

SURVEYOR'S REPORT

Specific Purpose Survey to Establish Elevations for
Seven (7) Ground Water Monitoring Well Sites throughout SFWMD Region

Buck Lake, Osceola County
L-63 NCW, Okeechobee County
S-71 Weir, Glades County
S-72 Weir, Glades County
HIF 42W, Glades County
S-65E Weir, Okeechobee County
Nubbin Slough STA, Okeechobee County

Prepared for:

South Florida Water Management District

Prepared by:

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South Florida Water Management District's
Purchase Order Number 95-2540

Morgan & Eklund, Inc. Project Number 5542.00

Report Date: November 18, 2008

Submittal: First

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5. HIF 42W

5. HIF 42W

5.1 Purpose

The specific purpose of this survey is to establish elevations on the top of four (4) ground water monitoring wells and to set and elevate a site benchmark, a 2" Aluminum SFWMD disk stamped "HIF 42W 2008".

5.2 Project Location

This site is located in Glades County as shown on the map below:



5.3 Deliverables

- Electronic copy of field notes
- Digital level files
- Site photo graphics
- Report
- District benchmark sheets
- District well Excel sheets

5.4 Vertical Datum

The vertical datums for the monitoring well and newly set monument are NGVD 29 and NAVD 88. The elevations for the project control benchmark SFWMD “Petzold 2008” were obtained through the SFWMD database.

5.5 Leveling Methods

A level loop was run from SFWMD Benchmark “Petzold 2008” to a 2” SFWMD Aluminum disk stamped “HIF 42W 2008” set in the 10x10 concrete pad for HIF 42W well and returning to “Petzold 2008”. A level loop was then run from the set 2” Aluminum cap “HIF 42W 2008” through x-cuts on the top of 2” pvc pipes for four (4) monitoring wells (NE, NW, SE, SW).

Raw digital level data was downloaded and edited in a text editor to add station information. The resultant “field book” file was then converted into an ASCII data file using Leica NA3000 software. This data file was then processed, analyzed for line lengths and closures, and adjusted using Starplus Software Inc.’s STARLEV software Version 1.30. All control closures exceeded the stated acceptable tolerance of 0.03’ multiplied by the square root of the distance between them in miles. All loop closures exceeded allowable tolerances for 3rd order vertical control or 0.05’ multiplied by the square root of the distance in miles. The vertical adjustment was performed in reference to the published control datum NAVD88 or NGVD29.

9-22-08

C. REESE

Z. RYAN

5542.00

S.F.W.M.D.

PEG TEST

STA.	I	HI	ELEV.
A	4.3586	4.3586	0.0000
B	4.7257	3.9248	5.1595 - 0.8009
A		3.9234	0.0014

COLL. DIFF. = -3.0"

SEWARD 1/24

LEICA NA 3003

SPIKE
SPIKE
SPIKE

1/45

SFWMD

LEICA NA 3005
ΔGVD 29

SFWMD ALA DISK "PETZOLD 2008"
SPIKE
SFWMD ALA DISK "HIF42W 2008"
SPIKE
SFWMD ALA DISK "PETZOLD 2008"

5542.00

SFWMD
HIF42W

BENCH RUN

FIELD

PT. OF SC. ELEV. ELEV.

0002 PETZOLD 23.44

0011 TP# 1-3

0014 HIF42W (4) 25.25%

0017 TP# 5-7

0025 PETZOLD (8) 23.44

9:22:08

C. REESE

Z. RYAN

BLOCK TO

0005 - 0011

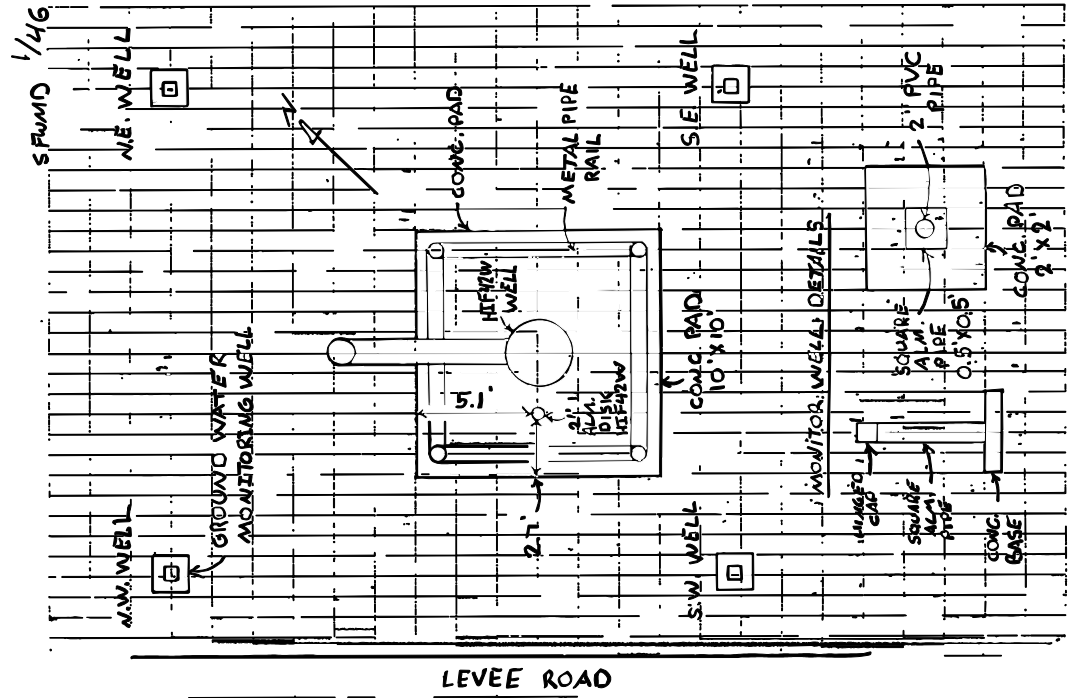
0014

0017 - 0023

0025

9-22-08 5542.00
 C. REBE
 2. RYAN
 SFWMD
 HIF42W

TO REACH FROM THE S.R. TO BRIDGE
 OVER THE KISSAMEE RIVER TRAVEL
 WEST ON S.R. TO FOR 1.4 MILES
 TO S.W. ROCKS DAIRY ROAD ON LEFT
 TURN LEFT, TRAVEL SOUTH FOR 1.3
 MILES TO A BRIDGE OVER C-41A
 CANAL AND A GATE ON THE LEFT
 (SFWMD "O" KEY) PASS THROUGH GATE
 TRAVEL EAST FOR 1.8 MILES TO THE
 S-B4 STRUCTURE ON RIGHT PASS OVER
 STRUCTURE TO A GATE ON IMMEDIATE
 LEFT (SFWMD "O" KEY) PASS THROUGH
 GATE TRAVEL EASTERLY FOR 1.2 MILES
 TO STATION ON THE LEFT, 97 N.E
 OF E LEVEE ROAD, SET FLUSH IN
 CONC. PAD FOR HIF42W WELL
 5.1' FROM N.W. FACE OF CONC. PAD
 2.7' FROM S.W. FACE OF CONC. PAD
 2" ALM. DISK SFWMD: HIF42W 2008
 LAT. 27° 14' 16" N LONG 80° 47' 08" W



LEVEE ROAD

SFWMD 1/49

SFWMD

5542.00

9-25-08

C. REESE
Z. RYAN

SFWMD
HIF 42W

REF. PG. 1/45, 1/46
MGVD 29

ELEVATE GROUND WATER
MONITORING WELLS

STA.	+	HI	-	ELEV.
BM	5.91	31.66		25.75
S.W. WELL	0.46	31.48	0.64	31.02
N.W. WELL	1.65	31.24	1.89	29.59
N.E. WELL	2.08	31.03	2.29	28.95
S.E. WELL	2.03	30.77	2.29	28.74
BM		5.03		25.74 (25.75)

GROUND WATER ELEVATION

STA.	X-CUT ELEV.	MEASURE DOWN	H ₂ O ELEV.
S.W. WELL	31.02	13.1	17.92
N.W. WELL	29.59	12.6	16.99
N.E. WELL	28.95	12.3	16.65
S.E. WELL	28.74	12.1	16.64

SFWMD ALM. DISK "HIF42W 2008"
 X-CUT TOP 2" PVC PIPE / FEMALE ADAPTOR S.W. SIDE
 X-CUT TOP 2" PVC PIPE S.W. SIDE
 X-CUT TOP 2" PVC PIPE S.W. SIDE
 X-CUT TOP 2" PVC PIPE S.W. SIDE
 SFWMD ALM. DISK "HIF42W 2008"

5.6 Vertical Control

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Survey Monument BenchMark Database Search

Designation	Petzold	Latitude	271306.2
County	Okeechobee	Longitude	805709.2
Quad	Okeechobee nw	Monument	Wantman group inc.
Project	S-65e weir	Year Set	2008
S/T/R	29 37 34	Type	H/v
Status		Stamping	Petzold 2008
		Party Chief	
NAD 1927		FB	256
N:		Pg	44
E:		NGVD 1929	
Adjustment		Elevation	23.44
NAD 1983		Order	3
N:	1048561.118	Class	
E:	671589.55	NAVD 1988	
Adjustment		Elevation	22.24
Order	3	Order	3
Class		Class	

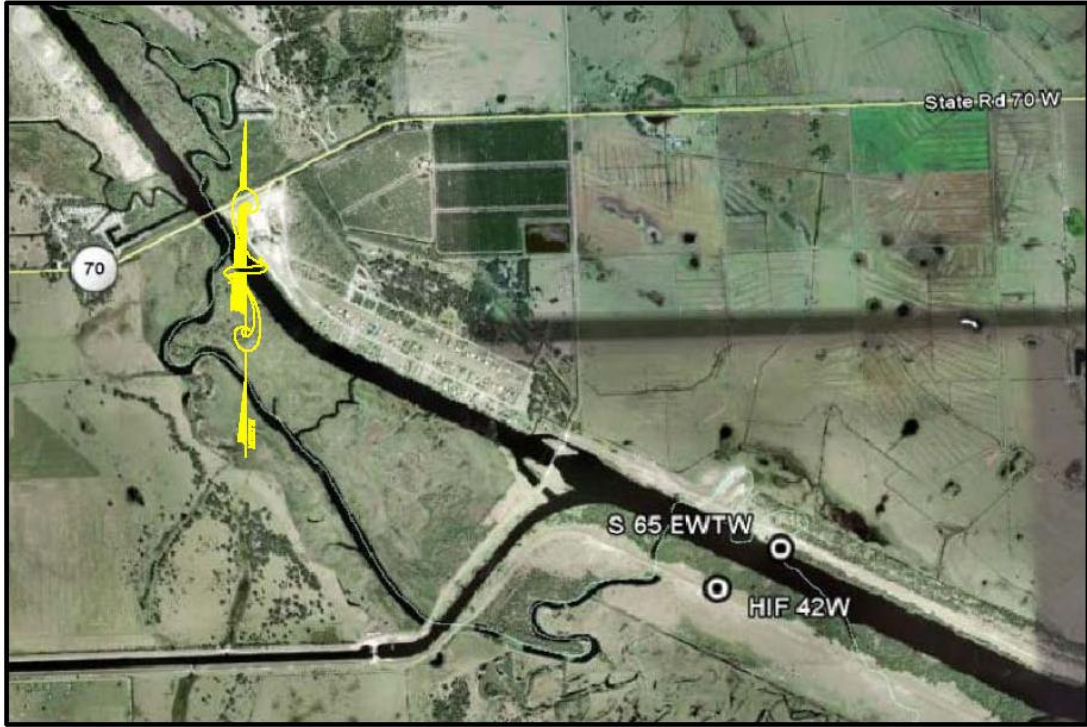
[Back](#)

TO REACH: FROM THE INTERSECTION OF STATE ROAD 70 AND U.S. HIGHWAY 441, IN OKEECHOBEE, GO WEST ON S.R. 70 FOR 8.0 MILES TO COUNTY ROAD C 670 NORTH, OR NORTHWEST 128TH AVE, ON THE RIGHT AND THE KISSIMMEE RIVER LOCKS ACCESS ROAD, OR SOUTHWEST 128TH AVENUE, ON THE LEFT, TURN LEFT ON SOUTHWEST 128TH AVE. FOR 1.2 MILES TO THE KISSIMMEE RIVER BOAT LOCK, TURN LEFT & HEAD SOUTHEAST ON A LEVEE ROAD FOR 0.8 MILES AND MARKER 216' SOUTH OF LEVEE ROAD, SET FLUSH WITH THE GROUND. LOCATED 4,200' +/- FT. SOUTHEAST OF CONTROL STRUCTURE S-65E, 210' FT. SOUTHWEST OF CENTERLINE OF THE EAST LEVEE ROAD. POINT IS AN ALUMINUM DISC, UNDER A 6" ALUMINUM COVER, STAMPED "SOUTH FLORIDA WATER MANAGEMENT DISTRICT SURVEY MARKER PETZOLD 2008". MARKER SET PER NATIONAL GEODETIC SURVEY (NGS) CLASS "B" SPECIFICATIONS. POINT WAS DRIVEN TO REFUSAL 20.0' FT. DEEP.

BENCHMARK USED: NATIONAL GEODETIC SURVEY POINTS "KR 1015" & "H-21"- RECOVERED BY B. AVRAMIDAS, GOOD CONDITION.

HORIZONTAL POINTS USED: NATIONAL GEODETIC SURVEY POINTS "U 357", "Z 357", "W 528", & "V 357" - RECOVERED BY B. AVRAMIDAS, GOOD CONDITION.

DESIGNATION: HIF42W	The station is a standard SFWMD disk set flush in a 10' X 10' concrete well pad, 5.1' South and 2.7' East of the northwest corner of the pad.		
NAVD88 ELEVATION 24.55'	NORTHING (NAD83)	LATITUDE	Actual Misclosure 0.001'
NGVD29 ELEVATION 25.75'	EASTING (NAD83)	LONGITUDE	Allowable Misclosure 0.035'
PUBLISHED NGVD 29 ELEVATION:	Starting Bench Mark PETZOLD 2008	Ending Bench Mark PETZOLD 2008	Length of Level Run 2,656'





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 8/07

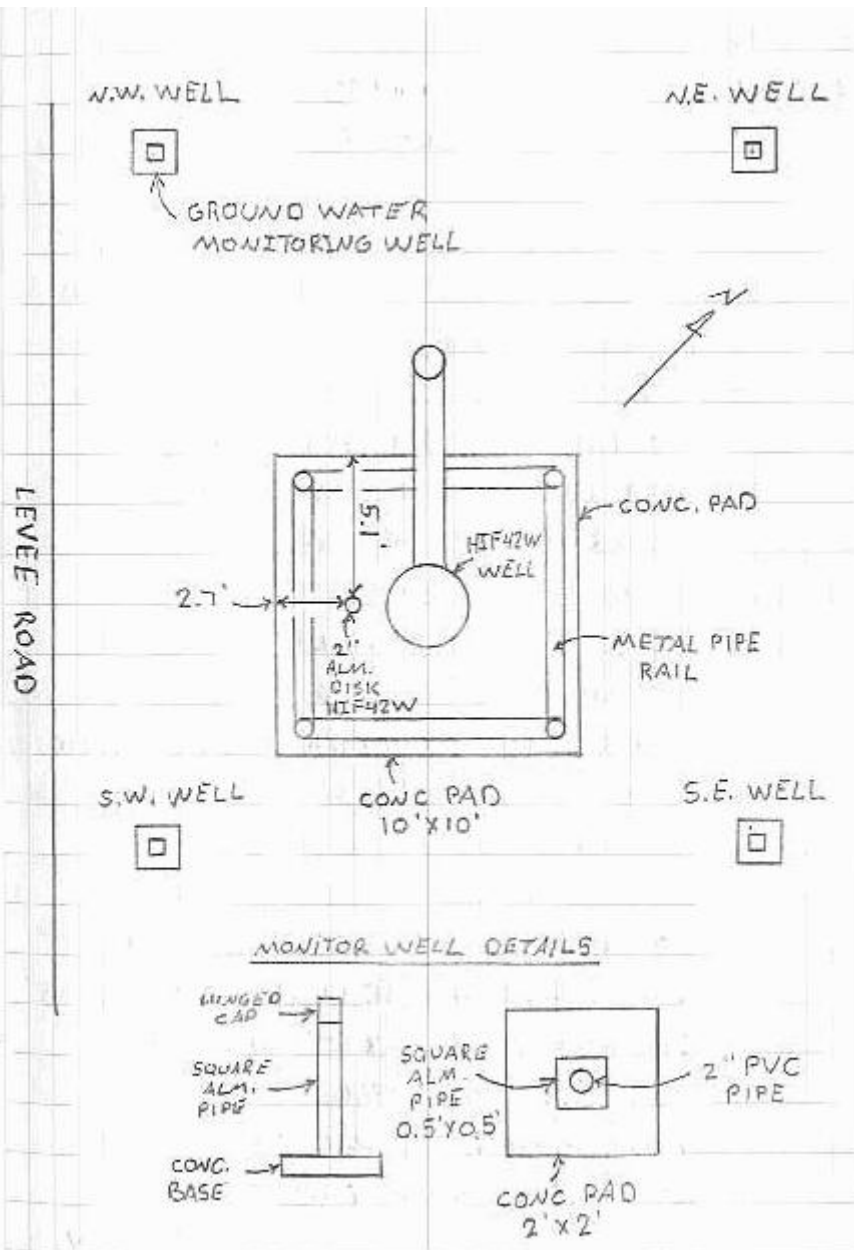
DESIGNATION HIF42W		PROJECT V.D.U.P.	
ESTABLISHED BY S.F.W.M.D.		SURVEYOR John R. Morgan II	
RECOVERED BY MORGAN & EKLUND, INC.		DATE 11/25/08	
GEOGRAPHIC POSITION			
SECTION 29	TOWNSHIP 37S	RANGE 34E	
COUNTY GLADES	NAME OF QUADRANGLE: OKEECHOBEE NW GEOGRAPHIC INDEX OF QUAD EAST 901-2608		
HORIZONTAL DATUM: 1927 <input checked="" type="checkbox"/> 1983 Other _____ (circle one) ZONE <input checked="" type="checkbox"/> E or W			
VERTICAL DATUM: MSL <input checked="" type="checkbox"/> 1929 1988 Other _____ (circle one)			
CONTROL ACCURACY: HORIZONTAL 1 2 3 _____(circle one) VERTICAL 1 2 3			
STATE PLANE COORDINATES (FEET)	NORTHING (Y)	EASTING (X)	NAVD 88 ELEV. <u>24.55</u> NGVD 29 ELEV. <u>25.75</u>
LATITUDE XX° XX' XX" N		LONGITUDE XX° XX' XX" W	
RECOVERY DESCRIPTION			
Stamping: HIF42W 2008			
To Reach: from the S.R. 70 bridge over the Kissimmee River, travel West on S.R. 70 for 1.4 miles to S.W. Rucks Dairy Road on left, turn left, travel South for 1.3 miles to a bridge over C-41A canal and a gate on the left (SFWMD "O" key). Pass through gate, travel East for 1.8 miles to the S-84 structure on right, pass over structure to a gate on immediate left (SFWMD "O" key). Pass through gate, travel Easterly for 1.2 miles to station on the left, 97' N.E. of centerline Levee Road, set flush in concrete pad for HIF42W well. 5.1' from N.W. face of concrete pad, 2.7' from S.W. face of concrete pad, 2" aluminum disk SFWMD "HIF42W 2008"			
Notable Land marks:			
FIELD BOOK SFWMD 1	PAGE 46		
SKETCH			
"See next sheet"			



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

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SKETCH



5.7 PROJECT RESULTS – HIF 42W

<p style="text-align: center;">HIF 42W SW Ground Water Monitoring Well</p>
<p>Reference Mark: X-Cut top 2” pvc pipe (SW side)</p> <p><i>New Information at the site:</i> Set Brass Tag and stamped the following information: Mark El. <u>31.02</u> NGVD 29 Initials: M&E Date: 9/25/08</p> <p><i>Previous Information at the site:</i> No tag existing at site.</p>
<p><i>DTW</i> (Distance to water inside well)</p> <p>Reference Mark: X-Cut top 2” pvc pipe El. <u>17.92</u> (NGVD 29) Water Measurement to water <u>13.1</u> Date: 9/25/08</p>

5.7 PROJECT RESULTS – HIF 42W

HIF 42W NW Ground Water Monitoring Well
Reference Mark: X-Cut top 2” pvc pipe (SW side) <i>New Information at the site:</i> Set Brass Tag and stamped the following information: Mark El. <u>29.59</u> NGVD 29 Initials: M&E Date: 9/25/08 <i>Previous Information at the site:</i> No tag existing at site.
<i>DTW</i> (Distance to water inside well) Reference Mark: X-Cut top 2” pvc pipe El. <u>16.99</u> (NGVD 29) Measurement to water <u>12.6</u> Date: 9/25/08

5.7 PROJECT RESULTS – HIF 42W

HIF 42W NE Ground Water Monitoring Well
<p>Reference Mark: X-Cut top 2” pvc pipe (SW side)</p> <p><i>New Information at the site:</i> Set Brass Tag and stamped the following information: Mark El. <u>28.95</u> NGVD 29 Initials: M&E Date: 9/25/08</p> <p><i>Previous Information at the site:</i> No tag existing at site.</p>
<p><i>DTW</i> (Distance to water inside well)</p> <p>Reference Mark: X-Cut top 2” pvc pipe (SW side) El. <u>16.65</u> (NGVD 29) water Measurement to water <u>12.3</u> Date: 9/25/08</p>

5.7 PROJECT RESULTS – HIF 42W

HIF 42W SE Ground Water Monitoring Well
<p>Reference Mark: X-Cut top 2" pvc pipe (SW side)</p> <p><i>New Information at the site:</i> Set Brass Tag and stamped the following information: Mark El. <u>28.74</u> NGVD 29 Initials: M&E Date: 9/25/08</p> <p><i>Previous Information at the site:</i> No tag existing at site.</p>
<p><i>DTW</i> (Distance to water inside well)</p> <p>Reference Mark: X-Cut top 2" pvc pipe El. <u>16.64</u> (NGVD 29) water Measurement to water <u>12.1</u> Date: 9/25/08</p>

5.8 Site Photo - HIF 42W - NE Ground Water Monitoring Well



5.8 Site Photo - HIF 42W - NW Ground Water Monitoring Well



5.8 Site Photo - HIF 42W - SE Ground Water Monitoring Well



5.8 Site Photo - HIF 42W - SW Ground Water Monitoring Well



