Data Sheet and Surveyor's Report
for
Buck Island Ranch
Monitoring Well Benchmarks

Description: **Monitoring Well "BUCK 19"** Date: June 17, 2005
Location: Buck Island Ranch, Highlands County, Florida

Benchmarks established:

1. **"BUCK 19A"**: 3" bronze survey disk set in concrete monument
    a. Elevation: **7.9776 m**
2. **"BUCK 19B"**: Top of existing 1.5" steel pipe
    a. Elevation: **8.1582 m**
3. **"BUCK 19C"**: Top of existing 3" PVC monitoring well casing
    a. Elevation: **8.9689 m**

Party Chief: **G. Royer** Field Book: **154,** Pages **1 - 45**

Survey Date: **February – May 2005** Bench Mark: **"H-437"** El. **9.395 m / 30.82 ft.**
"J-437" El. **11.555 m / 37.91 ft.**

Vertical Datum: **NAVD1988**

NGVD 1929 Offset: + **1.210 ft.** (add this value to convert to NGVD 1929)

Comments:
The offset value referred to as "NGVD 1929 Offset" was derived by subtracting the published NAVD 1988 elevation from the published NGVD 1929 elevation for NGS Benchmarks "H-437 and J-437".

G.P.S. POSITION (NAD 83, Florida East Zone, Sub-meter):

Well Site: **"BUCK 19A"** N = **1021853** E = **600843**

NAVD 88 - North American Vertical Datum of 1988
NGVD29 -National Geodetic Vertical Datum of 1929
NAD 83 (Horizontal Datum) North American Datum of 1983

*Note: See the SFWMD Benchmark Description Sheet for additional information

SURVEYOR'S REPORT

Hyatt Survey Services, Inc. operating under sub-contract to George F Young, Inc. and the South Florida Water Management District was tasked with the execution of a Vertical Control Survey in support of the District's Benchmark Densification and Monitoring Well Elevation Initiatives.

The purpose of this survey was to establish benchmarks at each of 22 monitoring wells on the Buck Island Ranch Facility in Highlands County, Florida. A minimum of two (2) benchmarks were established at each well.

1. **"A"** benchmarks are NGS Class "C", "poured-in-place," concrete monuments with SFWMD bronze disks set flush with the ground.
2. **"B"** benchmarks were set on the top of existing 1.5" steel pipes at each well site. Each pipe protrudes approximately 3" above the surrounding ground.
3. **"C"** benchmarks were set on the top of the 3" PVC well casing at each well site.

Elevations were determined by digital differential leveling performed in accordance with the Minimum Technical Standards (MTS) for Vertical Control Surveys as set forth in Chapter 61G17-6 FAC and the requirements for Second-Order Class II Vertical Control Surveys as established by the Federal Geodetic Control Sub-committee.

All elevations are based on National Geodetic Survey Benchmarks "H-437" and "J-437" both Second Order, Class I vertical control monuments. The vertical datum used was NAVD 88 (North American Vertical Datum of 1988).

All level runs were double-run under differing atmospheric conditions and meet or exceed the formula of the Square Root in miles of the level run multiplied by 0.03'. A Leica DNA 3003 digital level and two 3 meter aluminum bar-coded "Invar Rods" with aluminum struts were utilized to obtain all leveling data.

The processing of the field data was performed by and under the supervision of Mr. Ronnie Taylor, Florida's NGS Advisor. NGS' "WDDPROC" leveling software was utilized to process the field data and to create the NGS benchmark descriptions.

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Prepared for: **South Florida Water Management District**
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Notes:
1) This survey meets all applicable requirements of the Florida Minimum Technical Standards as contained in Chapter 61G17-6 FAC.
2) Not valid without the signature and the original raised seal of the Florida Surveyor and Mapper in responsible Charge.
3) Additions or deletions to this data by anyone other than the signing party are prohibited without written consent of the signing party.

Hyatt Survey Services, Inc.
Russell P. Hyatt, PSM, VP
Professional Surveyor and Mapper
License Number 5303

Signed: _____ Seal: