From: Ford, Kim

Sent: Thursday, June 12, 2003 12:28 PM

To: Pelz, Susan

Subject: met with John Banks about CCSWDC

On June 12, 2003 at 11am I met with John B. to discuss slope stability and crosssections.

I explained that justification for the FS is needed. I provide him with the Reviewer Checklist by Bachus with table 1 and 2 for FS and friction angles. I asked for the soil specs and CQA for the sideslope swale and intermediate cover and suggested that the soil should be well ddrained except for a layer on top to prevent satuation or the calculations must provide for complete saturation. I asked for the critical failure surface to be shown as part of the printouts.

l asked that all design crosssections must match the actual topo so that there will be no need to move waste.

Kim

From:Ford, KimSent:Thursday, May 29, 2003 1:53 PMTo:Pelz, Susan; Ross, LoraSubject:conversation with Paul Wingler (CCSWDC-Sarasota)

On May 29th at 1:45pm I spoke with Paul W. and requested the most recent topo of the active landfill area. Paul said the landfill was flown in December 2002 so he may have received it in February 2003, and the landfill will be flown again on June 15th 2003. He said I will have it next week. I suggested he send a copy to John Banks also. I told him that I want to see where the terrace is to match the proposed cross sections for the drainage.

Kim

From:Ford, KimSent:Thursday, May 29, 2003 11:29 AMTo:Pelz, Susan; Morris, John R.Subject:FW: Sarasota Landfill Operating Permit Renewal

This morning I spoke with Bob Gardner (SCS) about CCSWDC review timeframe and the unresolved crosssections which John Banks promised in writing yesterday to be sent by June 13th. I explained to Bob that because there is clearly missing information to be received later, the 30-day timeclock should not start until everything is received. Bob agreed. This also allows more time for SCS and the Sarasota County to decide on temporary or permanent drainage pipes and structures, and allows time for further discussion of the 2:1 sideslope conveyances and related supporting calculations and material/construction specifications and CQA.

Kim

-----Original Message-----From: Robert B. Gardner [mailto:rgardner@scsengineers.com] Sent: Thursday, May 29, 2003 10:51 AM To: Ford, Kim Cc: 'jbanks@scsengineers.com' Subject: Sarasota Landfill Operating Permit Renewal

Kim,

Per our discussions by telephone today, we understand that the Department is awaiting further information from SCS relative to questions raised regarding the subject permit renewal application, and that the Department will not initiate the 30-day review period until this information is received. Please do not hesitate to give John Banks a call if you have any questions.

Robert B. Gardner, P.E., DEE Senior Vice President SCS ENGINEERS 3012 U. S. Highway 301 N, Suite 700 Tampa, Florida 33619

Tele:	(813) 621-0080
Mobile:	(813) 220-4973
Email:	rgardner@scsengineers.com
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SCS ENGINEERS 3012 U. S. Highway 301 N., Suite 700 Tampa, FL 33619 (813) 621-0080 Fax (813) 623-6757

SCS ENGINEERS

facsimile transmittal

To;	Kin Ford	Phone:	
Company:	DEP Sold Waste	Fax:	744-6125
From:	John Barles	Date:	5/28/03
Re:	Savasoh Co.	Pages:	3
cc:		Project No.	·
Urgent	□ For Review □ Please Co	omment 🗆 Pl	lease Reply
	verguessed 500	me at	Friction Aught

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Source. "S Michanics" LAMSE JULAIMAN

Ch. 11 Shear Strength of Cohesionless Soil 140

Table 11.3 Summary of Friction Angle Data for Use in Preliminary Design

				Friction A	Angles			
		Sione	γ 1Π+i	• At		At Peak S	trength	· · · · · · · · · · · · · · · · · · ·
	A:	ngle of Repose	Stre	ength	Mediu	m Dense	De	ense
Classification	i(")	Slope (vert. to hor.)	φ _{ოν} (°)	$\tan \phi_{ev}$	φ(°)	tan ø	¢(°)	 tan φ
Silt (nonplastic)	26	1 on 2	26	0.488	28	0.532	30	0.577
	to		to		to		to	0.217
	30	1 on 1.75	30	0.577	32	0.625	34	0.675
Uniform fine to	26	I on 2	26	0.488	(30	0 577	17	0.675
medium sand	to		to	01100	to	0.271	52 to	0.075
	30	l on 1.75	30	0.577	34	0.675	36	0.726
Well-graded sand	30	1 on 1.75	30	0.577	1 34	0.675	38	0.830
	to		το	·	to	0.075	to	, (¢
	34	1 on 1.50	34	0.675	40	0.839	46	1.030
Sand and gravel	32	l on 1 60	32	0.625	36	0 706	40	0.000
U	to	1.00	to	0.025	to	0.720	4U	0.900
	36	l on 1.40	36	0.726	42	Ó.900	48	1.110

From B. K. Hough, Basic Soils Engineering. Copyright © 1957, The Ronald Press Company, New York. Note. Within each range, assign lower values if particles are well rounded or if there is significant soft shale or mica content, higher values for hard, angular particles. Use lower values for high normal pressures than for moderate normal pressure,

problems involving man-made fills, it is difficult to either measure or estimate the friction angle of a sand on the basis of laboratory tests alone. For these reasons, extensive use is made in practice of correlations between the friction angle of a sand and the resistance of the natural sand deposit to penetration.

Figure 11.14 shows an empirical correlation between the resistance offered to the standard penetration spoon (Chapter 7) and the friction angle. Inevitably, any such correlation is crude. The actual friction angle may deviate by $\pm 3^{\circ}$ or more from the value given by the curve. The given relation is intended to apply for depths of overburden up to 40 ft, and is conservative for greater depths.

11.6 SUMMARY OF MAIN POINTS

1. The strength of soil can be represented by a Mohr envelope, which is a plot of $\tau_{\gamma\gamma}$ versus $\sigma_{\gamma\gamma}$. Generally the Mohr envelope of a granular soil is curved. For stresses less than 100 psi, the envelope usually is almost straight so that urrz.

$$\tau_{II} = \sigma_{II} \tan \phi$$

where ϕ is the friction angle corresponding to the peak point of the stress-strain curve.

- 2. The value of ϕ for any soil depends upon ϕ_{μ} and upon the amount of interlocking; i.e., the initial void ratio and σ_{rr}
- 3. Where sand is being subjected to very large strains. ϕ_{ev} should be used in the failure law. Unless the sand is very loose, ϕ_{cv} will be less than ϕ . Where the sand is sliding over the surface of a structure, the friction angle will vary from ϕ_{μ} to $\phi_{e\nu}$, depending on the smoothness of the surface.
- 4. A knowledge of the effect of composition helps guide the selection of materials to be used in manmade fills
- 5. Materials to be used in man-made fills should be tested using the actual range of confining pressures which will be encountered in the fill.
- 6. For many practical problems, the friction angle of an in situ sand deposit can be determined by indirect means, such as the standard penetration test.

PROBLEMS

11.1 Given the following triaxial test data, plot the results (a) in a Mohr diagram and (b) in a p-q diagram, and determine \u00e9 by each method.

Geomembrane vs Soils Direct Shear Test Results

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	ONDETIGNISTY CALLES / CALLES	SHIEAR BATE	NDAMA LOV		LESS ())				
SO-mil GM	X	40.047	200 ps[521	5				
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			1000.000	944	088				
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Silty CLey			1500 paf	050	144		-		
			2600 par	2471	цл3				
40-mij GM	×	0.047	200 pať	328	92.1				
(acr) (MD) va Sand			600 paf	6 1-1	509	42.6	42.4	P.95	15.0
			Jeq 0601	961 2	306				
40-mil GM	×	0.047	200 ped	523	18)				
(Ject) (MD) 78. Sand			600 pset	685	583	19.4	171	0.27	C3.0
)5d 100	660	907				
60-mil HIDPE CIM (max) vs.		10 ,0	Ē	0.1	0.6				
Cley (Brown Silly Cley)			ie jai	O'B	J.2	5.16	112	6.0	50
			20 psi	12.8	4.4				
60-mil HDPR (1ex) (3M vr		Ž			1	ļ			
Sitty Clay			Jag 0051	05E1		1.24	g.12	76:0	136.0
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The above Direct Shear Tast reaults were conducted value itergreating neutonial, goorgraphetics, and loading conditions. Griemal friction ongles are product dependent and shall be verified prior to the deal ger and use. It is recommended that the apecific metricity georgeneous fractions of interface direct incurrence in g ASTM D-5121, "Doloremining the deal ger and use in the context and the fraction of the rest of performed on the ASTM D-5121, "Doloremining the deal ger and use interface direct incurrence direct interface performed using ASTM D-5121, "Doloremining the deal ger and use. It is recommended that the apecific and gersynthetic georgeneous data in the deal of the context dependence of the ASTM D-5121, "Doloremining

Geomembrane vs Grocomposite

Direct Shear Test Results

No Mutate Adel	TIONS CONTROL	SIMPLAR CONTRACTOR	NOUNAL STATES		Nusse Incontraction	ANG ANG		PEAK ()	
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00-mil GM (res) ts. OC	×	D, D2	ا 20 اور 200 اور 200 اور	48 53	85 123 261	36.9	Q. 15	0.0	16.B
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ઇન-mil Ciki (tex.) મહ GC	×	0.064	Lû pei 30 pei 50 pei	8.3 21.6 35.2	9.0 5 8 1 8 1 8	6.61	2.61	9 .1	2

The above Dirxx Sheur Test results were conducted using succific materials, grospatheting, and busing conditions. Entanal Circlion angles are protound operational should be verified pairs to the design tend use. It is recommended that the specific materials, geospathetics, and leading conditions be identified and a latertace direct and use the rectionment with a should be verified pairs to the design tend use. It is recommended that the specific materials, geospathetics, and leading conditions be identified and a latertace direct and the performent using ASTM D 5321, "Description and the design tend use. It is recommended that the specific materials, geospathetics, and leading conditions be identified and a latertace direct and the performent using. ASTM D 5321, "Description"



Superior Client Service

SCS ENGINEERS 3012 U. S. Highway 301 N., Sulte 700 Tampa, FL 33619 (813) 621-0080 Fax (813) 623-6757

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facsimile transmittal

To	Kin Frid	Phone:	
Company:	DEP Sold Waste	Fax:	744-6125
From:	John Darles	Date:	5/28/03
Re:	Savasoh Co.	Pages:	3
ce:		Project No.	
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SCS ENGINEERS

Source:

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Mechanics" Lange Juhisman

Ch. 11 Shear Strength of Cohesionless Soil

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č				Friction	Angles			•	
		¢1		At	, <u></u> ,	At Peak S	trength	Wars	AUMATES
	A	ngle of Repose	Stre	mate ength	Mediu	m Dense	1	Dense	_
Classification	i(")	Slope (vert. to hor.)	\$ ey(")	$\tan \phi_{cv}$	¢(°)	tan ø	φ(°)	tan ¢	
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	30	1 on 1.75	30	0.577	32	0.625	34	0.675	
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	30	l on 1.75	30	0.577	34	0.675	36	0.726	SANTY
Well-graded sand	30 to	1 on 1.75	30 10	0.5 77	$\int \frac{34}{to}$	0.675	38 TO	0.839	50,15
	34	1 on 1.50	34	0.675	40	0.839	46	,1.030	Ø=30 - 70
Sand and gravel	32 to	1 on 1.60	32	0.625	36	0.726	40	0.900	1
¥.	36	1 on 1.40	36	0.726	42	Ó.900	48	1.110	

From B. K. Hough, *Basic Soils Engineering*. Copyright © 1957, The Ronald Press Company, New York. Note. Within each range, assign lower values if particles are well rounded or if there is significant soft shale or mica content, higher values for hard, angular particles. Use lower values for high normal pressures than for moderate normal pressure,

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$$\tau_{II} = \sigma_{II} \tan \phi$$

where ϕ is the friction angle corresponding to the peak point of the stress-strain curve.

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PROBLEMS

11.1 Given the following triaxial test data, plot the results (a) in a Mohr diagram and (b) in a p-g diagram, and determine ϕ by each method.

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Geomembrane vs Soils Direct Shear Test Results

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	4	Ę	47	ŚĘ	31.	Ę.
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The above Direct Shear Tast reutite were conducted value if the reactific materials, geosynthetics, and loading conditions. Enteral friedion angles are product dependent and should be varified prior to the dealign and uses it is recommended that the apecific materials, geosynthetic stands and a latertate direct them text dependent and should be Varified prior to the dealign and uses it is recommended that the apecific materials, geosynthetic factors that and a latertate direct them text dependent and should be Varified prior to the coefficient of geosynthetic group interface and sail/geosynthetic friction by the Direct Share Method '.

Geomembrane vs Geocomposite

Direct Shear Test Results

ALL TRUE AGE CONTRACTOR TO AND A CONTRACTOR		RATE	A THESS	SHEAL ST	trout of			PEAK C	ON COLOR
80 mil EDPB (text) vs Daubis-Sideci CIC		Đ. 84	600 psf 1400 psf 2200 psf	438 B52 1)65	EB2 01:5 04:0	30.8	15.9	9.ET	Frt
60-mili GM (tec) vs. GC	×	1,02	ا 20 psf 200 psf 600 psf	801 153 489	85 (23 26(36.9	6.12	0.0	16,0
sc-mil Ghá (ber;) vi. GC	×	0.4	10 11 12 12 10 12 13 10 10 13	0.8 2.12 0.8E	17 17 0 EI	15.9	521	6-1	51
લ્ડ-rbil Gåi (tes) મહ ઉC	×	0.004	Lô pai 30 pai 50 pai	8.3 21.8 15.2	6:C 8 C 8 1,C	9.85	2.61	g-i	2

Source?

The above Direct Shear Test results were conducted using interpretific materials, and booling conditions. Internal Christyn angles are produed dependent, and should So vesified prior to the design and use. It is recommended that the specific materials, geospathetics, and loading conditions be identified and a interface direct shear test be performed tables ASTM D 5321, "Detormining the design and use. It is recommended that the specific materials, geospathetics, and notices be identified and a interface direct shear test be performed tables ASTM D 5321, "Detormining the design and use. It is recommended that the green ynthetic openynthetic and and and and a bit of Direct Shear Mathout.

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3012 U.S. Highway 301 N Suite 700 Tampa, FL 33619-2242 813 621-0080 FAX 813 623-6757

SCS ENGINEERS

May 28, 2003 File No. 09201024.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

MAY 2 8 2003 SOUTHWEST DISTRICT

Subject:Sarasota County, Central County Solid Waste Disposal Complex
Operations Permit Renewal, Pending Permit No. 130542-002-SO

Dear Mr. Ford:

R.

At your request we SCS Engineers (SCS) is providing the following documents in support of the referenced permit application:

- Replacement page v of the application Table of Contents
- Replacement pages L-4, L-5, and L-19 of the Operations Plan
- Replacement sheets 3 and 16 of the Operations Drawings
- Replacement Drawing E-2
- Replacement Drawing F-1
- Replacement Drawing L-1
- Additional input data sheets for the berm slope stability calculations

In addition, we recognize that several cross sections contained within the Operations Drawings, related to the fill sequence plans, may not accurately reflect the revised terrace swale berm and its proposed elevations. We will evaluate this issue and submit revised drawings, as needed, by June 13, 2003.

The three scenarios contained in the berm slope stability calculations model the effects of water infiltration and potential water build up along the low permeability portion of the future closure cap system. The future closure cap, which will incorporate the same side slopes (3H:1V maximum), represents the worst-case scenario for veneer slope stability due to the collection and migration of water along the closure cap interface. During operations prior to closure, water that has infiltrated should percolate downward through the intermediate and daily covers and not along a defined failure plane (i.e. such as the interface of the low permeability interface of the future closure cap).

The soil types, Soil Types 1 and 2, used in the model represent the cover soil and the strength of the interface between the cover soil and the drainage layer along the closure cap, respectively. Soil Type 1 represents a sandy soil with a typical internal phi angle of 30

Kim Ford May 28, 2003 Page 2

degrees and no cohesion. Soil Type 2 represents the interface friction strength between the cover soil and a drainage geocomposite or between the cover soil and a geomembrane.

The slope stability model scenarios use the same side slope profile and only vary the depth of saturation above the closure cap. To achieve a short-term slope stability factor of safety equal to 1.3, the depth of saturation should be keep below 12 inches above the closure cap. The future closure cap should be designed to either limit the amount of water infiltrating the cover system or designing the transmissivity of a drainage geocomposite to provide sufficient lateral drainage to keep the saturation depth below 12 inches. To minimize the amount of infiltration into the closure cap system, the design could possibly specify sandy soils with clayey fines or provide considerations for placing low permeability soils along the stormwater berms to maximum stormwater runoff and collection.

The specific design requirements for the geosyenthetic materials and final cover soils shall be åddressed at the time of final closure design and submitted to the Department for approval. During design of the closure cap, site-specific soils and direct shear test results should be conducted using the proposed geosynthetic and soil components.

Please let us know if you have any questions with this submittal.

Sincerely. 1/2.5

John A. Banks, P.E. Project Director SCS ENGINEERS Payel Sure

Raymond J. Dever, P.E., DEE Vice President SCS ENGINEERS

Gary Bennett, Sarasota County

** PCSTABL6 ** by Purdue University

--Slope Stability Analysis--Simplified Janbu, Simplified Bishop or Spencer's Method of Slices

Run By: JHO Input Data Filename: run.in Output Filename: result.out Unit: ENGLISH Plotted Output Filename: result.plt

PROBLEM DESCRIPTION Sarasota County Landfill - Terrace Berm Stability

BOUNDARY COORDINATES

7 Top Boundaries 17 Total Boundaries

Boundary	X-Left	Y-Left	X-Right	Y-Right	Soil Type
No.	(ft)	(ft)	(ft)	(ft)	Below Bnd
					~
1	0.00	30.00	20.00	30.00	4
2	20.00	30.00	65.00	45.00	1
3	65.00	45.00	85.00	55.00	1
4	85.00	55.00	89.00	53.00	1
5	89.00	53.00	161.00	77.00	1 /
6	161.00	77.00	181.00	76.00	1
7	181.00	76.00	230.00	92.33	1
8	65.00	45.00	89.00	53.00	1
9	20.00	30.00	26.30	30.00	4
10	26.30	30.00	161.28	75.00	2 /
11	161.28	75.00	181.28	74.00	2
12	181.28	74.00	230.00	90.23	2
13	26.30	30.00	27.12	30.00	4
14	27.12	30.00	161.31	74.75	3
15	161.31	74.75	181.31	73.75	3
16	181.31	73.75	230.00	89.98	3
17	27.12	30.00	230.00	30.00	4

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Pic Surf No.	ez. Yace	No	WATS	(cove	n system	Dry
1 2 3 4	110.0 62.4 55.0 110.0	120.0 62.4 65.0 120.0	0.0 0.0 0.0 0.0	30.0 30.0 30.0 32.0	$0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00$	0.0 0.0 0.0 0.0	0 0 0 0		Coven geom Lan Su	Soil Emanante OGH MA	Isoil I TENIAL	inter face	

NO PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED Unit Weight of Water = 62.40

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.

SCENARIO 2 (Coven soil is completely Day)



Page 1

100 Trial Surfaces Have Been Generated.

2 Boxes Specified For Generation Of Central Block Base

Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 10.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)	2	DI	E. Ind	ale a contrata de la
1 2	27.08 89.70	30.12 50.99	65.70 160.63	42.99 74.64	0.13 0.13	S	510015	FRIIVIA	interface

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Janbu Method * *

Failure Surface Specified By 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)	\frown		
1 2 3 4	28.50 33.14 146.17 149.37	32.83 32.18 69.88 73.12		Failure	SUNFACE

*** FS = 1.746 *** (Assumes that the cover soil is completely dry)

** PCSTABL6 ** by Purdue University

--Slope Stability Analysis--Simplified Janbu, Simplified Bishop or Spencer's Method of Slices

Run By: JHO Input Data Filename: run.in result.out Output Filename: ENGLISH Unit: Plotted Output Filename: result.plt

PROBLEM DESCRIPTION Sarasota County Landfill - Terrace Berm Stability

BOUNDARY COORDINATES

7 Top Boundaries 17 Total Boundaries

Boundary	X-Left	Y-Left	X-Right	Y-Right	Soil Type		
No.	(ft)	(ft)	(ft)	(ft)	Below Bnd		
1	0.00	30.00	20.00	30.00	4		
2	20.00	30.00	65.00	45.00	1		
3	65.00	45.00	85.00	55.00	1		
4	85.00	55.00	89.00	53.00	1		
5	89.00	53.00	161.00	77.00	1		
6	161.00	77.00	181.00	76.00	1		
7	181.00	76.00	230.00	92.33	- 1		
8	65.00	45.00	89.00	53.00	1	S. S. Laul	Ir
9	20.00	30.00	26.30	30.00	4	j soit prof	i filler
10	26.30	30.00	161.28	75.00	2		
11	161.28	75.00	181.28	74.00	2		
12	181.28	74.00	230.00	90.23	2		
13	26.30	30.00	27.12	30.00	4		
14	27.12	30.00	161.31	74.75	3		
15	161.31	74.75	181.31	73.75	3		
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17	27.12	30.00	230.00	30.00	4		

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil	Total	Saturated	Cohesion	Frictio	n Pore	Pressure	Piez.	
Type No.	Unit Wt.	Unit Wt. (pcf)	Intercept (psf)	Angle (deg)	Pressure Param.	(psf)	No.	water Level
1 2	110.0 62.4	120.0 62.4	0.0 0.0	30.0 30.0	0.00 0.00	0.0 0.0	1	Cover Soll FEOMEMSIANE/SOLL INTERFACE
3 4	55.0 110.0	65.0 120.0	0.0 0.0	30.0 32.0	$\begin{array}{c} 0.00\\ 0.00\end{array}$	0.0 0.0	1	LANDAIL MAJELIAL Susgande

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40 Piezometric Surface No. 1 Specified by 5 Coordinate Points

LENGINO L (LATEN LEVEL IS AT THE Soil / GEOMEMBARNE INTENFACE)

Point No.	X-Water (ft)	Y-Water (ft)	
1	20.00	30.00	
2	26.30	30.00	
3	161.28	75.00	
4	181.28	74.00	
5	230.00	90.23	

WATER LAVEL (WATER AT GEOMEMONANE/FOIL INTERFACE)

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

2 Boxes Specified For Generation Of Central Block Base

Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 10.0

BoxX-LeftY-LeftX-RightY-RightHeightNo.(ft)(ft)(ft)(ft)

127.0830.1265.7042.990.13289.7050.99160.6374.640.13

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Janbu Method * *

Failure Surface Specified By 4 Coordinate Points

Point	X-Surf	Y-Surf	
No.	(ft)	(ft)	
1	51.94	40.65	f Failure sunface
2	58.30	40.47	
3	158.95	74.10	
4	161.24	76.99	

*** FS = 1.685 *** (Piezometric Surface No. 1 - Assumes water at Soil/Geomembrane interface)



** PCSTABL6 ** by Purdue University Slone Stability Analysis...

--Slope Stability Analysis--Simplified Janbu, Simplified Bishop or Spencer's Method of Slices

Run By: JHO Input Data Filename: run.in Output Filename: result.out Unit: ENGLISH Plotted Output Filename: result.plt

(SCENARIO 3) (WATER LEVEL IS APPADX 12-INCH ABOVE SOIL/GEOMEMBARNE INTERFACE)

PROBLEM DESCRIPTION Sarasota County Landfill - Terrace Berm Stability

BOUNDARY COORDINATES

7 Top Boundaries 17 Total Boundaries

Boundary	y X-Left	Y-Left	X-Right	Y-Right	Soil Type	
No.	(ft)	(ft)	(ft)	(ft)	Below Bnd	
1	0.00	30.00	20.00	30.00	4	
2	20.00	30.00	65.00	45.00	1	
3	65.00	45.00	85.00	55.00	1	
4	85.00	55.00	89.00	53.00	1	
5	89.00	53.00	161.00	77.00	1	(
6	161.00	77.00	181.00	76.00	1	
7	181.00	76.00	230.00	92.33	1	1
8	65.00	45.00	89.00	53.00	1	1
9	20.00	30.00	26.30	30.00	4	1
10	26.30	30.00	161.28	75.00	2	ł
11	161.28	75.00	181.28	74.00	2	
12	181.28	74.00	230.00	90.23	2	
13	26.30	30.00	27.12	30.00	4	
14	27.12	30.00	161.31	74.75	3	offenderal and
15	161.31	74.75	181.31	73.75	3	
16	181.31	73.75	230.00	89.98	3	
17	27.12	30.00	230.00	30.00	4	

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil	Total	Saturate	d Cohesio	n Friction	Pore	Pressur	e Piez.		
Туре	Unit Wt.	Unit Wt.	Intercept	Angle	Pressure	Constant	Surface		in level
No.	(pcf)	(pcf)	(psf)	(deg)	Param.	(psf)	No.	/ W	Righ with
								¢	- 1
1	110.0	120.0	0.0	30.0	0.00	0.0	1 -		COVER SOIL
2	62.4	62.4	0.0	30.0	0.00	0.0	1 -		GEOMEMBARNE/Sol INTENTROCE
3	55.0	65.0	0.0	30.0	0.00	0.0	1 -		LA SELL MATERIAL
4	110.0	120.0	0.0	32.0	0.00	0.0	1 -		- ANONI MIRITAINI
									SUBGARDE

Soil Profile

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 6 Coordinate Points

Point	X-Water	Y-Water	
No.	(ft)	(ft)	
1	20.00	30.00	
2	25.89	30.32	
3	30.00	32.28	
4	161.14	76.00	
. 5	181.14	75.00	
6	230.00	91.28	

WATER LEVEL PROFILE (@ 12- when a sove Geomemonance / soil intenface)

Block FRILING Along GEOMEMENANE/SOIL INTERPOSE

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

2 Boxes Specified For Generation Of Central Block Base

Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 10.0

Box	X-Left	Y-Left	X-Right	Y-Right	Height	
No.	(ft)	(ft)	(ft)	(ft)	(ft)	
1	27.08	30.12	65.70	42.99	0.13	
2	89.70	50.99	160.63	74.64	0.13	

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Janbu Method * *

Failure Surface Specified By 4 Coordinate Points

Point	X-Surf	Y-Surf
No.	(ft)	(ft)
1	26.54	32.18
2	29.87	31.00
3	149.25	70.84
4	150.95	73.65

*** FS = 1.274 *** (Piezometric Surface No. 1 - Assumes cover soil half saturated 12inch above geomembrane)

E FRITURE SURFACE

From:	Ford, Kim
Sent:	Wednesday, May 28, 2003 11:48 AM
То:	Pelz, Susan
Subject:	RE: conversation with John Banks about CCSWDC Sarasota

On May 28, 2003 at 11:40am I discussed the following with John Banks:

1. I found the corrected replacement application page 6 from June 2002;

2. I asked for when I would receive the new figures and text as discussed yesterday. John said he could send in today by 3pm except for some cross sections that show elevation 65 instead of 55 for the new terrace swale. I said that he should explain that in writing in his cover letter when he brings in the other revisions.

3. We discussed (also with J. Oneil) the new terrace swale. I explained that the analysis should describe the soil type to be used. I asked what could be included in the design to prevent the worst case (hypothetical) saturated condition. They explained that the design and analysis could be revised for the closure permit design later to include a drainage net and a clayey top soil to minimize infiltration.

4. I said the current text calls the related letdown pipes as "temporary". John explained that this was already discussed with the County and decided upon earlier. I said that if their decision changes to provide a permanent design then a permit modification would be required.

Kim

 -----Original Message----

 From:
 Pelz, Susan

 Sent:
 Wednesday, May 28, 2003 6:05 AM

 To:
 Ford, Kim

 Subject:
 RE: conversation with John Banks about CCSWDC Sarasota

Good conversation record. This is a good way (and there are other equally good ways) of improving our accountability and clarifying how we get to where we're going on our permit reviews.

Another note: it appears that most of the requested info is minor, except for CQA, plans & specs & slope stability calcs. If they're going to try & include permanent letdown construction that with the op permit, we need to send another RAI. I don't think we should call the appl complete if we don't have those items already. If they don't want to include it as part of op permit, then we still probably need to send another RAI for slope stability calcs.

-----Original Message----From: Ford, Kim
Sent: Tuesday, May 27, 2003 12:34 PM
To: Pelz, Susan; Morris, John R.
Subject: conversation with John Banks about CCSWDC Sarasota

On May 27, 2003 at 11:30am I discussed the following with John Banks regarding the pending permit supporting information in response to DEP RAIs:

1. Page 6 of the application form B.3. revised to indicate the actual acres lined;

2. Fig. E-2 corrected to match the new Fig. L-1

3. Fig. F-1 corrected to match the new Fig. L-1

4. Ops Plan Section L.9. to correctly list the gas monitoring points

5.Drawing Sheet 3 to match the new terrace swale design;

6.Drawing Sheet 16 to show the inlet detail for each terrace and to note the slope on the terraces to the drain to the inlets

7. Slope stability printouts requested with all related values for input parameters

8. schedule for constructing the letdown pipes requested. John says the pipes and related inlets should be installed with the terraces as filling reaches the terrace height, and for now the pipes and related structures should be considered temporary. I explained that if the CQA, plans and specs are provided then the permanent installation can be included as part of the ops permit.

9. John said all revised pages with strikethrus can be replaced for final copies.

Kim

Florid Department of Environmental Protection

Memorandum

TO:	Kim Ford, P.E.
FROM:	John R. Morris, P.G. TRM
DATE:	May 20, 2003
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO
cc:	Susan Pelz, P.E.

I have reviewed the responses submitted to the Department's letter dated October 16, 2002 regarding the permit renewal application for the Central County Solid Waste Disposal Complex (CCSWDC) that were prepared by SCS Engineers on behalf of Sarasota County, dated and received May 2, 2003. My review focused on the hydrogeologic and environmental monitoring aspects of the permit renewal application.

This memorandum includes review comment numbers that are consistent with my memoranda dated March 28, July 24, and October 16, 2002. To facilitate the review process, those review comments that were fully addressed by previous submittals have been deleted from this memorandum.

SECTION L - LANDFILL OPERATION REQUIREMENTS (Rule 62-701.500, F.A.C.)

Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, revised Dec. 2, 2002

6. L.9. – Gas Monitoring Program

a. The submittal of revisions to Section L.9 and Figure L-1 of the Operations Plan that include gas monitoring locations GM-4 (administration building) and GM-5 (scale house) are noted. It is the Department's understanding that gas monitoring to comply with the requirements of Rule 62-701.530, F.A.C. will be conducted at the following locations:

- Gas probes (4 total): GP-1, GP-2, GP-3 and GP-7
- Gas monitoring locations (6 total): GM-1, GM-2, GM-3, GM-4, GM-5 and GM-7

The reference in the second paragraph of Section L.9 of the Operations Plan to three (3) gas monitoring locations appears to be inconsistent with the locations listed above. It appears that the text of Section L.9 of the Operations Plan should be revised to reference six (6) gas monitoring locations.

b. The submittal of revisions to Section L.9 and Figure L-1 of the Operations Plan that include gas monitoring location GM-7 (electric panel at leachate tank) are noted. The Department does not object to the justification provided for deleting gas monitoring location GM-6 (control booth). The submittal of Sheet No. CD-9 to show the location of the control booth is noted. No additional information is requested.

13. Section 6 – Adequacy of Monitoring Program

a. The submittal of revisions to Figure 4-1 to delete wells MW-6 and MW-7 is noted. No additional information is requested.

Complete responses were provided to review comment Nos. 6.b. and 13.a., as requested in my previous memorandum dated October 16, 2002. Provided that a replacement for page L-19 of the Operations Plan is submitted that addresses review comment No. 6.a., the submitted revisions appear to provide sufficient information to address the hydrogeologic and monitoring requirements of Rules 62-701.510 and 62-701.530, F.A.C.

jrm

WASTE MANAGEMENT TECHNICAL SUPPORT ROUTING FORM

PERMITTED FACILITIES

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Files and	related documents	can be four	ıd	
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Environmental Cons

3012 U.S. Highway 301 North Suite 700 Tampa, FL 33619-2242 813 621-0080 FAX 813 623-6757

SCS ENGINEERS

May 2, 2003 File No. 09201010.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619-2242

DECEVEN MAY 0 2 2003 SOUTHWEST DISTRICT

Subject: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Ford:

On behalf of Sarasota County, SCS Engineers (SCS) submits the following responses to your request for additional information in a letter directed to Mr. Gary Bennett from Mr. Kim Ford, dated October 16, 2002. For ease of review, each FDEP comment is reiterated in bold type, followed by our response. As previously communicated to the Department, response to this request has been delayed until the Department issued a policy statement regarding stormwater diversion berms placed on 3H:1V side slopes.

The following documents are provided with this submittal:

- Revised Section F Landfill Permit General Requirements
- Revised Section L Operations Plan
- Revised Figure L-1
- Revised Drawing Sheet 16
- Revised Figure 4-1
- Calculations of slope stability for the stormwater berm.
- Sheet CD-9 from the original design drawings showing location of control booth.

We have provided revised submittals, or replacement pages to the submittals, using a strikethrough and <u>underline</u> format, to facilitate review. We have included the revision date as part of the header/footer for all revised pages and provided four copies of all revised materials.

The following information is needed in support of the solid waste application (Chapter 62-701, Florida Administrative Code (F.A.C.). Please provide:

1. 62-701.500(2) (f) and (7) (c), and 62-701.600 (5) (e). According to Department rules, final sideslopes shall not be steeper than three feet horizontal to one foot vertical to control erosion of the final cover materials. The typical swale detail shown on Sheet 16 of the Operation Drawings shows 2H:1V sideslopes. Revisions to Detail B on Sheet 16 are requested to show 1) the 3H:1V waste limits along the sideslopes and (2) the final cover designed with a 3H:1V maximum sideslope adjacent to the swale.

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3012 U.S. Highway 301 Nor Suite 700 Tampa, FL 33619-2242 813 621-0080 FAX 813 623-6757

MAY 0 2 2003

SCS ENGINEERS

May 2, 2003 File No. 09201010.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619-2242

Subject: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Ford:

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- Revised Section L Operations Plan
- Revised Figure L-1
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(see borned document)

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Response: Please see the revised Detail B on the enclosed Sheet 16 of the Drawings. In accordance with recent discussions with the Department, the berm includes a relatively short distance of 2:1 slope. We have enclosed calculations that show this design is stable with an acceptable factor of safety using conservative assumptions and under worst-case scenarios. We evaluated the berm for two failure modes; 1) a sliding failure of the material that makes up the berm on a 2:1 slope angle and; 2) along the interface with the geomembrane cap material. Both of these analyses were performed assuming the soils are in a saturated condition.

2. 62-701.500, .510, and .530. Responses to Mr. John Morris' October 16, 2002 memorandum (attached) are requested. You may call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.

Response: Please see the following responses.

Please provide all responses that relate to engineering required for design and operation, signed and sealed by a professional engineer. All descriptions of operations procedures provided as part of responses should be included as revisions to the Operations Plan (Section L). All replacement pages should be numbered, and with revision date.

Below are our responses to a Memorandum dated October 16, 2002 from John R. Morris to Kim Ford.

SECTION B – DISPOSAL FACILITY GENERAL INFORMATION

1. B.13.: The response that indicates the notation of the special exemption area in the County land records was not intended to fulfill landfill closure requirements, and the submittal of revised page 7 of the application form are noted. No additional information is requested.

Response: Comment noted.

<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated</u> Feb.28, 2002

- 2. L.2.h.(2) Leachate Management System
 - a. Collection System The submittal of Figure L-1A showing the leachate pump station valve boxes labeled C-1 through C-5 is noted. No additional information is requested.

Response: Comment noted.

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c. The response verifying that Pond No. 6 is the location that will receive stormwater retained in the secondary containment of the leachate storage tank and the revision to Section L.2.h.2 of the Operations Plan are noted. No additional information is requested.

Response: Comment noted.

5. L.8.b. – Leachate Collection and Removal System: The reference to the response provided to review comment No. 2.a. is noted. No additional information is requested.

Response: Comment noted.

- 6. L.9. Gas Monitoring Program
 - a. The revision to Section L.9 of the Operations Plan describing how the landfill gas probes will be monitored to be consistent with Rule 62-701.530(2)(b), F.A.C., is noted. However, the Department does not agree with the response that the issue of landfill gas detected at GP-4, GP-5 and GP-6 has been resolved. The proposed changes to the gas probes in the renewal application and subsequent submittals follow:
 - <u>February 2002</u>: abandon existing GP-4/GP-5/GP-6; install proposed GP-4t at a location south of the borrow stockpile and yard waste compost areas
 - June 2002: abandon existing GP-4/GP-5/GP-6; renumber proposed GP-4t as proposed GP-4 and relocate it from south of the borrow stockpile and yard waste compost areas to between the waste tire and C&D processing facilities
 - <u>September 2002</u>: abandon existing GP-4/GP-5/GP-6; renumber proposed GP-4 as proposed GP-7 to be installed at a location between the waste tire and C&D processing facilities

It is agreed that the south side of landfill Cells 1 through 5 is a considerable distance from the property boundary. However, the proposed changes to eliminate the existing gas probes along the south side of the landfill footprint <u>and</u> the ambient monitoring locations in the scale house and administration building do not appear to provide a means to demonstrate the absence of landfill gas in the subsurface or in structures south of the landfill footprint. As such, the proposed changes do not appear to meet the

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requirements of Rule 62-701.530(2), F.A.C. At a minimum, the landfill gas monitoring program must include at least one gas probe located south of the landfill footprint (existing GP-4/GP-5/GP-6 or proposed GP-4t would be acceptable) <u>or</u> the existing ambient monitoring points at the scale house and administration building must be maintained. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

Response: Section L. and Figure L-1 have been revised to include GM-4 and GM-5 in the LFG Monitoring Plan.

b. It is agreed that the Department did not issue a permit modification to include ambient monitoring locations GM-6 and GM-7 in Specific Condition No. 19 of permit No. SO58-299180. For the purposes of clarification, it is noted that the County agreed to add ambient monitoring location GM-7 (electric panel at leachate tank) to the quarterly landfill gas monitoring events in response to the Department's request during a meeting conducted November 9, 1999. As previously requested, please provide a site map that shows the location of GM-6 (control booth) and specifically indicate why it is considered appropriate to cease monitoring this location. At a minimum, it is considered appropriate to maintain ambient monitoring location GM-7. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

Response: Section L.9 and Figure L-1 have been revised to include GM-7. A more detailed site plan is attached to show the location of the control booth. The control booth should not be routinely monitored because it is rarely occupied, its foundation is elevated above natural grade, the local groundwater table is within a few feet of land surface and it is over 3,000 feet from the waste filling area. The control booth is also located immediately adjacent to the Scale House where monitoring will be performed.

The response and the revisions to Section L.9 and Figure L-1 of the Operations Plan that indicate the proposed gas probe to be located between the waste tire and C&D processing facilities shall be identified as GP-7 are noted. No additional information is requested.

Response: Comment noted.

11. Section 4 – Water Quality Monitoring Findings

- a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:
 - 2) The revisions to the ground water quality data summaries for wells MW-1, MW-9 and MW-10 for the stated parameters/sampling events are noted. No additional information is requested.

Response: Comment noted.

- c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:
 - 3) The response that the County will regrade the northwest corner of the yard waste processing area to redirect stormwater toward the east and south is noted. No additional information is requested.

Response: Comment noted.

- d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:
 - 4) The affirmation in the response that the leachate sample collected during the October 2000 sampling event was reported to contain nitrate at 0.03 mg/L is noted. No additional information is requested.

Response: Comment noted.

e. The acknowledgement of the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation is noted. No additional information is requested.

Response: Comment noted.

12. Section 5 – Ground Water Levels and Flow

b. Further review of the field sheets included in the reports for the semiannual sampling events indicates that three elevations for the top of casing at well MW-9 (31.90, 34.85 and 35.01 feet NGVD) have been used since 1998. The data available in the Department's files are not sufficient to determine which elevation is correct for which sampling event. To resolve this uncertainty, it is the Department's intention to require a new survey (top of casing/land surface elevations and latitude/longitude coordinates) be submitted for all proposed <u>and</u> existing monitor wells to comply with the requirements of Rule 62-701.510(3)(d)1, F.A.C. This comment is provided for informational purposes, no additional information is requested.

Response: Comment noted.

d. The response that surface water elevations in the retention ponds may be influenced by short-term rainfall events is noted. No additional information is requested.

Response: Comment noted.

- 13. Section 6 Adequacy of Monitoring Program
 - a. The submittal of Figure 4-1 to show the locations of existing and proposed monitoring and test sites is noted. It is the Department's understanding that wells MW-6 and MW-7 were abandoned and that water levels will be measured in wells MW-3 and MW-5 during routine sampling events (response to comment No. 12.d., dated and received June 28, 2002). Please submit a revised Figure 4-1 that indicates the status of these wells.

Response: Figure 4-1 has been revised as requested. The revised Figure 4-1 is enclosed.

If you have any questions about the information provided, please do not hesitate to contact us.

Sincerely,

fobut 2 Westly

Robert L. Westly Senior Hydrogeologist SCS ENGINEERS

5-2-03

John A. Banks, P.E. Project Director SCS ENGINEERS

JAB/RJD:jlh Enclosures

cc: Gary Bennett, Sarasota County Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa

SECTION F

LANDFILL PERMIT GENERAL REQUIREMENTS

F.1 VICINITY MAP

No substantial change in the land use, local zoning, or significant features has occurred in the vicinity of CCSWDC since the previous Operations Permit Application submittal.

F.2 AIRPORT MAP

No change in airport development within a 5-mile radius of CCSWDC has occurred since the previous Operations Permit Application submittal.

F.3 PLOT PLAN

No substantial change to the CCSWDC plot plan showing landfill dimensions, locations of proposed and existing water quality monitoring wells, or locations of soil borings has occurred since the previous Operations Permit Application submittal.

A drawing showing the disposal areas and previously filled waste disposal areas are presented in Attachment F-1.

F.4 TOPOGRAPHIC PLAN

No substantial change to the CCSWDC drawing showing proposed fill areas, borrow areas, access roads, grades for drainage, lift cross-sections, fencing, or equipment facilities has occurred since the previous Operations Permit Application submittal.

No substantial changes to the borrow areas, access roads, drainage, lift cross-sections, or equipment facilities have occurred at CCSWDC since the previous Operations Permit Application submittal. Special drainage devices are shown on Sheet 16 of the Operations Drawings.

F.5 LANDFILL REPORT

F.5.a Current and Projected Population

Current and projected population data is included in the following table.

Sarasota County CCSWDC Section F



Revised November 25, 2002

1990	348,594
1999	404,106
2000	410,428
2005	440,474
2010	468,261
2015	497,142
2020	527,248

Table F-1. Sarasota County Current & Projected Population Data

Population data for 1990 is based on information from the U.S. Bureau of Census while 1999 population data & 2000-2020 population projections are based on information from the Bureau of Economic and Business Research, College of Business Administration at the University of Florida.

F.5.b Waste Type, Quantity, and Source

CCSWDC is the final depository for municipal solid waste (MSW) in Sarasota County. MSW waste received at CCSWDC includes residential, commercial, treated biomedical, water treatment sludge, agricultural, asbestos, construction and demolition debris, shredded/cut tires, yard trash, industrial, industrial sludge, and domestic sludge wastes. No hazardous waste is accepted or deposited at CCSWDC. Sources of these wastes may include, but are not limited to, Sarasota, Venice, North Port, Longboat Key, and other unincorporated areas in Sarasota County.

The current (2001) quantity of waste requiring landfilling is estimated from total waste receipts recorded at CCSWDC. The projected future quantity of waste requiring landfilling is estimated to be a 3-percent increase in volume from the previous year. Long-term estimates of waste disposal at CCSWDC is including in the following table.

Voor	Waste	Vear	Waste	Year	Waste	Year	Waste
<u> </u>	267 205	2012	370 137	2023	512,356	2034	709,221
2001	207,393	2012	281 241	2024	527 727	2035	730,498
2002	2/5,417	2015	301,241	2024	543 559	2036	752.413
2003	283,679	2014	392,078	2023	550.866	2037	774 985
2004	292,190	2015	404,459	2020	576.662	2037	798 235
2005	300,955	2016	416,593	2027	570,002	2030	922 182
2006	309,984	2017	429,090	2028	593,962	2039	822,182
2007	319,283	2018	441,963	2029	611,780	2040	846,847
2008	328,862	2019	455,222	2030	630,134	2041	872,253
2009	338,728	2020	468,879	2031	649,038	2042	898,420
2010	348,890	2021	482,945	2032	668,509	2043	925,373
2011	359 356	2022	497,433	2033	688,564	2044	953,134
	1 22,200	1	1 1		and the second se		

Table F-2. Sarasota County Current & Projected Waste Disposal Data (tons)

Sarasota County CCSWDC Section F Revised November 25, 2002

Site Life Estimate F.5.c

MAY 0 2 2003 Based on the proposed final site topography, the site capacity was calculated to be 40,000,000 cubic yards (CY) as submitted in the application for construction. To date, approximately 1,950,000 CY have been consumed. Using the waste projections provided above, and historic estimates of in place waste density (approximately 1,100 lbs per CY) the anticipated life of CCSWDC is estimated to be 40 years. Attachment F-2 includes the details concerning the site life calculation.

Source and Type of Cover Material **F.5.d**

Clean soil used as initial or intermediate cover material at CCSWDC is provided by onsite borrow pits and stockpiled at various locations at the facility. Initial cover material also may consist partially of screened construction and demolition material, processed yard waste, shredded tires, composted yard waste fines mixed with soil, or any other FDEP approved initial cover material. Another type of initial cover includes the use of tarpaulins, pending weather conditions.

APPROVED LABORATORY **F.6**

Attachment F-3 provides the current Quality Assurance Plan (QAP) approval for the laboratory currently performing water quality analysis for CCSWDC. If a different laboratory will be used in the future, a new QAP approval would be submitted to the Department for that laboratory.

FINANCIAL RESPONSIBILITY **F.7**

No substantial change to the financial responsibility requirements for Sarasota County has occurred since the previous Operations Permit Application submittal.

SECTION L

OPERATIONS PLAN SARASOTA COUNTY, FLORIDA

Prepared for:

Sarasota County Environmental Services Solid Waste Operations 4000 Knights Trail Road Nokomis, Florida 34275

Prepared by:

SCS Engineers 3012 U.S. Highway 301 North, Suite 700 Tampa, Florida 33619 (813) 621-0080

> File No. 09201010.01 Revised December 2, 2002

ENVEROMENTALPROTECTION MAY 0 2 2003 SOUTHERT DISTRICT

5-2-03

Revised December 2, 2002

Sarasota County CCSWDC Operations Plan

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SECTION L

OPERATIONS PLAN

L.1 TRAINING

In accordance with Rule 62-701.500(1), Florida Administrative Code (F.A.C.), key supervisory staff at the CCSWDC Landfill have received Landfill Operator Certification training. The training plan can be found in Attachment L-1. Sarasota County staff or a qualified landfill operations contractor will operate the facility. Sarasota County will require the operating entity to provide at least one trained landfill operator certified in accordance with Chapter 62-701.320(15), F.A.C. and at least one trained spotter at each working face during operation when the landfill receives waste to detect unauthorized wastes from each load.

The spotters will be responsible for guiding vehicles and promoting an efficient operation during normal operating hours. The spotters shall also be responsible for enforcing provisions for controlling the waste received. These provisions are described in Section L.2.c.

The facility will be operated in compliance with all applicable regulations governing the operation of solid waste management facilities, and surface water management facilities. Assurance that these requirements will be met is based on the County's past record of landfill operation.

In addition, the equipment operators have sufficient training and knowledge to move waste and soil, and to develop the site in accordance with the design plans and operational standards.

L.2 LANDFILL OPERATIONS PLAN

L.2.a Designation of Responsible Persons

The Central County Solid Waste Disposal Complex (CCSWDC) is owned by Sarasota County and operated under the direction of the Sarasota County Solid Waste Operations Unit. Gary Bennett, Solid Waste Operations Manager will be the designated responsible person for the operation of the CCSWDC. A list of the landfill personnel is given below:
Onyx Waste Services of Florida, Inc.:

- General Manager (1)
- Lead Equipment Operator (1)
- Equipment Operator (7)
- Laborer/Spotter (1)
- Laborer (1)
- Mechanic (1)

Sarasota County:

- Solid Waste Operations Manager (1)
- Engineer (1)
- Administrative Coordinator (2)
- Operations I Supervisor (1)
- Environmental Services Inspector (1)
- Environmental Specialist (2)
- Equipment Operator III (4)

Consolidated Resource Recovery, Inc.:

- Foreman (1)
- Equipment Operator/Spotter (1)
- Equipment Operator (3)
- Laborer (1)

L.2.b Contingency Operations for Emergencies

L.2.b.1 Emergency Provisions

Emergency conditions at the landfill site may occur as a result of a natural disaster (hurricane, tornado, flooding, etc.) or fire. In the event emergency conditions will interrupt operations at the facility, the contingency plan will be implemented (see Attachment L-2) and as follows: Refuse is not normally delivered to the site during emergency conditions; however, should a major storm occur, the following actions shall be taken:

- Daily cover shall be applied to all exposed refuse before a major storm arrives, if possible.
- All landfill equipment shall be parked near any natural wind screens such as earthen mounds and berms.
- All lightweight signs and equipment shall be secured.
- When operation resumes, work shall commence in dry areas only (up from the active face). Refuse shall not be deposited in standing water.
- Contract agreements with local contractors, equipment suppliers, or cooperative lending agreements with other County departments will be pursued for backup equipment, if necessary.

Small fires on the working face will be controlled by a bulldozer, landfill compactor and a water wagon and ample cover material to extinguish the fire. On-site stockpiles of soil cover material will always be available for suppressing fires. In the event an uncontrollable fire does occur at the landfill site, the Nokomis Fire Department will be contacted. The Nokomis Fire Department Sarasota County CCSWDC Operations Plan presently maintains a fire station at 111 Pavonia Road in Nokomis, approximately 7.5 miles from the proposed facility. This station has equipment capable of drafting water from surface sources.

The large stormwater retention basins adjacent to the landfill will serve as the water source for fire fighting purposes. In the event of a fire or other emergency, the landfill operator will notify the FDEP within twenty-four (24) hours by telephone and within seven (7) days a written report will be submitted describing the origins of the emergency, actions taken, result of the actions taken, and an analysis of the success or failure of the actions.

A hot load area will be provided in a location away from the working face to allow vehicles arriving at the landfill with a fire in their load to dump quickly in an area where the material can be spread out and quickly covered with soil. The location of the hot load area will change from time to time with the changing working face locations. Hot loads will not be dumped on the working face until sufficiently cool to avoid combustion.

As described in Sections L.11.a. and L.11.b., the Contractor will provide adequate equipment on-site to ensure proper operation of the landfill and for excavating, spreading, compacting and covering waste. As part of an agreement with a maintenance contractor, the Contractor will receive loaner equipment within forty-eight (48) hours of equipment breakdown, if required. These basic emergency procedures should protect the landfill and equipment, and allow reactivation of the operation in an orderly and timely manner.

L.2.b.2 Wet Weather Operations

Steps to be taken for accommodating wet weather solid waste disposal include: 1) set-aside elevated tipping areas with limestone or shell approaches or other acceptable base material as needed to allow uninhibited vehicular movement, 2) set-aside elevated sandy cover material, and 3) drainage and treatment facility inspection and maintenance. During inclement weather, private parties with small vehicles will be directed to a tipping area where a container for receiving waste will be placed on a level and stabilized surface. This container will be located within the lined area of the landfill and will be manned full time with a spotter when vehicles are allowed to use this location. When not in use, the container will be removed or access will be prohibited by barricades or other measures. The container shall be emptied at the working face or covered at the end of each day.

In order to avoid an excessive accumulation of standing water in the area of the working face a small area of daily cover will be removed by grading to allow direct percolation to the underlying refuse and leachate collection system. Pumping equipment is available onsite, if required.

L.2.c Controlling the Type of Waste Received at the Site

The CCSWDC will only accept wastes which are permitted for Class I landfills as provided in Chapter 62-701, F.A.C. Hazardous or untreated biomedical waste, as defined by the U.S. EPA and FDEP, will not be accepted at the site for disposal. All materials entering the facility must

Sarasota County CCSWDC Operations Plan pass through the scale facility. At this point the nature of the material must be disclosed for proper charging and direction to the correct receiving facility.

A trained spotter at the working face will visually inspect the waste as it is deposited. If unauthorized special waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found at the working face, as part of routine operations, the waste would be segregated and removed for recycling or other processing in accordance with FDEP regulations.

Unauthorized special wastes such as white goods and recyclable materials shall be stored in designated areas as shown on Figure L-1 in Attachment L-3. Refrigerated units will be stored in an upright position until all liquids, CFCs and freon are removed. Small quantity household hazardous waste such as lead acid batteries, fluorescent tubes, pesticides, solvents, cadmium batteries, and thermometers, which are discovered at the working face, will be removed and stored in a designated 30-foot x 45-foot covered concrete pad area adjacent to the Contractor's maintenance building located as shown in Figure L-1. This facility is only for temporary storage of material removed from the working face and is not a designated public household hazardous waste disposal facility or transfer station. These wastes will be placed on a 4-drum spill pallet. These pallets will be made up of 100 percent polyethylene with UV inhibitors and have spill reservoirs which meet the uniform fire code capacity requirements. Two pallets will be placed in the designated area. These materials will be collected each month by hazardous materials disposal companies or removed for alternate disposal.

Sarasota County will accept contaminated soil for the purpose of landfilling (disposal) at CCSWDC in accordance with the criteria included in Attachment L-4. Waste tires removed from the working face will be stored in the area designated for waste tire processing facility within the CCSWDC. The location of the waste tire processing facility is shown on Figure L-1.

At least one trained spotter will be at each working face when wastes are received at the landfill. The spotters will be trained in accordance with Rule 62-701.320(15) and in accordance with the training plan described in Attachment L-1 to recognize unauthorized waste. Each load of waste will be visually inspected by the spotter as well as the equipment operators spreading the waste. The spotters and equipment operators will look for containers and other indicators of unauthorized waste. Upon detection of unauthorized waste the spotters will require the hauler to remove the material for disposal at a proper facility. If the hauler has departed, the spotter will remove the material from the working face for temporary storage at the maintenance building and ultimate removal from the site for proper disposal.

If any hazardous waste is detected in the load, the hauler shall be informed immediately of the violation. In the event of discovery of hazardous materials, the procedures outlined in Subparts 3, 4, 5, and 6 of Section L.6 will be followed if any prohibited wastes are discovered.

If unauthorized waste (i.e., hazardous, PCBs, untreated biomedical, or free liquid) are found at the landfill working face, the waste would be isolated and the landfill supervisor would be promptly notified. The landfill supervisor is trained in the proper procedure to follow including notification to the FDEP. Similarly, if suspect waste is found, the waste would be isolated,

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identified if possible, and the landfill supervisor notified. The supervisor would prepare a suspect waste report and ensure that the waste is properly disposed. The waste load inspection form contained in Attachment L-5 is used for this purpose. Hazardous waste would be isolated and restricted from access until it is removed and properly disposed of from the CCSWDC Landfill by a licensed hazardous waste contractor. Hazardous wastes would be removed from the site within 48 hours.

Special waste such as asbestos will be accepted and managed in accordance with the requirements of 62-701.520(3), F.A.C. The asbestos waste haulers will be required to notify the landfill operator in advance and provide information on the estimated volume and delivery date of the asbestos. All incoming asbestos material will be required to comply with all applicable permit conditions and be wet down and double bagged. Any deliveries that do not meet these specifications will not be accepted for disposal. If adverse weather conditions prohibit access to the asbestos disposal area, then incoming asbestos deliveries will not be accepted for disposal. The asbestos material will be covered with a minimum 6-inch layer of cover material upon disposal. If additional asbestos deliveries are scheduled on the same day, the asbestos may remain uncovered until the end of the work day. The disposal location will be recorded in accordance with 40 C.F.R., Part 61.154, and a record of the asbestos location will be maintained.

Waste oil that is collected for the purpose of recycling is accepted at the CCSWDC near the main entrance. Waste oil is stored in a secure container until removed from the site for recycling purposes.

Lawn mowers are accepted at the CCSWDC, as long as they drained of all fluids, and are managed as white goods. After inspection for fluids, lawn mowers are stored in the white goods area until collected by the scrap metal vendor who collects the white goods.

L.2.d Weighing Or Measuring Incoming Wastes

All waste entering the landfill site will be weighed. A minimum of three (3) electronic 50-ton scales are installed at the entrance facility. An Information Management System (IMS) is linked to the scales to facilitate accurate data collection and measurement of incoming materials.

L.2.e Vehicle Traffic Control and Unloading

Directional signs will be placed to safely direct vehicles to the current waste unloading area. These signs will have large legible letters and will be cleaned when necessary. Signs will be strategically placed so that the route is clear to the drivers. Speed limit, safety, and prohibitive practice signs will be placed as necessary to encourage a safe, clean operating area. Unloading will be permitted only at the designated working face. On the fill area, temporary signs, barricades and flagged stakes will be used to direct vehicles to the proper tipping area. Haulers will be responsible for unloading their own vehicles. Wastes requiring special handling will be coordinated with and unloaded under the direct supervision of landfill personnel.

L.2.f Method And Sequence Of Filling Waste

The overall phasing plan for the facilities is depicted on Sheet 4 of the Operations Drawings included in Attachment L-3. The layout for the Cells (designated disposal units) comprising Phase I of the Class I landfill is shown on Sheet 1. A detailed staging plan for the fill sequencing is provided on Sheets 5 through 11. The typical height for each lift is 10-15 feet. The temporary roads and swales for access and surface water drainage will be phased in as the Phase I area is filled. The maximum width of the working face will be 200 feet. However, the landfill operations may be conducted with a working face width of less than 200 feet.

Filling in New Cell

Solid waste shall be deposited in each new cell (designated disposal unit) beginning at the south end of the landfill cell. A temporary rain cell cover composed of a reinforced flexible plastic membrane and designed for landfill applications shall be deployed over portions of the landfill cell to collect rainwater separate from the leachate. A portable "trash pump" will be used at the north end (low end) of the cell to pump accumulated rainwater from off the top of the new cell cover to the stormwater system or to the adjacent unused landfill cell.

The first lift will start at the southern end of the cell. The lift will progress to the north across the entire width of the landfill cell. The working face will primarily move in an east/west direction across the width of the landfill cell. Selected solid waste loads consisting of solid waste containing no rigid objects will be used for the first lift, and it will be filled to an elevation of approximately 37.0.

The method of waste disposal for each lift is described as follows. All incoming solid waste will be directed to the working face and placed against the side slope of the previous day's refuse. The first row of waste in a new lift will be placed against the toe of a containment berm to provide a guide for the placement of refuse for the remaining rows. A slope of not more than 3 to 1 will be maintained.. The working face shall be less than 200 ft. wide. A maneuvering area shall be provided for large private and commercial vehicles.

Solid waste will be placed at the working face and spread in 2-foot layers. The solid waste will be compacted with a minimum of three to five passes of a compactor. The spreading of refuse will be a continuous operation.

In compliance with 62-701.500(10), F.A.C., the stormwater management systems will be operated and maintained as necessary to meet applicable standards of Chapters 62-701, 62-302, and 62-25, F.A.C. The stormwater management system at CCSWDC Class I landfill is designed to avoid mixing of stormwater with leachate. Stormwater or other surface water which comes into contact with the landfilled solid waste or mixes with leachate will be considered leachate and subjected to applicable requirements.

The filling of each lined cell within the Phase I area will follow the sequence outlined below: (Refer to Sheet 3 of the Operation Drawings, Attachment L-3)

The cell area initially will be filled with an 8 to 15 ft. lift to bring the cover grade 1-2 feet higher than the cell's lined external containment berms to promote stormwater runoff.

Filling of each cell shall generally progress from the south end of the cell to the north end while providing a slope on the cover towards the side of the lift closest to the external perimeter of the landfill operation. Only select waste containing no rigid materials shall be used the first 4-ft. of the initial lift in a cell.

Subsequent lifts shall be added to the extent possible before removing the rain cover to open new cell area.

New cell areas shall be opened once insufficient room exists for the next lift. A minimum of 200 ft. width should be provided for a working lift area.

The surface runoff from unused portions of cells shall be directed away from solid waste by grading and using temporary cell covers.

Areas on the top and sides of each lift shall be adequately covered and stabilized to maximize surface runoff away from the bermed, sloped working area and towards the stormwater drainage areas to minimize leachate generation. Intermediate cover shall be applied to internal top and side slopes and completed external slopes within seven (7) days if the area will not receive more waste within 180 days. A two percent minimum slope shall be used on top of a lift when additional waste will not be placed within one year. Intermediate covered areas that will not be landfilled or covered with final cover within 6 months will be sodded (external slopes) or seeded and mulched (internal and top slopes) to avoid slope erosion. The areas inside the bermed working area will be contained as leachate. Efficient use of these techniques will decrease leachate volumes.

L.2.g Waste Compaction And Application Of Cover

Cover material for daily operations of the landfills will be obtained from designated stockpile area and compost generated from yard waste recycling. This material will be deposited in the stockpile area location shown on Figure L-1. The designated stockpile area will result in a stockpile no higher than 25-feet with 3:1 side slopes in order to minimize erosion. Additional borrow areas will be excavated and placed within the stockpile limits during the operational life of the facility. A silt fence will be installed at the toe of the stockpile area and side slopes grassed to further reduce and control erosion.

Waste shall be spread in layers of approximately two feet thick on the working face and compacted to approximately one foot in thickness before application of the next layer. Initial, intermediate and final cover will be applied as detailed in SectionsL.2.f, L.7.f, L.7.g and L.7.h., of this operations plan.

L.2.h Operations Of Gas, Leachate, And Stormwater Controls

L.2.h.1 Landfill Gas System

The CCSWDC is located near the center of a 6,000-acre site. The minimum distance from the Class I landfill to the nearest property line is 1,800 feet. This distance represent a substantial buffer to allow for dispersion of odors normally associated with MSW landfill operations. Therefore, it is not anticipated that collection of landfill gas will be necessary for odor control. The landfill gas monitoring plan is described in Section L.9 - Gas Monitoring Program.

In order to comply with air quality requirements, a Non-Methane Organic Compound (NMOC) emission report will be submitted to the implementing authority on an annual basis following the requirements of New Source Performance Standards (NSPS). Within twelve (12) months after reporting NMOC emission greater than or equal to 50 Mg/year (megagram per year), a detailed landfill gas collection and control system design plan submittal shall be made to the NSPS implementing agency. Within eighteen (18) months after this submittal, the installation of the landfill gas collection and control system shall be completed. Based on Tier 2 sampling and model projections, this landfill is not expected to exceed the threshold until after 2005 when a new Tier 2 analysis will be required. At a minimum, a landfill gas management system design will be developed to coincide with the initial closure construction for Phase I of the landfill.

Separate from the requirements of the NSPS, passive flares may be utilized on site to combust landfill gas from leachate collection and removal system cleanouts and pump stations, or passive vents installed within the waste mass. The flares will include a solar-powered ignition system that provides a spark at regular intervals. The flares shall be Landfill Service Corporation (formerly Landfill Technologies, Inc.) model CF-5, or similar. The flares are intended to minimize the potential for odors by combusting landfill gas that may accumulate in leachate collection and removal system pipes, or vent from passive vents. Figure L-5 provides a typical detail for installation of a passive flare connected to a leachate collection system cleanout.

L.2.h.2 Leachate Management System

Collection System

The Class I landfill leachate collection system consists of a geonet drainage layer and perforated collection pipe above the liner system to collect and convey leachate. The leachate conveyed to sumps will be pumped to a leachate holding tank onsite. The leachate collection piping system consists of 8-inch perforated polyethylene pipe sloped in such a manner that leachate flowing through the solid waste of the landfill will be collected and transported by gravity to a sump and leachate pump. The discharge line from the sump pump connects to a HDPE header line via a valve vault. Provisions for sampling the leachate as well as monitoring flows and pressure are provided in the valve vault (as shown in Attachment L-3). Any stormwater accumulated in an un-used cell will be pumped out from the collection system to the stormwater system prior to receiving solid wastes by using the valves provided. Immediately prior to solid waste being deposited into a new landfill cell, the related valve from its leachate pump to the stormwater system shall be closed.

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Leachate Disposal System: General Description

Leachate that is generated from the landfill cells will be pumped via the submersible sump pumps located in each cell to a 1,800,000 gallon storage tank. The leachate accumulating in the storage tank will be removed using leachate transfer pumps and discharged to tanker trucks for transport to an off-site wastewater treatment plant (WWTP).

The primary disposal location for CCSWDC leachate is the Bee Ridge WWTP and secondary disposal location is the Central County Utilities Water Reclamation (for facility commitment letter see Attachment L-6). CCSWDC may use other off-site secondary facilities for the treatment or disposal of leachate however will notify FDEP of the change prior to use. Another potential future leachate disposal option includes the installation of a leachate discharge pipeline from CCSWDC to a WWTP or disposal facility. In accordance with FDEP requirements, a construction permit would be obtained prior to implementing this option.

The following information provides a description of the above ground leachate storage tank in accordance with the requirements of 62-701.400(6)(c).

The leachate storage tank has a total capacity of 1.8 million gallons. The exposed plan area of the secondary containment system surrounding the leachate storage tank is 5,419 square feet. This will allow only 27,000 gallons of water to accumulate after an 8-inch rainfall event. All liquid accumulating in the secondary containment system will be tested for specific conductance. Specific conductance of the stormwater in the secondary containment shall not be more than 50-percent above the specific conductance of water in the nearest downstream stormwater pond (Stormwater Pond No. 6) or shall not exceed 1,275 μ mhos/cm, whichever is greater. If the specific conductance is greater than these criteria or if a visible sheen is present, then the stormwater will be pumped directly into the leachate storage tanks and managed as leachate.

A log of discharges from the secondary containment system will be maintained. The date, specific conductance measurements and visual sheen observations shall be recorded.

An electronic water level sensor will automatically determine when the storage tank reaches capacity. The level sensor will activate an electric actuated shutoff valve in the fill line to prevent overfilling the tank. The electric actuated shutoff valve will be tested by inducing a false signal from the level sensor and confirming proper operation on a weekly schedule. The exposed tank exterior will be inspected weekly by visual observation. The inspection will include looking for leaks, corrosion or other maintenance deficiencies. This will be accomplished by inspection from platforms at the top of the 20-foot high secondary containment wall, positioned 120° apart around the circumference of the tank. The tank interior will be inspected annually when the tank is empty or at least once every three years. If any failures are detected, the tank construction company shall be contacted immediately and appropriate repairs conducted based on the nature of the problem. Reports of the above inspections will be maintained by the County (the most recent inspection report is included as Attachment L-7).



Leachate Monitoring

A detailed plan for leachate monitoring is provided in Section M of this Permit Application.

L.2.h.3 Stormwater System

The stormwater management system for this project consists of a series of swales, culverts and detention ponds. The system is designed to comply with all of the requirements of both Chapters 62-25 F.A.C. and 40 D-4 F.A.C.

All stormwater runoff will be conveyed via a perimeter drainage ditch to detention facilities. Ditch blocks located in the perimeter ditch at strategic locations act as sediment traps and will require periodic maintenance.

The ultimate discharge of the detention facilities will be to the old slough or isolated wetlands through fixed control weirs and spreader swales.

As the filling of the waste progresses, temporary stormwater letdown structures will be installed to facilitate drainage without erosion. Temporary stormwater containment/diversion berms shall be installed around the top perimeter of each lift and connected to the temporary letdown structures. The temporary letdowns shall be located, in the approximate locations as shown on Sheet 2 of the Operations Drawings to achieve this objective. Ponding will be deterred within these containment berms by pumping the water if left standing for more than one day. See detail of letdown structure in Attachment L-3, Operations Drawings.

Sediment collection provided by perimeter ditches and ditch blocks will minimize siltation of the main retention areas. In addition, the active fill area(s) will be surrounded by berms to capture stormwater that comes in contact with waste and to prevent run-on and mixing with the stormwater from outside the active fill area. Stormwater collected within the berms surrounding the active fill area(s) will be allowed to percolate into the landfill for collection by the leachate collection system. Prolonged ponding of water in contained areas may be minimized by pumping the water to the sand drainage layer or to a leachate collection pipe cleanout.

Operation and Maintenance Procedures

The stormwater management system for the CCSWDC consists of a variety of treatment and conveyance methods. The treatment system for the main solid waste handling and disposal areas includes seven wet detention basins. Conveyance to these ponds is through a series of letdown structures, perimeter ditches and swales, and culverts. Stormwater collection along the entrance road is provided by the roadside swales. All portions of the stormwater system will be visually inspected weekly and immediately following a storm event of 0.5 inch or greater. The inspections will identify buildup of debris, surface sheen, erosion and sedimentation, overgrown or exotic vegetation, and structural problems. Any problems identified by these inspections will be corrected within three (3) days. The wet detention basins will be inspected to estimate quantities of sediment within each pond. If the sediment occupies 30 percent of the volume below the normal pool elevation, the sediment will be removed and disposed of in the landfill. Sarasota County Revised December 2, 2002 CCSWDC Operations Plan

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Vegetation in all portions of the conveyance systems will be removed on an as needed basis to prevent blockage.

L.2.i Groundwater Monitoring Plan

The groundwater monitoring network and the results of the background water sampling are discussed in Section M of this application. The proposed long term monitoring network for the site is also presented in Section M of this application. This plan complies with Chapter 62-701 F.A.C. Monitoring well locations are shown on Figure L-1.

L.2.j Maintaining and Cleaning Leachate Collection System

Leachate collection system maintenance will include daily inspection of all leachate pump control panels. All running data will be recorded and checked for irregularities. Pumps are pulled and checked for operational parameters at least once every two years. An example leachate pump data form is provided in Attachment L-8. The leachate collection system will be cleaned and inspected as described in part L.8.h of this Operations Plan.

L.3 LANDFILL OPERATION RECORD

The Administrative office located adjacent to the scale facilities at the entrance of the CCSWDC is shown onFigure L-1. The office will include facilities for employees including a training/meeting room, sanitary facilities, and first aid equipment. Similar additional facilities are located at the Equipment Maintenance building. Files will be located in the Administrative office to contain the operating record for the facilities as required by regulatory agencies/permits. The Laboratory Certification are included in the plan as Attachment L-9. Items which shall be stored in the operation record include:

- This Operations Plan.
- All Permits for the facility.
- All Records and drawings used for developing permit applications.
- All monitoring information calibration and maintenance records copies of reports required by permit (maintained for at least 10 years).
- Background water quality records.
- Annual estimates of the remaining life of the constructed landfill and other permitted landfill areas.
- All Monthly waste records which shall include tonnages received for Class I, C&D, yard waste and recyclables.
- Asbestos location records.

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- All Monitoring reports for groundwater, stormwater, leachate and landfill gas.
- Waste tire processing records.
- Copies of all notifications required by 62-701 F.A.C.
- On-site precipitation record.
- DEP inspection reports.
- Load checking reports.
- Leachate storage tank inspection reports
- All Training verifications.
- All Other reports related to the design, operation, monitoring or permitting for the facilities.

L.4 LANDFILL WASTE REPORTS

Each month, a summary report of waste tonnage received for Class I waste, C&D debris, yard waste, and recyclables will be compiled. Copies of the monthly report will be submitted to FDEP quarterly or upon request.

L.5 EFFECTIVE BARRIER/ACCESS CONTROL

Access control at CCSWDC includes a perimeter fence with a locking access gate at the scalehouse, which is the only entrance/exit for the facility. The access gate normally will be kept open during hours of operations and an attendant will be at the scalehouse during those times. When CCSWDC is not in operation, this access gate normally will be kept closed and locked.

L.6 LOAD CHECKING PROGRAM

At least three random loads of Class I Municipal Solid Waste (MSW) delivered to the landfill each week will be examined in accordance with the following procedure: **Mechanism For Inspections**

- (1) Specific locations within the active landfill cell are to be dedicated to load examination. The areas should be relatively free from extraneous debris and capable of maintaining isolation of the material for one calendar week.
- (2) The inspection of the load shall be controlled by a Contract Operator employee. Training of contract personnel shall continue on an ongoing basis.

- (3) The inspection form (see Attachment L-5) shall be filled out and signed off by the Contract Operator. It shall be the County's responsibility to file/store/distribute the reports.
- (4) The Sarasota County Solid Waste Operations Unit or the Solid Waste's Hazardous Waste Section will investigate violations found during the inspection process. The Contract Operator will attempt to remove or clean-up the disposed materials. If Contract Operator is unsuccessful, Solid Waste will remove or clean-up the disposed materials.
- (5) Violations involving hazardous waste dumping shall be handled by the Solid Waste's Hazardous Waste Section. Every attempt shall be exhausted to place responsibility on the generator relative to having the hazardous waste in question removed from the landfill at the expense of the generator. In the event that generator responsibility cannot be determined and that the waste appears to be from a commercial source, it shall be the County's responsibility to segregate and secure the waste and pay all costs relative to safely disposing of said waste.
- (6) A list of offenders shall be compiled by the Solid Waste's Hazardous Waste Section and the list shall be provided to the County with updates on a periodic basis.

L.7 PROCEDURES FOR SPREADING AND COMPACTING WASTE AT THE LANDFILL

L.7.a Waste Layer Thickness and Compaction Frequencies

Waste shall be spread in layers of approximately two feet thick on the working face and compacted to approximately one foot in thickness before application of the next layer. The solid waste will be compacted with a minimum of three to five passes of a compactor.

L.7.b First Layer of Waste

Selected solid waste loads consisting of solid waste containing no large rigid objects shall be used for at least the first four feet of the first lift of a new cell in order to protect the liner and leachate collection system. This first lift must be a minimum of four feet thickness and be filled to an elevation of approximately 37.0 NGVD in order to promote shedding of stormwater. Waste shall be deposited at the inside toe of the cell's lined external containment berm on the south end of the cell and spread to the north. No solid waste shall be placed beyond the litter fences. For the initial lift, hauling vehicles will reach the working face by traveling on top of the previously deposited waste and depositing the loads at the top of the working face. The fill will be spread and compacted "down slope" to prevent vehicles from traveling on the protective sand layer. Also see Section L.2.f. in this Operations Plan.

L.7.c Slopes, Side Grades and Lift Height

The typical height for each lift is 10-15 feet. All incoming solid waste will be directed to the working face and placed against the toe of the side slope of the previous day's refuse. The first row of waste in a new lift will be placed against the toe of the containment berm to provide a guide for the placement of refuse for the remaining rows. A maximum slope of 3 to 1 will be maintained on the working face. Covered top slope areas shall maximize surface runoff away from the working face and to the stormwater drainage areas to minimize leachate generation using a 2 percent minimum slope. All areas which promote stormwater runoff will receive sufficient cover and stabilization so that stormwater discharge from the facility will meet the requirements of 62-3 and 62-302, F.A.C.

L.7.d Maximum Width of Working Face

Maximum width of the working face will be 200 feet. This will provide a sufficient area for maneuvering large private and commercial vehicles, as well as minimize the exposed area and unnecessary use of cover material.

L.7.e <u>Initial Cover</u>

For the Class I landfill, a minimum of six inches of initial cover consisting of native sandy soils, top soil, soil, yard waste compost mixture, shredded tires, or other FDEP approved initial cover will be applied to the top of the lift and to the working face at the end of each day. Attachment L-10 provides a description and specification for initial cover materials previously approved for this facility. A 2-inch layer of shredded yard waste may be applied when needed to the initial cover to promote clean stormwater runoff and minimize erosion during rainy weather. The application of initial cover over the landfilled waste will assure control of disease vector breeding/animal attraction, odors, waste combustion (fire), blowing litter, and moisture infiltration.

L.7.f Application of Initial Cover

Initial cover will be applied at the end of each working day, except when solid waste will be placed on the working face within 18 hours, and a temporary cover such as a tarpaulin is used to cover the working face.

L.7.g Intermediate Cover

Intermediate cover consisting of at least 1 foot of compacted native sandy soils or composted yard trash screened through ½-inch mesh mixed within 25 percent soil, by volume, will be applied within 7 days if final cover or an additional lift is not to be applied within 180 days. Intermediate covered areas that will not be landfilled or covered with final cover within 6 months will be sodded (external slopes) or seeded and mulched (internal and top slopes) to avoid slope erosion. Also see Section L.2.f. in this Operation Plan.

L.7.h <u>Final Cover</u>

Following the receipt of a closure permit, final cover will be applied to the Class I landfill on the completed portions of Phase 1 of the landfill operation. The perimeter sides of all completed cells will have a slope of 3:1.

The cap and final cover will consist of a geomembrane layer that complies with Department rules and 24 inches of local common soil of which upper 6-inches will be capable of supporting vegetative cover.

L.7.i Scavenging and Salvaging Control Devices

Scavenging and salvaging is not allowed on the working face at CCSWDC. In the event spotters working in this area observe scavenging or salvaging activities on the working face, the landfill manager will be notified.

L.7.j Litter Control Devices

Litter will be controlled by requiring covered loads, efficient unloading and cover operations, litter fences, perimeter fencing, and by routine clean-up. Litter outside the working area will be picked up within twenty-four (24) hours.

A small litter fence will be placed at the limit of each landfill cell area as shown in Figure L-2 for the full length of the active working area of the cell.

L.7.k Erosion Control Procedures

Erosion control procedures at CCSWDC mainly consist of stormwater management for active cell areas and in areas surrounding the landfill cells. Stormwater management for unused portions of active cells is achieved by applying rain covers to the cell to divert stormwater from these unused areas away from the working face. Stormwater management for used portions of active cells, whereby initial cover or intermediate over the waste has been placed in accordance with FDEP requirements, is achieved by:

- Grading the waste-in-place and initial cover material to divert stormwater away from the working face.
- Use of terraces and letdown pipes.
- Maintaining internal and external berms.

Of critical importance will be maintaining the stormwater management system during the filling sequence. As each lift is constructed, two sets of temporary diversion berms will be constructed. One set will isolate the working face from the remaining covered areas. Stormwater which accumulates in the area of the working face will be retained and allowed to percolate into the landfill where it will eventually be collected in the leachate collection system. The second set of Serecta County

Sarasota County CCSWDC Operations Plan berms will serve as erosion and sediment traps on the newly covered landfilled areas. This set of berms will be placed around the perimeter of each lift to control runoff down the side slopes. These external berms will be sodded to prevent erosion and will be directly connected to the temporary letdown structures to facilitate proper management of stormwater runoff. Sediments which reach the perimeter ditch (shown on Sheet 3 of the Operation Drawings, Attachment L-3) will collect behind the ditch blocks and will require periodic removal. Prior to application of final cover, and after final grades are reached, sod shall be applied to the external slopes that have intermediate cover to reduce erosion. As filling progresses above the first terrace, the first set of temporary letdown structures will be constructed as shown on Sheet 5 of 16 of the Operations Drawings. This operating procedure will minimize the amount of erosion and sediment accumulation that must periodically be removed from the perimeter ditches.

Prolonged ponding of water behind the stormwater containment berm shall be prevented by pumping excess water to the sand drainage layer above the leachate collection system. If there are no areas of exposed sand drainage layer in an active cell, the water shall be pumped directly into a leachate collection pipe cleanout.

L.8 PROCEDURE FOR LEACHATE MANAGEMENT

L.8.a Leachate Monitoring, Sampling and Analysis

The sump pumps located in Cells 1 through 5 will operate in an automatic mode based on the liquid level in the sump. Figure L-3 shows the operation levels for the sump pumps. The pressure transducer located at the end of the pump housing accurately measures the level of liquid in the sump and provides a digital readout of this level at the control panel mounted on the valve box at the top of the each cell's lined external containment berm. As shown on FigureL-3, the high water alarm will result if leachate levels rise to cause 12 inches of head on the liner system adjacent to the sump area.

Two additional pump units will be provided for backup. This allows for removal of each pump on a regularly scheduled basis to perform preventative maintenance. When a sump pump is removed for scheduled maintenance, a spare pump will be reinstalled immediately while the maintenance is being performed. Each pump will receive preventive maintenance in accordance with the manufacturer's recommendations at a frequency based on run time.

Additional details on leachate sampling location, sampling and analysis schedule, and data submission is provided in the Groundwater Monitoring Plan Addendum, Section M.

L.8.b Leachate Collection and Removal System

The Class I landfill leachate collection system consists of a geonet drainage layer and perforated collection pipe above the liner system to collect and convey leachate. The leachate conveyed to sumps will be pumped to a leachate holding tank onsite. The leachate collection piping system consists of 8-inch perforated polyethylene pipe sloped in such a manner that leachate flowing through the solid waste of the landfill will be collected and transported by gravity to a sump and leachate pump. The discharge line from the sump pump connects to a HDPE header line via a

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valve vault. Provisions for sampling the leachate as well as monitoring flows and pressure are provided in the valve vault (see Sheet 14, Attachment L-3). Any stormwater accumulated in a landfill cell will be pumped from the collection system to the stormwater system prior to receiving solid wastes by opening the stormwater valve in the valve box located at each landfill cell pump station. Immediately prior to solid waste being deposited into a new cell, the valve from its leachate pump to the stormwater system shall be closed.

Leachate generated within the landfill cells will be pumped via the submersible sump pumps located in each cell to a 1,800,000 gallon storage tank. Leachate that accumulates in the storage tank will be transferred, to tanker trucks using leachate transfer pumps and transported to an offsite wastewater treatment plant (WWTP).

L.8.c If Leachate Becomes Regulated As Hazardous Waste

Sarasota County will evaluate options for pretreating the leachate and alternate disposal if it becomes regulated as a hazardous waste.

L.8.d Off-site Treatment of Leachate

The primary disposal location for CCSWDC leachate and alternate disposal is the Bee Ridge WWTP with secondary disposal location at the Central County Utilities Water Reclamation (see Attachment L-6 for facility commitment letter). CCSWDC may use other secondary facilities for the offsite treatment or disposal of leachate; however, the County will notify FDEP of the change prior to use.

The CCSWDC will dispose of leachate at the primary treatment location provided the leachate meets the disposal quality requirements. Should leachate quality change such that it is no longer acceptable at the primary treatment location, the CCSWDC will dispose of leachate at the secondary facility.

L.8.e Contingency Plan for Leachate Management

Should one of the following events occur, the leachate contingency management plan shall be implemented.

- Any mechanical failure of the leachate management system that would prevent operation of the landfill leachate collection system pumps or the leachate transfer pumps for more than three (3) consecutive days.
- Liquid accumulation in the holding tank leak detection system in amounts greater than expected from rainfall.
- Rise of leachate levels inside the holding tank greater than 52.6 (high water alarm elevation represented by 31 foot mark on the external tank gauge).

Implementation of the contingency plan includes the following actions.

Sarasota County CCSWDC Operations Plan Revised December 2, 2002

- (1) The landfill manager shall notify the FDEP (within twenty-four (24) hours) and leachate disposal facilities of the emergency event.
- (2) If the problem is excess leachate in the detection system of the holding tank, remedial measures shall be taken immediately to eliminate the leak. Additional tractor trailer tanker unit or units and operators shall be called to the site to expedite transport of leachate to the receiving wastewater treatment plant. The primary holding tank shall be emptied completely, if required, to facilitate repairs.
- (3) If the problem is excessive levels of leachate in the holding tank (elevation exceeds 52.6), the maximum amount of leachate shall be diverted from the tank by increasing the number or frequency or tanker trucks hauling leachate to the primary or secondary WWTPs.
- (4) Once the problem causing the implementation of the contingency plan has been resolved to an acceptable degree, the landfill manager shall notify FDEP (within three (3) days) that the facility is ready to return to normal operating conditions.

L.8.f <u>Recording Quantities of Leachate Generated</u>

A control panel for each sump pump in Cell Nos. 1 through 5 is mounted on the valve box at the top of each cell's lined external containment berm. Each control panel will be equipped with a pump hour meter.

The following information will be recorded once per day from each cell sump pump location.

Cell No.	
Flow Meter Reading	
Hour Meter Reading	
Sump Liquid Level	

The above information is recorded on the form provided as Attachment L-8.

L.8.g Precipitation and Leachate Generation Rates

Rainfall for each 24-hour period measured at an official gauge located onsite will be recorded and entered onto a spreadsheet (format included in Attachment L-11) to compare precipitation to leachate generation.

L.8.h Leachate Collection System Inspection and Cleaning

CCSWDC will conduct a video inspection of the leachate collection system at least once every five years in accordance with Rule 62-701.500 F.A.C. requirements, and cleaned as necessary. The most recent inspection of the leachate collection system at CCSWDC was completed on June 14, 2001.

111A J 2 2003 Leachate pumps at CCSWDC will be inspected for operation failures at least daily. Control 4 panels will be inspected and operational data recorded as described in L.8.f.

GAS MONITORING PROGRAM L.9

A gas monitoring program will be implemented to prevent explosions and fires and to minimize off-site odors and damage to vegetation. The landfill gas monitoring program for CCSWDC will include monitoring of the landfill perimeter at the monitoring locations shown on Figure L-1, as well as, inside the Contractor's maintenance building, the County's Maintenance Building, and all enclosed structures at the C&D recycling facility. Monitoring shall be conducted on a quarterly basis. The outside monitoring locations (gas monitoring probes) shall consist of a monitor probe as shown on Figure L-4.

The gas monitoring locations shall include four (4) gas monitoring probes as described above and numbered GP-1 through GP-3 and GP-7 and three (3) gas monitoring locations GM-1 through GM-5 and GM-7 in structures as shown on Figure L-1. Low areas, base boards, floor drains, and floor mounted cabinets shall be monitored inside the structures. Other structures on the site are not monitored because the great distance from the landfill (over 3,400 feet), and the shallow groundwater table (5-7 feet below surface) at the site would cause any migrating gas, if it existed, to purge to the atmosphere before it would travel to these structures through the ground. Also, there are no connections via conduit pipes, etc. between these structures and the landfill area.

The monitoring will be conducted for the Lower Explosive Limit (LEL) of methane. A Scott Aviation Gas Tester Model G15 or an equivalent unit will be used. No purging of the probe shall be allowed. Once the meter is connected to the sampling port, the valve shall be opened and the meter pump shall be engaged and meter reading observed. The highest valve observed is recorded as well as the steady state value observed.

If the LEL is greater than 25 percent inside any monitor location probe, a temporary monitor probe shall be established 50 feet from the monitor location in the opposite direction from the landfill. The temporary monitor probe shall be of the design as shown in Figure L-4. The temporary monitor probe will be monitored on a monthly basis for at least one quarter and until the temporary monitor station records zero percent LEL and the monitor location probe records less than 25 percent LEL. If the LEL is greater than 25 percent inside the structures, or equal to, or greater than 100 percent at any monitor probe, the landfill operator will submit to the FDEP within seven (7) days a remediation plan detailing the nature and extent of the problem and the proposed remedy. The remedy will be completed/ implemented within sixty (60) days of the detection unless otherwise approved by the FDEP.

STORMWATER MANAGEMENT SYSTEM L.10

The landfill stormwater management system for CCSWDC is discussed in Section L.2.h.(3) -Stormwater System.

Sarasota County **CCSWDC** Operations Plan

L.11 EQUIPMENT AND OPERATION FEATURE REQUIREMENTS

L.11.a Adequate In-Service Equipment

Equipment proposed for the CCSWDC will include the equipment listed in Table L-1. The exact equipment complement may vary from time to time and additional equipment will be acquired if needed. Two roll-off containers will be placed in the yard waste compost area and the other at the Class I landfill area.

NUMBER	EQUIPMENT
1	Bulldozers
2	Compactors
1	Dump Truck
1	Front-end Loader
1	Graders
1	Hydraulic Excavator
1	Water Truck
1	Fuel Truck
2	Pick-up Truck
2	UD Gators
3	Roll-off Containers
1	Compressor
1	Pressure Washer
1	Welder

TABLE L-1.EQUIPMENT USED AT THE CCSWDC

Emergency Electrical Generation Equipment is of adequate size to assure complete operation of the Leachate Disposal and Collection Systems.

L.11.b <u>Reserve Equipment</u>

Cooperative lending agreements with the Contract Operator's company and standing agreements with local equipment suppliers will provide a means for procuring additional back-up equipment.

L.11.c Communication Facilities

A telephone will be available at the scale house and the maintenance/administration building. Radios and other communication devices will be in select landfill equipment to provide safe conditions for landfill personnel.

L.11.d <u>Dust Control Methods</u>

Dust from unpaved haul roads and construction areas within the Class I landfill area will be controlled through the use of a water spray truck. An alternate dust control measure that may be used in active cells of the Class I landfill area is leachate reuse (see Attachment L-12 for FDEP approval letter). This reuse of leachate involves spraying small quantities of leachate from a spray bar mounted on the rear of a tank truck onto active fill areas of the landfill. The landfill operation crew will monitor the rate of leachate application, soil moisture conditions, and the specific landfill areas used to prevent the generation of leachate runoff. Leachate will only be applied under the following conditions.

- Leachate may only be sprayed on active, bermed fill areas, including the working face, and areas with the required six (6) inches of initial cover.
- Leachate may not be sprayed on areas with intermediate or final cover.
- At all times areas receiving leachate must be controlled to prevent run-off from entering the stormwater system.
- Leachate may not be sprayed when the application area is in a saturated condition.
- The application rate of leachate should be such that leachate does not accumulate on the landfill surface, and infiltrates quickly into the covered refuse.
- Leachate should not be sprayed at the end of the day on the initial cover of the working face or other areas. Spraying should be done early in the morning after any dew evaporates and continue until early afternoon or until all available areas have been utilized.

The Site Manager will record daily the gallons of leachate sprayed per this method.

If needed, dust masks will be available to personnel working in excessively dusty areas.

L.11.e Fire Protection And Fire Fighting Facilities

Small fires on the working face will be controlled by use of dump trucks, a landfill compactor, and a bulldozer to move earth cover material over hot areas. Additionally, the water truck will be available to apply water to any fires. In the event that an uncontrollable fire does occur at the CCSWDC site, the Nokomis Fire Department will be contacted immediately. The Nokomis Fire Department is equipped with pumper trucks capable of drafting water from surface sources. In the event of a fire, the landfill operator will notify the FDEP within twenty-four (24) hours. Within seven (7) days, a full written report on the fire will be submitted to FDEP describing the origins of the fire, the actions that were taken to deal with it, the results of the actions taken and an analysis of the success or failure of the actions.





A hot load area will be provided in a location away from the working face to allow vehicles arriving at the landfill with a fire in their load to dump quickly in an area where the material can be spread out and quickly covered with soil. The location of the hot load area will change from time to time with the changing working face locations. Hot loads will not be dumped on the working face until sufficiently cool to avoid combustion.

L.11.f Litter Control Devices

See Section 7.i. in this Operations Plan.

L.11.g Signs Indicating Name Of Operating Authority, Traffic Flow, Hours Of Operation, And Charges For Disposal

There is a permanent sign at the south property line along the access road to the facility identifying the Sarasota County Central County Solid Waste Disposal Facility and indicating hours of operation and charges for different types of loads. The sign indicates materials that are not accepted for disposal in the landfill. Signs indicating approach and exit routes and one-way roads are strategically placed so traffic at the landfill will move smoothly and efficiently to and from the working face area.

L.12 ALL WEATHER ACCESS ROADS

A paved entrance from Knights Trail Road terminates at the landfill perimeter roadway. In addition, paved perimeter roads around the landfill areas are shown on Sheet L-1. All weather access roads will be constructed within the Class I area to route traffic to the active working face. The all weather access roads will be constructed of earth, ground shingles, crushed rock, shell or any other stabilizing material, as appropriate.

L.13 ADDITIONAL RECORD KEEPING AND REPORTING

See Section L.3 of this Operations Plan.

ATTACHMENT L-1

TRAINING PLAN

Sarasota County CCSWDC Operations Plan

ATTACHMENT L-1

TRAINING PLAN

As stated in 62-701.500, F.A.C., all Class I landfills shall have at least one trained operator at the landfill during all times when the landfill receives waste. The operator training includes a 24 hour initial course and 16 hours of continuing education every 3 years. Spotter training includes an 8 hour initial course and 4 hours of continuing education every 3 years.

In accordance with Rule 62-701.320(15), the owner or operator of a landfill, or other solid waste management facility required by this chapter to have trained operators or spotters, shall not employ a person to perform, nor may any person perform, the duties of an operator or spotter at such a facility unless that person is a trained operator or trained spotter, or an interim operator or interim spotter.

Operator and spotter training courses are available at the University of Florida Center for Training, Research and Education for Environmental Occupations (UF/TREEO) and through other sources. A listing of the current year training courses available through TREEO follows. A listing of the County's current trained operators and their continuing education needs is also provided. In addition, several of the contract operators personnel have had spotter training, and the following Sarasota County personnel are trained spotters:

Personnel Gary Bennett Mark Rhoades Dan McAllister Date Training Received 11/9/00 11/9/00 5/3/01

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ATTACHMENT L-2

CONTINGENCY PLAN

Sarasota County CCSWDC Operations Plan Revised December 2, 2002

Solid Waste Operations Division CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX



STANDARD OPERATING PROCEDURES

File No. 09201010.01



May 2, 2003

SAFETY

Training	1
Equipment	1
Special Procedures	1
Safety Meetings	2
Safety Officer	2

EMERGENCY AND FIRE SAFETY

Notification:	Call 911	.3
Used Tire Storag	e Area Special Rules	.3
List of Emergend	y Response Equipment	.4
List of Emergend	y Response Persons	.4
Procedure to be	Followed for Cleanup	4

CONTINGENCY PLAN

Contingency Plan	
••••····	

SAFETY

The program shall consist of the following parts:

<u>**Training</u>** - General training of all employees will be required to develop the skills of emergency first aid and CPR. General training includes:</u>

- Red Cross Multimedia certification is required initially upon employment and subsequently re-certification on a three-year schedule is required.
- Red Cross Cardiopulmonary Resuscitation Basic Life Support Course certification initially upon employment and subsequently on an annual basis thereafter is required.
- All employees shall be trained in the job-specific aspects of their position. This training will be provided by and is the responsibility of the employee's immediate supervisor.
- Special training shall be required for each employee on a job-specific basis. Each operator of a. piece of equipment shall be trained in the operation of that piece of equipment by the immediate supervisor. This training shall be given in accordance with the manufacturer's recommendations and operating manuals. This training will be provided by and is the responsibility or the immediate supervisor in charge of the employee.

Equipment - This section shall outline the basic safety equipment to be provided to the employees of this Division.

- Uniforms shall be furnished for and shall be worn by all employees except office personnel. Special exemption from this requirement may be granted by the Director of Solid Waste Operations Division on a case-by-case basis.
- Special safety equipment such as rain gear including rubber boots, boots having steel toes and stainless steel puncture resistant soles, work gloves, goggles, dust masks, protective eye glasses, rubber gloves, face guards, hearing protection, and rubber aprons shall be utilized as part of the day-to-day operational procedures of this Division. It shall be the responsibility of each individual employee and the immediate supervisor to assure that proper safety equipment is in use. Standard operating procedures will be developed and included as a part of this program. Development of these procedures will be the responsibility of all supervisory personnel.
- All employees will be required to wear safety shoes or boots when working in an environment dictating the need for such equipment. Generally, safety shoes will be required except when working in the scalehouse or office. Safety shoes will be issued to all employees whose duties require the wearing of safety shoes.

<u>Special Procedures</u> - Special procedures shall consist of operational plans, which shall be prepared by the supervisor in charge of each separate operation within the Solid Waste

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Operations Division. Operational plans shall be prepared for the following separate functions within the Solid Waste Operations Division - office, landfill, transfer station, hazardous wastes and infectious wastes.

<u>Safety Meetings</u> - Safety meetings shall be held as deemed necessary by the Solid Waste Operations Division Safety Officer but no less than one meeting shall be held every other month.

Safety meetings shall be the responsibility of the Solid Waste Operations Division Safety Officer.

Safety meeting topics shall include a discussion of all incidents, which have occurred within the Division since the last safety meeting was held, along with topics of current importance and interest.

Safety Officer - the Manager of the Solid Waste Operations Division shall appoint the Solid Waste Operations Division Safety Officer. The Solid Waste Operations Division Safety Officer is Terry Foxworthy. The Solid Waste Operations Division Manager is Gary Bennet.

The-position of solid -Waste Operations Division Safety Officer shall be held in conjunction with the regular duties of the position for which the person was hired. However, the Solid Waste Operations Division Safety Officer shall be given time during the regular working hours to perform the duties of the Solid Waste Operations Division Safety Officer.

EMERGENCY AND FIRE SAFETY

This section provides the standard operating procedure for all personnel in the event of an emergency or fire of any nature that may take place within the boundaries of landfill or transfer station.

Notification: CALL 911 as in any emergency, the first thing to do is to immediately notify the proper emergency response team. In the case of FIRE, immediately notify the Fire Department through the emergency phone number 911. Remember, if you are calling from a phone, which is connected to the County switchboard, you must dial 4911 to reach the emergency operator.

If the office or one of the scalehouses is open, you can contact them by radio for your emergency, and they will be able to place the necessary phone call.

Be sure to SPEAK SLOWLY, DISTINCTLY, DELIBERATELY, and remain as calm as possible. Briefly tell the person to whom you are reporting the emergency the following:

- the nature of the emergency;
- any injuries or persons involved; and
- where the emergency is located.

If there are injuries, you should render whatever assistance you can without endangering yourself. Use the First Aid and/or CPR training you have learned to assist where necessary. if possible, evacuate any person or equipment that may be endangered.

In the event of small fires, the use of a fire extinguisher may be sufficient to contain the fire until the arrival of the Emergency Responders. Fire extinguishers are found in every Solid Waste Operations Division vehicle and on every machine. In the event of larger fires, a 4000gallon water tanker and the pressure washer trailer is available for fighting fires.

Upon arrival of the Emergency Responders, you should take whatever steps necessary to assist.

In the event of fire in the landfill, it may be necessary to smother the fire using available dirt from the dirt stockpiles located at the landfill. In this case, the Manager of the landfill shall make immediate provisions to provide that earth cover. Also, the procedures described in Section L.11.e of the Operations Plan shall be followed.

<u>Used Tire Storage Area Special Rules</u> - In the event there is a fire or other emergency in the used tire storage area, the following special rules shall apply:

• After following the emergency procedure outline above, the Manager shall insure that the dike around the waste tire pile is intact and that the valve of the drainpipe through the berm is closed. This shall be accomplished by patrolling the exterior of the dike and by adding earth to the dike wherever necessary to assure that no oily material generated by the combustion of the tires escapes the immediate area.

• The State of Florida, Department of Environmental Regulation, shall be immediately

notified by calling the Tampa office at 813\744-6100 if fire, or another emergency, poses an unanticipated threat to the public health or environment. Within two weeks of any emergency involving potential off-site impact, a report shall be submitted to the Department including information on the emergency, the results of the action taken, and an analysis of the success or failure of the actions.

• In addition, any special conditions as set forth by the Sarasota county Fire Department shall be net.

List of Emergency Response Equipment - In the event of a fire emergency, the following equipment is available at the landfill and may be used as the situation dictates in the evolution of responding to a fire emergency, such as repair of dikes, smothering with earth and materials, and then use of water in extinguishing fires:

(2) D-6N bulldozers	4000-gallon water tanker
523-B Excavator	8-inch Mac Pump w/diesel engine
950 Endloaders	Pressure washer trailer

It should be noted that from time to time the equipment available for fire emergency use may be changed, and it should be the responsibility of the persons in charge at the facility to be aware of those changes and respond accordingly with the appropriate equipment in the event of a fire emergency.

Dry hydrant connections are available as shown on the drawings for the purpose of supplying water in the event of a fire or other emergency.

Also available at the site is an 8-inch Mac pump with hose and discharge pipe to be used and for filling the 4000-gallon tanker. Upon arrival of the fire department, this pump and water supply will be used under the direction of the officer in charge from the fire department.

Fire extinguishers are available in every vehicle and piece of equipment on the site. Although fire extinguishers are very ineffective against a large fire, it may be possible through their use to control the fire until larger equipment is brought to bar the fire.

List of Emergency Responses Persons:

	Home Phone Number
Gary Bennett	(941)497-3191
Don Shaulis	(941)921-2674

Procedure to be Followed for Cleanup - Any residual from a fire at the tire storage area shall be removed for proper disposal by County personnel. The County will provide all cleanup services and equipment required. All debris and contaminated soil will be placed in the landfill and all liquids will be pumped into a hauling truck for proper disposal.

CONTINGENCY PLAN

In the event an emergency should occur that would interrupt operations at the landfill, the emergency provision of Section L.2.b.1 of the Operations Plan shall be followed and the following procedures shall be implemented:

- 1. The waste collection entities operating within the County shall be notified of the operational interruption and approximate time when operations will be restored.
- 2. If it is anticipated that the interruption of operations will be no longer than 48 hours, an alternate disposal site shall be determined. The following alternate disposal sites are available and listed in order of preference. Should one facility also not be available the next facility on the list shall be contacted.
 - a. Manatee County Lena Road Landfill
 - b. Charlotte County Zemel Road Landfill
 - c. Waste Management Landfill in Okeechobee County

Sarasota County will develop agreements with the first three facilities listed above to provide disposal capacity on an emergency basis.



Figure L-1. Site Plan, Central County Solid Wast



Disposal Complex, Sarasota County, Florida.







Figure 4—1. Locations of Existing and Proposed Monitoring an


Test Sites, Central County Solid Waste Disposal Complex, Sarasota County, Florida.





		SCS ENGINEERS			
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- Model the permitte - Use PCSTABL to n - A Block analysis wi - Closure cap consist	ed sideslope and berm con nodel various water leve ill be used to simulate fa ts the following layers:	onfiguration (as shown on Figure 1 on She els in the closure cap system (water above ailure along the geomembrane/soil interface	et 2 of) using F the geomembrar	VCSTABL. 1e)	
1) 2	feet of cover soil				
2) Te	xtured 40-mil geomemb	orane;			
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terer to Attachment A for Pt	JOTADL MOUEL RESULTS				
SCENARIO 1:					
- The closure cap system - The failure plane w	m is completely dry (I.e. no ould be a along the 3(h)	water or seepage forces are present);) to 1(v) slope in Layer 2.		(Refer to . Sheet 3)	Attachment A
RESULTS: PCSTABI	L estimates a factor of safet	y of 1.7			
- The closure cap system - The failure plane w	m is moist at the geoememt yould be a along the 3(h	brane/soil interface only) to 1(v) slope in Layer 2.		(Refer to Sheet 4)	Attachment A
RESULTS: PCSTABI	L estimates a factor of safet	y of 1.7			
SCENARIO 3: - The closure cap syste - The failure plane w	m is wet to approximately i vould be a along the 3(h	1 foot above the geoemembrane/soil interface) to 1(v) slope in Layer 2.		(Refer to Sheet 5)	Attachment A
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If only the water level saturation.	in the cover system can be	kept below 1 foot in depth, then a F.S. of 1.3 is	acceptable for shor	t term	
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Figure 1. Sarasota County Landfill - Terrace Berm Configuration

ShEET Z of 2

ATTACHMENT A

Slope STASILITY Model

SCS ENGINEERS



SHEET ______ OF _____

CLIENT SAND TITO (Junto	PROJECT	R County Conditil	JOB NO. 192010	10,04
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Sarasota County Landfill Sarasota County, Florida

<u>PROFIL</u>

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Sheet 2 of 5









SARASOTA COUNTY "Dedicated to Quality Service"

March 31, 2003

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Re: Central County Solid Waste Disposal Complex (CCSWDC) Landfill Gas Passive Flares Pending Permit No. 130542-002-SO

Dear Mr. Ford:

The eight passive flares have been installed and we have completed our test period.

Enclosed are two copies of the construction certification form and record drawings which are signed and sealed for your files.

The units are performing well and are relieving the development of landfill gas.

If you have any questions, please contact me directly at (941) 861-1578.

Sincerely,

Pallmale

Paul A. Wingler, P.E. Interim Solid Waste Operations Manager

Enclosures

cc: John A. Banks, P.E., SCS Engineers – Tampa Susan Pelz, P.E., FDEP - Tampa David H. Penoyer, P.E., SCS Engineers – Tampa



;

Florida Department of Environmental Protection Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction P	Permit No.: SO58-2	299180	County:	Sarasota		
Name of Project:	Landfill Gas Passi	ve Flares at L	eachate Colle	ection System Cleanouts		
Name of Owner:	Sarasota County		2 g			
Name of Engineer:	SCS Engineers					
Type of Project:	Installation of Pas	sive Flares	/ 	" 0 9 2000 M		
		·····	- Secon	5		
Cost: Estimate \$	25,000	Actual \$	25,000	2157610		
Site Design: Quanti	ity: N/A	Ton/day S	Site Acreage:	N/A Acres		
Deviations from Pla	ns and Application A	pproved by D	EP			
No significant devi	ations.			·		
Address and Teleph	one No. of Site:	4000 Knight	ts Trail Road,	Nokomis, FL 34275		
		(941) 486-26	00			
Name(s) of Site Sup	pervisor:	Garv Benne	tt			
Date Site inspection	is requested:	December 30, 2002				
This is to certify that project has been cor	it, with the exception npleted in substantial	of any deviation accordance w	on noted abov vith the plans a	e, the construction of the uthorized by Construction		
Permit No. SO58	-299180		Dated: S	September 30, 2002		
Date:	12/20/02	·		Sit Pag-		
			Signature	of Professional Engineer		

>	نم
Ford,	Kim

From: Sent: To: Tedder, Richard Friday, February 21, 2003 12:23 PM Krumbholz, Bill; Morgan, Steve; Ford, Kim; Boesch, Julia; Cheryan, George; Prusa, Rick; Bradner, James; Lurix, Joe; Minhaj, Ghousuddin; Nogas, Mary; Pelz, Susan; Seymore, Marshall; Barbaccia, Phil; Bostwick, William; Fitzsimmons, Michael; Goddard, Charlie; Kamath, Vivek; Kutash, William McGuire, Chris; Martin, Lee New Solid Waste Memos

Cc: Subject:

Just wanted you to know the attached memos have been signed. A hard copy is in the mail to you. I have attached the pdf versions which will also be posted on our solid waste web page. Thanks for your help on the side slopes memo for landfill closures. We appreciated it. If you have any guestions, just let me know. Thanks. - RT





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Memorandum

Florida Department of Environmental Protection

TO:	District Waste Program Administrators District Solid Waste Engineers
FROM:	Richard B. Tedder, Program Administrator Solid Waste Section
	Chris McGuire, Senior Assistant General Counsel Office of General Counsel
DATE:	February 18, 2003
SUBJECT:	Side Slopes for Landfill Closures Memo # SWM-04.34

We have been asked whether the requirements in Chapter 62-701, Florida Administrative Code (F.A.C.) which require three-to-one side slopes on aboveground disposal units apply to stormwater control structures built on top of the side slopes. In other words, if an applicant proposed to add stormwater benches on top of the final cover the sides of which are steeper than three-to-one, would that be prohibited by our rules¹. The answer is a qualified no.

Rule 62-701.600(5)(e), F.A.C., which describes the final side slope design requirements for landfill closures, states in part:

Side slopes of aboveground disposal units shall not be steeper than three feet horizontal to one foot vertical rise to control erosion of the final cover material. Such units shall incorporate reverse sloping benches or terraces into the side slopes of the landfill and shall contain down slope drainage ways with water flow energy dissipaters.

For purposes of our rules generally, a solid waste disposal unit would include stormwater conveyances built into or on top of the unit. In this case, however, we have concluded that the rule was never intended to prohibit the addition of benches or conveyances on top of the final cover, even if these additions would include areas with greater than a three-to-one slope. We have also had some limited experience with stormwater benches being constructed on top of the final cover which shows that, if

¹ Normally for these designs extra soil is placed over the final cover to construct the benches at regular intervals up the side slopes of the disposal unit. If the final cover is constructed at a 3:1 slope, then the slope of the bench will need to be steeper than 3:1 to intersect the final cover slope further down the hill. For example, some proposed designs show a four-foot wide bench at a 2:1 slope rising to a peak 24 inches above the final cover followed by a 20-foot decline of the bench at a 2:1 slope from the bench peak to the final cover. When terraces are used, wastes are normally placed in the disposal unit to form terraces at regular intervals in elevation. These terraces have the appearance of being "cut" into the side slopes of the waste disposal unit and are normally constructed so the slopes of the final cover are not greater than the 3:1 maximum at any location.

MEMORANDUM February 18, 2003 Page 2 of 3

engineered, constructed, and maintained properly, such structures are expected to remain stable and help to control erosion. See Figure 1 for a typical bench design over the final cover of a landfill.

Part of the confusion in interpreting this rule is the requirement for "reverse sloping benches or terraces into the side slopes of the landfill" and how this language should be understood in terms of the maximum allowed slope of three-to-one. Our research indicates that "reverse sloping" is intended to refer to both the benches and the terraces and that "into the side slopes of the landfill" is only intended to clarify the direction of the reverse slope, i.e., towards the landfill. This phrase does not require that benches or terraces be excavated into the side slopes of the landfill, and should not be read to prohibit the construction of benches or terraces on top of the final cover.

Generally speaking, benches built on top of the side slopes will require greater engineering effort and expertise than terraces excavated into the side slopes of the landfill. This is particularly true when a geomembrane is used in the final barrier layer because of the possibility that the bench may contribute to a side slope failure if its slope is too steep or the run too long, or if the proper materials are not used in the design. In either case, when designing and constructing the final side slopes, including the benches or terraces, the owner/operator must consider the following:

1. Whether benches or terraces are used, as required by Rule 62-701.600(5)(g), F.A.C., the applicant must provide reasonable assurance that the proposed final cover design will be stable. This must include a slope stability analysis of the final cover system with supporting calculations.

2. According to Rules 62-701.600(5)(c) and (7)(b)3., F.A.C., portions of the landfill that have reached their design dimensions and elevations and will not receive additional wastes or be mined must receive final cover, i.e. close-as-you-go. If benches are used, they must be installed over the final cover in these portions of the landfill during the facility's active life, rather than waiting until closure of the entire landfill, to control erosion of the final cover.

Rule 62-701.730(9)(b), F.A.C., requires that side slopes of above-grade construction and demolition debris disposal units be no greater than three-to-one. The same logic applies to these facilities as to landfills. While a design including stormwater benches with slopes greater than three-to-one will be more difficult to construct and maintain than a design with terraces built into the side slopes, it is not prohibited by our rules.

In closing, we must stress that a closure design which incorporates stormwater benches with slopes steeper than three-to-one is not automatically authorized under our rules. A permit applicant proposing such a design bears the burden of providing reasonable assurance that these benches can and will be constructed and maintained to minimize erosion of the side slopes. In many cases, excavating terraces into the side





MEMORANDUM February 18, 2003 Page 3 of 3

slopes will be the preferred method of stormwater control, especially if the permittee and engineer have little experience in this area. The intent of this memo is simply to clarify that the three-to-one limitation in the rules applies to the waste pile and the final cover, not to stormwater conveyances built on top of the final cover.

<u>Caveat</u>

This guidance memorandum does not constitute policy or rule of the Department. It is intended solely as internal guidance to District permit review staff, and is not intended to create additional requirements for the regulated community or to affect the rights of substantially affected parties to any agency decision. Please do not cite any part if this memorandum as though it were a standard, rule, or requirement.





To:

Cc:

en P

Pelz, Susan From: Wednesday, February 05, 2003 7:30 AM Sent: Tedder, Richard; Ford, Kim McGuire, Chris; Martin, Lee RE: 3:1 Closure Slopes and 2:1 Stormwater Swales Subject:

We can wait to discuss this at the teleconference.

thanks for your quick reply Susan

Original I	Message
From:	Tedder, Richard
Sent:	Tuesday, February 04, 2003 5:49 PM
To:	Ford, Kim
Cc:	McGuire, Chris; Martin, Lee; Pelz, Susan
Subject:	RE: 3:1 Closure Slopes and 2:1 Stormwater Swales

Kim.

I believe you have correctly stated what we talked about during the December teleconference. However, we have continued to evaluate this issue since then, and I'm now thinking we may want to consider a different approach. Chris and I are working on a draft policy memo that hopefully will clarify this matter. I imagine we will try to discuss this during the next teleconference on 2/13. Can you wait until then to resolve this? If not, let me know and we will come up with a different plan. Thanks. - RT

-----Original Message-----From: Ford, Kim Tuesday, February 04, 2003 4:13 PM Sent: Tedder, Richard To: McGuire, Chris; Martin, Lee; Pelz, Susan Cc: Subject: 3:1 Closure Slopes and 2:1 Stormwater Swales

Richard:

I know you are busy, but as you know I have 2 projects proposing 2:1 Stormwater swales on the side of 3:1 Closed Sideslopes - one for a C&D disposal facility and the other for a Class I landfill.

The Class I landfill permit application has been in-house for 340 days and this issue is about all that remains to be resolved. My last RAI said the 2:1 swale on the 3:1 slope does not comply with 62-701.600(5)(e) and asked for revisions to comply with the requirement for "reverse sloping benches or terraces into the side slopes of the landfill" and John Banks called you. He said you said that a policy is coming soon, so he has not made the requested revisions.

As I recall from our December 12, 2002 teleconference, a number of concerns must be addressed to exceed 3:1 on any sideslope or sideslope swale and alternate procedures would be appropriate until we have a policy. And also from that teleconference some comments were made that C&Ds would not be allowed to exceed the 3:1 criteria.

Please advise as to what procedures or policy you would like us to follow if different from what

1

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Thanks.

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Subject:	3:1 Closure Slopes and 2:1 Stormwater Swales

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Thanks.

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Thanks.

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Please advise as to what procedures or policy you would like us to follow if different from what we are saying in our RAIs.

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Thanks.





3012 U.S. Highway 301 Nd Suite 700 Tampa, FL 33619-2242 813 621-0080 FAX 813 623-6757

SCS ENGINEERS

November 15, 2002 File No. 09201024.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

ECEIVE NOV 1 5 2002 D.E.P. SOUTHWEST DISTRICT

Subject:Sarasota County, Central County Solid Waste Disposal Complex
Operations Permit Renewal, Pending Permit No. 130542-002-SO

Dear Mr. Ford:

Sarasota County has received your requests for additional information (RFI) dated October 16, 2002 for the above referenced permit application. SCS Engineers is assisting the County with the responses to your requests.

As you know, we have been working with the Tallahassee FDEP office on the issue of rule interpretation regarding the slope of the terrace swale berm. We have not received a definitive answer on this issue to date. Once we receive direction on this issue we anticipate submittal of a complete response within 7 days.

Please let us know immediately if this proposed schedule is not acceptable to the Department.

Sincerely,

John A. Banks, P.E. Project Director SCS ENGINEERS

Glugmond Fever

Raymond J. Dever, P.E., DEE Vice President SCS ENGINEERS

cc: Gary Bennett, Sarasota County

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Superior Client Service

SCS ENGINEERS 3012 U. S. Highway 301 N., Suite 700 Tampa, FL 33619 (813) 621-0080 Fax (813) 623-6757

SCS ENGINEERS

facsimile transmittal

To: Kim 1	Ford	Phone:	·
Company: FZ)ep	Fax:	744-6125
From: Joh.	n Banks	Date:	11-14-02
Re: 2:/	Bern Issa	ve_ Pages:	
		Project No.	·
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Company: FDEP Fax:	850-245-8811
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cc: Project	No.
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Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

October 16, 2002

Mr. Gary Bennett Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

10.1

Re: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Bennett:

This is to acknowledge receipt of the additional information in support of your permit renewal application, received September 16, 2002, to continue to operate a class I landfill and related facilities.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit remains <u>incomplete</u>. This is the Department's 3rd request for additional information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

- 1. 62-701.500(2)(f) and (7)(c), and 62-701.600(5)(e). According to Department rules, final sideslopes shall not be steeper than three feet horizontal to one foot vertical to control erosion of the final cover materials. The typical swale detail shown on Sheet 16 of the Operation Drawings shows 2H:1V sideslopes. Revisions to Detail B on Sheet 16 are requested to show 1) the 3H:1V waste limits along the sideslopes and (2) the final cover designed with a 3H:1V maximum sideslope adjacent to the swale.
- 62-701.500, .510, and .530. Responses to Mr. John Morris' October 16, 2002 memorandum (attached) are requested. You may call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.

Mr. Gary Bennett Sarasota County October 16, 2002 Page Two

Please provide all responses that relate to engineering required for design and operation, signed and sealed by a professional engineer. All descriptions of operational procedures provided as part of responses should be included as revisions to the Operations Plan (Section L). All replacement pages should be numbered, and with revision date. To expedite the review process, on one set of the revisions to the narrative reports, deletions may be struckthrough (struckthrough) and additions may be shaded (shaded) or similar notation method may be used.

"NOTICE! Pursuant to the provisions of Section 120.600, F.S., if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

Please submit your response to this letter as one complete package with an original and two copies of all correspondence (with one copy sent to Ms. Susan Pelz). If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab Attachment

cc: John Banks, P.E., SCS Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa

Florida Department of **Environmental Protection**

Memorandum

TO:	Kim Ford, P.E. $f(r)$
FROM:	John R. Morris, P.G. $IF \mathcal{M}$
DATE:	October 16, 2002
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO
cc:	Susan Pelz, P.E.

I have reviewed the responses submitted to the Department's letter dated July 24, 2002 regarding the permit renewal application for the Central County Solid Waste Disposal Complex (CCSWDC) that were prepared by SCS Engineers on behalf of Sarasota County, dated and received September 20, 2002. My review focused on the hydrogeologic and environmental monitoring aspects of the renewal application. Please have the applicant address all review comments that do not include the phrase "No additional information is requested". The information requests have been referenced to sections of the permit application and also to the sections of the supporting document where appropriate, and are consistent with the comment numbers included in my memoranda dated March 28, and July 24, 2002. To assist your review, those review comments that were indicated in my July 24, 2002 memorandum to have been fully addressed are omitted and the outstanding review comments follow:

SECTION B – DISPOSAL FACILITY GENERAL INFORMATION

B.13.: The response that indicates the notation of the special exemption area in the County land records was not intended to fulfill landfill closure requirements, and the submittal of revised page 7 of the application form are noted. No additional information is requested.

SECTION L - LANDFILL OPERATION REQUIREMENTS (Rule 62-701.500, F.A.C.)

Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002 2.

L.2.h.(2) – Leachate Management System a. Collection System - The submittal of Figure L-1A showing the leachate pump station valve boxes labeled C-1 through C-5 is noted. No additional information is requested.

c. The response verifying that Pond No. 6 is the location that will receive stormwater retained in the secondary containment of the leachate storage tank and the revision to Section L.2.h.2 of the Operations Plan are noted. No additional information is requested.

L.8.b. - Leachate Collection and Removal System: The reference to the response provided to review 5. comment No. 2.a. is noted. No additional information is requested.

6. L.9. - Gas Monitoring Program

a. The revision to Section L.9 of the Operations Plan describing how the landfill gas probes will be monitored to be consistent with Rule 62-701.530(2)(b), F.A.C., is noted. However, the Department does not agree with the response that the issue of landfill gas detected at GP-4, GP-5 and GP-6 has been resolved. The proposed changes to the gas probes in the renewal application and subsequent submittals follow:

- February 2002: abandon existing GP-4/GP-5/GP-6; install proposed GP-4t at a location south of the borrow stockpile and yard waste compost areas
- June 2002: abandon existing GP-4/GP-5/GP-6; renumber proposed GP-4t as proposed GP-4 and relocate it from south of the borrow stockpile and yard waste compost areas to between the waste tire and C&D processing facilities
- September 2002: abandon existing GP-4/GP-5/GP-6; renumber proposed GP-4 as proposed GP-7 to be installed at a location between the waste tire and C&D processing facilities

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Central County Solid Waster Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues

It is agreed that the south side of landfill Cells 1 through 5 is a considerable distance from the property boundary. However, the proposed changes to eliminate the existing gas probes along the south side of the landfill footprint and the ambient monitoring locations in the scale house and administration building do not appear to provide a means to demonstrate the absence of landfill gas in the subsurface or in structures south of the landfill footprint. As such, the proposed changes do not appear to meet the requirements of Rule 62-701.530(2), F.A.C. At a minimum, the landfill gas monitoring program must include at least one gas probe located south of the landfill footprint (existing GP-4/GP-5/GP-6 or proposed GP-4t would be acceptable) or the existing ambient monitoring points at the scale house and administration building must be maintained. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

b. It is agreed that the Department did not issue a permit modification to include ambient monitoring locations GM-6 and GM-7 in Specific Condition No. 19 of permit No. SO58-299180. For the purposes of clarification, it is noted that the County agreed to add ambient monitoring location GM-7 (electric panel at leachate tank) to the quarterly landfill gas monitoring events in response to the Department's request during a meeting conducted November 9, 1999. As previously requested, please provide a site map that shows the location of GM-6 (control booth) and specifically indicate why it is considered appropriate to cease monitoring this location. At a minimum, it is considered appropriate to maintain ambient monitoring location GM-7. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

c. The response and the revisions to Section L.9 and Figure L-1 of the Operations Plan that indicate the proposed gas probe to be located between the waste tire and C&D processing facilities shall be identified as GP-7 are noted. No additional information is requested.

11. Section 4 - Water Quality Monitoring Findings

a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:

2) The revisions to the ground water quality data summaries for wells MW-1, MW-9 and MW-10 for the stated parameters/sampling events are noted. No additional information is requested.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

3) The response that the County will regrade the northwest corner of the yard waste processing area to redirect stormwater toward the east and south is noted. No additional information is requested.

d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:

4) The affirmation in the response that the leachate sample collected during the October 2000 sampling event was reported to contain nitrate at 0.03 mg/L is noted. No additional information is requested.

e. The acknowledgement of the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation is noted. No additional information is requested.

Central County Solid Waste Ensposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues

12. Section 5 - Ground Water Levels and Flow

b. Further review of the field sheets included in the reports for the semi-annual sampling events indicates that three elevations for the top of casing at well MW-9 (31.90, 34.85 and 35.01 feet NGVD) have been used since 1998. The data available in the Department's files are not sufficient to determine which elevation is correct for which sampling event. To resolve this uncertainty, it is the Department's intention to require a new survey (top of casing/land surface elevations and latitude/longitude coordinates) be submitted for all proposed and existing monitor wells to comply with the requirements of Rule 62-701.510(3)(d)1, F.A.C. This comment is provided for informational purposes, no additional information is requested.

d. The response that surface water elevations in the retention ponds may be influenced by short-term rainfall events is noted. No additional information is requested.

13. Section 6 – Adequacy of Monitoring Program

a. The submittal of Figure 4-1 to show the locations of existing and proposed monitoring and test sites is noted. It is the Department's understanding that wells MW-6 and MW-7 were abandoned and that water levels will be measured in wells MW-3 and MW-5 during routine sampling events (response to comment No. 12.d., dated and received June 28, 2002). Please submit a revised Figure 4-1 that indicates the status of these wells.

jrm



Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

October 16, 2002

Mr. Gary Bennett Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

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Mr. Gary Bennett Sarasota County October 16, 2002 Page Two

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Sincerely, fn1 m

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab Attachment

cc: John Banks, P.E., SCS Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa

Florida Department of **Environmental Protection**

Memorandum

TO:		Kim Ford, P.E. Kar
FROM:		John R. Morris, P.G. JEM
DATE:	۴.	October 16, 2002
SUBJECT:	- 14	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO
cc:		Susan Pelz, P.E.

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L.2.h.(2) – Leachate Management System 2

a. Collection System - The submittal of Figure L-1A showing the leachate pump station valve boxes labeled C-1 through C-5 is noted. No additional information is requested.

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Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues

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Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues

12. Section 5 - Ground Water Levels and Flow

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jrm

Florida Department of Environmental Protection

Memorandum

то:	Kim Ford, P.E.
FROM:	John R. Morris, P.G. JEM
DATE:	October 16, 2002
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO
cc:	Susan Pelz, P.E.

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<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002

2. L.2.h.(2) – Leachate Management System

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5. L.8.b. – Leachate Collection and Removal System: The reference to the response provided to review comment No. 2.a. is noted. No additional information is requested.

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- <u>September 2002</u>: abandon existing GP-4/GP-5/GP-6; renumber proposed GP-4 as proposed GP-7 to be installed at a location between the waste tire and C&D processing facilities

Central County Solid Waste Ensposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues October 16, 2002 Page 2 of 3

It is agreed that the south side of landfill Cells 1 through 5 is a considerable distance from the property boundary. However, the proposed changes to eliminate the existing gas probes along the south side of the landfill footprint and the ambient monitoring locations in the scale house and administration building do not appear to provide a means to demonstrate the absence of landfill gas in the subsurface or in structures south of the landfill footprint. As such, the proposed changes do not appear to meet the requirements of Rule 62-701.530(2), F.A.C. At a minimum, the landfill gas monitoring program must include at least one gas probe located south of the landfill footprint (existing GP-4/GP-5/GP-6 or proposed GP-4t would be acceptable) or the existing ambient monitoring points at the scale house and administration building must be maintained. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

b. It is agreed that the Department did not issue a permit modification to include ambient monitoring locations GM-6 and GM-7 in Specific Condition No. 19 of permit No. SO58-299180. For the purposes of clarification, it is noted that the County agreed to add ambient monitoring location GM-7 (electric panel at leachate tank) to the quarterly landfill gas monitoring events in response to the Department's request during a meeting conducted November 9, 1999. As previously requested, please provide a site map that shows the location of GM-6 (control booth) and specifically indicate why it is considered appropriate to cease monitoring this location. At a minimum, it is considered appropriate to maintain ambient monitoring location GM-7. Please submit revisions to Section L.9 and Figure L-1 of the Operations Plan as appropriate to address this review comment.

c. The response and the revisions to Section L.9 and Figure L-1 of the Operations Plan that indicate the proposed gas probe to be located between the waste tire and C&D processing facilities shall be identified as GP-7 are noted. No additional information is requested.

11. Section 4 – Water Quality Monitoring Findings

a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:

2) The revisions to the ground water quality data summaries for wells MW-1, MW-9 and MW-10 for the stated parameters/sampling events are noted. No additional information is requested.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

3) The response that the County will regrade the northwest corner of the yard waste processing area to redirect stormwater toward the east and south is noted. No additional information is requested.

d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:

4) The affirmation in the response that the leachate sample collected during the October 2000 sampling event was reported to contain nitrate at 0.03 mg/L is noted. No additional information is requested.

e. The acknowledgement of the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation is noted. No additional information is requested.

Central County Solid Wasternesposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO Environmental Monitoring Issues

12. Section 5 – Ground Water Levels and Flow

b. Further review of the field sheets included in the reports for the semi-annual sampling events indicates that three elevations for the top of casing at well MW-9 (31.90, 34.85 and 35.01 feet NGVD) have been used since 1998. The data available in the Department's files are not sufficient to determine which elevation is correct for which sampling event. To resolve this uncertainty, it is the Department's intention to require a new survey (top of casing/land surface elevations and latitude/longitude coordinates) be submitted for all proposed <u>and</u> existing monitor wells to comply with the requirements of Rule 62-701.510(3)(d)1, F.A.C. This comment is provided for informational purposes, **no additional information is requested.**

d. The response that surface water elevations in the retention ponds may be influenced by short-term rainfall events is noted. No additional information is requested.

13. Section 6 – Adequacy of Monitoring Program

a. The submittal of Figure 4-1 to show the locations of existing and proposed monitoring and test sites is noted. It is the Department's understanding that wells MW-6 and MW-7 were abandoned and that water levels will be measured in wells MW-3 and MW-5 during routine sampling events (response to comment No. 12.d., dated and received June 28, 2002). Please submit a revised Figure 4-1 that indicates the status of these wells.

jrm



9/27/02



Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

September 30, 2002

Mr. Gary Bennett Sarasota County Solid Waste Operations 4000 Knights Trail Road Nokomis, FL 34275

> Re: Landfill Gas Passive Flares Permit # S058-299180, Sarasota County

Dear Mr. Bennett:

The Department has no objection to the installation and operation of the flares as described in SCS's September 20, 2002 letter and the drawing-Figure L-5 (attached). Upon completion, please provide the completed Certification of Construction Completion Form #62-701.900(2) attached.

On all future correspondence please include Ms. Susan Pelz on distribution. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab Attachments

cc: John Banks, P.E., SCS Engineers

"More Protection, Less Process"

Environmental Consultants

3012 U.S. Highway <u>3</u>0 Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

September 20, 2002 File No. 09201010.09

Mr. Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

SEP 2 0 2002 Southwest District Tampa

813 621-0080

FAX 813 623-6757

Subject:

Proposed Landfill Gas Passive Flares at Leachate Collection System Cleanouts Sarasota County, Central County Solid Waste Disposal Complex Operations Permit Renewal, Pending Permit No. 130542-002-SO

Dear Mr. Ford:

As we previously discussed, Sarasota County wishes to install passive landfill gas (LFG) flares at the Central County Solid Waste Disposal Complex (CCSWDC) and include the operation of these flares in the facility's pending solid waste operation permit. These flares will be installed at eight of the cleanouts for the leachate collection and removal system (LCRS) as a proactive measure to collect and combust LFG that accumulates in the LCRS.

The proposed flares will be connected to eight of the LCRS cleanouts for the landfill areas that currently have waste in place. The flares have a solar-powered ignition system that provides a spark at the flare tip at regular intervals to ensure combustion of the venting gas.

To incorporate the inclusion of the operation of the flares into the facility's solid waste operation permit, SCS Engineers (SCS) and the County request that the following text be added to the end of Section L.2.h.1 of the pending Operations Plan dated June 28, 2002:

"Separate from the requirements of the NSPS, passive flares may be utilized on site to combust landfill gas from leachate collection and removal system cleanouts and pump stations, or passive vents installed within the waste mass. The flares will include a solar-powered ignition system that provides a spark at regular intervals. The flares shall be Landfill Service Corporation (formerly Landfill Technologies, Inc.) model CF-5, or similar. The flares are intended to combust landfill gas that may accumulate in leachate collection and removal system pipes. Figure L-5 provides a typical detail for installation of a passive flare connected to a leachate collection system cleanout."

The detail referenced above, Figure L-5, is included as an attachment to this letter, and is intended to become part of the pending Operations Plan.

Please note that under separate cover, SCS has sent you a copy of the submittal requested by Mr. David Zell of the FDEP Division of Air Resources Management. As we discussed earlier, SCS understands that the proposed installation of the passive flares does not require a significant modification of the facility's Title V air operation permit.

Please contact us if you have any questions or need additional information.

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Sincerely,

Enge

David H. Penoyer, P.E. Senior Project Engineer

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John A. Banks, P.E. Project Director SCS ENGINEERS

attachment

cc: Susan Pelz, FDEP Gary Bennett, Sarasota County





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Passive Vent Installation at LCRS Cleanouts, CCSWDC -5. Figure L

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DEP Form # 62-701.900(2) Form Title Certification of Construction Completion Effective Date May 19, 1994 DEP Application No. (Filled by DEP)

12.2

Certification of Construction Completion of a Solid Waste Management Facility

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Name of Owner:		
Name of Engineer:		
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Ford, Kim

From: Sent: To: Subject: Zell, David Monday, September 30, 2002 3:47 PM Ford, Kim Cleanout Flares at Sarasota County Central Landfill

In response to you voice-mail message, we have received and reviewed the Aug. 20, 2002 letter from SCS Engineers regarding the eight proposed passive flares on the leachate collection and removal system cleanouts on the Central County Solid Waste Disposal Complex in Sarasota County. As stated in the letter the NMOC emission rate from this landfill does not yet require a NSPS LFG collection and control system so these flares are not subject to any specific air requirements. The level of the air emissions from these flares makes them "insignificant emissions sources" and exempt from air construction permitting. Once they are installed and operational we will include them on the list of insignificant emission sources in the Title V air operation permit for this facility when we have an opportunity to open the permit (revision, renewal or perhaps as an Administrative Correction).

Since we have no additional information requests on this, we will respond with a letter notifying them of our determination concurring with their request that they be considered as insignificant air emission sources for the Title V permit purposes, and that no air construction permitting is required. We will also request that they notify us when the flares are operational so we can include a reference to them the Title V operation permit. I plan on doing this letter in the next few weeks

David Zell FDEP SWD Air Permit Engineer Tampa, FL (813) 744-8100 ext. 118 david.zell@dep.state.fl.us



9/27/02

Environmental Consultants



3012 U.S. Highway 301 Na Suite 700 Tampa, FL 33619-2242813 621-0080 FAX 813 623-6757

SCS ENGINEERS

September 20, 2002 File No. 09201010.09

Mr. Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

ments 0 2002 SEP Southwest District Tampa

Subject:

t: Proposed Landfill Gas Passive Flares at Leachate Collection System Cleanouts Sarasota County, Central County Solid Waste Disposal Complex Operations Permit Renewal, Pending Permit No. 130542-002-SO

Dear Mr. Ford:

As we previously discussed, Sarasota County wishes to install passive landfill gas (LFG) flares at the Central County Solid Waste Disposal Complex (CCSWDC) and include the operation of these flares in the facility's pending solid waste operation permit. These flares will be installed at eight of the cleanouts for the leachate collection and removal system (LCRS) as a proactive measure to collect and combust LFG that accumulates in the LCRS.

The proposed flares will be connected to eight of the LCRS cleanouts for the landfill areas that currently have waste in place. The flares have a solar-powered ignition system that provides a spark at the flare tip at regular intervals to ensure combustion of the venting gas.

To incorporate the inclusion of the operation of the flares into the facility's solid waste operation permit, SCS Engineers (SCS) and the County request that the following text be added to the end of Section L.2.h.1 of the pending Operations Plan dated June 28, 2002:

"Separate from the requirements of the NSPS, passive flares may be utilized on site to combust landfill gas from leachate collection and removal system cleanouts and pump stations, or passive vents installed within the waste mass. The flares will include a solar-powered ignition system that provides a spark at regular intervals. The flares shall be Landfill Service Corporation (formerly Landfill Technologies, Inc.) model CF-5, or similar. The flares are intended to combust landfill gas that may accumulate in leachate collection and removal system pipes. Figure L-5 provides a typical detail for installation of a passive flare connected to a leachate collection system cleanout."

The detail referenced above, Figure L-5, is included as an attachment to this letter, and is intended to become part of the pending Operations Plan.

Please note that under separate cover, SCS has sent you a copy of the submittal requested by Mr. David Zell of the FDEP Division of Air Resources Management. As we discussed earlier, SCS understands that the proposed installation of the passive flares does not require a significant modification of the facility's Title V air operation permit.

Please contact us if you have any questions or need additional information.

Sincerely,

Ung-

David H. Penoyer, P.E. Senior Project Engineer

John A. Banks, P.E. Project Director SCS ENGINEERS

attachment

cc: Susan Pelz, FDEP Gary Bennett, Sarasota County



Figure L-5. Passive Vent Installation at LCRS Cleanouts, CCSWDC





3012 U.S. Highway 301 Na Suite 700 Tampa, FL 33619-2242



SCS ENGINEERS

August 20, 2002 File No. 09201010.09

Mr. David Zell Florida Department of Environmental Protection Division of Air Resource Management 3804 Coconut Palm Drive Tampa, Florida 33619

INVIRONME FACTECTION SEP 2 0 2002

Subject:

Proposed Passive Landfill Gas Flares at Leachate Collection System Cleanouts Central County Solid Waste Disposal Complex, Sarasota County FDEP Title V Permit No. 1150089-001-AV

Dear David:

This letter is to confirm our previous conversation, and to provide you a drawing depicting the proposed passive flares at the Central County Solid Waste Disposal Complex (CCSWDC) in Sarasota County. As we previously discussed, Sarasota County is proposing to install passive flares at eight of the leachate collection and removal system cleanouts at the landfill. This is being done as a proactive step to collect and combust landfill gas (LFG) from the leachate collection system.

As you know, the CCSWDC is regulated by the federal New Source Performance Standards (NSPS) for municipal solid waste landfills, and therefore the County was required to obtain a Part 70 (i.e., Title V) permit for the facility. However, because the site's non-methane organic compound (NMOC) emission rate, as determined using the applicable methods outlined in the permit and the NSPS regulation, is below 50 megagrams per year, a comprehensive landfill gas (LFG) collection and control system is not required at this time. The proposed passive flares are not intended to serve as a NSPS-compliant LFG collection and control system.

The flares will be connected to leachate cleanouts and will flare LFG that accumulates within the leachate collection system pipes. The flares have a solar-powered ignition system that provides a continuous spark at the flare tip to ensure combustion of the venting gas. The enclosed drawing provides a site map and typical detail for the installation of the flares.

Consistent with our earlier discussion, SCS Engineers and Sarasota County request that the eight proposed passive flares be considered insignificant emission sources with respect to the facility's Title V air permit.

SCS understands that this letter is sufficient for the Florida Department of Environmental Protection's (FDEP) consideration of this matter from an air permitting standpoint. However, please notify us if you have any questions or would like additional information. Also, please note that as a courtesy and to facilitate review by the FDEP Solid Waste Section, SCS is sending a copy of this letter to Mr. Kim Ford, P.E. Additional information pertinent to

Mr. David Zell September 20, 2002 Page 2

modifying the facility's solid waste operation plan to incorporate the flares will be submitted to the Solid Waste Section under separate cover.

SCS appreciates your consideration of this matter. Please contact us if you need additional information.

Sincerely,

1 ange

David H. Penoyer, P.E. Senior Project Engineer

John A. Banks, P.E. Project Director SCS ENGINEERS

attachment

cc: Gary Bennett, Sarasota County Kim Ford, P.E., FDEP

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3012 U.S. Highway 301 Na Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

September 20, 2002 File No. 09201010.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619-2242

2 0 2002 Southwest District Tampa

Subject: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Ford:

On behalf of Sarasota County, SCS Engineers (SCS) submits the following responses to your request for additional information in a letter directed to Mr. Gary Bennett from Mr. Kim Ford, dated July 24, 2002. For ease of review, each FDEP comment is reiterated in bold type, followed by our response. The following documents are enclosed with this letter as revisions to the previously submitted information as a result of the responses to the following comments:

- Permit Application form page 7
- Pages v and vi of the Table of Contents
- Section G •
- Section J •
- Section N •
- Section O •
- . Section M, Appendix A
- Section L •
- Figure L-1

- Figure L-1A (new)
- Figure L-5 (new)
- **Operation Drawings** •
- Figure 4-1 of the Monitoring Plan Addendum, Section M
- Calculations in support of using 18-inch diameter drainage pipes.
- Drawing E-4

The following information is needed in support of the solid waste application (Chapter 62-701, Florida Administrative Code (F.A.C.). provide:

✓ 1.

62-701.320(7)(d)3. The table of contents should be revised to list each related attachment.

Response: A revised table of contents is provided herein. Please note that Attachment E-1 contains the boundary survey and legal description of the site. Please disregard any previous references to Attachment E-3.

62-701.320(10). Revisions requested as follows: a) Section 0 to delete references to previous Operation permit Application; b) Section J to include references to each valid geotechnical report; c) Section N to include procedures for management of used oil and lawn mowers, and to delete references to previous Operation Permit Application; d) Section 0.2 to reference the gas monitoring plan described in Section L.9.

(see Bound report)

a)

∕<u>3</u>.

Response: Please see the enclosed revised Sections G, J, N, and O.

62-701.500(1). Revisions to Section *LA* and Attachment L-1 are requested to include training for spotters also.

Response: Please see the revised Section L and Attachment L-1.

4. 62-701.500(2). Revisions to the Operations Plan are requested as follows:

Section L.2.c. — to include procedures for managing used oil and lawn mowers;

b) Section L.2.j — to include reference to Section L.8.h. for cleaning;

- **(c)** Section L.6. to include clarification identifying the <u>County</u> rather than the 'landfill' as a responsible entity;
- d) Section L.9. to include the location of all gas monitoring inside structures;
- e) Attachment L.2. to include reference to Sections L.ll.e for fire control and L.2.b.1 for emergency procedures;
- f) Attachment L-3 Sheet 3 to show 3 to 1 external sideslopes;
- (y) Attachment ta-4 to describe the disposal of contaminated soil only "within the bermed working area'; and
 - h) Attachment L-13 to include the recycling of used oil and lawn mowers.

Response: Please see the revised Section L.

62-701.500(2)(f).

a)

5.

The referenced drawings for the sequence of filling should be confirmed still valid or revised, and provided as part of the operations plan.

Response: Please see the revised sequence of filling drawing included with the operations plans.

b) One full sized set of plans and one reduced set (for use as an attachment to the operations plan) with all revisions are requested.

Response: Please see the enclosed plans.

/ 6.

c) Plan views showing grades required for proper drainage along terrace swales are requested.

Response: Please see the enclosed plans, Sheet No. 16.

d) Typical details for all temporary and permanent drainage devices (letdown structures, terraces, berms and swales) to convey stormwater from the top and sides of filled areas without erosion are requested.

Response: Please see Sheet No. 16 of the enclosed plans.

62-701.500(7)(g). confirmation of conformance to designed dimensions and details for filled portions of Phase I including references to specific plan sheets and details is requested.

Response: SCS Engineers has reviewed as-built surveys and performed site inspections at the CCSWDC. SCS finds that the construction of the landfill is in compliance with the operations plans as previously approved and as clarified herein. The drainage structures currently in place are adequate for current needs as described below. As the landfill height increases additional drainage structures will be required as discussed below. Drawing E-4 is provided showing the as-constructed configuration of the landfill. The side slopes, letdown pipes and swales are in conformance to the details as provided on Sheet 16 of the Operation Drawings.

62-701.500(7)(j). clarification regarding erosion control. Typical details on a drawing for each type of erosion control and stormwater management control are requested.

Response: Please see the revised Sheet 16 of the Operation Drawings. The plans provide for 18-inch diameter letdown pipes until final cap and cover are applied at which time the permanent 24-inch and 30-inch diameter pipes are required. Please see the attached calculations supporting the 18-inch pipes for temporary stormwater conveyance.

8. 62-701.500, .510, and .530. Responses and required supporting information in response to Mr. John Morris' July 24, 2002 memorandum (attached). You may call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.

Response: Please see the following responses.

SECTION B - DISPOSAL FACILITY GENERAL INFORMATION

1. B.13.: Please note that this review comment in my memorandum dated March 28, 2002 incorrectly referenced application form item No. B.12 instead of item No. B.13. It is indicated in the response that the legal description of the special exception area was provided in Attachment E-3; please verify that the referenced information was provided in Attachment E-1. It appears that the legal description information that was submitted does not meet the requirements of Rule 62-





701.610(5), F.A.C., that are associated with closure of the facility. Please submit a revised permit application form (page 7 of 40) that indicates a "No" response to item No. B.13.

Response: The legal description of the special exception area was in fact provided as a supplement to Attachment E-1. The special exception area is a designation in the Sarasota County Land Development Code that allows for a landfill as well as other uses. The information presented in support of this designation indicates the intended purpose of the special exception area, as being for a landfill. This information is included in the County's Land Records. However, based on information provided by John Morris, we understand this section of the permit application form refers to closure requirements. Therefore, the proper response on the form is <u>no</u>. We have enclosed revised page 7 of the application form reflecting this change.

<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated</u> <u>Feb.28, 2002</u>

- 2. L.2.h.(2) Leachate Management System
 - a. Collection System The revision of this section to refer to the Figure L-3 does not address the intent of the review comment. Please submit a revised site plan similar to Sheet No. 1 that shows <u>each</u> of the leachate pump station valve boxes with unique identification numbers that will allow the leachate samples to be referenced to individual landfill cells. Please submit revisions to this section that reference the requested figure.

Response: Figure L-1A is attached, with the leachate pump station valve boxes shown on the figure and labeled C-1 to C-5.

b. The revisions of this section that indicate stormwater retained in the secondary containment of the leachate storage tank will be managed as leachate if a visible sheen is present are noted. No additional information is requested.

Response: Comment acknowledged.

c. It is noted that the response indicates that stormwater retained in the secondary containment of the leachate storage tank will be released to Stormwater Pond No. 4 but Figure L-1 indicates Stormwater Pond No. 6 as the receiving pond. Please review this apparent inconsistency and submit revisions to the text or Figure L-1 as appropriate.

Response: Pond No. 6 is correctly shown as the reviewing pond and the text

has been revised accordingly.

d. The revisions of this section that indicate a log will be maintained to track releases of stormwater retained in the secondary containment of the leachate storage tank are noted. No additional information is requested.

Response: Comment acknowledged.

e. Leachate Monitoring – The revisions of this section that reference the leachate monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

Response: Comment acknowledged.

3. L.2.i. – Ground Water Monitoring System: The revisions of this section that reference the ground water monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

Response: Comment acknowledged.

4. L.8.a. – Leachate Monitoring, Sampling and Analysis: The revisions of this section that reference the leachate monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

Response: Comment acknowledged.

5. L.8.b. – Leachate Collection and Removal System: The revisions of this section that refer to Sheet No. 14 (Leachate pump station – Detail 5) are noted, however the reference to Figure L-3 does not address the intent of the review comment. Please submit a revised site plan similar to Sheet No. 1 that shows <u>each</u> of the leachate pump station valve boxes with unique identification numbers that will allow the leachate samples to be referenced to individual landfill cells.

Response: Please see response L.2.h.(2) a.

6. L.9. – Gas Monitoring Program

a. The response that describes how existing gas probes GP-4, GP-5 and GP-6 will be abandoned is noted. However, it is noted that several quarterly gas monitoring events (1998Q3, 1998Q4, 1999Q1, 1999Q2, and 1999Q3) indicated gas measurements greater than 100% of the LEL for methane were reported for at least one of these three gas probes. Please provide the

> technical basis that supports the decision to abandon gas probes GP-4, GP-5 and GP-6, and provide a revised Figure L-1 if it is determined that these gas probes will be maintained. Please also submit revisions to this section of the Operations Plan that include a detailed description of the procedure and equipment that will be used to conduct the quarterly gas monitoring events to meet the requirements of Rule 62-701.530(2)(b), F.A.C., specifically including how pre-purging measurements will be recorded at the gas probes and describing the physical locations at each gas monitoring location.

Response: The issue of landfill gas detected in GP-4, GP-5, GP-6 was previously resolved with the Department. It was determined that the gas was naturally occurring. After several sampling events and purging of the wells, no gas has been detected in these probes. Recent sampling of the probes has been conducted without purging and no gas has been detected. Section L.9 has been revised to include the additional detail requested.

The response that gas monitoring locations GM-6 and GM-7 were "never b. proposed or referenced" is inconsistent with the quarterly gas monitoring reports submitted by Sarasota County. It is noted that GM-6 (control booth) and GM-7 (electric panel at leachate tank) have been included in the gas monitoring events since 1998Q3 and 1999Q4, respectively. The information provided in this section of the Operations Plan that structures other than those at GM-1, GM-2 and GM-3 will not be monitored due to their distance from the landfill, shallow water table and lack of subsurface connections to the landfill were considered sufficient to support the deletion of GM-4 (administration building) and GM-5 (scale house). However this information is considered to be insufficient to support the deletion of GM-6 and GM-7. Please provide a site map that shows the locations of existing gas monitoring locations GM-6 and GM-7 and indicate why it is considered appropriate that these locations no longer be monitored. Please include these locations on Figure L-1 if these gas monitoring locations will be maintained.

Response: Gas monitor locations GM-6 and GM-7 were added by County staff for general information purposes; however, these sites were not added to the monitoring program through an official permit modification. The County does not desire to include these locations in the LFG Monitoring Program as these locations are over 3,000 feet from the landfill cell and would serve no purpose in monitoring for LFG migration.

> c. The response that the proposed gas probe located between the waste tire and C&D processing facilities shall be identified as GP-4 is unacceptable as that identification number is currently assigned to an existing gas probe. Please provide a unique identification number for this proposed gas probe and submit a revised Figure L-1 that includes this change.

Response: Figure L-1 has been modified to change the GP-4 identifier to GP-7.

The revisions of this section regarding the preparation of a gas remediation plan are noted. No additional information is requested.

Response: Comment acknowledged.

7. Attachment L-2 – Contaminated Soil Acceptance Criteria: The revisions in the Contaminated Soil Acceptance Criteria (renumbered as Attachment L-4) that precludes the stockpiling of this material unless authorized in writing by the Department are noted. No additional information is requested.

Response: Comment acknowledged.

SECTION M – WATER QUALITY AND LEACHATE MONITORING

- <u>REQUIREMENTS</u> (Rule 62-701.510, F.A.C.)
- 8. M.1.a. through M.1.h.(2): The submittal of pages 32 and 33 of DEP Form No. 62-701.900(1) referring to Section M of the supporting information and the document entitled *Groundwater Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex, Sarasota County, Florida* (GWMPE) are noted. No additional information is requested.

Response: Comment acknowledged.

<u>Appendix A – Groundwater Monitoring Plan Evaluation, Central County Solid Waste</u> <u>Disposal Complex, Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28,</u> 2002, revised June 28, 2002.

- 9. Section 2 Summary of the Ground Water, Surface Water, and Leachate Monitoring Program
 - a. The information provided in Notes 2 and 3 of revised Table 2-2 regarding the source of monitor well construction details are noted. No additional information is requested.

Response: Comment acknowledged.

b. The revisions of Section 2 in Section M that describe the semiannual/annual sampling events and the procedure for collecting composite samples for inorganics are noted. No additional information is requested.

Response: Comment acknowledged.

c. The revisions of Section 2 in the GWMPE and Section 2 in Section M that indicate leachate samples will be annually analyzed for the parameters listed in 40 CFR Part 258, Appendix II are noted. No additional information is requested.

Response: Comment acknowledged.

10. Section 3 – Previous Land Use Effects on Ground Water at the CCSWDC

- a. The response indicates that an investigation will be conducted of potential soil impacts related to former cattle ranching activities and related effects on leachate and ground water quality. Please note that such an investigation is typically conducted during the hydrogeological investigation (Rule 62-701.410, F.A.C.) and is considered to be outside the scope of routine water quality and leachate monitoring (Rule 62-701.510, F.A.C.). As such, the Department does not intend to include a Specific Condition in the permit renewal that requires the implementation of a soil sampling program. No additional information is requested.
- b. The basis for the assertions presented in the response regarding the comparisons provided for ground water quality data collected "prelandfill" and "post-landfill" seems to be inadequate for the following reasons:
- c. The ground water sampling event conducted during September 1998 at wells MW-8 and MW-9 did not report field turbidity measurements due to equipment failure; it cannot be determined if the elevated metals results are representative of site conditions or were affected by elevated sample turbidity (potentially affected by well design, well installation/development, or sample collection).

The ground water sampling events conducted at wells P-1 through P-14D did not report field turbidity measurements; it cannot be determined if the elevated metals results reported for selected wells are representative of site

conditions or were affected by elevated sample turbidity.

The most conservative ground water velocity using site-specific variables is considered to be about 85 feet/year (see comment No. 12.a.); potential impacts to ground water quality at well MW-8 from landfilling operations cannot be ruled out.

The potential ground water impacts from activities in the yard waste composting area have not been previously indicated; if surface drainage from the composting area that is directed toward wells MW-8 and MW-9 has affected ground water quality at these downgradient wells, the ability to distinguish potential impacts from the landfill cells appears to be limited (see comment No. 11.c.3)).

Based on the response provided to comment No. 11.e., the Department expects that the next ground water monitoring plan evaluation will provide additional characterization of ground water/leachate quality trends at the facility.

The importance of collecting ground water samples that are representative of site conditions cannot be over-emphasized. Please note that the Department's SOP regarding ground water sampling (adopted April 9, 2002) provides several new criteria regarding well purging and the measurements of field parameters prior to sample collection that will be included in the review of results provided for future sampling events. A copy of this SOP may be viewed on the Department's web page at: <u>ftp://ftp.dep.state.fl.us/pub/labs/assessment/soppdf/fs2200.pdf</u>. Please note that the Department may consider future sampling events that report field measurements that do not meet the criteria in SOP FS 2212 (turbidity less than 20 NTU and dissolved oxygen less than 20% saturation) as not representative of site conditions, and may result in the requirement to resample. These comments are provided for informational purposes and do not require a response. No additional information is requested.

Response: Comments acknowledged.

11. Section 4 – Water Quality Monitoring Findings

a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:

1) No additional information is requested.

Response: Comment acknowledged.

2) MW-1: Turbidity for <u>April 2001</u> (previous comment referenced incorrect date) at 7.9 NTU

MW-9: Conductivity for November 1999 at 2140 µMHOs/cm

MW-10: Turbidity for October 2000 at 18.9 NTU

Response: Acknowledged. Appendix A is attached, (Groundwater Quality Data) and has been revised to reflect the changes referenced above.

3) No additional information is requested.

Response: Comment acknowledged.

- b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:
 - 1) Refer to comment No. 10.b. No additional information is requested.

Response: Comment acknowledged.

2) The response that indicates the relation between turbidity and metals concentrations was intended as a general observation and some measurements may not show this relationship is noted. No additional information is requested.

Response: Comment acknowledged.

3) Refer to comment No. 10.b. No additional information is requested.

Response: Comment acknowledged.

4) The revisions of this section regarding the sodium concentrations reported at detection well MW-11 are noted. No additional

information is requested.

Response: Comment acknowledged.

5) The response that TDS in the vicinity of well MW-1 is variable based on the ground water conductivity data collected on May 8, 2002 is noted. No additional information is requested.

Response: Comment acknowledged.

6) The revisions to this section regarding vanadium concentrations are noted. No additional information is requested.

Response: Comment acknowledged.

- c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:
 - The occurrence of ammonia in ground water samples collected over time at the detection wells remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e.
 appears to be warranted. No additional information is requested.

Response: Comment acknowledged.

2) The potential occurrence/source of mineralized water in the vicinity of well MW-1 remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e. appears to be warranted. No additional information is requested.

Response: Comment acknowledged.

3) The response that iron was reported above the ground water standard at well MW-10 before the construction of the landfill (May 1994) is noted, however iron was also reported <u>below</u> the ground water standard (0.0202 mg/L in October 1997) before the landfill was constructed. Please indicate how drainage from the yard waste composting area will be controlled to minimize potential impacts to ground water quality in areas downgradient from the landfill cells.

Response: Stormwater currently accumulates in the area of MW-9. The County will regrade this area in the northwest corner of the yard waste processing area to direct runoff to the east and to the south from this area. This will be accomplished through the addition of fill at the northwest corner of the yard waste area.

d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:

1) No additional information is requested.

Response: Comment acknowledged.

2) No additional information is requested.

Response: Comment acknowledged.

3) No additional information is requested.

Response: Comment acknowledged.

4) October 2000 sampling event reported nitrate at 0.03 mg/L.

Response: The nitrate value of 0.03 mg/l is the correct value for the October 2000 sampling event as listed in Appendix C (Leachate Quality).

e. The response that proposes the collection of supplemental parameters to assist in the evaluation of the relationship between ground water and leachate quality is noted. It is the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation.

Response: Comment acknowledged.

f. The revisions to renumbered Appendix E (Surface Water Quality) to address the listed inconsistencies with the data provided by Sarasota County are noted. No additional information is requested.

Response: Comment acknowledged.

12. Section 5 – Ground Water Levels and Flow

a. It is the Department's intention to use the most conservative site-specific information available for the calculation of ground water velocity. As such, using the arithmetic mean of all 10 slug tests (23.2 ft/day), hydraulic gradient of 0.002 ft/ft, and effective porosity of 0.2, ground water velocity is calculated to be about 85 ft/year. It is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using this worst case ground water flow velocity. No additional information is requested.

Response: Comment acknowledged.

b. The response indicates that a math error was found for the November 1999 water levels, however the data provided in Appendix F (renumbered) appear to be unchanged from the March 2002 submittal. Please review and revise as appropriate.

Response: The math error was in the semi-annual report. The Appendix F (renumbers) data is correct.

c. The response that the surficial aquifer ground water elevations collected upon installation of the proposed replacement wells will be used as a check of the previous contour maps is noted. No additional information is requested.

Response: Comment acknowledged.

d. The response that existing monitor wells MW-3 and MW-5 are available to be included in routine ground water level measurements is noted. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

Response: Including the surface water elevations at the staff gauges may help but the data could potentially be influenced by short-term rainfall events, if gauges are read during or immediately following the event.

13. Section 6 – Adequacy of Monitoring Program

> a. The response that wells MW-1, MW-2, MW-4, MW-11 and MW-12 will be replaced to minimize submergence of the wells screen is noted. Please provide a revised site map (similar to Figure 2-1) that shows the location and unique identification number for the replacement wells for use as a permit attachment (no larger than 11 x 17 inches).

Response: Locations of Existing and Proposed Monitoring and Test Sites, are shown on attached Figure 4-1 for inclusion in Section M - "Groundwater Monitoring Plan Addendum." The figure shows the proposed locations of MW-1R, MW-2R, MW-4R, MW-11R, and MW-12R.

b. The revisions to this section of the GWMPE regarding well MW-2 purging dry during the April 2001 sampling event are noted. No additional information is requested.

Response: Comment acknowledged.

c. The response that construction details for the proposed replacement well are presented in Table 4-1 of Section M is noted. Please note that the well screen and sand pack materials must be adequately sized to the formation encountered at each well location to minimize sample turbidity. No additional information is requested.

Response: Comment acknowledged.

d. The revisions to this section of the GWMPE regarding ground water velocity and sampling frequency are noted. As indicated in comment No. 12.a., it is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using the worst case ground water flow velocity. No additional information is requested.

Response: Comment acknowledged.

e. The revisions to this section of the GWMPE regarding surface water monitoring at stations B2 and B4R are noted. No additional information is requested.

Response: Comment acknowledged.

f. The revisions to this section of the GWMPE regarding supplemental leachate characterization are noted. No additional information is requested.

Response: Comment acknowledged.

14. Section 7 – Landfill Design and Operation Effectiveness: The revisions to this section of the GWMPE regarding the proposed changes to the monitoring plan are noted. No additional information is requested.

Response: Comment acknowledged.

If you have any questions about the information provided, please do not hesitate to contact us.

Sincerely,

Robert Z. Watty

Robert L. Westly Senior Hydrogeologist SCS ENGINEERS

Mar. B.h.

John A. Banks, P.E. Project Director SCS ENGINEERS

JAB/RJD:jlh Enclosures

cc: Gary Bennett, Sarasota County Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa










RUNOFF COMPUTATIONS METHOD TR-55





Client	WMI	Project	Sarasota Fill Sequencing	Job No. 092010	01.01	
Subject	Summary of Drainage Calculations			^{By} MMM	Date 9/	16/02
				23	Checked	Date

Rainfall:SCS, Type III25-yr, 24-hr.Rainfall = 9.5 in.Peak flow at outfall =19.0 cfs

Basin Name	Drainage Area, A (acres)	Slope Condition	Curve Number	Time of Concentration (hr.)	Peak Flow (cfs)
DA-1	3.70	enerally Flat, 2-4	74	0.45	15.0
DA-2	0.11	Steep, 33%	98	0.04	1.0
DA-3	0.72	Steep, 33%	98	0.06	7.0
DA-4	0.61	Steep, 33%	98	0.06	6.0

RUNOFF CURVE NUMBER CO Project : WMI-Sarasota Fill Sequencing County : Sarasota State: FL	MPUTATION User: M Checked: _	Ve IMM Date Date	ersion 2.10 e: 09-13-2002 e:
Subtitle: Flow Computation For Drainage Subar Subarea : 1	reas (With I	Inflow From T	'op)
COVER DESCRIPTION	Hydr A	cologic Soil B C Acres (CN)	Group D
FULLY DEVELOPED URBAN AREAS (Veg Estab.) Open space (Lawns,parks etc.) Good condition; grass cover > 75%	-	- 3.7(74)	- -
Total Area (by Hydrologic Soil Group)		3.7	
SUBAREA: 1 TOTAL DRAINAGE AREA: 3.7 Acr	es WEl	IGHTED CURVE	NUMBER: 7.4

RUNOFF CURVE NUMBER Project : WMI-Sarasota Fill Sequencing County : Sarasota State: FL Subtitle: Flow Computation For Drainage Sub Subarea : 2	COMPUTATION User: Checked: areas (With	MMM Inflow	Ve Date Date From 1	ersion 2.10 e: 09-13-2002 e: Fop)
COVER DESCRIPTION	ну А	drologic B Acres	c Soil C (CN)	Group D
FULLY DEVELOPED URBAN AREAS (Veg Estab.) Impervious Areas Paved parking lots, roofs, driveways		-	. –	.11(98)
Total Area (by Hydrologic Soil Group)				.11
		·		

 SUBAREA:
 2
 TOTAL DRAINAGE AREA:
 .11 Acres
 WEIGHTED CURVE NUMBER:
 98

RUNOFF CURVE NUMBER CO Project : WMI-Sarasota Fill Sequencing County : Sarasota State: FL Subtitle: Flow Computation For Drainage Subar Subarea : 3	MPUTATION User: MMM Checked: eas (With Inflow	Version 2.10 Date: 09-13-2002 Date: From Top)
COVER DESCRIPTION	Hydrologic A B Acres	C D (CN)
FULLY DEVELOPED URBAN AREAS (Veg Estab.) Impervious Areas Paved parking lots, roofs, driveways		72(98)
Total Area (by Hydrologic Soil Group)		.72

SUBAREA:	3	TOTAL	DRAINAGE	AREA:	.72	Acres	WEIGHTED	CURVE	NUMBER:	98

RUNOFF CURVE NUMBER C	COMPUTATIC	DN	Ve	rsion 2.10
Project : WMI-Sarasota Fill Sequencing County : Sarasota State: FL	User Checked	: MMM	Date Date	: 09-13-2002 :
Subtitle: Flow Computation For Drainage Suba Subarea : 4	ireas (Wit	h Inflow	From To	op)
COMED DECODIDATON	н Н	lydrologi	c Soil (Group
COVER DESCRIPTION	A	B Acres	C (CN)	D
FULLY DEVELOPED URBAN AREAS (Veg Estab.)				
Paved parking lots, roofs, driveways	-	-	-	.61(98)
Total Area (by Hydrologic Soil Group)				.61

SUBAREA: 4 TOTAL DRAINAGE AREA: .61 Acres WEIGHTED CURVE NUMBER: 98

Project : W County : S Subtitle: H	MMI-Saras Sarasota Flow Compu	TIME OF ota Fill utation F	CONCENT Sequenci State or Drain	RATION AN ng : FL age Subar	D TH Che eas	AVEL TIME User: MMM ccked: (With Inf	low Fr	Version Date: 09- Date: com Top)	2.10 13-2002
Flow Type	2 year rain	Length (ft)	Sub Slope (ft/ft)	area #1 - Surface code	1 - n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet Shallow Con	5 ncent'd	200 800	.04 .005	F u	••• •• •• •	Time of C	oncent	ration =	0.251 0.195 0.45*
Flow Type	2 year rain	Length (ft)	Sub Slope (ft/ft)	area #2 - Surface code	2 - n	Area (sq/ft)	 Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet Open Channe	5 el	24 200	.33	F		Time of C	oncent	3 cration =	0.020 0.019 0.04*
Flow Type	2 year rain	Length (ft)	Sub Slope (ft/ft)	area #3 - Surface code	- 3 - n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet Open Chann	5 el	66 200	.33	F		Time of C	Concent	3 cration =	0.044 0.019 0.06*
Flow Type	2 year rain	Length (ft)	Sub Slope (ft/ft)	area #4 - Surface code	-4. n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet Open Chann	5 el	66 200	.33	 F		Time of C	Concent	3 tration =	0.044 0.019 0.06*
A Smoo B Fall C Cult D Cult E Gras * - Genera	- Sheet F th Surface ow (No Resivated < 2 ivated > 2 s-Range, 2 ted for us	low Surfa e s.) 20 % Res. 20 % Res. Short se by TAB	ce Codes F Gra G Gra H Woo I Woo J Ran ULAR met	ss, Dense ss, Burmu ds, Light ds, Dense ge, Natur hod	e ida : : : : :	Shal	low Co Surfa P Pa U Un	oncentrate ce Codes aved npaved	d

Proje Count Subti	ct : WMI y : Sar tle: Flo	-Saraso asota w Compu	ta Fill tation	TABULAR Sequen Sta For Dra	HYDROGR cing te: FL inage Su	APH ME Ch bareas	THOD User: ecked: (With	MMM Inflow	V Dat Dat From	ersion 2. e: 09-13- e: Top)	.10 -20 02
Total	watersh	ed area	: 0.00	8 sq mi	Rainfa	ll typ	e: III	Freq	uency:	25 years	5
Area(Rainf. Curve Runof Tc (h TimeT Ia/P	sq mi) all(in) number f(in) rs) (Used) oOutlet (Used) (Used)	1 0.01* 9.5 74* 6.29 0.45* 0.45* 0.02 0.10 0.07 0.10	2 0.00* 9.5 98* 9.26 0.04* 0.10 0.01 0.00 0.00 0.10	3 0.00* 9.5 98* 9.26 0.06* 0.10 0.00 0.00 0.00 0.00 0.10	4 0.00* 9.5 98* 9.26 0.06* 0.10 0.00 0.00 0.00 0.10	Dareas					
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12.4 12.5 12.6 12.7 12.8 13.0 13.2 13.4	18 18 19P 17 15 11 7 6	10 13 15P 15 13 9 5 4	1 0 0 0 0 0 0 0	4 3 1 1 1 1	3 2 1 1 1 1						
13.613.814.014.314.615.015.516.0	5 3 2 2 2 1 1	3 2 2 2 2 1 1		1 1 0 0 0 0 0	1 0 0 0 0 0 0						
16.5 17.0 17.5 18.0 19.0 20.0 22.0 26.0	1 1 1 1 0 0 0	1 1 1 1 0 0 0	0 0 0 0 0 0 0		0 0 0 0 0 0 0						

P - Peak Flow * - value(s) provided from TR-55 system routines

Version 2.10 RUNOFF CURVE NUMBER COMPUTATION RUNDER COMPUTATIONVersion 2.10Project : WMI-Sarasota Fill SequencingUser: MMMDate: 09-13-2002County : SarasotaState: FLChecked: _____Date: _____ Subtitle: Flow Computation For Drainage Subareas (With No Inflow From Top) Subarea : 1 _____ Hydrologic Soil Group A B C D Acres (CN) COVER DESCRIPTION FULLY DEVELOPED URBAN AREAS (Veg Estab.) Impervious Areas - - .11(98) Paved parking lots, roofs, driveways .11 Total Area (by Hydrologic Soil Group) ==== _____ SUBAREA: 1 TOTAL DRAINAGE AREA: .11 Acres WEIGHTED CURVE NUMBER: 98

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RUNOFF CURVE NUMBER CO	MPUTATION	Version 2.10
County : Sarasota Fill Sequencing Subtitle: Flow Computation For Drainage Subar	User: MMM Checked:	Date: 09-13-2002 Date:
Subarea : 2		
COVER DESCRIPTION	Hydrologi A B	C Soil Group C D
FULLY DEVELOPED URBAN AREAS (Veg Estab.) Impervious Areas Paved parking lots, roofs, driveways		72(98)
Total Area (by Hydrologic Soil Group)		.72
SUBAREA: 2 TOTAL DRAINAGE AREA: .72 Acre	s WEIGHTEI	CURVE NUMBER: 98

Version 2.10 RUNOFF CURVE NUMBER COMPUTATION Project : WMI-Sarasota Fill SequencingUser: MMMVersion 2.10County : SarasotaState: FLChecked: ____Date:Cubtitle Fill SequencingChecked: ____Date: Subtitle: Flow Computation For Drainage Subareas (With No Inflow From Top) Subarea : 3 ______ Hydrologic Soil Group A B C D Acres (CN) COVER DESCRIPTION _____ FULLY DEVELOPED URBAN AREAS (Veg Estab.) Impervious Areas Paved parking lots, roofs, driveways - - - .61(98) Total Area (by Hydrologic Soil Group) .61 ====

SUBAREA: 3 TOTAL DRAINAGE AREA: .61 Acres WEIGHTED CURVE NUMBER: 98





TIME OF CONCENTRATION AND TRAVEL TIME Version 2.10 Project : WMI-Sarasota Fill SequencingUser: MMMDate: 09-13-2002County : SarasotaState: FLChecked: ____Date: Subtitle: Flow Computation For Drainage Subareas (With No Inflow From Top) ------ Subarea #1 - 1 ------Flow Type 2 year Length Slope Surface n Area Wp Velocity Time rain (ft) (ft/ft) code (sq/ft) (ft) (ft/sec) (hr)
 Sheet
 5
 24
 .33
 F

 Sheet
 200
 .02
 F
 0.020 0.331 Time of Concentration = 0.35*==== ----- Subarea #2 - 2 -----Flow Type 2 year Length Slope Surface n Area Wp Velocity Time rain (ft) (ft/ft) code (sq/ft) (ft) (ft/sec) (hr) Sheet566.33FOpen Channel200 0.044 ۲. 3 0.019 Time of Concentration = 0.06* Flow Type 2 year Length Slope Surface n Area Wp Velocity Time rain (ft) (ft/ft) code (sq/ft) (ft) (ft/sec) (hr) _____ Sheet566.33FOpen Channel200 0.044 3 0.019 Open Channel Time of Concentration = 0.06* --- Sheet Flow Surface Codes ---A Smooth SurfaceF Grass, Dense--- Shallow Concentrated ---B Fallow (No Res.)G Grass, Burmuda--- Surface Codes C Cultivated < 20 % Res. H Woods, Light D Cultivated > 20 % Res. I Woods, Dense E Grass-Range, Short J Range, Natural P Paved U Unpaved

* - Generated for use by TABULAR method

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12.4 12.5 12.6 12.7 12.8 13.0 13.2 13.4	8 6 5 3 2 2 2 2	1P 1 1 0 0 0 0	4 3 1 1 1 1	3 2 1 1 1 1 1							
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16.5 17.0 17.5 18.0 19.0 20.0 22.0 26.0			0 0 0 0 0 0 0								





Cover description		. 1	Curve nu hydrologic s	mbers for soil group-	
Cover type and hydrologic condition	Average percent impervious area ³	A	В	с	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) ² :					
Poor condition (grass cover $< 50\%$)		68	7 9	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover $> 75\%$)		39	61	(74)	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc.					\bigcirc
(excluding right-of-way).		98	98	98	(98)
Streets and roads:					\sim
Paved: curbs and storm sewers (excluding					•••
right-of-way)		98	98	98	98
Paved: open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴		63	77	85	88
Artificial desert landscaping (impervious weed					
barrier. desert shrub with 1- to 2-inch sand					• •
or gravel mulch and basin borders).		96	96	96	96
Urhan districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 agre	38	61	.75	83	87
1/3 acre	30	57	72	81	241
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas		•			
Newly graded areas (pervious areas only,					
no vegetation) ⁵		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

Table 2-2a.-Runoff curve numbers for urban areas1

⁴Average runoff condition, and $I_a = 0.2S$.

"The average percent impervious area shown was used to develop the composite CN's. Other assumptions areas follow:s: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 23 or 24. SCN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space, cover type. *Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious arreat percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydnologic constition. *Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4. based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

CIRCULAR PIPE CAPACITY

SCS ENGINEERS

C	Client WMI	Project Sarasota Fill Sequencing	Job No.	0920101	01.
S	^{ubject} Pipe Capacity Calculation		By	MMM	Date 9/16/02
			Checked		Date

CIRCULAR PIPE FLOW COMPUTATIONS

Assumptions:

Select a smooth pipe, PVC	
Pipe Length =	66.0 Ft
Pipe Diameter, D =	18 inches
Slope =	0.33 Ft/Ft
Manning's Roughness Coeff., "n" =	0.012

Calculate Flow and Velocity:

Pipe Capacity (full), Q = A * V Velocity (pipe full), V = $1.49 (R^{2/3} * S^{1/2})$

n

where:

V = Velocity of pipe, in feet per second
A =Cross-sectional area of pipe, in square foot
n = Coefficient of roughness for pipe
R = Hydraulic radius of pipe = A/WP, in feet
S = Friction for flow in pipe in foot per foot
WP = Wetted perimeter within pipe, in feet

Known parameters:

1.50 ft.	D =
0.38 ft.	R = (pipe diameter/4)
37.30 ft./sec	V (full) =
65.92 cfs	Q (full) =

Use Chart 1 (Atached) to obtain velocity for pipe flowing less than full:

Q (peak flow from TR55 calculations, attached) =	19.0 cfs
Q (full) =	65.9 cfs
Ratio of Q (actual) to Q (full) =	0.29
Ratio of V (actual) to V (full) from chart (attached) =	0.72
V (actual) =	27 ft/sec

HYDRAULICS OF SEWERS

Chart -

1)

87



FIGURE 24,---Hydraulic-elements graph for circular sewers.

et al. (22). Graphs for sewers of other than circular cross section may be developed by the same general method.

Most of the hydraulic-elements graphs in common use have been prepared on the assumption that the Manning n does not change with the depth of flow for the particular conduit shape. Nonetheless, many experimenters have observed a variation of n with depth of flow. The experiments of Wilcox (23) and of Yarnell and Woodward (24) show that the value of n for a pipe flowing partly full is greater than for the full pipe; and the average n values for 824 experiments are as indicated by the curve through the points marked by circles in Figure 24. A similar curve for the Darcy-Weisbach fraction factor f also is shown in the same figure.

The relation between the two friction coefficients is

which is similar to Equation 19.

The points in Figure 24 marked by triangles and x's were estimated from the measurements made by Johnson (25) in large Louisville, Ky., sewers flowing partly full. Since individual values of f/f_f in the experiments of Wilcox and of Yarnell and Woodward varied widely from the average for a particular value of d/D, the reliability of the averages used in Figure 24 may be questioned. Tests by Schmidt (26) on a large





3012 U.S. Highway 301 F Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

August 20, 2002 File No. 09201024.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619



Subject: Sarasota County, Central County Solid Waste Disposal Complex Operations Permit Renewal, Pending Permit No. 130542-002-SO

Dear Mr. Ford:

Sarasota County has received your requests for additional information (RFI) dated July 24, 2002 for the above referenced permit application. SCS Engineers is assisting the County with the responses to your requests. We anticipate submitting the response, including submittal of new fill sequencing plans, in approximately three weeks.

Please let us know immediately if this proposed schedule is not acceptable to the Department.

Sincerely,

ht. Sal

John A. Banks, P.E. Project Manager SCS ENGINEERS

cc: Gary Bennett, Sarasota County

em from

Raymond J. Dever, P.E., DEE Vice President SCS ENGINEERS

Q

Morris, John R.

From: Sent: To: Subject:

Morris, John R. Monday, August 19, 2002 7:52 AM Robert Westly (E-mail) Sarasota Central RAI Memo 78/4

My review memorandum dated July 24, 2002 is attached, as requested.



sarasotacentral1.702.m em.doc

John R. Morris, P.G. Department of Environmental Protection Solid Waste Section, Southwest District Office

Office: (813)744-6100, ext. 336 Fax: (813)744-6125 E-mail: John.R.Morris@dep.state.fl.us



3012 U.S. Highway 30 Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

July 26, 2002 File No. 09201010.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619-2242

ECEⅡVE JUL 2 9 2002 D.E.P.

Subject: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Ford:

Enclosed per John Morris' request on July 24, 2002 are the following revised pages of selected Operation Permit Renewal documents. We provided these to Mr. Morris via e-mail and fax.

- Pages 15 and 16 of the response letter originally dated 6/28/02.
- Section 2 of the Groundwater Monitoring Plan Addendum.
- Table 4-1a & b of the Groundwater Monitoring Plan Addendum.
- Table 6-1 of the Groundwater Monitoring Plan Evaluation Revised.

Please replace your original pages with these revised pages. If you have any questions about the information provided, please do not hesitate to contact us.

Sincerely,

Robert Z. West

Robert L. Westly Senior Hydrogeologist SCS ENGINEERS

John A. Banks, P.E. Project Director SCS ENGINEERS

JAB/RJD:jlh Enclosures

cc: Gary Bennett, Sarasota County Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa Kim Ford, P.E. June 28, 2002 Page 15

> other detection wells and the background wells. It does not appear that the data supports the assertion that iron is not likely related to operations of the CCSWDC.

<u>Response</u>: See response to 10. b. regarding MW-8 and MW-9. MW-10 is farther from cell 2 than MW-9 and, consequently, there has been insufficient time for groundwater quality at MW-10 to be impacted by the landfill.

4) It does not appear that the data supports the assertion that elevated concentrations of sodium were reported at detection well MW-11.

Response: Acknowledged. The text has been revised.

5) It is indicated that TDS occurs naturally in the surficial aquifer at the facility, however elevated TDS concentrations were not reported at all monitor wells (MW-4, MW-11 and MW-12). The localized occurrence of elevated TDS concentrations is not explained by this assertion.

<u>Response</u>: Background data indicate TDS occurs naturally and varies from location to location. SCS further assessed the potential cause for the variability by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Appendix D of the Groundwater Monitoring Plan Evaluation. SCS concludes that background TDS is variable and exceeds the drinking water standard at various locations unrelated to landfilling operations.

6) It is indicated that elevated concentrations of vanadium were reported at well MW-4. Please indicate if the text should have referred to well MW-8. It does not appear that the data supports the assertion that the results of vanadium for all the other monitor wells were reported below the detection limit.

Response: Agreed. The text for vanadium has been revised as follows: "Vanadium was detected above the groundwater clean-up target level only at MW-8. Vanadium was observed at other monitoring wells below the target level and often below detection limits."

c.

The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for Kim Ford, P.E. June 28, 2002 Page 16

> the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The discussion does not indicate that ammonia concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

Response: Ammonia was detected above the groundwater clean-up target level at MW-9 before the construction of the Class I landfill. However, the elevated concentrations of ammonia in MW-8 and MW-10 during the sampling events after the construction of the Class I landfill would not have been related to the landfill operations because there would have been insufficient time for potentially impacted groundwater to reach MW-8 and MW-10. The yard waste compost area to the south of MW-8 and MW-9 may be a contributing factor to groundwater quality at MW-8 and MW-9. Drainage from the yard waste compost area could be flowing towards MW-8 and MW-9, which could possibly be contributing to the presence of other constituents.

2) It is indicated that the elevated concentrations of chloride, sodium and TDS at well MW-1 suggest the presence of mineralized ground water. However, it appears that insufficient data has been collected to distinguish between mineralized ground water and landfill leachate. The discussion does not indicate why relatively elevated concentrations of chloride, sodium and TDS are limited to the vicinity of well MW-1. The plot of sodium concentrations appears to omit the result for well MW-1 for the May 24, 1994 sampling event.

<u>Response</u>: SCS further assessed the potential cause for the elevated levels of chloride, sodium, and TDS by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Appendix D of the Groundwater Monitoring Plan Evaluation. The plot of sodium concentrations for MW-1 has been revised to include the May 24, 1994 sampling event.

3)

The discussion does not indicate that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

Response: Iron was detected above the secondary drinking water

SECTION 2

LEACHATE SAMPLING AND PARAMETERS

The current GWMP specifies that composite samples of leachate collected from landfill cell pump stations will be collected for analysis. The modified sampling method includes the following:

- Inorganic parameters will be analyzed in one composite sample of all active sumps.
- Field parameters and organic parameters will be analyzed in samples collected from each of the active sumps.

Field, laboratory, and additional cation and anions as listed below will be sampled semi-annually Sampling for parameters listed in 40 CFR part 258 Appendix II will be performed annually.

A composite leachate sample is collected once per year from the pump stations located at the landfill cells and analyzed for the following parameters. These remain unchanged from the current GWMP with the exception of the addition of selected cations and anions.

Field Parameters

- Specific conductivity
- pH
- Dissolved oxygen
- Color and sheen by observation

Laboratory Parameters

- Total ammonia N
- Bicarbonate
- ChloridesIron

- Nitrate
- Sodium
- TDS

• Mercury

Additional Cations and Anions (Unfiltered)

- Potassium
- Calcium
- Magnesium

- Sulfate
- Carbonate

Compositing of inorganics will be performed as follows:



Two liters of sample will be collected at each active leachate sump. These will be combined into a single container in the field. Three aliquots (sub-samples) will be collected from the container for analysis as indicated below:

Aliquot 1: 250 ml sample container, preserved with sulfuric acid, to be analyzed for:

• Total ammonia - nitrogen

Aliquot 2: 1,000 ml sample container, no preservatives, to be analyzed for:

- Bicarbonate
- Carbonate
- Chloride
- Nitrate
- Sulfate
- Total dissolved solids

Aliquot 3: 500 ml sample container, preserved with nitric acid, to be analyzed for:

- Calcium
- Iron
- Magnesium
- Mercury
- Potassium
- Sodium
- 40 CFR Part 258 Appendix II Metals (annually only)

TABLE 4-1a. PROPOSED WELL REPLACEMENT CONSTRUCTION, ELEVATIONS AND PUMPING EQUIPMENT ADJUS CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX, SARASOTA COUNTY

			Proposed	I .		W	ELL ELEVA	ATIONS (feet N	GVD)
Eviatin a Wall	Replacement		Height of	Land	Top of		Top of		Bottor
Existing weil		roposed MP	Topot	Surface	Bentonite	Top of Sand	Slotted	Top of Pump	Pum
ID Number '	<u>Number</u>	Elevation ⁴	Casing ²	Elevation	Seal ³	Pack ⁴	Screen ⁵	Equipment	Equipm
MW-1	MW-1R	24.50	3	21.50	21.0	20.0	19.50	13.50	10.5
MW-2	MW-2R	24.10	3	21.10	20.6	19.6	19.10	13.10	10.1
MW-4	MW-4R	23.53	3.	20.53	20.0	19.0	18.53	12.53	9.5
MW-11	MW-11R	26.11	3	23.11	22.6	21.6	21.11	15.11	12.1
MW-12	MW-12R	25.55	3	22.55	22.1	21.1	20.55	14.55	11.5

TABLE 4-1b. PROPOSED WELL REPLACEMENT CONSTRUCTION AND DEPTHS AND PUMPING EQUIPMENT ADJUST CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX, SARASOTA COUNTY

	••••••••••••••••••••••••••••••••••••••			DEPTHS BELOW LAND SURFACE (feet)						
Well ID	Replacement Well ID	Land Surface	• Top of • Bentonite	Top of Sand Pack	Top of Slotted	Top of Pump	Bottom of Pump	Bottom of Slotted	Botton PVC	
Number ¹	Number ¹	Elevation	Seal ³	4	Screen ⁵	Equipment	Equipment ⁶	Screen ⁷	Endca	
MW-1	MW-1R	21.50	0.50	1.50	2.00	8.00	11.00	12.00	12.5	
MW-2	MW-2R	21.10	0.50	1.50	2.00	8.00	11.00	12.00	12.5	
MW-4	MW-4R	20.53	0.50	1.50	2.00	8.00	11.00	12.00	12.5	
MW-11	MW-11R	23.11	0.50	1.50	2.00	8.00	11.00	12.00	12.5	
MW-12	MW-12R	22.55	0.50	1.50	2.00	8.00	11.00	12.00	12.5	

NOTES:

¹ Replaced wells will be properly abandoned by a licensed drilling contractor. Proposed elevation or depth changes are shown in bold.

² MP Elevations will need to be resurveyed and top of casings will need to be remeasured upon completion of the well replacements. Prop

³ Where possible, a 1-foot bentonite clay seal is used.

⁴ Where possible, sand pack to be 0.5-feet above the top of screen.

⁵ Top of screen to be 2-feet below land surface elevation.

⁶ Bottom of dedicated pumping equipment is 1-foot above the bottom of screen elevation.

⁷ Bottom of screen to be 10-feet below the top of screen.

⁸ Bottom of well to be 0.5-feet below the bottom of screen.

feet NGVD = relative feet above the national geodedic vertical datum.

NA= Not Available.

7/24/02 Table 4-1a revised 7/24/02

rments,

			GROUNDWATER ELEVATIONS (feet NGVD)					
of p	Bottom of Slotted	Bottom of PVC	-					
ent ⁶	Screen ⁷	Endcap ⁸	Maximum	Average	Minimum	Max - Min		
	9.50	9.00	20.57	18.82	16.45	4.12		
)	9.10	8.60	21.04	19.09	17.13	3.91		
	8.53	8.03	20.36	18.74	16.32	4.04		
	11.11	10.61	20.29	18.40	17.13	3.16		
5.	10.55	10.05	20.24	18.24	16.97	3.27		

MENTS,

1

osed conditions will assume a 3-foot stickup for each well.

	-			W	ELL ELEVATI	ONS (f
Well ID Number	Current MP Elevation	Current Height Top of Casing ¹	Ground	Top of Bentonite Seal	Top of Sand Pack	Top S
MW-1	24.00	2.50	21.50	18.00	17.50	1
MW-2	23.38	2.28	21.10	17.82	15.82	1
MW-4	22.82	2.29	20.53	17.24	16.24	1
MW-8	31.60	2.65-	28.95	20.15	19.15	1
MW-9	31.90	2.18	29.72	21.42	19.42	1
MW-10	23.29	2.86	20.43	16.57	15.57	1
MW-10R	31.44	3.00	28.44	22.94	21.94	1
MW-11	26.11	3.00	23.11	20.31	19.31	1
MW-12	25.41	2.86	22.55	19.45	17.45	1

TABLE 6-1. GROUNDWATER WELL ELEVATION DATA, CENTRAL COUNTY SOLID WASTE D

NOTES:

feet NGVD = feet relative to the national geodetic vertical datum.

NA= Not Available.

¹ Current height of top of casing are from well construction data as provided in Table 2-2.

 2 All elevation calculations are based on well construction data as provided in Table 2-2.

ISPOSAL COMPLEX, SARASOTA COUNTY

eet NGVD)) ²		GROUNDWATER ELEVATIONS (feet NGVD)				
	: :						
of Slotted	Bottom of	Bottom of PVC				Difference	
creen	Slotted Screen	Endcap	Maximum	Average	Minimum	Max - Min	
7.00	9.00	9.00	20.57	18.82	16.45	4.12	
5.32	7.32	7.32	21.04	19.09	17.13	3.91	
5.24	5.24	5.24	20.36	18.74	16.32	4.04	
8.15	10.15	10.15	20.33	18.93	17.06	3.27	
7.42	9.42	9.42	20.15	16.85	14.00	6.15	
5.07	7.07	7.07	19.97	18.74	17.76	2.21	
9.94	9.94	9.44	19.39	18.33	16.86	2.53	
7.64	9.64	9.31	20.29	18.40	17.13	3.16	
5.45	5.45	5.45	20.24	18.24	16.97	3.27	

Page 1 of 2

Morris, John R.

From:Bob Westly [rwestly@scsengineers.com]Sent:Thursday, July 25, 2002 2:00 PMTo:Morris, John R.Subject:Sarasota permit renewal revisions

John,

Attached are files providing the following revisions to selected permit renewal materials we discussed on 7/24/02:

June 28, 2002 correspondence responding to the FDEP RAI:
 If If If
 Pages 16 and 17 have been revised to reference Appendix D of the
 Groundwater Monitoring Plan Evaluation in place of the references to
 Attachment A and Attachment I.

2. Section M - Groundwater Monitoring Plan Addendum:

-Page 2-1 has been revised and page 2-2 has been added to delete Appendix I, add compositing procedure for inorganics, and make other minor changes for consistency.

-Table 4-1a has been revised by changing the screen lengths to 10 feet and making minor changes in the footnotes for consistency. Note: Print these tables off the file "WellDataRevised.xls. There are other related tables in the file not used in the documents.

3. Appendix A - Groundwater Monitoring Plan Evaluation:
Table 6-1 has been revised by removing several of the non-applicable footnotes and making footnote reference changes within the table for consistency.

Call me if you have any questions, problems, or need more info.

Thanks!

Bob Westly, P.G. Project Director

7/25/02

7/25/02

R(m-REPLACEMENT MAGES FOR SAMASOTA CENTRAC FIE.

Joh



Kim Ford, P.E. June 28, 2002 Page 15

> other detection wells and the background wells. It does not appear that the data supports the assertion that iron is not likely related to operations of the CCSWDC.

<u>Response</u>: See response to 10. b. regarding MW-8 and MW-9. MW-10 is farther from cell 2 than MW-9 and, consequently, there has been insufficient time for groundwater quality at MW-10 to be impacted by the landfill.

4) It does not appear that the data supports the assertion that elevated concentrations of sodium were reported at detection well MW-11.

Response: Acknowledged. The text has been revised.

5) It is indicated that TDS occurs naturally in the surficial aquifer at the facility, however elevated TDS concentrations were not reported at all monitor wells (MW-4, MW-11 and MW-12). The localized occurrence of elevated TDS concentrations is not explained by this assertion.

Response: Background data indicate TDS occurs naturally and varies from location to location. SCS further assessed the potential cause for the variability by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Appendix D of the Groundwater Monitoring Plan Evaluation. SCS concludes that background TDS is variable and exceeds the drinking water standard at various locations unrelated to landfilling operations.

6) It is indicated that elevated concentrations of vanadium were reported at well MW-4. Please indicate if the text should have referred to well MW-8. It does not appear that the data supports the assertion that the results of vanadium for all the other monitor wells were reported below the detection limit.

Response: Agreed. The text for vanadium has been revised as follows: "Vanadium was detected above the groundwater clean-up target level only at MW-8. Vanadium was observed at other monitoring wells below the target level and often below detection limits."

c.

The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for



Kim Ford, P.E. June 28, 2002 Page 16

> the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The discussion does not indicate that ammonia concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

<u>Response</u>: Ammonia was detected above the groundwater clean-up target level at MW-9 before the construction of the Class I landfill. However, the elevated concentrations of ammonia in MW-8 and MW-10 during the sampling events after the construction of the Class I landfill would not have been related to the landfill operations because there would have been insufficient time for potentially impacted groundwater to reach MW-8 and MW-10. The yard waste compost area to the south of MW-8 and MW-9 may be a contributing factor to groundwater quality at MW-8 and MW-9. Drainage from the yard waste compost area could be flowing towards MW-8 and MW-9, which could possibly be contributing to the presence of other constituents.

2) It is indicated that the elevated concentrations of chloride, sodium and TDS at well MW-1 suggest the presence of mineralized ground water. However, it appears that insufficient data has been collected to distinguish between mineralized ground water and landfill leachate. The discussion does not indicate why relatively elevated concentrations of chloride, sodium and TDS are limited to the vicinity of well MW-1. The plot of sodium concentrations appears to omit the result for well MW-1 for the May 24, 1994 sampling event.

<u>Response</u>: SCS further assessed the potential cause for the elevated levels of chloride, sodium, and TDS by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Appendix D of the Groundwater Monitoring Plan Evaluation. The plot of sodium concentrations for MW-1 has been revised to include the May 24, 1994 sampling event.

3)

The discussion does not indicate that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

Response: Iron was detected above the secondary drinking water

SECTION 2

LEACHATE SAMPLING AND PARAMETERS

The current GWMP specifies that composite samples of leachate collected from landfill cell pump stations will be collected for analysis. The modified sampling method includes the following:

- Inorganic parameters will be analyzed in one composite sample of all active sumps.
- Field parameters and organic parameters will be analyzed in samples collected from each of the active sumps.

Field, laboratory, and additional cation and anions as listed below will be sampled semi-annually Sampling for parameters listed in 40 CFR part 258 Appendix II will be performed annually.

A composite leachate sample is collected once per year from the pump stations located at the landfill cells and analyzed for the following parameters. These remain unchanged from the current GWMP with the exception of the addition of selected cations and anions.

Field Parameters

- Specific conductivity
- pH
- Dissolved oxygen
- Color and sheen by observation

Laboratory Parameters

- Total ammonia N
- Bicarbonate
- Chlorides
- Iron
- Mercury

Additional Cations and Anions (Unfiltered)

- Potassium
- Calcium
- Magnesium

- Nitrate
- Sodium

TDS

- Sulfate
- Carbonate

Compositing of inorganics will be performed as follows:
Two liters of sample will be collected at each active leachate sump. These will be combined into a single container in the field. Three aliquots (sub-samples) will be collected from the container for analysis as indicated below:

Aliquot 1: 250 ml sample container, preserved with sulfuric acid, to be analyzed for:

• Total ammonia - nitrogen

Aliquot 2: 1,000 ml sample container, no preservatives, to be analyzed for:

- Bicarbonate
- Carbonate
- Chloride
- Nitrate
- Sulfate
- Total dissolved solids

Aliquot 3: 500 ml sample container, preserved with nitric acid, to be analyzed for:

- Calcium
- Iron
- Magnesium
- Mercury
- Potassium
- Sodium
- 40 CFR Part 258 Appendix II Metals (annually only)

7/24/02 Table 6-1

TABLE 6-1. GROUNDWATER WELL ELEVATION DATA, CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX, SARASOTA COUNTY

				[M	ELL ELEVATI	DNS (feet NGVD) 2		GROUN	DWATER ELE	VALIUNS (Iee	NGVDJ
		Current								• .	-	
Well ID	Current MP	Height Top of		Top of	Top of Sand	Top of Slotted	Bottom of	Bottom of PVC	•	•		Difference
Number	Elevation	Casing ¹	Ground	Bentonite Seal	Pack	Screen	Slotted Screen	Endcap	Maximum	Average	minim	Max - Min
NAVAL-1	24.00	2.50	21.50	18.00	17.50	17.00	6.00	9.00	20.57	18.82	16.45	4.12
C /V/V	23.28	2.2	21 10	17.82	15.82	15.32	7.32	7.32	21.04	19.09	17.13	3.91
NIV	20.00	0.00	20.53	17 24	16.24	15.24	5.24	5.24	20.36	18.74	16.32	4.04
MIVV-4	20.22	2.2.2	20.05	20.15	19.15	18 15	10.15	10.15	20.33	18.93	17.06	3.27
8-WW	31.00	2.03	02.02	21.13	19.47	17.42	9.42	9.42	20.15	16.85	14.00	6.15
B-WW	08.15	2.10	20.43	16.57	15.57	15.07	7.07	7.07	19.97	18.74	17.76	2.21
UI-V/M	21.44	00.4	28.44	22.94	21.94	19.94	9.94	9.44	19.39	18.33	16.86	2.53
	26.11	3.00	23.11	20.31	19.31	17.64	9.64	9.31	20.29	18.40	17.13	3.16
MW-12	25.41	2.86	22.55	19.45	17.45	15.45	5.45	5.45	20.24	18.24	16.97	3.27
NOTES.											•	

feet NGVD = feet relative to the national geodetic vertical datum. NA= Not Available.

¹ Current height of top of casing are from well construction data as provided in Table 2-2.

² All elevation calculations are based on well construction data as provided in Table 2-2.

l of l



Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

July 24, 2002

Mr. Gary Bennett Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

Re: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Bennett:

This is to acknowledge receipt of the additional information in support of your permit renewal application, received June 28, 2002, to continue to operate a class I landfill and related facilities.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit remains <u>incomplete</u>. This is the Department's 2nd request for additional information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

- 1. 62-701.320(7)(d)3. The table of contents should be revised to list each related attachment.
- 2. 62-701.320(10). Revisions requested as follows: a) Section G to delete references to previous Operation Permit Application; b) Section J to include references to each valid geotechnical report; c) Section N to include procedures for management of used oil and lawn mowers, and to delete references to previous Operation Permit Application; d) Section 0.2 to reference the gas monitoring plan described in Section L.9.
- 3. **62-701.500(1).** Revisions to Section L.1 and Attachment L-1 are requested to include training for spotters also.

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- 4. **62-701.500(2).** Revisions to the Operations Plan are requested as follows:
 - a) Section L.2.c. to include procedures for managing used oil and lawn mowers;
 - b) Section L.2.j to include reference to Section L.8.h. for cleaning;
 - c) Section L.6. to include clarification identifying the <u>County</u> rather than the "landfill" as a responsible entity;
 - d) Section L.9. to include the location of all gas monitoring inside structures;
 - Attachment L.2. to include reference to Sections L.11.e for fire control and L.2.b.1 for emergency procedures;
 - f) Attachment L-3 Sheet 3 to show 3 to 1 external sideslopes;
 - g) Attachment L-4 to describe the disposal of contaminated soil only "within the bermed working area"; and
 - h) Attachment L-13 to include the recycling of used oil and lawn mowers.
- 5. **62-701.500(2)(f).** a) The referenced drawings for the sequence of filling should be confirmed still valid or revised, and provided as part of the operations plan. b) One full sized set of plans and one reduced set (for use as an attachment to the operations plan) with all revisions are requested. c) Plan views showing grades required for proper drainage along terrace swales are requested. d) Typical details for all temporary and permanent drainage devices (letdown structures, terraces, berms and swales) to convey stormwater from the top and sides of filled areas without erosion are requested.
- 6. **62-701.500(7)(g).** Confirmation of conformance to designed dimensions and details for filled portions of Phase I including references to specific plan sheets and details is requested.
- 7. **62-701.500(7)(j).** Clarification regarding erosion control. Typical details on a drawing for each type of erosion control and stormwater management control are requested.
- 62-701.500, .510, and .530. Responses and required supporting information in response to Mr. John Morris' July 24, 2002 memorandum (attached). You may call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.

Please provide all responses that relate to engineering required for design and operation, signed and sealed by a professional engineer. All descriptions of operational procedures provided as part of responses should be included as revisions to the Operations Plan (Section L). All replacement pages should be numbered, and with revision date. To expedite the review process, on one set of the revisions to the narrative reports, deletions may be struckthrough (struckthrough) and additions may be shaded (shaded) or similar notation method.





Mr. Gary Bennett Sarasota County July 24, 2002 Page Three

"NOTICE! Pursuant to the provisions of Section 120.600, F.S., if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

Please submit your response to this letter as one complete package with an original and two copies of all correspondence (with one copy sent to Ms. Susan Pelz). If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab Attachment cc: John Banks, P.E., SCS Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa

Florida Department of Environmental Protection

Memorandum

TO:	Kim Ford, P.E.
FROM:	John R. Morris, P.G.
DATE:	July 24, 2002 JRA
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO

I have reviewed the responses submitted to the Department's letter dated March 29, 2002 regarding the permit renewal application for the Central County Solid Waste Disposal Complex (CCSWDC) that was prepared by SCS Engineers on behalf of Sarasota County, dated and received June 28, 2002, with replacement pages dated July 24, 2002. My review focused on the hydrogeologic and environmental monitoring aspects of the renewal application. Please have the applicant address all review comments that do not include the phrase "No additional information is requested". The information requests have been referenced to sections of the permit application and also to the sections of the supporting document where appropriate, and are consistent with the comment numbers included in my memorandum dated March 28, 2002, as presented below:

SECTION B - DISPOSAL FACILITY GENERAL INFORMATION

1. **B.13.:** Please note that this review comment in my memorandum dated March 28, 2002 incorrectly referenced application form item No. B.12 instead of item No. B.13. It is indicated in the response that the legal description of the special exception area was provided in Attachment E-3; please verify that the referenced information was provided in Attachment E-1. It appears that the legal description information that was submitted does not meet the requirements of Rule 62-701.610(5), F.A.C., that are associated with closure of the facility. Please submit a revised permit application form (page 7 of 40) that indicates a "No" response to item No. B.13.

<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002</u>

2. L.2.h.(2) – Leachate Management System

a. Collection System – The revision of this section to refer to the Figure L-3 does not address the intent of the review comment. Please submit a revised site plan similar to Sheet No. 1 that shows <u>each</u> of the leachate pump station valve boxes with unique identification numbers that will allow the leachate samples to be referenced to individual landfill cells. Please submit revisions to this section that reference the requested figure.

b. The revisions of this section that indicate stormwater retained in the secondary containment of the leachate storage tank will be managed as leachate if a visible sheen is present are noted. No additional information is requested.

c. It is noted that the response indicates that stormwater retained in the secondary containment of the leachate storage tank will be released to Stormwater Pond No. 4 but Figure L-1 indicates Stormwater Pond No. 6 as the receiving pond. Please review this apparent inconsistency and submit revisions to the text or Figure L-1 as appropriate.

d. The revisions of this section that indicate a log will be maintained to track releases of stormwater retained in the secondary containment of the leachate storage tank are noted. No additional information is requested.

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s w/jrm/sarasota/corresp/sarasotacentral1.702.mem

e. Leachate Monitoring – The revisions of this section that reference the leachate monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

3. L.2.i. – Ground Water Monitoring System: The revisions of this section that reference the ground water monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

4. L.8.a. – Leachate Monitoring, Sampling and Analysis: The revisions of this section that reference the leachate monitoring plan submitted in Section M of the permit application are noted. No additional information is requested.

5. **L.8.b.** – Leachate Collection and Removal System: The revisions of this section that refer to Sheet No. 14 (Leachate pump station – Detail 5) are noted, however the reference to Figure L-3 does not address the intent of the review comment. Please submit a revised site plan similar to Sheet No. 1 that shows <u>each</u> of the leachate pump station valve boxes with unique identification numbers that will allow the leachate samples to be referenced to individual landfill cells.

6. L.9. – Gas Monitoring Program

a. The response that describes how existing gas probes GP-4, GP-5 and GP-6 will be abandoned is noted. However, it is noted that several quarterly gas monitoring events (1998Q3, 1998Q4, 1999Q1, 1999Q2, and 1999Q3) indicated gas measurements greater than 100% of the LEL for methane were reported for at least one of these three gas probes. Please provide the technical basis that supports the decision to abandon gas probes GP-4, GP-5 and GP-6, and provide a revised Figure L-1 if it is determined that these gas probes will be maintained. Please also submit revisions to this section of the Operations Plan that include a detailed description of the procedure and equipment that will be used to conduct the quarterly gas monitoring events to meet the requirements of Rule 62-701.530(2)(b), F.A.C., specifically including how pre-purging measurements will be recorded at the gas probes and describing the physical locations at each gas monitoring location.

b. The response that gas monitoring locations GM-6 and GM-7 were "never proposed or referenced" is inconsistent with the quarterly gas monitoring reports submitted by Sarasota County. It is noted that GM-6 (control booth) and GM-7 (electric panel at leachate tank) have been included in the gas monitoring events since 1998Q3 and 1999Q4, respectively. The information provided in this section of the Operations Plan that structures other than those at GM-1, GM-2 and GM-3 will not be monitored due to their distance from the landfill, shallow water table and lack of subsurface connections to the landfill were considered sufficient to support the deletion of GM-4 (administration building) and GM-5 (scale house). However this information is considered to be insufficient to support the deletion of GM-6 and GM-7. Please provide a site map that shows the locations of existing gas monitoring locations GM-6 and GM-7 and indicate why it is considered appropriate that these locations no longer be monitored. Please include these locations on Figure L-1 if these gas monitoring locations will be maintained.

c. The response that the proposed gas probe located between the waste tire and C&D processing facilities shall be identified as GP-4 is unacceptable as that identification number is currently assigned to an existing gas probe. Please provide a unique identification number for this proposed gas probe and submit a revised Figure L-1 that includes this change.

d. The revisions of this section regarding the preparation of a gas remediation plan are noted. No additional information is requested.

7. Attachment L-2 – Contaminated Soil Acceptance Criteria: The revisions in the Contaminated Soil Acceptance Criteria (renumbered as Attachment L-4) that precludes the stockpiling of this material unless authorized in writing by the Department are noted. No additional information is requested.

<u>SECTION M – WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS</u> (Rule 62-701.510, F.A.C.)

8. M.1.a. through M.1.h.(2): The submittal of pages 32 and 33 of DEP Form No. 62-701.900(1) referring to Section M of the supporting information and the document entitled *Groundwater Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex, Sarasota County, Florida* (GWMPE) are noted. No additional information is requested.

<u>Appendix A – Groundwater Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex,</u> <u>Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28, 2002, revised June 28, 2002.</u>

9. Section 2 – Summary of the Ground Water, Surface Water, and Leachate Monitoring Program a. The information provided in Notes 2 and 3 of revised Table 2-2 regarding the source of monitor well construction details are noted. No additional information is requested.

b. The revisions of Section 2 in Section M that describe the semi-annual/annual sampling events and the procedure for collecting composite samples for inorganics are noted. No additional information is requested.

c. The revisions of Section 2 in the GWMPE and Section 2 in Section M that indicate leachate samples will be annually analyzed for the parameters listed in 40 CFR Part 258, Appendix II are noted. No additional information is requested.

10. Section 3 - Previous Land Use Effects on Ground Water at the CCSWDC

a. The response indicates that an investigation will be conducted of potential soil impacts related to former cattle ranching activities and related effects on leachate and ground water quality. Please note that such an investigation is typically conducted during the hydrogeological investigation (Rule 62-701.410, F.A.C.) and is considered to be outside the scope of routine water quality and leachate monitoring (Rule 62-701.510, F.A.C.). As such, the Department does not intend to include a Specific Condition in the permit renewal that requires the implementation of a soil sampling program. No additional information is requested.

b. The basis for the assertions presented in the response regarding the comparisons provided for ground water quality data collected "pre-landfill" and "post-landfill" seems to be inadequate for the following reasons:

- The ground water sampling event conducted during September 1998 at wells MW-8 and MW-9 did not report field turbidity measurements due to equipment failure; it cannot be determined if the elevated metals results are representative of site conditions or were affected by elevated sample turbidity (potentially affected by well design, well installation/development, or sample collection).
- The ground water sampling events conducted at wells P-1 through P-14D did not report field turbidity measurements; it cannot be determined if the elevated metals results reported for selected wells are representative of site conditions or were affected by elevated sample turbidity.
- The most conservative ground water velocity using site-specific variables is considered to be about 85 feet/year (see comment No. 12.a.); potential impacts to ground water quality at well MW-8 from landfilling operations cannot be ruled out.

The potential ground water impacts from activities in the yard waste composting area have not been previously indicated; if surface drainage from the composting area that is directed toward wells MW-8 and MW-9 has affected ground water quality at these downgradient wells, the ability to distinguish potential impacts from the landfill cells appears to be limited (see comment No. 11.c.3)).

Based on the response provided to comment No. 11.e., the Department expects that the next ground water monitoring plan evaluation will provide additional characterization of ground water/leachate quality trends at the facility.

The importance of collecting ground water samples that are representative of site conditions cannot be over-emphasized. Please note that the Department's SOP regarding ground water sampling (adopted April 9, 2002) provides several new criteria regarding well purging and the measurements of field parameters prior to sample collection that will be included in the review of results provided for future sampling events. A copy of this SOP may be viewed on the Department's web page at: <u>ftp://ftp.dep.state.fl.us/pub/labs/assessment/soppdf/fs2200.pdf</u>. Please note that the Department may consider future sampling events that report field measurements that do not meet the criteria in SOP FS 2212 (turbidity less than 20 NTU and dissolved oxygen less than 20% saturation) as not representative of site conditions, and may result in the requirement to resample. These comments are provided for informational purposes and do not require a response. No additional information is requested.

11. Section 4 – Water Quality Monitoring Findings

3)

a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:

- 1) No additional information is requested.
- MW-1: Turbidity for <u>April 2001</u> (previous comment referenced incorrect date) at 7.9 NTU MW-9: Conductivity for November 1999 at 2140 μMHOs/cm MW-10: Turbidity for October 2000 at 18.9 NTU
 - No additional information is requested.

b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:

1) Refer to comment No. 10.b. No additional information is requested.

2) The response that indicates the relation between turbidity and metals concentrations was intended as a general observation and some measurements may not show this relationship is noted. No additional information is requested.

3) Refer to comment No. 10.b. No additional information is requested.

4) The revisions of this section regarding the sodium concentrations reported at detection well MW-11 are noted. No additional information is requested.

5) The response that TDS in the vicinity of well \overline{MW} -1 is variable based on the ground water conductivity data collected on May 8, 2002 is noted. No additional information is requested.

6) The revisions to this section regarding vanadium concentrations are noted. No additional information is requested.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The occurrence of ammonia in ground water samples collected over time at the detection wells remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e. appears to be warranted. No additional information is requested.

2) The potential occurrence/source of mineralized water in the vicinity of well MW-1 remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e. appears to be warranted. No additional information is requested.

3) The response that iron was reported above the ground water standard at well MW-10 before the construction of the landfill (May 1994) is noted, however iron was also reported <u>below</u> the ground water standard (0.0202 mg/L in October 1997) before the landfill was constructed. Please indicate how drainage from the yard waste composting area will be controlled to minimize potential impacts to ground water quality in areas downgradient from the landfill cells.

d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:

- 1) No additional information is requested.
- 2) No additional information is requested.
- 3) No additional information is requested.
- 4) October 2000 sampling event reported nitrate at 0.03 mg/L.

e. The response that proposes the collection of supplemental parameters to assist in the evaluation of the relationship between ground water and leachate quality is noted. It is the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation.

f. The revisions to renumbered Appendix E (Surface Water Quality) to address the listed inconsistencies with the data provided by Sarasota County are noted. No additional information is requested.

12. Section 5 – Ground Water Levels and Flow

a. It is the Department's intention to use the most conservative site-specific information available for the calculation of ground water velocity. As such, using the arithmetic mean of all 10 slug tests (23.2 ft/day), hydraulic gradient of 0.002 ft/ft, and effective porosity of 0.2, ground water velocity is calculated to be about 85 ft/year. It is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using this worst case ground water flow velocity. No additional information is requested.

b. The response indicates that a math error was found for the November 1999 water levels, however the data provided in Appendix F (renumbered) appear to be unchanged from the March 2002 submittal. Please review and revise as appropriate.

c. The response that the surficial aquifer ground water elevations collected upon installation of the proposed replacement wells will be used as a check of the previous contour maps is noted. No additional information is requested.

d. The response that existing monitor wells MW-3 and MW-5 are available to be included in routine ground water level measurements is noted. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

13. Section 6 – Adequacy of Monitoring Program

a. The response that wells MW-1, MW-2, MW-4, MW-11 and MW-12 will be replaced to minimize submergence of the wells screen is noted. Please provide a revised site map (similar to Figure 2-1) that shows the location and unique identification number for the replacement wells for use as a permit attachment (no larger than 11 x 17 inches).

b. The revisions to this section of the GWMPE regarding well MW-2 purging dry during the April 2001 sampling event are noted. No additional information is requested.

c. The response that construction details for the proposed replacement well are presented in Table 4-1 of Section M is noted. Please note that the well screen and sand pack materials must be adequately sized to the formation encountered at each well location to minimize sample turbidity. No additional information is requested.

d. The revisions to this section of the GWMPE regarding ground water velocity and sampling frequency are noted. As indicated in comment No. 12.a., it is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using the worst case ground water flow velocity. No additional information is requested.

e. The revisions to this section of the GWMPE regarding surface water monitoring at stations B2 and B4R are noted. No additional information is requested.

f. The revisions to this section of the GWMPE regarding supplemental leachate characterization are noted. No additional information is requested.

14. Section 7 – Landfill Design and Operation Effectiveness: The revisions to this section of the GWMPE regarding the proposed changes to the monitoring plan are noted. No additional information is requested.

jrm

Florida Department of Environmental Protection

Memorandum

то:	Kim Ford, P.E.
FROM:	John R. Morris, P.G.
DATE:	July 24, 2002 TRA
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO

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<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002</u>

2. L.2.h.(2) – Leachate Management System

a. Collection System – The revision of this section to refer to the Figure L-3 does not address the intent of the review comment. Please submit a revised site plan similar to Sheet No. 1 that shows <u>each</u> of the leachate pump station valve boxes with unique identification numbers that will allow the leachate samples to be referenced to individual landfill cells. Please submit revisions to this section that reference the requested figure.

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<u>SECTION M - WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS</u> (Rule 62-701.510, F.A.C.)

8. **M.1.a. through M.1.h.(2):** The submittal of pages 32 and 33 of DEP Form No. 62-701.900(1) referring to Section M of the supporting information and the document entitled *Groundwater Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex, Sarasota County, Florida* (GWMPE) are noted. No additional information is requested.

<u>Appendix A – Groundwater Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex,</u> <u>Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28, 2002, revised June 28, 2002.</u>

Section 2 – Summary of the Ground Water, Surface Water, and Leachate Monitoring Program

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 well construction details are noted. No additional information is requested.

b. The revisions of Section 2 in Section M that describe the semi-annual/annual sampling events and the procedure for collecting composite samples for inorganics are noted. No additional information is requested.

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b. The basis for the assertions presented in the response regarding the comparisons provided for ground water quality data collected "pre-landfill" and "post-landfill" seems to be inadequate for the following reasons:

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The potential ground water impacts from activities in the yard waste composting area have not been previously indicated; if surface drainage from the composting area that is directed toward wells MW-8 and MW-9 has affected ground water quality at these downgradient wells, the ability to distinguish potential impacts from the landfill cells appears to be limited (see comment No. 11.c.3)).

Based on the response provided to comment No. 11.e., the Department expects that the next ground water monitoring plan evaluation will provide additional characterization of ground water/leachate quality trends at the facility.

The importance of collecting ground water samples that are representative of site conditions cannot be over-emphasized. Please note that the Department's SOP regarding ground water sampling (adopted April 9, 2002) provides several new criteria regarding well purging and the measurements of field parameters prior to sample collection that will be included in the review of results provided for future sampling events. A copy of this SOP may be viewed on the Department's web page at: http://ftp.dep.state.fl.us/pub/labs/assessment/soppdf/fs2200.pdf. Please note that the Department may consider future sampling events that report field measurements that do not meet the criteria in SOP FS 2212 (turbidity less than 20 NTU and dissolved oxygen less than 20% saturation) as not representative of site conditions, and may result in the requirement to resample. These comments are provided for informational purposes and do not require a response. No additional information is requested.

11. Section 4 – Water Quality Monitoring Findings

a. The revisions of Appendix A (Ground Water Quality Data) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Several of the items need additional review, as follow:

- 1) No additional information is requested.
- MW-1: Turbidity for <u>April 2001</u> (previous comment referenced incorrect date) at 7.9 NTU MW-9: Conductivity for November 1999 at 2140 μMHOs/cm MW-10: Turbidity for October 2000 at 18.9 NTU
- No additional information is requested.

b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:

1) Refer to comment No. 10.b. No additional information is requested.

2) The response that indicates the relation between turbidity and metals concentrations was intended as a general observation and some measurements may not show this relationship is noted. No additional information is requested.

3) Refer to comment No. 10.b. No additional information is requested.

4) The revisions of this section regarding the sodium concentrations reported at detection well MW-11 are noted. No additional information is requested.

5) The response that TDS in the vicinity of well MW-1 is variable based on the ground water conductivity data collected on May 8, 2002 is noted. No additional information is requested.

6) The revisions to this section regarding vanadium concentrations are noted. No additional information is requested.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The occurrence of ammonia in ground water samples collected over time at the detection wells remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e. appears to be warranted. No additional information is requested.

2) The potential occurrence/source of mineralized water in the vicinity of well MW-1 remains unclear. Further investigation of ground water/leachate quality as indicated in comment No. 11.e. appears to be warranted. No additional information is requested.

3) The response that iron was reported above the ground water standard at well MW-10 before the construction of the landfill (May 1994) is noted, however iron was also reported <u>below</u> the ground water standard (0.0202 mg/L in October 1997) before the landfill was constructed.

Please indicate how drainage from the yard waste composting area will be controlled to minimize potential impacts to ground water quality in areas downgradient from the landfill cells.

d. The revisions of Appendix C (Leachate Quality) to address the majority of the listed inconsistencies with the data provided by Sarasota County are noted. Item No. 4 needs additional review, as follows:

- 1) No additional information is requested.
- 2) No additional information is requested.
- 3) No additional information is requested.
- 4) October 2000 sampling event reported nitrate at 0.03 mg/L.

e. The response that proposes the collection of supplemental parameters to assist in the evaluation of the relationship between ground water and leachate quality is noted. It is the Department's intention to prepare Specific Conditions of the renewal permit to include the proposed parameters in the routine sampling events and to require their inclusion in the next monitoring plan evaluation.

f. The revisions to renumbered Appendix E (Surface Water Quality) to address the listed inconsistencies with the data provided by Sarasota County are noted. No additional information is requested.

12. Section 5 – Ground Water Levels and Flow

a. It is the Department's intention to use the most conservative site-specific information available for the calculation of ground water velocity. As such, using the arithmetic mean of all 10 slug tests (23.2 ft/day), hydraulic gradient of 0.002 ft/ft, and effective porosity of 0.2, ground water velocity is calculated to be about 85 ft/year. It is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using this worst case ground water flow velocity. No additional information is requested.

b. The response indicates that a math error was found for the November 1999 water levels, however the data provided in Appendix F (renumbered) appear to be unchanged from the March 2002 submittal. Please review and revise as appropriate.

c. The response that the surficial aquifer ground water elevations collected upon installation of the proposed replacement wells will be used as a check of the previous contour maps is noted. No additional information is requested.

d. The response that existing monitor wells MW-3 and MW-5 are available to be included in routine ground water level measurements is noted. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

13. Section 6 – Adequacy of Monitoring Program

a. The response that wells MW-1, MW-2, MW-4, MW-11 and MW-12 will be replaced to minimize submergence of the wells screen is noted. Please provide a revised site map (similar to Figure 2-1) that shows the location and unique identification number for the replacement wells for use as a permit attachment (no larger than 11 x 17 inches).

b. The revisions to this section of the GWMPE regarding well MW-2 purging dry during the April 2001 sampling event are noted. No additional information is requested.

c. The response that construction details for the proposed replacement well are presented in Table 4-1 of Section M is noted. Please note that the well screen and sand pack materials must be adequately sized to the formation encountered at each well location to minimize sample turbidity. No additional information is requested.

d. The revisions to this section of the GWMPE regarding ground water velocity and sampling frequency are noted. As indicated in comment No. 12.a., it is considered appropriate to continue routine ground water sampling events at a semi-annual frequency using the worst case ground water flow velocity. No additional information is requested.

e. The revisions to this section of the GWMPE regarding surface water monitoring at stations B2 and B4R are noted. No additional information is requested.

f. The revisions to this section of the GWMPE regarding supplemental leachate characterization are noted. No additional information is requested.

14. Section 7 – Landfill Design and Operation Effectiveness: The revisions to this section of the GWMPE regarding the proposed changes to the monitoring plan are noted. No additional information is requested.

jrm

WASTE MANAGEMENT TECHNICAL SUP ROUTING FORM PERMITTED FACILITIES TO: From: ARAFOTA CENTRAL CI LANDEN RENEWA Date: Subject: Document Name: county: Sanasore Revision Number Facility Name: C T Type of Facility: 1ssue Date: Permit Numper Copy of Permit attached: Document submitted in compliance with permit condition. Document subject to permit timeclock. 6 28/02 Day 1: Day 30: 727/02 PATS sheet attached: Enforcement Case/CO/NOV/ associated with this site: Files and related documents can be found Attaction in Filt-Please review and comment on the technical aspects of the attached document as you deem appropriate. In order to maintain progress with the permit review, please provide comments within 30 days or by ____20 02 Comments: 1., Module Attachments



3012 U.S. Highway 301 No Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

June 28, 2002 File No. 09201010.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619-2242

Subject: CCSWDC Landfill - Operation permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Ford:

On behalf of Sarasota County, SCS Engineers (SCS) submits the following responses to your request for additional information in a letter to Mr. Gary Bennett, dated March 29, 2002. For ease of review, the FDEP comments are in bold, followed by our response.

1. 62-701.320(7). Specific references for the location of documents or copies for the following: a) boundary survey; b) proof of ownership - deeds with legal description; c) description of recycling activities including a list of all recyclable materials collected at the site and a description of management procedures for each.

Response: Copies of the boundary survey and proof of property ownership are provided herein for inclusion in the permit application as Attachment E-3. A description of recycling activities is provided in the enclosed revised Section L Operations Plan, Attachment L-13.

2. 62-701.320(10). Revisions to the referenced documents. Supporting information for this pending permit renewal contains references to previous applications and Engineering Reports, and provides revisions, a) Reaffirm that the parts of the referenced documents that were not revised are still valid. b) Changes in the text being submitted as revisions should be provided as replacement pages with page numbers and the date of revision.

<u>Response</u>: A new Operations Plan is provided herein in its entirety as Section L of the permit application.

3. 62-701.330 (3) (d). Topographic map. a) An aerial (not more than1 year old) and topographic map with a scale not greater than 200 feet to the inch with 5-foot (or less) contour intervals is requested. This topographic map should verify landfill development in conformance with design drawings. b) Some of the referenced Attachment 10 Operation Drawings have been revised. One full sized set and one

(See Barnol Report



4.

5.

reduced set (for use as an attachment to the operations plan) with all revisions are requested. c) Plan views showing grades required for proper drainage along terrace swales are requested. d) Typical details for all temporary and permanent drainage devices (letdown structures, terraces, beams and swales) to convey stormwater from the top and sides of filled areas without erosion are requested.

<u>Response</u>: Attachment E-1 now includes the topographic map enclosed herein as requested. The Operations Plan, Attachment L-3 includes a complete set of the Operations Drawings.

62-701.400(2). Drawings to show a) those areas including berms and sideslopes that have been filled to design dimensions; and b) following the proposed sequence for filling, which areas can be closed first.

<u>Response</u>: The existing topographic map in Attachment E-1 provides the areas filled to design dimensions. The Operations Drawing in Attachment L-3 will show the proposed sequence of filling. The fill sequence drawings will be submitted in the near future.

62-701.400(6) (c). Clarification regarding the above ground leachate storage tank including: a) a description of provisions for the removal of accumulated precipitation from the secondary containment area within 24 hours or when 10 percent of the storage capacity is reached, whichever occurs first, and b) a copy of the most recent inspection report for the interior inspection of the tank (not more than 3 years old) showing all items of deficiency have been corrected.

<u>Response</u>: This information is provided in the revised Operations Plan Part L.2.h(2). The inspection report is included in Attachment L-7.

6. 62-701.400 (10). Gas control system. Documentation is required to demonstrate that the landfill is exempt from installation of a gas control system and to verify that the landfill is in compliance with the air requirements listed in specific conditions #41 of the current solid waste operation permit.

<u>Response</u>: Please see the attached letter provided to Sarasota County by SCS Engineers, confirming that the County will remain below regulatory thresholds for installation of a control system through 2005. Part L.2.h.1 of the Operations Plan has been updated to reflect this information.

7. 62-701.410(2). Specific references for the location of all related geotechnical reports and supporting documents (or copies).

1 .

<u>Response</u>: A copy of the referenced report is provided herein. Section J of the Application is revised to refer to the specific report.

8. 62-101.500. A comprehensive operations plan. Upon completion of all revisions prior to permit renewal, the entire Operations Plan and its attachments should be resubmitted (without strikethroughs and underlining) with the date of the most recent revisions on each page.

<u>Response</u>: As discussed above, a revised Section L, Operations Plan, with all attachments is provided herein.

9. 62-101.500(1). Training plan for landfill operators and spotters, a) This plan must demonstrate compliance with 62-701.320(15), (reference to 62-703 should be deleted). b) Confirm that <u>at least</u> one trained spotter will be at <u>each</u> working face at all times when the landfill receives waste to detect unauthorized wastes <u>from</u> <u>each load</u>. c) Describe how spotters will identify and manage any hazardous or prohibited materials. d) Include a list and schedule of classes that will be attended for training.

<u>Response</u>: A landfill operator and spotter training plan is provided as Attachment L-1 to the Operations Plan. Methods for controlling unauthorized wastes are described in the Operations Plan part L.2.c.

10. 62-701.500 (2) (b). The referenced contingency plan appears to contain less detail for related activities than the operations plan. All relevant and current information should be included either as revisions to the referenced plan or as part of the new operations plan.

Response: A revised Contingency Plan is included as Attachment L-2.

11. 62-701.500(2)(C). A list of all recyclable materials received at the site and a description of related management procedures for each.

<u>Response</u>: A list of all recyclable materials received at the site and management procedures for each are included in Attachment L-13, Recycling Plan.

12. 62-101.500 (2) (f). The referenced drawings for the sequence of filling should be confirmed still valid or revised, and provided as part of the operations plan. What is the percent slope to be used for the top of each lift?

Response: The top of each lift shall be 2 percent. Revised sequence of filling plans





will be submitted in the near future and included in Attachment L-3, Operation Drawings.

13. 62-701.500(2) (h). The referenced drawing of the leachate collection system should be provided as part of the operations plan. How will ponding of water within the containment berms be prevented?

<u>Response</u>: The leachate collection system drawings are included in Attachment L-3. Some ponding behind the containment berms will occur after heavy rainfall. Prolonged ponding will be prevented by pumping the water to the sand drainage layer of leachate cleanout pipe. This is described in Part L.7.k. of the Operations Plan.

14. 62-701.500 (2) (j) A description for cleaning of the leachate collection system is requested.

<u>Response</u>: The leachate collection system shall be cleaned at least once every five years as part of the video inspection process. This is described in Part L.8.h of the Operations Plan.

15. 62-701.500(3). A list of the documents to be kept as part of the operating record is requested.

<u>Response</u>: The list is provided Part L.3 of the Operations Plan.

16. 62-101.500(6). The load checking inspection form should be included as an attachment to the operations plan.

<u>Response</u>: This is included as Attachment L-5, Waste Load Inspection and Reporting Form.

17. 62-701.500(7)(e). A description and specifications for each type of initial cover are requested.

<u>Response</u>: The requested information is provided as Attachment L-10, Initial Cover Specifications.

18. 62-701.500 (7)(g). Timeframes for applying final cover are requested. When will the first portion of Phase I (such as external slopes) be completed to designed dimensions? Confirmation of conformance to designed dimensions and details for filled portions of Phase I is requested.

<u>Response</u>: Based on the existing topographic survey included in Attachment E-1,

the landfill has been constructed substantially in accordance with the design dimensions. The areas completed to final design dimensions are highlighted on this drawing. The County proposed applying final cover to the north and east slopes of the landfill after June 2006. This will be shown in the Operation Drawings to be submitted in the near future and included in Attachment L-3.

19. 62-101.500(7)(j) Clarification regarding erosion control. a) Is stormwater management for unused cells controlled "by grading" or use of rain cell covers? b) The list of stormwater management controls for used cells should include 1) maintaining internal and external berms and 2) the use of terraces and letdown pipes. How will temporary tarps be used to separate stormwater from waste over waste filled areas? d) Typical details on a drawing for each type of erosion control and stormwater management control are requested.

Response: Stormwater is managed on unused cells by pumping stormwater into the perimeter stormwater management system. Temporary tarps are not proposed for separation of stormwater over filled areas. Attachment L-3, Operations Drawings, provides typical details for erosion control and stormwater management features.

20. 62-701.500 (8) (g). The leachate report form should be included as an attachment to the operations plan.

<u>Response</u>: This information is provided in Attachment L-11, Leachate Report Form and LCRS Inspection Form.

21. 62-701.500 (8) (h). The results of the most recent leachate collection systems cleaning and inspection are requested.

<u>Response</u>: This information is provided in Attachment L-11, Leachate Report Form and LCRS Inspection Form.

22. 62-701.500(9). clarification regarding gas monitoring to demonstrate compliance with 62-701.530(2). a) Why is gas monitoring probe GP-4 located as shown on Figure L-1? Gas probes should be located between the Class I landfill and on-site structures. b) A gas probe should be located between the landfill and the material recovery facility. c) Why are the gas probes designed with such a large pipe screen so close to the surface? Typical details for gas probes show less than a 2—inch diameter pipe and a bentonite layer separating the screen from the surface. d) The design for a typical "temporary monitoring station" is requested. e) The reference to "property boundary" is unclear. The Department should be notified if the LEL is 100% or greater in any of the external gas probes located along the special exception boundary. f) What specific areas inside each structure will be

monitored?

<u>Response</u>: Figure L-1 in Attachment L-3 is revised to show a new proposed location for GP-4. Figure L-4 LFG monitor probe is revised to reflect the gas probe design. The reference in the Operations Plan to temporary monitor station is changed to temporary monitor probe and the design will be the same as the new Figure L-4. The reference to property boundary is changed to "any monitor probe". Inside structures; low area, base boards, floor drains and floor mounted cabinets will be monitored.

23. 62-701.500, .510, and .530. Responses and required supporting information in response to Mr. John Morris' March 28, 2002 memorandum (attached). You way call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.

Response: Please see responses to the March 28, 2002 following response #24.

24. 62-701.900(1). Revisions to the application form. Section B.3. should indicate that total acres and available acres for Phase I only since only Phase I has been constructed.

<u>Response</u>: This has been revised and a revised application form Section B is provided herein.

Please provide all responses that relate to engineering required for design and operation, signed and sealed by a professional engineer. All descriptions of operational procedures provided as part of responses should be included as revisions to the Operations Plan (Section L).

Responses to your request for additional information in a memo to Mr. Kim Ford from Mr. John Morris, dated March 28, 2002 follow (Item #23).

SECTION B – DISPOSAL FACILITY GENERAL INFORMATION

1. B.12.: It is indicated that the property is recorded as a disposal site in the County Land Records. Please indicate if this has been done to complete the requirements of Rule 62-701.610(5), F.A.C. Please also provide a certified copy of the County record including the legal description and a scale-drawn map for that part of the property that has been so recorded.

Response: Please see Attachment E-3 (enclosed) which provides the legal description of the special exception area approved by the Sarasota Board of County Commissioners.

<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated</u> <u>Feb.28, 2002</u>

2. L.2.h.(2) – Leachate Management System

a. Collection System - Please revise this section to refer to the figure requested in comment No. 5.

Response: This revision has been made.

b. It is indicated that the stormwater in the secondary containment of the leachate storage tank will be tested for specific conductance to determine the appropriate handling procedures. Please revise this section of the Operations Plan to also indicate that the retained stormwater will be managed as leachate if a visible sheen is present.

Response: This revision has been made.

c. Please provide a site map that indicates which pond will be checked for specific conductance prior to release of stormwater from the secondary containment of the leachate storage tank. Please also indicate on this site map where the stormwater from the secondary containment of the leachate storage tank will be released.

<u>Response</u>: Stormwater Pond No. 4 as shown on Figure L-1 will be checked for specific conductance prior to release of stormwater from the secondary containment of the storage tank. The stormwater from the secondary containment area is released to the stormwater drainage swale east of the tank on the south side of the perimeter road. This swale flows into Stormwater Pond No. 4.

d. Please revise this section of the Operations Plan to indicate that a log will be maintained to document releases of uncontaminated stormwater from the secondary containment of the leachate storage tank (date, specific conductance measurements, sheen observation).

<u>Response</u>: This revision has been made.

e. Leachate Monitoring – Please provide a revised leachate monitoring plan to reflect review comment Nos. 9.b., and 9.c.

Response: A revised Leachate Monitoring Plan is included as part of the

Groundwater Monitoring Plan Addendum and provided herein as Section M to the application.

3. L.2.i. – Ground Water Monitoring System: Please provide a revised ground water monitoring plan to reflect the proposed changes as indicated in comment Nos. 13.a. through 13.f.

<u>Response</u>: The Groundwater Monitoring Plan Addendum is enclosed and shall be included as Section M of the Application.

4. L.8.a. – Leachate Monitoring, Sampling and Analysis: Please revise this section to be consistent with the revisions requested in review comment No. 2.e.

<u>Response</u>: This revision has been made.

5. L.8.b. – Leachate Collection and Removal System: Please provide a leachate sampling figure that reflects Attachment 10, Sheet 14, Detail E of the December 1996 Operations Permit Application for use as a permit figure (no larger than 11 x 14 inches).

Response: The figure is included in Attachment L-3, Operation Drawings.

- 6. L.9. Gas Monitoring Program
 - a. Please indicate how existing gas probes G-4, G-5 and G-6 will be properly abandoned.

<u>Response</u>: The above grade protective casing will be removed, the well grouted to ground surface and the remaining pipe cut off at ground surface.

b. Please indicate where existing gas monitoring locations GM-6 and GM-7 are located and why it is considered appropriate that these locations no longer be monitored. Please include these locations on Figure L-1 if it is considered appropriate to maintain these gas monitoring locations.

<u>Response</u>: We do not understand the reference to GM-6 and GM-7. These gas monitor locations were never proposed or referenced to our knowledge.

c. Please revise Figure L-1 to reference the proposed gas probe identification number as <u>GP-4t</u>.

Response: The "t" on GP-4 was a typographic error. This has been

corrected in the text.

d. It is indicated that the gas probe locations will monitor subsurface gas migration at the <u>landfill perimeter</u>, but that a gas remediation plan will be submitted to the Department if landfill gas equals or exceeds the LEL at the <u>property boundary</u>. Please note that in the absence of gas probes at the property boundary, the data reported for the existing/proposed gas probes will be used to determine the need to prepare a gas remediation plan.

<u>Response</u>: Acknowledged. The text has been revised to reflect his understanding.

7. Attachment L-2 – Contaminated Soil Acceptance Criteria: Please revise the last sentence of this attachment to indicate that contaminated soil accepted at CCSWDC would be directly disposed in the lined active landfill cell, not used as initial cover, and <u>not stockpiled</u> at the site unless authorized in writing by the Department.

Response: This revision has been made.

<u>SECTION M – WATER QUALITY AND LEACHATE MONITORING</u> <u>REQUIREMENTS</u> (Rule 62-701.510, F.A.C.)

8. M.1.a. through M.1.h.(2): Please revise each item in this section of the application form to reference the appropriate section in Appendix A (Ground Water Monitoring Plan Evaluation).

<u>Response</u>: The application form has been revised in accordance with the following responses.

<u>Appendix A – Ground Water Monitoring Plan Evaluation, Central County Solid Waste</u> <u>Disposal Complex, Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28,</u> <u>2002</u>

- 9. Section 2 Summary of the Ground Water, Surface Water, and Leachate Monitoring Program
 - a. Please revise Note 2 of Table 2-2 to reference the current monitor well identification numbers. Please also revise Note 2 to indicate the date of preparation for the referenced document prepared by Ardaman & Associates, Inc.

<u>Response</u>: The correct date for the Ardaman & Associates report is March 10, 1992. Note 2 of Table 2-2 has been revised and is included in the

b.

Groundwater Monitoring Plan Evaluation Revision.

It is indicated on Page 2-6 that a composite leachate sample is collected annually from the pump stations located at the landfill cells. Please note that it is not appropriate to collect composite samples for analysis of volatile organic compounds or for measurement of field parameters, and that individual leachate samples shall be required at each pump station of each landfill cell that contains wastes. In the event that the County desires approval from the Department to collect composite leachate samples from the pump stations for the required parameters other than volatile organics and field measurements, please provide a detailed procedure for review. Please provide a revised leachate monitoring plan to reflect these changes and the requirements of Rule 62-701.510(6)(c), F.A.C.

<u>Response</u>: The leachate monitoring plan has been revised to indicate that field measurements will be performed at every active sump. Further, the leachate monitoring plan has been revised to indicate that the organics samples will be collected at every active sump. A composite sample will be collected from all sumps for analysis of inorganic parameters. A Groundwater Monitoring Plan Addendum is enclosed as Section M to the Application.

c. Please revise Page 2-6 to indicate that the annual leachate samples shall include analysis of the parameters listed in 40 CFR Part 258, <u>Appendix II</u>.

Response: The following has been added to Page 2-6: "In addition, leachate samples are required to be analyzed annually for the parameters listed in 40 CFR Part 258, Appendix II." This is also included in the enclosed Groundwater Monitoring Plan Addendum.

10. Section 3 – Previous Land Use Effects on Ground Water at the CCSWDC

a. It is indicated that prior use of the property for cattle ranching <u>may</u> have resulted in the <u>possible</u> former use of a cattle dipping vat. It is noted that evidence of a known current cattle dipping vat has not been provided. Please note that in the absence of such a demonstration, the assumption that site-wide occurrences of arsenic in ground water are related to the previous cattle ranching activities cannot be supported.

<u>Response</u>: Acknowledged. Soil used to construct the landfill may have had an arsenic component to it because soils used for fill were obtained from the property.

b.

The County proposes that the FDEP issue the permit renewal with a specific condition directing the County to demonstrate the presence of arsenic in the soils and provide a report to the FDEP presenting the findings. In response to the condition the County will perform a soil sampling program to evaluate the presence of arsenic in the soils and effect on leachate and groundwater quality.

It is indicated that the ground water data compiled for sampling events conducted at wells P-1 through P-14D prior to construction of the landfill at CCSWDC (Appendix A) indicate the occurrence of several inorganics and metals at detectable concentrations. It is further indicated that when these constituents are observed in the CCSWDC detection wells that it is unlikely that the constituents are related to the operation of the facility. However, as measurements for field parameters and results for quality assurance samples were not provided for the "pre-landfill" sampling events conducted during 1993, the representativeness of the samples cannot be evaluated. It is also noted that the relative concentrations reported for the individual parameters for the "pre-landfill" and "post-landfill" sampling events have not been considered. Please note that of the nine parameters detected in the "pre-landfill" sampling events, the occurrences of ammonia, arsenic, chloride and total dissolved solids, at a minimum, bears further evaluation.

<u>Response</u>: Appendix A lists historical concentrations for the list of parameters on Page 3-1 of the Groundwater Monitoring Plan Evaluation plus total dissolved solids (TDS). The data include test wells prior to landfill construction and monitoring well data prior to and following initiation of landfill operations (June 1998).

These data indicate that by September 1998 (only three months following initiation of landfill operations), maximum values for arsenic, barium, and iron exceeded the pre-landfill ranges for these parameters. By April 2001, zinc also exceeded the pre-landfill ranges. The following summarizes the values:

	September 1998	<u>April 2001</u>
Arsenic:	63 mg/ in MW-9;	44 mg/l in MW-9
Barium:	396 ug/l in MW-8;	150 ug/l in MW-8
Iron:	50.5 mg/l in MW-9;	48 mg/l in MW-8
Zinc:	-	140 mg/l in MW-8.

MW-9 had relative high concentrations of arsenic in September 1998 and April 2001 (the concentration trend is decreasing with time) and relative high concentrations of iron in September 1998. Filling of the landfill through May 2001 was limited to cells 1 and 2. The closest MW-9 is to cell 2 is 700 feet (to



> the southwest corner). The maximum horizontal groundwater velocity estimated for the site is 33 feet per year indicating that it would require 21 years for groundwater to move from the southeast corner of cell 2 to MW-9. Consequently, the presence of arsenic and iron at the well are not due to landfilling operations at cells 1 or 2.

> MW-8 is located approximately 76 feet from cell 2 and the shortest arrival time for groundwater from the edge of cell 2 would be 2.3 years. Consequently, the occurrence of the relative high concentration of barium in the well in September 1998 (three months following initiation of landfill operations) is not attributable to the presence of the landfill. Concentrations of iron have remained relatively constant between September 1998 and April 2001, so its source is not the landfill.

Zinc concentration is relatively high in the April 2001 sample from MW-8 and cannot currently be explained. However, its concentration remains well below the drinking water standard.

Iron is relatively high in the April 2001 sample from MW-8. However, the highest concentrations of iron in MW-8 are similar to concentrations in MW-9 which are not attributable to the landfill.

Ammonia concentrations are highest in MW-9 during landfill operations sampling events but are below the 1994 measurement. In addition, as previously discussed, there has been insufficient time for groundwater at MW-9 to be impacted by the landfill.

Chloride concentrations have remained relatively constant over the history of water quality data with concentrations in several of the wells highest in sampling events prior to initiation of landfill operations. This fact and the lack of sufficient travel time indicate chloride occurring in the down gradient wells also is not caused by the landfilling operations.

Similar arguments can be made for TDS concentrations. At MW-8, the 1994 sample concentration was lower than all but one of the later samples. However, the September 1998 sample concentration was higher than the subsequent samples. Again the lack of sufficient travel time to reach MW-8 indicates TDS data do not currently indicate groundwater effects caused by landfilling operations.

Additionally, the yard waste compost area to the south of MW-8 and MW-9 may be a contributing factor to groundwater quality at MW-8 and MW-9. Drainage

from the yard waste compost area could be flowing towards MW-8 and MW-9, which could possibly be contributing to the presence of other constituents. Section 3 of the Groundwater Monitoring Plan Evaluation has been revised to reflect this statement.

We continue to conclude that, based on the current data, landfilling operations are not detrimentally impacting groundwater quality hydraulically down gradient from landfill cells.

11. Section 4 – Water Quality Monitoring Findings

2)

- a. Some of the results provided in Appendix A (Ground Water Quality Data) for the "period of record" appear to be inconsistent with the data provided by Sarasota County for the semi-annual ground water sampling events. Please review the following items and revise as appropriate:
 - 1) All "post-landfill" wells are missing the organic parameters for April 1999.

Response: Appendix A (Groundwater Quality Data) has been updated with the organic parameters values for the April 1999 sampling event.

MW-1:	Conductivity for November 1999
	TDS for October 2000
	Turbidity for October 2000
MW-2:	Nitrate for March 2000
	Missing a notation that the well was purged dry and not
	sampled in April 2001
MW-3:	TDS for April 1999
MW-8:	TDS for April 1999
	Thallium for April 1999
MW-9:	Thallium for April 1999
	Conductivity for November 1999
MW-10:	Thallium for April 1999
	Turbidity for October 2000
MW-11:	Thallium for April 1999
MW-12:	Thallium for April 1999

Response: Appendix A (Groundwater Quality Data) has been corrected where appropriate. There was no change to the turbidity value for October 2000 for MW-1. MW-3 was not sampled. However, TDS was

corrected for MW-4 for the April 1999 sampling event. There was no change in the conductivity value for MW-9 during the November 1999 sampling event.

3) Please revise the shading used on the tables in Appendix A to reflect any changes related to the previous review comment. Please revise the tables in Appendix A so that the shaded cells on the copies provided to the Department are more noticeable.

Response: The shading has been revised on the tables in Appendices A, C, and E.

b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:

1) It is noted that ammonia and arsenic concentrations reported for "post-landfill" sampling events are significantly higher than reported for "pre-landfill" sampling events. It does not appear that the data supports the assertion that ammonia and arsenic concentrations in the current monitor wells are related to previous land use.

Response: See response to 10. b.

2) It is indicated that elevated concentrations reported for antimony and cadmium at MW-8 during April 1999 may have been related to sample turbidity. It does not appear the data supports this link between turbidity and metals concentrations as an even higher turbidity value was reported for MW-8 during September 2001 but concentrations of antimony and cadmium were reported to be below the method detection limit.

<u>Response</u>: The observation that turbidity and metals were related was intended to be a general observation about the data. It is acknowledged that some measurements my not show the relationship depending on hydrologic conditions at the time of sampling.

3) It is noted that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 are significantly higher than reported for the

c.

other detection wells and the background wells. It does not appear that the data supports the assertion that iron is not likely related to operations of the CCSWDC.

<u>Response</u>: See response to 10. b. regarding MW-8 and MW-9. MW-10 is farther from cell 2 than MW-9 and, consequently, there has been insufficient time for groundwater quality at MW-10 to be impacted by the landfill.

4) It does not appear that the data supports the assertion that elevated concentrations of sodium were reported at detection well MW-11.

Response: Acknowledged. The text has been revised.

5) It is indicated that TDS occurs naturally in the surficial aquifer at the facility, however elevated TDS concentrations were not reported at all monitor wells (MW-4, MW-11 and MW-12). The localized occurrence of elevated TDS concentrations is not explained by this assertion.

Response: Background data indicate TDS occurs naturally and varies from location to location. SCS further assessed the potential cause for the variability by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Attachment A to this response. SCS concludes that background TDS is variable and exceeds the drinking water standard at various locations unrelated to landfilling operations.

6) It is indicated that elevated concentrations of vanadium were reported at well MW-4. Please indicate if the text should have referred to well MW-8. It does not appear that the data supports the assertion that the results of vanadium for all the other monitor wells were reported below the detection limit.

Response: Agreed. The text for vanadium has been revised as follows: "Vanadium was detected above the groundwater clean-up target level only at MW-8. Vanadium was observed at other monitoring wells below the target level and often below detection limits."

The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for

> the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The discussion does not indicate that ammonia concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

Response: Ammonia was detected above the groundwater clean-up target level at MW-9 before the construction of the Class I landfill. However, the elevated concentrations of ammonia in MW-8 and MW-10 during the sampling events after the construction of the Class I landfill would not have been related to the landfill operations because there would have been insufficient time for potentially impacted groundwater to reach MW-8 and MW-10. The yard waste compost area to the south of MW-8 and MW-9 may be a contributing factor to groundwater quality at MW-8 and MW-9. Drainage from the yard waste compost area could be flowing towards MW-8 and MW-9, which could possibly be contributing to the presence of other constituents.

2) It is indicated that the elevated concentrations of chloride, sodium and TDS at well MW-1 suggest the presence of mineralized ground water. However, it appears that insufficient data has been collected to distinguish between mineralized ground water and landfill leachate. The discussion does not indicate why relatively elevated concentrations of chloride, sodium and TDS are limited to the vicinity of well MW-1. The plot of sodium concentrations appears to omit the result for well MW-1 for the May 24, 1994 sampling event.

<u>Response</u>: SCS further assessed the potential cause for the elevated levels of chloride, sodium, and TDS by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in Attachment I to this response. The plot of sodium concentrations for MW-1 has been revised to include the May 24, 1994 sampling event.

3) The discussion does not indicate that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

Response: Iron was detected above the secondary drinking water

> standard at MW-10 before the construction of the Class I landfill. However, the elevated concentrations of iron in MW-8 and MW-9 during the sampling events after the construction of the Class I landfill would not have been related to the landfill operations because there would have been insufficient time for potentially impacted groundwater to reach MW-8 and MW-9. The yard waste compost area to the south of MW-8 and MW-9 may be a contributing factor to groundwater quality at MW-8 and MW-9. Drainage from the yard waste compost area could be flowing towards MW-8 and MW-9, which could possibly be contributing to the presence of other constituents.

- d. Some of the results provided in Appendix C (Leachate Quality) appear to be inconsistent with the data provided by Sarasota County for the semiannual leachate sampling events. Please review the following items and revise as appropriate:
 - 1) The results for the March 2000 sampling event are included twice while the results for the March 2001 sampling event are omitted.

<u>Response</u>: Appendix C (Leachate Quality) has been revised with the sampling results for the March 2001 sampling event.

2) The field parameter measurements should not be reported as "ND" for the Nov. 1999, March 2000 and Oct. 2000 sampling events.

<u>Response</u>: The field parameter measurements have been revised for the Nov. 1999, March 2000, and Oct. 2000 sampling events.

3) Nov. 1999 sampling event – 1,4-dichlorobenzene and 1,2dichloroethane

<u>Response</u>: The correct concentration of 1,4-dichlorobenzene for the Nov. 1999 sampling event is 7.4 ug/l. The 1,2-dichloroethane concentration was correct in the table. The table has been revised.

4) Nov. 2000 sampling event -- nitrate

<u>Response</u>: The nitrate concentration for the Nov. 2000 sampling event was correctly reported in the table.

e. The discussion provides a comparison of the concentrations of chloride, sodium and TDS in samples collected from well MW-1 with leachate



> samples, and includes an assertion that the occurrence of these parameters in the leachate does not likely relate to the concentrations reported for the <u>detection</u> wells. This assertion does not appear to be supported for the following reasons.

> - A demonstration to distinguish between potentially mineralized ground water and landfill leachate has not been provided (see review comment No.11.c.2).

<u>Response</u>: The leachate and background water quality data relationships were evaluated using ion-concentration diagrams.¹ Diagrams were constructed using concentrations for arsenic, chloride, sodium, and iron obtained during the April 2001 sampling event for the background and detection wells and during the March 2000 sampling event for the leachate. The diagrams are included in Appendix D of the Groundwater Monitoring Plan Evaluation Revision. Three diagrams are provided, Figures D-1, D-2, and D-3, and each will be discussed below.

Figure D-1 shows plots of cumulative percent of the four parameters, arsenic, chloride, sodium, and iron found in leachate, detection wells MW-8 and MW-9, and background wells MW-1 and MW-4. Three types of water quality are indicated by the plots based on the shape of the diagrams. Water at MW-1 and MW-4 is similar with respect to cumulative percent of the parameters listed and water is similar at MW-8 and MW-9. Both types of water found at these wells are different from the leachate quality. The absolute water quality at MW-1 and MW-4 is different but the shape of the curves indicate the ratios of parameter constituents is similar. This indicates that the water at MW-4 may be a diluted form of the water found at MW-1.

Figure D-2 shows similar ion concentration diagrams as Figure D-1 but the MW-4 plot has been removed and a predicted plot of ion concentration has been added to reflect a mixture of water from MW-1 with leachate. A three-to-one mixture was calculated in an attempt to match the diagrams for MW-8 and MW-9. The shape of the mixture diagram indicates that water in MW-8 and MW-9 is not a combination of water from MW-1 and leachate. The MW-8 and MW-9 curves indicate that the type of water is similar at the two wells but the source appears not to be leachate mixing with MW-1 water as it flows under the landfill.

Figure D-3 is similar to Figure D-2 but MW-4 water is shown along with its

¹ John D. Hem. *Study and Interpretation of the Chemical Characteristics of Natural Water*. United States Geological Survey Water-Supply Paper 2254. 1992.
mixture with leachate. The shape of the mixture curve indicates that the type of water found at MW-8 and MW-9 is less related to MW-4 than it is to MW-1.

While the ion-concentration diagrams indicate that water quality at MW-8 and MW-9 cannot be explained by the effect of leachate on background water, the number of parameters used for the analysis is limited. The County proposes to add the following inorganic parameters to the groundwater monitoring program to provide additional data for evaluating the relationship of leachate to groundwater quality: sodium, potassium, calcium, magnesium, sulfate, bicarbonate, carbonate. These parameters have been included in the Groundwater Monitoring Plan Addendum and the Groundwater Monitoring Plan Revision includes this discussion.

The County proposes that the FDEP issue the permit renewal with a specific condition directing the County to further demonstrate the relationship between leachate and groundwater quality and provide the results in the next biennial report. In response to the condition the County will prepare ion-balance diagrams using the results from the additional inorganic parameters and assess the source of the water in the detection monitoring wells.

The localized occurrence of potentially mineralized ground water at well MW-1 has not been discussed.

<u>Response</u>: SCS further assessed the potential cause for the elevated levels of chloride, sodium, and TDS by reviewing available hydrogeologic reports for the region and performing a one-day evaluation of groundwater conductivity in the vicinity of MW-1. The results are included in the Groundwater Monitoring Plan Evaluation Addendum. The evaluation indicates that groundwater quality in the vicinity of MW-1 is somewhat mineralized and tends to be less mineralized in lower areas with a greater tendency for flooding.

- The impact of potentially mineralized ground water at well MW-1 on ground water quality reported for the detection wells has not been evaluated.

Response: See previous responses under 11. e.

- The "other constituents in the leachate more likely to be detected" have not been identified.





f.

<u>Response</u>: The other constituents in the leachate that are more likely to be detected in the detection wells not related to background groundwater quality are benzene and/or vinyl chloride. These are found in the leachate at concentrations as much as 14 times their drinking water standards and each is mobile in groundwater. Benzene is particularly mobile under anaerobic conditions and vinyl chloride is particularly mobile under aerobic conditions. The presence and mobility of these constituents suggests that one or both would be present in groundwater adjacent to the landfill cells if the groundwater were being impacted. Neither of these constituents has been detected in any of the monitoring wells. Section 4 of the Groundwater Monitoring Plan Evaluation has been revised to identify these constituents.

Some of the results provided in Appendix D (Surface Water Quality) appear to be inconsistent with the data provided by Sarasota County for the semi-annual surface water sampling events. Please review the following items and revise as appropriate:

1) The results of the March 2001 sampling event for stations B1 and B3 are omitted.

<u>Response</u>: Appendix E (Surface Water Quality) has been revised to include the March 2001 sampling event for stations B1 and B5. Station B3 was not sampled during the March 2001 sampling event.

2) The results of the Nov. 1999 sampling event for station B2 were not included in the semi-annual report provided by Sarasota County. Please verify that the data included in the summary table for this sampling event is appropriate.

Response: Although not originally provided in the semi-annual report, data for the November 1999 sampling event for station B2 were available and were added to the revised groundwater monitoring plan evaluation.

12. Section 5 – Ground Water Levels and Flow

a. It is indicated that the influence of the two extreme results of the ten hydraulic tests conducted on surficial aquifer wells (P-1 and P-4) was reduced by using a geometric mean. Please note that unless there is evidence that the hydraulic tests or the construction of wells P-1 or P-4 are considered to be non-representative of the surficial aquifer, it is not considered appropriate to bias the data set. Please revise the ground water

> velocity calculations by using an arithmetic mean of all ten hydraulic test results for the surficial aquifer.

> **<u>Response</u>:** The arithmetic mean of all 10 tests changes the calculated maximum groundwater velocity from 33 ft/yr to 85 ft/yr. The reason for this increase is the single value for P-1 of 159 ft/d. The 159 ft/d value was determined for aquifer material described as "silty fine sand." Review of representative values of hydraulic conductivity published in <u>Groundwater Hydrology</u>, 1980, Table 3.1, by John Wiley & Sons, Inc., lists the hydraulic conductivity for silt at 0.08 meters/day (0.02 ft/d) and fine sand at 2.5 meters/day (8.2 ft/d).

-The description of "silty fine sand," and the published representative values for hydraulic conductivity indicate the 159 ft/d value is too high to accurately represent silty fine sand.

-The 159 ft/d value is inconsistent with the magnitude of nine other values for the surficial aquifer.

-The P-1 site where the 159 ft/d values was measured is located approximately 2,500 feet west of the landfill while several of the other sites are located on and around the landfill.

The arithmetic mean for the nine sites (without P-1) is 8.1 ft/d, which is consistent with the representative value for fine sand. This is the descriptor used in each of the lithologic descriptions for all 10 test sites. This value is similar to the geometric mean value calculated from eight tests after removing the highest and lowest value from the series. The arithmetic mean for the nine sites would reduce the calculated maximum groundwater velocity calculation from 33 to 29 ft/yr. In our opinion, the 33 ft/yr calculation continues to be a reasonable estimate of the maximum groundwater velocity in the surficial aquifer based on the available data.

b. It is noted that the summary of ground water elevations provided in Appendix E (Water Level Data and Potentiometric Maps) appears to be inconsistent with data provided by Sarasota County for the semi-annual sampling events. Please check the elevation reported at well MW-9 for Nov. 1999.

<u>Response</u>: A math error was found in the data for the semi-annual Nov. 1999 sampling event. The data provided in Appendix F (Water Level Data and

c.

Potentiometric Maps) is correct.

It is noted that contour maps E-2 and E-3 appear to be strongly affected by the elevation reported at well MW-9. Please also note that the semi-annual report prepared by Sarasota County dated January 10, 2002 indicated that an incorrect elevation has been reported at MW-9 since the well was repaired (date of repair not provided). Please verify that the ground water elevations reported for MW-9 reflect the measuring point elevation change and modify the contour maps, gradient calculation, and ground water velocity calculation as necessary.

<u>Response</u>: The groundwater elevations reported for MW-9 do reflect the measuring point elevation change. The contour maps, gradient calculation, and groundwater velocity calculations used the most current elevation data. However, it is acknowledged that MW-9 strongly affects the contour maps. Following installation of replacement monitoring wells and the associated surveying, a new contour map of the surficial aquifer will be prepared to check the representativeness of the previous maps. If the new contour map appears to substantively affect hydrogeologic evaluations presented in the groundwater monitoring plan evaluation or in the enclosed responses, additional evaluation will be performed and submitted to the FDEP.

d. Please indicate if existing monitor wells MW-3, MW-5, MW-6 and MW-7, and any other wells or piezometers are available to be included in routine ground water level measurements. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

<u>Response</u>: Monitoring Wells MW-6 and MW-7 were abandoned. The monitoring program has been revised to include monitoring Wells MW-3 and MW-5 in the routine groundwater level measurements. The Groundwater Monitoring Plan Addendum is enclosed.

- **13.** Section 6 Adequacy of Monitoring Program
 - a. The statement that all well screens with the exception of MW-9 intercept the seasonal low water level appears to be inconsistent with Table 6-1, which indicates that the well screens are always submerged at MW-2, MW-4 and MW-12. Please review and revise as appropriate.

<u>Response</u>: Table 6-1 has been revised to reflect the most current construction details. Based on the table, the following wells have screens which

d.

are submerged at various times during the period of record. Consequently, MW-1, MW-2, MW-4, MW-11, and MW-12 should be replaced to correct this condition.

b. The statement that a water sample has been able to be collected from each well is inconsistent with the semi-annual reports prepared by Sarasota County. Please note that samples have not been collected from well MW-2 for the April 2001 and September 2001 sampling events. Please refer to the semi-annual report prepared by Sarasota County dated January 10, 2002 that includes a proposal to replace well MW-2 and revise this section as appropriate. The development of an alternate well location and construction details for the proposed replacement well should be submitted for review and approval as part of the permit renewal.

<u>Response</u>: The text has been revised to indicate that MW-2 was purged dry in April 2001. MW-2 will be replaced as indicated below and included in the Groundwater Monitoring Plan Addendum. Proposed construction characteristics are included in the Addendum in Table 4-1. The replacement well will be installed immediately adjacent to the MW-2 location and MW-2 will be abandoned.

c. It is indicated that wells MW-1, MW-2, MW-4, MW-11 and MW-12 may need to be replaced with wells that are constructed to intercept the water table surface. Please provide alternate well locations, identification numbers, and construction details (including a justification of proposed top and bottom well screen elevations) to meet the requirements of Rule 62-701.510(3)(d)3, F.A.C.

Response: These monitoring wells will be replaced with monitoring wells that have screens that intercept the historical high and low water table surfaces. Table 4-1 of the Groundwater Monitoring Plan Addendum lists the proposed construction characteristics of the wells. With the exception of replacement wells for MW-11 and MW-12, all replacement wells will be constructed immediately adjacent to the wells they are replacing the original wells will be abandoned. Because of limitations of land surface elevation there are times when some of the replacement monitoring well screens will be submerged. However, with the replacement of these wells we are decreasing the frequency of submergence. Replacement wells for MW-11 and MW-12 will be constructed near them but within approximately 50 feet of the waste cells.

It is indicated that the existing detection wells were located more than 50 feet from the edge of the liner due cell layout and access roads, and it is





> estimated to take less than six months for potential contaminants to reach the edge of the zone of discharge. It is proposed that the zone of discharge be expanded to accommodate the detection well siting constraints. Please note that the zone of discharge is defined by rule, cannot be modified at a District level by letter or permit, but must be authorized by an alternate procedure. Please revise this section to either relocate the detection wells closer to the edge of the liner or increase the ground water sampling frequency to comply with the intent of Rules 62-701.510(3)(a) and (3)(b), F.A.C.

<u>Response</u>: The text has been revised to indicate that at 33 ft/yr, or 16.5 feet per six months (the frequency of sampling), contaminants could potentially reach the edge of the zone of discharge in less than six months only from MW-12. MW-12 will be replaced as discussed above and at that time moved to provide an adequate distance from the edge of the zone of discharge. Although MW-11 is located an adequate distance from the zone of discharge, it also will be replaced due to screen submergence conditions. The replacement well will be moved to within 50 feet of the waste cell.

e. It is indicated that termination of monitoring at the surface water stations other than B2 and B4R should be considered. Please revise this section to indicate if the County will request a reduction in the number of surface water monitoring stations.

<u>Response</u>: The section has been revised to reflect the County's request to remove all except B2 and B4R surface water monitoring stations from the monitoring plan.

f. As indicated in review comment No. 11.e., the Department does not wholly accept the assertion that leachate does not appear to be contributing to contaminants found in the surficial aquifer. Please revise this section to be consistent with the revisions to leachate sampling presented in Section 2 of the Ground Water Monitoring Plan Evaluation regarding sampling locations, sample compositing, sampling frequency and parameters.

<u>Response</u>: The section has been revised to reflect proposed changes in the groundwater monitoring plan to improve its effectiveness.

14. Section 7 – Landfill Design and Operation Effectiveness: As indicated in review comment Nos. 11.b. and 11.c., the Department does not wholly accept the assertion that parameters reported in the detection wells have not resulted from landfill activities. Please revise this section to reference the trends reported for ammonia

(elevated at MW-9), arsenic (elevated at MW-9, increasing at MW-8), cadmium (elevated and erratic at MW-8), iron (increasing at MW-8, elevated at MW-9), lead (increasing at MW-8), and vanadium (increasing at MW-8).

<u>Response</u>: Sections prior to Section 7 provide findings. However, a paragraph has been added to Section 7 that reflects the concerns regarding findings at MW-8 and MW-9 and the proposed modifications to the groundwater monitoring program to improve its effectiveness.

If you have any question on the information provided, please do not hesitate to contact us.

Sincerely,

John A. Banks, P E. Project Manager SCS ENGINEER / JAB/RJD:jlh Enclosures

Raymond J. Dever, P.E., DEE / Vice President SCS ENGINEERS

cc: Gary Bennett, Sarasota County Susan Pelz, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa



3012 U.S. Highway 301 Suite 700 Tampa, FL 33619-2242 813 621-0080 FAX 813 623-6757

SCS ENGINEERS

November 9, 2001 File No. 09201010.03

CORRES FILE

Mr. Gary Bennett Solid Waste Operations Manager Solid Waste Operations Division 4000 Knights Trail Road Nokomis, Florida 34275

Subject: Updated Annual NMOC Emission Rates (Tier 2) Central County Solid Waste Disposal Complex

Dear Mr. Bennett:

SCS Engineers (SCS) is pleased to present this update of projected non-methane organic compound (NMOC) emissions from the subject site. The purpose of this letter is to confirm the findings in the Tier 2 report (dated December 4, 2000) by verifying that annual NMOC emissions for the period 2000-2004 are less than 50 Mg/yr.

The Central County Solid Waste Disposal Complex (CCSWDC) is subject to the EPA's New Source Performance Standards (NSPS) guidelines, because its design capacity (about 2.8 million tons) is greater than 2.5 million megagrams (Mg). As a result, the Landfill has estimated its annual NMOC emissions via Tier 2 sampling, which was conducted in September 2000 (see Tier 2 report dated December 4, 2000). At that time, the NMOC emission rate for 2000 was estimated to be 7.1 Mg, based on the Tier 2 NMOC concentration of 247 parts per million (ppm) and the waste in place at the time.

The NSPS requires landfills to estimate annual NMOC emissions on a yearly basis. Alternatively, landfills are permitted to project anticipated emissions in five-year increments. As such, SCS has projected the annual NMOC emissions for the CCSWDC for the period 2000 through 2004 using the EPA's Landfill Gas Emission Model (LandGEM). The maximum NMOC emission during this period is 18.7 Mg/yr in 2004, which is less than the NSPS threshold limit of 50 Mg/yr. Therefore, unless actual waste acceptance rates during this period exceed the projected rate of 300,000 tons per year, no further action is required until 2005, at which time the CCSWDC is required to repeat Tier 2 sampling to update its site-specific NMOC concentration. A copy of our modeling results, showing projected NMOC emission rates, is attached.



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Gary Bennett November 9, 2001 Page 2

Following your review of this letter, should you have any questions or desire more information, please do not hesitate to contact us.

Sincerely,

Lenn

Sor-Joshua G. Roth Project Engineer

Pla ht.

John A. Banks, P.E Project Manager SCS ENGINEERS

JGR/JAB/jr



PROJECTION OF ANNUAL NMOC EMISSIONS CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX SARASOTA COUNTY, FLORIDA

Model Parameters

Lo: 170.00 m^3 / Mg (Tier 2 Default Value) k: 0.05 1/yr (Tier 2 Default Value) NMOC: 247.00 ppmv (Tier 2 Site-Specific Testing) Methane: 50.0 % volume Year Opened: 1998

Year		Filling Rate (tons)	Refuse in Place (Mg)	NMOC Emission Rate (Mg/yr)	
Viewell,		an a sharan daga sharan sana ay ka takani yana sharan a sa 1967 a.	anna ann an San San ann ann an Ann Ann Ann Ann Ann Ann An	n a na na hana ka daga da ka	
	1998	99,450	0	0	
	1999	251,192	90,220	1.4	
	2000	264,221	318,100	4.7	
	2001	300,000	557,800	8.1	
	2002	300,000	830,000	11.8	
	2003	300.000	1,102,000	15.3	
	2004	300.000	1,374,000	18.7	
	2005	300.000	1,646,000	21.9	
	2006	300,000	1,918,000	24.9	

Notes:

1. Future filling rates conservatively estimated to be 300,000 tons per year.

2. Fill history based on information provided by Sarasota County.

3. NMOC concentration based on Tier 2 sampling conducted in September 2000.

4. Emissions estimates made using the EPA's Landfill Gas Emission Model (LandGEM).

DISPOSAL FACILITY GENERAL INFORMATION

в.

1.

Provide brief description of disposal facility design and operations planned under this application:

The disposal facility consists of five (5) phases. Phase I consists of five (5) cells with approximate

dimensions of 1,300 feet by 400 feet. The cells are lined with a composite liner of 60 mil HDPE and 12

inches of clay (with a permeability of K<1x10-8 cm/sec).

2.	Facility site supervisor:	Gary Benne	ett
	Title: Solid Waste Operations Manage	er Telephone: (<u>941</u>)	486-2600
		gbenne	ett@co.sarasota.ft.us
		E-Mail add	lress (if available)
3.	Disposal area: Total <u>55</u> acr	es; Used <u>44</u> acres;	Available <u>11</u> acres
4.	Weighing scales used: [$m{\prime}$] Yes	[] NO	
5.	Security to prevent unauthorized	l use: 🖌 Yes [] No	
6.	Charge for waste received:	\$/yds ³ \$/to	on
7.	Surrounding land use, zoning:		
	<pre>[✔] Residential [✔] Agricultural [] Commercial</pre>	[] Industrial [] None [] Other Describe:	Government Use
8.	Types of waste received:		
	 [*] Residential [*] Commercial [] Incinerator/WTE ash [*] Treated biomedical [*] Water treatment sludge [] Air treatment sludge [*] Agricultural [*] Asbestos [] Other Describe: 	 [~] C & D debris [~] Shredded/cut tires [~] Yard trash [] Septic tank [~] Industrial [~] Industrial sludge [~] Domestic sludge 	
9.	Salvaging permitted: [] Yes	[✔] No	
10.	Attendant: [/] Yes [] No	Trained operator: [/]	Yes [] No
11.	Spotters: Yes [🖌] No [] Num	ber of spotters used:	1
12	Site located in [] Floodplair	[] Wetlands [] C	Other

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

JUN 2 8 2002

SOUTHWEST DISTRICT

М.	

WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)

LOCATION N/A N/C S Water quality and leachate monitoring plan shall be Section M 1 1. submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements; Section M Based on the information obtained in the a. hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2)(a),FAC) All sampling and analysis preformed in b. accordance with Chapter 62-160, FAC; (62-701.510(2)(b),FAC) Ground water monitoring requirements; c. (62-701.510(3),FAC) Detection wells located downgradient from App. A 6-1 (1)and within 50 feet of disposal units; Downgradient compliance wells as required; (2)Background wells screened in all aquifers App. A 6-1 (3)below the landfill that may be affected by the landfill; Location information for each monitoring (4)well; Well spacing no greater than 500 feet App. A Fig. 2-1 (5) apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings; App. A A 6-1 Well screen locations properly selected; (6) Procedures for properly abandoning (7) monitoring wells; Detailed description of detection sensors (8) if proposed.

5	LOCATION	<u>N/A</u>	N/C	
<u> </u>	App. A 6-2			
			~	
		→		
~	App. A 6-4			
-				
			<u> </u>	
~	Section M-2			
~	Section M-4			
✓	Section M-3			
			~	
			<u> </u>	
			<u> </u>	

A 10 10 3

PART M CONTINUED

d.

g.

Surface water monitoring requirements; (62-701.510(4),FAC)

- Location of and justification for all proposed surface water monitoring points;
- Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
- e. Leachate sampling locations proposed; (62-701.510(5),FAC)
- f. Initial and routine sampling frequency and requirements; (62-701.510(6),FAC)
 - Initial background ground water and surface water sampling and analysis requirements;
 - (2) Routine leachate sampling and analysis requirements;¹
 - (3) Routine monitoring well sampling and analysis requirements;
 - (4) Routine surface water sampling and analysis requirements.
 - Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required; (62-701.510(7),FAC)
- h. Water quality monitoring report requirements; (62-701.510(9),FAC)
 - (1) Semi-annual report requirements;
 - (2) Bi-annual report requirements signed, dated and sealed by PG or PE.



June 21, 2002

SECTION J

GEOTECHNICAL INVESTIGATION REQUIREMENTS

J.1 GEOTECHNICAL SITE INVESTIGATION REPORT

No substantial change to the geotechnical investigation at CCSWDC has occurred since the previous Operations Permit Application submittal. The report titled "Geotechnical Evaluation and Hydrogeological Survey and Groundwater Monitoring Plan Sarasota Central Landfill Complex, Sarasota County, Florida" by Ardaman and Associates, Inc., March 10, 1992, was previously submitted to the Department in support of the construction permit application for this facility. A copy of this report was provided to the Department on June 30, 2002.

J.2 SIGNED AND SEALED REPORT

A ACT .

No substantial change to the geotechnical investigations at CCSWDC has occurred since the previous Operations Permit Application submittal, thus a signed and sealed report is not included.







3012 U.S. Highway 301 V Suite 700 Tampa, FL 33619-2242

SCS ENGINEERS

April 29, 2002 File No. 09201024.01

Kim Ford, P.E. Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619 D.E.P. APR 2 9 2002 Southwest District Tampa

Subject: Sarasota County, Central County Solid Waste Disposal Complex Operations Permit Renewal, Pending Permit No. 130542-002-SO Waste Tire Facility Permit Renewal, Pending Permit No. 126775-001-WT

Dear Mr. Ford:

Sarasota County has submitted the above referenced permit applications and has received requests for additional information (RFI) for each application. SCS Engineers is assisting the County with the responses to your requests.

We anticipate providing a complete response to the Waste Tire Facility permit application RFI by May 30, 2002. We also anticipate providing a complete response to the landfill operations permit RFI by June 29, 2002.

Please let us know immediately if this proposed schedule is not acceptable to the Department.

Sincerely,

John A. Banks, P.E. Project Manager SCS ENGINEERS

Gleymy Five

Raymond J. Dever, P.E., D.E.E. Vice President SCS ENGINEERS

cc: Gary

Gary Bennett, Sarasota County

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FLORIDA DEPARTMENT OF . **ENVIRONMENTAL PROTECTION 3804 COCONUT PALM DRIVE** TAMPA, FL 33619-8318

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION 3804 COCONUT PALM DRIVE TAMPA, FL 33619-8318

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Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

January 22, 2002

Mr. Gary Bennett Sarasota County Solid Waste Operations 4000 Knights Trail Road Nokomis, FL 34275

> Re: Yard Trash Mulch and Soil Mixture for Initial Cover Permit No.: S058-299180, Sarasota County

Dear Mr. Bennett:

The Department has no objection to the use of a yard trash mulch and soil mixture for initial cover subject to the following conditions:

- 1. A sample of the mixture shall be screened periodically and upon request by the Department to confirm that 100% passes a 2" screen, 85% passes ¾" screen, and 70% passes a ¾" screen; and
- 2. The mixture shall be applied in a 6 inch compacted layer.

If any inspections disclose problems with use of the cover mixture, such as failure to maintain normal operation and prevent ponding and leachate discharge outside the active disposal area, approval may be discontinued. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

K 1 1 -

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab

1

cc: Paul Wingler, P.E., Sarasota County Robert Butera, P.E., FDEP Tampa

"More Protection, Less Process"

9.0 Landfill Gas Migration Monitoring Program

A landfill gas migration monitoring program will be implemented to prevent explosions and fires outside of the limits of waste disposal, off-site odors and damage to vegetation. Monitoring will be conducted for the percent of the lower explosive limit for methane (LEL). The regulatory threshold for on-site structures is 25% of the LEL. The regulatory threshold for the landfill property boundary is 100% of the LEL. Monitoring shall be conducted quarterly in accordance with the regulations. If a regulatory exceedance is detected during routine monitoring, the landfill operator will submit a remediation plan within seven days to the FDEP. The plan will detail the nature and extent of the migration and the proposed remedy. The remedy will be complete/implemented within 60 days of the detection unless otherwise approved by the FDEP.

If migrating landfill gas is detected greater than 25 percent of the LEL for methane at any monitoring probe, a temporary monitoring probe will be established 50 feet in the direction opposite from the landfill. The temporary probe will be monitored on a monthly basis for at least one quarter and until monitoring of the temporary probe indicates zero percent of the LEL for methane.

The landfill gas migration monitoring program for CCSWDC will include monitoring of the landfill perimeter monitoring locations shown on Sheet E-1, inside the maintenance building, and any enclosed structures that are constructed on-site. A Scott Aviation Gas Tester Model G15 or equivalent will be used. The monitoring locations will consist of a probe as shown on Figure 5-4. The probes will be located at the toe of the landfill berm. A 3.25 inch hollow-stem auger (6.5 inch diameter borehole) will be advanced to a depth of seven feet below ground surface. This depth represents an average seasonal low water table elevation (5-7 feet below ground surface). The one-inch well screen will extend from seven feet below ground surface to two feet below ground surface. The one-inch well riser will extend from two feet below ground surface to three feet above ground surface. The annular space will be backfilled with pea gravel. Six inches of select sand backfill will be placed over the gravel pack. A one-foot thick bentonite seal will be placed over the select sand backfill. Six inches of compacted native soil

5-27



MPROBE .DWG 08/10/98

will placed on the one foot bentonite seal. The probe will have a labcock value installed to allow a positive seal to be made. The probe will be encased in a protective aluminum casing.

The landfill gas migration monitoring locations include six landfill gas monitoring probes as described and numbered GP-1 through GP-6. On-site structures shall also be monitored. These structures will be numbered GM-1, GM-2, etc. Currently, one structure exists on-site, the maintenance building (GM-1). An additional structure will be constructed in the construction and demolition debris processing area and will be designated GM-2. Additional structures erected on-site will be designated with the next available number, e.g. GM-3, and added to the list of locations monitored quarterly.

Other on-site structures are remotely located relative to the permitted disposal area. These structures, the scalehouses and administration building, are located over 3,400 feet from the landfill footprint. There are no man-made underground conduits for migrating landfill gas to travel through to reach these facilities. If migrating landfill gas is detected above the regulatory threshold at any of the probe locations, these buildings will be checked as a safety precaution. This will continue quarterly until such time as the threat of migrating landfill gas dissipates or is mitigated.

10.0 Stormwater Management System

The landfill stormwater management system for CCSWDC is discussed in Section 2.h.(c) – Stormwater System.

11.0 Equipment and Operation Feature Requirements

11.a. Adequate In-Service Equipment

Equipment proposed for the Sarasota County Landfill will include the equipment listed Table 5-1. The exact equipment complement may vary from time to time and additional equipment will be acquired if needed. Two roll-off containers will be placed in the yard waste compost area and the other at the Class I landfill area.





Environmental Protection

leb Bush Governor

Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

January 26, 2001

Mr. Paul Wingler, P.E. Solid Waste Operations Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

> CCSWDC - Stormwater Removal from Tank Re: Permit #S058-299180, Sarasota County

Dear Mr. Wingler:

The Department has no objection to the stormwater removal from the secondary containment of the tank as described in your January 8, 2001 letter subject to the following conditions:

- Stormwater in the secondary containment shall be inspected to verify the absence of color and oily sheen. Stormwater with visible color or oily 1. sheen shall not be discharged to the stormwater network but pumped to the primary leachate tank.
- Specific conductance of the stormwater in the secondary containment shall not be more than 50% above the specific conductance of water in the nearest 2. downstream stormwater pond or shall not exceed 1,275 umho/cm, whichever is greater.
- Turbidity of the stormwater in the secondary containment shall not be more than 29 NTU above the turbidity of water in the nearest downstream 3. stormwater pond.
- Results of visual inspection for color and oily sheen and field measurements of specific conductance and turbidity shall be documented for each pumping 4. event.
- Leachate records shall be adjusted and notated for each stormwater removal event to reduce the amount of rainfall into the primary leachate tank that 5. will be reported as leachate.
- If you have any questions please call me at (813) 744-6100, extensions 382.

sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab

Gary Bennett, Sarasota County cc: Don Shaulis, Sarasota County 🔊 Robert Butera, P.E., FDEP Tampa JEMJohn Morris, P.G., FDEP Tampa

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Department of Environmental Protection

Lawton Chiles Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

Virginia B. Wetherell Secretary

November 2, 1998

Mr. Mark Triplett, P.E. Sarasota County Solid Waste Operations 4000 Knights Trail Road Nokomis, FL 34275

> Re: SCSWDC - Operation Revisions Permit #S058-299180, Sarasota County

Dear Mr. Triplett:

The Department has no objection to the deviations regarding increased sideslopes and sump operation levels as described in your October 27, 1998 letter and attachments subject to the following conditions:

1. Outside slopes shall not exceed 33% (3 to 1); and

2. Sump operation levels shall limit the leachate head above the liner as specified in F.A.C. Rule 62-701.400(3)(b).

You are advised that a request for a permit modification for the revised sequence of filling and \$250 processing fee is required according to FAC Rule 62-4.050(4)(q)5. The change involves minor technical changes which involves new work. Construction details with cross-sections and elevations are required for review.

On all future correspondence, please include Robert Butera on distribution. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab

cc: Gary Bennett, Sarasota County Robert Butera, P.E., FDEP Tampa

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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SARASOTA COUNTY GOVERNMENT SARASOTA, FLORIDA

Utilities Department Solid Waste Operations Division

> 4000 Knights Trail Road Nokomis, Florida 34275 Telephone (941) 486-2600 FAX (941) 486-2620

October 27, 1998

Kim B. Ford, P.E. Florida Department of Environmental Protection 3804 Coconut Palm Drive Tampa, Florida 33619

Re: Central County Solid Waste Disposal Complex - Permit Number SO58-299180 Deviations from Operating Plan

Dear Mr. Ford:

The purpose of this letter is to provide the Department with notice that we are deviating from the approved operating plan. These deviations include revising the operating levels on the leachate sump pumps and the slope angle for the outside refuse fill slopes.

The operating levels on the leachate sump pump in cell one were modified August 7, 1998, in accordance with verbal approval granted by the Department to aid in reducing the frequency of maintenance associated with cleaning the screen surrounding the transducer. This frequent cleaning was in response to biofouling of the screen. The operating levels currently programmed will remain if effect because of the positive effect that has been observed, i.e. reduced pump maintenance. A revised Figure No. 5-3 will be prepared and submitted to the Department.

The side slope angle deviation will be implemented immediately in accordance with our discussion during the Department's site visit of October 20, 1998. A request for a minor permit modification will be submitted upon completion of the revised refuse fill plan drawings. Attached to this letter are excerpts from previously performed slope stability analyses submitted to show that an allowable factor of safety is achieved.

Please contact me if you have any questions.

Sincerely k Tiplet

Mark Triplett, P.E. Solid Waste Operations Division

Attachments RMT

C Ed Norris, Sarasota Landfill Management Robert J. Butera, P.E., FDEP - Tampa i:\user'shared\projects\central county solid waste disposal complex\correspondence\/dep\notice of deviations from ops plan - 27 oct 98.doc

"Dedicated to Quality Service"

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May 31, 1990 File Number 89-135

Consultants in Soils, Hydrogeology, Foundations and Materials Testing

Camp Dresser & McKee Inc. 6221 14th Street West, Suite 302 Bradenton, Florida 34207

Attention: Mr. John A. Banks, P.E.

Subject: Geotechnical Evaluation and Interim Hydrogeological Survey, Sarasota County Central Landfill Complex, Sarasota, Florida

Gentlemen:

As requested and authorized by Mr. John Banks, we are pleased to present the results of our Geotechnical Evaluation and Interim Hydrogeological Survey for the subject site.

This report has been prepared from data compiled to date and is intended as an interim report for the exclusive use of Camp Dresser & McKee Inc. and Sarasota County for specific application to the subject facility in accordance with generally accepted hydrogeological engineering practice. Included is a geotechnical summary and foundation evaluation for the footprint of the proposed landfill.

It has been a pleasure assisting you on this phase of your project. Please do not hesitate to contact the undersigned or our Mr. David G. Sawitzki if you have any questions.

Very truly yours, ARDAMAN & ASSOCIATES ANC.

Herbert G. Stangland, Jr., P.E. Senior Water Resources Engineer

John E. Garlanger, PA.D., P.E. Principal Florida Registration No. 19782

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Enclosures

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8008 S. Orange Avenue (32809), Post Office Box 593003, Orlando, Florida 32859-3003 Phone (407) 855-3860 FAX (407) 859-8121 Offices in: Avon Park, Bartow, Bradenton, Cocoa, Fort Myers, Miami, Orlando, Port Charlotte, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach



boring logs presented in Appendix A. The boring profiles and related information presented in this report are based on the driller's field logs and visual examination of soil samples in the laboratory. The delineation between soil types shown on the logs is approximate and the description represents our interpretation of subsurface soil conditions at the designated boring location. While the borings are representative of subsurface soil conditions at their respective locations and for their respective vertical distances, local variations characteristic of the subsurface materials are anticipated and may be encountered. Surficial water level depths encountered at each hole as well as hydrostatic water level depths for particular holes (2nd depth reading on Boring Logs) as recorded by the drilling crew are also included.

The results of our test borings indicate the following general soil profile:

Depth Below Ground <u>Surface (Feet)</u> From <u>To</u>		Soil Description			
0	5	Gray to brown fine sand with organic material and roots. Standard Penetration Test N-Values typically ranged from 4 to 25 in this zone.			
5	18	Gray silty to clayey fine sand. Standard Penetration Test N-Values typically ranged from 10 to 30.			
19	40	Gray to brown clayey fine sand with significant amounts of rock fragments. A solid rock layer, associated with circulation loss was noted frequently (at variable depth) as were local loose zones, again associated with circulation loss zones. Locally, a 3-10 foot thick layer of stiff gray to green/gray clay was documented. Standard Penetration Test N-Values were highly variable due to the presence of rock but typically were not lower than 20.			
40	100	Gray clayey fine sand to silty fine sand interbedded with layers containing rock fragments. Solid rock layers, associated with circulation loss were noted frequently (at variable depth) as were local loose zones, again associated with circulation loss zones. Standard Penetration Test N-Values were highly variable due to the presence of rock but typically were not lower than 20.			

The above soil profile is outlined in general terms only. Please refer to boring logs in Appendix A. East - west and north - south geologic cross-sections through the proposed landfill site are on Figure 2 and presented in Figures 5 and 6.

FOUNDATION EVALUATION

Based upon the landfill design as reported to us by Mr. John Banks (Figure 7), the final landfill configuration is proposed to have a maximum 33 percent slope. Since a 20 percent slope was also of interest this configuration was also considered. In either case a 20-foot wide bench was placed at elevation intervals of 20 feet. The overall height of the landfill will be 200 feet above grade and for purposes of this evaluation it is assumed that the refuse will not be placed below grade and the water table is at grade. Foundation analyses were performed for the critical landfill cross sections with both possible configurations to determine the structural integrity of the landfill.



The soil profile described in the previous section indicates several types of soil materials below the landfill footprint. The surficial material is typically loose sandy material which has Standard Penetration Test N-Values of between 5 and 20. Since the surficial loose organic material will be removed, this material was not considered as a separate layer in the analyses. A stiff clay layer (Standard Penetration Test N-Values of 15 to 20) with variable thickness (maximum 10 feet) at depths ranging from 20 to 40 feet was found beneath a large section of the landfill footprint as were loosely consolidated rock layers, however the predominant material below the surficial organic soil was silty to clayey fine sand.

A unit weight of 45 pcf and an angle of internal friction of 26° was assumed for the landfill refuse material. The friction angle at the soil-liner interface was assumed to be 18°. Based on our experience, use of these values will be conservative, i.e., the actual factor of safety is probably higher than we calculated. The underlying clayey to silty fine sand was assumed to be saturated and was given a buoyant unit weight of 65 pcf and a friction angle of 30°.

Foundation analyses included sliding block through the refuse and at the soil-liner interface and circular arc stability analyses through the refuse and foundation as shown in Figure 7. A minimum factor of safety of 1.5 was calculated for the 33 percent slope option while the minimum factor of safety for the 20 percent slope option was 2.2. A factor of safety of 1.5 is generally considered adequate for these types of analyses.

The stiff clay layer (maximum 10 feet) found at depths ranging from 20 to 40 feet was analyzed for settlement potential. Assuming a 200-foot high landfill the increased surcharge would be approximately 9000 psf. This clay had a moisture content of 20 percent and a Liquid Limit of 40 percent. The resulting analysis indicates a maximum settlement of 2 inches in the clay layer.

The above foundation analyses are applicable to the landfill design and liner system as described above. Should there be any change in the design or materials to be used, Ardaman and Associates, Inc. should be notified so that further analyses may be performed incorporating any changes.

No geotechnical siting factor is apparent from the geotechnical investigation completed to date that would preclude use of the site for a Class I landfill.





Ardaman & Associates, Inc.

Geotechnical, Environmental and Materials Consultants

March 10, 1992 File Number 89-135

Camp Dresser & McKee Inc. 201 Montgomery Avenue Sarasota, Florida 34243

Attention: Mr. John A. Banks, P.E.

Geotechnical Evaluation, Hydrogeological Survey and Groundwater Monitoring Plan, Subject: Sarasota County Central Landfill Complex, Sarasota, Florida

Gentlemen:

As requested by Mr. John Banks and authorized by Camp Dresser & McKee Inc., we are pleased to present the results of our Geotechnical Evaluation, Hydrogeological Survey and Groundwater Monitoring Plan for the subject site. Borrow and foundation evaluations are included for the project.

This report has been prepared for the exclusive use of Camp Dresser & McKee Inc. (CDM) and Sarasota County for specific application to the subject facility in accordance with generally accepted geotechnical and hydrogeological engineering practice. No other warranty, expressed or implied, is made.

It has been a pleasure assisting you on this phase of the project. Please do not hesitate to contact the undersigned or our Mr. David G. Sawitzki if you have any questions.

Very truly yours, ARDAMAN & ASSOCIATES, INC.

Herbert G. Stangland, Jr., P '.Е. Senior Water Resources Engineer

John E. Garlanger, Ph.D., P.E. Principal Florida Registration No. 19782

DGS:pdc

Enclosures

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12809) Post Office Box 593003, Orlando, Florida 32859-3003 Phone (407) 855-3860 FAX (407) 859-8121 المدرمجة عور harton, Coccia, Fort Myers, Mami, Orlando, Port Charlotte, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach

would need to be separated and stockpiled for such use as necessary during excavation of daily and intermediate cover. Additional investigation would be required to determine how and if this concept could be implemented cost effectively.

The presence of rock layers at the study site may also present excavation problems. Although not continuous over the entire site, rock layers were encountered at depths of less than 20 feet and soil samples containing rock fragments and SPT "N-Values" greater than 50 blows per 12 inches were also quite common at depths less than 20 feet. Several rock cores were retrieved in the field and laboratory test data for to these cores is presented in Table 8. Although classified as very poor rock, this material may require blasting where its removal is necessary.

Borrow materials can be excavated from the designated borrow areas either in the wet, using a dragline, or in the dry, using scraper pans. The dewatering system for excavating in the dry may consist of a perimeter ditch and one or more sumps. The sump discharge water would need to be placed in environmentally acceptable areas, e.g., in the stormwater retention ponds, to minimize potential adverse environmental impacts.

Foundation Evaluation

Foundation analyses were performed for the critical landfill cross section to determine the structural integrity of the landfill and foundation soils. Based upon the proposed landfill design provided to us by CDM (Figure 3), the final landfill configuration will have side slopes of 5H:1V with 20-foot wide benches placed at elevation intervals of 20 feet. This results in an overall landfill slope of 5.7H:1V as measured from natural ground to the crest of the landfill (see Figure 16). The overall height of the landfill will be 100 feet above grade and no refuse is to be placed below grade. Either a composite or double synthetic bottom liner system will be a part of the landfill design. A synthetic drainage net and geotextile filter fabric which together could comprise the primary leachate collection and removal system are to lie directly above either liner scenario to maintain the hydraulic head close to the liner surface.

The soil profile indicates several soil types directly beneath the landfill footprint. The surficial soils, from 0 to 18 feet below ground surface, are typically medium to dense sandy materials with varying amounts of silt and clay and have Standard Penetration Test "N-Values" ranging from 5 to 20. It was assumed that any unsuitable surficial organic or soft materials will be removed prior to liner construction and this material was not considered in the analyses. Underlying the sandy surficial soils were silty to clayey fine sands with significant rock and shell fragments and higher Standard Penetration Test "N-Values", typically ranging between 15 and greater than 50 blows per 12 inches. A stiff clay layer (average of all Standard Penetration Test "N-Values" equal to 21) with variable thickness (maximum 10 feet) was encountered at depths ranging from 18 to 40 feet beneath a large section of the landfill footprint, as were loosely consolidated rock layers. The predominant material below the surficial soil deposits, however, is silty to clayey fine sands. Below a depth of 50 feet, high SPT "N-Values" (greater than 50 blows per 12 inches) were encountered. The clayey to silty fine sand underlying the proposed landfill was assumed to be saturated (i.e. the water table was placed at the natural ground surface) and was given a buoyant unit weight of 65 pcf and a friction angle of 30°. A unit weight of 45 pcf and an angle of internal friction of 26° was assumed for the landfill refuse material.

The natural ground foundation soils underlying the proposed landfill footprint are very dense and competent and our stability analyses document that they will provide adequate support for the proposed waste fill materials. The critical element controlling stability of the proposed landfill is the synthetic liner and underdrain system. The HDPE liner material is typically very smooth and

has a much lower friction angle than most earthen construction materials. The smooth liner surface is particularly critical at the interface of the liner with other geotextiles, resulting in a relatively high potential for sliding at the contact interface.

There are four basic material interfaces in either bottom liner and underdrain scenario that need to be evaluated. These include: 1) HDPE liner to underlying soil, 2) HDPE liner to HDPE drainage net, 3) HDPE drainage net to geotextile and 4) geotextile to soil cover. After the final material selections are made for the liner and underdrain construction, we recommend that the coefficient of friction for each of the interface materials be established by laboratory testing of the actual materials used in construction. These data should then be used to refine the preliminary stability analyses presented in this report.

Based on a literature review and our experience with similar lines and geotextile materials, we have determined that the critical condition of sliding (i.e., lowest coefficient of friction) will most likely occur at the interface of the HDPE liner with the HDPE drainage net. Reported values of friction in the literature available to us indicate considerable variation, depending on material type and manufacturer, however our experience combined with a recent evaluation of a landfill stability failure (Mitchell, Seed and Seed, 1990 and Seed, Mitchell and Seed, 1990) indicate that a value of 8° is appropriate.

We have performed preliminary stability analyses including translational sliding failure at the HDPE liner - HDPE drainage net interface and circular arc stability analyses as shown in Figure 16. A minimum factor of safety of 1.6 was calculated for the translational type failure while a minimum factor of safety of 2.6 was calculated for a circular arc type failure which passed almost entirely through the refuse. A factor of safety of 1.5 is generally considered adequate for these types of analyses.

The total foundation settlement resulting from the proposed landfill has been predicted based on the 100-foot high proposed landfill design and considering a refuse unit weight of 45 pcf. The total load applied by the landfill at the maximum height will be 4,500 lb/ft². Standard Penetration Test borings TH-1 through TH-26 were used to establish conditions beneath the proposed landfill and based on this information it was concluded that only the shallow 18 feet of sandy soils and the stiff clay layer underlying the first hard layer will contribute to settlements.

Settlements within the upper 18 feet of sandy soils were calculated using the method developed by Peck and Bazaraa, (1969). This method correlates Standard Penetration Test "N-Values" with the load necessary to induce a 1-inch settlement and then the actual settlement is calculated for the actual load applied. This method results in approximately 2 inches of settlement for the upper 18 feet of soils.

The stiff clay layer was evaluated for settlement potential using classical consolidation theory. A laboratory consolidation test on an undisturbed sample of this clay resulted in a compression index of 0.113 and a preconsolidation pressure of approximately 7,000 psf. The natural moisture content of the clay was approximately 131% and the liquid and plastic limits were 327% and 106%, respectively resulting in a plasticity index of 221%. The present consolidation pressure existing on the clay layer is approximately 2,100 psf and when the additional landfill load of 4,500 psf is considered the total stress on the clay will be approximately 6,600 psf. Our calculations indicate settlements of 2 inches or less will occur considering a 10-foot thick clay layer.

Combining the settlements calculated for the two layers the maximum expected foundation settlement under the weight of the proposed landfill is 4 inches. This magnitude of settlement

Camp Dresser & McKee In File Number 89-135

will not adversely affect the performance of the liner.

No adverse geotechnical siting factor is apparent from the geotechnical investigation that would preclude use of the site for a Class I landfill.

Groundwater Impact Assessment

In our opinion, the potential for measurable groundwater impacts resulting from construction of a properly designed solid waste disposal facility on the site are extremely remote even on the site itself let alone on any adjacent properties, for example, the MacArthur Reserve Tract. Certainly, measurable impacts, if any, would be limited to the immediate vicinity of the landfill, i.e., within 20 feet vertically and 100 feet horizontally of the liner.

A landfill on this site will not be permitted if the County cannot provide reasonable assurance that the primary and secondary groundwater standards will be met at the edge of the zone of discharge, i.e., at the base of the surficial aquifer directly beneath the liner and 100 feet adjacent to the edge of the refuse. The FDER has developed very stringent design standards for landfill liners and leachate collection systems. The most recent revisions to these design standards require either composite or double liner systems beneath all Class I landfills. During the various revisions to the liner design standards which have occurred in the past 5 years, the performance criteria have evolved from an allowable leakage of almost 2 inches per year to less than 0.003 inches/year. In terms of liner effectiveness, the liner design standard has evolved from one that was 80 to 90 percent effective to one that is better than 99.97 percent effective in preventing the movement of leachate through the liner system.

As shown by the water table maps contained on Figures 7 and 8, groundwater seepage beneath the proposed Class I landfill is toward Cow Pen Slough Canal. Any predicted groundwater impacts would occur beneath and downgradient from the landfill. There is no potential for groundwater impacts upgradient from the landfill. For this reason, and because the site is separated from the MacArthur Tract by the Myakka River, there is no potential for groundwater from the proposed landfills to reach the MacArthur Tract through the surficial aquifer.

The production zone for the wells installed at the MacArthur Reserve is vertically separated from the surficial aquifer by more than 100 feet of clay confining units. It is our understanding that the MacArthur Tract wells tap the upper Floridan aquifer, the top of which is approximately 450 feet below land surface. Groundwater in this deeper production zone naturally flows vertically upward into the intermediate aquifer and laterally from the MacArthur Reserve toward the Walton Tract. Although pumping could reverse the gradient in the Floridan aquifer and across the confining layer, the probability that a drop of groundwater from the site would enter the production zone of the Upper Floridan aquifer on the MacArthur Tract within the next 1000 years is essentially zero.

Groundwater Monitoring Plan

The following groundwater monitoring plan shows the location of the proposed monitoring wells, construction details of the monitor wells, and water sampling and chemical analysis protocol for the proposed Class I and Class III landfills.





Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

March 29, 2002

Mr. Gary Bennett Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

> Re: CCSWDC Landfill - Operation Permit Renewal Pending Permit No.: 130542-002-SO, Sarasota County

Dear Mr. Bennett:

This is to acknowledge receipt of the permit renewal application, received March 1, 2002, to continue to operate the existing Class I landfill and related facilities.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit is <u>incomplete</u>. This is the Department's 1st request for additional information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

- 1. 62-701.320(7). Specific references for the location of documents or copies for the following: a) boundary survey; b) proof of ownership - deeds with legal description; c) description of recycling activities including a list of all recyclable materials collected at the site and a description of management procedures for each.
- 2. 62-701.320(10). Revisions to the referenced documents. Supporting information for this pending permit renewal contains references to previous applications and Engineering Reports, and provides revisions. a) Reaffirm that the parts of the referenced documents that were not revised are still valid. b) Changes in the text being submitted as revisions should be provided as replacement pages with page numbers and the date of revision.

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Mr. Gary Bennett Page 2

- 3. **62-701.330(3)(d)**. Topographic map. a) An aerial (not more than 1 year old) and topographic map with a scale not greater than 200 feet to the inch with 5-foot (or less) contour intervals is requested. This topographic map should verify landfill development in conformance with design drawings. b) Some of the referenced Attachment 10 Operation Drawings have been revised. One full sized set and one reduced set (for use as an attachment to the operations plan) with all revisions are requested. c) Plan views showing grades required for proper drainage along terrace swales are requested. d) Typical details for all temporary and permanent drainage devices (letdown structures, terraces, berms and swales) to convey stormwater from the top and sides of filled areas without erosion are requested.
- 4. 62-701.400(2). Drawings to show a) those areas including berms and sideslopes that have been filled to design dimensions; and b) following the proposed sequence for filling, which areas can be closed first.
- 5. 62-701.400(6)(c). Clarification regarding the above ground leachate storage tank including: a) a description of provisions for the removal of accumulated precipitation from the secondary containment area within 24 hours or when 10 percent of the storage capacity is reached, whichever occurs first, and b) a copy of the most recent inspection report for the interior inspection of the tank (not more than 3 years old) showing all items of deficiency have been corrected.
- 6. **62-701.400(10).** Gas control system. Documentation is required to demonstrate that the landfill is exempt from installation of a gas control system and to verify that the landfill is in compliance with the air requirements listed in specific conditions #41 of the current solid waste operation permit.
- 7. 62-701.410(2). Specific references for the location of all related geotechnical reports and supporting documents (or copies).
- 8. 62-701.500. A comprehensive operations plan. Upon completion of all revisions prior to permit renewal, the entire Operations Plan and its attachments should be resubmitted (without strike-throughs and underlining) with the date of the most recent revisions on each page.
- 9. 62-701.500(1). Training plan for landfill operators and spotters. a) This plan must demonstrate compliance with 62-701.320(15), (reference to 62-703 should be deleted). b) Confirm that at least one trained spotter will be at each working face at all times when the landfill receives waste to detect unauthorized wastes from each load. c) Describe how spotters will identify and manage any hazardous or prohibited materials. d) Include a list and schedule of classes that will be attended for training.

Mr. Gary Bennett Page 3

10. 62-701.500(2)(b). The referenced contingency plan appears to contain less detail for related activities than the operations plan. All relevant and current information should be included either as revisions to the referenced plan or as part of the new operations plan.

March 29,

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- 11. 62-701.500(2)(c). A list of all recyclable materials received at the site and a description of related management procedures for each.
- 12. 62-701.500(2)(f). The referenced drawings for the sequence of filling should be confirmed still valid or revised, and provided as part of the operations plan. What is the percent slope to be used for the top of each lift?
- 13. 62-701.500(2)(h). The referenced drawing of the leachate collection system should be provided as part of the operations plan. How will ponding of water within the containment berms be prevented?
- 14. 62-701.500(2)(j). A description for cleaning of the leachate collection system is requested.
- 15. 62-701.500(3). A list of the documents to be kept as part of the operating record is requested.
- 16. 62-701.500(6). The load checking inspection form should be included as an attachment to the operations plan.
- 17. 62-701.500(7)(e). A description and specifications for each type of initial cover are requested.
- 18. 62-701.500(7)(g). Timeframes for applying final cover are requested. When will the first portion of Phase I (such as external slopes) be completed to designed dimensions? Confirmation of conformance to designed dimensions and details for filled portions of Phase I is requested.
- 19. 62-701.500(7)(j). Clarification regarding erosion control. a) Is stormwater management for unused cells controlled "by grading" or use of rain cell covers? b) The list of stormwater management controls for used cells should include 1) maintaining internal and external berms and 2) the use of terraces and letdown pipes. c) How will temporary tarps be used to separate stormwater from waste over waste filled areas? d) Typical details on a drawing for each type of erosion control and stormwater management control are requested.
- 20. 62-701.500(8)(g). The leachate report form should be included as an attachment to the operations plan.
Mr. Gary Bennett Page 4

21. 62-701.500(8)(h). The results of the most recent leachate collection systems cleaning and inspection are requested.

- 62-701.500(9). Clarification regarding gas monitoring to 22. demonstrate compliance with 62-701.530(2). a) Why is gas monitoring probe GP-4 located as shown on Figure L-1? Gas probes should be located between the Class I landfill and on-site structures. b) A gas probe should be located between the landfill and the material recovery facility. c) Why are the gas probes designed with such a large pipe screen so close to the surface? Typical details for gas probes show less than a 2-inch diameter pipe and a bentonite layer separating the screen from the surface. d) The design for a typical "temporary monitoring station" is requested. e) The reference to "property boundary" is unclear. The Department should be notified if the LEL is 100% or greater in any of the external gas probes located along the special exception boundary. f) What specific areas inside each structure will be monitored?
- 23. 62-701.500, .510, and .530. Responses and required supporting information in response to Mr. John Morris' March 28, 2002 memorandum (attached). You may call Mr. Morris at (813) 744-6100, extension 336 to discuss the items in his memorandum.
- 24. **62-701.900(1).** Revisions to the application form. Section B.3. should indicate that total acres and available acres for Phase I only since only Phase I has been constructed.

Please provide all responses that relate to engineering required for design and operation, signed and sealed by a professional engineer. All descriptions of operational procedures provided as part of responses should be included as revisions to the Operations Plan (Section L).

"NOTICE! Pursuant to the provisions of Section 120.600, F.S., if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available." You are requested to arrange a meeting with DEP staff to discuss the items in this letter prior to responding. Please submit your response to this letter as one complete package. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

March 29,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab Attachment

cc: John Banks, P.E., SCS $\not {\it lb}$ Robert Butera, P.E., FDEP Tampa John Morris, P.G., FDEP Tampa

Florida Department of Environmental Protection

Memorandum

то:	Kim Ford, P.E.
FROM:	John R. Morris, P.G. JRM
DATE:	March 28, 2002
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO

I have reviewed the permit application materials submitted to the Department in support of the referenced application for the Central County Solid Waste Disposal Complex (CCSWDC) that was prepared by SCS Engineers on behalf of Sarasota County, received March 1, 2002. My review focused on the hydrogeologic and environmental monitoring aspects of the renewal application. Please have the applicant address the following review comments. The information requests have been referenced to sections of the permit application and are also referenced to the sections of the supporting document where appropriate, as presented below:

SECTION B - DISPOSAL FACILITY GENERAL INFORMATION

1. **B.12.:** It is indicated that the property is recorded as a disposal site in the County Land Records. Please indicate if this has been done to complete the requirements of Rule 62-701.610(5), F.A.C. Please also provide a certified copy of the County record including the legal description and a scale-drawn map for that part of the property that has been so recorded.

<u>SECTION L – LANDFILL OPERATION REQUIREMENTS</u> (Rule 62-701.500, F.A.C.) <u>Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002</u>

- 2. L.2.h.(2) Leachate Management System
 - a. Collection System -- Please revise this section to refer to the figure requested in comment No. 5.

b. It is indicated that the stormwater in the secondary containment of the leachate storage tank will be tested for specific conductance to determine the appropriate handling procedures. Please revise this section of the Operations Plan to also indicate that the retained stormwater will be managed as leachate if a visible sheen is present.

c. Please provide a site map that indicates which pond will be checked for specific conductance prior to release of stormwater from the secondary containment of the leachate storage tank. Please also indicate on this site map where the stormwater from the secondary containment of the leachate storage tank will be released.

d. Please revise this section of the Operations Plan to indicate that a log will be maintained to document releases of uncontaminated stormwater from the secondary containment of the leachate storage tank (date, specific conductance measurements, sheen observation).

e. Leachate Monitoring – Please provide a revised leachate monitoring plan to reflect review comment Nos. 9.b., and 9.c.

3. L.2.i. – Ground Water Monitoring System: Please provide a revised ground water monitoring plan to reflect the proposed changes as indicated in comment Nos. 13.a. through 13.f.

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s_w/jrm/sarasota/corresp/sarasotacentral1.302.mem

4. L.8.a. – Leachate Monitoring, Sampling and Analysis: Please revise this section to be consistent with the revisions requested in review comment No. 2.e.

5. L.8.b. – Leachate Collection and Removal System: Please provide a leachate sampling figure that reflects Attachment 10, Sheet 14, Detail E of the December 1996 Operations Permit Application for use as a permit figure (no larger than 11 x 14 inches).

6. L.9. - Gas Monitoring Program

a. Please indicate how existing gas probes G-4, G-5 and G-6 will be properly abandoned.

b. Please indicate where existing gas monitoring locations GM-6 and GM-7 are located and why it is considered appropriate that these locations no longer be monitored. Please include these locations on Figure L-1 if it is considered appropriate to maintain these gas monitoring locations.

c. Please revise Figure L-1 to reference the proposed gas probe identification number as $\underline{GP-4t}$.

d. It is indicated that the gas probe locations will monitor subsurface gas migration at the <u>landfill</u> <u>perimeter</u>, but that a gas remediation plan will be submitted to the Department if landfill gas equals or exceeds the LEL at the <u>property boundary</u>. Please note that in the absence of gas probes at the property boundary, the data reported for the existing/proposed gas probes will be used to determine the need to prepare a gas remediation plan.

7. Attachment L-2 – Contaminated Soil Acceptance Criteria: Please revise the last sentence of this attachment to indicate that contaminated soil accepted at CCSWDC would be directly disposed in the lined active landfill cell, not used as initial cover, and <u>not stockpiled</u> at the site unless authorized in writing by the Department.

SECTION M – WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (Rule 62-701.510, F.A.C.)

8. M.1.a. through M.1.h.(2): Please revise each item in this section of the application form to reference the appropriate section in Appendix A (Ground Water Monitoring Plan Evaluation).

<u>Appendix A – Ground Water Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex,</u> <u>Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28, 2002</u>

b. It is indicated on Page 2-6 that a composite leachate sample is collected annually from the pump stations located at the landfill cells. Please note that it is not appropriate to collect composite samples for analysis of volatile organic compounds or for measurement of field parameters, and that individual leachate samples shall be required at each pump station of each landfill cell that contains wastes. In the event that the County desires approval from the Department to collect composite leachate samples from the pump stations for the required parameters other than volatile organics and field measurements, please provide a detailed procedure for review. Please provide a revised leachate monitoring plan to reflect these changes and the requirements of Rule 62-701.510(6)(c), F.A.C.

c. Please revise Page 2-6 to indicate that the annual leachate samples shall include analysis of the parameters listed in 40 CFR Part 258, <u>Appendix II</u>.

10. Section 3 - Previous Land Use Effects on Ground Water at the CCSWDC

a. It is indicated that prior use of the property for cattle ranching <u>may</u> have resulted in the <u>possible</u> former use of a cattle dipping vat. It is noted that evidence of a known current cattle dipping vat has not been provided. Please note that in the absence of such a demonstration, the assumption that site-wide occurrences of arsenic in ground water are related to the previous cattle ranching activities cannot be supported.

b. It is indicated that the ground water data compiled for sampling events conducted at wells P-1 through P-14D prior to construction of the landfill at CCSWDC (Appendix A) indicate the occurrence of several inorganics and metals at detectable concentrations. It is further indicated that when these constituents are observed in the CCSWDC detection wells that it is unlikely that the constituents are related to the operation of the facility. However, as measurements for field parameters and results for quality assurance samples were not provided for the "pre-landfill" sampling events conducted during 1993, the representativeness of the samples cannot be evaluated. It is also noted that the relative concentrations reported for the individual parameters for the "pre-landfill" and "post-landfill" sampling events have not been considered. Please note that of the nine parameters detected in the "pre-landfill" sampling events, the occurrences of ammonia, arsenic, chloride and total dissolved solids, at a minimum, bears further evaluation.

11. Section 4 - Water Quality Monitoring Findings

a. Some of the results provided in Appendix A (Ground Water Quality Data) for the "period of record" appear to be inconsistent with the data provided by Sarasota County for the semi-annual ground water sampling events. Please review the following items and revise as appropriate:

- 1) All "post-landfill" wells are missing the organic parameters for April 1999.
- 2) MW-1: Conductivity for November 1999
 - TDS for October 2000

Turbidity for October 2000

MW-2: Nitrate for March 2000

Missing a notation that the well was purged dry and not sampled in April 2001

MW-3: TDS for April 1999

MW-8: TDS for April 1999

Thallium for April 1999

MW-9: Thallium for April 1999

Conductivity for November 1999

MW-10: Thallium for April 1999

Turbidity for October 2000

MW-11: Thallium for April 1999

MW-12: Thallium for April 1999

3) Please revise the shading used on the tables in Appendix A to reflect any changes related to the previous review comment. Please revise the tables in Appendix A so that the shaded cells on the copies provided to the Department are more noticeable.

b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:

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1) It is noted that ammonia and arsenic concentrations reported for "post-landfill" sampling events are significantly higher than reported for "pre-landfill" sampling events. It does not appear that the data supports the assertion that ammonia and arsenic concentrations in the current monitor wells are related to previous land use.

2) It is indicated that elevated concentrations reported for antimony and cadmium at MW-8 during April 1999 may have been related to sample turbidity. It does not appear the data supports this link between turbidity and metals concentrations as an even higher turbidity value was reported for MW-8 during September 2001 but concentrations of antimony and cadmium were reported to be below the method detection limit.

3) It is noted that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 are significantly higher than reported for the other detection wells and the background wells. It does not appear that the data supports the assertion that iron is not likely related to operations of the CCSWDC.

4) It does not appear that the data supports the assertion that elevated concentrations of sodium were reported at detection well MW-11.

5) It is indicated that TDS occurs naturally in the surficial aquifer at the facility, however elevated TDS concentrations were not reported at all monitor wells (MW-4, MW-11 and MW-12). The localized occurrence of elevated TDS concentrations is not explained by this assertion.

6) It is indicated that elevated concentrations of vanadium were reported at well MW-4. Please indicate if the text should have referred to well MW-8. It does not appear that the data supports the assertion that the results of vanadium for all the other monitor wells were reported below the detection limit.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The discussion does not indicate that ammonia concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

2) It is indicated that the elevated concentrations of chloride, sodium and TDS at well MW-1 suggest the presence of mineralized ground water. However, it appears that insufficient data has been collected to distinguish between mineralized ground water and landfill leachate. The discussion does not indicate why relatively elevated concentrations of chloride, sodium and TDS are limited to the vicinity of well MW-1. The plot of sodium concentrations appears to omit the result for well MW-1 for the May 24, 1994 sampling event.

3) The discussion does not indicate that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

d. Some of the results provided in Appendix C (Leachate Quality) appear to be inconsistent with the data provided by Sarasota County for the semi-annual leachate sampling events. Please review the following items and revise as appropriate:

1) The results for the March 2000 sampling event are included twice while the results for the March 2001 sampling event are omitted.

2) The field parameter measurements should not be reported as "ND" for the Nov. 1999, March 2000 and Oct. 2000 sampling events.

3) Nov. 1999 sampling event – 1,4-dichlorobenzene and 1,2-dichloroethane

4) Nov. 2000 sampling event -- nitrate

e. The discussion provides a comparison of the concentrations of chloride, sodium and TDS in samples collected from well MW-1 with leachate samples, and includes an assertion that the occurrence of these parameters in the leachate does not likely relate to the concentrations reported for the <u>detection</u> wells. This assertion does not appear to be supported for the following reasons.

- A demonstration to distinguish between potentially mineralized ground water and landfill leachate has not been provided (see review comment No. 11.c.2).
- The localized occurrence of potentially mineralized ground water at well MW-1 has not been discussed.
- The impact of potentially mineralized ground water at well MW-1 on ground water quality reported for the detection wells has not been evaluated.
- The "other constituents in the leachate more likely to be detected" have not been identified.

f. Some of the results provided in Appendix D (Surface Water Quality) appear to be inconsistent with the data provided by Sarasota County for the semi-annual surface water sampling events. Please review the following items and revise as appropriate:

1) The results of the March 2001 sampling event for stations B1 and B3 are omitted.

2) The results of the Nov. 1999 sampling event for station B2 were not included in the semiannual report provided by Sarasota County. Please verify that the data included in the summary table for this sampling event is appropriate.

12. Section 5 – Ground Water Levels and Flow

a. It is indicated that the influence of the two extreme results of the ten hydraulic tests conducted on surficial aquifer wells (P-1 and P-4) was reduced by using a geometric mean. Please note that unless there is evidence that the hydraulic tests or the construction of wells P-1 or P-4 are considered to be non-representative of the surficial aquifer, it is not considered appropriate to bias the data set. Please revise the ground water velocity calculations by using an arithmetic mean of all ten hydraulic test results for the surficial aquifer.

b. It is noted that the summary of ground water elevations provided in Appendix E (Water Level Data and Potentiometric Maps) appears to be inconsistent with data provided by Sarasota County for the semi-annual sampling events. Please check the elevation reported at well MW-9 for Nov. 1999.

c. It is noted that contour maps E-2 and E-3 appear to be strongly affected by the elevation reported at well MW-9. Please also note that the semi-annual report prepared by Sarasota County dated January 10, 2002 indicated that an incorrect elevation has been reported at MW-9 since the well was repaired (date of repair not provided). Please verify that the ground water elevations reported for MW-9 reflect the measuring point elevation change and modify the contour maps, gradient calculation, and ground water velocity calculation as necessary.

d. Please indicate if existing monitor wells MW-3, MW-5, MW-6 and MW-7, and any other wells or piezometers are available to be included in routine ground water level measurements. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

13. Section 6 – Adequacy of Monitoring Program

a. The statement that all well screens with the exception of MW-9 intercept the seasonal low water level appears to be inconsistent with Table 6-1, which indicates that the well screens are always submerged at MW-2, MW-4 and MW-12. Please review and revise as appropriate.

b. The statement that a water sample has been able to be collected from each well is inconsistent with the semi-annual reports prepared by Sarasota County. Please note that samples have not been collected from well MW-2 for the April 2001 and September 2001 sampling events. Please refer to the semi-annual report prepared by Sarasota County dated January 10, 2002 that includes a proposal to replace well MW-2 and revise this section as appropriate. The development of an alternate well location and construction details for the proposed replacement well should be submitted for review and approval as part of the permit renewal.

c. It is indicated that wells MW-1, MW-2, MW-4, MW-11 and MW-12 may need to be replaced with wells that are constructed to intercept the water table surface. Please provide alternate well locations, identification numbers, and construction details (including a justification of proposed top and bottom well screen elevations) to meet the requirements of Rule 62-701.510(3)(d)3, F.A.C.

d. It is indicated that the existing detection wells were located more than 50 feet from the edge of the liner due cell layout and access roads, and it is estimated to take less than six months for potential contaminants to reach the edge of the zone of discharge. It is proposed that the zone of discharge be expanded to accommodate the detection well siting constraints. Please note that the zone of discharge is defined by rule, cannot be modified at a District level by letter or permit, but must be authorized by an alternate procedure. Please revise this section to either relocate the detection wells closer to the edge of the liner or increase the ground water sampling frequency to comply with the intent of Rules 62-701.510(3)(a) and (3)(b), F.A.C.

e. It is indicated that termination of monitoring at the surface water stations other than B2 and B4R should be considered. Please revise this section to indicate if the County will request a reduction in the number of surface water monitoring stations.

f. As indicated in review comment No. 11.e., the Department does not wholly accept the assertion that leachate does not appear to be contributing to contaminants found in the surficial aquifer. Please revise this section to be consistent with the revisions to leachate sampling presented in Section 2 of the Ground Water Monitoring Plan Evaluation regarding sampling locations, sample compositing, sampling frequency and parameters.

14. Section 7 – Landfill Design and Operation Effectiveness: As indicated in review comment Nos. 11.b. and 11.c., the Department does not wholly accept the assertion that parameters reported in the detection wells have not resulted from landfill activities. Please revise this section to reference the trends reported for ammonia (elevated at MW-9), arsenic (elevated at MW-9, increasing at MW-8), cadmium (elevated and erratic at MW-8), iron (increasing at MW-8, elevated at MW-9), lead (increasing at MW-8), and vanadium (increasing at MW-8).

Florida Department of Environmental Protection

Memorandum

TO:	Kim Ford, P.E.
FROM:	John R. Morris, P.G. TRM
DATE:	March 28, 2002
SUBJECT:	Central County Solid Waste Disposal Complex, Sarasota County Operating Permit Renewal Application, Pending Permit 130542-002-SO

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SECTION B - DISPOSAL FACILITY GENERAL INFORMATION

1. **B.12.:** It is indicated that the property is recorded as a disposal site in the County Land Records. Please indicate if this has been done to complete the requirements of Rule 62-701.610(5), F.A.C. Please also provide a certified copy of the County record including the legal description and a scale-drawn map for that part of the property that has been so recorded.

SECTION L - LANDFILL OPERATION REQUIREMENTS (Rule 62-701.500, F.A.C.)

Operations Plan, Sarasota County, Florida, CCSWDC, prepared by SCS Engineers, dated Feb.28, 2002

2. L.2.h.(2) – Leachate Management System

a. Collection System -- Please revise this section to refer to the figure requested in comment No. 5.

b. It is indicated that the stormwater in the secondary containment of the leachate storage tank will be tested for specific conductance to determine the appropriate handling procedures. Please revise this section of the Operations Plan to also indicate that the retained stormwater will be managed as leachate if a visible sheen is present.

c. Please provide a site map that indicates which pond will be checked for specific conductance prior to release of stormwater from the secondary containment of the leachate storage tank. Please also indicate on this site map where the stormwater from the secondary containment of the leachate storage tank will be released.

d. Please revise this section of the Operations Plan to indicate that a log will be maintained to document releases of uncontaminated stormwater from the secondary containment of the leachate storage tank (date, specific conductance measurements, sheen observation).

e. Leachate Monitoring – Please provide a revised leachate monitoring plan to reflect review comment Nos. 9.b., and 9.c.

3. L.2.i. – Ground Water Monitoring System: Please provide a revised ground water monitoring plan to reflect the proposed changes as indicated in comment Nos. 13.a. through 13.f.

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4. **L.8.a.** – Leachate Monitoring, Sampling and Analysis: Please revise this section to be consistent with the revisions requested in review comment No. 2.e.

5. **L.8.b.** – Leachate Collection and Removal System: Please provide a leachate sampling figure that reflects Attachment 10, Sheet 14, Detail E of the December 1996 Operations Permit Application for use as a permit figure (no larger than 11 x 14 inches).

6. L.9. - Gas Monitoring Program

a. Please indicate how existing gas probes G-4, G-5 and G-6 will be properly abandoned.

b. Please indicate where existing gas monitoring locations GM-6 and GM-7 are located and why it is considered appropriate that these locations no longer be monitored. Please include these locations on Figure L-1 if it is considered appropriate to maintain these gas monitoring locations.

c. Please revise Figure L-1 to reference the proposed gas probe identification number as $\underline{GP-4t}$.

d. It is indicated that the gas probe locations will monitor subsurface gas migration at the <u>landfill</u> <u>perimeter</u>, but that a gas remediation plan will be submitted to the Department if landfill gas equals or exceeds the LEL at the <u>property boundary</u>. Please note that in the absence of gas probes at the property boundary, the data reported for the existing/proposed gas probes will be used to determine the need to prepare a gas remediation plan.

7. Attachment L-2 – Contaminated Soil Acceptance Criteria: Please revise the last sentence of this attachment to indicate that contaminated soil accepted at CCSWDC would be directly disposed in the lined active landfill cell, not used as initial cover, and <u>not stockpiled</u> at the site unless authorized in writing by the Department.

<u>SECTION M – WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS</u> (Rule 62-701.510, F.A.C.)

8. M.1.a. through M.1.h.(2): Please revise each item in this section of the application form to reference the appropriate section in Appendix A (Ground Water Monitoring Plan Evaluation).

<u>Appendix A – Ground Water Monitoring Plan Evaluation, Central County Solid Waste Disposal Complex,</u> <u>Sarasota County, Florida, prepared by SCS Engineers, dated Feb.28, 2002</u>

Section 2 – Summary of the Ground Water, Surface Water, and Leachate Monitoring Program

 Please revise Note 2 of Table 2-2 to reference the current monitor well identification numbers.
 Please also revise Note 2 to indicate the date of preparation for the referenced document prepared by
 Ardaman & Associates, Inc.

b. It is indicated on Page 2-6 that a composite leachate sample is collected annually from the pump stations located at the landfill cells. Please note that it is not appropriate to collect composite samples for analysis of volatile organic compounds or for measurement of field parameters, and that individual leachate samples shall be required at each pump station of each landfill cell that contains wastes. In the event that the County desires approval from the Department to collect composite leachate samples from the pump stations for the required parameters other than volatile organics and field measurements, please provide a detailed procedure for review. Please provide a revised leachate monitoring plan to reflect these changes and the requirements of Rule 62-701.510(6)(c), F.A.C.



c. Please revise Page 2-6 to indicate that the annual leachate samples shall include analysis of the parameters listed in 40 CFR Part 258, <u>Appendix II</u>.

10. Section 3 - Previous Land Use Effects on Ground Water at the CCSWDC

a. It is indicated that prior use of the property for cattle ranching <u>may</u> have resulted in the <u>possible</u> former use of a cattle dipping vat. It is noted that evidence of a known current cattle dipping vat has not been provided. Please note that in the absence of such a demonstration, the assumption that site-wide occurrences of arsenic in ground water are related to the previous cattle ranching activities cannot be supported.

b. It is indicated that the ground water data compiled for sampling events conducted at wells P-1 through P-14D prior to construction of the landfill at CCSWDC (Appendix A) indicate the occurrence of several inorganics and metals at detectable concentrations. It is further indicated that when these constituents are observed in the CCSWDC detection wells that it is unlikely that the constituents are related to the operation of the facility. However, as measurements for field parameters and results for quality assurance samples were not provided for the "pre-landfill" sampling events conducted during 1993, the representativeness of the samples cannot be evaluated. It is also noted that the relative concentrations reported for the individual parameters for the "pre-landfill" and "post-landfill" sampling events have not been considered. Please note that of the nine parameters detected in the "pre-landfill" sampling events, the occurrences of ammonia, arsenic, chloride and total dissolved solids, at a minimum, bears further evaluation.

11. Section 4 – Water Quality Monitoring Findings

a. Some of the results provided in Appendix A (Ground Water Quality Data) for the "period of record" appear to be inconsistent with the data provided by Sarasota County for the semi-annual ground water sampling events. Please review the following items and revise as appropriate:

- 1) All "post-landfill" wells are missing the organic parameters for April 1999.
- 2) MW-1: Conductivity for November 1999
 - TDS for October 2000

Turbidity for October 2000

MW-2: Nitrate for March 2000

Missing a notation that the well was purged dry and not sampled in April 2001

MW-3: TDS for April 1999

MW-8: TDS for April 1999

Thallium for April 1999

MW-9: Thallium for April 1999

Conductivity for November 1999

MW-10: Thallium for April 1999

Turbidity for October 2000

MW-11: Thallium for April 1999

MW-12: Thallium for April 1999

3) Please revise the shading used on the tables in Appendix A to reflect any changes related to the previous review comment. Please revise the tables in Appendix A so that the shaded cells on the copies provided to the Department are more noticeable.

b. The discussion of regulatory exceedances for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the summary tables provided in Appendix A. Please review the results for the following parameters and revise as appropriate:

1) It is noted that ammonia and arsenic concentrations reported for "post-landfill" sampling events are significantly higher than reported for "pre-landfill" sampling events. It does not appear that the data supports the assertion that ammonia and arsenic concentrations in the current monitor wells are related to previous land use.

2) It is indicated that elevated concentrations reported for antimony and cadmium at MW-8 during April 1999 may have been related to sample turbidity. It does not appear the data supports this link between turbidity and metals concentrations as an even higher turbidity value was reported for MW-8 during September 2001 but concentrations of antimony and cadmium were reported to be below the method detection limit.

3) It is noted that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 are significantly higher than reported for the other detection wells and the background wells. It does not appear that the data supports the assertion that iron is not likely related to operations of the CCSWDC.

4) It does not appear that the data supports the assertion that elevated concentrations of sodium were reported at detection well MW-11.

5) It is indicated that TDS occurs naturally in the surficial aquifer at the facility, however elevated TDS concentrations were not reported at all monitor wells (MW-4, MW-11 and MW-12). The localized occurrence of elevated TDS concentrations is not explained by this assertion.

6) It is indicated that elevated concentrations of vanadium were reported at well MW-4. Please indicate if the text should have referred to well MW-8. It does not appear that the data supports the assertion that the results of vanadium for all the other monitor wells were reported below the detection limit.

c. The discussion of trend analysis provided for some of the parameters appears to be inconsistent with the data provided by Sarasota County for the semi-annual sampling events and the plots provided in Appendix B. Please review the results for the following parameters and revise as appropriate:

1) The discussion does not indicate that ammonia concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

2) It is indicated that the elevated concentrations of chloride, sodium and TDS at well MW-1 suggest the presence of mineralized ground water. However, it appears that insufficient data has been collected to distinguish between mineralized ground water and landfill leachate. The discussion does not indicate why relatively elevated concentrations of chloride, sodium and TDS are limited to the vicinity of well MW-1. The plot of sodium concentrations appears to omit the result for well MW-1 for the May 24, 1994 sampling event.

3) The discussion does not indicate that iron concentrations reported for detection wells MW-8, MW-9 and MW-10 appear to be significantly different than reported for the background wells.

d. Some of the results provided in Appendix C (Leachate Quality) appear to be inconsistent with the data provided by Sarasota County for the semi-annual leachate sampling events. Please review the following items and revise as appropriate:

1) The results for the March 2000 sampling event are included twice while the results for the March 2001 sampling event are omitted.

2) The field parameter measurements should not be reported as "ND" for the Nov. 1999, March 2000 and Oct. 2000 sampling events.

3) Nov. 1999 sampling event – 1,4-dichlorobenzene and 1,2-dichloroethane

4) Nov. 2000 sampling event -- nitrate

e. The discussion provides a comparison of the concentrations of chloride, sodium and TDS in samples collected from well MW-1 with leachate samples, and includes an assertion that the occurrence of these parameters in the leachate does not likely relate to the concentrations reported for the <u>detection</u> wells. This assertion does not appear to be supported for the following reasons.

- A demonstration to distinguish between potentially mineralized ground water and landfill leachate has not been provided (see review comment No. 11.c.2).
- The localized occurrence of potentially mineralized ground water at well MW-1 has not been discussed.
- The impact of potentially mineralized ground water at well MW-1 on ground water quality reported for the detection wells has not been evaluated.
- The "other constituents in the leachate more likely to be detected" have not been identified.

f. Some of the results provided in Appendix D (Surface Water Quality) appear to be inconsistent with the data provided by Sarasota County for the semi-annual surface water sampling events. Please review the following items and revise as appropriate:

1) The results of the March 2001 sampling event for stations B1 and B3 are omitted.

2) The results of the Nov. 1999 sampling event for station B2 were not included in the semiannual report provided by Sarasota County. Please verify that the data included in the summary table for this sampling event is appropriate.

12. Section 5 – Ground Water Levels and Flow

a. It is indicated that the influence of the two extreme results of the ten hydraulic tests conducted on surficial aquifer wells (P-1 and P-4) was reduced by using a geometric mean. Please note that unless there is evidence that the hydraulic tests or the construction of wells P-1 or P-4 are considered to be non-representative of the surficial aquifer, it is not considered appropriate to bias the data set. Please revise the ground water velocity calculations by using an arithmetic mean of all ten hydraulic test results for the surficial aquifer.

b. It is noted that the summary of ground water elevations provided in Appendix E (Water Level Data and Potentiometric Maps) appears to be inconsistent with data provided by Sarasota County for the semi-annual sampling events. Please check the elevation reported at well MW-9 for Nov. 1999.

c. It is noted that contour maps E-2 and E-3 appear to be strongly affected by the elevation reported at well MW-9. Please also note that the semi-annual report prepared by Sarasota County dated January 10, 2002 indicated that an incorrect elevation has been reported at MW-9 since the well was repaired (date of repair not provided). Please verify that the ground water elevations reported for MW-9 reflect the measuring point elevation change and modify the contour maps, gradient calculation, and ground water velocity calculation as necessary.

d. Please indicate if existing monitor wells MW-3, MW-5, MW-6 and MW-7, and any other wells or piezometers are available to be included in routine ground water level measurements. Please indicate if including surface water elevations for the staff gauges located on Figure 2-1 would help to further characterize ground water flow in the surficial aquifer.

13. Section 6 – Adequacy of Monitoring Program

a. The statement that all well screens with the exception of MW-9 intercept the seasonal low water level appears to be inconsistent with Table 6-1, which indicates that the well screens are always submerged at MW-2, MW-4 and MW-12. Please review and revise as appropriate.

b. The statement that a water sample has been able to be collected from each well is inconsistent with the semi-annual reports prepared by Sarasota County. Please note that samples have not been collected from well MW-2 for the April 2001 and September 2001 sampling events. Please refer to the semi-annual report prepared by Sarasota County dated January 10, 2002 that includes a proposal to replace well MW-2 and revise this section as appropriate. The development of an alternate well location and construction details for the proposed replacement well should be submitted for review and approval as part of the permit renewal.

c. It is indicated that wells MW-1, MW-2, MW-4, MW-11 and MW-12 may need to be replaced with wells that are constructed to intercept the water table surface. Please provide alternate well locations, identification numbers, and construction details (including a justification of proposed top and bottom well screen elevations) to meet the requirements of Rule 62-701.510(3)(d)3, F.A.C.

d. It is indicated that the existing detection wells were located more than 50 feet from the edge of the liner due cell layout and access roads, and it is estimated to take less than six months for potential contaminants to reach the edge of the zone of discharge. It is proposed that the zone of discharge be expanded to accommodate the detection well siting constraints. Please note that the zone of discharge is defined by rule, cannot be modified at a District level by letter or permit, but must be authorized by an alternate procedure. Please revise this section to either relocate the detection wells closer to the edge of the liner or increase the ground water sampling frequency to comply with the intent of Rules 62-701.510(3)(a) and (3)(b), F.A.C.

e. It is indicated that termination of monitoring at the surface water stations other than B2 and B4R should be considered. Please revise this section to indicate if the County will request a reduction in the number of surface water monitoring stations.

f. As indicated in review comment No. 11.e., the Department does not wholly accept the assertion that leachate does not appear to be contributing to contaminants found in the surficial aquifer. Please revise this section to be consistent with the revisions to leachate sampling presented in Section 2 of the Ground Water Monitoring Plan Evaluation regarding sampling locations, sample compositing, sampling frequency and parameters.

14. Section 7 – Landfill Design and Operation Effectiveness: As indicated in review comment Nos. 11.b. and 11.c., the Department does not wholly accept the assertion that parameters reported in the detection wells have not resulted from landfill activities. Please revise this section to reference the trends reported for ammonia (elevated at MW-9), arsenic (elevated at MW-9, increasing at MW-8), cadmium (elevated and erratic at MW-8), iron (increasing at MW-8, elevated at MW-9), lead (increasing at MW-8), and vanadium (increasing at MW-8).

Morris, John R.

From:	Bob Westly [rwestly@scsengineers.com]
Sent:	Thursday, March 28, 2002 8:35 AM
То:	Morris, John R.
Cc:	Ta- John Banks

Subject: Sarasota Central County Disposal Complex, Groundwater Monitoring Plan Evaluation, Table 5-1

John,

As we discussed yesterday, the subject report referenced Table 5-1 in Section 5 but did not include the table. Table 5-1 was prepared for the draft report but was removed from the final report in favor of simply providing only the average value of hydraulic conductivity. Although the table was removed, the original text referencing the table was inadvertently left in the section. As you requested, attached to this email is Table 5-1. Please let us know if you need further information.

Thanks for the opportunity to provide this information in lieu of exchanging additional written correspondence!

Bob Westly, P.G. Senior Hydrogeologist Project Director EMS Services Manager rwestly@scsengineers.com 813-621-0080, ext. 320

TABLE 5-1. HORIZONTAL HYDRAULIC CONDUCTIVITY DATA, CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX, SARASOTA COUNTY, FLORIDA

Test Monitoring	Horizontal Hydra	ulic Conductivity	Well Depth	Aquifer	
Wells ¹	$(cm/sec)^2$	(ft/day) ³	(feet BLS ⁴)	Ацинст	
P-1	5.6 x 10 ⁻²	159	17.6	Surficial	
P-2S	1.9 x 10 ⁻³	5.38	13.5	Surficial	
P-2D	1.9 x 10 ⁻²	53.8	79.1	Intermediate	
P-4	8.9 x 10 ⁻⁴	2.52	15.3	Surficial	
P-6	3.5 x 10 ⁻³	9.92	18.1	Surficial	
P-7S	1.7 x 10 ⁻³	4.82	18.3	Surficial	
P-8	1.0×10^{-3}	2.83	18.1	Surficial	
P-10	3.3×10^{-3}	9.35	13.3	Surficial	
P-13	3.9 x 10 ⁻³	11.1	18.4	Surficial	
P-14S	7.2×10^{-3}	20.4	18.3	Surficial	
P-14D	4.6×10^{-3}	13.0	94.2	Intermediate	
P-16	2.4 x 10 ⁻³	6.80	18.3	Surficial	

Notes:

- 1. Ardaman & Associates, Inc., "Geotechnical Evaluation, Hydrogeological Survey and Groundwater Monitoring Plan, Sarasota Central Landfill Complex, Sarasota County, Florida", March 10, 1992.
- 2. cm/sec = centimeters per second.
- 3. ft/day = feet per day.
- 4. BLS = below land surface.

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Facility Name:
Type of Facility: <u>CILF</u>
Permit Number: Issue Date:
Copy of Permit attached:
Document submitted in compliance with permit condition.
Document subject to permit timeclock. 445
Day 1: 3/1/02
Day 30: 3/30/02
PATS sheet attached:
Enforcement Case/CO/NOV/ associated with this site:
Files and related documents can be found AttActes in Filts-
Please review and comment on the technical aspects of the attached document as you deem appropriate. In order to maintain progress with the permit review, please provide comments within 30 days or by MARLH 25 the .
Comments!
Module
Attachments



Operation Permit Renewal Application Central County Solid Waste Disposal Complex Sarasota County, Florida



SCS ENGINEERS

Prepared for:

Sarasota County Environmental Services Solid Waste Operations 4000 Knights Trail Road Nokomis, Florida 34275

Prepared by:

SCS Engineers 3012 U.S. Highway 301 N., Suite 700 Tampa, Florida 33619 (813) 621-0080

> File No. 09201010.01 February 28, 2002

SOUTHWEST DISTRICT FDEP

- cont

<u>\</u>___

Solid Waste Program Permitting Application

New Site

Site Address:	
Site Address:	
County:	
Type/Subcode:	

Existing Site

Site ID:	1305-12-	- 002			
Project Name:	CCSWDC	- LF	ODS	REA	JEWAL
Type/Subcode:	50/01		<u> </u>	· ·	
Fee Submitted:	10,000	Croo	orrect	() incorrect
Fee Refund \$		Fee Request \$	/		

Related Party

Role:	Applic ANT-
Name:	GARY BENNETT
Company:	SARAFSOFA COUNTY
Street:	4000 KNIGHTS TRAIL ROAD
City:	Nokomis FL
Zip Code:	34275
Phone:	(94) 4862600

Distribution Date:	·				
Fee Checked By:	Kim	FORD	Date:	3/4/	02

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

Please	Type	or	Print
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A. GENERAL INFORMATION

1. Type of facility (check all that appl	y):
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	<pre>[v] Disposal [v] Class I Landfill [] Ash Monofill [] Class II Landfill [] Asbestos Monofill [] Class III Landfill [] Industrial Solid Waste [] Other Describe:</pre>
	<pre>[] Non-Disposa] [] Incinerator For Non-biomedical Waste [] Waste to Energy Without Power Plant Certification [] Other Describe:</pre>
NOTE:	Waste Processing Facilities should apply on Form 62-701.900(4), FAC; Land Clearing Disposal Facilities should notify on Form 62-701.900(3), FAC; Compost Facilities should apply on Form 62-701.900(10), FAC; and C&D Disposal Facilities should apply on Form 62-701.900(6), FAC
2.	Type of application: [] Construction [] Operation [] Construction/Operation [] Closure
З.	Classification of application: [] New [] Substantial Modification [] Renewal [] Intermediate Modification [] Minor Modification
	Central County Solid Waste Disposal Complex
4.	Sof8-299180 County: Sarasola
£.	Facility location (main entrance): North End Knights Trail Road
7.	Location coordinates: 1-4 & Section: <u>9-16</u> Township: <u>38S</u> Range: <u>19E</u>
	Latitude: <u>27</u> ° <u>12</u> ' <u>00</u> " Longitude: <u>82</u> ° <u>23</u> ' <u>00</u> "

					Solid Waste Operations				
8.	Applicant name (0	4000 Knights Trail	Road		Nokomis	FL	34275		
	Mailing address:	Street	or P.O.	Box	City	State	e Zip		
	Contact person: _	Gary F	Bennett		Telephone:	(_941)	486-2600	<u>.</u>	
	Solid Waste Operations Manager								
	11016:	gbennett@co.sarasota.fl.us							
					E-Mail addr	ess (if a	available)		
9.	Authorized agent/	Consultant: S	CS Enginee	ers					
	Mailing address:	3012 U.S. Highwa	y 301 Nort	h, Suite 7	700 Tampa	FL	33619		
	Marring address	Street	or P.O.	Box	City	Stat	e Zip		
	Contact person:	John	Banks		Telephone:	(<u>813</u>)	621-0080		
			Р	roject Ma	anager				
	Title:				jbanks(@scsengineer	rs.com		
				• •	E-Mail add	cess (if	available)		
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16.	Anticipated con	struction star	ting and	l compl	etion dates:				
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± · •	V	ds ³ /day 8	50	tons/d	ay	gallor	ns/day		

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T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of _____

Sarasota County

is aware that statements made in this form and attached

information are an application for a Renewal of Operation 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.

Batto

Signature of Applicant or Agent

Gary Bennett

Name and Title (please type)

gbennett@co.sarasota.fl.us

E-Mail address (if available)

4000 Knights Trail Road						
Mailing Address						
Nokomis, FL 34275						
	City, State, Zip Code					
(941)	486-2600					

Telephone Number

Date: 3-1-02

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

 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.

anature

John A. Banks, P.E., Project Manager

Name and Title (please type)

Florida Registration Number (please affix seal)

SCS Engineers, 3012 US Highway 301 N., Suite 700

Mailing Address					
Tampa, FL 33619					
City, State, Zip Code					
jbanks@scsengineers.com					
E-Mail address (if available)					
(813) 621-0080					
Telephone Number					
Date: 2-28-02					



SARASOTA COUNTY "Dedicated to Quality Service"

February 28, 2002

Kim B. Ford, P.E. Solid Waste Section Florida Department of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, FL 33619-8318 D.E.P. MAR 0 1 2002 Southwest District Tampa

Re: Operating Permit Renewal Central County Solid Waste Disposal Complex

Dear Mr. Ford:

Please find attached to this letter four copies of Sarasota County's application for permit renewal of the operating permit at the Central County Solid Waste Disposal Complex. Enclosed also is a check in the amount of \$10,000. Onyx Waste Services, our landfill contract operator, is contemplating a change in the fill sequence plans which we would review and forward to you should it change from the existing plan. We are sensitive to the timeframe for review and would send it to you shortly if a change were to take place.

Thank you for your assistance in this matter.

Sincerely,

March I Butt

Gerald L. Bennett Solid Waste Operations Manager

Attachments

cc: Robert J. Butera, P.E., FDEP - Tampa

D.E.P. MAR 0 1 2002 Southwest District Tampa

\\CCSWDF\VOL1\USER\shared\projects\Central County Solid Waste Disposal Complex\FDEP\Correspondence\FDEP - Ford - February 28, 2002.doc

ENVIRONMENTAL SERVICES, Solid Waste Operations • 4000 Knights Trail Road, Nokomis, FL 34275 Tel 941-486-2600 • Fax 941-486-2620

(See Board Algherstreesed) Proper

MAR 0 1 2002 SOUTHWEST DISTRICT

FLUCION DEPARTMENT OF ENVIRONMENTAL PROTECTION

Operation Permit Renewal Application Central County Solid Waste Disposal Complex Sarasota County, Florida



SCS ENGINEERS

Prepared for:

Sarasota County Environmental Services Solid Waste Operations 4000 Knights Trail Road Nokomis, Florida 34275

Prepared by:

SCS Engineers 3012 U.S. Highway 301 N., Suite 700 Tampa, Florida 33619 (813) 621-0080

> File No. 09201010.01 February 28, 2002

February 28, 2002

D.E.P.

MAR 0 1 2002 Southwest District Tampa

OPERATION PERMIT RENEWAL APPLICATION CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX SARASOTA COUNTY, FLORIDA

Prepared for:

Sarasota County Environmental Services Solid Waste Operations 4000 Knights Trail Road Nokomis, Florida 34275

Prepared by:

SCS Engineers 3012 U.S. Highway 301 North, Suite 700 Tampa, Florida 33619 (813) 621-0080

> File No. 09201010.01 February 28, 2001









Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

January 22, 2002

Mr. Gary Bennett Sarasota County Solid Waste Operations 4000 Knights Trail Road Nokomis, FL 34275

> Re: Yard Trash Mulch and Soil Mixture for Initial Cover Permit No.: S058-299180, Sarasota County

Dear Mr. Bennett:

The Department has no objection to the use of a yard trash mulch and soil mixture for initial cover subject to the following conditions:

- 1. A sample of the mixture shall be screened periodically and upon request by the Department to confirm that 100% passes a 2" screen, 85% passes ¾" screen, and 70% passes a ¾" screen; and
- 2. The mixture shall be applied in a 6 inch compacted layer.

If any inspections disclose problems with use of the cover mixture, such as failure to maintain normal operation and prevent ponding and leachate discharge outside the active disposal area, approval may be discontinued. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab

cc: Paul Wingler, P.E., Sarasota County Robert Butera, P.E., FDEP Tampa

"More Protection, Less Process"

Printed on recycled paper.

FLORIDA Envir	Department of onmental Protection	on i
Jeb Bush Governor	Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619	David B. Struhs Secretary
DATE: 11.60		
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Kim Ford	<u>Affiliation</u>	B13 744 bioox 362
John Marris	DEP-SOLID WASTE SECTION	V X336
_ Gun, Benett	Somerta County	941-486-2600 ×102
John Banks	SCS Fagineers	(813) 621-0080
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"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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SARASOTA-LE NOV6,2001 - PREMPPL. FOR OPS PERMOT RENEMAL JM - GW disorsion GW map ? EXCELOANCES NOTED MEALS EXCEPTANCES WEED GIW MAPS EAR ALL PAST RUM TS WHAT TO DO FOR EXCELOIANCES & Any NEW WELLS missinh sampling - Do with !! Summary of Wells, screens FR-THSEE Inspection, Filt DISCUTSING OPS plan DUIJSIED AGENDA ITEMS DISCUSSION OTHER ITEMS - SEE AITACHED

File No. 09201010.01

Sarasota County CCSWDC **Operations Permit Renewal, Pre-application Meeting** November 6, 2001

Discussion Agenda

The following items within the operations plan are proposed for revision: I.

- (1) Pp. 5-5. Delete requirement to get permission for each contaminated soil load.
- 2) Pp 5-6. Method and sequence of filling waste, revert back to the up to 15ft-lift height. Include language to allow for short-term deviations from fill gauging plans.
- \checkmark 3) Pp 5-7. Revise description of deployment of new cell cover to allow flexibility of how much to deploy.
 - 4) Pp. 5-12 and 5-24. Revise discussion of offsite treatment of leachate to delete reference to onsite treatment option. Add Bee Ridge WWTP as primary disposal location and include the possibility of other options.
 - 5) Pp.5-12. Revise testing requirement of stormwater in secondary containment area of leachate storage tank to match current approved practice.
 - 6) Pp. 5-19. Initial Cover Include description of approved materials included in permit. Add shredded yard waste for initial cover during rainy weather. ttook for policy i Lan RD.
 - 7) Pp. 5-21. Revise litter fencing requirements to replace large movable litter fence at working face with a litter fence at the perimeter of the disposal area.
- \sim 8) Pp. 5-21. Revise Figure 5-2, delete construction of additional berm, set back litter fence 20 ft, use original fence detail using 2 x 4-inch posts.
- 9) Pp. 5-21. Erosion Control Procedures Revise description to specifically allow for stormwater runoff from initial cover areas provided that the initial cover meets the requirements of the Rule.
- 10) Pp. 5-27. Revise LFG Monitoring to include two view buildings; C&D building and County Maintenance building.
- 11) Pp. 5-30. Dust Control Include use of leachate per DEP letter.
- II. **FDEP** Issues
- Submittal Schedule III.

SANASOTA Engineering Report-Reference or provide on EDps Plan Stparate, not repeated wergin report SEW OF Fill DRAWING -fullsize - (cont Far closure pramit Dotopo SNEURY => SEE DJJ RAE REJIEN PERMIT AND CONFIRM COMPLIANCE





Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

October 19, 2001

Mr. Chris Bedell, P.E. The David J. Joseph Company P.O. Box 1078 Cincinnati, OH 45201-1078

> Re: Kingsway Road Landfill - Phase IV Pending Modification #30456-004, Hillsborough County Permit No.: 30456-003-50

Dear Mr. Bedell:

This is to acknowledge receipt of the additional information in support of the request for a permit modification, received September 21, 2001, to allow operation of Phase IV.

This letter constitutes notice that a permit modification will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your request for a permit modification remains incomplete. This is the Department's 2nd request for additional information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the request for a solid waste permit modification [Chapters 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

- 1. 62-701.320(15). Revisions to Section 3.0 of the Operations Report to include a description of the training plan to demonstrate that compliance with the training requirements will be maintained are requested.
- 62-701.500. Revisions to Section 4.2 of the Operations Report to describe the components of design and operation of the second leachate storage tank are requested.

October 19, 2001 Page Two

Mr. Chris Bedell The David J. Joseph Company

- 62-701.500(8). Revisions to Section 5.0 to describe and reference the new leachate reporting forms as part of Table 1, 3. including the monthly worksheet and summary for recording and reporting separate quantities of leachate from each stage in Phase IV are requested.
- Revised Figures 10 through 21 to include: 1) detail for the east side access into Phase IV; 2) temporary access into each segment 4. of Phase IV; and 3) the permanent access road along the west side slope.

Compliance with Current Permit Conditions.

- Permit #30456-001-SC. Supporting information is requested as 5. follows:
 - Certification of construction completion, signed and sealed by a professional engineer, for the project and new a)
 - leachate storage tank; and a report assessing the effectiveness of the new Phase IV
 - leachate collection systems, and associated pumps and b) piping.
- Permit #30456-003-SO. Supporting information is requested as 6.
 - a site plan (a current topographic map with contours is follows: a)
 - suggested) with the location markers for the top edge of the liner and a cross-section to show the setback distance for waste placement to allow for future closure (to connect the future top liner to the bottom liner at the anchor trench); and
 - confirmation by a professional engineer that all waste along outslopes is no steeper than 3 to 1 and that waste is b) adequately setback from the liner anchor trench along the perimeter of the entire lined and filled disposal areas.

Please provide all responses that relate to engineering required for construction or operation, signed and sealed by a professional engineer. All descriptions of operational procedures provided as part of responses should be included as revisions to the Operations Plan. Revised replacement pages and figures should be provided as originals, with the date of revision on each.
Mr. Chris Bedell The David J. Joseph Company October 19, 2001 Page Three

"NOTICE! Pursuant to the provisions of Section 120.60, F.S., if the Department does not receive a response to this request for information within 90 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you receive this letter, responding to as many of the information requests as possible and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table a Final Order of Denial for lack of timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant can reapply as soon as the requested information is available."

Please submit your response to this letter as one complete package. On all future correspondence, please include Robert Butera on distribution. If you have any questions you may call me at (813) 744-6100, extension 382.

sincerely,

Kim B. Ford, P.E. Solid Waste Section Division of Waste Management

KBF/ab

cc: Dennis Syrja, P.E., URS -Tampa Glenn Armstrong, P.E., URS -Cincinnati

- A Robert Butera, P.E., FDEP Tampa
- * Susan Pelz, P.E., FDEP Tampa Ron Cope, EPCHC



Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

July 3, 2001

Mr. Gary Bennett Sarasota County Solid Waste Operations Division 4000 Knights Trail Road Nokomis, FL 34275

Re: Potentially Impacted Stormwater, Phase 3 Central County Solid Waste Disposal Complex DEP Permit No. SO58-299180, Sarasota County

Dear Mr. Bennett:

The purpose of this letter is to follow up the verbal notification received by the Department yesterday regarding the options for handling potentially impacted stormwater at the referenced facility. It is the Department's understanding that the interceptor berm located around the working face in Phase 2 was breached during rainfall events that occurred last week and that potentially impacted stormwater flowed into unused Phase 3. Don Shaulis also indicated that the pump in Phase 3 has been taken out of service until it has been determined how the potentially impacted stormwater contained in this phase will be handled.

Based on the information described above, the Department offers two options for handling the potentially impacted stormwater contained in Phase 3, as follow:

- 1. Pump the potentially impacted stormwater contained in Phase 3 through the leachate collection system to the leachate storage tank for treatment; or
- 2. Pump the potentially impacted stormwater contained in Phase 3 to the stormwater system upon receipt of written authorization from the Department. A <u>one-time</u> discharge event will be considered by the Department subject to the following conditions:
 - a. One sample that is representative of the potentially impacted stormwater contained in Phase 3 shall be analyzed for the parameters listed in Rule 62-701.510(8)(b), F.A.C., <u>plus</u> chloride, sodium, and total ammonia. The method detection limits reported by the laboratory must be low enough to allow comparison with the standards for Class III freshwaters listed in Chapter 62-302, F.A.C. For those parameters with surface water standards that are lower than the practical quantitation levels established by the Department, the laboratory must report detection limits at the practical quantitation levels.
 - b. Samples for field measurements of pH, conductivity, and turbidity of the liquids from each of Phase 3, Phase 4, Phase 5, and Pond No. 1 shall be taken (Pond No. 1 is stormwater pond located northwest of Phase 3).
 - c. Results of the laboratory analysis of the sample collected from Phase 3 and the field measurement of the samples collected from Phase 3, Phase 4, Phase 5, and Pond No. 1 shall be provided to the Department.
 - d. The potentially impacted stormwater contained in Phase 3 must: meet the standards for Class III freshwaters established in Chapter 62-302, F.A.C.; not exhibit oily sheen; have a specific conductance that is not more than 50% above the specific conductance in Pond No. 1 or does not exceed 1,275 μ mho/cm, whichever is greater; and, have a turbidity that is not more than 29 NTU above the water in Pond No. 1.

Mr. Gary Bennett July 3, 2001 Page 2 of 2

- e. The discharge from Phase 3 shall commence within 24 hours of receipt of Department authorization, and shall be completed within 96 hours of initiation. The quantity of liquid discharged to the stormwater system during the discharge shall be recorded and provided to the Department.
- f. The water level in Pond No. 1 shall be observed and recorded during the discharge of potentially impacted stormwater from Phase 3. If water is not released from Pond No. 1 during the discharge of potentially impacted stormwater from Phase 3, additional sampling shall not be required. If water is released from Pond No. 1 during the discharge of potentially impacted stormwater from Phase 3, collection of samples from station Nos. B2 and B4R shall be required for analyses of the parameters listed in Rule 62-701.510(8)(b), F.A.C., plus chloride, sodium, and total ammonia. The samples from station Nos. B2 and B4R, if required, shall be collected immediately following the termination of pumping from Phase 3.

Upon approval of all the information listed in option Nos. 2.c., the Department will provide written, conditional authorization to discharge the potentially impacted stormwater from Phase 3 to the stormwater system. Please note that if <u>any</u> of the requirements listed in option No. 2.d., are not met, the Department shall require the potentially impacted stormwater contained in Phase 3 to be pumped through the leachate collection system to the leachate storage tank for treatment. Other than the conditional authorization for a <u>one-time</u> discharge to the stormwater system described herein, the requirements of Specific Condition No. 15 of the referenced permit and of the Department's letter dated September 9, 1999 (attached) shall remain in effect.

As required by Specific Condition No. 28, please provide written notification to the Department that describes the failure of the interceptor berms, remedial measures to be taken including the methods to prevent recurrence, and the time needed for repairs. This written notification shall be submitted to the Department by July 9, 2001.

Please contact me at (813) 744-6100, extension 336, if you have questions about this letter.

Sincerely,

Dolul Morros

John R. Morris, P.G. Solid Waste Section Southwest District

Attachment

cc: Don Shaulis, Sarasota County Solid Waste Operations Robert Butera, P.E., FDEP Tampa Kim Ford, P.E., FDEP Tampa





Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

September 9, 1999

Mr. Gary Bennett, Sarasota County Solid Waste Director Central County Solid Waste Disposal Complex 4000 Knights Trail Road Nokomis, Floida 34275

Re: Leachate Impounded on Rain Cell Cover - Central County Solid Waste Complex

Dear Mr. Bennett:

The Department has reviewed the sampling analysis of the impounded leachate on the rain cell cover within Cell No. 2 of the Central County Solid Waste Complex submitted by Sarasota County. The sampling analysis does not provide results for mercury which was present in the leachate sample at a concentration which exceeded ground water and surface water standards. In addition the Department does not have the authority to authorize the discharge of leachate. Leachate as defined by 62-701.200(59) means liquid that has passed through or emerged from solid waste and may contain soluble, suspended or miscible materials. The Department therefore requires that the impounded leachate be discharged to the leachate collection system.

The Department was informed that this breach of the berm has been the second occurrence of a leachate discharge. As a result of the Department's inspection on September 1, 1999 it appears the facility is not operating in accordance with Section 5, 7.g. or 7.j. of the Operations Plan. Section 5, 7g. specifically states that intermediate cover "will be applied within 7 days if final cover or an additional lift is not applied within 180 days. It also states that "Intermediate cover areas that will not be landfilled or covered with final cover in 6 months will be sodded (external slopes) or seeded and mulched (internal and top slopes) to avoid slope erosion". I had discussed with you the requirement for a second berm, which is already included in Section 5, 7.j. of the Operations Plan. Without going into detail on this matter, I have attached a copy of the applicable sections of the Operations Plan that the secondary berms required in accordance with the Operations Plan be installed within 10 days of receipt of this letter and the Department be notified when the berm is constructed. All leachate that may be impounded between the berms may be recirculated only over the active area of the landfill and shall not be recirculated over intermediately closed external slopes.

If you have any questions concerning this letter or further information relating to the operations plan please contact Kim Ford at 813-744-6100, Ext. 382.

Sincerely,

Robert J. Butera, P.E. Solid Waste Manager Southwest District

Attachment

cc:

Kim Ford, P.E. , FDEP John Morris, P.G., FDEP

"Protect, Conserve and Manage Florida's Environment and Natural Resources"





David B. Struhs Secretary

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

January 26, 2001

Mr. Paul Wingler, P.E. Solid Waste Operations Sarasota County 4000 Knights Trail Road Nokomis, FL 34275

> Re: CCSWDC - Stormwater Removal from Tank Permit #S058-299180, Sarasota County

Dear Mr. Wingler:

The Department has no objection to the stormwater removal from the secondary containment of the tank as described in your January 8, 2001 letter subject to the following conditions:

- 1. Stormwater in the secondary containment shall be inspected to verify the absence of color and oily sheen. Stormwater with visible color or oily sheen shall not be discharged to the stormwater network but pumped to the primary leachate tank.
- 2. Specific conductance of the stormwater in the secondary containment shall not be more than 50% above the specific conductance of water in the nearest downstream stormwater pond or shall not exceed 1,275 umho/cm, whichever is greater.
- 3. Turbidity of the stormwater in the secondary containment shall not be more than 29 NTU above the turbidity of water in the nearest downstream stormwater pond.
- 4. Results of visual inspection for color and oily sheen and field measurements of specific conductance and turbidity shall be documented for each pumping event.
- 5. Leachate records shall be adjusted and notated for each stormwater removal event to reduce the amount of rainfall into the primary leachate tank that will be reported as leachate.
- If you have any questions please call me at (813) 744-6100, extensions 382.

Sincerely, Kim B. Ford, P.E.

Solid Waste Section Division of Waste Management

KBF/ab

cc: Gary Bennett, Sarasota County Don Shaulis, Sarasota County Robert Butera, P.E., FDEP Tampa JUMJohn Morris, P.G., FDEP Tampa

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Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

January 18, 2000

Mr. Gary Bennett Sarasota County Solid Waste Operations 4000 Knights Trail Road Nokomis, FL 34275

> Re: Leachate Reuse at SCSWDC Permit #S058-299180, Sarasota County

Dear Mr. Bennett:

The Department has no objection to the reuse of leachate for dust control (not re-circulation) on active areas as described in your January 12, 2000 letter and operations plan for leachate reuse via truck mounted spraying (attached), subject to the conditions in these referenced letters and attachments. The reuse of leachate for dust control at SCSWDC is considered experimental and over-application should be avoided.

If any inspections disclose problems with this leachate reuse, such as failure to maintain normal operation and prevent ponding and leachate discharge outside the active disposal area, approval may be discontinued. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerelv, Kim B. Ford, P.E.

Solid Waste Section Division of Waste Management

KBF/ab Attachments

cc: Paul Wingler, P.E., Sarasota County Robert Butera, P.E., FDEP Tampa Steve Morgan, FDEP Tampa

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



D.E.P. JAN 14 2000 Southwest District Tamps

January 12, 2000

Kim B. Ford, P. E. Florida Department of Environmental Protection 3804 Coconut Palm Drive Tampa, Florida 33619-8318

Re: Central County Solid Waste Disposal Complex Leachate Reuse

SARASOTA COUNTY "Dedicated to Guality Service"

Dear Mr. Ford:

Our Contract Landfill Operator, Waste Management has requested leachate reuse as a dust control agent. They have submitted the attached "Operations Plan for Leachate Reuse via Truck Mounted Spraying" which outlines their proposed activity.

We would require the following additional conditions if the proposed activity is acceptable to the Department.

- a) Leachate reuse is subject to the acceptance of the Sarasota County Solid Waste Operations Manager or his designee and will be suspended or terminated at his discretion.
- b) The leachate reuse management system will operate to prevent the exposure of leachate to the stormwater control network.
- c) The truck used for leachate hauling must be thoroughly cleaned before being used for any other watering purpose.
- d) The truck tank must be free of leaks. If a leak is discovered the truck must be decommissioned for the purpose of repair.
- e) Use of the leachate for dust control must not result in ponding within the authorized operation area of the landfill cell(s).

Sincerely,

The end B. to

Gerald L. Bennett Solid Waste Operations Manager

GLB:lh

Attachment

- c: Anita Largent, General Manager, Solid Waste
 - Stephen Barton, WM/Englewood Disposal Company Robert J. Butera, P.E., Florida Department of Environmental Protection, Tampa Ed Norris, Sarasota Landfill Management

CCSWDF/VOL1/USER/shared/projects/Central County Solid Waste Disposal Complex/Landfill Operator Correspondence/FDEP K. Ford - Leachate Reuse. Joc

ENVIRONMENTAL SERVICES, Solid Waste Operations • 4000 Knights Trail Road, Nokomis, FL 34275 Tel 941-486-2600 • Fax 941-486-2620



December 6, 1999

SOLID WASTE OPERATIONS

JAN - 4 2080

RECEIVED

Operations Plan for Leachate Reuse via Truck Mounted Spraying

Leachate reuse will be employed for dust control and as a supplemental method to manage leachate. The reuse of leachate involves spraying small quantities of leachate from a spray bar mounted on the rear of a tank-truck onto active fill areas of the landfill. This approach has been used successfully at numerous Class I landfills in Florida. The advantages of this method are the reduction of leachate by evaporation, the promotion of the decomposition of organic matter in the landfilled refuse and dust control.

The landfill operation crew will monitor the rate of leachate application, soil moisture conditions and the specific landfill areas used so that leachate application does not generate run-off. This form of leachate reuse should be acceptable as a supplementary means of leachate management. Leachate may be applied under the following conditions:

- Leachate may only be sprayed on active, bermed fill areas, including the working face, and areas with the required six (6) inches of initial cover.
- Leachate may not be sprayed on areas with intermediate or final cover.
- At all times areas receiving leachate must be controlled to prevent run-off from entering the stormwater system.
- Leachate may not be sprayed when the application area is in a saturated condition.
- The application rate of leachate should be such that leachate does not accumulate on the landfill surface, nor infiltrate quickly into the covered refuse.
- Leachate should not be sprayed at the end of the day on the initial cover of the working face or other areas. Spraying should be done early in the morning after any dew evaporates and continue until early afternoon or until all available areas have been utilized.

The Site Manager will record daily the gallons of leachate sprayed per this method and provide this information to the County on a weekly basis. Leachate reuse will be conducted in strict compliance with these procedures.