

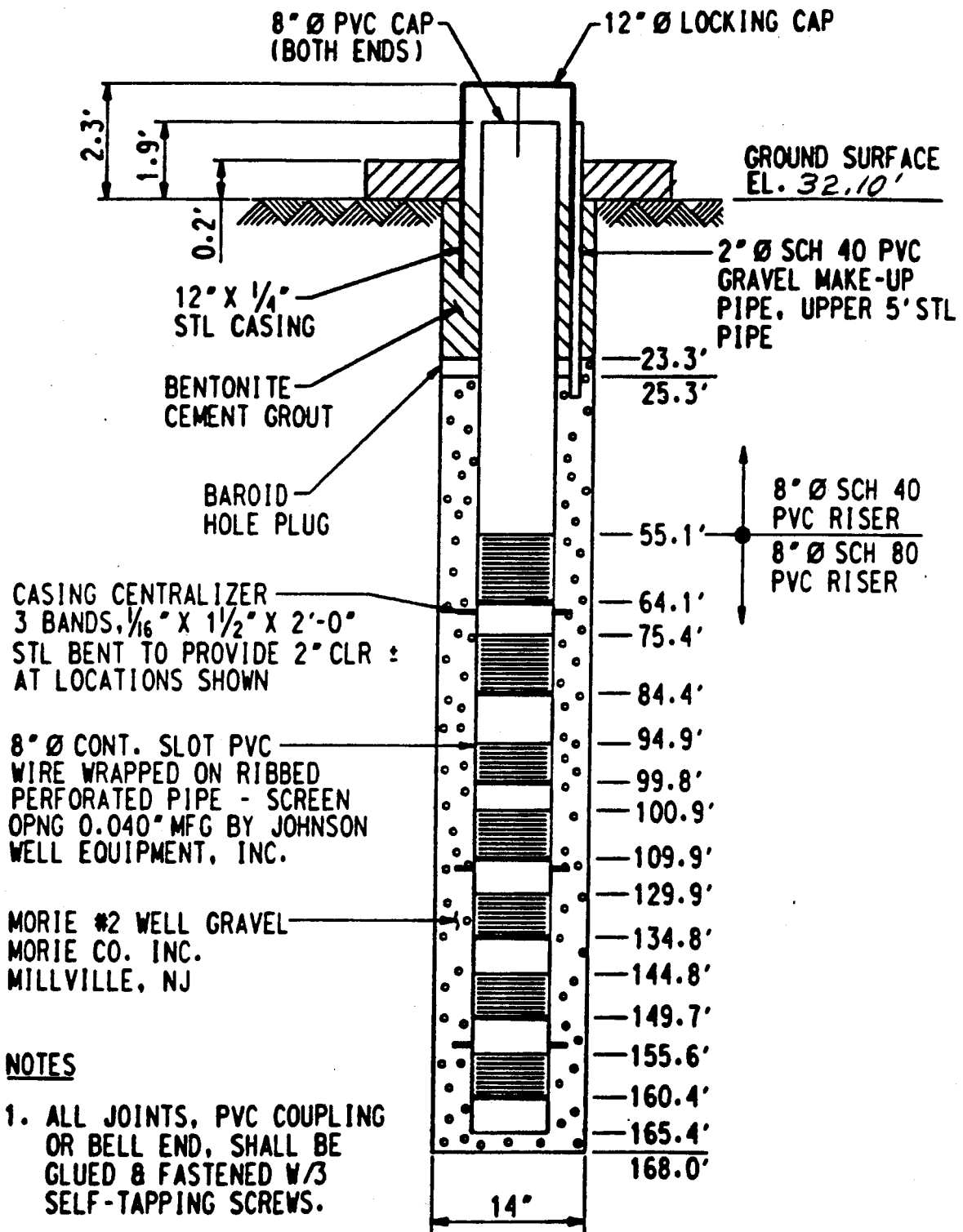
**NOTE**

1. DRAWING IS PRODUCED FROM U S GEOLOGICAL SURVEY MAP.

**LEGEND**

- ◆ TEST WELL AND OBS WELL
- ◆ EXPLORATORY BORING COMPLETED AS OBSERVATION WELL
- EXISTING MARTIN PLANT PRODUCTION WELL
- FLORIDAN AQUIFER TEST WELL

NO.	DATE	REVISIONS	BY	CHK	DES	APP	APP
<b>BECHTEL</b> GAITHERSBURG, MARYLAND							
<b>FLORIDA POWER &amp; LIGHT COMPANY</b> OF 170 NORTH CHURCH STREET CORP. GASIFICATION COMPATIBLE PROJECTS							
<b>TEST WELL LOCATION PLAN</b> FIGURE 4.1-1							
SCALE	1"=2000'	19720					SK C 009



#### NOTES

1. ALL JOINTS, PVC COUPLING OR BELL END, SHALL BE GLUED & FASTENED W/3 SELF-TAPPING SCREWS.
2. DEPTHS SHOWN ARE BELOW GROUND SURFACE.
3. WELL INSTALLED APRIL 13, 1989.

FOR INFORMATION ONLY

**PRELIMINARY**

FLORIDA POWER & LIGHT  
MARTIN CC/CG PROJECT  
TEST WELL

BTW-4

# PRELIMINARY

## FOR INFORMATION ONLY



WELL LOG				PROJECT	JOB NO	SHEET NO	WELL NO
				FPL MARTIN CC/CG	19720	1 OF 5	BTW-4
SITE				COORDINATES		LOGGED BY	
				N 984458.32 E 652283.71		Robert Blodnikar	
BEGIN	COMPLETED	DRIILLER	DRIILL MAKE AND MODEL	TOLE SIZE	EASING DIAMETER/LENGTH	TOTAL DEPTH	
3/30/81	3/30/89	Drilling Services, Inc. David Spencer	Mobil B-40L	5 3/4"	8-IN./16.13'	175.0'	
SCREEN DIAMETER/LENGTH/SLOT				EL TOP OF CASING	GROUND EL	DEPTH/EL GROUND WATER	
8-IN./30 FT. TOTAL / 0.040"				34.03	32.10	SHALLOW	
ELEVATION	DEPTH	THICKNESS	SAMPLE	DESCRIPTION AND CLASSIFICATION			NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC
	0			0.0 - 5.0 ft. Light gray, fine-medium, SAND, trace medium-coarse sand, subrounded-rounded, quartz; little fines, silty. (Fill)			Start drilling at 1240 hrs. using 5-3/4" dia. tricone bit. Drilling fluid Baroid Quik-Jel and water from drainage canal. Samples obtained from returns at 5' intervals. Desander run periodically to clean fines from drilling fluid.  0 - 70' Avg. drilling rate 1.4 ft./min.  0 - 30' Drill fluid grayish-brown.
	5			5.0 - 10.0 ft. Dark brown, fine-coarse, SAND, most fine-medium, subrounded-rounded quartz; little fines, silty; few organics, decomposed vegetation and roots.			
	10			10.0 - 15.0 ft. Brown, fine-coarse, SAND, most fine-medium, subrounded-rounded, quartz and feldspar; little fines, silty; few organics, decomposed vegetation and charcoal.			
	15			15.0 - 20.0 ft. Brown, fine-coarse, SAND, most fine-medium, subrounded-rounded, quartz and feldspar; little fines, silty; few organics; trace shell fragments.			
	20			20.0 - 25.0 ft. Brown, fine-coarse, SAND, most fine-medium, subrounded-rounded, quartz and feldspar; little fines, silty and clayey; trace organics; trace shell fragments.			
	25			25.0 - 30.0 ft. Light gray-brown, fine-coarse, SAND, most fine-medium, subrounded-rounded, quartz and feldspar, trace mafic minerals; little fines, silty; trace shell fragments; trace organics.			
	30			30.0 - 34.0 ft. Dark brown, black and dark gray, fine-medium, CLAYEY SAND, most fine; little fines, medium plastic; interbedded with dark gray clayey silt and black organic rich silty clay.			34 - 36' Rig chatters, hard and soft layers. Drilling fluid dark brown.
	35			34.0 - 40.0 ft. Gray and tan, hard, SANDY LIMESTONE, brittle, fine-medium grained sand			
SITE							WELL NO BTW-4

# PRELIMINARY

## FOR INFORMATION ONLY



WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO 19720	SHEET NO 2 of 5	WELL NO BTW-4
ELEVATION	DEPTH	THICKNESS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RECHARGE, CHARACTER OF DRILLING, ETC		
	35			Moderately cemented with calcareous cement; with tan shells, sand sized to 1/4", most 1/8"; and thin gray, fine sand lenses.	36 - 37' Soft, rapid penetration, drilling fluid dark brown. Some mud loss. 37 - 42' Rig chatters, hard and soft layers. Drilling fluid dark brown.		
	40			40.0 - 42.0 ft. Gray and tan, hard, SANDY LIMESTONE, same as 34.0 - 40.0 ft.			
	45			42.0 - 45.0 ft. Gray, SANDY LIMESTONE and tan SHELLS and SHELL FRAGMENTS, limestone hard, fine-medium sand moderately cemented with calcareous cement in thin layers; shells and shell fragments sand sized to 1/2"; scattered lenses of gray sand, fine.			
				45.0 - 50.0 ft. Dark gray and brown, SANDY CLAY and SHELLS and SHELL FRAGMENTS, sandy clay - little fine-medium sand; shells, sand size to 3/16"; little sandy limestone, angular fragments to 1/8".			
	50			50.0 - 55.0 ft. Tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/4" most 1/16" to 1/4", interbedded with gray clayey sand, sand fine-medium, most fine.			
	55			55.0 - 60.0 ft. Gray and tan, SHELLS and SANDY LIMESTONE, subangular-angular fragments of weakly cemented sandy limestone; some shells cemented to limestone fragments, most loose with little sand.	70 - 140' Avg. drilling rate 1 ft./min.		
	60			60.0 - 65.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/4", most 1/16" to 1/8"; some gray sandy limestone fragments, hard; few gray sand, fine-coarse, most fine.			
	65			65.0 - 70.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 1/4", most 1/8" to 1/4", little sandy limestone fragments, subangular-subrounded, to 1/8"; trace gray sand, fine.			
	70			70.0 - 75.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells, sand sized to 1/4", most 1/16" to 1/8"; few gray sandy limestone fragments, subangular-subrounded, to 1/8"; trace gray sand, fine.			
	75						

DATE
WELL NO  
BTW-4

# PRELIMINARY

## FOR INFORMATION ONLY



WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO 19720	SHEET NO 3 of 5	WELL NO BTW-4
ELEVATION	DEPTH	THICKNESS	SAMPLE GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC		
	75			75.0 - 80.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 1/4", most coarse sand size to 1/8"; little sand, gray, medium-coarse, subrounded-rounded, quartz; few sandy limestone fragments, subangular.			
	80			80.0 - 85.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 3/8", most coarse sand size to 1/8"; little sandy limestone fragments, subangular-subrounded; few sand, gray, fine-coarse, subrounded-rounded, quartz.			
	85			85.0 - 90.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 3/8", most coarse sand size to 1/8"; few sandy limestone fragments, subangular, to 1/8"; few sand, medium-coarse, subrounded-rounded, quartz; trace fines, silty.	87' Slight chatters.		
	90			90.0 - 95.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 3/8", most coarse sand size to 1/8"; little limestone fragments, subangular-subrounded; few clayey sand, gray, fine.	90' Desander run continuously for remainder of drilling.		
	95			95.0 - 100.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, shells sand sized to 1/2", most 1/8" to 3/16"; little sand, gray, fine-medium, most fine, subrounded-rounded, quartz; few sandy limestone fragments, tan, subangular-subrounded.			
	100			100.0 - 105.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sizes to 3/8", most coarse sand size to 1/4"; little sand, fine-medium, most fine, subrounded-rounded, quartz; few sandy limestone fragments, tan, subangular-subrounded.			
	105			105.0 - 110.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, coarse sand size to 1", most 1/4" to 1/2"; little sand, fine-coarse; few sandy limestone fragments, to 1/8".	105' Polymer added to drilling fluid to lift coarse cuttings.		
	110			110.0 - 115.0 ft. Slight greenish-gray and tan, SHELLS and SHELL FRAGMENTS, sand size to 1/2"; little sand, fine-coarse, most fine-medium; few fines, clayey, phosphatic; trace sandy limestone fragments.			
	115						
SITE						WELL NO BTW-4	

# PRELIMINARY

## FOR INFORMATION ONLY



WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO. 19720	SHEET NO. 4 OF 5	WELL NO. BTW-4
ELEVATION	DEPTH	THICKNESS	SAMPLE GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
	115			<b>TAMIAHI FORMATION</b>			
				115.0 - 120.0 ft. Dark greenish-gray, fine-coarse, SAND, partially cemented into open angular fragments; some shells, 1/16" to 1/2"; trace fines, clayey.			
	120			120.0 - 125.0 ft. Dark greenish-gray, fine-coarse, SAND, most fine-medium, partially cemented into open angular fragments; few shells, sand sized.			
	125			125.0 - 130.0 ft. Light greenish-gray, fine-coarse, SAND, most fine-medium, and partially CEMENTED SAND, weakly cemented into open angular fragments to 1/16"; some shells and shell fragments, sand sized to 1/8", most 1/16"; few fines, clayey, milky, marly, slightly phosphatic.			
	130			130.0 - 135.0 ft. Light greenish-gray, fine-coarse, SAND, most fine-medium, and partially CEMENTED SAND, weakly cemented into open angular fragments to 1/8"; few shells and shell fragments, sand sized to 1/8"; few fines, clayey, milky, marly.			
	135			135.0 - 140.0 ft. Greenish-gray and tan, CEMENTED SAND, fine-coarse, weakly cemented into open angular fragments to 1/8"; few shells, sand sized; few gray sand, fine-medium; little fines, clayey, milky, marly.	135 - 140' Some chatters, drill fluid greenish gray color.		
	140			140.0 - 145.0 ft. Greenish-gray and tan, CEMENTED SAND, same as 135.0 to 140.0 ft.			
	145			145.0 - 150.0 ft. Light greenish-gray, CEMENTED SAND, fine-medium grained, weakly cemented into open angular fragments; little sand, gray, fine-coarse; little fines, clayey, milky, marly; few shells, medium-coarse sand sized.			
	150			150.0 - 155.0 ft. Light greenish-gray, CEMENTED SAND, fine-coarse grained, weakly cemented into open angular fragments 1/8" to 1/4"; few shells and shell fragments; little fines, clayey, milky, marly, phosphatic.			
	155						
SITE						WELL NO. BTW-4	



**PRELIMINARY**

**FOR INFORMATION ONLY**



WELL LOG				PROJECT FPL MARTIN CC/CG	WELL NO. 19720	SHEET NO. 5 of 5	WELL NO. BTW-4
ELEVATION	DEPTH	THICKNESS	SAMPLE GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC		
	155			155.0 - 160.0 ft. Light greenish-gray, <b>CEMENTED SAND</b> , fine-medium grained, subrounded-rounded, weakly cemented into open angular fragments; little fines, clayey, milky, marly; few shells and shell fragments, partially cemented.	158 - 165' Rapid penetration.  160' Drill fluid change color to dark green.		
	160			160.0 - 165.0 ft. Light olive-green and white, angular, <b>SANDY LIMESTONE</b> and <b>SHELLS</b> and <b>SHELL FRAGMENTS</b> , limestone weakly to moderately cemented with fine-coarse grained sand; shells and shell fragments to 1/4"; few sand fine, loose; trace olive-green sandy clay balls.			
	165			<b>HAWTHORN GROUP</b>	165 - 175' Rapid penetration.		
				165.0 - 170.0 ft. Olive-green, soft, <b>SANDY CLAY</b> , clay, plastic, sand, fine; little shells and shell fragments coarse sand size to 1/8".			
	170			170.0 - 175.0 ft. T.D. Olive-green, soft, <b>SANDY CLAY</b> and <b>CLAY</b> , clay, plastic, sand, very fine-fine; few shells and shell fragments to 1/4".	T. D. 175 ft. at 1510 hrs. Circulate hole and condition drilling fluid.  3/31/89 Run drilling rods to bottom of hole and circulate and condition drilling fluid for geophysical logging. Difficulty in getting out of hole at 160' and at various intervals.		
	175			Total Depth of pilot hole 175.0 ft. Hole geophysically logged on March 31, 1989 by Florida Geophysical Logging. Hole left open for reaming and installation of Test Well.			
	180						
	185						
	190						
	195						

WTE

WELL NO.  
BTW-4