



OBSERVATION WELL

PROJECT *F.P. & L. MARTIN CCICG.*

WELL NO.
BTW-4
065

JOB NO.
19720-016

SITE
TRANSMISSION LINE CORRIDOR

COORDINATES

N 984402.31 E 652176.92

BEGUN
3/31/89

COMPLETED
4/3/89

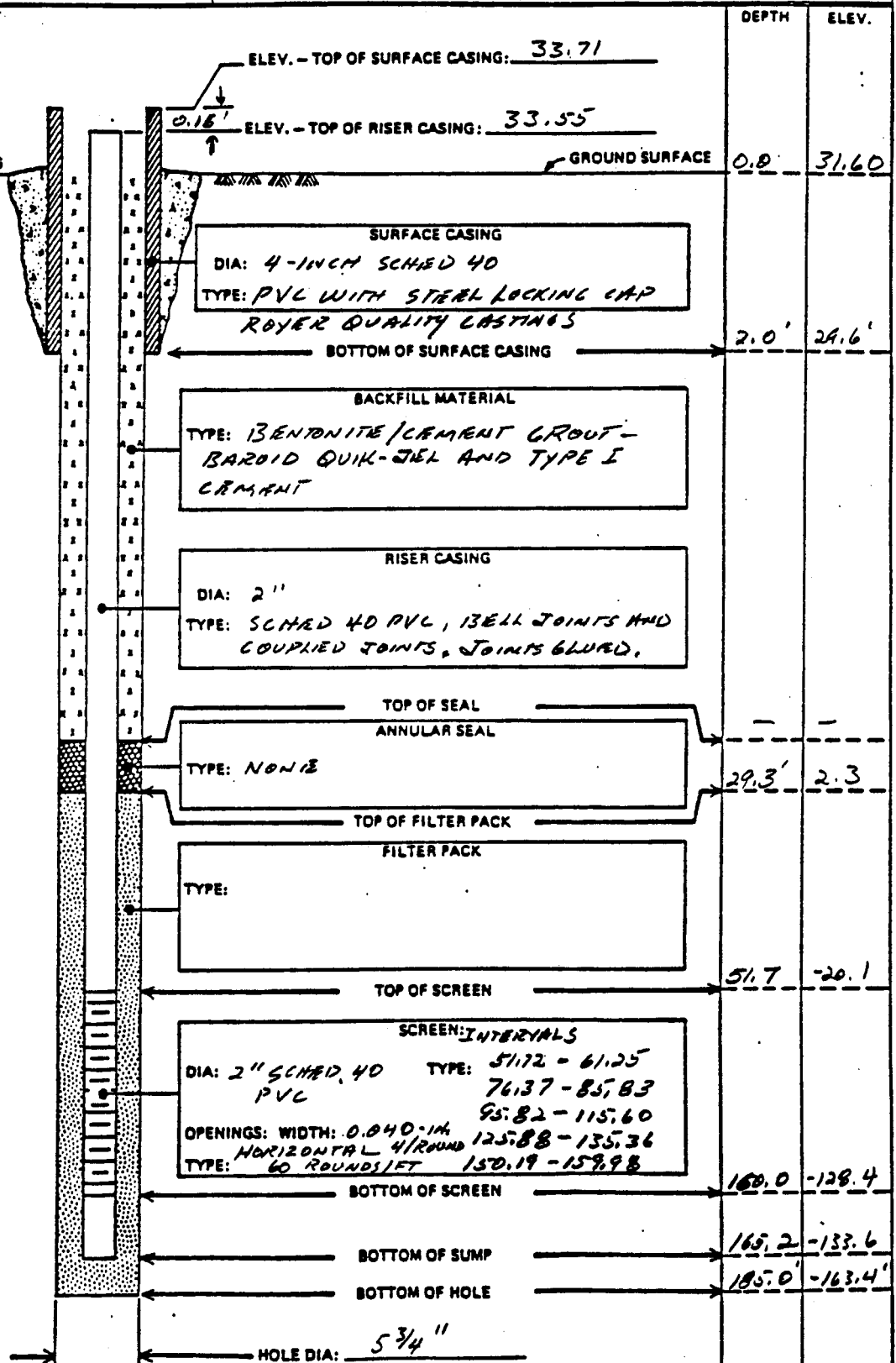
PREPARED BY
ROBERT L. BLODNIKAR

REFERENCE POINT FOR MEASUREMENTS
TOP OF 2" PVC RISER PIPE

GENERALIZED GEOLOGIC LOG

FOR INFORMATION ONLY

PRELIMINARY



PRELIMINARY



FOR INFORMATION ONLY

WELL LOG				PROJECT	JOB NO	SHEET NO	WELL NO	
				FPL MARTIN CC/CG	19720	1 of 5	BTW-4 obs	
SITE				COORDINATES		LOGGED BY		
				N 98° 44' 02" E 31° E 652283.71		Robert Blodnikar		
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	HOLE SIZE	CASING DIAMETER/LENGTH	TOTAL DEPTH		
3/31/81	3/31/81	Drilling Services, Inc. David Spencer	Mobil B-40L	5 3/4"	2-14/167.15'	185.0'		
SCREEN DIAMETER/LENGTH/SLOT				EL TOP OF CASING	GROUND EL	DEPTH/EL GROUND WATER		
2-14/60 FT TOTAL / 0.640"				33.55'	31.00'	AQUIFER SHALLOW		
ELEVATION	DEPTH	THICKNESS	SAMPLE	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION			NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC
	0				0.0 - 5.0 ft. Light gray, fine-coarse, SAND, most fine-medium, subrounded-rounded, quartz; little fines, silty.			Start drilling at 1145 hrs. using 5-3/4" dia. tricone bit. Drilling fluid Baroid Quik-Jel and water from irrigation canal. Samples obtained from drilling returns at 5' intervals. Desander run periodically to clean fines from drilling fluid. 0 - 140' Avg. drilling rate 0.9 ft./min. 0 - 60' Desander working continuously.
	5				5.0 - 10.0 ft. Dark brown, fine-medium, SAND, subrounded-rounded, quartz; little fines, silty; few organics, roots and decayed vegetation.			
	10				10.0 - 15.0 ft. Light reddish-brown, fine-medium, SAND, subrounded-rounded; little fines, silty; trace organics.			
	15				15.0 - 20.0 ft. Tan, fine-medium, SAND, subrounded-rounded, quartz; little fines; trace shells; trace organics.			
	20				20.0 - 25.0 ft. Light gray-tan, fine-medium, SAND, subrounded-rounded, quartz, trace mafic minerals; little fines, silty.			
	25				25.0 - 27.0 ft. Light gray-tan, fine-medium, SAND, same as 20.0 - 25.0 ft.			
	27				27.0 - 28.0 ft. Black, SANDY CLAY, medium plastic, sand, fine-medium, organic rich.			25' Drilling fluid dark brown. 28 - 32' Rig chatters, hard and soft layers.
	28				28.0 - 30.0 ft. Tan and gray, hard, SANDY LIMESTONE, fine-medium grained, subrounded-rounded, with calcareous cement; little shells and shell fragments, sand sized to 1/4", most 1/8", partially cemented.			
	30				30.0 - 38.0 ft. Gray, hard, SANDY LIMESTONE, fine-medium grained, with calcareous cement; little shells and shell fragments, sand sized to 3/8", moderately cemented; interbedded limestone and shells.			
	35							32 - 38' Rig chatters, hard drilling. Add drilling fluid.
SITE								WELL NO BTW-4 obs

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WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO 19720	SHEET NO 2 OF 5	WELL NO BTW-4 obs
ELEVATION	DEPTH	THICKNESS	SAMPLE GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC		
	35			38.0 - 40.0 ft. Tan, SHELLS and SHELL FRAGMENTS and SAND, shells sand sized to 1/8"; sand, gray fine-medium in lenses; sandy limestone, hard, calcareous cemented sand in thin lenses.	38 - 40' Rig chatters, hard and soft layers.		
	40			40.0 - 45.0 ft. Tan, SHELLS and SHELL FRAGMENTS and SAND, shells sand sized to 1/8"; sand, fine-medium grained; sandy limestone fragments subangular-subrounded possibly reworked in thin lenses.			
	45			45.0 - 50.0 ft. Tan and gray, SHELLS and SHELL FRAGMENTS, sand sized to 1/2"; little sandy limestone fragments; little sandy clay, fine-medium sand, in thin lenses.			
	50			50.0 - 55.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/8"; little limestone fragments, subangular to subrounded; few gray clay; few sandy clay, organic.			
	55			55.0 - 60.0 ft. Gray, fine-medium, SAND and SHELLS and SHELL FRAGMENTS, sand, most fine, subrounded-rounded, quartz; shells sand sized to 1/8"; little fines, silty.			
	60			60.0 - 65.0 ft. Gray and tan, LIMESTONE FRAGMENTS and SHELLS and SHELL FRAGMENTS, limestone hard, subangular-subrounded fragments to 1/8"; shells, sand sized to 1/8".	60' Add polymer to drilling fluid to lift coarse cuttings.		
	65			65.0 - 70.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sizes to 1/2", most coarse sand size to 1/8"; little limestone fragments, subangular-subrounded to 1/8".			
	70			70.0 - 75.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/4", most coarse sand size to 1/8"; little limestone fragments, subangular-subrounded; few sand, gray, very fine-fine.			
	75						

PRELIMINARY

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WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO. 19720	SHEET NO. 3 of 5	WELL NO. BTW-4 obs
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, sand sized to 1/4", most 1/8"; little limestone fragments, subrounded-rounded; few sand, gray, fine.			
	80			80.0 - 85.0 ft. Gray and tan SHELLS and SHELL FRAGMENTS, sand sized to 1/8", most sand sized; few limestone fragments, dark to light gray, hard, subrounded-rounded; few fines, silty.	80 - 85' Add drilling fluid.		
	85			85.0 - 90.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/8", most sand size; little sand, gray, fine-medium; little fines, silty; few limestone fragments, subangular-subrounded, to 1/8".	88 - 90' Hard lens.		
	90			90.0 - 95.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 3/8", most sand size to 1/8"; some sand, gray, fine-medium, subrounded-rounded, quartz; few sandy limestone fragments; trace clay, gray.			
	95			95.0 - 100.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/8", most sand size; some sand, fine-coarse, most fine-medium; few fines, silty.			
	100			100.0 - 105.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/8", most sand size; some sand, gray, fine-coarse, most fine-medium; few fines, silty.			
	105			105.0 - 110.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand sized to 1/4", most 1/8" to 1/4"; little sand, gray, fine-medium, subrounded-rounded, quartz; few fines, silty.			
	110			110.0 - 115.0 ft. Gray and tan, SHELLS and SHELL FRAGMENTS, sand size to 3/4", most 1/4 to 3/8"; little sand, gray, fine-medium; few fines, slightly clayey.			
	115						
BTE					WELL NO BTW-4 obs		

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WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO 19720	SHEET NO 4 of 5	WELL NO BTW-4 obs
ELEVATION	DEPTH	THICKNESS	SAMPLE GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC		
	115			TANIANI FORMATION			
				115.0 - 120.0 ft. Light greenish-gray, SHELLS and SHELL FRAGMENTS and CEMENTED SAND , shells, sand sized to 1/4", most sand size: cemented sand, fine-coarse, most medium-coarse, weak calcareous cement; little fines, clayey, milky, marly.			
	120			120.0 - 125.0 ft. Light greenish-gray, CEMENTED SAND , fine-coarse, weakly cemented into open angular fragments, calcareous cement; some sand, fine-medium, subrounded-rounded; little fines, clayey, milky, marly.			
	125			125.0 - 130.0 ft. Light greenish-gray, CEMENTED SAND , fine-medium, weakly cemented into open angular fragments, calcareous cement; some fines, clayey, milky, marly; few shells and shell fragments.			
	130			130.0 - 135.0 ft. Light greenish-gray, CEMENTED SAND , same as 125.0 - 130.0 ft.			
	135			135.0 - 140.0 ft. Light greenish-gray, CEMENTED SAND , fine-coarse, weakly cemented into open angular fragments, calcareous cement; some fines, clayey, milky, marly.			
	140			140.0 - 145.0 ft. Light greenish-gray, CEMENTED SAND , fine-coarse, most fine-medium, weakly cemented into open angular fragments, calcareous cement; some fines, clayey, milky, marly; few shells and shell fragments.			
	145			145.0 - 150.0 ft. Light greenish-gray, CEMENTED SAND , fine-coarse, weakly cemented into open angular fragments, calcareous cement; some fines, clayey, milky, marly; few shells and shell fragments.			
	150			150.0 - 155.0 ft. Light greenish-gray to white, CEMENTED SAND , fine-coarse, weak to moderately cemented into open angular fragments; some fines, clayey, milky, marly; few shells and shell fragments.			
	155						
WTE					WELL NO BTW-4 obs		

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WELL LOG				PROJECT FPL MARTIN CC/CG	JOB NO. 19720	SHEET NO. 5 of 5	WELL NO. BTW-4 obs
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 to white, CEMENTED SAND, fine-coarse, weakly cemented into open angular fragments to 1/8", calcareous cement; some fines, clayey, milky; early; few shells and shell fragments.			
	160			160.0 - 165.0 ft. Light olive-green and gray, CEMENTED SAND, fine-medium, weakly cemented into open angular fragments, calcareous cement; some fines olive-green, clayey; few shells and shell fragments.			
	165			HAWTHORN GROUP	165 - 175' Rapid penetration. Drilling fluid color change to dark green.		
				165.0 - 170.0 ft. Dark olive-green, soft, SANDY CLAY; little sand, fine-coarse, most fine-medium; few cemented sand fragments.			
	170			170.0 - 175.0 ft. Dark olive-green, soft, SANDY CLAY, same as 165.0 - 170.0 ft.			
	175			175.0 - 180.0 ft. Olive-green, very soft, CLAY, plastic; little sand, fine-medium; few cemented sand fragments; few shells and shell fragments.			
	180			180.0 - 185.0 ft. T.D. Olive-green, very soft, CLAY and SANDY CLAY, plastic, moist, little sand, fine-medium, most fine; few cemented sand fragments, angular; few shells and shell fragments.	T. D. 185 ft. at 1520 hrs. Circulate hole and condition drilling fluid for geophysical logging. 4/3/89 Fluid level 3' in am. Hole caved from 3' to bottom. Open hole to 165' for installation of observation well.		
	185			Total depth of hole 185.0 ft. Hole geophysically logged on March 31, 1989 by Florida Geophysical Logging. Observation well installed on April 3, 1989.			
	190						
	195						

BTE

WELL NO.
BTW-4 obs