



T2 UES, Inc.

5670 Zip Drive
Fort Myers, FL 33905
USA

Phone +1 239 277 0722

www.T2ue.com

SURVEYOR'S REPORT

USGS Wells Phase 4

USGS Station No: 265529081185201

Station Name: OSF-8

Prepared For: South Florida Water Management
District

Work Order No: 4600004161-WO5

Report Date: September 1, 2020



TABLE OF CONTENTS

| | |
|--|-------|
| CERTIFICATION | 3 |
| PURPOSE OF SURVEY AND PROJECT OVERVIEW | 4 |
| SITE LOCATION | 4 |
| PROJECT DATUM..... | 4 |
| LEVELING PROCEDURES AND METHODOLOGY | 5 |
| NATIONAL GEODETIC SURVEY ONLINE POSITIONING USER SERVICE (OPUS). | 5 |
| DATES OF FIELD DATA COLLECTION..... | 5 |
| PROJECT RESULTS | |
| DISTRICT WELL REPORT FORM..... | 6-11 |
| NGS DATA SHEETS | 12-15 |
| FIELD NOTES | 16-23 |
| SFWMD BENCHMARK FORM | 24 |
| OPUS REPORT | 25-28 |
| RAW LEVEL DATA | 29-30 |
| CORPSCON SOLUTION | 33 |



SURVEYOR'S REPORT

According to the:
STATE OF FLORIDA
Standards of Practice
CHAPTER 472.027 Florida Statutes
Chapter 5J-17.050 through 5J-17.052, Florida Administrative Code

This report and copies thereof are not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. **This report is not valid without the digital files referenced in this report.**

Additions or deletions to the report by other than the signing party are prohibited without written consent of the signing party.

All field work was performed by:

T2 UES, Inc., LB00008336
5670 Zip Drive
Fort Myers, Florida 33905
Phone: (239) 277-0722 Fax: (239) 277-7179
Scott Urquhart, PSM 6524 (Surveyor and Mapper in Responsible Charge)

I hereby certify that as a duly registered Florida Professional Surveyor and Mapper, I have prepared this Report for the specific purpose of providing the **South Florida Water Management District** with the information as outlined. This report is not complete without the referenced information being available during an examination of said Report. I further certify that the precision achieved and the care taken in collecting the data to formulate this Report are adequate for the purpose of the assignment and that the standards set forth in Chapter 5J-17.050 through 5J-17.052 of the Florida Administrative Code have been met.

Scott Urquhart
Professional Surveyor & Mapper
Florida Certificate No. 6524

(For the firm – LB 8336)

Date Signed



PURPOSE OF SURVEY AND PROJECT OVERVIEW

The specific purpose of this survey is establish North American Vertical Datum of 1988 (NAVD88) elevations for United States Geological Survey (USGS) well site **OSF-8**, provide a site benchmark and additional well data as follows:

- Establish an elevation on the USGS measuring mark on top of the well(s) at each site.
- Stamp a District provided aluminum tag with the appropriate data in the appropriate spaces on the tag. Including the Corpscon 6.0.1 vertical offset value from NGVD1929 to NAVD1988.
- Establish a North American Datum 83/11 (or higher) State Plane Coordinate on the benchmark and the well head.
- Provide an NAVD88 elevation on each of the USGS benchmarks (in the USGS Reports noted as “Reference Marks” or “RM’s”) recovered at the site.
- Take a typical ground shot near the well.
- Take an elevation shot on all four (4) corners of the concrete well pad.
- Measure the well diameter to determine the casing material (i.e. PVC), include a picture with a ruler on it and state and show in the report.
- Determine distance to the water table inside the well (DTW) (measurement from the well measuring point, along with time and date). Measure the well head size whether it is a manhole or surface casing.
- Complete the standard District benchmark form for each control monument set and submit the form as a .pdf and a .xlsx.

SITE LOCATION

See Page 6 for SFWMD Well Site Form.

PROJECT DATUM

- Horizontal – The project horizontal data is referenced to the North American Datum of 1983, 2011 adjustment, Florida State Plane Coordinate System, East Zone, U.S. Survey Feet.
- Vertical – The project vertical data is referenced to the North American Vertical Datum of 1988 (NAVD88). All data referenced to National Geodetic Vertical Datum of 1929 (NGVD29) was converted utilizing **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.



LEVELING PROCEDURES AND METHODOLOGY

All control leveling for the project was completed utilizing a Leica DNA 03 (serial number 347859) and Leica LS10 digital level (serial number 700874) with barcode level rod. Collimation and adjustment of the instrument was completed prior to leveling. Leveling began on National Geodetic Survey Benchmark R 512, ran through site benchmark OSF 8 and closed on National Geodetic Survey Benchmark Y 629. All leveling was completed in accordance with standard survey practice utilizing conventional third order methods, techniques, and equipment. The overall closure met or exceeded allowable project requirements of 0.02 feet times the square root in miles ($0.02 * \text{SQRT}(\text{miles})$). In attempt to hold National Geodetic Survey benchmarks as primary project control the following NGS benchmarks were searched for but not found or recovered:

- Q512 (DF6701)

See page 24 for SFWMD Benchmark Datasheet.

NATIONAL GEODETIC SURVEY ONLINE POSITIONING USER SERVICE (OPUS)

The site-established benchmark was also occupied collecting positional GPS data for a duration of 6.5 hours. This information was then uploaded to the OPUS site for processing. See pages 25-28 for OSF-8 OPUS Report.

DATES OF FIELD DATA COLLECTION

Field survey work by T2 was performed between July 31st & August 26th, 2020. Field notes are contained in Field Book 556, pages 17-19, 22-24, 27 and Field Book 537, page 68.



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

| | | | |
|---------------------------------|---|---|----------------------------------|
| U.S.G.S. Station Name: OSF-8 | U.S.G.S. Station Number: 281559081260701 | Agency: T2 UES, Inc. | Date of Field Work: 8-17-2020 |
| Party Chief: Reider | Field Book: 556; 537 | Page(s): 17-19, 22-24, 29; 68 | Report Prepared by: Campbell |

SITE SPECIFIC DATA

| | | | |
|--|---|---|--------------------------------|
| Site Benchmark: OSF-8 | Benchmark Elevation(s) (NAVD88): 60.40 | Corpscon 6.0.1 Conversion Factor (NAVD88 to NGVD29) + 0.94 | |
| Well Reference Elevation (NAVD88): 59.66 | DTW: 3.61 (08/11/2020 at 8:51 AM) | Ground Elevation (NAVD88): 56.30 | Pad Elevation (NAVD88): N/A |

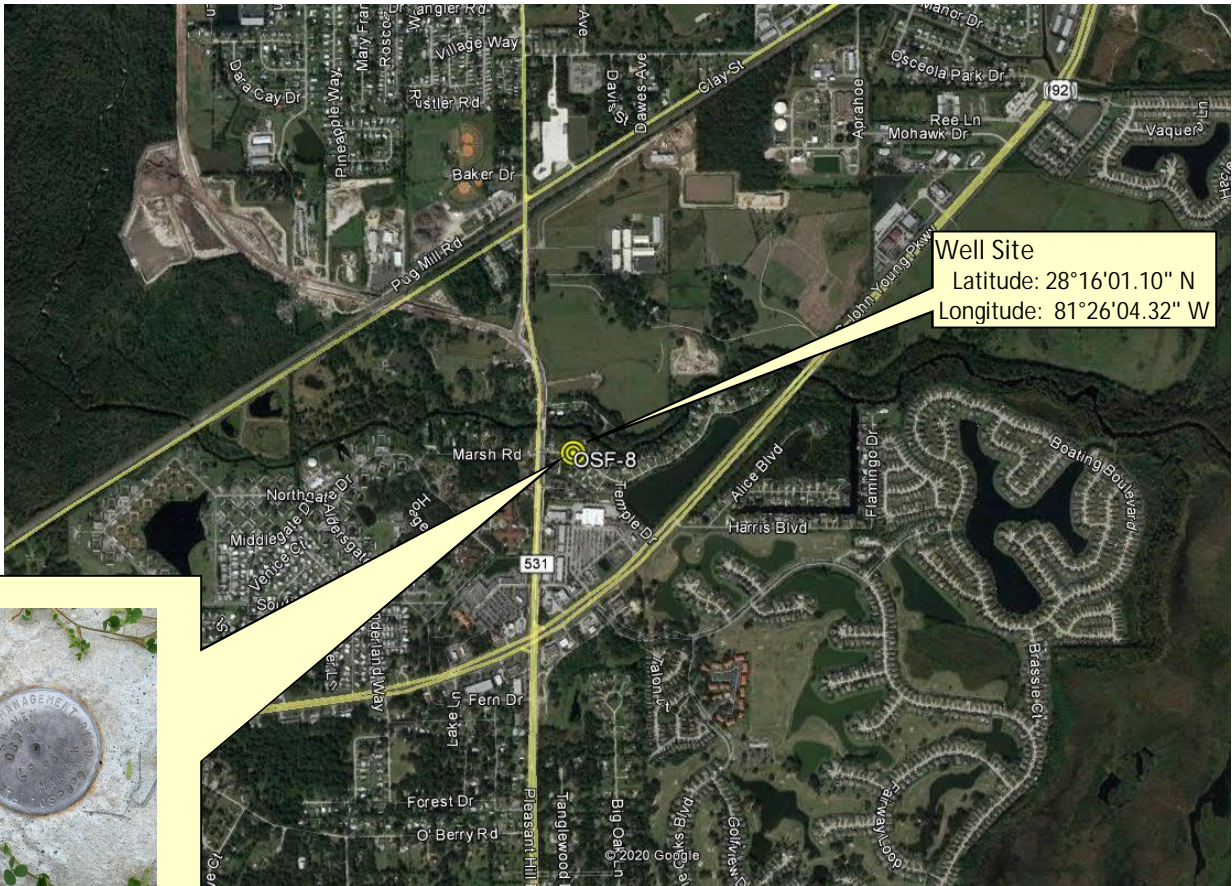
GEOGRAPHIC DATA

| | | |
|----------------------------------|-----------------------------------|-----------------------------|
| Section 32 | Township 25S | Range 29E |
| Well Latitude: 28°16'01.10" N | Well Longitude: 81°26'04.32" W | Location Source: RTK GPS |
| State Plane Coordinates: | Northing (Y) = 1430017.047 | Easting (X) = 516293.759 |

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 of Overall Well Site



Well Site
 Latitude: 28°16'01.10" N
 Longitude: 81°26'04.32" W



Benchmark "OSF 8"
 Latitude: 28°15'59.06" N
 Longitude: 81°26'05.42" W
 El. = 60.40 feet NAVD88

Not to scale (GoogleEarth product)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Well Site and Well Head



Well



Well: "OSF-8"
Reference Point: N. RIM OF 4"
PVC PIPE WITH 8" CASING

Reference Point El. = 59.66
feet NAVD88

Distance to Water = 3.61
feet from reference point
(08/11/2020 at 8:51 AM)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

New Aluminum Tag





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

USGS RMs



RM 3 – LAG BOLT



Latitude: 28°16'01.08" N
Longitude: 81°26'04.40" W
NAVD88 EL = 57.18 feet

RM 2 – X CUT IN PVC



Latitude: 28°16'01.10" N
Longitude: 81°26'04.32" W
NAVD88 EL = 58.82 feet

RM 1 – 1/2" REBAR



Latitude: N 28°16'01.11" N
Longitude: W 81°26'04.32" W
NAVD88 EL = 56.25 feet



Site Benchmark

Site Benchmark Overall Photo



Site BM: OSF 8



Latitude: 28°15'59.06" N
Longitude: 81°26'05.42" W
NAVD88 EL = 60.40





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Source Benchmarks



NGS Benchmark "R 512" (DF6702)

Latitude: 28°15'31.1"
Longitude: 81°26'11.6"
NAVD88 EL = 65.71 feet



NGS Benchmark "Y 629" (DI9182)

Latitude: 28°16'05.6"
Longitude: 81°25'37.1"
NAVD88 EL = 66.29 feet





"R 512" Benchmark Datasheet (1 of 2)

DATASHEETS

Page 1 of 2

The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

```

PROGRAM = datasheet95, VERSION = 8.12.5.7
Starting Datasheet Retrieval...
1 National Geodetic Survey, Retrieval Date = MAY 19, 2020
DF6702 *****
DF6702 DESIGNATION - R 512
DF6702 PID - DF6702
DF6702 STATE/COUNTY- FL/OSCEOLA
DF6702 COUNTRY - US
DF6702 USGS QUAD - KISSIMMEE (2018)
DF6702
DF6702 *CURRENT SURVEY CONTROL
DF6702
DF6702* NAD 83(1986) POSITION- 28 15 31.1 (N) 081 26 11.6 (W) HD_HELD2
DF6702* NAVD 88 ORTHO HEIGHT - 20.029 (meters) 65.71 (feet) ADJUSTED
DF6702
DF6702 GEOID HEIGHT - -27.772 (meters) GEOID18
DF6702 DYNAMIC HEIGHT - 19.999 (meters) 65.61 (feet) COMP
DF6702 MODELED GRAVITY - 979,160.6 (mgal) NAVD 88
DF6702
DF6702 VERT ORDER - FIRST CLASS II
DF6702
DF6702.The horizontal coordinates were established by autonomous hand held GPS
DF6702.observations and have an estimated accuracy of +/- 10 meters.
DF6702.
DF6702.The orthometric height was determined by differential leveling and
DF6702.adjusted by the NATIONAL GEODETIC SURVEY
DF6702.in April 2004.
DF6702
DF6702.Significant digits in the geoid height do not necessarily reflect accuracy.
DF6702.GEOID18 height accuracy estimate available here.
DF6702
DF6702.Click photographs - Photos may exist for this station.
DF6702
DF6702.The dynamic height is computed by dividing the NAVD 88
DF6702.geopotential number by the normal gravity value computed on the
DF6702.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DF6702.degrees latitude (g = 980.6199 gals.).
DF6702
DF6702.The modeled gravity was interpolated from observed gravity values.
DF6702
DF6702; North East Units Estimated Accuracy
DF6702;SPC FL E - 434,947. 157,165. MT (+/- 10 meters HH2 GPS)
DF6702
DF6702_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMM5717925930(NAD 83)
DF6702
DF6702 SUPERSEDED SURVEY CONTROL
DF6702
DF6702.No superseded survey control is available for this station.
DF6702
DF6702 MARKER: DD = SURVEY DISK
DF6702_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

```




SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

"R 512" Benchmark Datasheet (2 of 2)

DATASHEETS

Page 2 of 2

DF6702_STAMPING: R 512 2001
 DF6702_MARK LOGO: FLDEP
 DF6702_PROJECTION: FLUSH
 DF6702_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET
 DF6702_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 DF6702+STABILITY: SURFACE MOTION
 DF6702_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 DF6702+SATELLITE: SATELLITE OBSERVATIONS - August 06, 2009

| DF6702 | HISTORY | - Date | Condition | Report By |
|--------|---------|------------|------------|-----------|
| DF6702 | HISTORY | - 20010628 | MONUMENTED | FLDEP |
| DF6702 | HISTORY | - 20050507 | GOOD | FLDEP |
| DF6702 | HISTORY | - 20090806 | GOOD | FLDEP |

DF6702
 DF6702 STATION DESCRIPTION

DF6702'DESCRIBED BY FL DEPT OF ENV PRO 2001 (JLM)
 DF6702'THE MARK IS ABOUT 3.7 MI SOUTHWEST OF KISSIMMEE, IN SECTION 5,
 DF6702'TOWNSHIP 26 SOUTH, RANGE
 DF6702'29 EAST.
 DF6702'
 DF6702'TO REACH THE MARK FROM THE JUNCTION OF U.S. HIGHWAY 192 (VINE STREET)
 DF6702'AND U.S. HIGHWAY
 DF6702'17, 92 (JOHN YOUNG PARKWAY) IN KISSIMMEE, GO SOUTH ON U.S. HIGHWAY 17,
 DF6702'92 FOR 3.5 MI TO THE
 DF6702'JUNCTION OF PLEASANT HILL ROAD (COUNTY ROAD 531) ON THE LEFT, TURN
 DF6702'LEFT ON PLEASANT HILL
 DF6702'ROAD (COUNTY ROAD 531) AND GO SOUTH FOR 0.15 MI TO THE JUNCTION OF
 DF6702'FERM DRIVE ON THE
 DF6702'RIGHT AND THE MARK ON THE RIGHT, SET IN TOP OF A ROUND CONCRETE
 DF6702'MONUMENT FLUSH WITH
 DF6702'THE GROUND AND ABOUT LEVEL WITH FERM DRIVE.
 DF6702'
 DF6702'LOCATED 71.7 FT WEST OF PLEASANT HILL ROAD, 17.2 FT SOUTH OF FERM
 DF6702'DRIVE, 5.6 FT NORTH OF A
 DF6702'4-FOOT TALL CHAINLINK FENCE, 2.2 FT WEST OF A CARSONITE WITNESS POST
 DF6702'AND 2.0 FT WEST OF A
 DF6702'POWER POLE WITH 3 GUY WIRES ATTACHED.
 DF6702'
 DF6702'NOTE A MAGNET WAS IMBEDDED IN THE MONUMENT ON THE SOUTH SIDE.

DF6702
 DF6702 STATION RECOVERY (2005)
 DF6702

DF6702'RECOVERY NOTE BY FL DEPT OF ENV PRO 2005 (JLM)
 DF6702'RECOVERED IN GOOD CONDITION.

DF6702
 DF6702 STATION RECOVERY (2009)
 DF6702

DF6702'RECOVERY NOTE BY FL DEPT OF ENV PRO 2009 (BPJ)
 DF6702'RECOVERED AS DESCRIBED.

*** retrieval complete.
 Elapsed Time = 00:00:02



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

"Y 629" Benchmark Datasheet (1 of 2)

The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.9

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = AUGUST 4, 2020

DI9182 *****

DI9182 DESIGNATION - Y 629
DI9182 PID - DI9182
DI9182 STATE/COUNTY- FL/OSCEOLA
DI9182 COUNTRY - US
DI9182 USGS QUAD - KISSIMMEE (2018)

DI9182
DI9182 *CURRENT SURVEY CONTROL

DI9182* NAD 83(1986) POSITION- 28 16 05.6 (N) 081 25 37.1 (W) HD_HELD2
DI9182* [NAVD 88](#) ORTHO HEIGHT - 20.205 (meters) 66.29 (feet) ADJUSTED

DI9182
DI9182 GEOID HEIGHT - -27.793 (meters) GEOID18
DI9182 DYNAMIC HEIGHT - 20.175 (meters) 66.19 (feet) COMP
DI9182 MODELED GRAVITY - 979,161.5 (mgal) NAVD 88

DI9182 VERT ORDER - FIRST CLASS II
DI9182

DI9182.The horizontal coordinates were established by autonomous hand held GPS
DI9182.observations and have an estimated accuracy of +/- 10 meters.

DI9182.

DI9182.The orthometric height was determined by differential leveling and
DI9182.adjusted by the NATIONAL GEODETIC SURVEY

DI9182.in April 2010.

DI9182

DI9182.Significant digits in the geoid height do not necessarily reflect accuracy.

DI9182.GEOID18 height accuracy estimate available [here](#).

DI9182

DI9182.Click [photographs](#) - Photos may exist for this station.

DI9182

DI9182.The dynamic height is computed by dividing the NAVD 88
DI9182.geopotential number by the normal gravity value computed on the
DI9182.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DI9182.degrees latitude (g = 980.6199 gals.).

DI9182

DI9182.The modeled gravity was interpolated from observed gravity values.

DI9182

DI9182;
DI9182;SPC FL E - North East Units Estimated Accuracy
- 436,006. 158,109. MT (+/- 10 meters HH2 GPS)

DI9182

DI9182_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMM5812326989(NAD 83)

DI9182

DI9182 SUPERSEDED SURVEY CONTROL

DI9182

DI9182.No superseded survey control is available for this station.

DI9182



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

"Y 629" Benchmark Datasheet (2 of 2)

DI9182_MARKER: DD = SURVEY DISK
 DI9182_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE
 DI9182_SP_SET: BRIDGE ABUTMENT
 DI9182_STAMPING: Y 629 2005
 DI9182_MARK LOGO: FLDEP
 DI9182_MAGNETIC: N = NO MAGNETIC MATERIAL
 DI9182_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 DI9182_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
 DI9182+SATELLITE: SATELLITE OBSERVATIONS - August 06, 2009

DI9182

| DI9182 | HISTORY | - Date | Condition | Report By |
|--------|---------|------------|------------|-----------|
| DI9182 | HISTORY | - 20050730 | MONUMENTED | FLDEP |
| DI9182 | HISTORY | - 20090806 | GOOD | FLDEP |

DI9182

STATION DESCRIPTION

DI9182

DI9182'DESCRIBED BY FL DEPT OF ENV PRO 2005
 DI9182'THE MARK IS ABOUT 3.0 MI (4.8 KM) SOUTHWEST OF KISSIMMEE, 1.5 MI (2.4
 DI9182'KM) EAST OF CAMPBELL, IN SECTION 32, TOWNSHIP 25 SOUTH, RANGE 25 EAST.
 DI9182'TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 17, 92 SOUTH
 DI9182'(JOHN YOUNG PARKWAY) AND U.S. HIGHWAY 192 (VINE STREET) IN KISSIMMEE,
 DI9182'GO SOUTH ON U.S. HIGHWAY 17, 92 (JOHN YOUNG PARKWAY) FOR 2.4 MI (3.9
 DI9182'KM) TO THE SOUTH END OF BRIDGE NUMBER 920152 SPANNING THE SHINGLE
 DI9182'CREEK AND THE MARK ON THE LEFT, SET FLUSH IN THE TOP OF THE SOUTHEAST
 DI9182'ABUTMENT OF BRIDGE, 0.6 FT (0.2 M) BELOW THE LEVEL OF U.S. HIGHWAY 17,
 DI9182'92 NORTHBOUND LANES.

DI9182'

DI9182'LOCATED 23.5 FT (7.2 M) EAST OF THE CENTERLINE OF U.S. HIGHWAY 17, 92
 DI9182'NORTHBOUND LANES, 8.1 FT (2.5 M) NORTH OF A CARSONITE WITNESS POST,
 DI9182'8.0 FT (2.4 M) NORTH OF THE SOUTH END OF THE BRIDGE GUARD RAIL AND 5.5
 DI9182'FT (1.7 M) NORTH OF THE NORTH END OF A METAL GUARD RAIL.

DI9182

STATION RECOVERY (2009)

DI9182

DI9182'RECOVERY NOTE BY FL DEPT OF ENV PRO 2009 (BPJ)
 DI9182'RECOVERED AS DESCRIBED.

*** retrieval complete.
 Elapsed Time = 00:00:01



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (1 of 7)

| 171204.05 USGS PH4 WELLS: SFWMD | | | | J. CONNORS | |
|---------------------------------|---------|-------------------------|---------|------------|---|
| WELL OSF-8 | | | | T. ADT | |
| | | | | 7/31/30 | |
| | | | | FB556 PG17 | |
| LEICA DNA03 | | | | | |
| S/N: 347859 | | | | | |
| FILE: 171204.05JC 73120 | | | | | |
| COLLIMATION | | | | | |
| COLL ERROR OLD = -12.8" | | COLL ERROR NEW = -19.9" | | | |
| DIFF = -7.1" | | RECTILE = 6.2459 | | | |
| STA | B.S.(+) | H.I. | F.S.(-) | EL. | DESC. |
| | 72.312 | 72.9412 | | 65.71 | From RS12 DF6702 65.71(88) FDEP RS12 2001 |
| | 23742 | 69.0534 | 62619 | 66.6792 | T.P. 1 |
| | 3.0691 | 66.0635 | 6.0591 | 62.9943 | T.P. 2 |
| | 4.5849 | 65.8625 | 4.7859 | 61.2776 | T.P. 3 |
| | 6.0198 | 66.6776 | 52046 | 60.6579 | T.P. 4 |
| | 4.9701 | 66.6360 | 5.0118 | 61.6659 | T.P. 5 |
| | 4.6014 | 65.0582 | 6.1791 | 60.4568 | T.P. 6 |



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (2 of 7)

| 171204.05 SEWMO USGS PH 4 WELLS | | | | | J. CONNORS | | |
|---------------------------------|---------|--------|----------|-----|---------------------------------------|--|--|
| WELL OSF-8 | | | | | T. AOT | | |
| (CONTINUED FROM PG 17) | | | | | 7/31/20 | | |
| (CONTINUED FROM PG 17) | | | | | FB 556 PG 18 | | |
| STA | B.S (+) | H.I. | F.S. (-) | EL. | DESC. | | |
| 5.3288 | 65.7232 | 4.6638 | 60.3944 | | FCM OSF-8 2020 | | |
| 4.2485 | 62.6942 | 7.2776 | 58.4457 | | T.P. 7 | | |
| 3.1064 | 62.7592 | 3.0414 | 59.6528 | | OSF-8 @ M.P. x CUT | | |
| 3 ⁺ .7873 | 62.6016 | 3.9449 | 58.8143 | | R.M. 2 x CUT | | |
| 6.2750 | 62.5135 | 6.3630 | 56.2385 | | R.M. 1 1/2" REBAR @ WELL HEAD | | |
| 5.8562 | 63.0325 | 5.3372 | 57.1764 | | R.M. 3 LAG BOLT IN STUMP @ HIGHEST PT | | |
| 4.6605 | 65.6281 | 2.0649 | 60.9676 | | T.P. 8 | | |
| 4.0679 | 64.4617 | 5.2312 | 60.3952 | | T.P. 9 (FCM OSF-8) | | |
| 4.9080 | 64.0442 | 5.3256 | 59.1362 | | T.P. 10 | | |
| 4.0952 | 64.8844 | 3.2550 | 60.7891 | | T.P. 11 | | |
| 4.5365 | 65.7344 | 3.6854 | 61.1979 | | T.P. 12 | | |



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (3 of 7)

| 171204.05 SFWMD USGS PH4 WELLS | | | | | J. CONNORS | | | | |
|--------------------------------|----------|---------|----------|---------|-----------------------------|---------|-------------|--|--|
| WELL OSF-8 | | | | | T. ADT | 7/31/20 | FB556 PG 19 | | |
| (CONTINUED FROM PG 18) | | | | | | | | | |
| STA | B.S. (+) | H.I. | F.S. (-) | EL. | DESC. | | | | |
| | 4.7931 | 66.3996 | 4.1280 | 61.6064 | T.P. 13 | | | | |
| | 6.7323 | 68.7637 | 4.3681 | 62.0314 | T.P. 14 | | | | |
| | 5.8089 | 72.0334 | 2.5392 | 66.2245 | T.P. 15 | | | | |
| | | | 5.7605 | 66.2730 | Y 629 F DEP 2005 66.29 (88) | | | | |



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (4 of 7)

17/20465 SFWD USGS/PH4 WELLS

File OSF-8

Bm-OSF-8 SET SFWD Disk in Poured

IN PLACE CONC. MON 8" DIA

STAMPED OSF-8 LB 8336 2020

HT 6.562

START 8.51

END 3.23

TRIANGLE R8S

Bm OSF-8 EL 60.40156

EL @ WELL 59.66046

OS + 0.744

DEPTH OF WATER 3.61 FROM TOP
OF WELL

30000 Bm CROW

30,001 WELL

B. REIDEN

F8556 PG 22

8/11/2020

Bm PICTURES

Pic #1 Disk

Pic #2 Disk WAIST HEIGHT

Pic #3 Bm Looking NORTH

Pic #4 Bm Looking EAST

Pic #5 Bm Looking SOUTH

Pic #6 Bm Looking WEST

WELL PICTURES

Pic #7 Well Looking NORTH

Pic #8 Well Looking EAST

Pic #9 Well Looking WEST

Pic #10 Well Looking SOUTH

Pic #11 Well Looking NORTH

Pic #12 PLATE Looking NORTH

WELLS 3" PUC WITH 8" CASING



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (5 of 7)

171204.05 SFWD USGS/PA4 WELLS

4

CRICK

WTS

CONC. SLABS

15" OAK

50.90

28.32

WELL

8.05 BOLT

43" OAK

pool

House

B. RUIJVEN

FB 556 Pg 23

8-11-2020

10.5' 35° NE

GR EL: 56.06

10.5' 74° E

GR EL: 55.95

WELL

6.5' 278° W

GR EL: 56.58

8.03 158° S

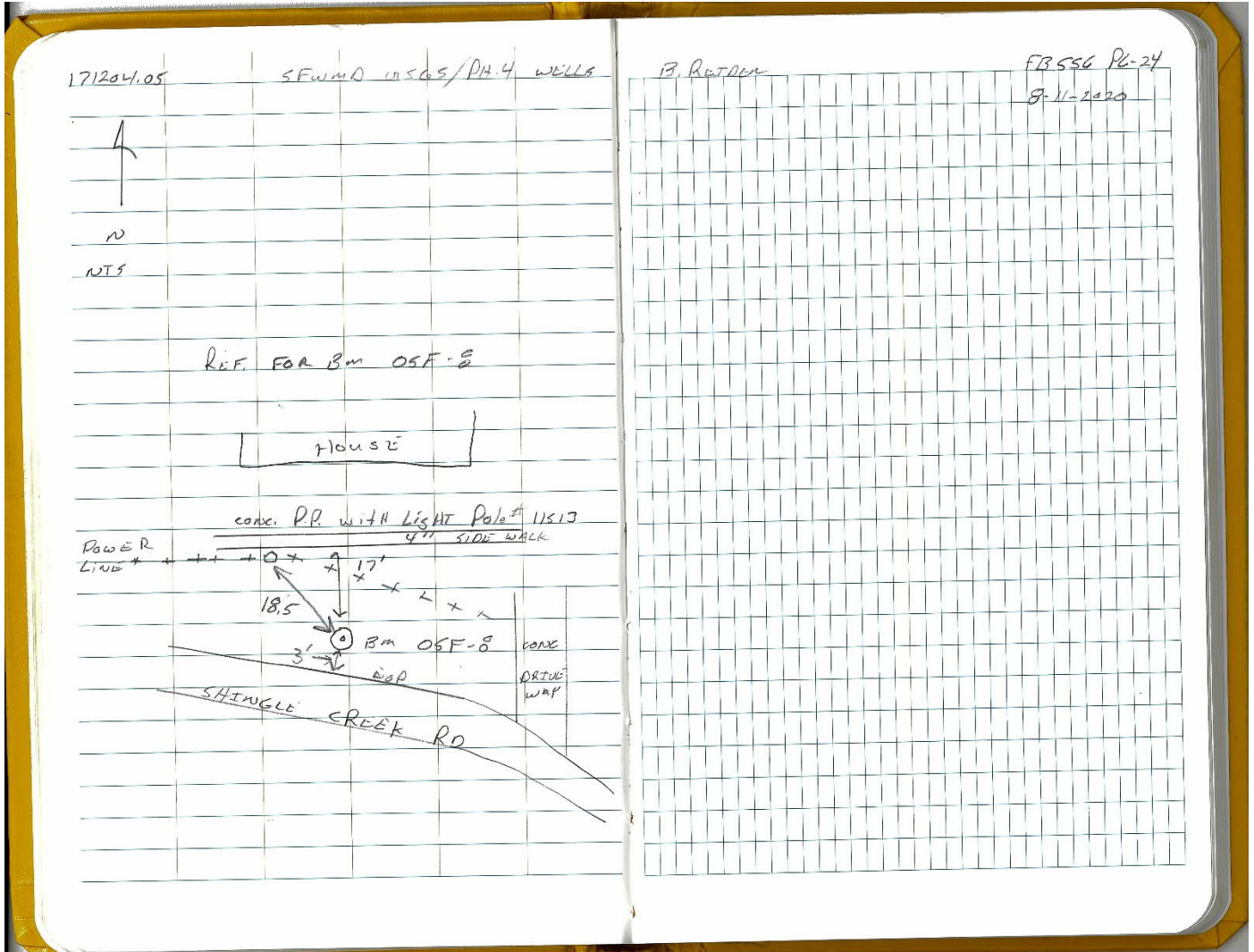
GR EL: 56.59



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (6 of 7)





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/19

Field Notes (7 of 8)

171204.05 SFWMD USGS/ D#4 WELLS

B. RETOCA

FB 556 Pg. 27

8-17-2020

WELL OSF-8

Pic #105 WELL OSF-8 WITH TAPE

Pic #106 RIM LAG BOLT IN STUMP

8.05' AT 263% WEST OF WELL

Pic #107 Bm OSF-8 CLOSE UP

Pic #108 Bm OSF-8 WAIST HIGH

Pic #109 Bm OSF-8 AT 130'

20 MINUTES FROM OSF-14



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

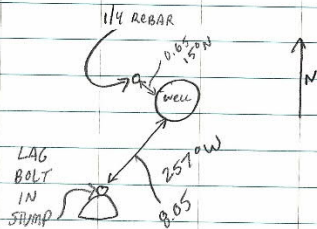
Rev. 1/19

Field Notes (8 of 8)

171204.05 SFWMD USGS WELLS PH4
OSF-8

E DOULE 8/25/20 FB537 PG 68

* NOTE REF X MARK ON WELL
IS 15°N





South Florida Water Management District Benchmark Datasheet

| | | | |
|-------------------------------------|---|--|----------------------------------|
| Designation: <u>OSF 8</u> | Project Name: <u>USGS PHASE 4 WELLS</u> | Type: <u>V</u> | State Plane Zone: <u>FL East</u> |
| Stamping: <u>OSF 8 LB 8336 2020</u> | Field Book Name: <u>556</u> | Field Book Page: <u>17-19, 22-24, 29</u> | |
| Established By: <u>T2ues</u> | Recovered By: _____ | Recovery Date: _____ | |
| Surveyor: <u>REIDER</u> | Established Date: <u>08/11/20</u> | Status: <u>New</u> | |

GEOGRAPHIC POSITION INFORMATION

| | | |
|---|--|----------------------------------|
| Section: <u>32</u> | Township: <u>25S</u> | Range: <u>29E</u> |
| County: <u>OSCEOLA</u> | Quadrangle: <u>KISSIMMEE</u> | |
| NAD83 Adj. Year: <u>2011</u> | Vertical Datum: <u>NAVD1988</u> | Horizontal Datum: <u>NAD1983</u> |
| NAVVD88 Elevation (feet): <u>60.402</u> | NGVD29 Elevation (feet): <u>61.342</u> | 2022 Elevation: _____ |
| NAVVD88 Class: _____ | NGVD29 Class: _____ | Other Elevation: _____ |
| NAVVD88 Order: <u>3RD</u> | NGVD29 Order: _____ | Other Elevation Type: _____ |

CORPSCON 6.0.1 CONVERSION FACTOR (NAVVD88 TO NGVD29): (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)

| | | |
|--|--|--|
| Vertical Datum Offset: + <u>0.94</u> | Actual NGS Elevation or ngvd29.txt file: _____ | OPUS Ortho Height: <u>18.415(m)</u> |
| Northing (Y) (feet): <u>1429811.743</u> | Easting (X) (feet): <u>516194.834</u> | Source of Latitude & Longitude: <u>OPUS SOLUTION</u> |
| Latitude: <u>28</u> <u>15</u> <u>59.06264</u> | Longitude: <u>81</u> <u>26</u> <u>5.41518</u> | |
| Latitude (Decimal Degrees): <u>28.26640629</u> | Longitude (Decimal Degrees): <u>-81.43483755</u> | |

RECOVERY DATA

How to Reach: FROM THE PHYSICAL INTERSECTION OF S JOHN YOUNG PKWAY AND PLEASANT HILL RD, GO NORTH ALONG PLEASANT HILL RD FOR 0.40 MILES TO THE INTERSECTION OF SHINGLE CREEK CT, PROCEED EAST ALONG SHINGLE CREEK CT FOR APPROXIMATELY 350 FEET TO THE MARK ON THE LEFT. BENCHMARK OSF 8 IS A SFWMD DISK SET IN A 1 1/2 INCH PIPE WITH A 10 INCH CONCRETE COLLAR 18.5 FEET SOUTHEAST OF A CONCRETE POWER POLE NUMBERED 11513, 17.0 FEET SOUTH OF THE SOUTH FACE OF A 4 FOOT WIDE SIDEWALK AND 3.0 FEET NORTH OF THE EDGE OF PAVEMENT OF SHINGLE CREEK CT.

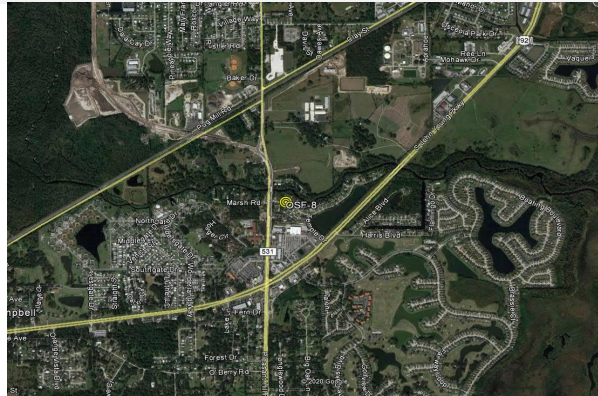
Description/Notes:

Notable Landmarks:

Other Source Benchmarks:

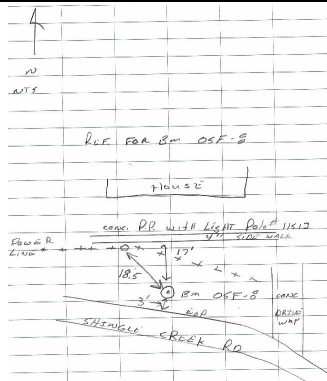
PICTURES

Aerial View of Overall Site



PICTURES

Site Sketch



Haywood, Joshua

From: opus <opus@ngs.noaa.gov>
Sent: Monday, August 24, 2020 7:20 AM
To: Haywood, Joshua
Subject: OPUS solution : 33322240.20o OP1598267851686

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

FILE: 33322240.20o OP1598267851686

NGS OPUS SOLUTION REPORT
=====

All computed coordinate accuracies are listed as peak-to-peak values.

For additional information:

https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.ngs.noaa.gov%2FOPUS%2Fabout.jsp%23accuracy&data=02%7C01%7Cjosh.haywood%40t2ue.com%7Cb9c64aa9f1e24f02abf508d8481fad11%7Ce64791d699864645a1a068c1175eda41%7C1%7C0%7C637338648208054343&reserved=0

USER: josh.haywood@t2ue.com DATE: August 24, 2020
RINEX FILE: 3332224m.20o TIME: 11:20:04 UTC

SOFTWARE: page5 1801.18 master73.pl 160321 START: 2020/08/11 12:52:00
EPHEMERIS: igr21182.eph [rapid] STOP: 2020/08/11 19:23:00
NAV FILE: brdc2240.20n OBS USED: 13892 / 16132 : 86%
ANT NAME: TRMR8S NONE # FIXED AMB: 87 / 98 : 89%
ARP HEIGHT: 2.000 OVERALL RMS: 0.018(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) ITRF2014 (EPOCH:2020.6111)

X: 837276.452(m) 0.012(m) 837275.609(m) 0.012(m)
Y: -5559091.465(m) 0.035(m) -5559089.905(m) 0.035(m)
Z: 3002536.292(m) 0.013(m) 3002536.133(m) 0.013(m)

LAT: 28 15 59.06264 0.010(m) 28 15 59.08378 0.010(m)
E LON: 278 33 54.58482 0.015(m) 278 33 54.56275 0.015(m)
W LON: 81 26 5.41518 0.015(m) 81 26 5.43725 0.015(m)
EL HGT: -9.365(m) 0.035(m) -10.910(m) 0.035(m)
ORTHO HGT: 18.415(m) 0.062(m) [NAVD88 (Computed using GEOID18)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 17) SPC (0901 FLE)
Northing (Y) [meters] 3126790.777 435807.491
Easting (X) [meters] 457351.057 157336.500
Convergence [degrees] -0.20593056 -0.20593056
Point Scale 0.99962245 0.99996363
Combined Factor 0.99962392 0.99996510

US NATIONAL GRID DESIGNATOR: 17RMM5735126790(NAD 83)

BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DE9138 OKCB OKEECHOBEE CORS ARP N271557.715 W0805119.181 124706.7
DH3757 WACH WAUCHULA CORS ARP N273051.042 W0815256.615 94289.9
DR4402 LBL1 LABELLE CORS ARP N264451.324 W0812712.291 168307.2

NEAREST NGS PUBLISHED CONTROL POINT
DF6701 Q 512 N2815000050 W08125000055 385.7

BASE STATION INFORMATION
STATION NAME: okcb a 4 (Okeechobee; Okeechobee, Florida, U.S.A.)
MONUMENT: 49587S001
XYZ 901665.5395 -5601320.7260 2904442.8976 MON @ 2010.0000 (M)
XYZ -0.0116 0.0012 0.0016 VEL (M/YR)
NEU 0.0000 0.0000 0.0000 MON TO ARP (M)
NEU 0.0001 -0.0008 0.1242 ARP TO L1 PHASE CENTER (M)
NEU -0.0000 -0.0008 0.1337 ARP TO L2 PHASE CENTER (M)
XYZ -0.1231 0.0123 0.0172 VEL TIMES 10.6112 YRS
XYZ 0.0000 0.0000 0.0000 MON TO ARP
XYZ 0.0168 -0.1091 0.0570 ARP TO L1 PHASE CENTER
XYZ 901665.4332 -5601320.8227 2904442.9718 L1 PHS CEN @ 2020.6111
XYZ -0.0000 -0.0000 -0.0000 + XYZ ADJUSTMENTS

XYZ 901665.4332 -5601320.8227 2904442.9718 NEW L1 PHS CEN @ 2020.6111
XYZ 901665.4164 -5601320.7136 2904442.9148 NEW ARP @ 2020.6111
XYZ 901665.4164 -5601320.7136 2904442.9148 NEW MON @ 2020.6111
LLH 27 15 57.73632 279 8 40.79741 -15.2076 NEW L1 PHS CEN @ 2020.6111
LLH 27 15 57.73631 279 8 40.79744 -15.3319 NEW ARP @ 2020.6111
LLH 27 15 57.73631 279 8 40.79744 -15.3319 NEW MON @ 2020.6111

STATION NAME: wach a 2 (Wauchula; Wauchula, Florida, U.S.A.)

MONUMENT: NO DOMES NUMBER

XYZ 799335.4500 -5604081.2975 2928868.5949 MON @ 2010.0000 (M)
XYZ -0.0116 0.0017 0.0012 VEL (M/YR)
NEU 0.0000 0.0000 0.0000 MON TO ARP (M)
NEU 0.0001 -0.0008 0.1242 ARP TO L1 PHASE CENTER (M)
NEU -0.0000 -0.0008 0.1337 ARP TO L2 PHASE CENTER (M)
XYZ -0.1234 0.0180 0.0123 VEL TIMES 10.6112 YRS
XYZ 0.0000 0.0000 0.0000 MON TO ARP
XYZ 0.0148 -0.1091 0.0575 ARP TO L1 PHASE CENTER
XYZ 799335.3414 -5604081.3887 2928868.6648 L1 PHS CEN @ 2020.6111
XYZ -0.0000 -0.0000 0.0000 + XYZ ADJUSTMENTS
XYZ 799335.3414 -5604081.3887 2928868.6648 NEW L1 PHS CEN @ 2020.6111
XYZ 799335.3266 -5604081.2796 2928868.6072 NEW ARP @ 2020.6111
XYZ 799335.3266 -5604081.2796 2928868.6072 NEW MON @ 2020.6111
LLH 27 30 51.06303 278 7 3.36196 9.2827 NEW L1 PHS CEN @ 2020.6111
LLH 27 30 51.06302 278 7 3.36199 9.1585 NEW ARP @ 2020.6111
LLH 27 30 51.06302 278 7 3.36199 9.1585 NEW MON @ 2020.6111

STATION NAME: lball a 1 (LBLL LaBelle; LaBelle, Florida USA)

MONUMENT: NO DOMES NUMBER

XYZ 847023.9738 -5636220.8238 2853260.8910 MON @ 2010.0000 (M)
XYZ -0.0111 -0.0005 0.0019 VEL (M/YR)
NEU 0.0000 0.0000 0.0000 MON TO ARP (M)
NEU 0.0001 -0.0008 0.1242 ARP TO L1 PHASE CENTER (M)
NEU -0.0000 -0.0008 0.1337 ARP TO L2 PHASE CENTER (M)
XYZ -0.1178 -0.0053 0.0202 VEL TIMES 10.6112 YRS
XYZ 0.0000 0.0000 0.0000 MON TO ARP
XYZ 0.0157 -0.1098 0.0560 ARP TO L1 PHASE CENTER
XYZ 847023.8717 -5636220.9389 2853260.9672 L1 PHS CEN @ 2020.6111
XYZ -0.0001 -0.0000 -0.0001 + XYZ ADJUSTMENTS
XYZ 847023.8717 -5636220.9389 2853260.9671 NEW L1 PHS CEN @ 2020.6111
XYZ 847023.8559 -5636220.8291 2853260.9111 NEW ARP @ 2020.6111
XYZ 847023.8559 -5636220.8291 2853260.9111 NEW MON @ 2020.6111
LLH 26 44 51.34435 278 32 47.68768 -18.0673 NEW L1 PHS CEN @ 2020.6111
LLH 26 44 51.34434 278 32 47.68771 -18.1916 NEW ARP @ 2020.6111
LLH 26 44 51.34434 278 32 47.68771 -18.1916 NEW MON @ 2020.6111

REMOTE STATION INFORMATION

STATION NAME: 3332 1

MONUMENT: NO DOMES NUMBER

XYZ 837275.4174 -5559089.9206 3002536.0565 MON @ 2020.6108 (M)
NEU -0.0012 0.0011 2.0000 MON TO ARP (M)
NEU 0.0012 -0.0011 0.0827 ARP TO L1 PHASE CENTER (M)
NEU -0.0003 -0.0009 0.0713 ARP TO L2 PHASE CENTER (M)
XYZ 0.2636 -1.7423 0.9461 MON TO ARP
XYZ 0.0096 -0.0716 0.0402 ARP TO L1 PHASE CENTER
XYZ 837275.6906 -5559091.7345 3002537.0428 L1 PHS CEN @ 2020.6111

BASELINE NAME: okcb 3332

XYZ 0.1987 0.0156 0.0816 + XYZ ADJUSTMENTS
XYZ 837275.8893 -5559091.7189 3002537.1244 NEW L1 PHS CEN @ 2020.6111
XYZ 837275.8796 -5559091.6473 3002537.0842 NEW ARP @ 2020.6111
XYZ 837275.6161 -5559089.9050 3002536.1381 NEW MON @ 2020.6111
LLH 28 15 59.08390 278 33 54.56302 -8.8239 NEW L1 PHS CEN @ 2020.6111
LLH 28 15 59.08386 278 33 54.56306 -8.9066 NEW ARP @ 2020.6111
LLH 28 15 59.08390 278 33 54.56302 -10.9066 NEW MON @ 2020.6111

BASELINE NAME: wach 3332

XYZ 0.1863 -0.0017 0.0785 + XYZ ADJUSTMENTS
XYZ 837275.8769 -5559091.7362 3002537.1213 NEW L1 PHS CEN @ 2020.6111
XYZ 837275.8673 -5559091.6646 3002537.0811 NEW ARP @ 2020.6111
XYZ 837275.6037 -5559089.9223 3002536.1350 NEW MON @ 2020.6111
LLH 28 15 59.08358 278 33 54.56247 -8.8120 NEW L1 PHS CEN @ 2020.6111
LLH 28 15 59.08354 278 33 54.56252 -8.8946 NEW ARP @ 2020.6111
LLH 28 15 59.08358 278 33 54.56247 -10.8947 NEW MON @ 2020.6111

BASELINE NAME: lball 3332

XYZ 0.1896 0.0332 0.0685 + XYZ ADJUSTMENTS
XYZ 837275.8802 -5559091.7013 3002537.1114 NEW L1 PHS CEN @ 2020.6111
XYZ 837275.8705 -5559091.6297 3002537.0711 NEW ARP @ 2020.6111
XYZ 837275.6070 -5559089.8874 3002536.1250 NEW MON @ 2020.6111
LLH 28 15 59.08382 278 33 54.56278 -8.8467 NEW L1 PHS CEN @ 2020.6111
LLH 28 15 59.08378 278 33 54.56282 -8.9294 NEW ARP @ 2020.6111
LLH 28 15 59.08382 278 33 54.56278 -10.9294 NEW MON @ 2020.6111

G-FILES

Axx2020 811 20 811
 B2020 8111251 20 8111923 1 page5 v1801.18IGS 132 1 2 27NGS 2020 824IFDDPX
 ITRF2014_2118 IGS 20200809
 C00090005 643898003 6 -422308086 27 -980932233 14 X2240A3332X2240AOKCB
 D 1 2 -6574665 1 3 4513855 2 3 -8740634

Axx2020 811 20 811
 B2020 8111251 20 8111923 1 page5 v1801.18IGS 132 1 2 27NGS 2020 824IFDDPX
 ITRF2014_2118 IGS 20200809
 C00090001 -379402771 7 -449913572 34 -736675278 17 X2240A3332X2240AWACH
 D 1 2 -6037369 1 3 7028969 2 3 -8804390

Axx2020 811 20 811
 B2020 8111251 20 8111923 1 page5 v1801.18IGS 132 1 2 27NGS 2020 824IFDDPX
 ITRF2014_2118 IGS 20200809
 C00090002 97482490 5 -771309418 25 -1492752140 14 X2240A3332X2240ALBLL
 D 1 2 -6226915 1 3 5066387 2 3 -8122961

POST-FIT RMS BY SATELLITE VS. BASELINE

OVERALL 01 02 03 05 06 07 09 12
 okcb-3332| 0.018 0.017 0.017 0.021 0.015 0.025 ... 0.023 0.019
 13 15 17 18 19 22 24 25 28
 okcb-3332| 0.021 0.022 0.015 0.017 0.015 0.022 0.017 0.020 0.014
 29 30
 okcb-3332| 0.021 0.019

OVERALL 01 02 03 05 06 07 09 12
 wach-3332| 0.020 0.019 0.020 0.022 0.017 0.020 ... 0.034 0.022
 13 15 17 18 19 22 24 25 28
 wach-3332| 0.018 0.021 0.026 0.019 0.017 0.016 0.022 0.021 0.014
 29 30
 wach-3332| 0.027 0.017

OVERALL 01 02 03 05 06 07 09 12
 lbl-3332| 0.017 0.020 0.015 0.020 0.016 0.016 0.018 0.022 0.018
 13 15 17 18 19 22 24 25 28
 lbl-3332| 0.018 0.020 0.016 ... 0.024 0.020 0.034 0.020 0.012
 29 30
 lbl-3332| 0.020 0.016

OBS BY SATELLITE VS. BASELINE

OVERALL 01 02 03 05 06 07 09 12
 okcb-3332| 4836 48 467 211 510 124 ... 188 465
 13 15 17 18 19 22 24 25 28
 okcb-3332| 230 165 536 33 619 80 157 325 338
 29 30
 okcb-3332| 209 131

OVERALL 01 02 03 05 06 07 09 12
 wach-3332| 4496 30 372 151 479 605 ... 53 516
 13 15 17 18 19 22 24 25 28
 wach-3332| 210 140 55 33 638 38 183 305 349
 29 30
 wach-3332| 204 135

OVERALL 01 02 03 05 06 07 09 12
 lbl-3332| 4560 48 426 200 519 696 25 218 445
 13 15 17 18 19 22 24 25 28
 lbl-3332| 204 162 559 ... 36 90 92 260 323
 29 30
 lbl-3332| 158 99

ITRF position of 3332 as determined by individual baselines

| | X | Y | Z |
|------|------------|--------------|-------------|
| okcb | 837275.616 | -5559089.905 | 3002536.138 |
| wach | 837275.604 | -5559089.922 | 3002536.135 |
| lbl | 837275.607 | -5559089.887 | 3002536.125 |

Residuals of position determined by individual baselines from the final position

| | X | Y | Z | East | North | Up |
|------|--------|--------|--------|--------|--------|--------|
| okcb | 0.007 | -0.000 | 0.005 | 0.007 | 0.004 | 0.004 |
| wach | -0.005 | -0.017 | 0.002 | -0.008 | -0.006 | 0.016 |
| lbl | -0.002 | 0.018 | -0.008 | 0.001 | 0.001 | -0.019 |

Covariance Matrix for the xyz OPUS Position (meters^2).

| | | |
|---------------|---------------|---------------|
| 0.0000002733 | -0.0000000811 | 0.0000000442 |
| -0.0000000811 | 0.0000062333 | -0.0000002845 |
| 0.0000000442 | -0.0000002845 | 0.0000017978 |

Covariance Matrix for the enu OPUS Position (meters^2).

| | | |
|--------------|--------------|---------------|
| 0.0000003817 | 0.0000003782 | -0.0000007053 |
|--------------|--------------|---------------|

0.000003782 0.0000025189 -0.0000016381
-0.000007053 -0.0000016381 0.0000054039

Horizontal network accuracy = 0.00320 meters.
Vertical network accuracy = 0.00456 meters.

Derivation of NAD 83 vector components

Position of reference station ARP in NAD_83(2011)(EPOCH:2010.0000).

| | Xa(m) | Ya(m) | Za(m) | | |
|------|--------------|----------------|---------------|---------|--|
| OKCB | 901666.25422 | -5601322.30851 | 2904443.08260 | 2010.00 | |
| WACH | 799336.16445 | -5604082.87126 | 2928868.78053 | 2010.00 | |
| LBLL | 847024.68649 | -5636222.40999 | 2853261.08073 | 2010.00 | |

Position of reference station monument in NAD_83(2011)(EPOCH:2010.0000).

| | Xr(m) | Yr(m) | Zr(m) | | |
|------|--------------|----------------|---------------|---------|--|
| OKCB | 901666.25422 | -5601322.30851 | 2904443.08260 | 2010.00 | |
| WACH | 799336.16445 | -5604082.87126 | 2928868.78053 | 2010.00 | |
| LBLL | 847024.68649 | -5636222.40999 | 2853261.08073 | 2010.00 | |

Velocity of reference station monument in NAD_83(2011)(EPOCH:2010.0000).

| | Vx (m/yr) | Vy (m/yr) | Vz (m/yr) |
|------|-----------|-----------|-----------|
| OKCB | 0.00118 | 0.00217 | -0.00155 |
| WACH | 0.00128 | 0.00265 | -0.00157 |
| LBLL | 0.00151 | 0.00044 | -0.00103 |

Vectors from unknown station monument to reference station monument
in NAD_83(2011)(EPOCH:2010.0000).

| | Xr-X= DX(m) | Yr-Y= DY(m) | Zr-Z= DZ(m) | | |
|------|--------------|--------------|---------------|---------|--|
| OKCB | 64389.80222 | -42230.84351 | -98093.20940 | 2010.00 | |
| WACH | -37940.28755 | -44991.40626 | -73667.51147 | 2010.00 | |
| LBLL | 9748.23449 | -77130.94499 | -149275.21127 | 2010.00 | |

STATE PLANE COORDINATES - U.S. Survey Foot
SPC (0901 FLE)

| | |
|-----------------------|-------------|
| Northing (Y) [feet] | 1429811.743 |
| Easting (X) [feet] | 516194.834 |
| Convergence [degrees] | -0.20593056 |
| Point Scale | 0.99996363 |
| Combined Factor | 0.99996510 |

***** New Reference Frame Preview *****

We are replacing the nation's NAD 83 and NAVD 88 datums, to improve access and accuracy of the National Spatial Reference System. More at <https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fgeodesy.noaa.gov%2Fdatums%2Fnewdatums%2F&data=02%7C01%7Cjosh.haywood%40t2ue.com%7Cb9c64aa9f1e24f02abf508d8481fad11%7Ce64791d699864645a1a068c1175eda41%7C1%7C0%7C637338648208054343&sdata=2G2K0T NLAi9wWN4xJElrrPQRreYWXNO4q5EOVVh6Oqk%3D&reserved=0>

Below are approximate coordinates for this solution in the new frames:

APPROX ORTHO HGT: 18.392 (m) [PROTOTYPE (Computed using xGeoid19B,GRS80,ITRF2014)]

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.

171204.05JC073120.GSI

| | | | | |
|---------------------|--------------------|-------------------|--------------------|------------------|
| 110001+000000A1 | 32. . . 7+00326980 | 331. 27+00051944 | 390. . . +00000003 | 391. 27+00000000 |
| 110002+000000B1 | 32. . . 7+00325625 | 332. 27+00046270 | 390. . . +00000004 | 391. 27+00000000 |
| 110003+000000B2 | 32. . . 7+00654197 | 336. 27+00056763 | 390. . . +00000003 | 391. 27+00000001 |
| 110004+000000A2 | 32. . . 7+01309154 | 335. 27+00062414 | 390. . . +00000004 | 391. 27+00000002 |
| 110005+0000R512 | 32. . . 7+02031719 | 331. 07+00072312 | 390. . . +00000004 | 391. 07+00000003 |
| 410006+?. 1 | | | | |
| 110007+0000R512 | 83. . 17+00657100 | | | |
| 110008+0000R512 | 32. . . 7+02031719 | 331. 07+00072312 | 390. . . +00000004 | 391. 07+00000003 |
| 110009+00000TP1 | 32. . . 7+02066186 | 332. 07+00062619 | 390. . . +00000006 | 391. 07+00000003 |
| 110010+00000TP1 | 573. . 7-00034466 | 574. . 7+04097905 | 83. . 07+00666792 | |
| 110011+00000TP1 | 32. . . 7+02981667 | 331. 07+00023742 | 390. . . +00000006 | 391. 07+00000005 |
| 110012+00000TP2 | 32. . . 7+02142439 | 332. 07+00060591 | 390. . . +00000004 | 391. 07+00000001 |
| 110013+00000TP2 | 573. . 7+00804761 | 574. . 7+09222011 | 83. . 07+00629943 | |
| 110014+00000TP2 | 32. . . 7+02857642 | 331. 07+00030691 | 390. . . +00000005 | 391. 07+00000005 |
| 110015+00000TP3 | 32. . . 7+03018795 | 332. 07+00047859 | 390. . . +00000004 | 391. 07+00000005 |
| 110016+00000TP3 | 573. . 7+00643608 | 574. . 7+15098449 | 83. . 07+00612776 | |
| 110017+00000TP3 | 32. . . 7+03044545 | 331. 07+00045849 | 390. . . +00000004 | 391. 07+00000005 |
| 110018+00000TP4 | 32. . . 7+03015372 | 332. 07+00052046 | 390. . . +00000007 | 391. 07+00000005 |
| 110019+00000TP4 | 573. . 7+00672781 | 574. . 7+21158365 | 83. . 07+00606579 | |
| 110020+00000TP4 | 32. . . 7+02916564 | 331. 07+00060198 | 390. . . +00000004 | 391. 07+00000005 |
| 110021+00000TP5 | 32. . . 7+02955767 | 332. 07+00050118 | 390. . . +00000005 | 391. 07+00000006 |
| 110022+00000TP5 | 573. . 7+00633579 | 574. . 7+27030697 | 83. . 07+00616659 | |
| 110023+00000TP5 | 32. . . 7+02005323 | 331. 07+00049701 | 390. . . +00000003 | 391. 07+00000001 |
| 110024+00000TP6 | 32. . . 7+01942440 | 332. 07+00061791 | 390. . . +00000004 | 391. 07+00000001 |
| 110025+00000TP6 | 573. . 7+00696462 | 574. . 7+30978460 | 83. . 07+00604568 | |
| 110026+00000TP6 | 32. . . 7+00737163 | 331. 07+00046014 | 390. . . +00000005 | 391. 07+00000001 |
| 110027+00000FCM | 32. . . 7+00693043 | 332. 07+00046638 | 390. . . +00000003 | 391. 07+00000001 |
| 110028+00000FCM | 573. . 7+00740582 | 574. . 7+32408665 | 83. . 07+00603944 | |
| 110029+00000FCM | 32. . . 7+01249030 | 331. 07+00053288 | 390. . . +00000003 | 391. 07+00000001 |
| 110030+00000TP7 | 32. . . 7+01028164 | 332. 07+00072776 | 390. . . +00000003 | 391. 07+00000001 |
| 110031+00000TP7 | 573. . 7+00961447 | 574. . 7+34685859 | 83. . 07+00584457 | |
| 110032+00000TP7 | 32. . . 7+00207005 | 331. 07+00042485 | 390. . . +00000004 | 391. 07+00000000 |
| 110033+00000SF8 | 32. . . 7+00202477 | 332. 07+00030414 | 390. . . +00000006 | 391. 07+00000000 |
| 110034+00000SF8 | 573. . 7+00965976 | 574. . 7+35095342 | 83. . 07+00596528 | |
| 110035+00000SF8 | 32. . . 7+00445097 | 331. 07+00031064 | 390. . . +00000004 | 391. 07+00000000 |
| 110036+00000RM2 | 32. . . 7+00445346 | 332. 07+00039449 | 390. . . +00000003 | 391. 07+00000001 |
| 110037+00000RM2 | 573. . 7+00965726 | 574. . 7+35985785 | 83. . 07+00588143 | |
| 110038+00000RM2 | 32. . . 7+00444766 | 331. 07+00037873 | 390. . . +00000003 | 391. 07+00000001 |
| 110039+00000RM1 | 32. . . 7+00440085 | 332. 07+00063630 | 390. . . +00000003 | 391. 07+00000000 |
| 110040+00000RM1 | 573. . 7+00970407 | 574. . 7+36870636 | 83. . 07+00562385 | |
| 110041+00000RM1 | 32. . . 7+00440423 | 331. 07+00062750 | 390. . . +00000003 | 391. 07+00000000 |
| 110042+00000RM3 | 32. . . 7+00384878 | 332. 07+00053372 | 390. . . +00000005 | 391. 07+00000000 |
| 110043+00000RM3 | 573. . 7+01025952 | 574. . 7+37695937 | 83. . 07+00571764 | |
| 110044+00000RM3 | 32. . . 7+00401110 | 331. 07+00058562 | 390. . . +00000004 | 391. 07+00000000 |
| 110045+00000TP8 | 32. . . 7+00476012 | 332. 07+00020649 | 390. . . +00000004 | 391. 07+00000001 |
| 110046+00000TP8 | 573. . 7+00951050 | 574. . 7+38573060 | 83. . 07+00609676 | |
| 110047+00000TP8 | 32. . . 7+00868413 | 331. 07+00046605 | 390. . . +00000003 | 391. 07+00000000 |
| 110048+00000TP9 | 32. . . 7+00730157 | 332. 07+00052342 | 390. . . +00000004 | 391. 07+00000001 |
| 110049+00000TP9 | 573. . 7+01089305 | 574. . 7+40171630 | 83. . 07+00603938 | |

171204.05JC073120.GSI

| | | | | |
|-----------------|--------------------|-------------------|--------------------|------------------|
| 110050+0000TP9 | 32. . . 7+02993445 | 331. 07+00040679 | 390. . . +00000003 | 391. 07+00000005 |
| 110051+0000TP10 | 32. . . 7+02954040 | 332. 07+00053256 | 390. . . +00000004 | 391. 07+00000003 |
| 110052+0000TP10 | 573. . 7+01128710 | 574. . 7+46119115 | 83. . 07+00591362 | |
| 110053+0000TP10 | 32. . . 7+03045769 | 331. 07+00049080 | 390. . . +00000007 | 391. 07+00000005 |
| 110054+0000TP11 | 32. . . 7+02930270 | 332. 07+00032550 | 390. . . +00000007 | 391. 07+00000003 |
| 110055+0000TP11 | 573. . 7+01244209 | 574. . 7+52095154 | 83. . 07+00607891 | |
| 110056+0000TP11 | 32. . . 7+02132407 | 331. 07+00040952 | 390. . . +00000005 | 391. 07+00000002 |
| 110057+0000TP12 | 32. . . 7+02194533 | 332. 07+00036864 | 390. . . +00000004 | 391. 07+00000002 |
| 110058+0000TP12 | 573. . 7+01182083 | 574. . 7+56422095 | 83. . 07+00611979 | |
| 110059+0000TP12 | 32. . . 7+03026748 | 331. 07+00045365 | 390. . . +00000008 | 391. 07+00000004 |
| 110060+0000TP13 | 32. . . 7+03076954 | 332. 07+00041280 | 390. . . +00000004 | 391. 07+00000001 |
| 110061+0000TP13 | 573. . 7+01131877 | 574. . 7+62525797 | 83. . 07+00616064 | |
| 110062+0000TP13 | 32. . . 7+03040493 | 331. 07+00047931 | 390. . . +00000003 | 391. 07+00000002 |
| 110063+0000TP14 | 32. . . 7+03057482 | 332. 07+00043681 | 390. . . +00000005 | 391. 07+00000003 |
| 110064+0000TP14 | 573. . 7+01114889 | 574. . 7+68623771 | 83. . 07+00620314 | |
| 110065+0000TP14 | 32. . . 7+03013339 | 331. 07+00067323 | 390. . . +00000007 | 391. 07+00000001 |
| 110066+0000TP15 | 32. . . 7+03074449 | 332. 07+00025392 | 390. . . +00000004 | 391. 07+00000004 |
| 110067+0000TP15 | 573. . 7+01053778 | 574. . 7+74711560 | 83. . 07+00662245 | |
| 110068+0000TP15 | 32. . . 7+01078268 | 331. 07+00058089 | 390. . . +00000007 | 391. 07+00000001 |
| 110069+0000Y629 | 32. . . 7+01050246 | 332. 07+00057605 | 390. . . +00000005 | 391. 07+00000001 |
| 110070+0000Y629 | 573. . 7+01081801 | 574. . 7+76840074 | 83. . 07+00662730 | |

| | | | |
|--------------------------|--|--------------------------|----------|
| Project File Data | | Coordinate System | |
| Name: | J:\2017\171204.05 - SFWMD USGS Phase 4 Wells\TBC\OSF 8.vce | Name: | Default |
| Size: | 49 KB | Datum: | WGS 1984 |
| Modified: | 8/4/2020 2:58:30 PM (UTC:-4) | Zone: | Default |
| Time zone: | Eastern Standard Time | Geoid: | |
| Reference number: | | Vertical datum: | |
| Description: | | Calibrated site: | |
| Comment 1: | | | |
| Comment 2: | | | |
| Comment 3: | | | |

Level Report

Imported file: [171204.05JC073120.GSI](#)

Instrument:

Creation option: Delta elevations

Description usage: Feature codes

Run - 0002 Raw Observations

Standard error per kilometer of double leveling: 0.00230 ft

Standard error per turn/station setup: 0.00000 ft

Raw Misclosure: -0.01703 ft

Σ BS Distances: 3896.086 ft

Σ FS Distances: 3787.906 ft

Run Length: 7683.992 ft

Reduction: Adjusted Values

| Create | Point ID | BS | HI | IS | FS | A Elevation | Raw Elevation | Correction | Adj. Elevation | Type | Distance | Description |
|--------|--------------|------------|-------------|----|------------|-------------|---------------|------------|----------------|-----------|------------|-------------|
| ✓ | RS12 | 7.23119 ft | 72.94105 ft | | | 0.00000 ft | 65.70987 ft | 0.00000 ft | 65.70987 ft | Benchmark | 203.171 ft | |
| ✓ | TP1 | | | | 6.26189 ft | 0.96930 ft | 66.67917 ft | 0.00091 ft | 66.68007 ft | Computed | 206.618 ft | |
| | TP1 | 2.37420 ft | 69.05336 ft | | | | | | | | 298.166 ft | |
| ✓ | TP2 | | | | 6.05909 ft | -3.68489 ft | 62.99427 ft | 0.00204 ft | 62.99632 ft | Computed | 214.243 ft | |
| | TP2 | 3.06909 ft | 66.06337 ft | | | | | | | | 285.764 ft | |
| ✓ | TP3 | | | | 4.78589 ft | -1.71680 ft | 61.27748 ft | 0.00335 ft | 61.28082 ft | Computed | 301.879 ft | |
| | TP3 | 4.58489 ft | 65.86237 ft | | | | | | | | 304.454 ft | |
| ✓ | TP4 | | | | 5.20459 ft | -0.61970 ft | 60.65778 ft | 0.00469 ft | 60.66247 ft | Computed | 301.537 ft | |
| | TP4 | 6.01979 ft | 66.67757 ft | | | | | | | | 291.656 ft | |
| ✓ | TP5 | | | | 5.01179 ft | 1.00800 ft | 61.66578 ft | 0.00599 ft | 61.67177 ft | Computed | 295.576 ft | |
| | TP5 | 4.97009 ft | 66.63587 ft | | | | | | | | 200.532 ft | |
| ✓ | TP6 | | | | 6.17909 ft | -1.20900 ft | 60.45678 ft | 0.00687 ft | 60.46365 ft | Computed | 194.244 ft | |
| | TP6 | 4.60139 ft | 65.05817 ft | | | | | | | | 73.716 ft | |
| ✓ | FCM OSF 2020 | | | | 4.66379 ft | -0.06240 ft | 60.39438 ft | 0.00718 ft | 60.40156 ft | Computed | 69.304 ft | |
| | FCM OSF 2020 | 5.32879 ft | 65.72317 ft | | | | | | | | 124.903 ft | |
| ✓ | TP7 | | | | 7.27759 ft | -1.94880 ft | 58.44558 ft | 0.00769 ft | 58.45327 ft | Computed | 102.816 ft | |
| | TP7 | 4.24849 ft | 62.69407 ft | | | | | | | | 20.700 ft | |
| ✓ | OSF8 MP | | | | 3.04139 ft | 1.20710 ft | 59.65268 ft | 0.00778 ft | 59.66046 ft | Computed | 20.248 ft | |
| | OSF8 MP | 3.10639 ft | 62.75907 ft | | | | | | | | 44.510 ft | |
| ✓ | RM2 | | | | 3.94489 ft | -0.83850 ft | 58.81418 ft | 0.00798 ft | 58.82216 ft | Computed | 44.535 ft | |
| | RM2 | 3.78729 ft | 62.60147 ft | | | | | | | | 44.477 ft | |
| ✓ | RM1 | | | | 6.36299 ft | -2.57569 ft | 56.23849 ft | 0.00817 ft | 56.24666 ft | Computed | 44.008 ft | |
| | RM1 | 6.27499 ft | 62.51347 ft | | | | | | | | 44.042 ft | |
| ✓ | RM3 | | | | 5.33719 ft | 0.93780 ft | 57.17629 ft | 0.00836 ft | 57.18464 ft | Computed | 38.488 ft | |
| | RM3 | 5.85619 ft | 63.03247 ft | | | | | | | | 40.111 ft | |
| ✓ | TP8 | | | | 2.06490 ft | 3.79129 ft | 60.96758 ft | 0.00855 ft | 60.97613 ft | Computed | 47.601 ft | |
| | TP8 | 4.66049 ft | 65.62807 ft | | | | | | | | 86.841 ft | |
| ✓ | TP9 | | | | 5.23419 ft | -0.57370 ft | 60.39388 ft | 0.00890 ft | 60.40278 ft | Computed | 73.016 ft | |
| | TP9 | 4.06789 ft | 64.46177 ft | | | | | | | | 299.344 ft | |
| ✓ | TP10 | | | | 5.32559 ft | -1.25770 ft | 59.13618 ft | 0.01022 ft | 59.14640 ft | Computed | 295.403 ft | |
| | TP10 | 4.90799 ft | 64.04417 ft | | | | | | | | 304.576 ft | |
| ✓ | TP11 | | | | 3.25499 ft | 1.65300 ft | 60.78918 ft | 0.01155 ft | 60.80073 ft | Computed | 293.026 ft | |
| | TP11 | 4.09519 ft | 64.88437 ft | | | | | | | | 213.240 ft | |
| ✓ | TP12 | | | | 3.68639 ft | 0.40880 ft | 61.19798 ft | 0.01251 ft | 61.21048 ft | Computed | 219.453 ft | |
| | TP12 | 4.53649 ft | 65.73447 ft | | | | | | | | 302.674 ft | |
| ✓ | TP13 | | | | 4.12799 ft | 0.40850 ft | 61.60648 ft | 0.01386 ft | 61.62034 ft | Computed | 307.695 ft | |
| | TP13 | 4.79309 ft | 66.39957 ft | | | | | | | | 304.049 ft | |
| ✓ | TP14 | | | | 4.36809 ft | 0.42500 ft | 62.03148 ft | 0.01521 ft | 62.04669 ft | Computed | 305.748 ft | |
| | TP14 | 6.73229 ft | 68.76376 ft | | | | | | | | 301.333 ft | |
| ✓ | TP15 | | | | 2.53919 ft | 4.19309 ft | 66.22457 ft | 0.01656 ft | 66.24113 ft | Computed | 307.444 ft | |
| | TP15 | 5.80889 ft | 72.03346 ft | | | | | | | | 107.827 ft | |
| ✓ | Y629 | | | | 5.76049 ft | 0.04840 ft | 66.27297 ft | 0.01703 ft | 66.29000 ft | Benchmark | 105.024 ft | |

Run - 0002 (N6) Reduced Observations

| Observation | Status | Raw Δ Elevation | Correction | Final Δ Elevation | Setups | Length | Σ BS Readings | Σ FS Readings | Std. Error |
|------------------------|---------|-----------------|------------|-------------------|--------|------------|---------------|---------------|------------|
| R512-TP1 (E75) | Enabled | 0.96930 ft | 0.00091 ft | 0.97021 ft | 1 | 409.790 ft | 7.23119 ft | 6.26189 ft | 0.00081 ft |
| TP1-TP2 (E76) | Enabled | -3.68489 ft | 0.00114 ft | -3.68376 ft | 1 | 512.410 ft | 2.37420 ft | 6.05909 ft | 0.00091 ft |
| TP2-TP3 (E77) | Enabled | -1.71680 ft | 0.00130 ft | -1.71549 ft | 1 | 587.643 ft | 3.06909 ft | 4.78589 ft | 0.00097 ft |
| TP3-TP4 (E78) | Enabled | -0.61970 ft | 0.00134 ft | -0.61836 ft | 1 | 605.990 ft | 4.58489 ft | 5.20459 ft | 0.00099 ft |
| TP4-TP5 (E79) | Enabled | 1.00800 ft | 0.00130 ft | 1.00930 ft | 1 | 587.232 ft | 6.01979 ft | 5.01179 ft | 0.00097 ft |
| TP5-TP6 (E80) | Enabled | -1.20900 ft | 0.00088 ft | -1.20812 ft | 1 | 394.776 ft | 4.97009 ft | 6.17909 ft | 0.00080 ft |
| TP6-FCM OSF 2020 (E81) | Enabled | -0.06240 ft | 0.00032 ft | -0.06208 ft | 1 | 143.020 ft | 4.60139 ft | 4.66379 ft | 0.00048 ft |
| FCM OSF 2020-TP7 (E82) | Enabled | -1.94880 ft | 0.00050 ft | -1.94829 ft | 1 | 227.719 ft | 5.32879 ft | 7.27759 ft | 0.00061 ft |
| TP7-OSF8 MP (E83) | Enabled | 1.20710 ft | 0.00009 ft | 1.20719 ft | 1 | 40.948 ft | 4.24849 ft | 3.04139 ft | 0.00026 ft |
| OSF8 MP-RM2 (E84) | Enabled | -0.83850 ft | 0.00020 ft | -0.83830 ft | 1 | 89.044 ft | 3.10639 ft | 3.94489 ft | 0.00038 ft |
| RM2-RM1 (E85) | Enabled | -2.57569 ft | 0.00020 ft | -2.57550 ft | 1 | 88.485 ft | 3.78729 ft | 6.36299 ft | 0.00038 ft |
| RM1-RM3 (E86) | Enabled | 0.93780 ft | 0.00018 ft | 0.93798 ft | 1 | 82.530 ft | 6.27499 ft | 5.33719 ft | 0.00036 ft |
| RM3-TP8 (E87) | Enabled | 3.79129 ft | 0.00019 ft | 3.79149 ft | 1 | 87.712 ft | 5.85619 ft | 2.06490 ft | 0.00038 ft |
| TP8-TP9 (E88) | Enabled | -0.57370 ft | 0.00035 ft | -0.57334 ft | 1 | 159.857 ft | 4.66049 ft | 5.23419 ft | 0.00051 ft |
| TP9-TP10 (E89) | Enabled | -1.25770 ft | 0.00132 ft | -1.25638 ft | 1 | 594.747 ft | 4.06789 ft | 5.32559 ft | 0.00098 ft |
| TP10-TP11 (E90) | Enabled | 1.65300 ft | 0.00132 ft | 1.65432 ft | 1 | 597.603 ft | 4.90799 ft | 3.25499 ft | 0.00098 ft |
| TP11-TP12 (E91) | Enabled | 0.40880 ft | 0.00096 ft | 0.40976 ft | 1 | 432.693 ft | 4.09519 ft | 3.68639 ft | 0.00083 ft |
| TP12-TP13 (E92) | Enabled | 0.40850 ft | 0.00135 ft | 0.40985 ft | 1 | 610.369 ft | 4.53649 ft | 4.12799 ft | 0.00099 ft |
| TP13-TP14 (E93) | Enabled | 0.42500 ft | 0.00135 ft | 0.42635 ft | 1 | 609.796 ft | 4.79309 ft | 4.36809 ft | 0.00099 ft |
| TP14-TP15 (E94) | Enabled | 4.19309 ft | 0.00135 ft | 4.19444 ft | 1 | 608.778 ft | 6.73229 ft | 2.53919 ft | 0.00099 ft |
| TP15-Y629 (E95) | Enabled | 0.04840 ft | 0.00047 ft | 0.04887 ft | 1 | 212.851 ft | 5.80889 ft | 5.76049 ft | 0.00058 ft |

Run - 0002 (N6) Reduced Coordinates

| Point ID | Status | Elevation |
|----------|---------|-------------|
| R512 | Enabled | 65.70987 ft |
| Y629 | Enabled | 66.29000 ft |

| | | |
|-----------------------------|--|-------------------------|
| Date: 8/16/2020 10:46:13 AM | Project: J:\2017\171204.05 - SFWMD USGS Phase 4 Wells\TBC\OSF 8.vce | Trimble Business Center |
|-----------------------------|--|-------------------------|

Office

Project

25 August 2020

INPUT

State Plane, NAD83
0901 - Florida East, U.S. Feet
Vertical - NAVD88, U.S. Feet

OUTPUT

State Plane, NAD83
0901 - Florida East, U.S. Feet
Vertical - NGVD29 (Vertcon94), U.S. Feet

OSF_8

1/1

Northing/Y: 1429811.715

Easting/X: 516194.800

Elevation/Z: 60.402

Convergence: -0 12 21.34801

Scale Factor: 0.999963633

Combined Factor: 0.999965097

Northing/Y: 1429811.715

Easting/X: 516194.800

Elevation/Z: 61.347

Convergence: -0 12 21.34801

Scale Factor: 0.999963633

Combined Factor: 0.999965051

Grid Shift (U.S. ft.): X/Easting = 0.0, Y/Northing = 0.0

Remark: