

Executive Summary  
ROMP Site No. 124  
Core and Two Monitor Wells

Location - ROMP Site 124 is located on the south side of Bonito Club Road approximately .2 mile west of State Route 40A in Levy County. The site is located in Section 6, Township 17 South, Range 16 East and at latitude  $29^{\circ}02'00''$ , Longitude  $82^{\circ}43'25''$ .

Site Easements - This site was obtained from Thomas Jeffrey Knotts, Trustee on May 2, 1977 for the sum of one dollar. The Perpetual Easement is 20 feet by 100 feet and the Temporary Construction Easement which includes the Perpetual Easement is 50 feet by 100 feet. The Temporary Easement was obtained on May 2, 1977 for a period of 12 months and expired on May 1, 1978. A Right-of-Entry instrument was also obtained on May 2, 1977 for a period of three months and expired on July 1, 1977. These easements are recorded in O.R. Book 109 Pages 314 through 319 of the Levy County Courthouse.

Reason for Coring - This site was cored in order to obtain geologic and water quality data so that a monitor well could be designed.

Geology - The site is located on the Silver Bluff Terrace at an elevation of approximately 5 feet above mean sea level (MSL). Geologic information was obtained from continuous core samples from land surface to 254 feet below land surface datum (LSD). The general geology of this site is as follows:

0-8'	Sand
8'-29'	Ocala Group
29'-254'	Avon Park Limestone

FIELD OPERATIONS  
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Hydrogeology - During the coring of this site it was discovered that two distinct artesian aquifers occur at this site. The first artesian zone is located in the upper half of the Avon Park limestone between the depths of + 36 and + 160 feet below LSD. The second artesian aquifer is found at + 175 feet below LSD. These two aquifers are apparently separated by limestones that contain organic streaks and have very low porosity. There is a + 2 foot difference in head with the second artesian zone having the greater head. Numerous cavities appear in both zones with the most prevalent areas being found at depths of + 76 to + 90 feet and + 180 to + 200 feet below LSD. Both areas are in dolomite zones which would indicate that these are the areas that are contributing the greatest water flows to the well. The temperature log does indeed show temperature changes opposite these zones.

Core Drilling - This site was cored between May 10 and June 21, 1977 by the District CME core rig from land surface to 254 feet at a cost of \$10,450 or \$41.14 per foot.

Wireline core samples of 1 7/8" diameter were obtained and boxed in core boxes. After these samples were described by the field geologist they were sent to the University of Florida for in depth analysis.

Well Construction - Both monitor wells were constructed by the District's Portadrill between July 18 and October 13, 1977 at a cost of \$21,275 or \$53.19 per foot.

- A. Well No. 1 - the deep well (250 feet) was constructed by using 23 feet of 16 inch, 41 feet of 14 inch, and 65 feet of 12 inch steel work casing and 200 feet of 6 inch PVC well casing. After the 6 inch PVC casing was cemented in place the well was

drilled out to 250 feet below LSD and developed.

It should be noted that this well was constructed with some difficulty due to the development of a couple of sinkholes during construction.

- B. Well No. 2 - the shallow (150 feet) well was constructed by using 25 feet of 16 inch, 39 feet of 14 inch, and 43 feet of 12 inch steel work casing and 100 feet of 6 inch PVC casing. After the PVC was grouted in place the well was drilled out to 150 feet below LSD and developed.

Geophysical Logs - Electric, caliper, gamma, fluid resistivity, and temperature logs were run on both the core hole and well no. 1.

Type of Monitor - Both of these wells are designed to monitor potentiometric changes in the two artesian zones of the Avon Park.

Water Quality - The water quality at this site is very poor. The chlorides are extremely high, 450 to 2600 milligrams per liter (mg/L), at shallow depths, 0 to 120 feet below LSD. The sulfates are also very high, 250 to 1500 mg/L, at depths in excess of 160 feet below LSD. In addition the total dissolved solids (TDS) are 854 mg/L at 150 feet and go up to 18,716 mg/L at 253 feet below LSD. The only area where the water appears to be potable is between the depths of  $\pm 125$  to  $\pm 150$  feet below LSD and based on the TDS of 854 mg/L at 150 feet this area may not even be potable (the recommended TDS is 500 mg/L as set by the Public Health Service and Safe Drinking Water Act - 1975). The iron content of this water ranges from 1.28 mg/L at 150 feet to 1.46 mg/L at 253 feet below LSD which exceeds the limits of .3 mg/L as set by the aforementioned regulations.

U.S.G.S. Notification - SWFWMD Planning Section was notified in February, 1978 that these wells were completed and ready for monitoring.

LITHOLOGIC WELL LOG PRINTOUT

SOURCE - FGS

WELL NUMBER: W- 30124

COUNTY - LEVY

TOTAL DEPTH: 00254 FT.

LOCATION: T.17S R.16E S.06

SAMPLES - NONE

LAT = N 29D 02M 00

LON = W 82D 43M 25

COMPLETION DATE - N/A

ELEVATION - 005 FT

OTHER TYPES OF LOGS AVAILABLE - NONE

OWNER/DRILLER: SWFWMD; YANKEETOWN #124 CORE; ROMP SITE # 124

WORKED BY: CODED AND ENTERED BY RICHARD GREEN 8/90 FROM A GEOLOGIST'S  
(K. FREEDOM) LOG PROVIDED BY SWFWMD. THIS IS A CORE.

SITE IS LOCATED ON THE SOUTH SIDE OF BONITO CLUB RD.  
APPROXIMATELY .2 MILES WEST OF STATE ROUTE 40A IN LEVY CO.

SINCE THE FGS DOES NOT HAVE A W# ASSIGNED TO THIS CORE,  
IT HAS BEEN ASSIGNED A 30,000 SERIES # FOR THE PURPOSE  
OF DATA ENTRY.

- 0. - 8. UNDIFFERENTIATED SAND AND CLAY
- 8. - 29. OCALA GROUP
- 29. - 254. AVON PARK FM.

0 - 8 SAND; ; RANGE: MEDIUM TO FINE;

8 - 14.5 LIMESTONE; CREAM;  
GRAIN TYPE: CALCILUTITE;  
POOR INDURATION;  
FOSSILS: MOLLUSKS;  
DISMICRITE. FRIABLE, GRAINY, PUNKY. CONTAINS OCCASIONAL PELECYPODS. POROSITY IS FINE,  
PRIMARY, AND MODERATE.

14.5- 29.5 LIMESTONE; CREAM; POSSIBLY HIGH PERMEABILITY;  
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL;  
POOR INDURATION;  
OTHER FEATURES: FOSSILIFEROUS;  
FOSSILS: MOLLUSKS, ECHINOID, BENTHIC FORAMINIFERA, OSTRACODS;  
PACKED BIOMICRITE. FRIABLE. ABUNDANT MOLLUSKS. POROSITY IS FAIRLY GOOD.

- 29.5- 32 LIMESTONE; LIGHT GRAY; POSSIBLY HIGH PERMEABILITY;  
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL;  
POOR INDURATION;  
OTHER FEATURES: FOSSILIFEROUS;  
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, OSTRACODS;  
PACKED BIOMICRITE. FRIABLE, SOMEWHAT GRAINY. POROSITY IS FAIRLY HIGH W/ SOME SECONDARY  
DEVELOPMENT.
- 32 - 36 PEAT; BROWN;  
ORGANIC ZONE, VERY SOFT.
- 36 - 39 LIMESTONE; ;  
REPEAT OF 29.5-32'.
- 39 - 39.5 LIMESTONE; ; FRACTURE, LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE, SKELETAL;  
POOR INDURATION;  
ACCESSORY MINERALS: ORGANICS- %;  
OTHER FEATURES: CHALKY;  
FOSSILIFEROUS MICRITE, PASTY, FRIABLE. CONTAINS THIN LIGNITE ZONES. OBLIQUE FRACTURING  
PRESENT.
- 39.5- 43 DOLOMITE; ;  
GOOD INDURATION;  
ACCESSORY MINERALS: SPAR- %;  
OTHER FEATURES: FOSSILIFEROUS;  
FOSSILS: MOLLUSKS;  
HARD WITH A FEW MINOR POWDERY ZONES. CONTAINS MANY MOLLUSKS. CRYSTALLINE CALCITE LINING  
IN LEACHED FOSSILS. POROSITY IS SECONDARY AND MOD.
- 43 - 61.5 LIMESTONE; CREAM;  
GRAIN TYPE: CALCILUTITE, CRYSTALS;  
MODERATE INDURATION;  
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;  
MICRITE TO SOMEWHAT SPARRY MICRITE. MED-GOOD INDURATION.
- 61.5- 65 LIMESTONE; MODERATE GRAY TO TAN; POSSIBLY HIGH PERMEABILITY;  
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL;  
PACKED BIOMICRITE, GRAINY. POROSITY IS FAIRLY HIGH.
- 65 - 68.5 DOLOMITE; MODERATE GRAY TO TAN; LOW PERMEABILITY;  
ACCESSORY MINERALS: SPAR-%;  
SPARRY DOLOMITE, GRAINY. POROSITY IS VERY LOW.
- 68.5- 69 LIMESTONE; TAN; LOW PERMEABILITY;  
GRAIN TYPE: CRYSTALS, CALCILUTITE;  
POOR INDURATION;  
OTHER FEATURES: DOLOMITIC;  
SPARITE. SOMEWHAT POWDERY. LOW POROSITY.

- 69 - 82 LIMESTONE; TAN; POSSIBLY HIGH PERMEABILITY, VUGULAR;  
GOOD INDURATION;  
ACCESSORY MINERALS: ORGANICS- %;  
OTHER FEATURES: DOLOMITIC;  
SPARITE. SLIGHTLY DOLOMITIC. ORGANIC STAINED STREAKS AND POCKETS. WELL LITHIFIED WITH  
ZONES OF HIGH POROSITY AND VARIOUS ZONES OF LARGER PORES (1-4MM) YIELDING HIGH POROSITY.
- 82 - 82.3 LIMESTONE; LIGHT TAN;  
GRAIN TYPE: CALCILUTITE;  
GOOD INDURATION;  
ACCESSORY MINERALS: ORGANICS-02%;  
MINOR ORGANICS AND MODERATE POROSITY.
- 82.3- 84 DOLOMITE; TAN; LOW PERMEABILITY;  
GOOD INDURATION;  
VERY HARD, SOMEWHAT SPARRY AND MICRITIC IN PLACES.
- 84 - 84.5 DOLOMITE; LIGHT TAN; LOW PERMEABILITY;  
POOR INDURATION;  
MICRITIC DOLOMITE. POWDERY BUT LITHIFIED SLIGHTLY.
- 84.5- 87 DOLOMITE; GRAYISH BROWN TO GRAYISH BROWN; POSSIBLY HIGH PERMEABILITY;  
SPARRY, ABUNDANT MM SIZE POROSITY.
- 87 - 88.5 LIMESTONE; CREAM TO LIGHT TAN;  
GRAIN TYPE: CALCILUTITE;  
MODERATE INDURATION;  
OTHER FEATURES: DOLOMITIC;  
GENERALLY WELL INDURATED, GRADING TO LOOSELY LITHIFIED AND POWDERY AT BOTTOM.
- 88.5- 94 DOLOMITE; TAN; POSSIBLY HIGH PERMEABILITY, VUGULAR;  
GOOD INDURATION;  
ACCESSORY MINERALS: SPAR-%;  
CONTAINS ABUNDANT MM SIZE PORES TO SOME LARGE CM SIZE PORES. PORES WELL CONNECTED.
- 94 - 94.5 DOLOMITE; TAN;  
POOR INDURATION;  
SEDIMENTARY STRUCTURES: BANDED,  
ACCESSORY MINERALS: ORGANICS-%;  
POWDERY, FRIABLE. CONTAINS FINE ORGANIC BANDS, APPEARS TO BE SOMEWHAT SPARRY.
- 94.5- 97 LIMESTONE; TAN; POSSIBLY HIGH PERMEABILITY, VUGULAR;  
GRAIN TYPE: CRYSTALS, SKELETAL;  
GOOD INDURATION;  
CEMENT TYPE(S): SPARRY CALCITE CEMENT;  
OTHER FEATURES: FOSSILIFEROUS, DOLOMITIC;  
FOSSILS: MOLLUSKS;  
SPARITE. CONTAINS POORLY PRESERVED MOLLUSKS. GRADES INTO MORE DOLOMITIZATION WITH DEPTH.  
VERY POROUS, MM SIZE PORES.

- 97 - 99 LIMESTONE; WHITE TO LIGHT TAN; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GOOD INDURATION;  
ACCESSORY MINERALS: ORGANICS-%;  
VIRTUALLY NO POROSITY. CONTAINS WELL PRESERVED ORGANICS.
- 99 - 102.5 LIMESTONE; ; POSSIBLY HIGH PERMEABILITY;  
GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS;  
GOOD INDURATION;  
CEMENT TYPE(S): SPARRY CALCITE CEMENT, CALCILUTITE MATRIX;  
POORLY WASHED SPARITE. POROSITY IS GENERALLY HIGH BECOMING LESS POROUS WITH DEPTH. A  
SECOND DESCRIPTION (100-102.5') IS LISTED: DOLOMITE AND MICRITE- POWDERY, LIGHT TAN, HIGH  
CONTENT OF FINE ORGANICS.
- 102.5- 107 LIMESTONE; LIGHT GRAY TO WHITE; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GOOD INDURATION;  
CEMENT TYPE(S): CALCILUTITE MATRIX;  
ACCESSORY MINERALS: ORGANICS- %;  
OTHER FEATURES: CHALKY;  
FRIABLE, CHALKY IN ZONES. CONTAINS FINE ORGANICS. POROSITY IS GENERALLY LOW.
- 107 - 109 DOLOMITE; LIGHT TAN; POSSIBLY HIGH PERMEABILITY;  
GRAIN SIZE: MICROCRYSTALLINE; GOOD INDURATION;  
OTHER FEATURES: SUCROSIC;  
MICROSUCROSIC TEXTURE. POROSITY IS MOD. AT TOP, BECOMING GREATER WITH DEPTH.
- 109 - 112 LIMESTONE; ; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GOOD INDURATION;  
OTHER FEATURES: CHALKY;  
FOSSILS: PLANT REMAINS;  
VERY CHALKY. WELL PRESERVER PLANT REMAINS.
- 112 - 114 LIMESTONE; ; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GRADES FROM LOOSELY LITHIFIED CHALK TO CARBONATE MUD. EXTREMELY VARIABLE AND APPARENTLY  
HAS LOW POROSITY.
- 114 - 117 LIMESTONE; CREAM; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GOOD INDURATION;  
POROSITY IS MM SIZES, WIDELY SPACED, GENERALLY LOW.
- 117 - 120 LIMESTONE; CREAM; LOW PERMEABILITY;  
GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE;  
MODERATE INDURATION;  
POORLY WASHED BIOSPARITE. POROSITY IS GENERALLY LOW.

- 120 - 128 LIMESTONE; WHITE; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
GRAIN SIZE: FINE;  
ACCESSORY MINERALS: ORGANICS-%;  
CONTAINS POCKETS OF FINE ORGANICS. POROSITY IS GENERALLY VERY LOW.
- 128 - 173.5 LIMESTONE; CREAM; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
RANGE: VERY FINE TO MEDIUM;  
ACCESSORY MINERALS: ORGANICS-%;  
SOMEWHAT GRAINY TO VERY FINE GRAINED. CONTAINS ORGANIC STREAKS. PRIMARY POROSITY IS HIGHER THAN ABOVE WITH SOME MINOR SECONDARY POROSITY. GENERALLY LOW POROSITY.
- 173.5- 176 LIMESTONE; ; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
MODERATE INDURATION;  
OTHER FEATURES: DOLOMITIC;  
SLIGHTLY DOLOMITIC. GRAINY, FRIABLE. V. LOW POROSITY.
- 176 - 194.5 DOLOMITE; LIGHT BROWN; POSSIBLY HIGH PERMEABILITY;  
ACCESSORY MINERALS: ORGANICS- %;  
OTHER FEATURES: SUCROSIC;  
MINOR LENSES OF BLuish GRAY DOLOMITE, STREAKS OF BLACK AND BROWN ORGANICS PRESENT.  
SLIGHTLY SUCROSIC TEXTURE IN PLACES. POROSITY IS FAIRLY HIGH, BECOMING GREATER W/ DEPTH TO EXTREMELY HIGH.
- 194.5- 197 LIMESTONE; MODERATE GRAY TO CREAM; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;
- 197 - 227 DOLOMITE; LIGHT BROWN;  
ACCESSORY MINERALS: ORGANICS-%;  
MINOR LENSES OF BLuish GRAY DOLOMITE PRESENT. STREAKS OF BLACK AND BROWN ORGANICS. MOD. POROSITY.
- 227 - 254 LIMESTONE; CREAM TO TAN; LOW PERMEABILITY;  
GRAIN TYPE: CALCILUTITE;  
MOD-LOW POROSITY.
- 254 TOTAL DEPTH