for heating and cooling.

ET's role included the construction of the site work, equipment and building foundations, utilities, 5,100-square-foot building, equipment rigging and setting, process mechanical piping and process electrical systems. The process equipment installed included three 600-Hp and one 400-Hp compressors, refrigeration skid, membrane treatment skid, landfill gas blower skid, aftercoolers, thermal oxidizer, motor control center and operations office. The process has the capability to remotely monitor and control the entire system operation. The facility was completed and demonstrated the operational capability to produce pipeline quality gas in December 2008.

SECTION 3 – SELECT EXPERIENCE

Landfill Gas Projects

EDMONTON LFG
Edmonton, Alberta
ET provided design/build services for a 19-well landfill gas expansion project in Edmonton, Alberta. The project included tying into the old LFG piping, drilling and installing 19 LFG wells, 12" and 18" pipe header installation, condensate piping, and the installation of a new flare assembly.

CHARLESTON WEST VIRGINIA LFG FACILITY
Charleston, WV
ET provided design/build services for an LFG gas collection, control system, and electrical generation plant located at the City of Charleston landfill. This landfill gas to energy project utilizes approximately 1,000 SCFM (initially 600 SCFM) of available landfill gas supply to feed Jenbacher gensets, for a maximum combined output of 3.5 MW. As a backup to generators, the project included installation of an enclosed LFG flare. The 1060-kilowatt engines were enclosed in a pre-engineered metal building approximately 40'by 50'. Gas conditioning skids and flares were located outside the building.

WINDER OAK GROVE HIGH BTU OPERATIONS AND MAINTENANCE
Winder, GA
Winder Renewable Methane engaged ET to provide facility operations and maintenance services on the Winder Renewable Natural Gas Plant. ET provided oversight, reporting, and maintenance for the project for approximately eight months.

AKRON WWTP COGEN FEASIBILITY STUDY
Akron, OH
Hull & Associates engaged ET to provide feasibility conceptual design & budgeting for a cogeneration facility to provide electricity to the WWTP using internal combustion engines powered by landfill gas from an adjacent landfill.

COFFEE COUNTY LANDFILL GAS TO ENERGY
Elba, AL
Coffee County Clean Energy engaged ET to provide engineering, procurement, and construction services for a LFGTE project located at the Coffee County municipal solid waste landfill in Elba, AL. The design and procurement was completed and initial site construction was started, but the project was ultimately terminated by the client prior to completion.

SECTION 3 – SELECT EXPERIENCE

Landfill Gas Projects

LIVE OAK RNG PLANT
Atlanta, GA
GeoRecovery LLC engaged ET to provide operational review of the newly commissioned high BTU processing facility. ET reviewed the design and operational profile and made recommendations on increasing the plant throughout.

BLACK WARRIOR LFGTE PLANT FEASIBILITY STUDY
Tuscaloosa, AL
ET was engaged by Black Warrior Clean Energy to provide a feasibility study for the development of a landfill gas to energy project located at the Black Warrior Solid Waste Authority landfill in Tuscaloosa, AL. The study consisted of conceptual design, gas analysis and equipment selection.

CENTRAL WASTE FLARE AND GAS COLLECTION AND CONTROL SYSTEM
Alliance, OH
Sindicatum Carbon Capital, LLC engaged ET to provide engineering, procurement, and construction services for the installation of gas collection and control system upgrades and landfill flare station at the Central Waste, Inc. landfill. The project entailed collection and flaring of approximately 400 SCFM of landfill gas.

GREENBRIAR COUNTY FLARE AND GAS COLLECTION AND CONTROL SYSTEM
Lewisburg, WV
Greenbriar County engaged ET to provide engineering, procurement, and construction services for the installation of gas collection and control system upgrades and landfill flare at the Greenbriar County Landfill in Lewisburg, WV. The project entailed collection and flaring of approximately 500 SCFM of landfill gas.

KEYSTONE RNG FEASIBILITY STUDY
Dunmore, PA
ET has been engaged by Meadowbrook Energy LLC to provide conceptual design & feasibility studies for a high capacity renewable natural gas (RNG) refinery for a large landfill in northeast Pennsylvania. The RNG will accommodate LFG flows of up to 5000 SCFM and will inject into the local gas distribution utility.

SECTION 3 – SELECT EXPERIENCE

Landfill Gas Projects

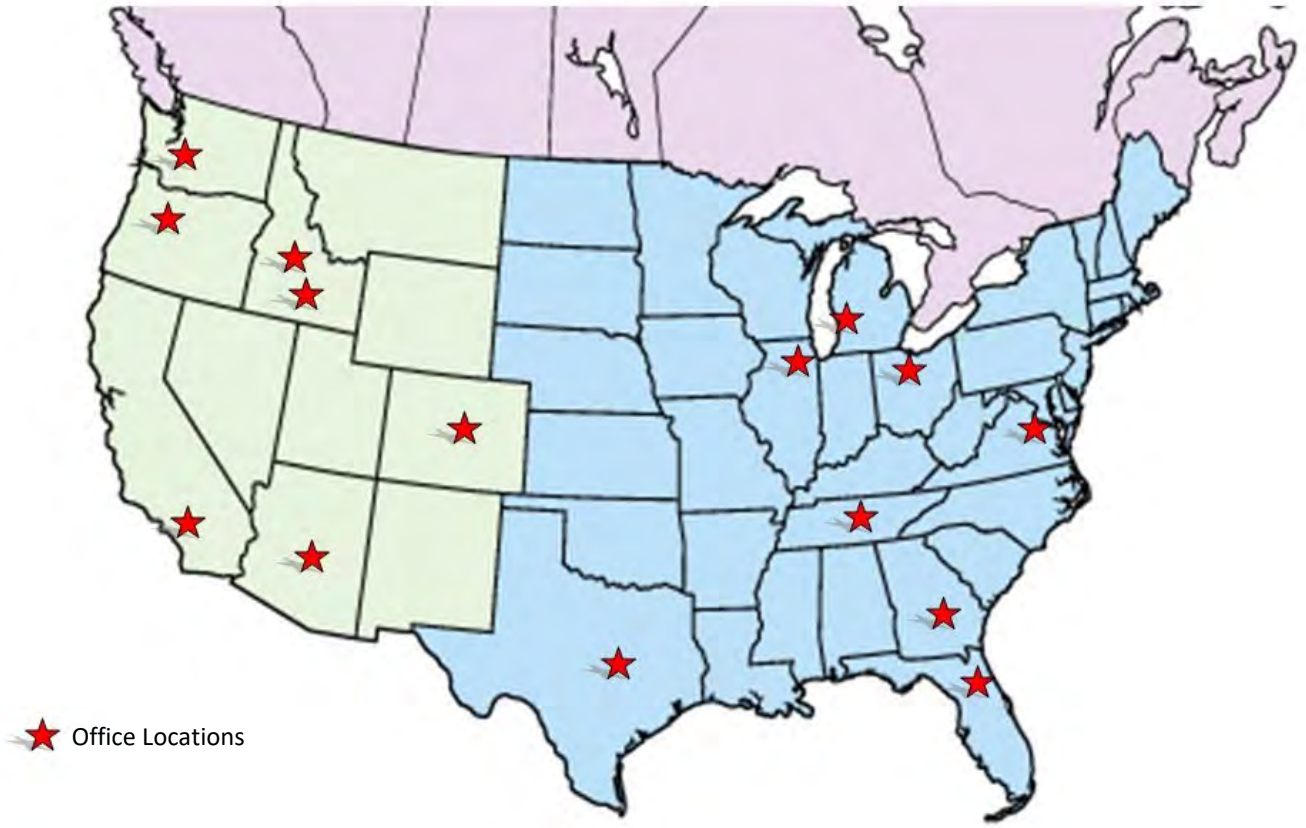
MCCOMMAS BLUFF RNG PLANT OPERATIONAL REVIEW
Dallas, TX
CERF engaged ET to provide operational and programming review of the newly completed train two processing component of the McCommas Bluff landfill high BTU plant. The study consisted of reviewing piping and instrumentation diagrams (P&ID's), software parameters, equipment set points, and making recommendations on adjustments to optimize production.

ATMOS INTERCONNECT STATION D/B CONTRACT
MCCOMMAS BLUFF HIGH BTU PROCESSING PLANT
Dallas, TX
CERF engaged ET to design and construct the interconnection facility to allow the renewable natural gas (RNG) output of the train two plant to be injected into the ATMOS Distribution pipeline.

RIVER BIRCH, LLC, RIVERBIRCH RNG EXPANSION
New Orleans, LA
ET was hired to provide CM consulting services for the bid scoping, logistics, and contract negotiations of a $10M addition to an existing LFG RNG facility.

CLEANCOR ST. LUCIE LFG TO RNG
Port St. Lucie, FL
ET has been engaged by Cleancor to provide conceptual design, budgeting, and feasibility studies to recommission a high capacity RNG refinery for a landfill in eastern Florida. The RNG plant will accommodate LFG flows up to 1200SCFM and will inject into the local gas distribution utility or be used by nearby industries.

SECTION 4 – CONTACT INFORMATION



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www.etenv.com

JOHNSTON COUNTY LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Gas to Energy
- Air Quality Permitting
- Landfill Gas Quality and Tier 2 Testing
- Landfill Closure
- Landfill Design and Permitting
- Construction Oversight
- Water Quality Assessment and Remediation
- Financial Evaluations
- Greenhouse Gas Reporting
- Stormwater Compliance

SMITHFIELD, NORTH CAROLINA / 1997 – PRESENT

Description - The Johnston County Landfill facility consists of an active lined and inactive MSW landfill units, three unlined MSW units, and an active lined C&D landfill. S+G has significantly increased the expected airspace at this site through the use of creatively applying presumptive remedy strategies for unlined landfill units. The project team for Johnston Co. is lead by Mr. Pieter Scheer, P.E. with Ms. Joan Smyth, P.G. and Ms. Madeline German, P.G. providing environmental monitoring and evaluation leadership. S+G has provided services to the County including the following:

Feasibility Studies - S+G performed in depth feasibility analyses of various gas to energy options,including piping of LFG to County-owned water treatment facilities, local industries for use asboiler fuel, and electricity generation. Based on the favorable results of the study, the Countychose to contract with a third party to develop a gas to power project.

Landfill Gas Utilization Procurement - S+G assisted Johnston County in preparing andadministrating the RFP for LFGTE project, resulting in the receipt of several qualified bids. Theproject is currently under development, with well field installation currently under way.

Landfill Gas Operations and Maintenance - S+G performed O&M services for the initial LFG developer prior to and during utilization of the methane for power generation. Monthly monitoring and tuning has been performed for the wellfield, consisting of 55 vertical extraction wells, horizontal collectors, and leachate cleanout connections. Maintenance included servicing of blowers and air compressors during routine maintenance and non-routine shutdowns. S+G provided year round on-call response services during shutdowns due to adverse weather conditions. Data collection, flow meter, and Seimens Ultramat 23 calibration services were facilitated by S+G.

Landfill Gas Sampling - S+G performed extensive testing to identify and quantify contaminantsin the LFG, as well as Tier 2 testing from 50 sample locations. Monitoring LFG flow rates fromvent flares was performed to determine the amount of methane eligible to earn carbon credits under existing protocols. Sampling was performed for laboratory analysis for siloxanes and other contaminants of concern. S+G coordinated stack emissions testing in compliance with site permit and federal regulations for engine emissions.

Carbon Credit Verification Assistance – During the initial verification of carbon credits for the Climate Action Reserve Landfill Methane Protocol Version 3.0, S+G collected and provided data for flare and engine destruction of methane, including flow total and methane content. Monitoring of LFG flow rates and methane content from vent flares was performed to determine the amount of methane eligible to earn carbon credits prior to project registration.

Client Reference: Johnston County Public Works
Mr. Rick Proctor
(919) 209-8333
rick.proctor@johnstonnc.com

LEXINGTON COUNTY HIGHWAY 321 LANDFILL - 2012 EPA EXCELLENCE IN SITE REUSE AWARD

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Closure
- Construction Administration/CQA
- USC Golf Facility Design
- Groundwater Remediation Operation
- Landfill Gas Collection Design
- Landfill Gas Collection Operation
- Greenhouse Gas Reporting

RESOURCE MANAGEMENT
RECOVERY
REMEDIATION

LEXINGTON COUNTY, SOUTH CAROLINA / 1994 – PRESENT

Description – The Lexington County Highway 321 Landfill is an unlined landfill Superfund site consisting of three designated waste disposal areas, and areas of waste disposed outside of those the designated areas. This site had two landfill cap failures prior to S+G's involvement, as well as groundwater and landfill gas impacts. S+G has provided the following services on this site:

Site Redevelopment – S+G has assisted in the design of various installations over the closed landfill facility. Redevelopment has included a golf driving range, a golf practice range for the University of South Carolina's golf team, a convenience center for Lexington County residents, and a miniature golf course.

Waste Consolidation – When S+G originally was contracted to work on this site, there were several areas of waste that were outside landfill footprint boundaries. To promote site remediation as well as future redevelopment of the site, S+G oversaw the consolidation of these waste areas back into existing landfill footprint. This has increased the area that may be considered for future development.

Landfill Closure – The Highway 321 Landfill, listed on EPA's National Priority List (NPL), had already sustained two landfill cap failures prior to S+G's involvement. S+G prepared a revised closure design which included stormwater management features to prevent cover erosion and an irrigation system for the maintenance of vegetative cover on the landfill. S+G provided CQA of the cover installation and waste relocation activities. The project was structured to allow Lexington County to complete over 50% of the remedial efforts with their own forces providing significant savings to the County taxpayers.

Groundwater Remediation – In 1999 S+G designed, bid and oversaw the installation of a groundwater remediation system. This system consisted of 18 groundwater recovery wells to prevent off-site migration of impacted groundwater, a 1.1 million gallon water aeration pond, and an irrigation system for the re-use of remediated groundwater to promote vegetative growth on the cap and promote cap stabilization. S+G has operated this system since installation. Currently ½ of the system has successfully achieved clean-up targets and is currently shut down.

Landfill Gas Remediation – S+G designed, bid, and oversaw the installation of a landfill gas collection and control system to remediate off-site impacts from the migration of landfill gas. This system has effectively remediated LFG from adjacent properties.

The landfill gas collection system consists of 6 wells and 1 flare.

A short U.S. EPA video of this project can be viewed at:
https://www.youtube.com/watch?v=82l1uynsmho&feature=youtu.be

Client Reference: Lexington County Public Works
Mr. Dave Eger, Director
803.755.3325
Deger@lex-co.com

OCONEE COUNTY LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Mixed Waste MRF Evaluation
- Landfill Gas Collection System Evaluation/ Enhancement
- Water Quality Monitoring

RESOURCE MANAGEMENT

RECOVERY

REMEDIATION

OCONEE COUNTY, SOUTH CAROLINA / 2007 – PRESENT

Description: The Oconee County landfill consists of a closed Class 3 (MSW) landfill, a closed Class 2 (C&D) landfill, and an open Class 2 (C&D) landfill. S+G has performed the following services for Oconee County:

Mixed Waste MRF Evaluation - S+G has performed a mixed waste MRF evaluation to assist the County in meeting their goal of an 85% diversion rate. This evaluation included review of waste disposal options used by the highest recyclers in the Southeast, evaluation of the County's current waste disposal systems, MRF equipment options, compost options, wet-dry separation, cost evaluations and equipment requirements. S+G prepared a report summarizing options and projected costs and presented our findings to the Board of Commissioners.

Landfill Gas Collection System - S+G is currently providing landfill gas collection system assistance to Oconee County for their existing collection system. S+G made modifications to the system to enhance gas recovery. This has included evaluation of old LFG extraction wells to determine their viability for continued recovery and system optimization. S+G also provides continued landfill gas system operation and maintenance for Oconee County to include maintenance of the flare system.

The landfill gas collection system includes 33 wells and one flare.

Additionally, S+G provided design and construction oversight for a passive LFG trench installed at the Oconee facility. The purpose of the LFG trench was to prevent off-site migration of the gas onto properties not owned by Oconee County.

Groundwater Monitoring Services - S+G has also provided semi-annual water quality monitoring and reporting for the Oconee County Landfills (Class Two and Three landfills). These services include completion of all field work (groundwater sample collection) and preparation of written reports for submittal to the DHEC. Our evaluations have focused on allowing the improved landfill cover time to effect groundwater quality at the site to minimize groundwater remediation strategies.

Remediation Services – S+G has completed Assessment of Corrective Measures (ACM) plans for two of the closed and unlined Class Three landfills owned by Oconee County. The ACMs focused on chlorinated solvent impacts to groundwater and surface water caused by apparent leachate migration from the old unlined landfills. The ACMs outlined multiple remedial options including monitored natural attenuation (MNA), enhanced biological degradation, and pumping and treatment of impacted groundwater.

Following approval of the ACMs, Corrective Action Plans (CAPs) were prepared for the facilities. One CAP outlined a MNA approach for the groundwater remediation while the other CAP outlined installation of an in-situ barrier consisting of activate carbon. Each CAP has been implemented and future groundwater and surface water sampling events will be utilized to determine the effectiveness of each treatment technology.

Stormwater Design Services – S+G completed a redesign of the stormwater conveyance system for the Oconee County solid waste complex that includes a transfer station and MRF facility. As part of the redesign, modeling of the existing stormwater conditions at the facility was completed. The final redesign included plans for construction of two additional stormwater basins in addition to redesign of the existing stormwater basin on this site. The redesign also took into account the future construction of a new transfer station at the solid waste complex.

OCONEE COUNTY LANDFILL CONTINUED

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Mixed Waste MRF Evaluation
- Landfill Gas Collection System Evaluation/ Enhancement
- Water Quality Monitoring

RESOURCE MANAGEMENT

RECOVERY

REMEDIATION

OCONEE COUNTY, SOUTH CAROLINA / 2007 – PRESENT

Conceptual Transfer Station Design - S+G assisted Oconee County with preparation of a conceptual design for a future transfer station to be located at the Oconee County solid waste complex. The conceptual design included three (3) potential options for transfer station location on the Oconee County property. One location option would entail expansion of the existing transfer station building while the other two locations would include construction of new transfer station buildings. Oconee County opted for a location that would include construction of a new transfer station building.

Stormwater Design Services – S+G completed a redesign of the stormwater conveyance system for the Oconee County solid waste complex that includes a transfer station and MRF facility. As part of the redesign, modeling of the existing stormwater conditions at the facility was completed. The final redesign included plans for construction of two additional stormwater basins in addition to redesign of the existing stormwater basin on this site. The redesign also took into account the future construction of a new transfer station at the solid waste complex.

Client Reference:

Oconee County
Mr. Swain Still, Solid Waste Director
864.888.1440
SStill@OconeeSC.com

AVERY COUNTY LANDFILLS/TRANSFER STATION

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Solid Waste Feasibility Study
- Site Remediation
- Recycling System Design
- Solid Waste Permitting
- Landfill Design and Permitting
- Construction Administration and CQA
- Water Quality Monitoring
- Solid Waste Management Plan
- Landfill Closure
- Regulatory Negotiation
- Transfer Station Permitting

RESOURCE MANAGEMENT

RECOVERY

REMEDIATION

INGALLS, NORTH CAROLINA / 2007 – PRESENT

Description – Avery County has two landfill facilities on two properties. The Avery County C&D landfill is an active facility with a transfer station for MSW waste. The closed Avery County MSW landfill is located on a separate property. Our services to the County include the following:

Economic Feasibility Study – S+G began work with Avery County by performing an economic feasibility study of existing solid waste operations which compared the economic viability of passing the C&D waste stream through the existing MSW transfer station in response to the January 1, 2007 C&D rule amendments and the Solid Waste Management Act of 2007.

Evaluation of Solid Waste Disposal Services – As an update to our 2007 Study (Economic Feasibility Study) S+G completed a financial evaluation for County solid waste disposal options, which reviewed, in more detail, solid waste disposal options available to the County in consideration of 2017 costs and recent construction and operations costs. The updated evaluation specifically compared continued C&D landfill disposal operations within the County owned Construction and Demolition (C&D) landfill with transferring C&D to an out-of-county facility using the County's existing Municipal Solid Waste (MSW) Transfer Station. To appropriately evaluate the County's options, S+G performed a 20-year full-cost accounting analysis for potential waste disposal options. S+G's analysis determined that the County should continue C&D disposal within the C&D landfill until the current Phase reached capacity and transfer all C&D debris out-of-County once the current Phase reached capacity. Along with this option S+G reviewed waste densification and recycling options that could extend the life of the current C&D landfill phase and recommended the County consider privatizing waste hauling operations to reduce one of the County's largest operating expenses.

Avery MSW Landfill Gas Remediation – S+G has been assisting the County with responding to elevated landfill gas concentrations at the property line and off-site at the closed MSW landfill. S+G prepared a LFG mitigation plan to address this issue, has evaluated the effectiveness of a small LFG collection system on-site, and provided monthly LFG system monitoring and maintenance for this facility.

The landfill gas collection system consists of 9 extraction wells and 1 flare.

Water Quality Monitoring/Reporting – S+G provides regular water and landfill gas monitoring and report preparation for both the C&D and closed MSW landfills.

Landfill Closure - S+G designed, bid and provided construction administration for landfill closure for Phases 1 and 2 of the Avery County C&D landfill.

Avery C&D Landfill Design and Permitting – S+G designed a C&D landfill expansion and secured a letter of Site Suitability for an expansion area that would serve Avery County for approximately 40 years. Additionally, S+G permitted a new 5 year cell for the C&D landfill that removed an intermittent stream feature and gave the County 5 years of capacity with only 1.5 acres of footprint construction.

Waste Consolidation (C&D Landfill) – S+G assisted the County through the process of self-reporting the disposal of waste discovered outside the permitted landfill footprint. S+G negotiated a remedial action that included the purchase of additional property to limit the amount of waste that required relocation. Finally S+G oversaw waste relocation activities and provided certification to NCDENR regarding completion of the remedial strategy to address this issue.

Transfer Station Permitting – S+G completed the five year renewal of the Avery County MSW Transfer Station Permit which included updates to the Operations Manual, Site Drawings, and the inclusion of various supporting recycling operations such as glass, aluminum, cardboard, and white goods. More specifically, S+G included the streamlining of the existing facility permits, manuals, drawings, and supporting documents into a single Solid Waste Permit for the Transfer Station, C&D landfill, and various recycling activities.

Client Reference:

Avery County
Mr. Eric Foster, Solid Waste Director
828.737.5420
avery.sw@averycountync.gov

SMITH GAP LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Design and Permitting
- Landfill Closure & Construction Administration/CQA
- Landfill Gas Collection and Control System Design
- Title V Permitting and Reporting
- LFG System Operations and Training
- Landfill Gas to Energy Feasibility Analysis

RESOURCE MANAGEMENT

RECOVERY

ROANOKE, VIRGINIA / 1994 - PRESENT

Landfill Design and Permitting - S+G co-designed, permitted, and provided engineering and CQA services during construction for Phase II (13-acres) and Phases III/IV (8-acres) and Phase V (13-acres) of this Subtitle D facility, which are currently in operation. S+G performed a re-design of Phases V-IX (50-acres) of this facility including the design of a final cover system for all phases of the landfill. This expansion will provide over 30 years of additional life to the facility.

Landfill Closure and Landfill Gas Control - S+G is currently permitting a partial closure for this facility. S+G has also designed, permitted, and oversaw construction of a landfill gas collection and control system. S+G is currently operating this system to optimize landfill gas collection and control.

Smith Gap Regional Landfill – Closure Event No. 1 - S+G designed and permitted the final cover system for this facility. This included the addition of two alternative final cover systems to allow flexibility based on available soil materials. The final cover design for this facility incorporates the use of S+G's rain gutter system which allows easier maintenance of the cover system long-term as opposed to tack-on soil berms. Additionally, the design incorporates a passive landfill gas (LFG) vent system that is designed to minimize pressure on the final cover system in the event of a shut-down of the active LFG collection system.

S+G managed the bid procurement process and is currently performing construction administration, construction quality assurance, and other engineering services during construction of this 8 acre partial closure as part of a larger multi-milestone project which also includes an 8 acre lined expansion of the landfill (Phase VI). Combining the work into a single project, provided significant savings to the Authority.

Air Quality Reporting - S+G has prepared Title V and Greenhouse Gas Reports for this site on an annual basis.

Client Reference:

Roanoke Valley Resource Authority
Mr. Dan Miles, P.E., CEO
540.857.5050
dmiles@rvra.net

SMITH GAP LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Design and Permitting
- Landfill Closure & Construction Administration/CQA
- Landfill Gas Collection and Control System Design
- Title V Permitting and Reporting
- LFG System Operations and Training
- Landfill Gas to Energy Feasibility Analysis

RESOURCE MANAGEMENT

RECOVERY

ROANOKE, VIRGINIA / 1994 - PRESENT

S+G has worked with the Roanoke Valley Resource Authority since the early 1990s. Our involvement with the Authority at the Smith Gap Regional Landfill has included the following:

Phase I Construction Assistance: S+G was called in to assist with the construction of Phase I of the landfill. S+G helped to develop a method of processing on-site weathered shale into material suitable for use as a soil liner. This provided a significant savings to the Authority in avoided additional costs for bentonite amendment or development of other on or off-site borrow sources.

Landfill Design Services: S+G co-designed Phases II (13-acres) and III/IV (8-acres) with HSMM (now AECOM) of Roanoke. S+G designed all liner and final cover components for the site. The design of Phases III/IV included S+G's recommended optimization of the Phase III/IV footprint and an increase in the final cover slopes to maximize overall airspace for the entire landfill. **This resulted in a near-term savings of several hundred thousand dollars in reduced liner construction costs and a gain of landfill capacity.** S+G also co-designed Phases V-IX (50 acres) with HSMM of Roanoke.

Landfill Closure: S+G designed and is completing permitting of final cover system alternatives for the site which will allow the Authority increased flexibility and the opportunity for savings through reduced construction costs and/or increased waste disposal capacity. S+G also designed and permitted the final cover system for the Smith Gap Landfill facility. This included the addition of two alternative final cover systems to allow flexibility based on available soil materials. The final cover design for this facility incorporates the use of S+G's rain gutter system which allows easier maintenance of the cover system long-term as opposed to tack-on soil berms. Additionally, the design incorporates a passive landfill gas (LFG) vent system that is designed to minimize pressure on the final cover system in the event of a shut-down of the active LFG collection system.

Bid Procurement and Construction Services: S+G performed construction quality assurance (CQA) and engineering services during construction of Phases II, III/IV, and V. During construction of the Phases III/IV liner system, S+G negotiated construction difficulties related to the contractor's selection of geosynthetic materials such that there was no construction claim or increase in construction cost to the Authority. S+G has recently managed the bid procurement process and is currently performing construction administration, construction quality assurance, and other engineering services during construction of Phase VI (8-acres) and an 8-acre partial closure.

Landfill Gas and Air Quality Services: S+G performed design, permitting, bid procurement, and construction services (contract administration and CQA) associated with landfill gas collection and control systems at both the Smith Gap Landfill (system designed by S+G) and the Rutrough Road Landfill (replacement blower/flare system designed by others with S+G input).

Client Reference: Roanoke Valley Resource Authority
Mr. Dan Miles, P.E., CEO
540.857.5050
dmiles@rvra.net

SMITH GAP AND RUTROUGH ROAD LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

» Landfill Design and Permitting
» Construction Administration/CQA
» Landfill Gas Collection and Control System Design
» Title V Permitting and Reporting/GHG Reporting
» LFG System Operations and Training
» Landfill Gas to Energy Feasibility Study and RFP

RESOURCE MANAGEMENT

RECOVERY

ROANOKE, VIRGINIA / 1994 - PRESENT

Description - The Roanoke Resource Authority (Authority) has two landfill facilities - the active Smith Gap Regional Landfill located in Salem, VA, which is a lined Subtitle D municipal solid waste (MSW) landfill, and the Rutrough Road Landfill, which is a closed unlined MSW landfill located in Roanoke, VA. S+G has worked with the Authority since the 1990s. Our involvement with the Authority has included the following:

Landfill Design, Permitting, and Construction (Smith Gap Landfill) (1994 - Present) - Work performed by S+G at the Authority's Smith Gap Landfill has included:

- S+G was called in to assist with the construction of Phase I. S+G helped to develop a method of processing on-site weathered shale into material suitable for use as a soil liner. This provided a significant savings to the Authority in avoided additional costs for bentonite amendment or development of other on or off-site borrow sources.

- S+G co-designed Phases II and III/IV with HSMM (now AECOM) of Roanoke. For this work, S+G provided the design of all liner and final cover components inside the limit of the containment areas. The design of Phases III/IV included S+G's recommended optimization of the Phase III/IV footprint and an increase in the final cover slopes to maximize overall airspace for the entire landfill. This resulted in a near-term savings of several hundred thousand dollars in reduced liner construction costs and a gain of much more in landfill capacity. A significant innovation of the design of Phases III/IV, as well as the subsequent design for Phases V-IX, was the development of a means to segregate stormwater along the steep interior landfill side slopes; thus, limiting leachate generation during initial filling and lowering the associated costs for hauling and disposal.

- S+G co-designed Phases V-IX with HSMM of Roanoke. As for our previous work, S+G provided the design of all liner, final cover, and leachate management components inside the limit of the containment areas as well as the leachate gravity main leading to the storage tank. As part of this work, S+G considered both top-down construction and bottom-up construction for Phases V-IX and determined that top-down construction would be more favorable as it would more quickly provide volume and limit operational issues.

- S+G performed construction quality assurance (CQA) and engineering services during construction of Phases II, III/IV, V, and VI and a partial closure. During construction of the Phases III/IV liner system, S+G negotiated construction difficulties related to the contractor's selection of geosynthetic materials such that there was no construction claim or increase in construction cost to the Authority. As part of our services during construction of Phase V, S+G evaluated and worked with both the contractor and the DEQ to develop a cost-effective plan for mitigation of a groundwater spring which developed beneath the installed liner and leachate collection system.

- S+G worked with the DEQ to permit final cover system alternatives for the site which will allow the Authority increased flexibility and the opportunity for savings through reduced construction costs and/or increased waste disposal capacity.

SMITH GAP AND RUTROUGH ROAD LANDFILLS (CONTINUED)

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Design and Permitting
- Construction Administration/CQA
- Landfill Gas Collection and Control System Design
- Title V Permitting and Reporting/GHG Reporting
- LFG System Operations and Training
- Landfill Gas to Energy Feasibility Study and RFP

RESOURCE MANAGEMENT

RECOVERY

S+G oversees

as they perform

The gas collection system at the active Smith Gap Landfill includes 36 wellheads and 1 enclosed flare.

- The plans approved by the DEQ also include a plan to recirculate leachate at a rate of up to approximately 10% by weight of the daily waste tonnage. S+G evaluated leachate recirculation for this site carefully considering typical landfill operations (particularly use of soil as daily cover), site location, and experiences with other sites and general industry issues with the practice. If application methods prove successful at the higher rate, the plan could allow 3M gallons or more of leachate to be recirculated at the facility. Considering the current leachate disposal cost of $0.03 to $0.04 per gallon, this plan could save the Authority $100K or more annually.

Landfill Gas Collection and Control System Design, Permitting, & Construction (Smith Gap and Rutrough Road Landfills) (2009-11) - S+G performed design, permitting, bid procurement, and construction services (contract administration and CQA) associated with landfill gas collection and control systems at both the Smith Gap Landfill (system designed by S+G) and the Rutrough Road Landfill (replacement blower/flare system designed by Joyce Engineering with S+G input).

Landfill Gas Management and Air Quality Services (Smith Gap and Rutrough Road Landfills) (2011-Present) - S+G is currently teaming with Draper Aden Associates to perform landfill gas management services for the Authority's Smith Gap and Rutrough Road Landfills. Draper Aden Associates performs monthly monitoring and adjustment of the active LFG collection systems at both sites and quarterly monitoring of perimeter gas probes. S+G performs periodic and annual air quality permitting and compliance activities and manages system data for both sites and manages the process to obtain carbon credits at the Smith Gap Landfill under a contract with Element Markets entered by S+G on behalf of the Authority. S+G also previously performed and LFG to energy feasibility study for the Smith Gap Landfill which included an evaluation of LFG to electricity, LFG to high-BTU pipeline quality, and LFG to vehicle fuel.

Evaluation of Final Cover Improvements (Rutrough Road Landfill) (2005) - S+G evaluated the cost-benefit of the installation of an improved final cover system over flatter portions of the Rutrough Road Landfill in order to limit the amount of leachate being generated.

Client Reference: Roanoke Resource Authority
Mr. Steve Barger, P.E., Operations Manager
540.857.5050
sbarger@rvra.net

SAMPSON COUNTY LANDFILL

PROJECT SPECIFIC EXPERIENCE INCLUDES:

- Landfill Design and Permitting
- Landfill Closure
- Gravity Groundwater Intercept Design
- Landfill Gas Collection System Design
- Landfill Gas to Energy System Design
- Construction Administration/CQA
- Wetland Creation
- Wetland Permitting
- Stormwater Monitoring/Reporting
- Air Quality Permitting
- Greenhouse Gas Reporting

RESOURCE MANAGEMENT

RECOVERY

ROSEBORO, NORTH CAROLINA / 2000 – PRESENT

Description – The Sampson County landfill is a privately owned/operated landfill which consists of an open Subtitle-D landfill, a closed Subtitle-D landfill, an operating C&D landfill, a sludge solidification operation, and a leachate evaporation system. S+G has provided numerous services for this client including the following:

Landfill Closure Design and Construction Services – S+G designed, permitted and provided engineering and construction administration/CQA services during closure construction for the original Subtitle-D MSW landfill unit (40-acres) of this facility. This closure included a geomembrane cap, vegetative layer, and stormwater and subsurface drainage systems. Additionally, S+G provided design engineering and construction administration/CQA for closure of a portion of the first phase of the currently active Subtitle-D landfill (12-acres).

Landfill Gas-To-Energy (LFGTE) System – S+G conducted an informal RFP process to solicit LFG to energy projects, including pipeline sales to industry (brick kilns, rendering plants), production of bio-diesel/bio-methanol, pipeline injection, leachate evaporation; and electricity generation. Sampson County Disposal, LLC chose to self-develop a power production project. The renewable energy project began operations in the spring of 2011.

During closure activities, S+G also provided construction administration of an active landfill gas collection and recovery system. This system, as well as landfill gas collection from the active MSW landfill are part of the largest LFGTE system in NC. With the addition of future phases, this system will ultimately generate ~~13.5~~ 12.8 megawatts of power.

Air Quality Permitting – S+G has applied for and obtained Title V permits at both site landfills, which are subject to NSPS and MACT rules, and helped to prepare the PSD permit and BACT determination for the gas to energy project. We prepared both LFG Management Design plans for approval by the state, and have received operational and design variances for well head temperature, oxygen levels, and manifolding of wells.

GHG Reporting – We have worked closely with site personnel to collect and document information necessary for greenhouse gas reporting. S+G personnel are registered as Designated Representatives at both site landfills and have prepared monitoring plans required by the rules.

Landfill Design and Permitting with Gravity Groundwater Intercept System – A review of the overall site design prepared by a previous consultant indicated the site would be subject to significant soil deficits and that significant soil was needed from off-site sources. S+G evaluated the site and designed a system whereby groundwater is gravity drained to a nearby stream. This Gravity Groundwater Intercept System lowered the groundwater surface approximately 15 feet in some areas, allowing for a significant increase in site capacity, improved stability of the waste mass, and the creation of a soil surplus. At this time, 4 cells have been constructed with this system. The successful implementation of this system resulted in a savings of millions of dollars for the client.

Wetland Creation – S+G assisted Waste Industries with wetland permitting for landfill expansion that included the creation of 26 acres of wetland to off-set wetland removal. This project was completed in 2004 and the wetland continues to thrive.

Reference listed to the left.

Client Reference:

GFL Environmental , Inc.
Mr. Bryan Wuester
910.525.4132
bryan.wuester@gflenv.com

S+G has operated the landfill gas collection system as it expanded from 11 wells to the current 145 wellheads.

BOWMAN GRAY STADIUM

PROJECT SPECIFIC EXPERIENCE INCLUDES:

» Landfill Location and Identification
» Waste Evaluation
» Environmental Site Assessment
» Surface Emission Investigation

RECOVERY
REMEDIATION

WINSTON-SALEM, NORTH CAROLINA / 2015 – PRESENT

Description - The Bowman Gray Stadium property was investigated as part of a Brownfield Agreement between the City and Winston-Salem State University. Historical documentation indicated the possible presence of landfills on the property. S+G investigated the property to determine the location and types of landfills present.

Geophysical Identification – S+G utilized a geophysical survey to locate potential waste disposal areas at the site. This investigation identified four waste disposal areas at the site. These disposal areas were unpermitted and are pre-regulatory landfills.

Soil Boring and Test Pit Investigation – S+G personnel oversaw test pit excavations to evaluate waste types. Waste types encountered included C&D, MSW and inert brick and block.

Soil Gas Survey – After identification of waste areas, S+G professionals performed a soil gas survey to evaluate whether LFG was being generated by the old disposal areas and whether off-site migration was occurring. We identified LFG in the subsurface as well as areas of potential off-site migration during this investigation.

Surface Emission Investigation – In response to elevated subsurface LFG concentrations, S+G performed surface emission sweeps on the entire Bowman Gray property. These sweeps indicated no significant emissions of LFG on the property with the exception of one location. This location was covered with compost which naturally binds organic vapors. This has been successful in remediating emissions in this area while a long-term remedial strategy is designed.

Off-Site Soil Gas Survey - S+G also performed an off-site soil gas survey to evaluate the extent of potential off-site migration. This survey indicated LFG migration off-site in two areas. Surface Emission Sweeps in houses and buildings in these areas indicated no significant surface emissions.

LFG Remedial Design and Implementation - S+G designed two separate LFG collection and control systems to remediate remote areas of the site. S+G provided construction administration for LFG system installation and provides system operations and maintenance.

The landfill gas collection system consists of:
-14 wellheads;
-2 pneumatic pums; and
2 flares.

Client Reference: City of Winston-Salem Stormwater Division
Mr. Keith Huff
336.747.6962
keithh1@cityofws.org

RNGC - Response Appendix 6 - Bill Held Representative Projects (Specialized BioGas Services - Project Consultant)

LANDFILL PROJECT NAME	STATE	CITY	BILL HELD INVOLVEMENT
OPERATIONAL			
Oklahoma City Landfill	OK	Oklahoma City	
Franklin County SLF	OH	Grove City	Consulting to landfill owner on LFGTE project development
Sauk Trail Hills Landfill (Canton, MI)	MI	Canton	Landfill owner rep., project development, contract negotiation, project management after start-up
North Shelby Landfill	TN	Millington	Landfill owner rep., project development, contract negotiation, project management after start-up
Seneca Meadows SWMF	NY	Waterloo	Consulting to landfill owner on LFGTE project development
McCommas Bluff Landfill	TX	Dallas	Due diligence on posssible project investment
Hamm SLF	KS	Lawrence	Adive to landfill owner
Westside Recycling and Disposal Facility	MI	Three Rivers	
Stony Hollow Landfill Inc.	OH	Dayton	Consullting to landfill owner on wellfield issues
Fort Bend Regional Landfill	TX	Needville	Due diligence on plant and wellfield for possible acquistion
Rumpke SLF, Inc.	OH	Cincinnati	Consulting to landfill owner on contract with developer
Monroeville LF	PA	Monroeville	Prior to RNG project, LFG system installtion and O&M
Valley LF	PA	Irwin	
Shade Landfill	PA	Cairnbrook	
Laurel Highlands LF (Raeger Mountain)	PA	Johnstown	
McCarty Road LF	TX	Houston	Project management and constract administration as Owner
Humble Renewable Energy	TX	Humble	
Milam Recycling and Disposal Facility (2 sites)	IL	East St. Louis	
American LF	OH	Waynesburg	
Outer Loop Recycling and Disposal Facility	KY	Louisville	Consullting on wellfield O&M
Altamont Landfill & Resource Recovery Facility	CA	Livermore	
Woodland Medows Landfill	MI	Wayne	
Fort Smith SLF	AR	City of Fort Smith	
Jefferson Davis Parish Landfill	LA	Welsh	Project management and constract administration as Owner
Greenwood Farms Landfill	TX	Tyler	Project management and constract administration as Owner
Pine Hill LF	TX	Kilgore	Project management and constract administration as Owner
City of Edinburg Landfill	TX	Edinburg	

Blue Ridge LF	TX	Fresno	Project management and constract administration as Owner
River Birch Landfill	LA	Westwego	
Cedar Hills Regional LF	WA	Maple Valley	
Northeast Mississippi Regional Landfill	MS	Walnut	
Riverview Land Preserve	MI	Canton	Due diligence for possible project acquistion
Dane County LF #2-Rodefeld	WI	Madison	
St. Landry Parish LF	LA	Washington	
Sarpy County SLF	NE	Springfield	
Fresh Kills SLF	NY	Staten Island	Assisted in the preparation of an winning FP for plant operations
Roosevelt Regional MSW Landfill	WA	Roosevelt	Project management and constract administration as Owner
Former Douglas County Landfill	NE	Omaha	
Meadow Branch Landfill	TN	Athens	
Seneca Landfill Inc.	PA	Evans City	
City of Charleston Landfill	WV	Charleston	
Under Contruction			
Big Run Landfill	KY	Ashland	Consulting on LFG system, pipeline interconnect enginnering
Apex Sanitary Landfill	OH	Amsterdam	
Woolworth Road Landfill	LA	Keithville	
Butler County	NE	David City	
Westmoreland	PA	Belle Vernon	Consullting on wellfield O&M
Carter Valley Landfill	TN	Church Hill	Consullting on wellfield O&M
Arlington LF	TX	Arlington	Project management and constract administration as Owner
Butler County Landfill	KS	El Doraado	
OTHER			
Oak Grove Landfill	GA	Winder	Consulting to developer, and owner's PM Note - propject shut-down 2011

Salomone, Bill

From: Jeffrey Craig <jcraig@rngas.com>
Sent: Friday, January 17, 2020 2:53 PM
To: Salomone, Bill
Cc: Dick, Bob; King, Brandon; Clarke Gibson
Subject: Re: Region 2000 LFGE Proposal- Request for Additional Information

Bill. The Agreements have been executed with two other sites. Confidentiality provisions preclude me from providing more information. They don't in any way affect the project at Livestock. My point was that we are going to move ahead with our pipeline tap into the Transco pipeline based on those two sites. Livestock would be the third site for which we have planned ample capacity. We are most excited about the opportunity at Livestock. We would be in a position to move quickly on the discussion and execution of an agreement.

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From: Salomone, Bill <BSalomone@scsengineers.com>
Sent: Friday, January 17, 2020 1:59:50 PM
To: Jeffrey Craig <jcraig@rngas.com>
Cc: Dick, Bob <BDick@scsengineers.com>; King, Brandon <BKing@scsengineers.com>; Clarke Gibson <cgibson@region2000.org>
Subject: RE: Region 2000 LFGE Proposal- Request for Additional Information

Jeff,

Thank you for your rapid response regarding the missing pages from the Greenlane Biogas SOQ.

Your email below mentions "…agreements for two other landfill sites in Virginia…". Are you able to provide additional information about the nature and the status of these agreements? Is the potential Project at Region 2000, dependent on, or contingent upon on the fulfillment of contracts with other landfills?

Thank you,

Bill

William A. Salomone, PE
Project Advisor
SCS Engineers
15521 Midlothian Turnpike, Suite 305
Midlothian, VA 23113 USA
804-486-1917 (W)
bsalomone@scsengineers.com

www.scsengineers.com

From: Jeffrey Craig <jcraig@rngas.com>
Sent: Friday, January 17, 2020 12:44 PM

Attachment 2 – Correspondence with INGENCO (SCS Questions and INGENCO Responses)

Salomone, Bill

From: Salomone, Bill
Sent: Friday, January 10, 2020 4:33 PM
To: Fabrie, Thomas
Cc: Clarke Gibson; Bob Dick (BDick@scsengineers.com)
Subject: Region 2000 LFGE Proposal- Request for Additional Information
Attachments: Memo - INGENCO-Proposal Rev-Request for Additional Info.pdf

Mr. Fabrie,

Please see attached request for additional information regarding your proposal. Thank you in advance for your response.

Best Regards,

Bill

William A. Salomone, PE
Project Advisor
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15521 Midlothian Turnpike, Suite 305
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bsalomone@scsengineers.com

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January 10, 2020
File No. 02195001.07-T10

Thomas Fabrie
Chief Financial Officer
Riverview Power/INGENCO
2250 Dabney Road
Richmond, VA 23230

Re: Review of Proposal for Landfill Gas-to-Energy Development Project - Request for Additional Information and Clarifications

Dear Mr. Fabrie:

On behalf of the Region 2000 Services Authority (Authority), SCS Engineers (SCS) appreciates the opportunity to review your Proposal submitted to the Authority for a Landfill Gas-to-Energy (LFGE) Project at Livestock Road Regional Landfill (Landfill). We request additional information and/or clarifications as listed below. Please provide response via email by close of business on Thursday January 16, 2020.

1. The Landfill Gas Payment Form C shows LFG utilization of 95% of the gas generated at the landfill. The proposed plan will result in average annual LFG residual flow under 100 scfm that would need to be vented to the atmosphere. Please explain if the proposed gas plant will be designed/constructed to accommodate 100% of the LFG generated from the landfill. The Form C shows the anticipated SCFM to be USED by the project with annual increases to accommodate increased Recovery Potential. Please indicate how the annual maximum fuel demand or capacity planned for the facility relates to the planned power plant system expansion. For example, Section 7 indicates that each system group is capable of utilizing 600 scfm, however the anticipated USED flow shows annual increases of 6% without explanation of the maximum system capacity or showing interval expansions.

2. For the annual minimum payment, explain how the average methane concentration and gas flow will be measured and calculated? For example, are these parameters based on average hourly, daily or monthly values. Explain how average concentration and flow will be computed under the condition of INGENCO monitoring equipment differs from the values measured by the Authority's equipment.

3. Please describe the anticipated noise that may be generated by the proposed facility at Livestock Road. How will INGENCO verify that sound levels will not exceed the regulatory standard?

4. Please describe if anticipated nuisance odors that may be generated by the proposed facility at Livestock Road.

5. Please quantify the anticipated water demand required to operate the proposed facility for engine cooling.

6. Please describe and quantify the anticipated solid and liquid waste, such as process water as generated from the facility and describe how INGENCO plans to manage such waste.

7. Please briefly explain the plan to interconnect power generation from the facility to the power grid. What are the anticipated requirements that may be requested that may impact the Authority property?

8. Please provide an anticipated schedule to construct and begin operation of the facility. Assume that an agreement with the Authority is signed by mid-April 2020.

9. Per the RFP, Section 7, the Proposal is required to submit a "…plan for decommissioning and removal of LFGE Project Facilities over time as landfill gas production decreases after landfill closure (and upon ultimate cessation of LFGE Project operations)" Please provide this information.

10. The proposal mentions that INGENCO requests that the Authority will process and dispose of condensate returned to INGENCO to the condensate system. Based on INGENCO's experience, what is the quantity of additional condensate that is anticipated to be generated at the 4 MW facility?

11. The Landfill Gas Payment Form C describes the purchase price of 10% of the Total Revenue of the Landfill Gas Plant. Describe how INGENCO plans to demonstrate its annual revenue to the Authority?

12. It is unclear if payment to the Authority based on $/MMBtu or % revenue of the Plant. Please explain.

13. The Landfill Gas Payment Form C states the following:

    > *" INGENCO proposes to purchase the landfill gas on percent of revenue basis. The purchase price for a given month shall be 10% of the total revenues of the landfill gas plant…."*
    >
    > *INGENCO will **also** commit to an annual minimum payment of $100,000 per year or $8,333 per month, provided the landfill averages at least 700 scfm of landfill gas flow at 40% methane content or above"*

    Based on these statements, assuming the minimum LFG flow and concentrations are met, does INGENCO agree to pay the minimum monthly gas payment ***and*** 10% of the gas plant revenue, or is the total anticipated payment a maximum of the 10% of the revenue?

Thank you for taking time to respond to these comments.

Sincerely,

William A. Salomone, PE.
Project Advisor
SCS Engineers

cc: Clarke Gibson, PE (Region 2000)
Bob Dick, PE (SCS Engineers)

Salomone, Bill

From:	Fabrie, Thomas <Thomas.Fabrie@riverviewpwr.com>
Sent:	Monday, January 13, 2020 5:23 PM
To:	Salomone, Bill
Cc:	Clarke Gibson; Dick, Bob; Badeer, Robert
Subject:	RE: Region 2000 LFGE Proposal- Request for Additional Information
Attachments:	INGENCO RESPONSES_01_13_2020.docx

Bill,

Please see the attached for our responses to your request for additional information. Let me know if we can provide any additional explanations or details regarding our proposal.

Thank you.

Thomas Fabrie – Chief Financial Officer
INGENCO – Riverview Investment Holdings
2250 Dabney Road, Richmond, VA 23230
Thomas.Fabrie@riverviewpwr.com
804.521.3578 - office
804.239.3451 - cell

INGENCO

INGENCO RESPONSES
01/13/2020

#1 – The INGENCO plant will be designed for 100% of the LFG generated from the landfill. However, there will be maintenance activities, utility outages, blower outages, etc. that will prevent us from running 100% of the time. During these occurrences, we would not vent the LFG to the atmosphere. We would route the LFG back to the landfill's flare for destruction.

The INGENCO building will be large enough to accommodate 8 megawatts of generation (~2,400 scfm), with 4 megawatts (~1,200 scfm) initially installed. As additional LFG becomes available, we will add a third group into the building. We intend to watch the flow of LFG closely while working with landfill personnel/consultants to plan expansions. Also, INGENCO will conduct initial gas sampling if we are awarded this contract. We may install the third group, making a 6 megawatt plant from the start if it looks as though increased gas flows are present or imminent. For reference purposes, we have successfully expanded many of our sites. In fact we just added a 2 megawatt expansion at our Wake facility in August 2019.

#2 – Average methane concentrations are normally measured once or twice daily using GEM meters. Flow is measured constantly across a Rosemount pressure meter. Typically the calculation of these is done on a daily average for each month. We are open to other durations – hourly or monthly.

If our measurements should differ from the Authority's, we would propose some sort of dispute resolution process. We would be amenable to accepting the Authority's value until this dispute is resolved, by testing, inspection, or calibration of the meters in question.

#3 – The INGENCO facilities are engineered to reduce noise levels to acceptable levels. In addition to normal insulation, the building will be lined with perforated panels to muffle sound. INGENCO will also retain a noise control engineering firm to measure the environmental sound levels currently experienced in the vicinity of the proposed landfill gas to energy (LFGE) plant to evaluate, through analytical modeling, the potential noise impact of the facility at the nearest residences, and how best to mitigate these impacts.

#4 – The INGENCO facility will not produce nuisance odors in addition to background odors from the landfill. The INGENGO power generating equipment utilizes all of the LFG that is delivered. Venting of raw landfill gas is not done nor allowed by permit. Combustion exhaust from the power generating equipment is discharged high above the plant and produces no net odor at landfill boundary. Condensate from the landfill gas is collected and returned to the landfill's leachate in a closed system.

#5 – The INGENCO power generating equipment uses a cooling tower to remove heat for turbo after-cooler and liquid fuel cooling. Generally this equipment consumes 150 gallons of water per hour per MWH.

#6 – Generally this equipment discharges 30 gallons of cooling tower water blow-down per hour per MWH. This blow-down is either ground discharge or sanitary sewer if available. The balance (120 gallons per hour per MWH) of the water is fed to the cooling tower and is evaporated.

#7 – The interconnect impacts to the Authority property should be minimal. Once site control is established through a lease, we will commission PJM to conduct feasibility, system impact, and interconnection studies. The results of these studies will ultimately determine the technical and cost requirements of the interconnection. As the Authority has utility poles up to the site, we would expect any upgrades could be implemented on these same poles. In addition, there will be utility transfer trip equipment and there may be upgrades at the Rustburg substation as well.

#8 – The INGENCO power generating plants are a standard design. Generally, engineering and permitting takes about 3-6 months while procurement, installation, and commissioning take 6 months from time of permit approval. The wild card is the utility interconnect. We have seen these done in as little as six months, or as long as 16 months.

#9 – As landfill gas decreases, INGENCO has great turndown with its power generating equipment. INGENCO will simply reduce the number of engines it operates for gross adjustment of about 100 SCFM landfill gas and can fine adjust the power of each individual engine to consume all of the available landfill gas while maintaining the landfill's "hill vacuum" requirement. At the end of contract we will either remove all equipment, or enter into another lease agreement and leave our facility in place as a capacity resource. We are open to either approach.

#10 – The INGENCO power generating plants all have condensate management systems, such as expansion chambers and knock out pots with coalescing and filtration. Condensate from the incoming landfill gas varies in quantity and any condensate captured is returned to the landfill's leachate system. We do not expect this quantity of condensate to be different than what the landfill currently manages.

#11 - INGENCO will provide a monthly invoice to the Authority based on total revenue from the month. We will also provide the Authority the right to have a third-party audit the total revenues of the plant.

#12 – The payment would be based on % of revenue. For the form C, we attempted to convert the % of revenue into a $/mmbtu based on predicted flows and power curves.

#13 –The proposed payment is either 10% of plant revenue or $8,333 per month, whichever is higher. Examples are below:

A. Plant Monthly Revenue = $75,000
    a. 10% of revenue = $7,500
    b. $7,500 < $8,333
    c. INGENCO would pay the Authority = $8,333

B. Plant Monthly Revenue = $200,000
    a. 10% of revenue = $20,000
    b. $20,000 > $8,333
    c. INGENCO would pay the Authority = $20,000

From: Britton, James <James.Britton@riverviewpwr.com>
Sent: Wednesday, January 15, 2020 5:24 PM
To: King, Brandon <BKing@scsengineers.com>; Fabrie, Thomas <Thomas.Fabrie@riverviewpwr.com>
Subject: FW: Region 2000

Brandon,

Our timeframe for getting all permits and building a plant is typically 12 to 15 months. We have done it as quickly as 10 months. The timeframe on this one could be reduced because of the location and we are not building another plant right now. We just recently completed an expansion at our Wake, NC plant.

Region 2000 would get 10% of all revenue as indicated in the example below. If the demand is high and PJM request the plant to go to peak power and (for example) the price increases to $300mwh Region 2000 would get 10% of any increases. Region 2000 is guaranteed 10% of all revenue and a minimum of $8,333 per month. Their monthly payment would never be below that amount.

Energy Revenue
Capacity Revenue
Ancillary Revenue
Renewable Energy Credit Revenue
Other Revenue
TOTAL REVENUE

Please let me know if you have any questions.

Thanks,
James

James L. Britton
Director of Southern Operations
Riverview Power-INGENCO
2250 Dabney Road
Richmond, VA 23230
Work: 804-521-3532
Cell: 804-240-7466
James.Britton@riverviewpwr.com

RIVERVIEW™
Investment Holdings LLC

Region 2000 Services Authority

Electronic Meeting: GoToMeeting

May 27, 2020 | 2:00 p.m.

Solid Waste Management Plan

The Region 2000 Services Authority has prepared the Solid Waste Management Plan for distribution.

Review the entire document here.

Review the abbreviated document here.

May 15, 2020
File No. 02195001.07-5

MEMORANDUM

TO: Clarke Gibson and Robert Arthur, Region 2000 Services Authority

FROM: Ryan Duckett, SCS Engineers

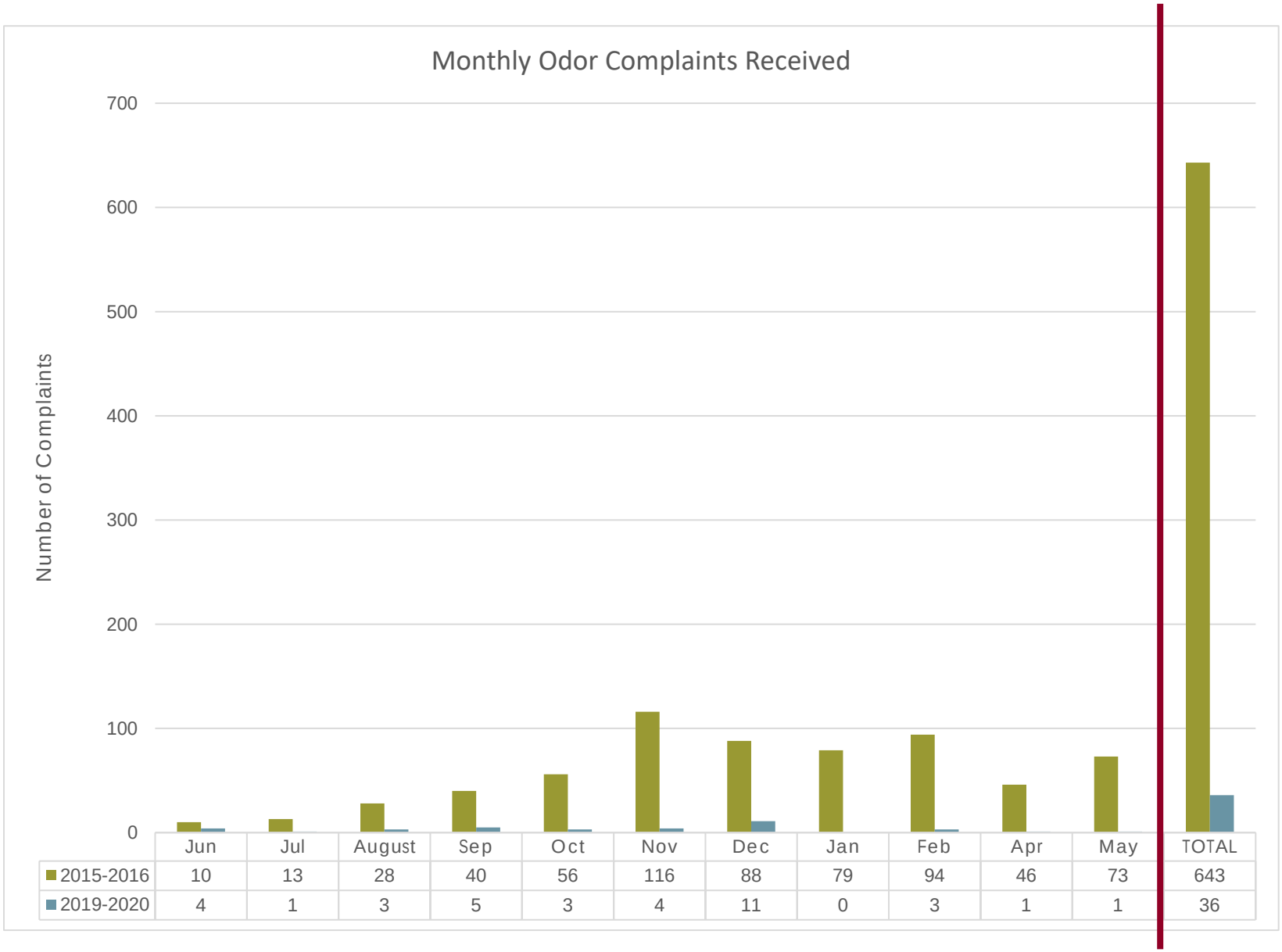
SUBJECT: Odor Complaint Analysis May 2020 Update
Region 2000 Regional Landfill - Livestock Road Facility – Rustburg, Virginia

SCS Engineers (SCS) has compiled the Odor Complaint Records provided by the Region 2000 Services Authority (Authority) that document odor complaints concerning the Authority's Livestock Road Facility (Landfill). As requested, we have developed this analysis of odor complaints recorded during the most recent 1-year period of June 2019 to May 2020, and compared the number of complaints received during that period to the number of complaints received during the 10-month period leading up to the 3/17/16 installation of the vaporizer system and 2-month period which followed (June 2015 to May 2016). This serves as an independent analysis and follow up to the previous Complaint Analysis presented 3/4/2020.

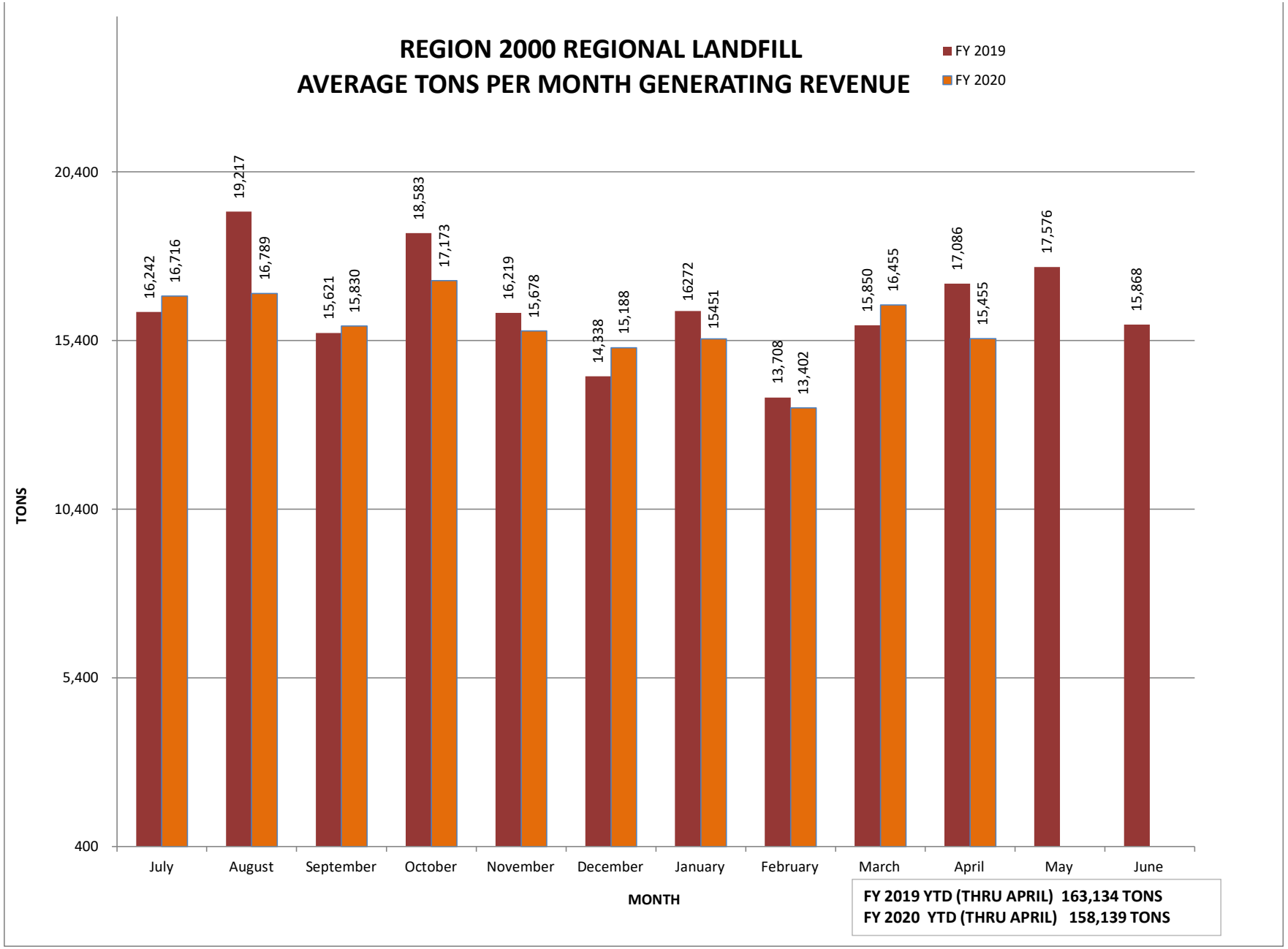
ANALYSIS

SCS calculated the total number of odor complaints recorded during each month for the June through May periods of both 2015-2016 and 2019-2020. A summary of findings from this analysis comparing the monthly and cumulative received odor complaints during the two time periods is presented in **Attachment 1**. The comparison indicates that the number of odor complaints received by the Authority in the most recent 1-year period is about 94 percent less than in the corresponding 1-year period starting in the calendar year prior to the installation of the vaporizer system.

Attachment 1



	Jun	Jul	August	Sep	Oct	Nov	Dec	Jan	Feb	Apr	May	TOTAL
2015-2016	10	13	28	40	56	116	88	79	94	46	73	643
2019-2020	4	1	3	5	3	4	11	0	3	1	1	36


REGION 2000 REGIONAL LANDFILL
AVERAGE TONS PER MONTH GENERATING REVENUE
FY 2019
FY 2020
TONS
20,400
15,400
10,400
5,400
400
16,242
16,716
19,217
16,789
15,621
15,830
18,583
17,173
16,219
15,678
14,338
15,188
16272
15451
13,708
13,402
15,850
16,455
17,086
15,455
17,576
15,868
July
August
September
October
November
December
January
February
March
April
May
June
MONTH
FY 2019 YTD (THRU APRIL) 163,134 TONS
FY 2020 YTD (THRU APRIL) 158,139 TONS

Region 2000 Services Authority

Electronic Meeting: GoToMeeting

May 27, 2020 | 2:00 p.m.

Election of Officers for 2020-2021

Traditionally, Lynchburg and Campbell have rotated the Chair while Appomattox and Nelson have rotated the Treasurer's position, typically for two one-year terms.

Since it has been two years since we rotated officer positions, the following slate of officers are recommended:

- Chair: Frank Rogers, Campbell County
- Vice Chair: City of Lynchburg Representative
- Treasurer: Susan Adams, Appomattox County

It would be appropriate for the Authority to recognize Lynchburg City Manager Bonnie Svrcek for her service to the Authority as Chair and Nelson County Administrator Steve Carter for his service as Treasurer.