From:	Fischer, Shane
To:	Tafuni, Steven; Newsome, Kaitlyn; SWD Waste
Cc:	Bryan White; Anthony Detweiler; Bob Bennett; Sarah Metcalfe; Lebron, Carlo
Subject:	RE: Manatee County Lena Road Landfill Piezometer P-9 Damage Notification
Date:	Tuesday, October 20, 2020 9:00:41 AM
Attachments:	image001.png
	Lena PZ-9A Installation.pdf

Please find attached the installation documentation for replacement piezometer PZ-9A. Shane R. Fischer, P.E.

SCS Engineers Tampa, FL (813) 804-6714 (W) (813) 503-1044 (C) <u>sfischer@scsengineers.com</u> <u>www.scsengineers.com</u>

From: Fischer, Shane Sent: Monday, August 24, 2020 9:45 AM

To: Newsome, Kaitlyn <Kaitlyn.Newsome@FloridaDEP.gov>

**Cc:** Tafuni, Steven <Steven.Tafuni@FloridaDEP.gov>

Subject: RE: Manatee County Lena Road Landfill Piezometer P-9 Damage Notification

Thank you. We are scheduled to install the replacement piezometer tomorrow, 8/25. Shane R. Fischer, P.E.

SCS Engineers

Tampa, FL

(813) 804-6714 (W)

(813) 503-1044 (C)

sfischer@scsengineers.com

www.scsengineers.com

From: Newsome, Kaitlyn <<u>Kaitlyn.Newsome@FloridaDEP.gov</u>>

**Sent:** Monday, August 24, 2020 8:41 AM

To: Fischer, Shane <<u>SFischer@SCSEngineers.com</u>>

Cc: Tafuni, Steven <<u>Steven.Tafuni@FloridaDEP.gov</u>>

Subject: RE: Manatee County Lena Road Landfill Piezometer P-9 Damage Notification

This email originated from outside of SCS Engineers. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Shane,

The Department has no additional comments or questions regarding the proposed piezometer replacement schedule or design at this time.

Thank you,

Kate Newsome

## Kate Newsome Environmental Specialist II

Florida Department of Environmental Protection Southwest District 13051 North Telecom Parkway, Suite 101 Temple Terrace, FL 33637



Please Note: Florida has a very broad public records law. Most written communications to or from state officials regarding state business are public records available to the public and media upon request. Your e-mail communications may therefore be subject to public disclosure.

Please consider the environment before printing this e-mail.

From: Ciaravella, Philip <<u>Philip.Ciaravella@FloridaDEP.gov</u>>
Sent: Friday, August 21, 2020 3:00 PM
To: Newsome, Kaitlyn <<u>Kaitlyn.Newsome@FloridaDEP.gov</u>>
Cc: Morgan, Steve <<u>Steve.Morgan@FloridaDEP.gov</u>>; Tafuni, Steven
<<u>Steven.Tafuni@FloridaDEP.gov</u>>
Subject: Re: Manatee County Lena Road Landfill Piezometer P-9 Damage Notification

Hi Kaitlyn- I have no comments or questions regarding the proposed piezometer replacement. Thanks,

Philip J. Ciaravella

Solid Waste Section

Florida Department of Environmental Protection

(850) 245-8742

From: Fischer, Shane <<u>SFischer@SCSEngineers.com</u>>

Sent: Friday, August 21, 2020 1:59 PM

**To:** SWD\_Waste <<u>SWD\_Waste@dep.state.fl.us</u>>; Tafuni, Steven <<u>Steven.Tafuni@FloridaDEP.gov</u>>; Newsome, Kaitlyn <<u>Kaitlyn.Newsome@FloridaDEP.gov</u>>

**Cc:** Robert.shankle <<u>Robert.shankle@mymanatee.org</u>>; Anthony Detweiler

<<u>anthony.detweiler@mymanatee.org</u>>; Bryan White <<u>bryan.white@mymanatee.org</u>>; Bob Bennett <<u>bob.bennett@mymanatee.org</u>>; Sarah Metcalfe <<u>sarah.metcalfe@mymanatee.org</u>>; Lebron, Carlo <<u>CLebron@scsengineers.com</u>>; Cooper, Dan <<u>DCooper@SCSEngineers.com</u>>; Paul, Darryl <<u>DPaul@scsengineers.com</u>>

**Subject:** RE: Manatee County Lena Road Landfill Piezometer P-9 Damage Notification Mr. Tafuni,

On behalf of the Manatee County Utilities Department, Solid Waste Division (County) and the Lena Road Landfill Operation Permit Number 39884-021-SO-01, SCS is providing this letter to the Florida Department of Environmental Protection (FDEP) identifying the proposed replacement of damaged piezometer PZ9, referred to as piezometer PZ9A, and the abandonment of PZ9.

A drilling contractor is tentatively scheduled to install PZ9A on August 25 or August 27, 2020. Shortly after the piezometer is installed a Florida Licensed Surveyor will collected the information required by permit. With this proposed expedited schedule the County will be able to include the water level readings from PZ9A with the monthly gradient report required for August 2020.

Thank you for consideration of the requested expedited schedule, proposed construction detail, and location for installation of PZ9A as enclosd. We look forward to your concurrence with the enclosed information so we can move forward.

Thank you. Shane R. Fischer, P.E.

SCS Engineers Tampa, FL (813) 804-6714 (W) (813) 503-1044 (C) <u>sfischer@scsengineers.com</u> <u>www.scsengineers.com</u>

From: Fischer, Shane

Sent: Tuesday, August 11, 2020 12:58 PM

**To:** SWD\_Waste (Shared Mailbox) <<u>SWD\_Waste@dep.state.fl.us</u>>; Steven Tafuni <<u>steven.tafuni@dep.state.fl.us</u>>

**Cc:** Robert Shankle <<u>robert.shankle@mymanatee.org</u>>; Anthony Detweiler

<<u>anthony.detweiler@mymanatee.org</u>>; Bryan White <<u>bryan.white@mymanatee.org</u>>; Bob Bennett <<u>bob.bennett@mymanatee.org</u>>; Sarah Metcalfe <<u>sarah.metcalfe@mymanatee.org</u>>; Carlo Lebron <<u>CLebron@scsengineers.com</u>>; Dan Cooper <<u>dcooper@scsengineers.com</u>>; Darryl Paul <<u>dpaul@scsengineers.com</u>>

**Subject:** Manatee County Lena Road Landfill Piezometer P-9 Damage Notification Mr. Tafuni,

On behalf of the Manatee County Utilities Department, Solid Waste Division (County) and the Lena Road Landfill Operation Permit Number 39884-021-SO-01, SCS is notifying the Department of damage to piezometer P-9. During the morning of August 10, 2020 the County observed P-9 had been damaged and is inoperable.

As required by the Operation Permit, within ten (10) days of this notice a written report will be provided to the Department describing what problem occurred and the remedial measures taken by the County to prevent reoccurrence. Also, within that report the proposed replacement piezometer design will be provided for approval by the Department. Following approval, the County will notify the Department within fourteen (14) days prior to the installation of the replacement piezometer. Since this piezometer is one of the monthly gradient monitoring points, the County will proceed as quickly as possible to install a replacement piezometer to ensure continuous monthly monitoring at this location.

Please feel free to contact the County or myself if you have any further questions or need any additional information.

Thank you.

Shane R. Fischer, P.E. Vice President/Office Manager SCS Engineers 3922 Coconut Palm Drive, Suite 102 Tampa, Florida 33619 (813) 804-6714 (W) (813) 503-1044 (C) <u>sfischer@scsengineers.com</u>

## **Driven by Client Success**

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# SCS ENGINEERS

October 20, 2020 File No. 09217088.21

Mr. Steven Tafuni Florida Department of Environmental Protection Southwest District Office - Solid Waste Section 130501 N. Telecom Parkway Temple Terrace, Florida 33637-0926

Subject: Replacement Piezometer PZ-9A Lena Road Landfill, 333 Lena Road, Bradenton, Florida Operation Permit Number 39884-021-S0-01

### Dear Mr. Tafuni:

On behalf of the Manatee County Utilities Department, Solid Waste Division (County) and the Lena Road Landfill Operation Permit Number 39884-021-SO-01, SCS Engineers (SCS) is providing this letter to the Florida Department of Environmental Protection (FDEP) documenting the installation of a replacement piezometer for PZ9 at the Lena Road Landfill. The piezometer installation and construction activities were completed in accordance with the requirements of Florida Administrative Code (FAC) and the approved Lena Road Landfill Water Quality Monitoring Plan.

SCS previously notified the FDEP via email of damage to PZ9 on August 11, 2020. Following, SCS notified the FDEP via email on August 20, 2020 of the proposed replacement of PZ9, referred to as piezometer PZ-9A.

Measures proposed by the County to avoid potential future damage to PZ-9A included installing steel bollards filled with concrete surrounding the piezometer. The original bollards were hollow 2-inch PVC pipes. In addition, PZ9 was approximately 1-foot from the edge of pavement, PZ-9A was installed approximately 5-feet further back. Please refer to **Figure 1** identifying the approximate location of PZ-9A.

## FIELD ACTIVITIES

## **Piezometer Installation**

The installation of piezometer PZ-9A was completed on August 25, 2020, by Action Environmental, using hollow-stem augers. The drilling equipment was decontaminated prior to the piezometer's installation. The piezometer was installed using 8-inch outside diameter, 4.25-inch inside diameter, hollow-stem augers equipped with a wood bottom plug. The piezometer was installed to an approximate depth of 24-feet below land surface (BLS). The piezometer was constructed using ten feet of 2-inch diameter 0.010-inch, slotted polyvinyl chloride (PVC) well screen equipped with a threaded end cap and threaded to a 14-feet of 2-inch diameter PVC solid riser. A sand filter pack consisting of 20/30 washed silica sand was installed from the bottom of the annulus space to approximately 2-feet above the screened interval. A 2-foot thick, 30/65 silica sand seal was installed above the filter pack. The remaining annulus space was filled to land surface with Portland Type I bentonite cement grout. The piezometer was developed using a centrifugal pump on August 25, 2020. The piezometer was developed until the discharge water was mostly clear.

Mr. Steven Tafuni October 20, 2020 Page 2

The piezometer construction was completed with an approximately 4-foot by 4-foot by 6-inch thick concrete pad, a new steel protective aboveground casing, and a lockable cap. Four bollards were also installed around the piezometer. The protective bollards consisted of steel pipes extending approximately 16 inches BLS. The steel bollards were filled with concrete and plastic protective covers were placed on the bollards.

The FDEP installation permit, piezometer construction diagram, FDEP soil boring log, and the FDEP monitoring well completion report are included in **Attachment A**. Photo documentation of the piezometer installation is included in **Attachment B**.

The location and elevation of newly installed piezometer PZ-9A was documented in a survey prepared by Hyatt Survey Services dated September 8, 2020 included as **Attachment C**.

## CLOSING

If you have questions regarding the requests or information contained herein, or need additional information, please contact the County or the undersigned at (813) 503-1044.

Sincerely,

Darry & Paul

Darryl J. Paul Senior Project Professional SCS Engineers

DJP/SRF:djp

Shane R. Fischer, P.E. Vice President/Office Manager SCS Engineers

cc: Bryan White, Manatee County Landfill Superintendent Anthony Detweiler, Manatee County Landfill Operations Supervisor Bob Bennett, Manatee County Landfill Operations Supervisor Sarah Metcalfe, Manatee County Landfill Administrative Assistant

### Attachments

This item has been digitally signed and sealed by Shane R. Fischer, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



# Figure 1

PZ-9A Location



## Attachment A

FDEP Permit, Piezometer Construction Diagram, Soil Boring Log, and Monitoring Well Completion Report



WCP File of Record Report

Southwest Florida Water Management District

#### Selection Criteria:

**Report Cover Page** 

Report Name: WCP File of Record Report

Permit Number: 892822

The information provided is based on the information available at the time of request. The information is believed to be accurate and complete, but is subject to the accuracy and completeness of information submitted to the District by permittees and other sources and is subject to the specific request made. The District does not warrant that the information is suitable for any particular use.

Report Generation Date: September 21, 2020

WATER MANAGEMENT INF	OBMATION SYSTEM				WCP	File of Record Re	eport				Southwest Florie Water Management Dist
Permit #: Reference #: Well Use:	892822 2020-8304 MONITO	l R		Sta Tyj Cor	tus: pe: nst. Date:	Completed New Constru 08/21/2020	uction		Application R Issue Date: Suspense Dat	e:	08/21/2020 08/21/2020 11/19/2020
Owner Info	rmation: 892	822									
Name			Address					Cit	v/State/Zip		
М	ANATEE COUN	FY PARK (	P O BOX 1	000				BI	RADENTON, FL 34206	5	
Contractor	Information:	892822									
Name			License #	Addre	255			Cit	y/State/Zip		
Jonatha	n Abbott		9539	3007 1	N. 50th St.			1	ampa, FL 33619		
Well Informa Diameter	ation: 89282 Drill Me	2 thod		Depth	Primary Casing	Material		Casing Depth	Casing Diameter		Contamination
2	AUGER			25		Cement		15			
Well Location	n: 892822										
Site ID	Address		City/Sta	te		Lat	Long		Section Townsh	ip Rang	ge
944333	3331 LENA RD		BRADE	NTON		27° 28" 31.00'	82° 26" 37.30'		6 35	19	
Well Complet Completion Date	ion Informati Static Water Level	on: 892822 Finish Code		Drill Method		Status	Well Depth	Casing Diameter	Casing From Depth	Casing To Depth	Casing Material
08/25/2020	15.00	UPGRADE TO PSV 20 GROUT	WW/TOP AU	JGER		Complete	24	2		15	PVC

Page 1 of 1

Report Generation Date: September 21, 2020

STATE OF FL	ORIDA WELL COM	IPLETION REPOR	т	Date Stamp
X Southwest Northwest St. Johns River South Florida Suwannee River DEP Delegated Author	PLEASE, FILL OUT ("Denotes Requi writy (If Applicable) <u>MANAT</u>	ALL APPLICABLE FIELDS ired Fields Where Applicat	ole)	Received: Sep 15, 2020 12:19 pm Official Use Only
1 *Permit Number 892822 *CLIP	M/I IP Number	*DID Number	62-524 De	lineation No.
2 *Number of permitted wells constructed rep	aired or abandoned 1	*Number of permitted v	wells not constructed repai	red or abandoned 0
3 *Owner's Name MANATEE COUNTY		4 *Completion Date 08/2	25/2020 5 Florida Uni	
			5. Honda oni	que in
*Well Location - Address, Road Name or N	umber, City, ZIP	NION		er Or
7. *County_Manatee	*Section 6 Land (	Grant	*Township	35 *Range 19
8. Latitude 27 28 31.00	Longitude 82 26 37.30	D		
9. Data Obtained From:GPS _X_M	apSurvey	Datum:	NAD 27XNAD 83	6WGS 84
11.*Specify Intended Use(s) of Well(s): Domestic Bottled Water Supply Public Water Supply (Limited Use/DOH) Public Water Supply (Community or Non Class I Injection Class V Injection:Recharge Comm Remediation:RecoveryAir Sparge	Landscape Irrigation Recreation Area Irrig -Community/DEP) nercial/Industrial Disposal _ Other (Describe)	ationAgricultu Livestock Commer Golf Cou Aquifer Storage and R	ral IrrigationSite <x moni<br="">IrrigationTest rcial/IndustrialEarth urse IrrigationHVA HVA tecoveryDrainage</x>	Investigation toring n-Coupled Geothermal C Supply C Return
Other (Describe)				
12.*Drill Method: X_Auger Cable	ToolRotary	Combination (Two or M	ore Methods)Jette	edSonic
13. Measured Static Water Level <u>15.0</u> f 14. Measuring Point (Describe) <u>15.8</u> f 15. Casing Material: <u>Black Steel</u>	t. Measured Pumping Wa Galvanized X PVC	ter Level ft. s ftAbove Stainless Steel	AfterHours at Below Land Surface *I Not CasedOther	GPM Flowing:YesNo
17.*Abandanmant: Other (Evaluin)	15.0 II. Open Hole: Fr	om101t. 3	Screen: From10	1t. Slot Size
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18.*Surface Casing Diameter and Depth: Diain. Fromft. Tof Diain. Fromft. Toft.	t. No. of Bags S t. No. of Bags S	eal Material (Check One): eal Material (Check One):	Neat Cement Ber	ntoniteOther ntoniteOther
19.*Primary Casing Diameter and Depth:           Dia         2.00 in.         From         0.00 ft.         To         15.001           Dia         in.         From         ft.         To         1           Dia         in.         From         ft.         To         1	t. No. of Bags <u>2.00</u> S t. No. of Bags <u>S</u> S	eal Material (Check One): eal Material (Check One):	X Neat Cement Ber Neat Cement Ber Neat Cement Ber Neat Cement Ber Neat Cement Ber Neat Cement Ber	ntoniteOther ntoniteOther ntoniteOther ntoniteOther ntoniteOther
20.*Liner Casing Diameter and Depth: Diain. Fromft. To Diain. Fromft. To Diain. Fromft. To	ft. No. of Bags S ft. No. of Bags S ft. No. of Bags S	eal Material (Check One): eal Material (Check One): eal Material (Check One):	Neat Cement Ber Neat Cement Ber Neat Cement Ber	ntoniteOther ntoniteOther ntoniteOther
21.*Telescope Casing Diameter and Depth: Diain. Fromft. To Diain. Fromft. To Diain. Fromft. To	ft. No. of Bags S ft. No. of Bags S ft. No. of Bags S	eal Material (Check One): Seal Material (Check One): Seal Material (Check One):	Neat CementBei Neat CementBei Neat CementBei	ntoniteOther ntoniteOther ntoniteOther
22. Pump Type (If Known):	arsible Turbine	23. Chemical Analysis	(When Required):	
Horsepower Pump Capacity (	GPM)	Ironppm	Sulfateppm	Chlorideppm
Pump Depthft. Intake Depth	ft.	Laboratory Te	estField Test k	Sit
24. Water Well Contractor:				
*Contractor Name Jonathan Abbott	*License Number _	9539 E-mail	Address jonathan.abbott@	gactn.com
*Contractor's Signature Digitally Signed	provided in this report is accurate an	*Driller's Name (Pr	int or Type) jonathan abbo	tt

FORM LEG-R.005.02 (06/10) Rule 40D-3.411 (1)(a), F.A.C. EFFECTIVE DATE: 9/12/2010

#### SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

2379 BROAD STREET, BROOKSVILLE, FL 34604-6899 PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

#### ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

4049 REID STREET, PALATKA, FL 32178-1429 PHONE: (386) 329-4500 WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT 152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712 (U.S. Highway 90, 10 miles west of Tallahassee) PHONE: (850) 539-5999 WWW.NWFWMD.STATE.FL.US

#### SOUTH FLORIDA WATER MANAGEMENT DISTRICT P.O. BOX 24680 3301 GUN CLUB ROAD WEST PALM BEACH, FL 33416-4680 PHONE: (561) 686-8800 WWW.SFWMD.GOV

#### SUWANNEE RIVER WATER MANAGEMENT DISTRICT 9225 CR 49

LIVE OAK, FL 32060 PHONE: (386) 362-1001 or (800) 226-1066 (Florida only) WWW.MYSUWANNEERIVER.COM

M-Modiu	m and C=	Coore	zxamine cuu	angs every 20 ft. or at for	mation changes. Note cavities and depti	n to producing zone. Grain Size: F=Fine,
From	0.0 ft	To	10.0 ft	Color BLACK	Grain Size (F. M. C)COARSE	Material SAND
From	10.0 ft	To	25.0 ft	Color BROWN	Grain Size (F, M, C)COARSE	Material SAND
From	ft	То	ft	Color	Grain Size (F. M. C)	Material
From	ft	То	ft.	Color	Grain Size (F. M. C)	Material
From	ft	To	ft.	Color	Grain Size (F. M. C)	Material
From	ft	То	ft	Color	Grain Size (F. M. C)	Material
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From	ft.	To	ft.	Color	Grain Size (F, M, C)	Material
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Comment	<sup>s:</sup> Finis	h: <sup>Uf</sup>	PGRADE TO	PSW W/TOP 20 GROUT		

\*Detailed Site Map of Well Location

Give distances from all reference points or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well.



## PZ-9 Replacement

PROJECT N PROJECT N CLIENT Mai ADDRESS DRILLING D LICENCE NO COMPLETIC COMMENTS	UMBER 09217088.15 AME Lena Road Landfill, natee County ATE August 25, 2020 D.	DRILLING COMPANY Action Environemntal DRILLER John Abbott DRILL RIG DRILLING METHOD TOTAL DEPTH 24. DIAMETER 2 CASING uPVC	COORDINATES COORD SYS SURFACE ELEVATION WELL TOC LOGGED BY Darryl Paul CHECKED BY Shane Fischer SCREEN uPVC Factory Slotted
Well Installation			
	Protective Cover 6" Aluminum Casing with Locking Cap 4'x4'x6" Concrete slab Neat Cement Grout: Portland Wel PVC Fine Sand Seal 30/65 Grade Factory Pipe Co Well Sc PVC 0.0 10 feet Sand Sand Filter Pack 20/30 Grade Pipe	8 Inch Bo Diamaete 2 Casing, 2 inch, 2, Schedule 40, 4 feet long Threaded onnection reen, 2 inch, 11 inch Slot, long tory Threaded e Connection	vrehole er
	Facto End F	ry Threaded Point	

Disclaimer This bore log is intended for environmental not geotechnical purposes.

## **BORING LOG**

												Pag	ge 1 of	1
Boring	g/Well N	Jumber				Permit	Number:				Florida Unic	lue ID	Numbe	er:2020-8304
Site N	ama	F	PZ9A			892822					Timat	WAG	CS 447	795
Site IV	ame.								тинс. (	830		AM PM		
Enviro	nmenta	ena R	oad Lan			Geolog	End Da	e.	08/25/20	End	Environmen	200 tal Tec	hniciar	AM 💌 FM
	Jiiiiciita	SCS E	Engineer	s		Geologi	ist s indiff	c. Da	rryl Paul		Liiviioiiiiei		N/A	i s ivanic.
Drillir	ng Comp	oany:			Paveme	ent Thick	cness (inc	hes):	Borehole Dian	neter (inches):	Bo	rehole	Depth	(feet):
	Action	Envir	onmenta			Ν	IA			8			2	24
Drillir	ng Meth סם	od(s): VHS		Apparen	t Boreho	le DTW (	in feet	Mea	asured Well DTW	/ (in feet after	OVA (list m	odel ar	nd chec	k type):
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Boren		ipietioi	I (CHECK C	nie).	v	W CII		ui	Bentonite	Dackin		Julier (	uescin	je)
Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	(inclu	Sample de grain size bas and ot	e Description sed on USCS, odd her remarks)	ors, staining,	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
PH DC	0-4 4-24	48 NA	NA		NA	1	2 4 6							
							8 10 12 14		0-23 Med brown	n fine sand well s	sorted		М	
							16 18 20						S	
Sample	e Type Co	odes: P	PH = Post 1	Hole; H	A = Hand	l Auger:	22 24 <b>SS</b> = Split	23-24 N	/led brown fine s ST = Shelby Tu	sand well sorted	with clay Push; $SC = S$	onic Co	ore; DC	C = Drill Cuttings

Moisture Content Codes:  $\mathbf{D} = Dry; \mathbf{M} = Moist; \mathbf{W} = Wet; \mathbf{S} = Saturated$ 



# Florida Department of **Environmental Protection**

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 DEP Form # 62-701.900(30) Form Title: Monitoring Well Completion Report Effective Date: January 6, 2010 Incorporated in Rule 62-701.510(3), F.A.C.

## MONITORING WELL COMPLETION REPORT

DATE: September 14, 2020		
FACILITY NAME: Lena Road Lar	ndfill	
DEP PERMIT NO.: 892822	WACS FACILITY I	D NO.: 44795
WACS MONITORING SITE NUM .:_	WACS WELL N	<sub>IO.:</sub> PZ9A
WELL TYPE: BACKGROUND		
LATITUDE: 82 026	, 57.130 W <sub>" LONGITUDE:</sub> 27	<u>∘</u> 28
(see back for LAT / LONG requirem	nents):	
Coordinate Accuracy	Datum_NAD83	Elevation Datum NGVD29
Collection Method Trimble TSC3	Collection Date	September 8, 2020
Collector Name Russell P Hyatt	Collector Affiliation Hy	att Survey Services
AQUIFER MONITORED: Shallow		
DRILLING METHOD: Hollow Sten	ם DATE	NSTALLED: August 25, 2020
INSTALLED BY: Action Environm	mental	
BORE HOLE DIAMETER: 8 Inch	TOTAL DEPTH: 24 feet	(BLS)
CASING TYPE: PVC	CASING DIAMETER: 2 inch	_CASING LENGTH: 14 feet
SCREEN TYPE: PVC	SCREEN SLOT SIZE: 0.01 inch	_SCREEN LENGTH: 10 feet
SCREEN DIAMETER: 2 inch	SCREEN INTERVAL: 14 feet	TO_24 feet(BLS)
FILTER PACK TYPE: Sand	FILTER PACK GRAIN	SIZE: 20/30
INTERVAL COVERED: 12 feet	TO <u>24 feet</u> (BLS)	
SEALANT TYPE: Sand	SEALANT INTERVAL. 10 feet	TO 12 feet (BLS)
		(DL3)
GROUT TYPE: Neat Cement	GROUT INTERVAL: surface	
GROUT TYPE: Neat Cement	GROUT INTERVAL: surface VD): 39.83 GROUND SURFACE E	TO(BLS) TO(BLS) ELEVATION (NGVD): 37.26
GROUT TYPE: Neat Cement TOP OF CASING ELEVATION (NG DESCRIBE WELL DEVELOPMENT	GROUT INTERVAL: Surface VD): 39.83 GROUND SURFACE E The piezometer was developed using a centrifugal pump on August 26, 2020. The	TO 10 feet (BLS) TO 10 feet (BLS) ELEVATION (NGVD): 37.26 plezometer was developed until the discharge water was mostly clear.
GROUT TYPE: Neat Cement TOP OF CASING ELEVATION (NG DESCRIBE WELL DEVELOPMENT POST DEVELOPMENT WATER LE	GROUT INTERVAL: Surface VD): 39.83 GROUND SURFACE E : The piezometer was developed using a centrifugal pump on August 26, 2020. The : VEL ELEVATION (NGVD): N/A	TO 10 feet (BLS) TO 10 feet (BLS) ELEVATION (NGVD): 37.26 piezometer was developed until the discharge water was mostly clear.
GROUT TYPE: Neat Cement TOP OF CASING ELEVATION (NG DESCRIBE WELL DEVELOPMENT POST DEVELOPMENT WATER LE DATE AND TIME MEASURED: N/A	GROUT INTERVAL: Surface VD): 39.83 GROUND SURFACE E : The piezometer was developed using a centrifugal pump on August 26, 2020. The EVEL ELEVATION (NGVD): N/A	TO 10 feet (BLS) TO 10 feet (BLS) ELEVATION (NGVD): 37.26 piezometer was developed until the discharge water was mostly clear.

NAME OF PERSON PREPARING REPORT: Darryl Paul, SCS Engineers, 813.446.5839 dpaul@scsengineers.com

(Name, Organization, Phone No., E-mail)

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South District 2295 Victoria Ave., Ste. 364 Fort Myers, FL 33901-3881 239-332-6975

Southeast District 400 North Congress Ave. West Palm Beach, FL 33401 561-681-6600

**NOTE:** ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.(NGVD) NATIONAL GEODETIC VERTICAL DATUM OF 1988 (BLS) = BELOW LAND SURFACE

Latitude must be measured in degrees, minutes and seconds, to at least two (2) decimal places.

Longitude must be measured in degrees, minutes and seconds, to at least two (2) decimal places.

Eastings and northings (State Plane Coordinates) **must** be converted to latitude and longitude.

Coordinate Accuracy: the measured, estimated degree of correctness of the measurement. An accuracy of 15 feet or 5 meters is preferred.

Datum: the horizontal reference for measuring locations on the Earth's surface. NAD83-North American Datum of 1983 is preferred.

Elevation Datum: the reference datum from which elevation measurements are made. NGVD88 (National Geodetic Vertical Datum of 1988) is preferred.

Collection Method: the method or mechanism used to derive the measurements, e.g. GPS, map, aerial photo, etc.

Collection Date: the date and time on which the measurements were taken.

Collector Name: the name of the person taking the measurement.

Collector Affiliation: the agency or company for whom the collector works.

## Attachment B

**Field Documentation** 





## Attachment C

Survey of PZ-9A

**Surveyor's Report** 

For

Lena Road Landfill Piezometer 9 As-Built Survey

Manatee County, Florida

Survey #12-1697-12

Requested By:

SCS Engineers 3922 Coconut Palm Dr. #102 Tampa, FL, 33619

Prepared By: Hyatt Survey Services 2012 Lena Road Bradenton, Florida 34211 Phone #: (941) 748-4693 Licensed Business No. 7203

## **INTRODUCTION**

The scope of work for this Survey was to provide the location and elevation of one (1) installed at Lena Road Solid Waste Disposal. The collected data required all elevations to be referenced to the National Geodetic Vertical Datum of 1929 (NGVD29). Horizontal positions are referenced to the North American Datum of 1983 (NAD83) 2011 adjustment, State Plane Coordinates, Florida West Zone (0902) and measured in US survey feet.

## **METHODS AND PROCEDURES**

- **Methodology:** The horizontal positions were determined utilizing Real Time Kinematic Global Positioning System (RTK GPS) Techniques and horizontal/vertical control checks were made throughout each field day to ensure data quality. All data was collected via Trimble TSC3 data collectors running Trimble Access Survey Software. The data was then processed with Trimble Business Center and exported for quality assurance.
- **Procedure:** The ground/top of concrete slab was located with two (2) 180 epochs of RTK data locations with a Trimble R10 Base/Rover GPS system to produce an average vector to each well location for the purpose of calculating the horizontal and vertical positions. Subsequently, a direct measurement was recorded from the existing ground from the top of each well casing.

Monumentation: Single local site benchmark listed below:

Control						
Northing Easting Elev. Desc.						
1139596.539	510507.125	37.66	BM 200			

PIEZOMETER LOCATION									
ELEV. ELEV.									
PT ID	NORTHING	EASTING	CASING	GROUND	DESC.				
50001	1140749.767	509328.494	39.83	37.26	PZ-9				



### **CERTIFICATION**

This is to certify that this report and survey have been performed in accordance with the Standards of Practice as set forth by the Florida Board of Professional Surveyors and Mappers per Florida Administrative Code Chapter 5J-17, pursuant to section 472.027, Florida Statutes. The map associated with this report is by reference made a part hereof and the map is not valid without this report and vice versa.

Date:

Signed Russell P. Hyatt, P.S.M No. 5303

\*Not valid unless signed and sealed by a Florida Licensed Surveyor and Mapper\*