# SCS ENGINEERS

February 2, 2022 File No. 09215600.13

Mr. Phillip J. Ciaravella Florida Department of Environmental Protection Solid Waste Section. MS 4565 2600 Blair Stone Road Tallahassee, Florida, 32399-2400

Subject: Hillsborough County, Southeast County Landfill Phases II-III Accelerated Closure **Operation Permit Intermediate Modification Application** FDEP Permit No. 35435-022-S0-01

#### Dear Mr. Ciaravella:

On behalf of the Hillsborough County Solid Waste Management Department (SWMD), SCS Engineers (SCS) is pleased to submit this Operation Permit Intermediate Modification Application for the Southeast County Landfill (SCLF). This intermediate modification application follows the Florida Department of Environmental Protection (FDEP) rules set forth in 62-701 Florida Administrative Code (FAC), and was developed following an October 20, 2021 Phases II-III Accelerated Closure Preapplication Meeting with FDEP representatives. The enclosed permit documents provide information regarding the phased closure of SCLF Phases I-VI beginning with the Phases II-III Accelerated Closure as identified in the Phase I-VI Operating Sequence plan drawings dated June 2020.

# Application

Enclosed with this application is a check in the amount of \$5,000 made payable to Florida Department of Environmental Protection in accordance with the fee schedule listed in Rule 62-701.320(4)(b), FAC.

This intermediate modification application includes updated information previously submitted to the FDEP as part of previous permit renewal applications and modifications. Sections with no changes are marked as such on the Application Form 62-701.900(1), or may have a reference to direct the reader to a copied or re-typed area of the Application.

For more information refer to:

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;



Mr. Phillip J. Ciaravella February 2, 2022 Page 2

- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

# Summary of Attachments

A completed permit application form has been included in accordance with the requirements of Rule 62-701.320(5), along with an Engineer's Design Report and all other applicable supporting information as follows:

- The Phase I-VI Closure Design Drawings which provide detailed information regarding the Phases II-III Accelerated Closure can be found in **Attachment A**.
- A revised Operations Plan with changes identified in redline and strikeout is included as **Attachment B**.
- In addition to Operations Plan revisions, **Attachment B** includes Closure Plans and a Phase I-VI Long-Term Care Plan as part of the revised Operations Plan.
- A Phase I-VI Construction Quality Assurance Plan is included as Attachment C.
- Technical Specifications describing the physical properties of closure materials is included as Attachment D.
- A Stormwater Design Report summarizing the revised Interconnected Channel and Pond Routing (ICPR) Model is included as **Attachment E**.
- Phase I-VI Closure Design Calculations have been provided in Attachment F.
- An updated Phase I-VI Financial Assurance Cost Estimate with FDEP Form #62-701-900(28) has been included as **Attachment G**.

# Brief Summary of Permit Modifications

The enclosed permit modification application provides information regarding the proposed changes to the Operations Plan to include the phased closure of SCLF Phase I-VI beginning with the Phases II-III Accelerated Closure Areas. The Phases II-III Accelerated Closure is being initiated to satisfy the conditions of the Alternate Procedure Case No. SWAP 19-1. However, the closure design and associated plans have been developed for the entirety of Phase I-VI in order to facilitate the integration of the Phases II-III Accelerated Closure into a more comprehensive closure design and long-term plan.

The Operations Plan has been revised to include information regarding the Phase I-VI Closure Plan, Phase I-VI Long-Term Care Plan, Phase I-VI Construction Quality Assurance Plan, and information regarding the commencement of the 30-year post-closure care period. Although closed areas will be inspected and maintained in accordance with the Long-Term Care Plan, the SWMD does not intend to commence the 30-year post closure care period until the entirety of the Phase I-VI landfill has been close under a Solid Waste Closure Permit.

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Select sections of the Operations Plan have also been revised to incorporate the Leachate Evaporator Facility, the recently installed enclosed flare, the use of a composted yard waste or mulch mixture as daily and intermediate cover, and occasional night operations that are closed to the public. Additionally, Operations Plan **Appendix A** includes and updated University of Florida Training, Research, and Education for Environmental Occupations (TREEO) training class calendar and Operations Plan **Appendix F** includes Figures updated with an SCS border.

Please do not hesitate to contact us should you have any questions or require additional information.

Sincerely,

Holle modeli

Kollan L. Spradlin, P.E. Sr. Project Professional SCS Engineers

KLS/RBC;kls

Robert B. Curtis, P.E. Project Director SCS Engineers

cc: Kimberly Byer, SWMD Larry Ruiz, SWMD Ron Cope, HCEPC

Encl

# FDEP INTERMEDIATE MODIFICATION FEE CHECK (\$5,000) MAILED TO:

# FDEP SOLID WASTE SECTION 2600 BLAIRSTONE ROAD/MS 4565, TALLAHASSEE, FL 32399-2400

Intermediate Modification Application Phases II-III Accelerated Closure Southeast County Landfill Hillsborough County, Florida



Hillsborough County Solid Waste Management Department (SWMD) 332 N. Falkenburg Road Tampa, FL 33619

Florida Board of Professional Engineers Certificate No. 00004892

# SCS ENGINEERS

09215600.13 | February 2022

3922 Coconut Palm Drive, Suite 102 Tampa, FL 33619 813-621-0080

#### Intermediate Modification Application Phases II-III Accelerated Closure SOUTHEAST COUNTY LANDFILL HILLSBOROUGH COUNTY, FLORIDA

Presented To: Hillsborough County Solid Waste Management Department (SWMD) 332 N. Falkenburg Road Tampa, FL 33619

Presented From:

SCS ENGINEERS 3922 Coconut Palm Drive, Suite 102 Tampa, FL 33619

Florida Board of Professional Engineers Certificate No. 00004892

> February 2022 File No. 09215600.13

> > i



Kollan L. Spradlin, P.E. FL Reg. No. 82852

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- Attachment A Phase I-VI Closure Design Drawings
- Attachment B Revised Operations Plan With Changes In Redline
- Attachment C Phase I-VI Construction Quality Assurance Plan
- Attachment D Technical Specifications
- Attachment E Stormwater Design Report
- Attachment F Phase I-VI Closure Design Calculations
- Attachment G Financial Assurance Cost Estimate



# Florida Department of Environmental Protection

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 DEP Form #: 62-701.900(1), F.A.C.

Form Title: Application to Construct, Operate, Modify, or Close a Solid Waste Management Facility

Effective Date: February 15, 2015

Incorporated in Rule: 62-701.330(3), F.A.C.

# STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

# APPLICATION TO CONSTRUCT, OPERATE, MODIFY, OR CLOSE A SOLID WASTE MANAGEMENT FACILITY

# **APPLICATION INSTRUCTIONS AND FORMS**

Northwest District 160 Governmental Street Suite 308 Pensacola, FL 32502-5794 850-595-8300 Northeast District 7777 Baymeadows Way West Suite 100 Jacksonville, FL 32256-7590 904-256-1700 Central District 3319 Maguire Boulevard Suite 232 Orlando, FL 32803-3767 407-897-4100 Southwest District 13051 North Telecom Pkwy Temple Terrace, FL 33637 813-470-5700 South District 2295 Victoria Ave, Suite 364 P.O. Box 2549 Fort Myers, FL 33901-3881 239-344-5600 Southeast District 3301 Gun Club Road MSC 7210-1 West Palm Beach, FL 33406 561-681-6600

#### INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

#### I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A permit application shall be submitted in accordance with the requirements of Rule 62-701.320(5)(a), F.A.C., to the appropriate Department office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315, FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "Not Applicable" or "No Substantial Change". Information provided in support of the application shall be marked "Submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

#### II. Application Parts Required for Construction and Operation Permits

- A. Landfills and Ash Monofills Submit Parts A through S
- B. Asbestos Monofills Submit Parts A, B, C, D, E, F, I, K, M, O through S
- C. Industrial Solid Waste Disposal Facilities Submit Parts A through S

**NOTE:** Portions of some Parts may not be applicable.

**NOTE:** For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A, B and C type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

#### III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills Submit Parts A, B, L, N through S
- B. Asbestos Monofills Submit Parts A, B, M, O through S
- C. Industrial Solid Waste Disposal Facilities Submit Parts A, B, L through S

**NOTE:** Portions of some Parts may not be applicable.

#### IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

### V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

### VI. Listing of Application Parts

- PART A: GENERAL INFORMATION
- PART B: DISPOSAL FACILITY GENERAL INFORMATION
- PART C: PROHIBITIONS
- PART D: SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL
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- PART P: OTHER CLOSURE PROCEDURES
- PART Q: LONG-TERM CARE
- PART R: FINANCIAL ASSURANCE
- PART S: CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

#### STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION APPLICATION FOR A PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

#### PART A. GENERAL INFORMATION

- 1. Type of disposal facility (check all that apply):
  - 🛛 Class I Landfill

🗆 Ash Monofill

Asbestos Monofill

Industrial Solid Waste

□ Other (describe):

**NOTE:** Waste Processing Facilities should apply on Form 62-701.900(4), FAC; Yard Trash Disposal Facilities should notify on Form 62-701.900(3), FAC; Compost Facilities should apply on Form 62-709.901(1), FAC; and C&D Disposal Facilities should apply on Form 62-701.900(6), FAC

### 2. Type of application:

- $\Box$  Construction
- Operation
- □ Construction/Operation
- $\Box$  Closure
- □ Long-term Care Only
- 3. Classification of application:
  - □ New
  - Renewal

Substantial Modification

- Intermediate Modification
- □ Minor Modification
- 4. Facility name: Southeast County Landfill

5.	DEP ID number: SWD/29/41193	
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Facility location (main entrance):
 <u>15960 County Road 672</u>, Lithia, Florida 33547 (8.8 miles east of US Highway 301 on CR 672)

7.	Location coordinates:					
	Section:13-15, 18, 19, 22, 23, 24	Township: <u>3</u>	51S	Range: 21	E, 22E	
	Latitude: 27 . 46		Longitude: 82	。 <b>11</b>	، 01	"
	Datum: NGVD 1929	Coordinate me	thod: WGS 84			
	Collected by: Sherry A. Gry		Company/Affiliation:	Pickett & A	Associates, In	C.

8.	Applicant name (operating authority): Hillsborough C	ounty Solid Waste Ma	anagement Department
	Mailing address: 332 North Falkenburg Roa	ad Tampa	FL 33619
	Street or P.O. Box	City	State Zip
	Contact person: Kimberly A. Byer	Telephone: ( <u>81</u>	3 <sub>)</sub> 612-7718
	Title: Director, Solid Waste Managemen	t Department	
		byerk@hillsboro	oughcounty.org
		E-Mail add	ress (if available)
9.	Authorized agent/Consultant: SCS Engineers		
	Mailing address: 3922 Coconut Palm Drive	Suite 102, Tampa	i, FL 33619
	Street or P.O. Box	City	State Zip
	Contact person: Kollan Spradlin, PE	Telephone: ( <u>81</u>	3 <sub>)</sub> 621-0080
	Title: Senior Project Professional		
		KSpradlin@scse	engineers.com
		E-Mail addr	ess (if available)
10.	Landowner (if different than applicant): Same as A	pplicant	_
	Mailing address:		
	Street or P.O. Box	City	State Zip
	Contact person:	Telephone: (	)
11.	Cities, towns, and areas to be served:	E-Mail add	lress (if available)
11.	City of Tampa, Temple Terrace, and Un	incorporated Hillsb	orouah Countv
	<u> </u>		
12.	Population to be served:		
12.	Current: 1,438,913 (2020 HC Planning Commission est)	Five-Year 1,487,291 (20	026 @ 1.14% annual growth)
13.	Date site will be ready to be inspected for completion:		
14.	Expected life of the facility: <u>8.7</u> years		
15.	Estimated costs:		
	Total Construction: \$ 16,372,990.31	_Closing Costs: \$	to Eng. Rep. Secton R
16.	Anticipated construction starting and completion dates		
	From: Fall 2022	To: Spring 2025	
17.	Expected volume or weight of waste to be received:		
	yds <sup>3</sup> /day 2,000 tons	s/day	gallons/day
	62 701 000/1)		

### PART B. DISPOSAL FACILITY GENERAL INFORMATION

1.	Provide brief description of disposal facility design and operations planned under this application: This intermediate modification permit application presents information supporting the						
	revised Operations Plan which incorporates the accelerated closure of portions of Phases						
	I-VI at Southeast County Landfill. Design information for the final cover system, stormwater						
	system improvements, and GCCS in	system improvements, and GCCS improvements have been included with this submittal.					
2.	Facility site supervisor: Mr. Larry Ruiz						
	Title: Operations Manager	Telephone: ( <u>813</u> ) 67	1-7707				
		RuizLE@Hills	sboroughCounty.org /lail address (if available)				
3.	Disposal area: Total acres: <u>162.4 (Phases I-VI)</u> 34.5 (Section 7-9)	Used acres: <u>162.4 (Phases I-VI)</u> 34.5 (Section 7-9)	Available acres: <u>162.4 (Phases I-VI)</u> 34.5 (Section 7-9)				
4.	Weighing scales used: ✓Yes No						
5.	Security to prevent unauthorized use: $\checkmark$ Yes	s No					
6.	Charge for waste received:	\$/yds³ _61.54	\$/ton				
7.	Surrounding land use, zoning:						
	Residential	☑ Industrial					
	☑ Agricultural	□ None					
	□ Commercial	□ Other (describe):					
8.	Types of waste received:						
	☑ Household	☑ C & D debris					
	☑ Commercial	Shredded/cut tires					
	☑ Incinerator/WTE ash	☑ Yard trash					
	□ Treated biomedical	□ Septic tank					
	☑ Water treatment sludge	☑ Industrial					
	☑ Air treatment sludge	Industrial sludge					
	☑ Agricultural	Domestic sludge					
	☑ Asbestos	□ Other (describe):					
	Processed yard waste is accepted	Processed yard waste is accepted at the Biosolids Composting Facility as part of					
	the Falkenburg Road Advanced V	the Falkenburg Road Advanced Waste Water Treatmet Facility Domestic					
	Wastewater Facility Permit Number FL0040614.						

9.	Salvaging permitted: Yes 🗸 No				
10.	Attendant: ✓ Yes No	Trained operator: ✓ Yes	No		
11.	Trained spotters: ✓ Yes No	Number of spotters used:	Minimum of 1		
12.	Site located in: □ Floodplain Upland, Closed phosphate mine	□ Wetlands	☑ Other (describe):		
	Manday through Sat	hurdov			
13.	Days of operation: Monday through Sat				
14.	Hours of operation:Open to public 7:30am to	o 5:00pm, Occasional Cour	ty-only night and Sunday operations		
15.	Days working face covered: Daily during	operations (Class I)			
16.	Elevation of water table: 123.7 SHGWT		VD 1929		
	Number of monitoring wells: 23 Total; 15				
17.	Number of monitoring wells: 20 10tal, 10				
18.	Number of surface monitoring points:				
19.	Gas controls used: Ves No	Type controls:	Passive		
	Gas flaring: 🗸 Yes 🔄 No	Gas recovery: ✓Yes N	lo		
20.	Landfill unit liner type:				
	□ Natural soils	Double geomembrane			
	□ Single clay liner	Geomembrane & comp	posite		
	□ Single geomembrane	Double composite			
	□ Single composite				
	□ Slurry wall	☑ Other (describe):			
	Phosphatic clay, 4-18 feet in thickr	iess (Phase I-VI only)			
21.	Leachate collection method:				
	☑ Collection pipes	☑ Double geomembrane	e (Sections 7-9)		
	☑ Geonets	☑ Gravel layer			
	□ Well points	☑ Interceptor trench			
	$\Box$ Perimeter ditch $\Box$ None				
	☑ Other (describe):				
	Pump stations and chipped tire lay	er			

1:

☑ Tanks
---------

□ Other (describe):

□ Chemical treatment

23. Leachate treatment method:

- □ Oxidation
- ☑ Secondary
- □ Advanced

□ None

□ Settling

☑ Other (describe):

On-site biological treatment system.

24. Leachate disposal method:

□ Recirculated

Pumped to WWTP

 $\hfill\square$  Discharged to surface water/wetland

□ Injection well☑ Evaporation

☑ Transported to WWTP

Spray irrigation

- ☑ Other (describe):

□ Percolation ponds

Storage pond evaporation or spray irrigation on intermediate closed portions of

landfill after treatment at the on-site treatment facility. A 50,000 GPD leachate

evaporator facility reduces volume.

25. For leachate discharged to surface waters:

Name and Class of receiving water:

Leachate is not discharged to surface waters.

### 26. Storm Water:

Collected: ✓ Yes No

Type of treatment: Detention/Filtration, Infiltration

Name and Class of receiving water: A tributary of Long Flat Creek

27.

Environmental Resources Permit (ERP) number or status: ERP Permit #29-0270881-004 (Operation Phase)

National Pollution Discharge Elimination System (NPDES) Permit #FLR05B138

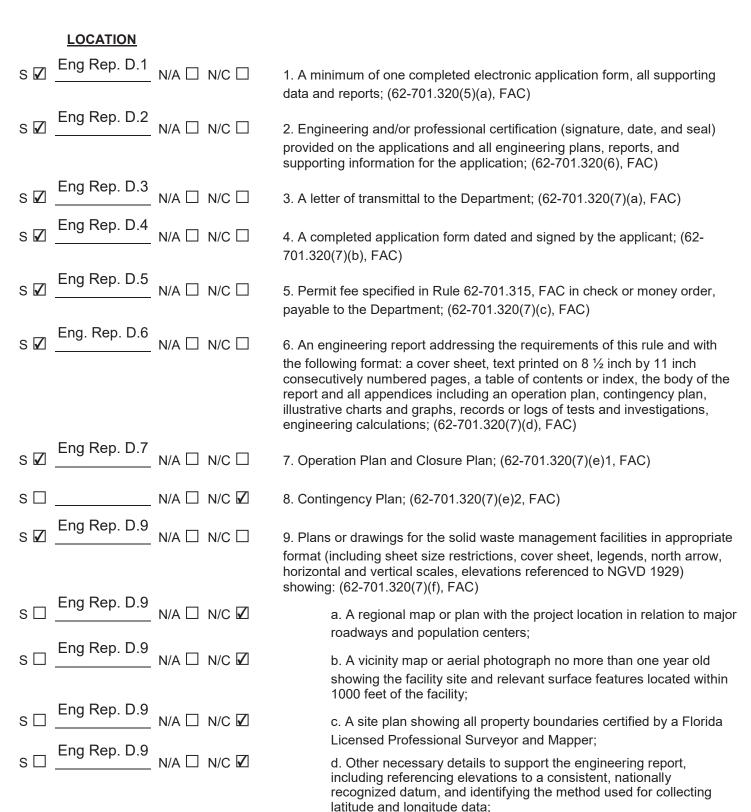
Southwest Florida Water Management District Permit #100330

### PART C. PROHIBITIONS (62-701.300, FAC)

# LOCATION

S □ N/A □ N/C ☑	1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC)
S □ N/A □ N/C ☑	2. If the facility qualifies for any of the exemptions contained in Rules 62-701.300(12), (13) and (16) through (18), FAC, then document this qualification(s);
S □ N/A □ N/C ☑	3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC)
S □ N/A □ N/C ☑	4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC)
S □ N/A □ N/C ☑	5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC)
S □ N/A □ N/C ☑	6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC)
S □ N/A □ N/C ☑	7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC)
S □ N/A □ N/C ☑	8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC)
S □ N/A □ N/C ☑	9. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC)
S □ N/A □ N/C 🗹	10. Provide documentation that the facility will be in compliance with the used oil and oily waste restrictions; (62-701.300(11), FAC)
S □ N/A □ N/C ☑	11. Provide documentation that the facility will be in compliance with the CCA treated wood restrictions; (62-701.300(14), FAC)
S □ N/A □ N/C ☑	12. Provide documentation that the facility will be in compliance with the dust control restrictions; (62-701.300(15), FAC)

#### PART D. SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL (62-701.320, FAC)



LOCATION	PART D CONTINUED
S □ N/A □ N/C ☑	10. Documentation that the applicant either owns the property or has legal authority from the property owner to use the site; (62-701.320(7)(g), FAC)
S □ N/A □ N/C ☑	11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of the waste reduction and recycling goals contained in Section 403.706, FS; (62-701.320(7)(h), FAC)
S 🗹 N/A □ N/C □	12. Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders, or permit conditions relating to the operation of any solid waste management facility in the state; (62-701.320(7)(i), FAC)
S □ N/A ☑ N/C □	13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-701.320(8), FAC)
S □ N/A □ N/C ☑	14. Provide a description of how the requirements for airport safety will be achieved, including proof of required notices if applicable. If exempt, explain how the exemption applies; (62-701.320(13), FAC)
S □ N/A □ N/C ☑	15. Explain how the operator and spotter training requirements and special criteria will be satisfied for the facility; (62-701.320(15), FAC)

### PART E. LANDFILL PERMIT REQUIREMENTS (62-701.330, FAC)

# LOCATION

s 🗆	N/A □ N/C 🗹	1. Regional map or aerial photograph no more than five years old showing all airports that are located within five miles of the proposed landfill; (62-701.330(3)(a), FAC)
s 🗆	N/A □ N/C Ø	2. Plot plan with a scale not greater than 200 feet to the inch showing: (62-701.330(3)(b), FAC)
s 🗆	N/A 🗆 N/C 🗹	a. Dimensions;
s 🗆	N/A 🗆 N/C 🗹	b. Locations of proposed and existing water quality monitoring wells;
s 🗆	N/A 🗆 N/C 🗹	c. Locations of soil borings;
s 🗆	N/A □ N/C 🗹	d. Proposed plan of trenching or disposal areas;
s 🗆	_ N/A □ N/C 🗹	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;

s 🗆	N/A □ N/C 🗹	f. Any previously filled waste disposal areas;
s 🗆	N/A □_ N/C 🗹	g. Fencing or other measures to restrict access;
s 🗆	N/A □ N/C 🗹	3. Topographic maps with a scale not greater than 200 feet to the inch with five foot contour intervals showing: (62-701.330(3)(c), FAC)
s 🗆	N/A □_ N/C 🗹	a. Proposed fill areas;
s 🗆	N/A □_ N/C 🗹	b. Borrow areas;
s 🗆	N/A □ N/C 🗹	c. Access roads;
s 🗆	N/A □ N/C 🗹	d. Grades required for proper drainage;
s 🗆	N/A □ N/C 🗹	e. Cross sections of lifts;
s 🗆	N/A □_ N/C 🗹	f. Special drainage devices if necessary;
s 🗆	N/A □ N/C 🗹	g. Fencing;
s 🗆	N/A □ N/C 🗹	h. Equipment facilities;
s 🗆	N/A □ N/C 🗹	4. A report on the landfill describing the following: (62-701.330(3)(d), FAC)
s 🗆	N/A □ N/C 🗹	a. The current and projected population and area to be served by the proposed site;
s 🗆	N/A □ N/C 🗹	b. The anticipated type, annual quantity, and source of solid waste expressed in tons;
s 🗆	N/A □ N/C 🗹	c. Planned active life of the facility, the final design height of the facility, and the maximum height of the facility during its operation;
s 🗆	N/A □_ N/C 🗹	d. The source and type of cover material used for the landfill;
s 🗆	N/A □ N/C 🗹	5. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Chapter 62-160, FAC; (62-701.330(3)(g), FAC
s 🗆	N/A □ N/C 🗹	6. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(3)(h), FAC)

# PART F. GENERAL CRITERIA FOR LANDFILLS (62-701.340, FAC)

	LOCATION		
s 🗆 _		N/A □ N/C 12	1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100 year floodplain where it will restrict the flow of the 100 year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result in a washout of solid waste; (62-701.340(3)(b), FAC)
s 🗆 _		N/A 🗌 N/C 🗹	2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; $(62-701.340(3)(c), FAC)$

### PART G. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400, FAC)

	LOCATION								
s 🗆 .		. N/A □	N/C 🛛	1. Describe how the landfill shall be designed so the solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill, and shall be designed to achieve a minimum factor of safety of 1.5 using peak strength values to prevent failures of side slopes and deep-seated failures; (62-701.400(2), FAC)					
s 🗆 .		_ N/A □	N/C 🗹	2. Land	fill liner	requirements; (62-701.400(3), FAC)			
s 🗆 .		_ N/A □	N/C 🗹		a. Gene	eral construction requirements; (62-701.400(3)(a), FAC)			
s 🗆 .		N/A 🗆	N/C 🗹		(1)	Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;			
s 🗆		N/A 🗌	N/C 🗹		(2)	Document foundation is adequate to prevent liner failure;			
s 🗆		N/A □	N/C 🗹		(3)	Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;			
s 🗆 .		N/A 🗌	N/C 🗹		(4)	Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;			
s 🗆		N/A 🗌	N/C 🗹		(5)	Installed to cover all surrounding earth which could come into contact with the waste or leachate;			

#### PART G CONTINUED

- S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C ☑ S □ N/A □ N/C 🗹 S □ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹
- b. Composite liners; (62-701.400(3)(b), FAC)
- (1) Upper geomembrane thickness and properties;
- (2) Design leachate head for primary leachate collection and removal system (LCRS) including leachate recirculation if appropriate;
- (3) Design thickness in accordance with Table A and number of lifts planned for lower soil component;
- c. Double liners; (62-701.400(3)(c), FAC)
- (1) Upper and lower geomembrane thickness and properties;
- (2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
- (3) Lower geomembrane sub-base design;
- Leak detection and secondary leachate collection system
   minimum design criteria (k ≥ 10 cm/sec, head on lower liner
   ≤ 1 inch, head not to exceed thickness of drainage layer);
- d. Standards for geosynthetic components; (62-701.400(3)(d), FAC)
- Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;
- (2) Geomembranes to be used shall pass a continuous spark test by the manufacturer;
- (3) Design of 24-inch-thick protective layer above upper geomembrane liner;
- Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above a 24-inch-thick protective layer;
- (5) HDPE geomembranes, if used, meet the specifications in GRI GM13, and LLDPE geomembranes, if used, meet the specifications in GRI GM17;
  - PVC geomembranes, if used, meet the specifications in PGI 1104;

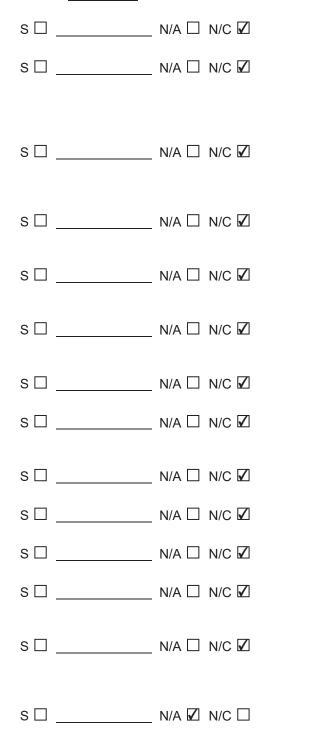
(6)

- S □ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C ☑
- S □ \_\_\_\_\_ N/A □ N/C 🗹

- (7) Interface shear strength testing results of the actual components which will be used in the liner system;
- (8) Transmissivity testing results of geonets if they are used in the liner system;

- (9) Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;
- e. Geosynthetic specification requirements; (62-701.400(3)(e), FAC)
- (1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
- (2) Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;
- (3) Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size, and geomembrane repairs;
- (4) Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembranes, and procedures for lining system acceptance;
- (5) Geotextile and geogrids specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;
- (6) Geonet and geocomposites specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;
- (7) Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;

#### PART G CONTINUED



- f. Standards for soil liner components; (62-701.400(3)(f), FAC)
- Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil components in layers;
- (2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100, or an equivalent test method;
- (3) Procedures for testing in situ soils to demonstrate they meet the specifications for soil liners;
- (4) Specifications for soil component of liner including at a minimum:
  - (a) Allowable particle size distribution, and Atterberg limits including shrinkage limit;
  - (b) Placement moisture and dry density criteria;
  - (c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
  - (d) Minimum thickness of soil liner;
  - (e) Lift thickness;
  - (f) Surface preparation (scarification);
  - (g) Type and percentage of clay mineral within the soil component;
- (5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field;

g. If a Class III landfill is to be constructed with a bottom liner system, provide a description of how the minimum requirements for the liner will be achieved;

#### PART G CONTINUED S □ N/A □ N/C ☑ 3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC) S □ \_\_\_\_\_ N/A □ N/C 🗹 a. The primary and secondary LCRS requirements; (62-701.400(4)(a), FAC) S □ \_\_\_\_\_ N/A □ N/C 🗹 (1) Constructed of materials chemically resistant to the waste and leachate: S □ N/A □ N/C 🗹 (2) Have sufficient mechanical properties to prevent collapse under pressure; S □ N/A □ N/C 🗹 (3) Have granular material or synthetic geotextile to prevent clogging; S □ N/A □ N/C ☑ (4) Have a method for testing and cleaning clogged pipes or contingent designs for reducing leachate around failed areas: S □ \_\_\_\_\_ N/A □ N/C 🗹 b. Other LCRS requirements; (62-701.400(4)(b), (c) and (d), FAC S □ \_\_\_\_\_ N/A □ N/C 🗹 (1) Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{3}$ cm/sec: S □ \_\_\_\_\_ N/A □ N/C 🗹 Total thickness of 24 inches of material chemically resistant (2) to the waste and leachate: S □ N/A □ N/C 🗹 (3) Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements; S □ N/A □ N/C 🗹 (4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load, and protection of geomembranes liner; S □ \_\_\_\_\_ N/A □ N/C 🗹 (5) Schedule provided for routine maintenance of LCRS. s □ \_\_\_\_\_ N/A □ N/C 🛛 4. Leachate recirculation; (62-701.400(5), FAC) S □ \_\_\_\_\_ N/A □ N/C 🗹 a. Describe general procedures for recirculating leachate; S □ \_\_\_\_\_ N/A □ N/C 🗹 b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water; S □ \_\_\_\_\_ N/A □ N/C 🗹 c. Describe procedures for preventing perched water conditions and gas buildup;

#### LOCATION

s 🗆	N/A □ N/C 🗹	cannot	cribe alternate methods for leachate management when it t be recirculated due to weather or runoff conditions, surface wind-blown spray, or elevated levels of leachate head on the
s 🗆	N/A □ N/C 🗹		cribe methods of gas management in accordance with Rule I.530, FAC;
s 🗆	N/A □ N/C 🗹	standa and pro	inchate irrigation is proposed, describe treatment methods and ands for leachate treatment prior to irrigation over final cover, ovide documentation that irrigation does not contribute cantly to leachate generation;
s 🗆	N/A □_ N/C 🗹	5. Leachate sto 701.400(6), FA	brage tanks and leachate surface impoundments; (62- NC)
s 🗆	N/A □ N/C 🗹	a. Surf	ace impoundment requirements; (62-701.400(6)(b), FAC)
s 🗆	N/A □ N/C 🗹	(1)	Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
s 🗆	N/A □ N/C 🗹	(2)	Designed in segments to allow for inspection and repair, as needed, without interruption of service;
s 🗆	N/A 🗌 N/C 🗹	(3)	General design requirements;
s 🗆	N/A □ N/C 🗹		(a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
s 🗆	N/A □ N/C 🗹		<ul> <li>(b) Leak detection and collection system with hydraulic conductivity ≥ 1 cm/sec;</li> </ul>
s 🗆	N/A □ N/C 🗹		(c) Lower geomembrane place on subbase $\ge 6$ inches thick with k $\le 1 \ge 10^{-5}$ cm/sec or on an approved geosynthetic clay liner with k $\le 1 \ge 10^{-7}$ cm/sec;
s 🗆	N/A □ N/C 🗹		(d) Design calculation to predict potential leakage through the upper liner;
s 🗆	N/A □ N/C 🗹		(e) Daily inspection requirements, and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
s 🗆	N/A □ N/C 🗹	(4)	Description of procedures to prevent uplift, if applicable;

- S □ N/A □ N/C ☑ S □ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ N/A □ N/C ☑ S □ \_\_\_\_\_ N/A □ N/C 🗹 S □ N/A ☑ N/C □
- (5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
- (6) Procedures for controlling vectors and off-site odors;
- b. Above-ground leachate storage tanks; (62-701.400(6)(c), FAC)
- Describe tank materials of construction and ensure foundation is sufficient to support tank;
- (2) Describe procedures for cathodic protection for the tank, if needed;
- (3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;
- Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;
- (5) Describe design to remove and dispose of stormwater from the secondary containment system;
- (6) Describe an overfill prevention system, such as level sensors, gauges, alarms, and shutoff controls to prevent overfilling;
- (7) Inspections, corrective action, and reporting requirements;
  - (a) Weekly inspection of overfill prevention system;
  - (b) Weekly inspection of exposed tank exteriors;
  - (c) Inspection of tank interiors when tank is drained, or at least every three years;
  - (d) Procedures for immediate corrective action if failures detected;
  - (e) Inspection reports available for Department review;
- c. Underground leachate storage tanks; (62-701.400(6)(d), FAC)

s□	N/A 🗹	N/C	(1)	Describe	e materials of construction;
s□	N/A 🗹	N/C	(2)		e-walled tank design system to be used with the grequirements:
s□	N/A 🗹	N/C 🗌		(a)	Interstitial space monitoring at least weekly;
s 🗆	N/A 🗹	N/C			Corrosion protection provided for primary tank interior and external surface of outer shell;
s□	N/A 🗹	N/C			Interior tank coatings compatible with stored leachate;
s□	N/A 🗹	N/C		. ,	Cathodic protection inspected weekly and repaired as needed;
s□	N/A 🗹	N/C 🗆	(3)	sensors,	e an overfill prevention system, such as level , gauges, alarms, and shutoff controls to prevent g, and provide for weekly inspections;
s□	N/A 🗹	N/C	(4)	Inspectio	on reports available for Department review;
s□	N/A 🗆	N/C 🗹 6.	Liner systems	s constru	ction quality assurance (CQA); (62-701.400(7), FAC)
s□	N/A 🗆	N/C 🗹	a. Provi	de CQA	Plan including:
s□	N/A 🗆	N/C 🗹	(1)	Specifica system;	ations and construction requirements for liner
s□	N/A 🗆	N/C 🗹	(2)	Detailed frequenc	description of quality control testing procedures and cies;
s□	N/A 🗆	N/C 🗹	(3)	Identifica	ation of supervising professional engineer;
s 🗆	N/A 🗆	N/C 🗹	(4)		responsibility and authority of all appropriate ations and key personnel involved in the construction
s□	N/A 🗌	N/C 🗹	(5)		alifications of CQA professional engineer and personnel;

s□		N/A 🗆	N/C 🗹		(6)	Description of CQA reporting forms and documents;
s 🗆		N/A 🗌	N/C 🗹			dependent laboratory experienced in the testing of hetics to perform required testing;
s□		N/A 🗌	N/C 🗹	7. Soil I	liner CQ/	A; (62-701.400(8), FAC)
s 🗆		N/A 🗌	N/C 🗹		with tes	mentation that an adequate borrow source has been located t results, or description of the field exploration and laboratory program to define a suitable borrow source;
s□		N/A 🗌	N/C 🗹			ription of field test section construction and test methods to emented prior to liner installation;
s 🗆		N/A 🗌	N/C 🗹			ription of field test methods, including rejection criteria and ve measures to insure proper liner installation;
s 🗆		N/A 🗌	N/C 🗹	provide convey	docume	rater management systems at aboveground disposal units, ntation showing the design of any features intended to ater to a permitted or exempted treatment system; (62- C)
s□		N/A 🗆	N/C 🗹	9. Gas	control s	ystems; (62-701.400(10), FAC)
s 🗆		N/A 🗌	N/C 🗹		wastes,	de documentation that if the landfill is receiving degradable it will have a gas control system complying with the nents of Rule 62-701.530, FAC;
s 🗆		N/A 🗌	N/C 🗹	landfill	will provi	designed in ground water, provide documentation that the de a degree of protection equivalent to landfills designed with t in contact with ground water; (62-701.400(11), FAC)
PART	H. HYDR	OGEOLO	GICAL INV	ESTIGA	TION RI	EQUIREMENTS (62-701.410(2), FAC)
	LOCATION					
s□		N/A 🗆	N/C 🗹		5	rogeological investigation and site report including at least prmation:
s□		N/A 🗌	N/C 🗹		a. Regio	onal and site specific geology and hydrology;
s 🗆		N/A 🗌	N/C 🗹			tion and rate of ground water and surface water flow g seasonal variations;

s□	N/A □ N/C ☑	c. Background quality of ground water and surface water;
s 🗆	N/A 🗆 N/C 🗹	d. Any on-site hydraulic connections between aquifers;
s 🗆	N/A 🗆 N/C 🗹	e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the site that may be affected by the disposal facility;
s 🗆	N/A □ N/C 🗹	f. Description of topography, soil types, and surface water drainage systems;
S 🗆	N/A 🗆 N/C 🗹	g. Inventory of all public and private water wells within a one mile radius of the site including, where available, well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique, and static water level;
s□	N/A 🗆 N/C 🗹	h. Identify and locate any existing contaminated areas on the site;
s 🗆	N/A □ N/C 🗹	i. Include a map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas;
s□	N/A 🗆 N/C 🗹	2. Report signed, sealed, and dated by P.E. and/or P.G.
PART		
	I. GEOTECHNICAL INVES	TIGATION REQUIREMENTS (62-701.410(3) and (4), FAC)
	I. GEOTECHNICAL INVES	TIGATION REQUIREMENTS (62-701.410(3) and (4), FAC)
s 🗆		<b>TIGATION REQUIREMENTS</b> (62-701.410(3) and (4), FAC) 1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
	LOCATION	1. Submit a geotechnical site investigation report defining the engineering
s 🗆	LOCATION N/A □ N/C ☑	<ol> <li>Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:</li> <li>a. Description of subsurface conditions including soil stratigraphy</li> </ol>
s 🗆 s 🗆	LOCATION N/A □ N/C ☑ N/A □ N/C ☑	<ol> <li>Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:         <ul> <li>a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;</li> <li>b. Investigate for the presence of muck, previously filled areas, soft</li> </ul> </li> </ol>
s 🗆 s 🗆 s 🗆	LOCATION         N/A □ N/C ☑         N/A □ N/C ☑         N/A □ N/C ☑         N/A □ N/C ☑	<ol> <li>Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:         <ul> <li>a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;</li> <li>b. Investigate for the presence of muck, previously filled areas, soft ground, and lineaments;</li> <li>c. Estimates of average and maximum high water table across the</li> </ul> </li> </ol>

LOCATION		

#### **PART I CONTINUED**

s 🗆	N/A □ N/C ☑	(1)	Foundation bearing capacity analysis;
s 🗆	N/A 🗆 N/C 🗹	(2)	Total and differential subgrade settlement analysis;
s 🗆	N/A 🗆 N/C 🗹	(3)	Slope stability analysis;
s 🗆	N/A □ N/C 🗹	that is	uation of potential for sinkholes and sinkhole activity at the site based upon the investigations required in Rule 62-0(3)(f), F.A.C.;
s 🗆	N/A □ N/C 🗹	the inve analytic	eotechnical report providing a description of methods used in estigation, and includes soil boring logs, laboratory results, cal calculations, cross sections, interpretations, conclusions, description of any engineering measures proposed for the site;
s 🗆	N/A 🗆 N/C 🗹	2. Report signe	ed, sealed, and dated by P.E. and/or P.G.
PART J. VERT	ICAL EXPANSION	OF LANDFILLS (	62-701.430, FAC)
LOCATION			
LOCATION S []	N/A □ N/C 🗹	violations of wa	w the vertical expansion shall not cause or contribute to any ater quality standards or criteria, shall not cause objectionable sely affect the closure design of the existing landfill;
		violations of wa odors, or adver 2. Describe how	ater quality standards or criteria, shall not cause objectionable sely affect the closure design of the existing landfill; w the vertical expansion over unlined landfills will meet the f Rule 62-701.400, FAC with the exceptions of Rule 62-
s 🗆	. N/A □ N/C 🗹	violations of wa odors, or adver 2. Describe how requirements o 701.430(1)(c),	ater quality standards or criteria, shall not cause objectionable sely affect the closure design of the existing landfill; w the vertical expansion over unlined landfills will meet the f Rule 62-701.400, FAC with the exceptions of Rule 62-
s 🗆 s 🗆	. N/A □ N/C 🗹	violations of wa odors, or adver 2. Describe how requirements o 701.430(1)(c), 3. Provide foun 4. Provide total	ater quality standards or criteria, shall not cause objectionable sely affect the closure design of the existing landfill; w the vertical expansion over unlined landfills will meet the f Rule 62-701.400, FAC with the exceptions of Rule 62- FAC; dation and settlement analysis for the vertical expansion; settlement calculations demonstrating that the final elevations stem, gravity drainage, and no other component of the design

S N/A N/C A 6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;

S \_\_\_\_\_ N/A \_\_ N/C 🗹 7. Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion;

# PART K. LANDFILL OPERATION REQUIREMENTS (62-701.500, FAC)

### LOCATION

s□		N/A 🗆	N/C 🗹	1. Provide documentation that the landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1), FAC)
s□		N/A 🗌	N/C 🗹	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
s□		N/A 🗌	N/C 🗹	a. Designating responsible operating and maintenance personnel;
s□		N/A 🗆	N/C 🗹	b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;
s 🗹	Eng. Rep. K.2.c	N/A 🗆	N/C	c. Controlling types of waste received at the landfill;
s□		N/A 🗌	N/C 🗹	d. Weighing incoming waste;
s□		N/A 🗌	N/C 🗹	e. Vehicle traffic control and unloading;
s□		N/A 🗌	N/C 🗹	f. Method and sequence of filling waste;
s 🛛	Eng. Rep. K.2.g	N/A 🗌	N/C	g. Waste compaction and application of cover;
s□		N/A 🗌	N/C 🗹	h. Operations of gas, leachate, and stormwater controls;
s□		N/A 🗌	N/C 🗹	i. Water quality monitoring;
s□		N/A 🗌	N/C 🗹	j. Maintaining and cleaning the leachate collection system;
s 🗆		N/A 🗌	N/C 🗹	3. Provide a description of the landfill operation record to be used at the landfill, details as to location of where various operational records will be kept (i.e. DEP permit, engineering drawings, water quality records, etc.); (62-701.500(3), FAC)
s□		N/A 🗌	N/C 🗹	4. Describe the waste records that will be compiled monthly and provided to the Department annually; (62-701.500(4), FAC)
s□		N/A 🗌	N/C 🗹	5. Describe methods of access control; (62-701.500(5), FAC)
s 🗆		N/A 🗌	N/C 🗹	6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized waste at the landfill; (62-701.500(6), FAC)

LOCATION	PART K CONTINUED
S ☑ Eng. Rep. K.7 N/A □ N/C □	7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), FAC)
S □ N/A □ N/C ☑	a. Waste layer thickness and compaction frequencies;
S □ N/A □ N/C ☑	b. Special considerations for first layer of waste placed above the liner and leachate collection system;
S □ N/A □ N/C ☑	c. Slopes of cell working face and side grades above land surface and planned lift depths during operation;
S □ N/A □ N/C 🛛	d. Maximum width of working face;
S ☑ N/A □ N/C □	e. Description of type of initial cover to be used at the facility that controls:
s □ n/a □ n/c 🗹	(1) Vector breeding/animal attraction;
S □ N/A □ N/C ☑	(2) Fires;
S □ N/A □ N/C 🗹	(3) Odors;
s □ N/A □ N/C 🗹	(4) Blowing litter;
s □ N/A □ N/C ☑	(5) Moisture infiltration;
S □ N/A □ N/C 🗹	f. Procedures for applying initial cover, including minimum cover frequencies;
S □ N/A □ N/C 🗹	g. Procedures for applying intermediate cover;
S 🗹 N/A □ N/C □	h. Time frames for applying final cover;
S □ N/A □ N/C ☑	i. Procedures for controlling scavenging and salvaging;
S □ N/A □ N/C ☑	j. Description of litter policing methods;
S □ N/A □ N/C 🗹	k. Erosion control procedures;

#### PART K CONTINUED

s□		N/A 🗌	N/C 🗹	8. Describe operational procedures for leachate management including: (62-701.500(8), FAC)
s□		N/A 🗌	N/C 🗹	a. Leachate level monitoring;
s□		N/A 🗌	N/C 🗹	<ul> <li>b. Operation and maintenance of leachate collection and removal system, and treatment as required;</li> </ul>
s□		N/A 🗌	N/C 🗹	c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
s□		N/A 🗌	N/C 🗹	<ul> <li>Identification of treatment or disposal facilities that may be used for off-site discharge and treatment of leachate;</li> </ul>
s□		N/A 🗌	N/C 🗹	e. Contingency plan for managing leachate during emergencies or equipment problems;
s□		N/A 🗌	N/C 🗹	f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;
s 🗆		N/A 🗌	N/C 🗹	g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;
s□				h. Procedures for water pressure cleaning or video inspecting leachate collection systems;
s 🗹	Eng. Rep. K.9	N/A 🗌	N/C	9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of Rule 62-701.530, FAC; (62-701.500(9), FAC)
s 🗹	Eng. Rep. K.10	N/A 🗌	N/C 🗌	10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9), FAC; (62-701.500(10), FAC)
s□		N/A 🗌	N/C 🗹	11. Equipment and operation feature requirements; (62-701.500(11), FAC)
s□		N/A 🗌	N/C 🗹	a. Sufficient equipment for excavating, spreading, compacting, and covering waste;
s□		N/A 🗌	N/C 🗹	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
s□		N/A 🗌	N/C 🗹	c. Communications equipment;

#### PART K CONTINUED

s 🗆 _	N/A □_ N/C ☑	d. Dust control methods;
s 🗆 _	N/A □_ N/C 🗹	e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
s 🗆 _	N/A □ N/C 🗹	f. Litter control devices;
s□_	N/A □ N/C 🗹	g. Signs indicating operating authority, traffic flow, hours of operation, and disposal restrictions;
s□_	N/A □ N/C 🗹	12. Provide a description of all-weather access road, inside perimeter road, and other on-site roads necessary for access at the landfill; (62-701.500(12), FAC)
s 🗆 _	N/A □ N/C 🗹	13. Additional record keeping and reporting requirements; (62-701.500(13), FAC)
s□_	N/A □ N/C 🗹	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
s 🗆 _	N/A □ N/C 🗹	b. Monitoring information, calibration and maintenance records, and copies of reports required by permit maintained for at least 10 years;
s□_	N/A □ N/C 🗹	c. Maintain annual estimates of the remaining life of constructed landfills, and of other permitted areas not yet constructed, and submit this estimate annually to the Department;
s 🗆 _	N/A □ N/C 🗹	d. Procedures for archiving and retrieving records which are more than five years old;
PART	L. WATER QUALITY MONIT	DRING REQUIREMENTS (62-701.510, FAC)
	LOCATION	
s 🗆 _	N/A □ N/C 🗹	1. A water quality monitoring plan shall be submitted describing the proposed

1. A water quality monitoring plan shall be submitted describing the proposed ground water and surface water monitoring systems, and shall meet at least the following requirements:

S □ \_\_\_\_\_ N/A □ N/C ☑

a. Based on the information obtained in the hydrogeological investigation and signed, dated, and sealed by the P.G. or P.E. who prepared it; (62-701.510(2)(a), FAC)

#### PART L CONTINUED

- s □ \_\_\_\_\_ N/A □ N/C ☑ s □ \_\_\_\_\_ N/A □ N/C ☑ s □ \_\_\_\_\_ N/A □ N/C ☑
- S □ \_\_\_\_\_ N/A □ N/C 🗹
- S □ \_\_\_\_\_ N/A □ N/C 🗹
- S □ \_\_\_\_\_ N/A □ N/C 🗹
- S □ \_\_\_\_\_ N/A □ N/C ☑
- S □ \_\_\_\_\_ N/A □ N/C 🗹
- S □ \_\_\_\_\_ N/A □ N/C 🗹
- s □ \_\_\_\_\_ N/A □ N/C 🛛
- s □ \_\_\_\_\_ N/A □ N/C 🛛
- s □ \_\_\_\_\_ N/A □ N/C ☑
- s □ \_\_\_\_\_ N/A □ N/C 🛛
- S □ N/A □ N/C ☑

b. All sampling and analysis performed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b), FAC)

- c. Ground water monitoring requirements; (62-701.510(3), FAC)
- (1) Detection wells located downgradient from and within 50 feet of disposal units;
- (2) Downgradient compliance wells as required;
- (3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
- (4) Location information for each monitoring well;
- (5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells, unless site specific conditions justify alternate well spacings;
- (6) Properly selected well screen locations;
- (7) Monitoring wells constructed to provide representative ground water samples;
- (8) Procedures for properly abandoning monitoring wells;
- (9) Detailed description of detection sensors, if proposed;
- d. Surface water monitoring requirements; (62-701.510(4), FAC)
- (1) Location of and justification for all proposed surface water monitoring points;
- (2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;

e. Initial and routine sampling frequency and requirements; (62-701.510(5), FAC)

(1) Initial background ground water and surface water sampling and analysis requirements;

**PART L CONTINUED** LOCATION S □ \_\_\_\_\_ N/A □ N/C 🗹 (2) Routine monitoring well sampling and analysis requirements; S □ \_\_\_\_\_ N/A □ N/C 🗹 Routine surface water sampling and analysis requirements; (3) S □ \_\_\_\_\_ N/A □ N/C 🗹 f. Describe procedures for implementing evaluation monitoring, prevention measures, and corrective action as required; (62-701.510(6), FAC) S □ N/A □ N/C 🗹 g. Water quality monitoring report requirements; (62-701.510(8), FAC) S □ \_\_\_\_\_ N/A □ N/C 🗹 Semi-annual report requirements; (see paragraphs 62-(1) 701.510(5)(c) and (d), FAC for sampling frequencies) S □ \_\_\_\_\_ N/A □ N/C 🗹 (2) Documentation that the water quality data shall be provided to the Department in an electronic format consistent with requirements for importing into Department databases, unless an alternate form of submittal is specified in the permit: S □ \_\_\_\_\_ N/A □ N/C 🗹 (3) Two and one-half year, or annual, report requirements, or every five years if in long-term care, signed dated, and sealed by P.G. or P.E.;

PART M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)

#### LOCATION

s 🗆	_ N/A □ N/C 🗹	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
s 🗆	_ N/A 🗆 N/C 🗹	2. Describe procedures for landfilling shredded waste; (62-701.520(2), FAC)
s 🗆	_ N/A 🗌 N/C 🗹	3. Describe procedures for asbestos waste disposal; (62-701.520(3), FAC)
s 🗆	_ N/A 🗌 N/C 🗹	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
s 🗆	_ N/A 🗌 N/C 🗹	5. Describe procedures for disposal of biological wastes; (62-701.520(5), FAC)

PART N. GAS MANAGEMENT SYSTEM REQUIREMENTS (62-701.530, FAC)

	LOCATION			
s 🗹	Eng. Rep. N.1	N/A 🗌	N/C 🗆	1. Provide documentation for a gas management system that will: (62-701.530(1), FAC)
s 🗹	Eng. Rep. N.1	N/A 🗌	N/C	a. Be designed to prevent concentrations of combustible gases from exceeding 25% the LEL in structures and 100% the LEL at the property boundary;
s 🗹	Eng. Rep. N.1	N/A 🗌	N/C	b. Be designed for site specific conditions;
s 🗹	Eng. Rep. N.1	N/A 🗌	N/C 🗆	c. Be designed to reduce gas pressure in the interior of the landfill;
s 🗹	Eng. Rep. N.1	N/A 🗌	N/C	d. Be designed to not interfere with the liner, leachate control system, or final cover;
s 🗆		N/A 🗆	N/C 🗹	2. Provide documentation that will describe locations, construction details, and procedures for monitoring gas at ambient monitoring points and with soil monitoring probes; (62-701.530(2), FAC)
s□		N/A 🗌	N/C 🗹	3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC)
s□		N/A 🗆	N/C 🗹	4. Landfill gas recovery facilities; (62-701.530(5), FAC)
s 🗆		N/A 🗌	N/C 🗹	a. Provide information required in Rules 62-701.320(7) and 62-701.330(3), FAC;
s□		N/A 🗌	N/C 🗹	b. Provide information required in Rule 62-701.600(4), FAC, where relevant and practical;
s 🗹	Eng. Rep. N.4.c	N/A 🗌	N/C 🗌	c. Provide estimates of current and expected gas generation rates and description of condensate disposal methods;
s 🗆		N/A 🗌	N/C 🗹	d. Provide description of procedures for condensate sampling, analyzing, and data reporting;
s□		N/A 🗌	N/C 🗹	e. Provide closure plan describing methods to control gas after recovery facility ceases operation, and any other requirements contained in Rule 62-701.400(10), FAC;

Eng. Rep. O.1 N/A 🗆 N/C 🗆 s 🗸 1. Closure permit requirements; (62-701.600(2), FAC) Eng. Rep. 0.1 , \_\_\_\_\_ N/A □ N/C □ s 🗹 a. Application submitted to the Department at least 90 days prior to final receipt of wastes; Eng. Rep. O.1 s 🗹 b. Closure plan shall include the following: Eng. Rep. O.1 \_\_\_\_\_ N/A □ N/C □ s 🗹 (1)Closure design plan; Eng. Rep. O.1. N/A 🗆 N/C 🗆 s 🗸 (2)Closure operation plan; Eng. Rep. O.1 N/A N/C s 🗹 (3) Plan for long-term care; Eng. Rep. O.1 N/A 🗆 N/C 🗆 s 🗹 (4)A demonstration that proof of financial assurance for longterm care will be provided; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗸 2. Closure design plan including the following requirements: (62-701.600(3), FAC) Eng. Rep. O.2 s 🗹 N/A □ N/C □ a. Plan sheet showing phases of site closing; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗸 b. Drawings showing existing topography and proposed final grades; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗹 c. Provisions to close units when they reach approved design dimensions; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗹 d. Final elevations before settlement; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗹 e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters, and description of expected precipitation effects; Eng. Rep. O.2 N/A 🗌 N/C 🗌 s 🗸 f. Final cover installation plans including: Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗹 (1) CQA plan for installing and testing final cover; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗹 (2)Schedule for installing final cover after final receipt of waste; Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🔽 Description of drought resistant species to be used in the (3)vegetative cover;

### LOCATION Eng. Rep. O.2 \_\_\_\_ N/A 🗌 N/C 🗔 s 🗹 S ☑ \_\_\_\_\_ N/A □ N/C □ Eng. Rep. O.2 s 🗸 Eng. Rep. 0.2 у. тер. 0.2 N/A 🗌 N/C 🗌 s 🔽 Eng. Rep. O.2 N/A □ N/C □ s 🗹 Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🗸 Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🔽 Eng. Rep. 0.2 \_\_\_\_\_ N/A 🗆 N/C 🗆 s 🗹 Eng. Rep. O.2 N/A 🗆 N/C 🗆 s☑ s ☑ \_\_\_\_\_ N/A □ N/C □ Eng. Rep. 0.2 \_\_\_\_\_ N/A 🗆 N/C 🗆 s☑ Eng. Rep. O.2 N/A 🗆 N/C 🗆 s 🔽 Eng. Rep. O.3 N/A 🗆 N/C 🗆 s 🗹 Eng. Rep. O.3 N/A 🗆 N/C 🗆 s 🗹 🗋 s ☑ \_\_\_\_\_ N/A □ N/C □ Eng. Rep. O.3 N/A 🗆 N/C 🗆 s 🗸 S □ \_\_\_\_\_ N/A □ N/C 🗹 Eng. Rep. O.3 N/A 🗆 N/C 🗆 s 🗹

#### PART O CONTINUED

- (4) Top gradient design to maximize runoff and minimize erosion;
- (5) Provisions for cover material to be used for final cover maintenance;

g. Final cover design requirements;

- (1) Protective soil layer design;
- (2) Barrier soil layer design;
- (3) Erosion control vegetation;
- (4) Geomembrane barrier layer design;
- (5) Geosynthetic clay liner design, if used;
- (6) Stability analysis of the cover system and the disposed waste;
- h. Proposed method of stormwater control;
- i. Proposed method of access control;
- j. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC;
- 3. Closure operation plan shall include: (62-701.600(4), FAC)

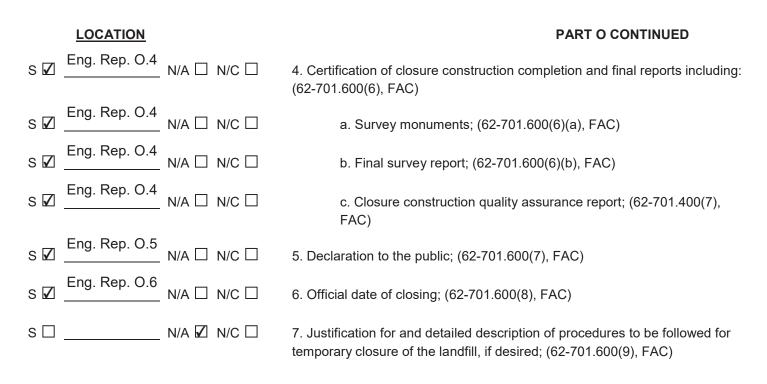
a. Detailed description of actions which will be taken to close the landfill;

b. Time schedule for completion of closing and long-term care;

c. Describe proposed method for demonstrating financial assurance for long-term care;

d. Operation of the water quality monitoring plan required in Rule 62-701.510, FAC;

e. Development and implementation of gas management system required in Rule 62-701.530, FAC;



PART P. OTHER CLOSURE PROCEDURES (62-701.610, FAC)

s 🗆	N/A 🗹 N/C 🗆	1. Describe how the requirements for use of closed solid waste disposal areas will be achieved; (62-701.610(1), FAC)
S 🗆	N/A ☑ N/C □	2. Describe how the requirements for relocation of wastes will be achieved; (62-701.610(2), FAC)

PART Q. LONG-TERM CARE (62-701.620, FAC)

#### LOCATION

S ☑ Eng. Rep. Q.1 N/A □ N/C □	1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)
s ☑ N/A □ N/C □	2. Stabilization report requirements; (62-701.620(6), FAC)
s ☑ N/A □ N/C □	3. Right of access; (62-701.620(7), FAC)
s ☑ N/A □ N/C □	4. Requirements for replacement of monitoring devices; (62-701.620(8), FAC)
S ☑ N/A □ N/C □	5. Completion of long-term care signed and sealed by professional engineer; (62-701.620(9), FAC)

#### PART R. FINANCIAL ASSURANCE (62-701.630, FAC)

	LOCATION	
s 🗹	Eng. Rep. R N/A □ N/C □	1. Provide cost estimates for closing, long-term care, and corrective action costs estimated by a P.E. for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3) & (7), FAC)
s 🗹	Eng. Rep. R N/A □ N/C □	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closing, long-term care, and corrective action plans; (62-701.630(4) & (8), FAC)
s 🗹	Eng. Rep. R N/A □ N/C □	3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms. (62-701.630(5), (6), & (9), FAC)

#### PART S. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Hillsborough County

Solid Waste Management Department is aware that statements made in this form and attached information

are an application for a Operation Minor Modification permit from the Florida Department of Environmental Protection, and certifies that the information in this application is true, correct, and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Luly Dyn 01/28/2022	332 N. Falkenberg Road	
Signature of Applicant or Agent	Mailing Address	
Kimberly A. Byer, Director, SWMD	Tampa, FL 33619	
Name and Title (please type)	City, State, Zip Code	
byerk@hillsboroughcounty.org	(813) 612-7718	
E-Mail Address (if available)	Telephone Number	

Attach letter of authorization if agent is not a government official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

Date:

Signature Kollan L. Spradlin, PE, Sr. Project Professional Name and Title (please type) P.E. # 82852 Florida Registration Number please

### 3922 Coconut Palm Drive

Mailing Address

Tampa, FL 33619 City, State, Zip Code kspradlin@scsengineers.com E-Mail Address (if available)

813 ) 804-6706

Telephone Number

Date: 02/02/2022

# A. INTRODUCTION

On behalf of Hillsborough County Solid Waste Management Department (SWMD), SCS Engineers (SCS) has prepared this Solid Waste Operations Permit Intermediate Modification Application (Application) for the Southeast County Landfill (SCLF). Information provided in this Application is in accordance with and divided into Sections following the State of Florida Department of Environmental Protection (FDEP) Application for a Permit to Construct, Operate, Modify or Close a Solid Waste Management Facility Application Form 62-701.900(1), FAC.

This Application has been prepared based on the Phases II-III Accelerated Closure Preapplication Meeting conducted between the FDEP and SCS on October 20, 2021. Because the Phase I-VI landfill will continue to receive waste in unclosed areas, FDEP has requested that the SWMD apply for a modification to the solid waste operations permit instead of an application to close a solid waste disposal unit. Therefore, SCS has prepared this Application package to address the closure requirements of select portions of Phases II-III within the context of Phase I-VI Solid Waste Operations and future closure.

SCS has updated the SCLF Operations Plan to incorporate the phased closure of SCLF Phases I-VI beginning with the Phases II-III Accelerated Closure which is scheduled to commence in Fall 2022. This closure area was delineated as part of the Phase I-VI Fill Sequencing Plan drawings created by SCS dated June 2020, which was approved by FDEP on May 24, 2021 under Solid Waste Operations Permit modification number 35435-029-SO-MM. Although the Phases I-VI Fill Sequencing Plans identify a Phases II-III Accelerated Closure Area, Phase I-VI Closure Design Drawings are included with this Application as **Attachment A**. The Phase I-VI Closure Design Drawings encompass the entirety of Phase I-VI in order to more practically integrate the accelerated closure areas into the future closure of the Phase I-VI landfill.

A copy of the January 2022 revised Operations Plan with changes marked in redline and strikeout is provided as **Attachment B**. Additionally, Section N, Section O, and Section Q of this Engineer's Report include information pertaining to the incorporation of Phases II-III Accelerated Closure and Phase I-VI Closure Documents into the Solid Waste Operations Permit.

## A.1 LANDFILL DESCRIPTION

The Phase I-VI disposal area encompasses 162.4 acres while Section 7, 8, and 9, collectively referred to as the Capacity Expansion Area (CEA), encompasses 34.5 acres. Phase I-VI and the CEA are permitted by the FDEP as a Class I landfill. Currently waste filling operations are conducted in Phase I-VI, Lift 18A. The SCLF currently receives an average of 1,500 tons per day (tpd), with a maximum of 2,500 tpd of ash residue from incinerated Municipal Solid Waste (MSW), non-processable waste, and bypass MSW. The SCLF services unincorporated Hillsborough County, the City of Tampa, and Temple Terrace. The SCLF currently has the following active permits:

- Phases I-VI, Capacity Expansion Area (Sections 7, 8, and 9) Class I Landfill, and Leachate Treatment and Reclamation Facility (LTRF): FDEP Operation Permit #35435-022-01 – Revised through Interim Modification #35435-023-SO-IM and Minor Modification #35435-029-MM
- SCLF Title V Air Operation Permit: FDEP Permit #0570854-012-AV
- SCLF Title V Air Construction Permit: #0750854-011 AC

- Waste Tire Processing Facility (WTPF): FDEP Permit #126787-007-WT-02
- Stormwater Management Facilities: Southwest Florida Water Management District Permit #100330 and U.S. Environmental Protection Agency (U.S. EPA) National Pollution Discharge Elimination System Permit #FLR05B138-005
- FDEP Environmental Resource Program: FDEP Permit #29-0270881-004

## B. DISPOSAL FACILITY GENERAL INFORMATION

See Permit Application Form (page 6 of 36) for this information. The designated responsible person for Southeast County Landfill is:

Kimberly A. Byer, Director, Hillsborough County Solid Waste Management Department 332 N. Falkenberg Road Tampa, FL 33619 Phone: 813-612-7718 Email: <u>byerk@hillsboroughcounty.org</u>

The information required for Section B - Disposal Facility General Information for the Southeast County Landfill has been provided on pages 6, 7, 8, and 9 of the FDEP Application for a Permit to Construct, Operate, Modify or Close a Solid Waste Management Facility Application Form 62-701.900(1), which is attached at the beginning of permit modification.

The Southeast County Landfill is open for disposal of solid waste Monday through Saturday between the hours of 7:30 a.m. and 5:00 p.m. excluding Hillsborough County Holidays.

# C. **PROHIBITIONS**

All prohibition requirements for the disposal area and operations of the CEA and the Phase I-VI disposal area remain valid as verified in the June 2013 Operation Permit Renewal and do not change as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## D. SOLID WASTE FACILITY PERMITTING REQUIREMENTS

## D.1 APPLICATION FORM AND SUPPORTING DOCUMENTS

One electronic copy of the application form, supporting data and reports are included with this permit application.

## D.2 ENGINEERING CERTIFICATION

This permit application has been certified, signed, and sealed by Kollan L. Spradlin, P.E., a Licensed Engineer in the State of Florida (License No. 82852).

## D.3 TRANSMITTAL LETTER

A transmittal letter is included at the beginning of this submittal.

## D.4 APPLICATION FORMS

FDEP Form No. 62-701.900(1) is included with this submittal and has been signed and sealed by Kollan L. Spradlin, P.E., a Licensed Engineer in the State of Florida (License No. 82852). In addition, the Form has been signed and dated by Kimberly A. Byer, the Hillsborough County Solid Waste Management Department Director and the designated responsible person for the SCLF.

## D.5 PERMIT FEE

Enclosed with this application is a check in the amount of \$250 made payable to Florida Department of Environmental Protection in accordance with the fee schedule listed in Rule 62-4.050, FAC.

### D.6 ENGINEERING REPORT

This permit modification with supporting drawings, figures, tables, calculations and attachments is submitted in the format specified by 62-701.320(7)(d), FAC.

## D.7 OPERATION PLAN AND CLOSURE PLAN

Please refer to **Attachment B** for updates to the currently approved Operations Plan, dated June 2020. The date of the Operations Plan has been updated to January 2022, and references the accelerated closure of Phases II-III. Revisions to the Operations Plan have been identified in redline and strikeout. The Phase I-VI Construction Quality Assurance (CQA) Plan and the Phase I-VI Long-Term Care Plan are included as attachments to the revised Operations Plan. Additionally, Per Rule 62-701.320(7)e1, FAC, please refer to **Attachment A** for the Phase I-VI Closure Design Drawings.

# D.9 PLANS OR DRAWINGS IN APPROPRIATE FORMAT

The Phase I-VI Closure Design Drawings for the proposed closure system, stormwater, and landfill gas collection and control system (LFGCCS) improvements is included as **Attachment A**. The closure

design includes consideration of the most recent topographic survey, dated July 29, 2021 conducted by Pickett and Associates, Inc., and previously approved final elevations. The elevations shown are based on the National Geodetic Vertical Datum 1929 (NGVD29), and the coordinates shown are referenced to the West Zone of the Florida State Plane Coordinate System, North American Datum (NAD) 1983, 1990 adjustment. The Phases II-III closure design includes details and is described in greater depth within Section 0 of this Application.

### D.12 ENFORCEMENT HISTORY

Table 1 below summarizes enforcement history for the applicant, the SWMD. Based on a review of the SCLF files and information provided by Hillsborough County staff responsible for the SCLF, the applicant is not aware of any other enforcement actions relative to the County's other solid waste operations. Any errors or omissions are not to be construed as a misrepresentation of the facts. Should FDEP have additional information in their files, the SWMD will concede to FDEP's data.

FACILITY	ACTION	STATUS
	FDEP Warning Letter Regarding Turbidity and Consent Agreement issued #WL02-2223SW29SWD 12/9/02	County responded 2/3/03. Measures implemented to reduce turbidity under evaluation for six months.
	FDEP SFCO #10-3622	Closed
Southeast County Landfill	FDEP WL #10 005-SW29SWD	Closed
(SCLF)	FDEP SFCO #09-3117	Closed
	FDEP Consent Order No. 96-1649 for head over liner 8/5/1996	Leachate Management Plan Developed-Closed
	OGC-CO #09-3117	Closed 12/3/09
	Consent Agreement, OGC # 17-0058	Closed 12/11/2020
	Notice to implement Evaluation Monitoring	Open – 11/20/2020
Hillsborough Heights/Taylor Road	EPA Consent Decree 6/15/83	Replaced with ROD and Consent Decree No. 98-239-CIV-T-25F
Landfills	EPC SFCO No. 09-3366DW	Closed

 Table D.12
 Enforcement Action History Hillsborough County Solid Waste Operations

FACILITY	ACTION	STATUS
	DEP Consent Order No. 89-0108	Replaced with Water Quality Monitoring Permit No SF29-288170
Northwest Landfill	#WL92-0011SW29SWD	Closed
	FDEP – CO #08-2838	Open
	#WL92-0010SW29SWD	Closed
Falkenburg Yard and WW	#WL93-0006SW29SWD	Closed
	EPC WN#15372	Closed
	#WL93-0014SW29SWD	Closed
Northwest Transfer Station	#WL94-0012SW29SWD	Closed, replaced by general permit #126750-001-SO
South County Transfer Station	EPC Case #05-35153	Closed 8/12/09
	EPC Warning Notice #14629-Ash Residue Management - 1994	Closed
	EPC Warning Notice #14697	Closed
Resource Recovery	EPC WL#16099 lead to CO #99- 0721DML0261-Retrofit for Air Emissions	Closed
Facility	EPC CO #03-0824AR0261 – Failure to inject carbon in MWC Unit Numbers 1 & 3	Closed
	EPC Warning Notice #2004-0506A – Failure to calibrate the opacity CEMs for EU2	Closed
Mango Clay Pit	FDEP – WL #29-8610483 – monitoring only – 10/14/1986	Closed
, ,	Final Order Agreement OGC #20-1387	Closed – No Further Action
Sydney Mine	FDEP – CO #87-0627 – Source removal and pump and treat system in 1987 – lead to second Consent Decree – CD 801 – CV-2466-T-30TBM in 2004 for natural attenuation and continued monitoring	Open – Settlement Agreement
Gunn Highway Landfill	FDEP – CO#92-0622 – required to investigate LFG migration at property boundaries – SWMD currently monitors the site monthly	Open
Pleasant Grove Landfill	FDEP – CO #92-0683 – required contamination assessment and ground and surface water and LFG monitoring	Closed
	OGC 15-0386	LTC under Final Order Agreement

FACILITY	ACTION	STATUS
Leto High School Landfill	OGC File # 20-0969	LTC under Final Order Agreement
Ruskin Old Landfill	OGC #21-1050	Closed/NFA - Awaiting on response to stabilization report. Site Developed under EPC Director's Authorization

## E. LANDFILL PERMIT REQUIREMENTS

Disposal areas at the facility, specifically the CEA (Section 7, 8, and 9) and Phase I-VI, have been permitted by FDEP and are located within the property boundaries of the SCLF. The attached revised Operations Plan and associated Phases II-III Accelerated Closure documents will not require additional disposal areas at the SCLF. No changes are proposed to landfill permit requirements as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## F. GENERAL CRITERIA FOR LANDFILL

No changes are proposed to the general criteria requirements as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## G. LANDFILL CONSTRUCTION REQUIREMENTS

Disposal areas at the facility, specifically the CEA (Section 7, 8, and 9) and Phase I-VI, have been permitted by FDEP and are located within the property boundaries of the SCLF. The attached revised Operations Plan and associated Phases II-III Accelerated Closure documents will not require construction of additional disposal areas at the SCLF. No construction of new disposal areas is proposed as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

No changes are proposed to the hydrogeological investigation requirements as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## I. GEOTECHNICAL INVESTIGATION REQUIREMENTS

No changes are proposed to geotechnical investigation requirements as part of this Application. For additional information refer to:

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## J. VERTICAL EXPANSION OF LANDFILLS

No changes are proposed to landfill operations as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## K. LANDFILL OPERATION REQUIREMENTS

The Operations Plan has been updated to incorporate the phased closure of SCLF Phases I-VI beginning with the Phases II-III Accelerated Closure Areas. The revised Operations Plan with changes identified in redline and strikeout is included as **Attachment B**. Below, a description of the changes to the Operations Plan is provided by Section.

### K.2 LANDFILL OPERATION PLAN

#### K.2.a SWMG Organization and Responsibilities

Section K.2.a of the Operations Plan has been updated to account for occasional operations to accommodate County solid waste facilities that occur during hours closed to the public.

#### K.2.c Waste Type Control

Section K.2.c of the Operations Plan has been updated to clarify that unprocessed yard waste is not accepted at the facility.

#### K.2.g Waste Compaction and Application of Cover

Section K.2.g of the Operations Plan has been updated to allow for the use of composted yard waste or mulch, screened through  $\frac{1}{2}$ " mesh, and then mixed in the ratio of 75% screened compost to 25% soil by volume as daily cover. This is consistent with alternative daily cover practices approved by FDEP for other Florida Class I Landfills.

## K.5 ACCESS CONTROLS

Section K.5 of the Operations Plan has been updated to emphasize that a trained operator and a security guard will be on site during operations that may occasionally occur during hours that are not open to the public. These operations are to accommodate for the transfer of waste from other County-owned solid waste facilities.

## K.7 SPREADING AND COMPACTING WASTE

Section K.7 of the Operations Plan has been updated to allow for the use of composted yard waste or mulch, screened through ½" mesh, and then mixed in the ratio of 75% screened compost to 25% soil by volume as daily cover. The use of tire chips as initial cover material has also been removed from SectionK.7 of the Operations Plan as tires are no longer processed on site.

#### K.7.e Initial Cover Controls

Section K.7.e of the Operations Plan has been updated to allow for the use of composted yard waste or mulch, screened through ½" mesh, and then mixed in the ratio of 75% screened compost to 25% soil by volume as daily cover. The use of tire chips as initial cover material has also been removed from SectionK.7 of the Operations Plan as tires are no longer processed on site.

### K.7.g Intermediate Cover

Section K.7.g of the Operations Plan has been updated to allow for the use of composted yard waste or mulch, screened through  $\frac{1}{2}$ " mesh, and then mixed in the ratio of 75% screened compost to 25% soil by volume as daily cover. This is consistent with intermediate cover practices approved by FDEP for other Florida Class I Landfills.

#### K.7.h.2 Final Cover

Section K.7.h.2 of the Operations Plan has been revised to reference the October 20, 2021 Phases II-III Accelerated Closure Preapplication Meeting attended by FDEP and SCS representatives. Section 0.2 of the revised Solid Waste Operations Plan and this Engineer's Report includes additional detail regarding the design of the final cover system.

## K.9 LANDFILL GAS COLLECTION SYSTEM

Operations Plan Section K.9.b has been updated to include reference to the enclosed flare that is located at the Leachate Evaporator Facility.

## K.10 STORMWATER MANAGEMENT SYSTEM

Operations Plan Section K.10.a.1.1 and Section K.10.a.1.2 have been updated to reflect changes in the Phase I-VI and Phases II-III Closure stormwater design.

## L. WATER QUALITY MONITORING

No changes are proposed to the water quality monitoring requirements as part of this Application. For additional information refer to:

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

## M. SPECIAL WASTE HANDLING

No changes are proposed to special waste handling requirements as part of this Application.

- Operation Permit Renewal Application, dated June 2013, and subsequent responses, prepared by HDR;
- Operation Permit Intermediate Modification, dated September 21, 2015, and subsequent responses, prepared by HDR and SCS;
- Operation Permit Minor Modification, dated April 10, 2017, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated August 3, 2018, and subsequent responses, prepared by SCS;
- Operation Permit Minor Modification, dated June 15, 2020, and subsequent responses, prepared by SCS; and,
- Operation Permit Minor Modification, dated May 27, 2021, and subsequent responses, prepared by SCS.

# N. GAS MANAGEMENT SYSTEM REQUIREMENTS

### N.1 GAS MANAGEMENT SYSTEM DESIGN

The LFGCCS currently consists of 78 vertical extraction wells, 35 horizontal gas collectors, and four dewatering wells located in Phases I-VI, and Sections 7, 8, and 9. Construction of the LFGCCS first began in April 2009 and was completed in February 2010. An expansion of the LFGCCS occurred in 2013.

In addition to the vertical extraction wells, horizontal gas collectors, and dewatering wells, the LFGCCS also contains condensate traps, air and forcemain piping, a candlestick flare system, and an enclosed flare system.

#### **Existing Vertical Extraction Wells**

Phases I-VI contain 72 vertical gas extraction wells that are 6-inch diameter Schedule 80 Polyvinyl Chloride (PVC) pipe extending to various depths within the waste.

Sections 7, 8, and 9 contain six vertical gas extraction wells that are 6-inch diameter Schedule 80 PVC pipe extending to various depths within the waste.

#### **Existing Horizontal Gas Collectors**

Phases I-VI contain 21 horizontal gas collectors that are 6-inch diameter HDPE pipe.

Sections 7, 8, and 9 contain 14 horizontal gas collectors that are 6-inch diameter HDPE pipe.

#### Existing Vacuum Header and Lateral Piping

The Phase I-VI vacuum header runs from the flare station facility and circles the perimeter of Phase I-VI. The CEA header is installed along the eastern side of Sections 7 and 8. A 10-inch crossover header is located in Phase II and connects the north side of the Phase I-VI vacuum header to the to the south side of the header. Lateral vacuum piping branches off the respective headers for each disposal unit and run towards the center of the landfills. The header and lateral piping consist of 16-inch, 10-inch, 6-inch, and 4-inch HDPE piping.

#### Existing Condensate Traps

Phase I-VI has three condensate traps and three sloped condensate U-Traps on the vacuum header. The CEA header has two condensate traps.

#### **Existing Flares**

The blower vacuum applied to the header and lateral piping pulls LFG from the waste mass to the blower station where it is then routed to the open candlestick flare and the enclosed flare. LFG routed to the open candlestick flare and enclosed flare is restricted to a capacity of 4,000 scfm.

### N.1.a Preventing High Combustible Gas Concentrations

No changes are proposed to the procedures for monitoring and reporting combustible LFG concentrations through this Application. The proposed LFGCCS improvements in Phase I-VI is designed to further enhance and prevent the subsurface migration of LFG and to reduce the potential for odors. This is accomplished through the installation of 49 new and two re-drilled vertical LFG extraction wells, maintaining vacuum, and connective laterals and header piping around the landfill. The monitoring program is conducted to ensure that concentrations of combustible gases do not exceed 25% of the lower explosive limit (LEL) in structures and 100% of the LEL at the property boundary.

### N.1.b Designed for Site Specific Conditions

The design, location, number of vertical gas extraction wells, and conveyance components proposed for the Phase I-VI LFGCCS improvements have been evaluated to provide maximum LFG collection efficiency, flexibility and control in the application of vacuum to the gas extraction wells, and operation. Some field changes to the design may be required due to conditions at the time of construction to allow for the proper performance of the LFGCCS, however, the functionality of the system will remain as presented herein.

Landfill elevations may slightly change from design conditions, it is expected that minor field modifications will be made when existing site conditions differ from those shown in the Phase I-Vi Closure Design Drawings. As-built drawings of the Phase I-VI LFGCCS improvements, to be submitted to FDEP with the certification documentation, will include any necessary field changes made during construction. No significant changes to the layout of the Phase I-VI LFGCCS improvements or the design in general will be made without prior approval from FDEP.

The Phase I-VI LFGCCS improvements will include considerations for temporary shutdown of vacuum, air, and condensate lines in order to facilitate connection of proposed improvements.

If objectionable odors are detected at the property line, the County will implement an odor monitoring program as required by Rule 62-701.530(3)(b), FAC.

### GCCS Stage 1-3 Closure

The overall Phase I-VI LFGCCS improvements will take place in three Stages as shown on the Phase I-VI Closure Design Drawings provided as **Attachment A**.

Stage 1 will cover approximately 69 acres and include the installation of 18 new and 2 re-drilled wells. Wells that are being re-drilled during Stage 1 will be disconnected from the LFGCCS, capped, and abandoned in place, below grade. Stage 2 will cover approximately 41 acres and include the installation of 12 new vertical extraction gas wells. Stage 3 will cover approximately 119 acres and include the installation of 19 new vertical extraction gas wells.

All new and re-drilled gas extraction wells and associated piping will be installed underneath the final closure geomembrane liner system. All liner penetrations will include typical pipe boot connections to create a seal and prevent air and water intrusion.

The existing header loop around the perimeter of Phase I-VI will remain and the proposed Stage 1-3 LFGCCS improvements will only require new connections to the existing header and lateral lines.

Stage 1 will be constructed over the course of Fall 2022 - Spring 2025, prior to the installation of closure liner over the Phases II-III Accelerated Closure Areas. Stage 2 and Stage 3 require the installation of new cross-over vacuum headers. In order to facilitate construction activities while maintaining the required header slope and burial depth, Stages 2 and 3 will be constructed after waste has been filled to final permit elevations and prior to the closure of Phase I-VI. Construction of Stage 2 and Stage 3 of the LFGCCS improvements is not intended to be constructed at this time or part of this Application.

#### Vertical Gas Extraction Wells

The Stage 1-3 LFGCCS improvements includes new and re-drilled vertical gas extraction wells. The gas extraction wells, as shown in the Phase I-VI Closure Design Drawings provided in **Attachment A**, will extract LFG from the landfill under a steady vacuum. Well depths are based on the depth of the waste mass at each well location using the respective intermediate cover grade and permitted protective base grades.

Each gas extraction well will have an effective Radius of Influence (ROI) that is approximately 2.25 times the well depth. Consequently, the well spacing will vary generally from 100 to 200 feet on center, depending on the estimated ROI of the wells. Due to the variability of the actual configuration of the ROI, it is desirable to install the wells so that their ROIs partially overlap in order to ensure adequate gas collection coverage.

#### Vertical Gas Extraction Well Construction

The new and re-drilled vertical gas extraction wells are designed using an 8-inch HDPE pipe with an effective well diameter of three feet. Vertical gas extraction wells as shown in the Phase I-VI Closure Design Drawings, will be designed to include the following features:

- a. Approximately one-third of the well casing below grade will be solid-wall pipe, with a minimum of 15-feet of solid pipe installed below surface. This design criterion is used to maximize LFG collection. The liner system installed as part of the closure area will also contribute to reduce the potential for pulling ambient air into the extraction well.
- b. A reinforcement grate will be installed below grade at the time of well installation, as specified in the Phase I-VI Closure Design Drawings and the Technical Specifications, provided in **Attachment A** and **Attachment D**, respectively.
- c. Perforations will typically be 1/2-inch diameter holes, four rows spaced at 90 degrees, with 16 perforations per foot.
- d. Non-calcareous aggregate will be sized as specified on the Phase I-VI Closure Design Drawings in **Attachment A** to prevent penetration or blockages of the gas extraction well pipe perforations.

#### N.1.c Reduction of Gas Pressures Within the Interior of the Landfill

The LFGCCS is an active extraction system that exerts a negative pressure on the wells that are regulated at a wellhead connection to the LFGCCS. The existing blowers will continue conveying LFG via a vacuum header to the candle stick flare and the enclosed flare where it is treated and combusted. Phase I-VI LFGCCS improvements will assist in further reducing the internal gas pressures of the landfill.

#### N.1.d Non-Interference with the Liner, Leachate Control System, or Final Cover

In accordance with Rule 62-701.530 (1)(a)(3) and (4), the vertical LFG wells are designed to extract gas and not interfere with or cause failure of the clay liner, leachate control systems, or final cover. The new and re-drilled vertical gas extraction wells will maintain at least 5 feet offset from the base liner system and the LFG header line will remain as installed. The Phase I-VI LFGCCS improvements were designed to not impact the bottom of the landfill or the leachate collection and removal system (LCRS) and to maintain the integrity of the final cover system by minimizing the gas pressure in the landfill.

## N.2 LANDFILL GAS MONITORING

No changes are proposed to the procedures for monitoring LFG as part of this permit modification.

## N.3 GAS AND ODOR REMEDIATION PLAN

No changes are proposed to the requirements for gas or odor remediation. With the enhancement of the LFGCCS, the County does not anticipate any issues with gas and odor control. However, should LFG migration occur or should objectionable odors be detected offsite, the County will take the necessary steps to protect human health as required by Rule 62-701.530, F.A.C.

## N.4 LANDFILL GAS RECOVERY FACILITIES

The proposed LFGCCS improvements will not affect the operations of the existing control devices at the landfill. Any additional LFG collected will only increase the percentage of gas recovery.

### N.4.c Gas Generation and Condensate Management

No changes are proposed to the procedures for monitoring and reporting combustible LFG concentrations through this Application. The proposed Phase I-VI LFGCCS improvements are designed to further enhance and prevent the subsurface migration of LFG and to reduce the potential for odors. This is accomplished through the installation of 49 new and 2 re-drilled vertical gas extraction wells in Stage 1-3 of the LFGCCS expansion, maintaining vacuum, and maintaining connectivity to vacuum header and lateral piping around the landfill. The monitoring program is conducted to ensure that concentrations of combustible gases do not exceed 25% of the lower explosive limit (LEL) in structures and 100% of the LEL at the property boundary.

The proposed Phase I-VI LFGCCS improvements are designed to handle the expected LFG recovery rates over the life of the landfill. The LFG recovery models estimate the annual LFG generation/recovery rates based on the amount and age of waste in place and the organic/biodegradable fraction of the waste. Gas generation was estimated using the U.S. Environmental Protection Agency's Landfill Gas Emission Model (LandGEM). Historical and projected future putrescible waste tonnages were input to the model, and the standard default parameter values were used. Projected LFG generation rates are summarized in **Table N-1** below.

Year	Projected LFG	Projected LFG
	Generation Rate	Collection Rate
	(scfm)	(scfm)
2021	3,457	2,593
2022	3,594	2,696
2023	3,724	2,793
2024	3,866	2,900
2025	4,021	3,016
2030	4,968	3,726
2035	4,305	3,229
2040	3,524	2,643
2045	2,885	2,164

Table N.1 Projected LFG Generation and Collection Rates Southeast County Landfill

The addition of new and re-drilled gas extraction wells will not result in generation of more LFG, but will improve the collection efficiency resulting in higher collection efficiency. The higher collection efficiency could also result in a higher quality of LFG collected, but the existing and enclosed flares are capable of control and destruction of LFG in accordance with the active Title V operations permit at the modeled collection rates.

#### N.4.d Condensate Sampling, Analyzing, and Data Reporting

Condensate sampling analysis is not required under the current operations permit.

#### N.4.e Closure Plan for Gas Recovery Facilities

As previously stated, the recovery facility and all control devices will remain in operation after the closure. They will not be closed as long as the SCLF is generating LFG. Additional details regarding inspection, Operations, and Maintenance procedures are identified in the revised Operations Plan included as **Attachment B**.

# O. LANDFILL CLOSURE REQUIREMENTS

# O.1 CLOSURE PERMIT REQUIREMENTS

On October 20, 2021, FDEP and SCS representatives met to discuss the implementation of accelerated closure over Phases II-III of the Phase I-VI landfill at the SCLF. At that meeting, FDEP requested that SWMD modify the Solid Waste Operations Permit and Operations Plan to include Phases II-III Accelerated Closure information as required by FDEP landfill closure regulations described in 62-701.600, FAC. However, because waste will continue to be accepted and landfilled within areas of Phase I-VI that have not received final closure cover, a permit to close a solid waste disposal unit will not be required until SWMD proceeds with closure of the entirety of Phase I-VI.

Phase I-VI will be closed in in stages beginning with the accelerated closure of Phases II-III as outlined in the revised Operations Plan provided as **Attachment B.** The Phase I-VI Closure Design Drawings (**Attachment A**) and the Phases I-VI Long-Term Care Plan are included as attachments to the revised Operations Plan (**Attachment B**). Although the design and accompanying plans reference the Phase I-VI Closure Design, the they apply to the Phases II-III Accelerated Closure Areas as well. The design and associated plans were developed in this manner to ensure that the Phases II-III Accelerated Closure more readily incorporated into the Phase I-VI Closure Design than stand-alone designs, calculations, and plans.

An application to certify partial closure will be submitted to the FDEP following each partial closure which are anticipated to take place in three stages from Fall 2022 through Spring 2025. Upon the completion of waste filling activities in Phase I-VI, a Closure Permit Application will be submitted to the FDEP in accordance to Rule 62-701.600(2) FAC.

# O.2 CLOSURE DESIGN PLAN

In accordance with Rule 62-701.600(3), FAC the Closure Design Plan includes Phase I-VI Closure Design Drawings, as shown in **Attachment A**, that address the Phase I-VI final closure area and existing and proposed final grades. The Operations Plan, which includes the Phase I-VI Long-Term Care Plan, included as **Attachment B** provides additional information for the closure design. Supplemental attachments to this application include The Phase I-VI CQA Plan (**Attachment C**), Technical Specifications (**Attachment D**), Stormwater Report (**Attachment E**) and Phase I-VI Closure Design Calculations (**Attachment F**) to support the design.

### O.2.a Initial Cover Controls

The closure of Phase I-VI will be conducted in stages as final grades are reached beginning with the accelerated closure of Phases II-III areas that have reached final permit elevations shown in **Attachment A.** The approved Phases I-VI Operations Sequence Drawings identify the approximate limits of the Phases II-III Accelerated Closure Areas. Actual closure areas will be based on the extent of waste at final design elevations at the time closure activities commence.

### O.2.b Existing Topography and Proposed Final Grades

Existing topography and proposed final grades information is provided in the Phase I-VI Closure Design Drawings included as **Attachment A.** 

### O.2.c Provisions for Closure

Closure information is provided in the Operations Plan and the Phase I-VI Long-Term Care Plan included as **Attachment B**.

#### O.2.d Final Elevations Before Settlement

As shown the Phase I-VI Closure Design Drawings provided as **Attachment A**, the proposed final elevation will not exceed the currently permitted final elevation.

#### O.2.e Sideslope Design

The sideslopes of the final cover design are shown to include, side-slope berms, downchutes, and energy dissipaters. As shown in the Phase I-VI Closure Design Drawings provided as **Attachment A**, the final waste slopes will not be steeper than 4(H):1(V). Final Cover Design Calculations provided as **Attachment F** are provided to support the selection of geocomposite, toe drain construction, geotextile filter, and veneer slope stability. A summary of the stormwater system design can be found in **Attachment E**.

### O.2.f Final Cover Installation Plan

The Phase I-VI Closure Design Drawings, provided as **Attachment A**, include the final cover installation plans and details. The final cover will be installed in accordance with the Phase I-VI CQA Plan provided included in **Attachment C**.

#### O.2.f (1) Construction Quality Assurance Plan for Installing and Testing Final Cover

The Phase I-VI CQA Plan provided as **Attachment C** includes plans for installing and testing the final cover.

### O.2.f (2) Final Cover Installation Schedule

The Operations Plan and the Phase I-VI Long-Term Care Plan provided as **Attachment B**, includes the schedule for installing final cover.

### O.2.f (3) Final Vegetative Cover

The surface of the final cover system will be vegetated by seeding (and sodding where required) to minimize erosion. The Technical Specifications provided as **Attachment D** includes a description of drought-resistant species to be used in the vegetative cover.

### O.2.f (4) Top Gradient Design

The Phase I-VI Closure Design Drawings provided as **Attachment A** illustrates a top gradient of five percent to promote stormwater runoff and minimize erosion.

### O.2.f (5) Final Cover Maintenance Material

A minimum of 18-inches of protective soil with an additional 6-inch vegetative layer will be installed. The final cover will be maintained with regular landscaping maintenance as required. The Operations Plan and the Phase I-VI Long-Term Care Plan provided as **Attachment B** include provisions for the maintenance of final cover.

### O.2.g Final Cover Design Requirements

The Phase I-VI Closure Design Drawings included as **Attachment A** and the Operations Plan and Phase I-VI Long-Term Care Plan included as **Attachment B** provide a description of the final cover design. Components of the final cover system consists of the following, from bottom to top:

- 40-mil textured linear low-density polyethylene (LLDPE) geomembrane
- Geocomposite
- 18-inch protective cover soil layer
- 6-inch sodded topsoil layer

### O.2.g(1) Protective Soil Layer Design

The final cover design includes an 18-inch protective cover soil layer with an additional 6-inch sodded topsoil layer. The Technical Specifications included as **Attachment D** describes the characteristics of the protective cover soil specified for closure activities.

### O.2.g(2) Barrier Soil Layer Design

A geocomposite drainage layer consisting of a geotextile filter, a geonet, and a geotextile friction layer, heat-bonded together, will be placed beneath the protective soil layer. The function of the geotextile filter is to prevent soil particles of the overlying vegetative layer from penetrating and clogging the underlying geonet. The purpose of the geonet drainage layer is to remove the precipitation water reaching the geomembrane and to minimize the potential for saturation of the overlying vegetative layer. The purpose of the geotextile friction layer is to increase the interface friction between the textured geomembrane and the geonet, thereby increasing the stability of the final cover system.

The Hydrologic Evaluation of Landfill Performance (HELP) model uses various formulas, based upon fundamentals of soil mechanics, to simulate water percolation in a vertical and horizontal direction under many climatological, soil, and topographic conditions. The HELP model estimates how much leachate and surface drainage is likely to occur within the simulated period within a specific landfill profile.

Design parameters pertinent to the geonet component of the geocomposite drainage layer include hydraulic transmissivity, hydraulic conductivity, and hydraulic gradient. The hydraulic transmissivity and hydraulic conductivity of geonet drainage layer is primarily a function of overburden compressive stress and boundary conditions. The boundary conditions considered in the design of the geocomposite drainage layer consist of a geotextile filter on the top and a geotextile friction layer on the bottom of the geonet.

To keep the maximum head above the geomembrane liner within the geocomposite thickness, a certain transmissivity must be achieved from the geocomposite. Appropriate reduction factors have been applied to the transmissivity value for the geocomposite for design purposes. These reduction

factors represent chemical clogging ( $RF_{CC}$ ), biological clogging ( $RF_{BC}$ ), geotextile intrusion ( $RF_{IN}$ ), creep reduction ( $RF_{CR}$ ) and a factor of safety.

Chemical and biological reduction factors account for the particles that fill the voids in the geotextile; over time, the chemical and biological clogging reduces the transmissivity of the geocomposite. The chemical and biological reduction factors have been obtained from the Geosynthetic Research Institute (GRI) Standard-GC8.

Geotextile intrusion accounts for the geotextile encroaching on the geonet under a constant load. A 100-hour transmissivity test evaluates intrusion of the geotextile into the geonet. After the 100-hour seat time the geotextile has already begun to intrude into the geonet; therefore, the transmissivity value has already been affected by the intrusion factor. The intrusion factor used in the calculations is 1.0 because the transmissivity values were based on the 100-hour seat time.

Creep reduction represents the elongation of the geonet under constant load for an extended period. Typical creep reduction factors have been supplied by the geocomposite manufacturer.

The transmissivity of the composite has also divided by a factor of safety of two for sizing purposes. Because the veneer stability calculations included as part of **Attachment F** contain multiple factors of safety compounded over the calculated transmissivity value, a geotextile transmissivity with a factor of safety of 1.5 applied was used as the design transmissivity of the geocomposite for veneer stability calculations. The geocomposite transmissivity values used in each scenario are summarized in the geocomposite transmissivity calculations included as part of **Attachment F**.

The compressive stress on the geocomposite is approximately 621 pounds per square foot (psf), which is the weight of the overlying protective soil and topsoil layers at the deepest design depth. The hydraulic gradient of the geocomposite on the sideslopes is 0.25, which represents the 4(H):1(V) sideslopes. However, a compressive stress of 1000 psf and a 0.33 hydraulic gradient was used in the sideslope geocomposite transmissivity design calculations as laboratory data for a 0.25 hydraulic gradient and less than 1,000 psf was not available.

Unlike the sideslope geocomposite transmissivity values, the top slope geocomposite transmissivity, and associated HELP model, use a minimum geocomposite thickness and transmissivity required by the Technical Specifications. The geocomposite transmissivity calculations then apply a factor of safety to the specified geocomposite characteristics to verify that the specified product will convey the HELP model peak flow at a five percent hydraulic gradient. The transmissivity/hydraulic conductivity calculations for the closure geocomposite are provided in the Phase I-VI Final Closure Design Calculations included as **Attachment F**.

The Closure Design Calculations indicate that the transmissivity of the sideslope geocomposite material under 1,000 psf of compressive stress is approximately  $1.72 \times 10^{-3} \text{ m}^2/\text{sec}$ . For design purposes, which include reduction factors as previously mentioned, a calculated hydraulic transmissivity of  $6.31 \times 10^{-4} \text{ m}^2/\text{sec}$  was utilized to design the sideslope geocomposite requirements. Therefore, the calculated hydraulic conductivity with a loaded sideslope geocomposite thickness of 0.297 inches is 8.36 cm/sec. Please note for veneer stability calculations, the transmissivity is divided by a factor of safety of 1.5 (as a factor of safety is already applied in the veneer stability calculations), which results in a geocomposite design hydraulic conductivity of 11.15 cm/sec.

The top slope geocomposite has been specified to require a transmissivity of  $3.30 \times 10^{-3} \text{ m}^2/\text{sec}$ . A top slope geocomposite transmissivity value of  $1.21 \times 10^{-3} \text{ m}^2/\text{sec}$  was calculated by applying the appropriate factors of safety. This value was used in the HELP model for the top slope geocomposite (k=14.58 cm/sec), and indicates that a geocomposite with a minimum thickness of 0.330 inches (100-hour loading of 0.327 inches) will contain the peak daily depth of head on the liner. Each top

slope model was evaluated under conditions representative of the upper and lower range of the specified protective cover soil.

The precipitation that percolates through the protective soil layer will be drained from the final cover system through the geocomposite drainage layer and a series of composite drain pipes. The quantity of precipitation that enters the drainage layer (i.e., impingement rate) can be conservatively estimated using the HELP model. From the results of the HELP model analysis presented in the Phase I-VI Closure Design Calculations provided as **Attachment F**, the worst-case daily peak scenario for percolation through the final cover layer indicated a head of 0.066 inches above the sideslope liner and 0.285 inches above the top slope liner. Precipitation falling on a landfill surface will run off, evaporate, evapotranspirate, or infiltrate. The percentage of precipitation falling on a landfill surface that will travel each of these paths can be estimated by use of water balance methods. The calculated maximum hydraulic head in the geocomposite drainage layers (0.066 and 0.285 inches) is less than the thickness of the geocomposite drainage layers (0.297 and 0.327 inches); therefore, the geocomposite drainage layers will perform as required.

### O.2.g(3) Erosion Control Vegetation

The surface of the final cover system will be vegetated by seeding with drought resistant grasses (and sodding where required) to minimize erosion. The sod will be strongly rooted Bahia or Bermuda.

### O.2.g(4) Geomembrane Barrier Layer Design

A component of the final cover system is a geomembrane placed under the geocomposite drainage layer to reduce infiltration of precipitation through the final cover system into the waste. The design specifies a 40-mil textured LLDPE geomembrane. The texturing of the geomembrane increases the stability of the final cover system. Specified property values for the final cover textured LLDPE geomembrane are provided in the Technical Specifications included as **Attachment D**.

### O.2.g(5) Geosynthetic Clay Liner Design

The proposed final closure design does not include a geosynthetic clay liner (GCL) as part of the final cover design. However, because the existing liner around the perimeter of Phase I-VI is chlorosulfonated polyethylene (CSPE or Hypalon), two layers of CGL will be installed along the top of the perimeter berm, between the existing CSPE and the proposed LLDPE. This GCL will form a seal between the existing perimeter berm and the 40-mil LLDPE closure liner. The GCL coupled with the existing cut-off trench and proposed leachate toe drains will mitigate the accumulation of leachate below the closure liner, near the toe of the landfill. Details of the

### O.2.g(6) Stability Analysis of the Cover System

Per 62-701.600(3)(g)(5), FAC, the final cover design shall include an evaluation of the stability of the cover system and the disposed waste and shall be designed to meet the factor of safety criteria in paragraph 62-701.400(2), FAC. This evaluation shall include an analysis of the potential for slides along the weakest interface of the final cover system. Stability analysis of the cover system is provided as part of the Phase I-VI Final Closure Design Calculations included as **Attachment F.** 

The potential failure surface within the final cover system (weakest interface of the final cover system) along the sideslope was evaluated using a veneer soil stability analysis. Components of the final cover system consists of the following, from bottom to top:

- Intermediate Cover Soil
- 40-mil textured LLDPE geomembrane
- Geocomposite
- 18-inch protective cover soil layer
- 6-inch sodded topsoil layer

Based on the results of the veneer soil stability analysis, soil-geosynthetic and geosyntheticgeosynthetic interfaces of the final cover system must obtain a minimum interface friction angle of 22.6 degrees to maintain the minimum acceptable Factor of Safety of 1.5 required by FDEP against final cover slope failure. Based on our literature search and experience, this interface friction angle is achievable for the materials specified for the final cover system. The Phase I-VI Final Closure Design Calculations included as **Attachment F** contain the veneer stability calculations.

#### O.2.h Method of Stormwater Control

The Stormwater Design Report included as **Attachment E** provides a detailed description of the design of the stormwater management system. Although the post development (post-closure) of the SCLF has been permitted under a conceptual Environmental Resource Permit (ERP 29-0270881-004), the stormwater design of the Phase I-VI Closure Design was modeled in greater detail in order to size stormwater conveyance components within the Phase I-VI footprint. Although, the post-development conditions of Phase I-VI will not generate more stormwater runoff than what has been previously approved, the Interconnected Channel and Pond Routing (ICPR) model has been revised to include more basins, nodes, channels, and structures, leading to a more robust model. This has caused some variance from the original conceptual ERP model; however, the revised ICPR model indicates that all stormwater ponds and structures remain adequately sized.

#### O.2.i Proposed Method of Access Control

The Operations Plan and Long-Term Care Plan provided as **Attachment B** addresses access control of the landfill.

#### O.2.j Gas Management System

The LFGCCS improvements will be constructed as the landfill is closed in phases. Refer to the Phase I-VI Closure Design Drawings provided as **Attachment A** for the LFGCCS Plans and Details. Section N of this Report provides a description of the gas management system improvements to be installed in three stages.

## O.3 CLOSURE OPERATION PLAN

The Operations Plan and the Phase I-VI Long-Term Care Plan provided as **Attachment B** includes provisions for Closure Operation. Components and requirements of the Closure Operation Plan were incorporated into the existing SCLF Operations Plan as a majority of the landfill will continue to accept solid waste and the Accelerated Closure of Phases II-III will be conducted under the existing Solid Waste Operations Permit. Although SWMD will conduct post-closure care of certified closed areas of Phases II-III in accordance with the Phase I-VI Long-Term Care Plan, the 30-year post-closure care period will not commence until the entirety of Phase I-VI has been certified as closed by FDEP.

### O.3.a Actions Needed to Close the Landfill

Currently, waste filling operations are conducted in Phase I-VI, Lift 18A (Phases IV and VI). Waste operations will continue as shown on the approved Phases I-VI Operating Sequence plan drawings dated June 2020 until final grades are reached. SWMD plans to conduct the Phases II-III Accelerated Closure over a majority of Lift 18B in three mobilizations. Each mobilization will include closure over areas of Lift 18B that have reached final permit elevations at the time of mobilization. Once Lift 18B waste filing operations have brought waste to the final approved elevations, the subbase preparation will begin to ensure slopes are uniform. After completion of the subbase, the LFGCCS upgrades will be installed. Refer to the Phase I-VI Closure Design Drawings provided as **Attachment A** for the Plans and Details.

After the LFGCCS upgrades are installed, a 40-mil textured LLDPE geomembrane will be laid on top of the prepared subbase. As the geomembrane is rolled on the prepared subbase, approximately 6-inch diameter holes will be cut through the geomembrane for the LFGCCS collection well pipes and access risers to slide through. The 40-mil textured LLDPE geomembrane will be field-seamed to cover the closure area. A geomembrane boot will be placed around the LFGCCS collection well pipes, access risers, and utility stickups and secured with a stainless-steel band clamp. The boot will then be extrusion welded to the LLDPE geomembrane. After the geomembrane is completely laid out on top of the prepared subbase, two layers of GCL will be installed between the existing CSPE geomembrane and the 40-mil LLDPE closure liner. The LLDPE closure liner will then be anchored within the soil outside of the existing CSPE anchor trench. A geocomposite drainage layer will then be placed on top of the geocomposite drainage layer. It should be noted that the sequence of construction events will be proposed by the Contractor for approval by the County and Engineer.

Next, the 18-inch protective soil layer will be constructed over the geocomposite drainage layer which will then be overlain by a 6-inch topsoil layer. The entire surface area of accelerated closure area will be sodded immediately after placement of the top soil layer to prevent erosion due to surface water runoff. Final cover soil, sodding, and stormwater conveyance structures will be installed as shown on the Phase I-VI Closure Design Drawings provided as **Attachment A**. The construction activities and material properties will meet the minimum requirements presented in the Phase I-VI CQA Plan and the Technical Specifications provided as **Attachment C** and **Attachment D**, respectively.

This process will be repeated as final grades are reached throughout the remainder of Phases II-III Accelerated Closure Area as outlined in the Phases I-VI Operating Sequence plan drawings, dated June 2020.

### 0.3.b Time Schedule for Completion of Closing and Long-Term Care

Long-term care of the Phases II-III Accelerated Closure Areas will be performed by the County in accordance with the Phase I-VI Long-Term Care Plan following FDEP certification of closure. However, the 30-year post-closure care period will not commence until the entirety of Phase I-VI disposal area receives closure certification. Hillsborough County will maintain right of access to the site through the long-term care period to assure that maintenance and monitoring activities can be performed. In the event of transfer of rights or ownership from Hillsborough County to another person, Hillsborough County will comply with the requirements of Rule 62-701.620(6), FAC. Monitoring devices or equipment will be regularly maintained and replaced as necessary. The replacement of monitoring devices will be in accordance with Rule 62-701.620(7), FAC. The post-closure plan for the SCLF will comply with Rule 62-701.620, FAC.

### O.3.c Financial Responsibility

Hillsborough County has a financial funding mechanism for the closure and long-term care of the SCLF currently on file with FDEP. To comply with the requirements of Rule 62-701.630(4), FAC, SWMD submits annual adjustments to FDEP for the cost estimates for the closure and long term-care of the SCLF. Although the SWMD will request relief from for the closure cost financial assurance associated with Phases II-III Accelerated Closure Areas following FDEP certification of the closure, long-term care costs for the Phases II-III Accelerated Closure Areas will be maintained until the entirety of Phase I-VI is certified closed. Refer to the Financial Assurance provided as **Attachment G** for updated financial responsibility requirements based on the Phase I-VI Closure Design Drawings.

### O.3.d Water Quality Monitoring Plan

No changes are proposed to the Water Quality Monitoring Plan as part of this Application.

#### O.3.e Gas Monitoring System

Please refer to Section N for detailed description of the gas monitoring system.

## 0.4 CERTIFICATE OF CONSTRUCTION COMPLETION

In accordance with 62-701.610(4), FAC, a signed, dated, and sealed certificate of closure construction by the engineer of record will be submitted to the FDEP upon completion of each closure construction stage. Each submittal will indicate any deviations from the permitted closure plans. A separate certification of closure will be completed for all subsequent closure stages.

#### O.4.a Survey Monuments

Survey monuments marking the boundaries of the landfill are not required for the SCLF under 62-701.600(6)(a), FAC, as the final elevation of the landfill is greater than 20 feet above the surrounding natural land surface.

#### O.4.b Final Survey Report

The Operations Plan and Long-Term Care Plan provided as **Attachment B** includes details regarding the final survey report for closure activities.

### O.4.c Closure Construction Quality Assurance Report

A certification of closure construction completion will be prepared in compliance with Rule 62-701.400(7), FAC, consistent with the requirements of the Phase I-VI CQA Plan for the project, signed, dated and sealed by a Professional Engineer in the State of Florida will be provided to FDEP upon completion of the final closure. A separate certification of closure will be completed for all subsequent closure phases.

# O.5 DECLARATION TO THE PUBLIC

The SWMD will file a declaration to the public in the deed records of Hillsborough County following the closure of the entirety of Phase I-VI. A certified copy of the declaration will be provided to FDEP upon finalization.

The Operations Plan and Long-Term Care Plan provided as **Attachment B** includes details regarding the declaration to the public.

## O.6 OFFICIAL DATE OF CLOSING

The Operations Plan and Long-Term Care Plan provided as **Attachment B** includes details regarding the official date of the final closure area.

## O.7 TEMPORARY CLOSURE PROCEDURES

This Application is not intended to request temporary closure procedures at the Southeast County Landfill; therefore, this section is marked as not applicable.

# P. OTHER CLOSURE PROCEDURES

This section is not applicable to this application.

# Q. LONG-TERM CARE

Long-term care will be provided for the landfill pursuant to Rule 62-701.620, FAC upon the certified closure of Phase I-VI. The County will continue to monitor and maintain the facility in accordance with the approved closure plan for 30 years from the date of final closure of the entirety of Phase I-VI. However, areas certified as closed will continue to be monitored, inspected, and maintained in accordance with the Operations Plan and Long-Term Care Plan provided in **Attachment B**.

The surface water management system, LFGCCS, LCRS, and vegetative cover will be maintained during the post-closure and long-term care period. Additionally, the leachate collection and removal system, will continue to be operated throughout the long-term care period. The Operations Plan and Long-Term Care Plan provided as **Attachment B** address long-term care requirements.

## Q.1 GAS COLLECTION AND MONITORING SYSTEM

The Operations Plan and Long-Term Care Plan provided as **Attachment B** includes details regarding the operations and maintenance of the LFGCCS following closure activities.

## Q.2 STABILIZATION REPORTS

According to the FDEP stabilization report requirements, every five years after issuance of a permit for long-term care, the permittee shall submit a report to the FDEP that addresses stabilization of the Southeast County Landfill. The submittal shall include the technical report required in Rule 62-701.620(6), FAC and shall also address subsidence, barrier layer effectiveness, and storm water management. For lined landfills, the submittal shall also address leachate collection and removal system effectiveness, leachate quality, and leachate quantity. However, the County does not intend to seek a permit for long-term care until the certified closure of the entirety of the Phase I-VI landfill. Operations and maintenance of closed areas will be conducted under the Operation Plan and Long-Term Care Plan.

Regular water quality monitoring activities will continue in accordance with the previously approved Water Quality Monitoring Plan and the conditions of the Solid Waste Operations Permit following certified closure of select areas of the Phase I-VI landfill. Although closed areas will be inspected and maintained in accordance with the Phase I-VI Long-Term Care Plan, the 30-year post-closure care period for Phase I-VI will not be commence until all areas of the Phase I-VI landfill have been closed. The Operations Plan and Long-Term Care Plan provided as **Attachment B** provide greater detail regarding long-term care requirements.

# Q.3 RIGHT OF ACCESS

After termination of solid waste operations and closure of the entirety of Phase I-VI, the County will retain the right of entry to the Southeast County Landfill property for the long-term care period for inspection, monitoring, and maintenance purposes for the duration of the long-term care period as required by Rule 62-701.620(7), FAC. The Operations Plan and Long Term Care Plan provided in **Attachment B** addresses long-term care requirements.

## Q.4 REPLACEMENT OF MONITORING DEVICES

If a monitoring well or other device is destroyed or becomes inoperable, the County will notify FDEP in writing immediately upon discovery. Inoperative monitoring devices will be replaced with functioning devices within 60 days of the discovery or as required by Rule 62-701.620(8), FAC. The Operations Plan and Long-Term Care Plan provided as **Attachment B** addresses long-term care requirements.

## Q.5 COMPLETION OF LONG-TERM CARE

Following completion of the long-term care period, the County will submit a certification, signed and sealed by a Professional Engineer, verifying that long-term care has been completed in accordance with the closure plan and has been placed in the operating record.

The Operations Plan and Long-Term Care Plan included as **Attachment B** addresses long-term care completion requirements.

## R. FINANCIAL ASSURANCE

An updated financial assurance cost estimate for Phase I-VI is included with this Application to reflect the changes to the originally permitted design. Refer to the Financial Assurance Cost Estimate located in **Attachment G** for FDEP Form #62-701-900(28) and backup information.

Attachment A

Phase I-VI Closure Design Drawings