

Stock Island Landfill Gas and Water Sampling Brief

Upon request, the Utilities Department looked at the gas and water sampling activities at or around the Stock Island Landfill. We were also asked to provide any first-hand knowledge of other landfill mining or reuse projects that might give insight to the project.

1) Landfill Gas Review

What is Landfill Gas?

- **Landfill gas is composed of a mixture of hundreds of different gases.** By volume, landfill gas typically contains *45% to 60% methane* and *40% to 60% carbon dioxide*. Landfill gas also includes small amounts of nitrogen, oxygen, ammonia, sulfides, hydrogen, carbon monoxide, and *nonmethane organic compounds (NMOCs)* such as trichloroethylene, benzene, and vinyl chloride.
- **How is landfill gas formed? Decomposition, Volatilization and Chemical Reactions**
 - **Bacterial decomposition.** Most landfill gas is produced by bacterial decomposition, which occurs when organic waste is broken down by bacteria naturally present in the waste and in the soil used to cover the landfill. Organic wastes include food, garden waste, street sweepings, textiles, and wood and paper products.
 - **Volatilization.** Landfill gases can be created when certain wastes, particularly organic compounds, change from a liquid or a solid into a vapor. This process is known as volatilization. *NMOCs* in landfill gas may be the result of volatilization of certain chemicals disposed of in the landfill.
 - **Chemical reactions.** Landfill gas, including *NMOCs*, can be created by the reactions of certain chemicals present in waste. For example, if chlorine bleach and ammonia come in contact with each other within the landfill, a harmful gas is produced.

How long will the landfill produce gas?



- Gas starts producing in the first few years after it is buried.
- Peak production is 5-7 years after buried.
- Almost all gas is produced within 20 years of being buried.
- Small quantities of gas may continue to be emitted for 40-50 years. We are close to 30 years since the last waste was added to the Stock Island Landfill.
- The amount of organic material in the waste is an important factor in how long gas production lasts. The more organic waste, the longer the landfill produces gas.

Hydrogen Sulfide (H₂S) Facts

What is hydrogen sulfide?

- Hydrogen sulfide is a heavier-than-air, flammable gas with a characteristic rotten egg odor. Individuals can detect this odor when hydrogen sulfide gas is present at very low levels. Each individual has a different sensitivity to the odor.

Hydrogen Sulfide (H₂S) Facts

- Hydrogen sulfide occurs both naturally and from industrial processes. Natural sources include crude oil, natural gas, salt marshes, sulfur springs, and swamps. Industrial sources include manure handling operations, oil refineries, pulp and paper mills, tanneries, wastewater treatment plants, and solid waste landfills.
- Hydrogen sulfide may account for up to 1 percent by volume of landfill gas emissions, although typically the percentage is much less. The formation of hydrogen sulfide within a landfill depends on certain conditions including moisture content, temperature, and pH; anaerobic conditions (lacking oxygen); and a sulfate source.

Hydrogen Sulfide (H₂S) Facts

What types of wastes contribute to hydrogen sulfide formation in landfills?

- Gypsum wallboard, a component of Construction and Demolition Debris (CDD), is a major contributor to hydrogen sulfide formation in landfills.
- CDD and crushed CDD (fines), containing gypsum, are a significant source of sulfate. Other types of waste streams that may contain sulfate include wastes from pulp and paper mill bleaching and coating operations and sludges from wastewater treatment plants.

Hydrogen Sulfide (H₂S) Facts

How do landfills check for hydrogen sulfide?

- Different methods can be used to check for hydrogen sulfide and are selected based on site-specific needs. Hydrogen sulfide can be detected and measured with portable or stationary continuous air monitors. Air sampling and subsequent laboratory analysis can also be conducted.

Hydrogen Sulfide (H₂S) Facts

How can hydrogen sulfide be controlled in the landfill environment?

- Hydrogen sulfide and other landfill gases can be controlled by installing an active gas management system that pulls out and burns the landfill gas. Also, hydrogen sulfide emissions can be reduced by decreasing the amount of sulfate containing wastes entering the landfill, and by applying certain cover materials such as soil amended with lime and fine concrete.

Hydrogen Sulfide (H₂S) Facts

Are there Federal Standards and/or Exposure Limits?

- OSHA and NIOSH have established workplace limits for hydrogen sulfide. OSHA established an eight-hour permissible exposure limit-time weighted average (PEL-TWA) of 10 ppm and a 15-minute short-term exposure limit (PEL-STEL) of 15 ppm for exposed workers. NIOSH established a limit of 300 ppm as the immediately dangerous to life and health concentration.
- EPA health scientists unanimously recommend a weighted average of no more than 15 ppb at the residence or 70 ppb at the property line. EPA set the safe exposure level at 0.00014 ppm to protect sensitive people such as children and the elderly.

2) Review of complaints about Stock Island Landfill

The City requested information about any complaints or investigations of the City of Key West Stock Island Landfill from the Florida Department of Health in Key West. Below is the email response and the complaint received:

From: Floyd, Caitlin M

Sent: Tuesday, February 5, 2019 8:53 AM

To: Kerr, Alison M <Alison.Kerr@flhealth.gov>; Rachal, James M <James.Rachal@flhealth.gov>

Cc: Stayton, Donna N <Donna.Stayton@flhealth.gov>

Subject: RE: Sanitary Nuisance Records - Mt. Trashmore

Alison,

I have attached the only complaint we had on file.

The only other thing I know about the landfill is that the schools had monitors in them to detect landfill gasses. It was regulated by either the DEP or EPA but this past year I know the County was trying to stop being required to monitor at both Poinciana and Gerald Adams because there hadn't been any detections in a few years. I'm not sure what ended up happening with that. I can try to find the lady's contact information who was monitoring that if you need it.

This is the only complaint filed with the FDOH that we could find.

Next we followed up with FDEP about the schools that were being monitored were actually Poinciana and HOB, but we were informed due to the construction of a new Gerald Adams school buildings on the site adjacent to the Stock Island Landfill there had been environmental sampling, including gases, of the site.

44-99-215494

Complaint Number: 53-13
Date Reported: 11/12/13

STATE OF FLORIDA
MONROE COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH

COMPLAINT INVESTIGATION

Complaint reported by: [redacted] (anonymous) Phone # [redacted]
Name of business/person: Transfer Station Dump Site
Address of complaint: 5401 College Rd SE
Directions: _____
Complaint: Transfer Station is being demolish (buildings etc) & excessive amts of Dust has been blowing toward the Sunset Key Marina. Boats & cars are covered in dust and complainant's wife became so ill with allergies from the dust that she had to go to the hospital

Action Taken: Transfer Station is owned by city of KW. Contacted Dave Fernandez asst City mgr. He was already aware of the complaint & called me back 11/13 & was taking some steps to mitigate the dust.

Initials: _____ Date: _____
Follow Up Visit
Remarks: 11/14/13 return call to complainant said dust a little better now he noticed someone over at the site using a fire hose

Initials: [signature] Date: 11/14/13
Referred: ☒ Invalid: _____ Abated: _____ Citation Issued: _____ Legal Action
Taken: _____
Investigator's signature(s): [signature]
Date: 11/13/13
Approved by: [signature]
Date: _____

3) Review of gas sampling and possibility of VOC vapors

**SITE ASSESSMENT REPORT FOR
GERALD ADAMS ELEMENTARY SCHOOL
5855 COLLEGE ROAD
STOCK ISLAND, MONROE COUNTY, FLORIDA 33040**

**EE&G Environmental Services, LLC
5751 Miami Lakes Drive
Miami Lakes, Florida 33014
(305) 374-8300
June 9, 2017
EE&G Project No.: 2017 – 3071**



On April 25, 2017, EE&G installed four temporary vapor wells around the site (Gerald Adams Elementary School next to the Stock Island Landfill) via the direct-push drill rig, which were designated VP-1 thru VP-4.

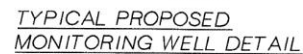
On April 26 and May 12, 2017, EE&G conducted vapor screening events for the 4 vapor wells, which included measuring the wells with a 4-gas meter and an OVA/FID.

April 26, 2017

- High tides 10:18am and 11:27pm
- Low tides 3:49am and 4:39pm

May 12, 2017

- High tide 11:09am
- Low tides 4:46am and 5:55pm



<p>PHASE 1 CLOSURE SYSTEM DESIGN FOR THE KEY WEST STOCK ISLAND LANDFILL KEY WEST, FLORIDA</p>	<p>SCALE: 1" = 100'</p>
-----------------------------------------------------------------------------------------------------------	-------------------------

RECEIVED	SHEET
AUG 23 1991	DWG 9
PER SAUNDERS	NO.
	DATE FEB 1990
	PROJ.

TABLE 2
VAPOR WELL RESULTS
GERALD ADAMS ELEMENTARY SCHOOL
5855 COLLEGE ROAD
STOCK ISLAND, MONROE COUNTY, FLORIDA 33040
PROJECT NO.: 2017 - 3071

ID	Date	OVA/FID (ppm)			4-GAS METER			
		Unfiltered	Filtered	Net OVA	CO %	H2S (ppm)	LEL %	Oxygen %
VP-1	4/26/17	< 1	NF	< 1	2	0	0	18.3
	5/12/17	< 1	NF	< 1	0	0	0	14.1
VP-2	4/26/17	32	30	2	2	0	0	18.3
	5/12/17	< 1	NF	< 1	0	0	0	17.5
VP-3	4/26/17	120	7	113	0	0	0	18.3
	5/12/17	186	< 1	186	0	0	0	19.1
VP-4	4/26/17	< 1	NF	< 1	0	0	0	20.2
	5/12/17	< 1	NF	< 1	0	0	0	20.1

Notes:

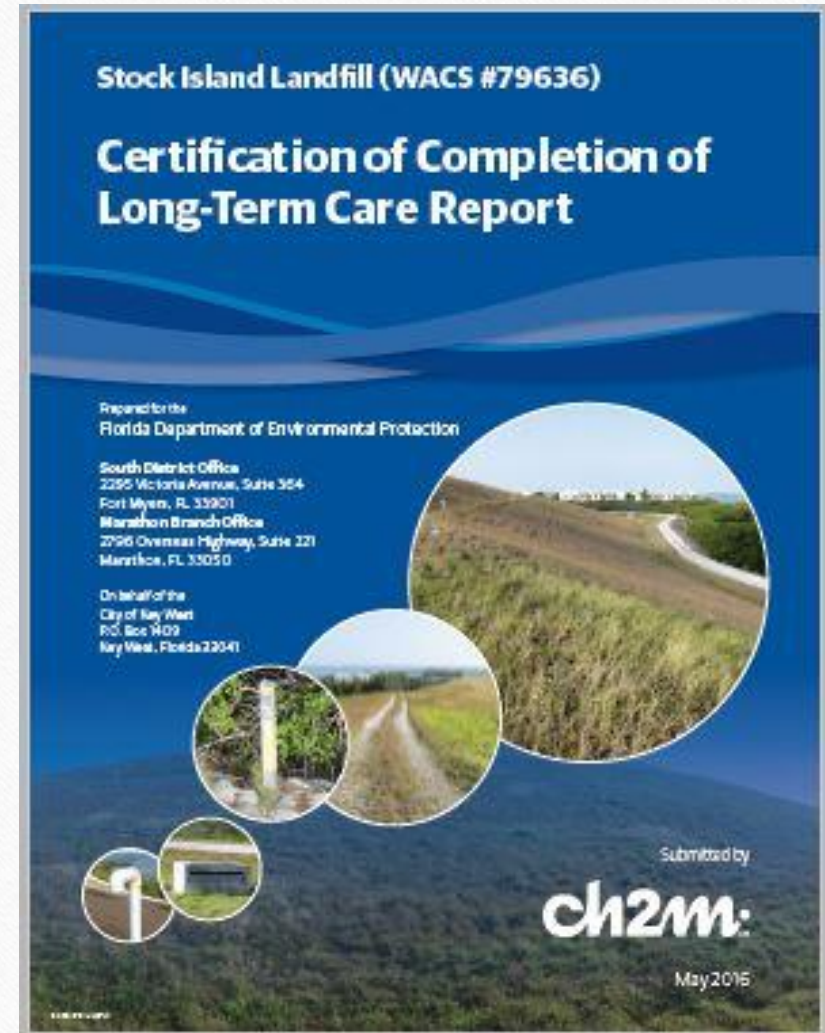
ppm = parts per million
N/A = Not lab analyzed
CO = carbon monoxide
VP= vapor point

H2S = hydrogen sulfide
LEL = lower explosivity limit
OVA/FID = organic vapor analyzer equipped with a flame ionization device

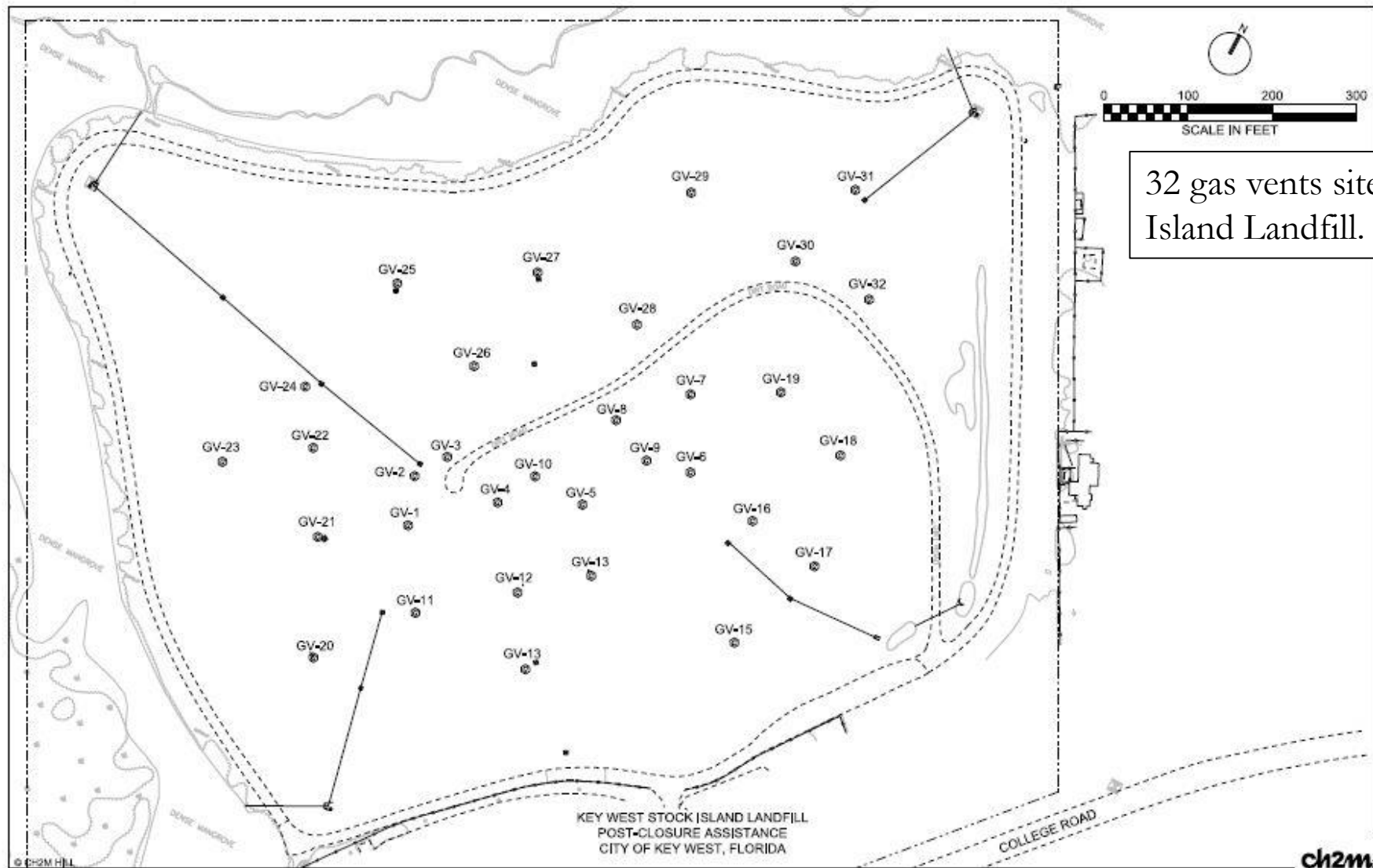
Gerald Adams Elementary School - Public Notification November 2017

“The buried debris and adjoining landfill have resulted in the accumulation of vapors containing low concentrations of petroleum constituents and methane. However, confirmation sampling did not detect Volatile Organic Compounds (VOC’s) above the USEPA Vapor Intrusion Screening Levels (VISL’s), and methane readings were below the lower explosive limit (LEL).”

Results of gas vent
sampling in May 2016
by City of Key West
contractors CH2M
for Closure Report.



CH2M Certification of Completion Long –Term Care Report



May 4, 2016

Low tide 1:26am

High tide 7:43am

Sampling began 11:00am

Low tide 2:10pm

Sampling ended 2:30pm

High tide 8:34pm



Gas vents 1-7 were first sampled starting at 11:00am

Landfill Gas Vents GV-1 through GV-7, all located on the landfill peak, showed methane readings of > 100% LEL (% of the lower explosive limit for methane), when sampled directly from the vent. GV-1 through GV-7 were also the only vents to produce hydrogen sulfide readings, ranging from 1.3 to 6.9 ppm. GV-22, GV-26, and GV-29 yielded % LEL readings 30%, 4%, and 25% respectively.

Returned to vents 1-7 before 2:30pm, sampled a second time, yielding results of between 0 and 5 % LEL, significantly lower than initial sampling results.

It was hypothesized that the apparent decrease in venting could be associated with local tidal fluctuations, as the site is bordered by seawater on two sides and in close proximity on a third side. Initial comparisons of field measurements with NOAA tidal charts (Exhibit 5) supported this hypothesis and prompted development of a secondary testing plan.

*CH2M Certification of Completion Long-Term Care Report.



May 11, 2016

High tide 1:49 am

Low tide 6:48am

High tide 1:01pm

Sampling started 2:43pm

Low tide 8:21pm

May 12, 2016

High tide 2:48am

Low tide 7:52am

High tide 2:01pm

Low tide 9:21pm

May 13, 2016

Sampling ended 1:06am

High tide 3:52am

Low tide 9:08am

High tide 3:11pm

Low tide 10:20pm

- Follow-up gas monitoring was completed from 2:43 p.m. on May 11, 2016 through 1:06 a.m. on May 13, 2016.
- The MultiRAE unit was installed at one of the more productive gas vents, GV-3, sampling every 120 seconds.
- Results indicate minor correlations between gas venting and tidal fluctuation as gas vent off-gassing concentrations fluctuate throughout the day.
- Tidal influence does not appear to be the sole source of off-gas fluctuations.
- Rate of off-gassing and gas concentrations are likely influenced by a variety of factors such as tidal and atmospheric pressure fluctuation.

4) Review of water sampling and possibility of water contamination

Review of semi-annual water quality sampling for Stock Island Landfill groundwater monitoring wells

(June 2011 - December 2015)

- Only one groundwater parameter was found to occasionally exceed the Groundwater Cleanup Target Levels (GCTLs) set forth in Chapter 62-777, F.A.C. = Total Dissolved Solids (TDS) at Well #2 and Well #3. Both of these wells are between the landfill and the Gulf of Mexico.
- The TDS exceedance should not be seen as a potential concern for leachate leaks. The background water condition *is* the Gulf of Mexico due to the tidal influence the groundwater incurs through the highly permeable formations. All other monitored parameters have not shown any exceedance or concerning data trends.
- The data analyzed during the reporting period indicated the landfill does not impact groundwater at concentrations that may be expected to result in violations of Department water quality standards or criteria.

The following are examples of the times of
water samples and the tides of the day.

Two different labs were contracted in the following samples:

Flowers Chemical Laboratories Inc.

Jupiter Environmental Laboratories, Inc.

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481 Newburyport Ave.
Altamonte Springs, FL 32701
Bus: 407-339-5984
Fax: 407-260-6110

☐ Flowers Chemical Labs-South

West Park Industrial Plaza
571 N.W. Mercantile Pl., Ste. 111
Port St. Lucie, FL 34986
Bus: 772-343-8006
Fax: 772-343-8089

☐ Flowers Chemical Labs-North

812 S.W. Harvey Greene Dr.
Madison, FL 32340
Bus: 850-973-6878
Fax: 850-973-6878

☐ Flowers Chemical Labs-Keys

3980 Overseas Highway, Ste. 103
Marathon, FL 33050
Bus: 305-743-8598
Fax: 305-743-8598

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Client <i>City of Key West - Transfer Station</i>		Project Name <i>Key West L.F. S/A</i>		P.O. #								
Address		Client Contact		FAX								
Phone		FCL Project Manager <i>J. Flower</i>		E-MAIL								
Sampled By (PRINT): <i>Tommy Cross</i>		Requested Due Date 10 Day Standard OR <input type="text"/> MM <input type="text"/> DD <input type="text"/> YY		Rush Charges May Apply								
Sampler Signature <i>[Signature]</i>		Date Sampled <i>11/14/14</i>		Pick-Up Fee \$ <input type="text"/> Vehicle Surcharge \$ <input type="text"/> Sampling Fee \$ <i>25</i>								
GW - ground water DW - drinking water WW - wastewater SW - surface water SO - soil/solid SL - sludge HW - waste		PRESERVATIVES		ANALYSES REQUEST								
ITEM NO.	SAMPLE ID	DATE	TIME	MATRIX	(LAB USE ONLY) LAB NO.	NONE	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₈	COMMENTS	Total # Containers
1	MW-5	11/14/14	0916	GW	2515746w1	X	X				<i>IDS Ed G Pb 2mHg</i>	2
2	MW-4		0955		6w2							
3	MW-3		1026		6w3							
4	MW-2		1136		6w4							
5	MW-1		1204		6w5							
6												
7												
8												
9												
10												

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time

FINANCE CHARGES APPLIED TO PAST DUE INVOICES

• WHITE - Lab Copy - To Be Scanned

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November 14, 2015

High Tide 2:18am

Sampling Starts 9:16am

Low Tide 9:23am

Sampling Ends 12:04pm

High Tide 3:48pm

Low Tide 7:24pm

December 11, 2015

High Tide 12:48am

Low Tide 7:41am

Sampling Starts 12:30pm

High Tide 2:19pm

Sampling Ends 4:30pm

Low Tide 7:24pm

Form FD 9090-24
GROUNDWATER SAMPLING LOG

SITE: STOCK ISLAND LANDFILL DATE: 12/11/15
WELL NO: MW-5 SAMPLE ID: MW-5 DATE: 12/11/15

PURGING DATA
WELL CAPACITY: 15.49 gal. STATIC DEPTH: 5.20 ft. TURBIDITY: 0.16 NTU. COLOR: 1.71 PCU. TOTAL VOLUME PURGED: 0.25 gal. TURBIDITY: 0.25 NTU. COLOR: 0.25 PCU.

SAMPLING DATA
TIME: 12:14, 12:19, 12:22, 12:25, 12:28
VOLUME PURGED (gal): 1.80, 2.80, 3.00, 2.00, 2.40
TURBIDITY (NTU): 0.20, 0.20, 0.20, 0.20, 0.20
COLOR (PCU): 0.32, 0.36, 0.38, 0.40, 0.41
TDS (mg/L): 7.31, 7.28, 7.26, 7.25, 7.25
METALS (mg/L): 26.3, 26.2, 26.2, 26.2, 26.2

REMARKS: 1. The above do not constitute all of the information required by Chapter 63-166, F.A.C. 2. SUBMERGED CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 2) pH: ± 0.2 units; Temperature: ± 0.2 °C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≥ 20% saturation (see Table FS 2200-2); Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater) Revision Date: February 12, 2009

Form FD 9090-24
GROUNDWATER SAMPLING LOG

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COLOR (PCU): 0.32, 0.36, 0.38, 0.40, 0.41
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METALS (mg/L): 26.3, 26.2, 26.2, 26.2, 26.2

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Form FD 9090-24
GROUNDWATER SAMPLING LOG

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WELL NO: MW-5 SAMPLE ID: MW-5 DATE: 12/11/15

PURGING DATA
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TURBIDITY (NTU): 0.20, 0.20, 0.20, 0.20, 0.20
COLOR (PCU): 0.32, 0.36, 0.38, 0.40, 0.41
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Client: City of Key West
Address: _____
Phone: _____
Project Name: Stock Island Landfill - 4 MW's
Client Contact: _____
FCL Project Manager: J. Flowers
Requested Due Date: 10 Day Standard OR 1-2-3-4-5-6-7-8-9-10
E-MAIL: _____
Rush Charges May Apply

Sampled By (PRINT): Tommy Cross
Sampler Signature: _____
Date Sampled: 5/26/17
Pick-Up Fee: \$ _____
Vehicle Surcharge: \$ _____
Sampling Fee: \$ 7

ITEM NO.	SAMPLE ID	DATE	TIME	MATRIX	(LAB USE ONLY) LAB NO.	PRESERVATIVES					ANALYSES REQUEST					COMMENTS	Total # Containers
						NONE	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	TDs	Calc	Cu	Pb	Zn		
1	MW-5	5/26/17	0846	GW	332127 GW1	X		X			X	X	X				2
2	MW-4		0917		GW2												1
3	MW-3		0957		GW3												1
4	MW-2		1038		GW4												1
5	MW-1		1112		GW5												1
6	MW-T1		1158		GW6												1
7	MW-T2		1353		GW7												4
8																	1
9																	
10																	

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time

FINANCE CHARGES APPLIED TO PAST DUE INVOICES

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Rev 04-09

May 26, 2017

Low Tide 3:57am

Sampling Starts 8:46am

High Tide 10:34am

Sampling Ends 1:53pm

Low Tide 5:17pm

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Fax: 772-343-8089

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Client

Address

City of Key West-Transfer Station

Project Name

SILF - A - MW's

P.O. #

Client Contact

FAX

Phone

FCL Project Manager

J. Flowers

E-MAIL

Sampled By (PRINT):

Tommy Cross

Requested Due Date

10 Day Standard

OR

Rush Charges May Apply

Sampler Signature

Pick-Up Fee

\$

Vehicle Surcharge

\$

Sampling Fee

\$

7

Date Sampled

5/17/18 5/18/18

PRESERVATIVES

ANALYSES REQUEST

COMMENTS

Total # Containers

ITEM NO.	SAMPLE ID	DATE	TIME	MATRIX	(LAB USE ONLY) LAB NO.	NONE	H ₂ SO ₄	HNO ₃	HCl	Na ₂ S ₂ O ₃	CaCl ₂ /MgCl ₂ /H ₂	TI	TDS	PCB (0082)	COMMENTS	Total # Containers
1	T-2	5/17/18	1044	GW	366367	GW1	α		x			x	x	x		5.90
2	T-1	↓	1138			GW2						x	x	x		4
3	MW-5	5/18/18	1019			GW3										1
4	MW-4	↓	0946			GW4										2
5	MW-3	5/17/18	1324			GW5										1
6	MW-2	↓	1424			GW6										1
7	MW-1	↓	1223			GW7										1

Inquired By / Affiliation

Date

Time

Accepted By / Affiliation

Date

Time

Relinquished By / Affiliation

Date

Time

Accepted By / Affiliation

Date

Time

E - Lab Copy - To Be Scanned

FINANCE CHARGES APPLIED TO PAST DUE INVOICES
• YELLOW - Client Copy

May 26, 2017

High Tide

12:26 am

Low Tide

4:59am

Sampling Starts

10:44am

High Tide

11:33am

Sampling Ends

14:24pm

Low Tide

6:24pm

5) Review of Landfill Mining

The article below mentions 3 landfill reclamation (mining) projects. I was involved in the first one, Perdido Landfill, in the grant writing, observations, and educational tours and presentations of the project. I've also attached an article from the EPA about landfill reclamation, what's involved and some case studies. Both of these are available to you.

I also went to observe a landfill mining project at New River Landfill. Where Perdido Landfill used contractors, New River used staff.

<https://foresternetwork.com/msw-management-magazine/ms-waste/ms-landfill-management/landfill-mining-current-trends/>



- Perdido Landfill opened in 1980.
- Liners were not required until the early 1990's. Before that trenches were used to deposit trash.
- Now Perdido digs up the old trash and screens it into two separate materials: dirt and trash at a 70/30 ratio.
- Removes a possible source of groundwater contamination
- Provides 40+ years of solid waste disposal capacity within existing permitted footprint.
- Processed excavated waste is reused on site for daily and intermediate cover, reducing the need for new borrow pits.

Challenges and Processes

- Bore samples before the project
- Spent 1 year experimenting different screens and processes
- Soil contents and sampling
- Keeping exposed garbage covered
- Different options
- Dust







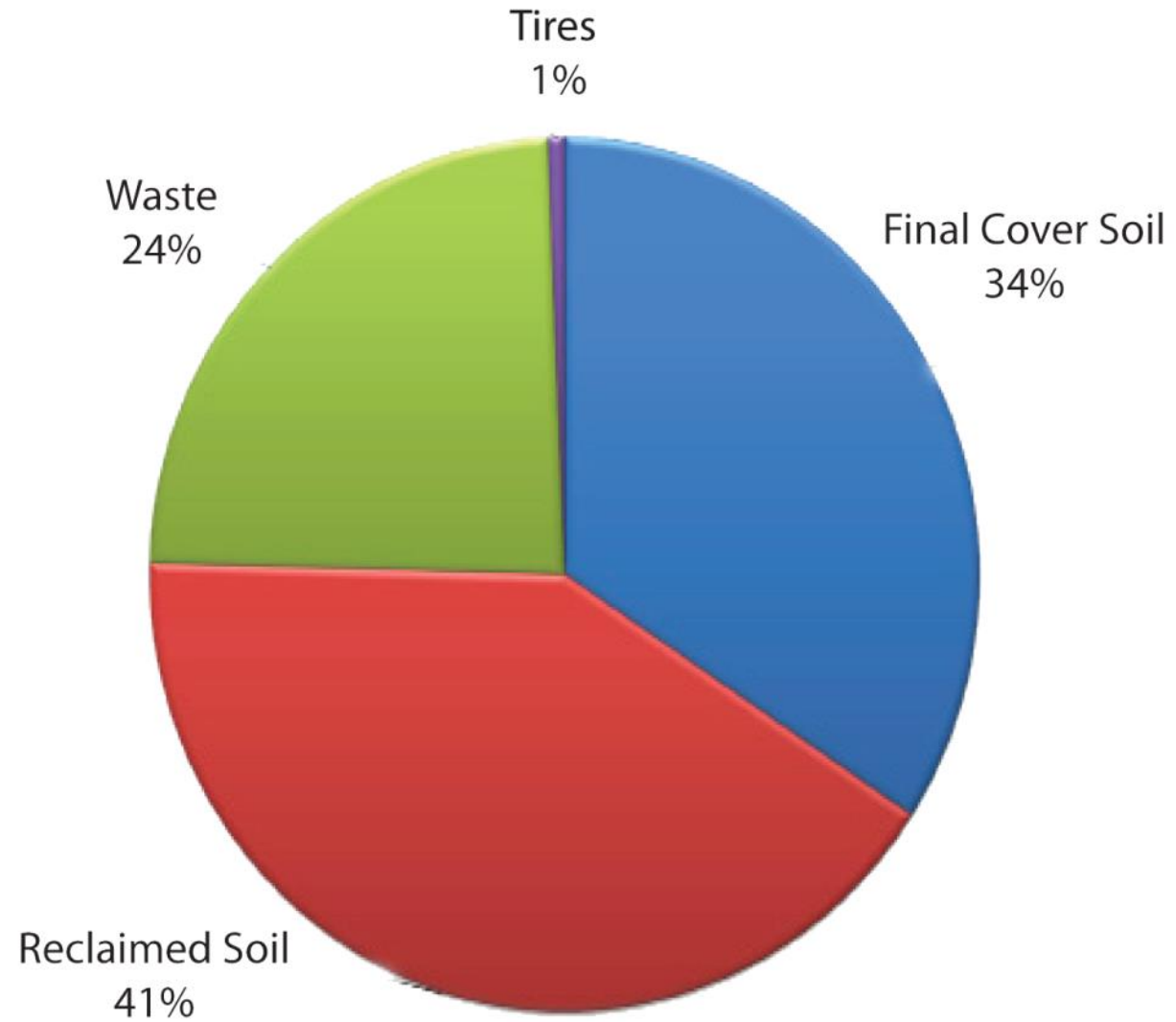








What Was Perdido Landfill Made Of?



Closed Landfills

Some landfill
reuse projects

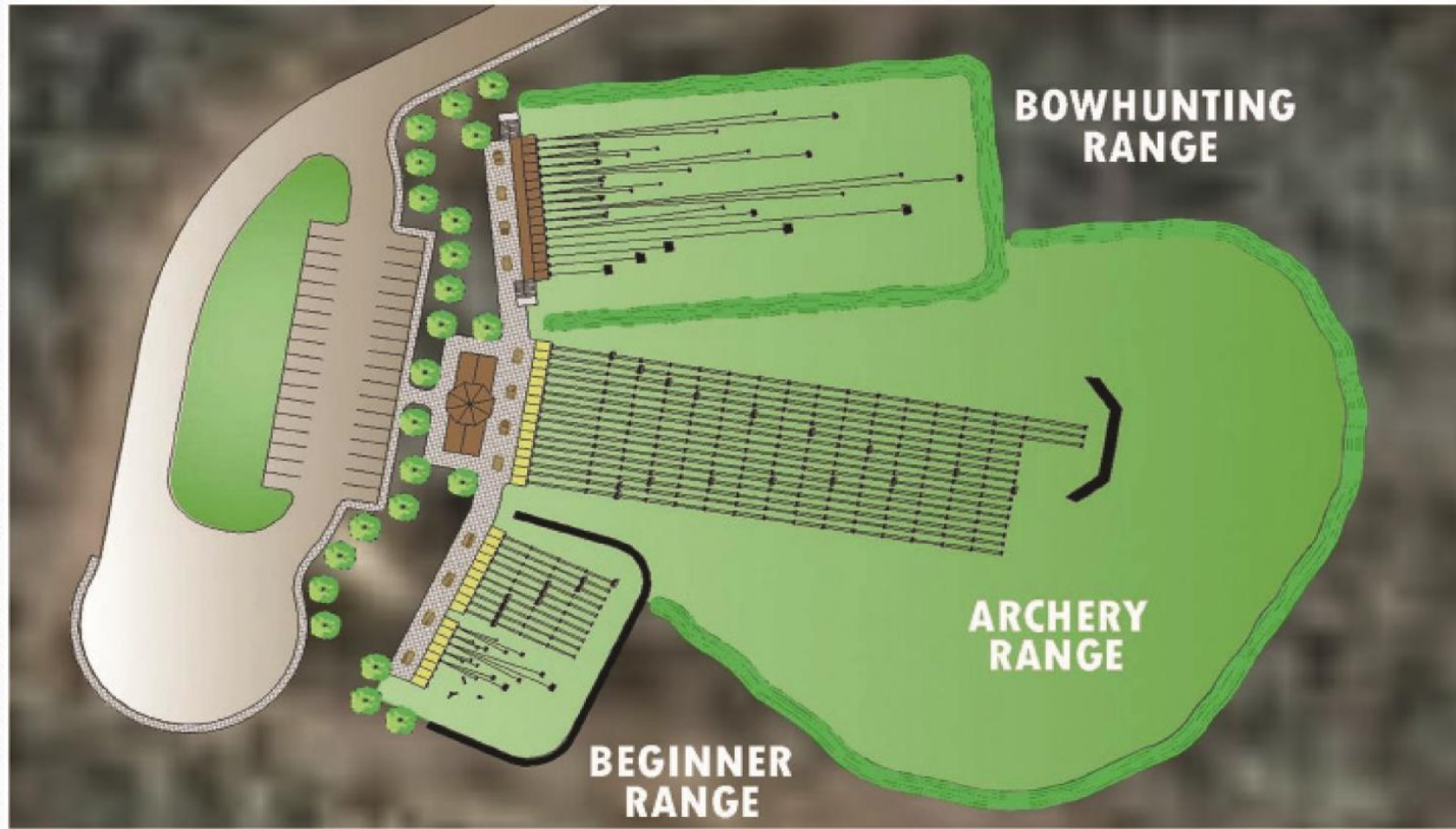


Landfill space turned into solar farm.

Closed Landfills

Saufley Field Landfill, Escambia County

Partnership with the FWC and Florida Dept. of Education



Closed Landfills

Beulah Landfill, Escambia County



Northwest Florida Modelers, Inc. (www.nfmi.org) enjoy Fritz Field.

Resources for information noted in presentation

- Tides: <https://tidesandcurrents.noaa.gov/noaatideannual.html?id=8724580>
- Pre-2017 Tides: <https://tides4fishing.com/us/florida-florida-keys/key-west-south-side-white-street-pier>
- Patricia Goense, FDEP Environmental Specialist II, Drinking Water Patricia.Goense@FloridaDEP.gov
- Waste Cleanup records for Gerald Adams Elementary School (ID No. COM_355111):
[https://depdms.dep.state.fl.us:443/Oculus/servlet/shell?command=hitlist&\[freeText=\]&\[folderName=\]&\[profile=Administrative%2BCleanup_Remediation%2BDiscovery_Compliance%2BDocument_Review%2BEligibility%2BEnforcement_Legal\]&\[creator=\]&\[entityType=any\]&\[createdDateTo=\]&\[catalog=5\]&\[searchBy=Profile\]&\[sortBy=Received+Date\]&\[createdDate=\]&{County= EQ_MONROE}&{District= EQ_N%2FA}&{Facility-Site+ID= EQ_COM_355111}](https://depdms.dep.state.fl.us:443/Oculus/servlet/shell?command=hitlist&[freeText=]&[folderName=]&[profile=Administrative%2BCleanup_Remediation%2BDiscovery_Compliance%2BDocument_Review%2BEligibility%2BEnforcement_Legal]&[creator=]&[entityType=any]&[createdDateTo=]&[catalog=5]&[searchBy=Profile]&[sortBy=Received+Date]&[createdDate=]&{County= EQ_MONROE}&{District= EQ_N%2FA}&{Facility-Site+ID= EQ_COM_355111})
- Perdido Landfill: www.myescambia.com
- City Website: <https://www.cityofkeywest-fl.gov/departments/division.php?structureid=314>
 - CH2M Certification of Completion Long –Term Care Report
 - CH2M. 2012. “Data Analysis for the Closed Stock Island Landfill, Key West, Florida”.
- Florida Department of Environment Protection (FDEP). 2004. “Ground Water Standards and Guidance Concentrations used in Watershed Assessments”. Division of Waters Resource Management. Bureau of Watershed Management. <https://floridadep.gov/dear>
- Landfill Gas Basics: <https://www.atsdr.cdc.gov/hac/landfill/html/ch2.html>