



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

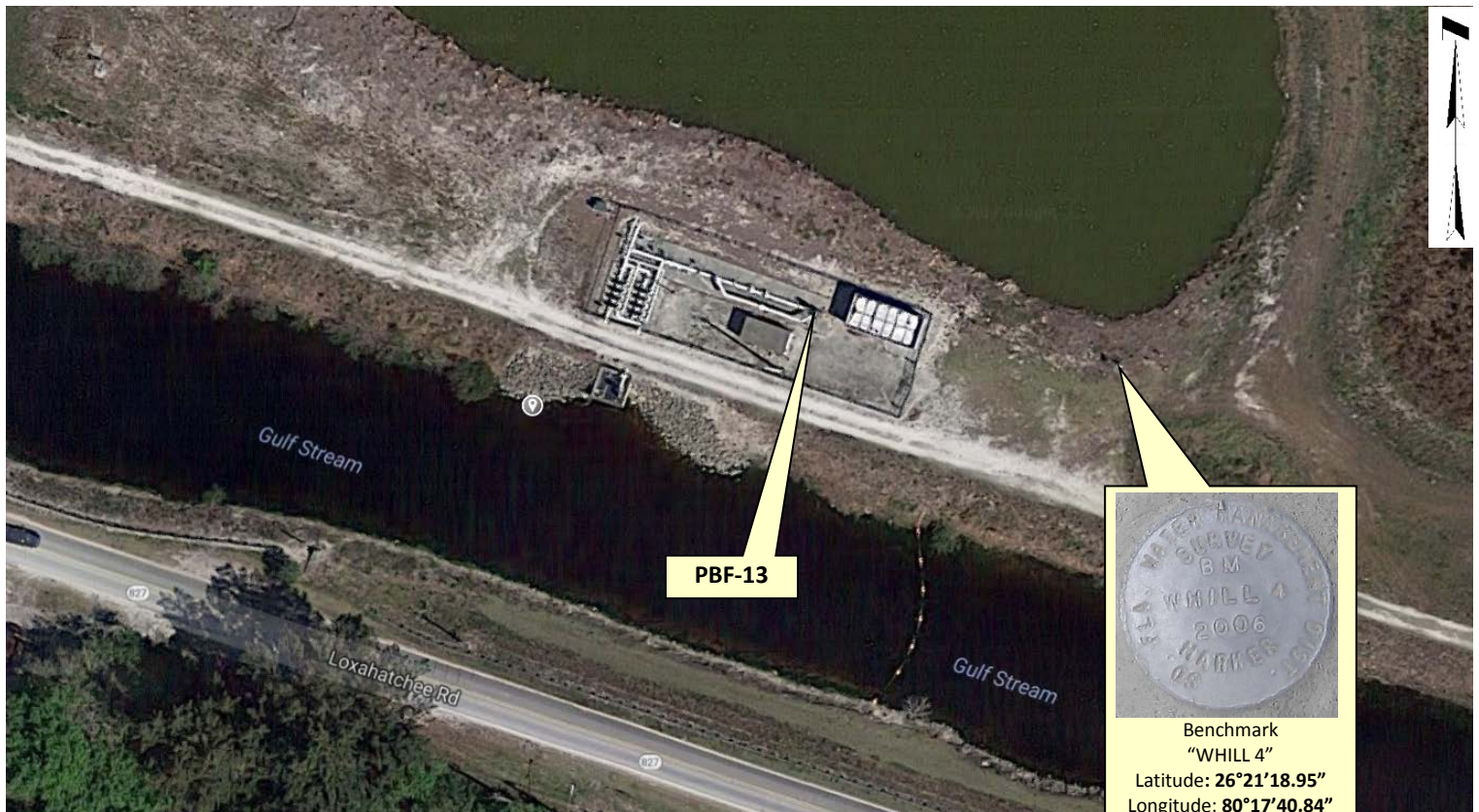
Rev. 1/16

DB Hydro Station Name: PBF-13		DB Hydro Site Name (RTU): WHILL		Date of Field Work: 24-oct-17	
Party Chief:		Field Book:		Page(s)	
				Prepared by: H. Ehmke	
SITE SPECIFIC DATA					
Site Benchmark: WHILL4		Benchmark Elevation (NAVD88) 10.841		Corpscon 6.0.1 Conversion Factor (NAVD88 to NGVD29) +1.519	
Reference Elevation(s) (NAVD88): 20.54		Existing Brass Tag Elevation (Datum): None		Calibration Port Elevation(s) (NAVD88): Not applicable	
Ground Elevation (NAVD88): Not required			Pad Elevation (NAVD88): Not required		
GEOGRAPHIC DATA					
Section 19		Township 47 South		Range 41 East	
Well	Latitude: 26°21'19.15"		Longitude: 80°17'42.42"		Source: Scaled
	State Plane Coordinates		Northing (Y) =		Easting (X) =

Notes:
NAVD88 – North American Vertical Datum of 1988
NGVD29- National Geodetic Vertical Datum of 1929
Corpscon 6.0.1 - A U.S. Army Corps of Engineers Engineering Research and Development Center Topographic Engineering Center Alexandria, Virginia Windows-based program to convert coordinates and elevations between datum's using vertcon05.txt and vertcon05.05 files supplied by the U.S. Army Corps of Engineers South Atlantic Division, Jacksonville FL.

PICTURES

Aerial Overall Site



Not to scale (Google product)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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PBF-13



PBF-13
Reference El.
El. 20.54 NAVD88

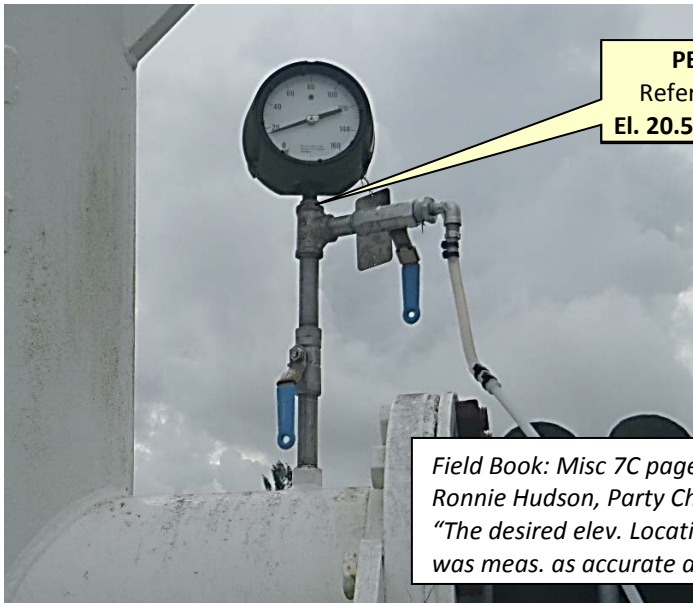
Looking Southeasterly Oblique (Not to scale) 24-oct-17

PBF-13 Reverse Angle

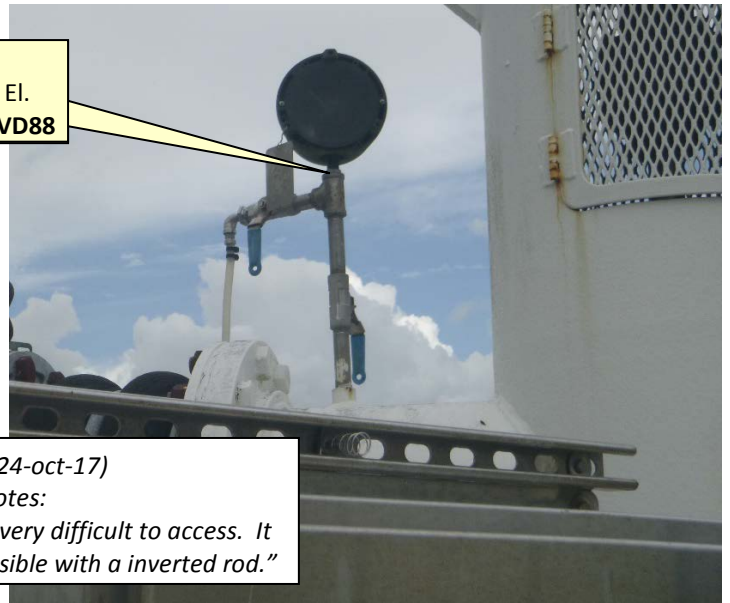


Looking Northwesterly Oblique (Not to scale) 24-oct-17

PBF-13
Reference El.
El. 20.54 NAVD88



Looking Southeasterly Oblique (Not to scale) 24-oct-17



Looking Northwesterly Oblique (Not to scale) 24-oct-17

*Field Book: Misc 7C page 61 (24-oct-17)
Ronnie Hudson, Party Chief notes:
"The desired elev. Location is very difficult to access. It was meas. as accurate as possible with a inverted rod."*



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DESIGNATION: WHILL4	PROJECT: WHILL4 Well
ESTABLISHED BY: SOUTH FLORIDA WATER MANAGEMENT DISTRICT	SURVEYOR: Giammarco
RECOVERED BY: SOUTH FLORIDA WATER MANAGEMENT DISTRICT	DATE: 16-oct-17

GEOGRAPHIC POSITION

SECTION 19	TOWNSHIP 47 SOUTH	RANGE 41 EAST
COUNTY Palm Beach	NAME OF QUADRANGLE GEOGRAPHIC INDEX OF QUAD:	
HORIZONTAL DATUM: 1927 <u>1983</u> Other _____ (circle one) ZONE E or W		
VERTICAL DATUM: MSL 1929 <u>1988</u> Other _____ (circle one)		
VERTICAL ACCURACY: 1 2 <u>3</u>		
STATE PLANE COORDINATE	(N) Y= 735447.45	(E) X= 887132.16
		NAVD 88 EL. 10.841 NGVD 29 EL. 12.362
CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): +1.519		
LATITUDE: 26° 21' 18.949"		LONGITUDE: 80° 17' 40.841"

RECOVERY DATA

Stamping: **BM WHILL 4 2006**

To Reach: From the intersection of State Road 7 and Lox Road in Broward County Florida, go west and northwest along Lox Road a distance of 6.2 miles to South Florida Water Management District's (SFWMD) Structure 39; turn right go over Structure 39 a distance of 150 feet to a road on the north side of the Hillsboro Canal; turn right on to the dirt road and head southeasterly a distance of 950 feet to SFWMD's WHILL 4 well and station location. Station is set on the northeast corner of the concrete collar for the well. The station is a SFWMD aluminum disk grouted into the well pad and stamped "BM WHILL 4 2006."

NGS SOURCE BENCHMARK: **OTTER (AD7241)**

FIELD BOOK **Misc 6Z PAGE 74**

PICTURES

Overall Site



Looking Southwesterly Oblique (Not to scale) 16-oct-17



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SKETCH (Field Notes) FB Misc 6Z page 74

74 Misc FB 6Z 10/16/17

SEC 19 TWP 47 RGE A1

PBS H WHILL4 GROUND WATER Well
 PROVIDE NEW NAVD 88 ELEVATION AND
 ESTABLISH NORTHING & EASTING COORD. ON
 BENCH

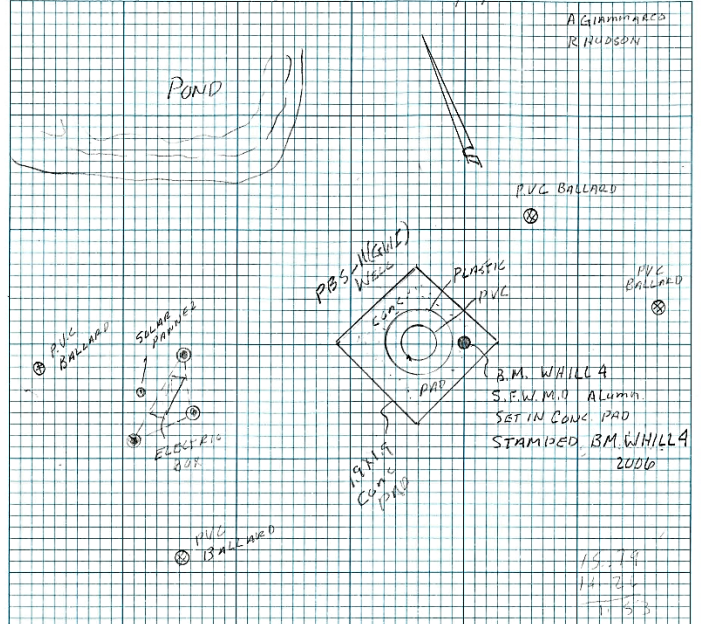
REF NGS DATA SHEETS, S.F.W.M.D DATA SHEETS

EQUIP W.P.B. HIPERV GPS UNIT S378, ZEISS NI² LEVEL
 25' ROD
 RAPID STATIC SESSION
 HIPERV

BEGIN TIME 8:32 AM
 END TIME 10:45 AM
 HIGH 1.5 M

BM	x	HI	ELEV	
TBM	12.265		11.05	SEE PG 72 Misc FB 6Z
Conc PAD	6.06	17.11	6.31	10.8
GROUND			6.7	10.41
REF. MARK			2.85	19.26
BM WHILL4			6.27	10.84 10.84 call

Misc FB 6Z 10/16/17 74



- PICTURES
- 1) SITE VERIFICATION
 - 2) SOUTH LOOKING NORTH
 - 3) WEST LOOKING EAST
 - 4) NORTH LOOKING SOUTH
 - 5) EAST LOOKING WEST
 - 6) LOOKING DOWN WELL
 - 7) BENCH MARK

SEL. 19 TWP. 47 R6E 41

PBF-14

VERIFY SITE Bm & ESTAB REF ELEV on
THE CALIBRATION & REF POINT OF WELL.
PER H. EMMLE REQ.

LEVELS FR Bm WHILL4 TO Bm HABR-FASMNW3

SPT	+	HF	-	ELEV	Bm
Bm					10.84 [88]
IF	6.91	17.75			
	4.24	17.97	4.02	13.73	
Bm			4.63	13.34	13.35

PBF-4 SITE ELEV'S

	4.33	17.68			13.35
INVERTED ROD	0.90			18.58	
"	0.89			18.57	
NE COR			4.44	13.24	
"			4.8	12.9	
SE COR			4.43	13.25	
"			4.6	13.1	
SW COR			4.39	13.29	
"			4.7	13.0	
NW COR			4.41	13.27	
"			4.6	13.1	
Bm			4.33	13.35	13.35

GPS STATION DELETION @ Bm HABR-FASMNW3
CLEW HIPER +

START 11:27
END 1:30
AVG. 1.5 m

END PBF 14

ZEISS LEVEL SN# 159720 & 25' ROD

TJ HUBBARD
G. GRAMMARCO

COMMENTS

Bm WHILL4 FR. IN GOOD COND PER DESL.

Bm HABR-FASMNW3 FR. IN GOOD COND PER DESL.
ERROR 0.01'

HABR-FASMNW3 ABOVE

CALIBRATION FR.
VERIFY FR - SENSOR

COND PAD

COND

COND PAD

COND

COND. PAD

COND

COND. PAD

COND

Bm ABOVE

(10)

MISC FB 7-L 10/24/17

SEC.	19	TWP	47	RGE	41
		PBF. 13			

OBTAIN REF ELEV & LOCATION PROVIDED ON
A PHOTO BY H. EATME.

ELEV WILL BE MEAS BY INVERTED ROD

STA	+	HE	-	ELEV	Bm
	6.20	17.04			10.84 [98]
REF EL	3.50			20.54	
			6.20	10.84	10.84
		END LEVELS			

NOTE: THE DUBLED ELEV LOCATION IS VERY DIFFICULT TO
ACCESS. IT WAS MEAS. AS ACCURATE AS POSSIBLE
WITH A INVERTED ROD.

END PBF. 13

MISC FB 7-C

10/24/17

(61)

ZEISS LEVEL / 25' ROD

K W HUDSON
φ GRAMMELLO

Comments

Bm WHILL P3 60

TOP OF FITTING HOUSING A GAGE AS PER PROVIDED PHOTO.

Bm ABOVE

From: opus
To: Ehmke, Howard
Subject: OPUS solution : log1016m.tps OP1508345288757
Date: Wednesday, October 18, 2017 12:49:37 PM

FILE: log1016m.tps OP1508345288757

1009 WARNING! No antenna type was selected. No antenna offsets or
1009 pattern will be applied. Coordinates with reduced accuracy
1009 will be returned for the antenna phase center.
1009

NGS OPUS SOLUTION REPORT
=====

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <https://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: hehmke@sfwmd.gov DATE: October 18, 2017
RINEX FILE: log1289m.17o TIME: 16:49:04 UTC

SOFTWARE: page5 1603.24 master93.pl 160321 START: 2017/10/16 12:32:00
EPHEMERIS: igr19711.eph [rapid] STOP: 2017/10/16 14:45:00
NAV FILE: brdc2890.17n OBS USED: 4928 / 5161 : 95%
ANT NAME: NONE NONE # FIXED AMB: 33 / 36 : 92%
ARP HEIGHT: 1.5 OVERALL RMS: 0.016(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2017.7906)

X: 964104.104(m) 0.012(m) 964103.308(m) 0.012(m)
Y: -5637088.492(m) 0.010(m) -5637086.899(m) 0.010(m)
Z: 2814374.953(m) 0.022(m) 2814374.784(m) 0.022(m)

LAT: 26 21 18.94964 0.025(m) 26 21 18.96934 0.025(m)
E LON: 279 42 19.15942 0.011(m) 279 42 19.14080 0.011(m)
W LON: 80 17 40.84058 0.011(m) 80 17 40.85920 0.011(m)
EL HGT: -21.955(m) 0.010(m) -23.557(m) 0.010(m)
ORTHO HGT: 3.411(m) 0.022(m) [NAVD88 (Computed using GEOID12B)]

UTM COORDINATES STATE PLANE COORDINATES

	UTM (Zone 17)	SPC (0901 FL E)	
Northing (Y) [meters]	2915220.329	224164.831	N (Y)= 735447.4497
Easting (X) [meters]	570374.405	270398.424	E (X)= 887132.1627
Convergence [degrees]	0.31313053	0.31313053	
Point Scale	0.99966114	1.00000234	
Combined Factor	0.99966459	1.00000579	

US NATIONAL GRID DESIGNATOR: 17RNK7037415220(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL2756	FLC5 CARD SOUND 5 CORS ARP	N252553.839	W0802801.043	103771.4
DF9225	ZMA1 MIAMI WAAS 1 CORS ARP	N254928.585	W0801909.066	58841.9

DG9798 PBCH WEST PALM CORS ARP N265046.638 W0801309.299 54920.1

NEAREST NGS PUBLISHED CONTROL POINT

AD7241 OTTER N262122.082 W0801750.488 284.3

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Office

Project

21 September 2017

INPUT

State Plane, flhp gn - Florida HPGN
0901 - Florida East, U.S. Feet
Vertical - NAVD88, U.S. Feet

OUTPUT

Geographic, flhp gn - Florida HPGN
Vertical - NGVD29 (Custom), U.S. Feet

PBF-13

1/1

Northing/Y: 735467.04

Easting/X: 886988.44

Elevation/Z: 0

Convergence: 0 18 46.57118

Scale Factor: 1.000002266

Combined Factor: 1.000006246

Latitude: 26 21 19.15142

Longitude: 80 17 42.41937

Elevation/Z: 1.519

Remark:

Corpscon v6.0.1, U.S. Army Corps of Engineers

DBHYDRO | by station

STATION INFORMATION

Station	PBF-13
Site	WHILL
Type	WELL
Latitude (ddmmss.sss)	262119.121
Longitude (ddmmss.sss)	801742.314
X Coord (ft) NAD83	886997.951
Y Coord (ft) NAD83	735463.946
County	Palm Beach
Basin	HILLSBORO CANAL
Section	19
Township	47
Range	41
Show Map	Google Map
Well Info	Info
Description	SFWMD Western Hillsboro ASR Pilot Well (ASR-1)
Notes	500 ft E of S39 Structure along N side of Hillsboro Canal, next to PBF-10R
Nearby Stations	Nearby Stations
Attachments	Show Attachments

Query returned 1 station record(s).

Get Sample Data