

SURVEYOR'S REPORT

**Specific Purpose Survey of the Monitoring Well
Structure AIR 19-G
Orange County, Florida**

**South Florida Water Management District's
Purchase Order number 4500001788**

**Keith and Schnars project number 16434.07
Task 22006**

Report Date: September 05, 2006

Submittal: First

Prepared for:

South Florida Water Management District

Prepared by:



KEITH and SCHNARS, P.A.
ENGINEERS, PLANNERS, SURVEYORS

2525 Drane Field Rd., Suite #7

Lakeland, Florida 33811

Ph. (863) 646-4771 Fax (863) 646-3378

Licensed Business (L.B.) 1337

SURVEYOR'S REPORT

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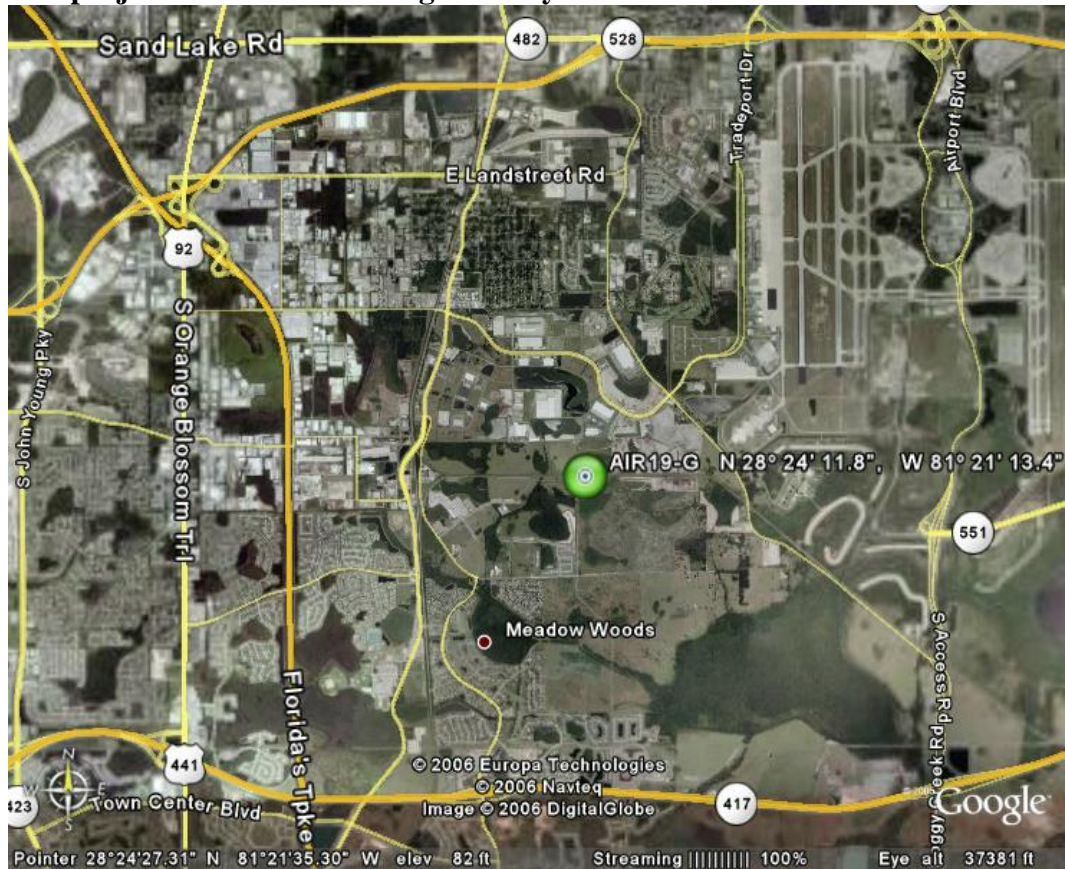
SURVEYOR'S REPORT

PURPOSE

To establish vertical data (NAVD 1988 and NGVD 1929) on the Monitoring Wells at the structure.

LOCATION OF PROJECT

The project is located in Orange County.



SURVEYOR'S REPORT

ITEMS DELIVERED TO THE DISTRICT

1. Electronic copy of field notes.
2. Electronic copy of all computation sheets.
3. CORPSMET 95 file.
4. Site photographs.
5. Surveyor's Report.

DATUM FOR THE PROJECT


The vertical datum for the project is North American Datum of 1988 (NAVD '88). National Geodetic Survey vertical control monuments with published NAVD '88 elevations were used as the basis for this survey. The National Geodetic Vertical Datum of 1929 (NGVD '29) shown were computed using CORPSCON version 6.0 program.

LEVELING METHODS

Benchmark AIR 19-G was constructed at the site. The elevations were established from BM N 122 with a Topcon AT-F2 conventional level and three-wire observation method.

SURVEYOR'S REPORT

VERTICAL CONTROL

BM N 122		Elevation:	NAVD 1988	90.90'	NGVD 1929	
Found in National Geodetic Survey Database	Latitude		28°26'28" (Scaled)			
State/County FL/Orange	Longitude		-81°20'12" (Scaled)			
USGS QUAD Pine Castle (1980)						
Horiz. Order (Preliminary) Class (Preliminary)			DESCRIBED BY COAST AND GEODETIC SURVEY 1945			
		<p>1.5 MI S FROM PINE CASTLE. 1.5 MILES SOUTH ALONG STATE HIGHWAY NO. 3A FROM THE POST OFFICE AT PINE CASTLE, THENCE 1.5 MILE EAST ALONG A ASPHALT ROAD, AT THE PINE CASTLE ARMY AIR FIELD, ABOUT 1.0 MILE NORTH OF THE MAIN HANGAR, ABOUT 0.6 MILE SOUTH OF THE POST HEADQUARTERS, ABOUT 30 FEET NORTH OF A POINT WHERE A POWER LINE CROSSES OVER THE PAVED STREET, 24 FEET WEST OF THE CENTERLINE OF THE PAVED STREET, IRON DISK SET IN THE NORTH END OF A CONCRETE CULVERT. STAMPED N 122 1945. NOTE-- PINECASTLE ARMY AIR FIELD IS NOW MC COY AFB. THE POWER LINE DOES NOT CROSS THE ROAD ANYMORE. THE MARK IS DIRECTLY WEST OF BUILDING 140, 8595 AVENUE C, AND ABOUT 500 FEET NW OF THE COMMISSARY STORE.</p>				

SURVEYOR'S REPORT

PROJECT RESULTS

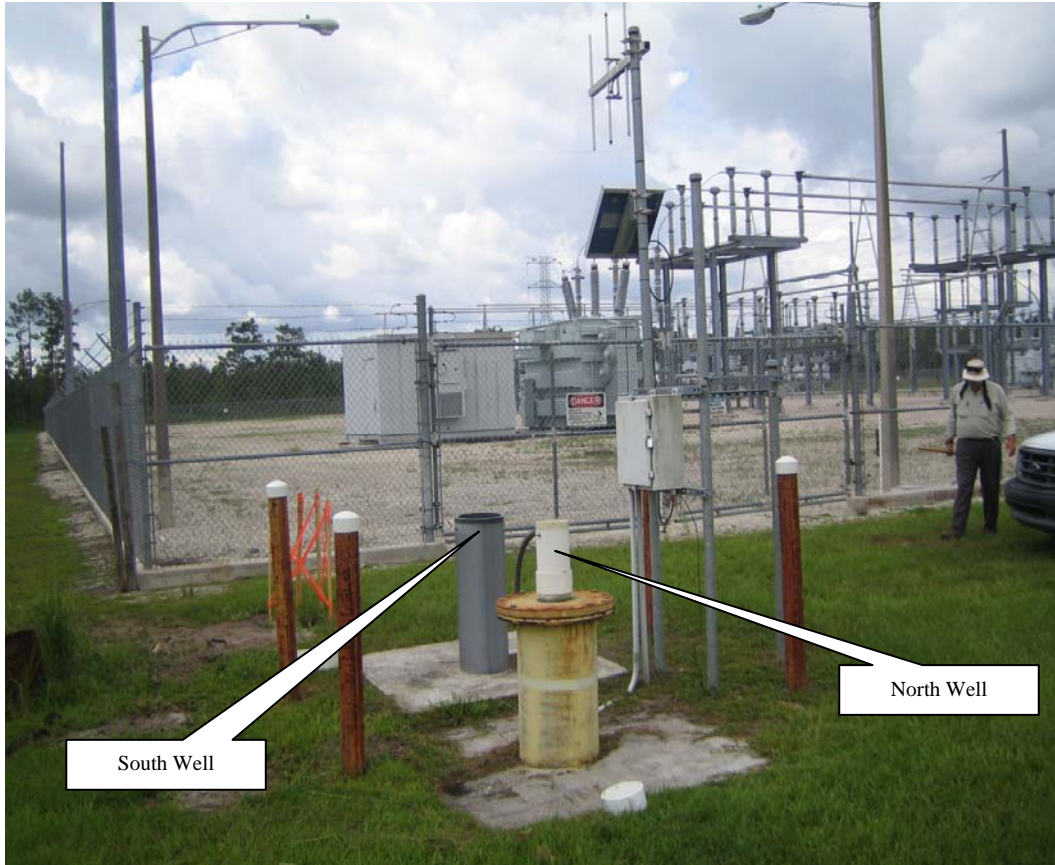
WELL SITE AIR 19-G

South Monitoring Well	North Monitoring Well
<p>Monitoring Well AIR 19-G: Reference mark: <u>Set mark on N. side PVC pipe</u> <u>With initials K&S.</u></p> <p>New Reference Mark El. <u>89.418'</u> (NGVD '29) <u>(Wrote -0.930' to NAVD 1988).</u></p> <p>Initials: <u>K&S</u> <u>B.L., J.B., D.T.</u></p> <p>Date: <u>8/26/06</u></p> <p>written at the mark: El. <u>89.38'</u> Date: <u>00/00/00</u> By: <u>None</u></p> <p>Reference Mark location:</p>	<p>Monitoring Well AIR 19-G: Reference mark: <u>Set mark on N. side PVC pipe</u> <u>With initials K&S.</u></p> <p>New Reference Mark El. <u>90.058'</u> (NGVD '29) <u>(Wrote -0.930' to NAVD 1988).</u></p> <p>Initials: <u>K&S</u> <u>B.L., J.B., D.T.</u></p> <p>Date: <u>8/26/06</u></p> <p>written at the mark: El. <u>90.01'</u> Date: <u>00/00/00</u> By: <u>None</u></p> <p>Reference Mark location:</p>

SURVEYOR'S REPORT

PROJECT PHOTO

WELL SITE AIR 19-G



SURVEYOR'S REPORT

PROJECT PHOTO

WELL SITE AIR 19-G SOUTH WELL



SURVEYOR'S REPORT

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WELL SITE AIR 19-G NORTH WELL



SURVEYOR'S REPORT

PROJECT PHOTO

WELL SITE AIR 19-G



SURVEYOR'S REPORT

PROJECT PHOTO

WELL SITE AIR 19-G



SURVEYOR'S REPORT

Comments:

Party Chief: **B. LANDRY** Field Book: **1165** Page **26-40**
Bench Mark: "**N 122**" El. **90.90'**, Vertical Datum: **NAVD1988**
Offset: **0.930'** SFWMD VALUE (add this value to convert to NGVD 1929)
Offset: **0.930'** NGS VALUE (add this value to convert to NGVD 1929)
NAVD 88 - North American Vertical Datum of 1988
NGVD29 -National Geodetic Vertical Datum of 1929
NAD 83-99 (Horizontal Datum) North American Datum
NGS- National Geodetic Survey
SFWMD- South Florida Water Management District
PVC- Polyvinyl Chloride

SURVEYOR'S CERTIFICATION

I hereby certify that this Specific Purpose Survey meets applicable portions of the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61-G17, Florida Administrative Code. This report is prepared for the sole and specific use of the South Florida Water Management District and is not assignable.

KEITH and SCHNARS, PA.
L.B. number 1337

By:

Date of Survey
August 26, 2006

Kenneth T. Glass, PSM
Professional Surveyor and Mapper
State of Florida
Certificate No. 5713

WED, AUG 23, 2006

Job # 16434.07
 Loc CR 527, ORLANDO
 FOR SENMDF - MONITORING WELLS (AIR 19-G)
 WORK BENCH RUN
 EQUIP TOPCON AT-F2 (30515), LEVEL 200
 WEATHER P. CLOUDY, 92°

CREW B.A. LANDRY
 J.L. THOMAS
 J.W. BENSTON

BM	BS	IN	HI	FS	IN
M122	229 5.25 4.10 2.96 12.31	4.103			
TP1	215 6.20 5.12 4.05 15.37	5.23	229 6.69 5.54 4.40 16.63	5.543	
TP2	213 6.47 5.40 4.34 16.21	5.403	213 6.07 5.00 3.94 15.01	5.003	
TP3	217 6.90 5.82 4.73 17.45	5.817	212 6.48 5.42 4.36 16.26	5.420	
TP4	217 5.99 4.90 3.82 14.71	4.903	217 6.72 5.64 4.55 16.91	5.637	
TP5	213 5.39 4.33 3.26 12.98	4.327	216 7.88 6.80 5.72 20.40	6.800	

1304

1087

1165-26

THIS BENCHRUN IS BASED ON NAVD '88

ELEV	ADJ. EL.	REMARKS
94.63 (NAVD 88)		<p>NGS DATA SHEET M122</p> <p>BRASS DISK IN NORTH END OF HEADWALL, WEST SIDE OF DAETWYLER DRIVE "M122 1948"</p> <p>NAVD '88 FINISHED EL. = 94.63</p> <p>NGVD '29 FINISHED EL. = 95.57</p>
		PK NAIL - WEST EDGE OF DAETWYLER DRIVE
		PK NAIL - WEST EDGE OF DAETWYLER DRIVE
		PK NAIL - WEST EDGE OF DAETWYLER DRIVE
		PK NAIL - EAST EDGE OF DAETWYLER DRIVE (ABOUT 100' SOUTH OF C OF BARNSTABLE PL.)
		PK NAIL

BM	BS	MN	HI	FS	MN
TP 6	4.30 2.61 2.93 10.84 14.41	3.613	2.13	6.486 5.39 4.33 16.18	5.393
N 122	4.79 3.73 2.66 11.18	3.727	1.43	3.95 3.24 2.52 9.71 14.43 = 2884	3.237
TP 7	6.75 5.75 4.74 17.24	5.747	2.12	5.65 4.59 3.53 13.77	4.590
TP 8	6.46 5.36 4.27 16.09	5.363	2.01	5.70 4.69 3.69 14.08	4.693
TP 9	6.80 5.73 4.66 17.19	5.730	2.19	6.18 5.08 3.99 15.25	5.083
TP 10	6.06 4.98 3.91 14.95	4.983	2.13	5.72 4.65 3.59 13.96	4.653
TP 11	5.93 4.82 3.71 14.46	4.820	2.15	6.81 5.74 4.66 17.21	5.737
TP 12	6.17 5.04 3.92 15.13	5.043	2.22	6.73 5.62 4.51 16.86	5.620

ELEV	ADJ ELEV	REMARKS
90.510		HUB
90.886	90.90	NGS DATA SHEET N 122 BRASS DISK IN NORTH END OF WEARWALL, WEST OF AVENUE C "N 122 1945" ELEV = 90.90 NAVD 83 $2884 / 5280 = 0.546$ HUES ELEV = 91.83 NGVD 29 $0.546 \times 0.03 = 0.022$ ALLOWABLE ERR
		PK WALL - IN PARKING LOT
		HUB - SOUTH R/W OF LANDSTREET RD
		PK WALL - WEST EDGE OF SOUTHBOUND LANES, TRADEPORT DRIVE
		SAME DESC AS TP 9
		SAME DESC AS TP 10
		SAME DESC AS TP 11

BM	BS	MIN	HT	FS	MIN
TP 13	224' 6.32 5.20 4.08 5.60	5.200	225'	6.47 5.34 4.22 16.03	5.343
TP 14	222' 6.68 5.57 4.46 16.71	5.570	223'	6.484 5.32 4.21 15.97	5.323
TP 15	223' 6.62 5.50 4.39 16.51	5.503	222'	6.52 5.401 4.30 16.23	5.410
TP 16	227' 6.54 5.275 3.97 5.76	5.253	223'	6.63 5.502 4.40 16.55	5.517
TP 17	222' 6.52 5.41 4.30 16.23	5.410	227'	6.49 5.20 3.92 15.61	5.203
TP 18	229' 6.43 5.28 4.14 15.85	5.283	221'	6.50 5.39 4.29 16.18	5.393
TP 19	233' 6.67 5.51 4.24 16.52	5.507	229'	6.60 5.45 4.31 16.36	5.453
TP 20	225' 6.38 5.35 4.183 15.70	5.253	233'	6.62 5.45 4.29 16.36	5.453

ELEV	ADJ. EL.	REMARKS
90.594		PK NAIL - WEST EDGE OF SOUTHBOUND LANES OF TRADEPORT DRIVE
		SAME DESC AS TP 13
		SAME DESC AS TP 14
		SAME DESC AS TP 15
		SAME DESC AS TP 16
		SAME DESC AS TP 17
		SAME DESC AS TP 18
		SAME DESC AS TP 19

BM	BS	MN	HI	FS	MN
TP 21	233 6.65 5.48 <u>9.372</u> 16.45	5.483	225	6.43 5.30 4.18 <u>5.91</u>	5.303
TP 22	229 6.84 5.70 <u>4.55</u> 17.09	5.697	231	6.55 5.39 <u>4.24</u> 16.18	5.393
TP 23	227 6.60 5.46 <u>4.33</u> 16.39	5.463	228	6.87 5.73 <u>4.59</u> 17.19	5.730
TP 24	229 6.36 5.21 <u>4.57</u> 15.64	5.213	227	6.87 5.74 <u>4.60</u> 17.21	5.737
TP 25	220 6.00 4.90 <u>3.80</u> 14.70	4.900	229	5.88 4.783 <u>3.59</u> 14.20	4.733
TP 26	227 6.33 5.19 <u>4.06</u> 15.58	5.193	219	6.44 5.34 <u>4.25</u> 16.03	5.343
TP 27	228 5.88 4.74 <u>3.60</u> 14.22	4.740	229	6.69 5.55 <u>4.40</u> 16.64	5.547
TP 28	218 5.67 4.60 <u>3.524</u> 13.81	4.603	228	4.46 3.32 <u>2.18</u> 9.96	3.320

ELEV	ADJ ELEV	REMARKS
90.518		PK NAIL WEST EDGE OF SOUTHBOUND LANES ON TRANSPORT DRIVE
		SAME DESC AS TP 21
		SAME DESC AS TP 22
		SAME DESC AS TP 23
		SAME DESC AS TP 24
		SAME DESC AS TP 25
		SAME DESC AS TP 26
		SAME DESC AS TP 27

BM	BS	MN	HT	FS	MN
TP 29	5.45	4.257	239'	6.48	5.413
	4.26			5.41	
	3.04			4.305	
				6.24	
	12.77				
TP 30	6.04	4.843	240'	5.52	4.320
	4.84			4.312	
	3.65			3.12	
				12.96	
	14.53				
TP 31	8.03	6.893	242'	6.56	5.360
	6.89			5.36	
	5.76			4.16	
				16.08	
	20.68				
TP 32	7.27	6.137	222'	7.25	6.117
	6.14			6.12	
	5.00			4.98	
				18.35	
	18.41				
TP 33	5.93	4.743	232'	5.21	4.080
	4.74			4.08	
	3.56			2.95	
				12.24	
	14.23				
TP 34			234'	7.789	6.597
				6.60	
				5.40	
				19.79	

ELEV	ADJ. ELEV.	REMARKS
90.594		HUB
		HUB
		HUB
		PK WALL - WEST EDGE OF SOUTHBOUND LANES OF TRADEPORT DRIVE
		SAME DESC AS TP 32
90.993		SAME DESC AS TP 33 ALSO OPPOSITE SOUTH ENTRANCE TO 7-11

6319

1211

JOB # 16434.07
 LOC TRADESPORT DR, ORLANDO CREW B. A. LANDRY III
 FOR SFWMD - MONITORING WELL AIR 196 D. L. JORDAN A
 WORK GENCH TRUM J. W. BENTON P
 EQUIP TDPCON AT-F2 (BOSIIS), LEVEL ROD A. B. CHUMNEY P
 WEATHER P. CLOUDY, 93°; OVERCAST, HARD RAIN IN THE AFTERNOON

	BM	BS	MN	HI	FS	MN
TP 34	235	5.985 4.77 <u>3.60</u> 14.32	4.773			
TP 35	235	7.71 6.54 <u>5.36</u> 19.61	6.537		6.54 5.37 <u>4.20</u> 16.11	5.370
TP 36	246	4.58 3.35 <u>2.12</u> 10.05	3.350		9.07 7.90 <u>6.72</u> 23.69	7.897
TP 37	238	6.41 5.24 <u>4.08</u> 15.73	5.243		4.83 3.60 <u>2.37</u> 10.80	3.600
TP 38	231	5.87 4.701 <u>3.56</u> 14.14	4.713		5.71 4.53 <u>3.36</u> 13.60	4.593
TP 39	231	4.72 3.60 <u>2.49</u> 10.81	3.603		6.93 5.78 <u>4.62</u> 17.33	5.777

ELEV	ADJ ELEV	REMARKS
90.993		PK NAIL - NORTHWEST EDGE OF SOUTHBOUND LANES OF TRADESPORT DRIVE
		SAME DESC AS TP 34
		HUB
		HUB
		HUB
		PK NAIL - NORTH EDGE OF ASPH DRIVE TO WATKINS TRUCKING

BM	BS	MIN	HI	FS	MIN
TP 40	234 6.45 5.28 4.11 5.84	5.280		224 6.58 5.46 4.34 6.38	5.460
TP 41	247 5.47 4.24 3.00 12.71	4.237		234 6.02 4.85 3.68 4.55	4.850
TP 42	198 4.89 3.90 2.91 11.70	3.900		245 3.35 2.13 0.80 6.380	2.127
TP 43	227 5.83 4.64 3.46 13.93	4.643		198 5.11 4.72 3.73 4.16	4.720
TP 44	127 5.0976 5.32 4.69 5.97	5.323		237 6.40 5.21 4.03 15.64	5.213
BM AIR 19-G	208 9.89 8.85 7.81 26.55	8.850		118 9.78 9.19 8.60 27.57	9.190
TP 45	210 6.74 5.19 3.64 19.57	5.190		208 6.03 4.99 3.95 14.97	4.990
TP 46	221 6.010 4.89 3.79 14.68	4.893		310 6.10 4.55 3.00 13.65	4.550

ELEV	ADJ EL	REMARKS
86.575		HUB
		HUB
		HUB
		HUB
87.725	87.739	HUB*
		17.273
83.858	83.872	POURED MON "AIR 19-G 2006" 17.518 NGVD '29 EL. = 84.802
		HUB*
		HUB

8-24-06

SAME CREW; CONT FROM PG 32

1165-33

BM	BS	MN	HI	FS	MN	
TP 47	2.25 5.16 4.08 15.49	5.163	231	7.75 6.65 5.54 19.94	6.647	
TP 48	5.47 4.27 3.07 12.81	4.270	217	5.50 4.41 3.33 13.24	4.413	
TP 49	7.56 6.41 5.245 19.22	6.407	240	5.19 3.99 2.79 11.97	3.990	
TP 50	5.788 4.96 4.184 14.88	4.960	232	5.77 4.61 3.45 13.83	4.610	
TP 51			164	6.83 6.01 5.15 18.03	6.010	
		10356				10345

ELEV	ADJEL	REMARKS
86.604		HUB
		HUB
		HUB
		HUB
		HUB
88.381		PK NAIL

BM	BS	MIN	HI	FS	MRJ
TP 65	5.89	4.703	249'	4.67	3.427
	4.70			3.43	
	3.52			2.18	
	14.11			10.28	
TP 66	6.77	5.587	236'	6.31	5.130
	5.59			5.13	
	4.40			3.95	
	16.76			15.39	
TP 67	6.48	5.283	237'	6.498	5.293
	5.28			5.29	
	4.09			4.11	
	15.85			15.88	
TP 68	6.51	5.323	241'	6.54	5.337
	5.32			5.34	
	4.14			4.13	
	15.97			16.01	
TP 69	6.62	5.430	238'	6.51	5.380
	5.43			5.32	
	4.24			4.13	
	16.29			15.96	
TP 70	6.63	5.440	239'	6.65	5.453
	5.44			5.45	
	4.25			4.26	
	6.32			6.36	
TP 71	6.77	5.580	239'	6.53	5.333
	5.58			5.33	
	4.39			4.34	
	16.74			16.00	
TP 72	6.70	5.507	240'	6.71	5.516
	5.51			5.571	
	4.31			4.31	
	16.52			16.53	

ELEV	ADJ EL	REMARKS
90.643		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P. (NE INTERSECTION OF EXPRESS ST)
		PK NAIL - E.O.P.

BM	BS	MN	HI	FS	MN
TP 73	232 6.74 5.55 <u>4.35</u> 16.64	5.547		238 6.77 5.58 <u>4.39</u> 16.74	5.580
TP 74	236 6.52 5.34 <u>4.16</u> 16.02	5.340		240 6.69 5.489 <u>4.29</u> 16.47	5.490
TP 75	237 6.37 5.19 <u>3.99</u> 4.00 15.56	5.187		240 6.60 5.40 <u>4.20</u> 16.20	5.400
TP 76	234 6.54 5.37 <u>4.20</u> 16.11	5.370		240 6.56 5.36 <u>4.16</u> 16.08	5.360
TP 77	241 6.82 5.62 <u>4.41</u> 16.85	5.617		244 6.39 5.17 <u>3.95</u> 15.51	5.170
TP 78	240 6.93 5.73 <u>4.53</u> 17.19	5.730		235 6.14 4.96 <u>3.79</u> 14.89	4.963
TP 79				237 6.38 5.19 <u>4.01</u> 15.58	5.193
	16958			16969	

ELEV	ADJ. EL	REMARKS
90.540		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
91.755		PK NAIL - E.O.P.

JOB # 16434.07
 LOC TRADEPORT DRIVE & VICINITY ORLANDA
 FOR SEWARD - MONITORING WELL AIR 19-G
 WORK BENCH RUN
 EQUIP TOPCON AT-F2 (BBS115), PRISM POLE
 WEATHER P. CLOUDY, 90°

CREW B. A. LANDRY [I]
 D. L. JORDAN [A]
 D. L. THOMAS [P]

BM	BS	IN	HI	FS	IN
TP 79	240' 6.95 5.75 4.55 17.25	5.750			
TP 80	242' 5.81 4.60 3.41 3.83	4.610	240'	7.30 6.10 4.90 16.30	6.100
TP 81	272' 6.08 4.72 3.36 14.16	4.720	238'	6.44 5.25 4.06 15.75	5.250
TP 82	246' 6.62 4.79 3.56 14.37	4.790	243'	6.65 5.34 4.02 16.01	5.337
TP 83	241' 8.23 7.03 5.82 21.08	7.027	247'	7.88 6.65 5.40 19.94	6.647
TP 84	236' 8.812 7.684 6.46 22.92	7.640	242'	5.85 4.64 3.43 3.92	4.640

10 1122

ELEV	ADJ ELEV	REMARKS
91.755		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - IN ASPH PARKING LOT
		HUB
		PK NAIL -

BM	BS	MIN	HI	FS	MN
TP 85	225' 6.49 5.36 4.24 16.09	5.363		236' 6.32 5.14 3.96 15.42	5.140
TP 86	229' 6.588 5.384 4.09 16.01	5.337		225' 6.34 5.21 4.09 15.64	5.213
TP 87	247' 6.03 4.80 3.56 14.39	4.797		248' 6.53 5.29 4.05 15.87	5.290
TP 88	25' 6.80 5.93 4.945 17.63	5.877		247' 6.36 5.12 3.89 15.37	5.123
M 122	19339			125' 5.20 4.33 3.45 12.98	4.327
				19330	

RIPV	ADJ EL	REMARKS
93-178		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
		PK NAIL - E.O.P.
94.599 -0.031		NGS DATA SHEET M122 BRASS DISK IN NORTH END OF HEADWALL, WEST SIDE OF DAETWYLER DRIVE "M122 1945" NAVD '88 PUBLISHED EL = 94.63 NGVD '29 PUBLISHED EL = 95.57
		38669 / 5280 = 7.324 MILES $\sqrt{7.324 \times 0.03} = 0.081$ ALLOWABLE ERR

8-26-03

SAME CREW; CONT. FROM Pg. 39

1165-40

BM	BS	IN	HI	FS	MIN
	7.21				
BMAIR19-G	7.08	25	7.083		
	6.96				
	21.25				
	2.42			2.59	
SOUTH WELL	2.29	26	2.290	2.47	2.467
	2.16			2.34	
	6.87			7.40	
	4.44			1.78	
NORTH WELL	3.85	18	3.850	1.65	1.650
	3.26			1.52	
	11.55			4.95	
				5.84	
				5.24	5.240
				4.64	
				5.72	

SOUTH WELL

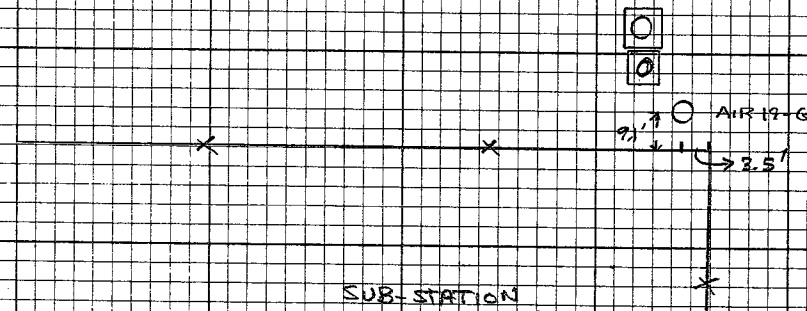
4 3/4" OD WHITE PVC INSIDE 1'0 3/4" OD GRAY PVC CASING ON 4'10" X 4'10" CONC SLAB
 "GLW 2089-38" WRITTEN INSIDE GRAY PIPE

NORTH WELL

6 1/2" WHITE PVC INSIDE 16" METAL PIPE CASING ON 6' X 6' CONC SLAB
 OD
 "BP 90.01" INSIDE WHITE PVC

ELEV	ADJ EL	REMARKS
	83.872	POURED MONUMENT RECEIVED 1.5' ±
88.488	88.488	MARK ON NORTH EDGE OF WHITE PVC NGVD '29 = 89.418 -0.930 TO NAVD '88
89.128	89.128	MARK ON NORTH EDGE OF PVC NGVD '29 = 90.058 -0.930 TO NAVD '88
87.738	87.739	HUB -0.001

AIR19-G: N 28° 24' 11.8"
 W 81° 21' 13.4"



SUB-STATION

Identification_Information:

Citation:

Citation_Information:

Originator: Kenneth T. Glass, P. S. M. (ed.)
Publication_Date: 20060826
Publication_Time: Unknown
Title: S. F. W. M. D. Monitoring Well
Edition: Well Site AIR 19-G
Publication_Information:
Publication_Place: Not Published
Publisher: None
Online_Linkage: kglass@keithandschnars.com

Description:

Abstract:

South Florida Water Management District
Well Site AIR 19-G

Purpose:

To establish reference elevations in NAVD 1988 and
NGVD 1929 datum at the Monitoring Well(s).

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20060826

Currentness_Reference: Publication Date

Status:

Progress: Complete

Maintenance_and_Update_Frequency: Unknown

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: 81°21' 13.6"

East_Bounding_Coordinate: 81°21' 13.6"

North_Bounding_Coordinate: 28°24' 11.8"

South_Bounding_Coordinate: 28°24' 11.8"

Keywords:

Theme:

Theme_Keyword_Thesaurus: Specific Purpose Survey

Theme_Keyword: Monitoring Well(s)

Place:

Place_Keyword_Thesaurus: Orange County

Place_Keyword: S. F. W. M. D. Monitoring Well AIR 19-G

Place_Keyword: SEC. 18 - T24S - R30E

Access_Constraints:

Key for lock needed to gain access to Monitoring
Wells.

Use_Constraints:

Call South Florida Water Management District for
key.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Howard J. Ehmke

Contact_Organization: South Florida Water Management

Contact_Position: P. S. M.

Contact_Address:

Address_Type: mailing and physical address
Address:

Acceler 8

Suite 150

2301 Centerpark West Drive

City: West Palm Beach

State_or_Province: Florida

Postal_Code: 33409

Country: USA

Contact_Voice_Telephone: (561) 242-5520 ext 4064

Contact_Electronic_Mail_Address: hehmke@sfwmd.gov

Hours_of_Service: 8:00 am to 5:00 pm EST

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Kenneth T. Glass
Keith & Schnars

Howard J. Ehmke II
District Contact
District

AIR 19-G.met

The horizontal location of the benchmark was taken from a hand held G. P. S. unit. The vertical data was collected using a Topcon AT-F2 Level. Coordinates are based on the Florida State Plane Coordinate System, East Zone, NAD 83/90. Elevations are based on NAVD 1988 with an offset supplied to convert to NGVD 1929.

Logical_Conistency_Report:

Air19 Well Report

Vertical data on the monitoring well was established using the site benchmark.

Completeness_Report:

89.418' (NGVD 1929) AIR 19-G South Monitoring Well.
Offset written at wells (-) 0.930' to NAVD 1988.
90.058' (NGVD 1929) AIR 19-G North Monitoring Well.
Offset written at wells (-) 0.930' to NAVD 1988.
AIR 19-G was the site benchmark used for this survey.
NAVD 1988 elevation 83.872'

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The horizontal position of the benchmark was established using a hand held GPS.

Quantitative_Horizontal_Positional_Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value: Lat. 28°24' 11.8"

Long. 81°21' 13.6"

Horizontal_Positional_Accuracy_Explanation: Value derived

by hand-held GPS unit.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

The onsite benchmark was used to establish the elevations on the monitoring well(s) in this report.

Quantitative_Vertical_Positional_Accuracy_Assessment:

Vertical_Positional_Accuracy_Value: 0.031 ft. NAVD88
Vertical_Positional_Accuracy_Explanation: Better than

0.03ft. x sq. root of miles of the level loop.

Lineage:

Process_Step:

Process_Description:

Differential leveling was performed using a Topcon AT-F2 level. The onsite benchmark AIR 19-G was used to determine the monitoring well elevation. Elevations were written at the wells in NGVD 1929 with an offset provided to convert the elevations to NAVD 1988.

Process_Date: 20060826

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 28°24' 11.8"

Longitude_Resolution: 81°21' 13.6"

Geographic_Coordinate_Units: Degrees, minutes, and decimal seconds

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Keith and Schnars, P. A.

Contact_Person: Kenneth T. Glass, P. S. M.

Contact_Position: Director of Surveying and Mapping Lakeland

Contact_Address:

Address_Type: mailing and physical address

Address: 2525 Drane Field Rd., Suite 7

City: Lakeland

State_or_Province: Florida

Postal_Code: 33811

Country: Polk

Contact_Voice_Telephone: (863)-646-4771

Contact_Facsimile_Telephone: (863)-646-3378

Contact_Electronic_Mail_Address: kglass@keithandschnars.com

Hours_of_Service: 8:00-5:00 est.

Distribution_Liability: None

Metadata_Reference_Information:

Metadata_Date: 20060905

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Kenneth T. Glass, P. S. M.

Contact_Organization: Keith and Schnars, P. A.

Contact_Position: Director of Surveying and Mapping Lakeland

Contact_Address:

Address_Type: mailing and physical address

Address: 2525 Drane Field Rd., Suite 7

City: Lakeland

State_or_Province: FL

Postal_Code: 33811

Country: USA

Contact_Voice_Telephone: (863) 646-4771

Contact_Facsimile_Telephone: (863) 646-3378

Contact_Electronic_Mail_Address: kglass@keithandschnars.com

Hours_of_Service: 8:00 am to 5:00 pm EST

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: 19940608

The NGS Data Sheet

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

DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.35

1 National Geodetic Survey, Retrieval Date = APRIL 27, 2006

AK1788 *****

AK1788 DESIGNATION - M 122
AK1788 PID - AK1788
AK1788 STATE/COUNTY- FL/ORANGE
AK1788 USGS QUAD - PINE CASTLE (1980)

AK1788
AK1788 *CURRENT SURVEY CONTROL

AK1788*	NAD 83(1986)-	28 26 54.	(N)	081 20 19.	(W)	SCALED
AK1788*	NAVD 88	-	28.843 (meters)	94.63	(feet)	ADJUSTED

AK1788 GEOID HEIGHT- -27.80 (meters) GEOID03
AK1788 DYNAMIC HT - 28.801 (meters) 94.49 (feet) COMP
AK1788 MODELED GRAV- 979,188.9 (mgal) NAVD 88

AK1788 VERT ORDER - FIRST CLASS II

AK1788 This mark is at Orlando Int'l Airport (MCO)

AK1788 The horizontal coordinates were scaled from a topographic map and have
AK1788 an estimated accuracy of +/- 6 seconds.

AK1788 The orthometric height was determined by differential leveling
AK1788 and adjusted by the National Geodetic Survey in June 1991..

AK1788 The geoid height was determined by GEOID03.

AK1788 The dynamic height is computed by dividing the NAVD 88
AK1788 geopotential number by the normal gravity value computed on the
AK1788 Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AK1788 degrees latitude (g = 980.6199 gals.).

AK1788 The modeled gravity was interpolated from observed gravity values.

	North	East	Units	Estimated Accuracy
AK1788; SPC FL E	- 455,940.	166,830.	MT	(+/- 180 meters Scaled)

AK1788 SUPERSEDED SURVEY CONTROL

AK1788	NGVD 29 (??/??/92)	29.129 (m)	95.57 (f)	ADJ UNCH	1 2
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AK1788 Superseded values are not recommended for survey control.
AK1788 NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AK1788 [See file dsdata.txt](#) to determine how the superseded data were derived.

AK1788 U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMM668469(NAD 83)

AK1788_MARKER: DB = BENCH MARK DISK

AK1788_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE

AK1788_SP_SET: CULVERT HEADWALL

AK1788_STAMPING: M 122 1945

AK1788_MARK LOGO: USE

AK1788_MAGNETIC: N = NO MAGNETIC MATERIAL

AK1788_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

AK1788+STABILITY: SURFACE MOTION

AK1788_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AK1788+SATELLITE: SATELLITE OBSERVATIONS - April 15, 2005

AK1788	HISTORY	- Date	Condition	Report By
AK1788	HISTORY	- 1945	MONUMENTED	USE
AK1788	HISTORY	- 1945	GOOD	NGS
AK1788	HISTORY	- 1973	GOOD	LOCENG
AK1788	HISTORY	- 19901113	GOOD	FL-095
AK1788	HISTORY	- 19960316	GOOD	USPSQD
AK1788	HISTORY	- 20050326	GOOD	GEOCAC
AK1788	HISTORY	- 20050415	GOOD	INDIV

AK1788 STATION DESCRIPTION

AK1788
AK1788 DESCRIBED BY NATIONAL GEODETIC SURVEY 1945
AK1788 1.5 MI S FROM PINE CASTLE.
AK1788 1.5 MILE SOUTH ALONG STATE HIGHWAY NO. 3A FROM THE POST OFFICE AT
AK1788 PINE CASTLE, THENCE 1.5 MILE EAST ALONG A ASPHALT ROAD, AT THE
AK1788 PINE CASTLE ARMY AIR FIELD, ABOUT 0.2 MILE SOUTH OF THE MAIN GATE,
AK1788 ABOUT 0.1 MILE NORTH OF POST HEADQUARTERS, AT A RAILROAD CROSSING,
AK1788 51 FEET NORTH OF THE CENTERLINE OF THE RAILROAD CROSSING, 24 FEET
AK1788 WEST OF THE CENTERLINE OF THE PAVED STREET LEADING TO POST
AK1788 HEADQUARTERS, BRONZE DISK SET IN THE NORTH END OF A CONCRETE CULVERT.
AK1788 STAMPED M 122 1945. NOTE-- PINECastle ARMY AIR FIELD IS NOW MC COY
AK1788 AFB. ABOUT 750 FEET SOUTH OF MAIN GATE TO MC COY AFB ALONG ENTRANCE
AK1788 ROAD, 23 FEET WEST OF CENTERLINE PAVING, 22.6 FEET SOUTHEAST OF
AK1788 POWER POLE I-95, 26 FEET EAST OF SEWAGE LIFT STATION 3.

AK1788
AK1788 STATION RECOVERY (1973)

AK1788 RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1973
AK1788 RECOVERED IN GOOD CONDITION.

AK1788
AK1788 STATION RECOVERY (1990)

AK1788 RECOVERY NOTE BY ORANGE COUNTY FLORIDA 1990
AK1788 3-INCH US ENGINEERING DEPT-HARBOR SURVEY BRASS DISK IN NORTH END OF
AK1788 1-FT BY 21-FT CONCRETE HEADWALL WITH WINGWALL ON WEST SIDE OF
AK1788 DAETWYLER DRIVE, ABOUT 23 FT (7.0 M) WEST OF THE CENTER LINE OF
AK1788 DAETWYLER DRIVE, ABOUT 420 FT (128.0 M) NORTH OF THE CENTER LINE OF
AK1788 1ST STREET, ABOUT 575 FT (175.3 M) SOUTH OF THE CENTER LINE OF
AK1788 JETPORT DRIVE, AND ABOUT 40 FT (12.2 M) SOUTHEAST OF POWER POLE
AK1788 NUMBER 821551. T23S, R30E, SECTION 32. (DESCRIPTION SOURCE--THE
AK1788 ORANGE COUNTY ENGINEERING DEPARTMENT.)

AK1788
AK1788 STATION RECOVERY (1996)

AK1788 RECOVERY NOTE BY US POWER SQUADRON 1996
AK1788 RECOVERED IN GOOD CONDITION.

AK1788
AK1788 STATION RECOVERY (2005)

AK1788 RECOVERY NOTE BY GEOCACHING 2005 (MAG)
AK1788 RECOVERED IN GOOD CONDITION.

AK1788
AK1788 STATION RECOVERY (2005)

AK1788 RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (ADJ)
AK1788 RECOVERED IN GOOD CONDITION.

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

The NGS Data Sheet

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

```

DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.35
1      National Geodetic Survey, Retrieval Date = APRIL 27, 2006
AK1791 *****
AK1791 DESIGNATION - N 122
AK1791 PID - AK1791
AK1791 STATE/COUNTY- FL/ORANGE
AK1791 USGS QUAD - PINE CASTLE (1980)
AK1791
AK1791 *CURRENT SURVEY CONTROL
AK1791
AK1791 * NAD 83(1986)- 28 26 28. (N) 081 20 12. (W) SCALED
AK1791 * NAVD 88 - 27.706 (meters) 90.90 (feet) ADJUSTED
AK1791
AK1791 GEOID HEIGHT- -27.81 (meters) GEOID03
AK1791 DYNAMIC HT - 27.665 (meters) 90.76 (feet) COMP
AK1791 MODELED GRAV- 979,187.6 (mgal) NAVD 88
AK1791
AK1791 VERT ORDER - FIRST CLASS II
AK1791
AK1791.This mark is at Orlando Int'l Airport (MCO)
AK1791
AK1791.The horizontal coordinates were scaled from a topographic map and have
AK1791.an estimated accuracy of +/- 6 seconds.
AK1791
AK1791.The orthometric height was determined by differential leveling
AK1791.and adjusted by the National Geodetic Survey in June 1991..
AK1791
AK1791.The geoid height was determined by GEOID03.
AK1791
AK1791.The dynamic height is computed by dividing the NAVD 88
AK1791.geopotential number by the normal gravity value computed on the
AK1791.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AK1791.degrees latitude (g = 980.6199 gals.).
AK1791
AK1791.The modeled gravity was interpolated from observed gravity values.
AK1791
AK1791; North East Units Estimated Accuracy
AK1791;SPC FL E - 455,140. 167,020. MT (+/- 180 meters Scaled)
AK1791
AK1791 SUPERSEDED SURVEY CONTROL
AK1791
AK1791 NGVD 29 (??/??/92) 27.991 (m) 91.83 (f) ADJ UNCH 1 2
AK1791
AK1791.Superseded values are not recommended for survey control.
AK1791.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AK1791.See file dsdata.txt to determine how the superseded data were derived.
AK1791
AK1791_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMM670461(NAD 83)
AK1791_MARKER: DB = BENCH MARK DISK
AK1791_SETTING: 30 = SET IN A LIGHT STRUCTURE
AK1791_SP_SET: CULVERT
AK1791_STAMPING: N 122 1945
AK1791_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AK1791_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AK1791+SATELLITE: SATELLITE OBSERVATIONS - April 15, 2005
AK1791
AK1791 HISTORY - Date Condition Report By
AK1791 HISTORY - 1945 MONUMENTED CGS
AK1791 HISTORY - 20050326 GOOD GEOCAC
AK1791 HISTORY - 20050415 GOOD INDIV
AK1791
AK1791 STATION DESCRIPTION
AK1791
AK1791'DESCRIBED BY COAST AND GEODETIC SURVEY 1945
AK1791'1.5 MI S FROM PINE CASTLE.
AK1791'1.5 MILES SOUTH ALONG STATE HIGHWAY NO. 3A FROM THE POST OFFICE
AK1791'AT PINE CASTLE, THENCE 1.5 MILE EAST ALONG A ASPHALT ROAD, AT THE
AK1791'PINE CASTLE ARMY AIR FIELD, ABOUT 1.0 MILE NORTH OF THE MAIN
AK1791'HANGAR, ABOUT 0.6 MILE SOUTH OF THE POST HEADQUARTERS, ABOUT 30

```


DATASHEETS

AK1791' FEET NORTH OF A POINT WHERE A POWER LINE CROSSES OVER THE PAVED
AK1791' STREET, 24 FEET WEST OF THE CENTERLINE OF THE PAVED STREET,
AK1791' IRON DISK SET IN THE NORTH END OF A CONCRETE CULVERT. STAMPED
AK1791' N 122 1945. NOTE-- PINECASTLE ARMY AIR FIELD IS NOW MC COY AFB.
AK1791' THE POWER LINE DOES NOT CROSS THE ROAD ANYMORE. THE MARK IS
AK1791' DIRECTLY WEST OF BUILDING 140, 8595 AVENUE C, AND ABOUT 500 FEET
AK1791' NW OF THE COMMISSARY STORE.

AK1791
AK1791 STATION RECOVERY (2005)

AK1791 RECOVERY NOTE BY GEOCACHING 2005 (MAG)
AK1791 RECOVERED IN GOOD CONDITION

AK1791
AK1791 STATION RECOVERY (2005)

AK1791 RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (ADJ)
AK1791 MARK FOUND IN HEADWALL ON THE WEST SIDE OF AVENUE C. ALL BUILDINGS IN
AK1791 THE AREA ARE GONE. MARK IS APPROXIMATELY MIDWAY BETWEEN EAST
AK1791 LANDSTREET ROAD AND 3RD STREET.

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



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY Orange		PROJECT		DESIGNATION Well Site AIR 19-G	
SECTION 18		TOWNSHIP 24 SOUTH		RANGE 30 EAST	
GEOGRAPHIC INDEX OF QUAD					
Established by <u>Keith and Schnars, P.A.</u> Recovered by SET CLASS "C" MONUMENT WITH SFWMD BRASS DISK.			NAME OF QUADRANGLE <u>PINE CASTLE</u>		
SURVEYOR <u>B. LANDRY (Keith and Schnars)</u> DATE <u>08/26/2006</u>			FIELD BOOK, 1165, pgs. 26-40		
HORIZONTAL DATUM: 1983 with 1999 correction, ZONE East					
VERTICAL DATUM: NGVD 1929 and NAVD 1988					
CONTROL ACCURACY: HORIZONTAL HAND-HELD GPS, 3 rd Order VERTICAL					
STATE PLANE COORDINATES		X = 542432	Y = 1479491	EL. (NGVD 1929) 84.802' EL. (NAVD 1988) 83.872'	
LATITUDE <u>28° 24' 11.8"</u>			LONGITUDE <u>81° 21' 13.6"</u>		
DESCRIPTION					
South Florida Water Management District brass disk set in concrete monument stamped AIR 19-G / 2006					
The benchmark is located in south Orlando					
From Interstate 4 and State Road 417 (Central Florida Greenway) travel north along					
State Road 417 (Central Florida Greenway) 12.5 miles +- to Landstar Blvd; then travel north along					
Landstar Blvd. 2.0 miles to where Landstar Blvd. dead ends into Wetherbee Road; Take a left on Wetherbee Rd.					
And head north for a distance of 0.7 miles to a rail road crossing; on the south side of the rail road track and the					
East side of Wetherbee Rd. there is a access road leading to a substation; take the access Rd. a Distance					
1.4 miles to the substation. The Benchmark is located 3.5' west of the northeast fence corner					
And 9.1' north of the north fence line.					
Notable Land marks:					

SKETCH