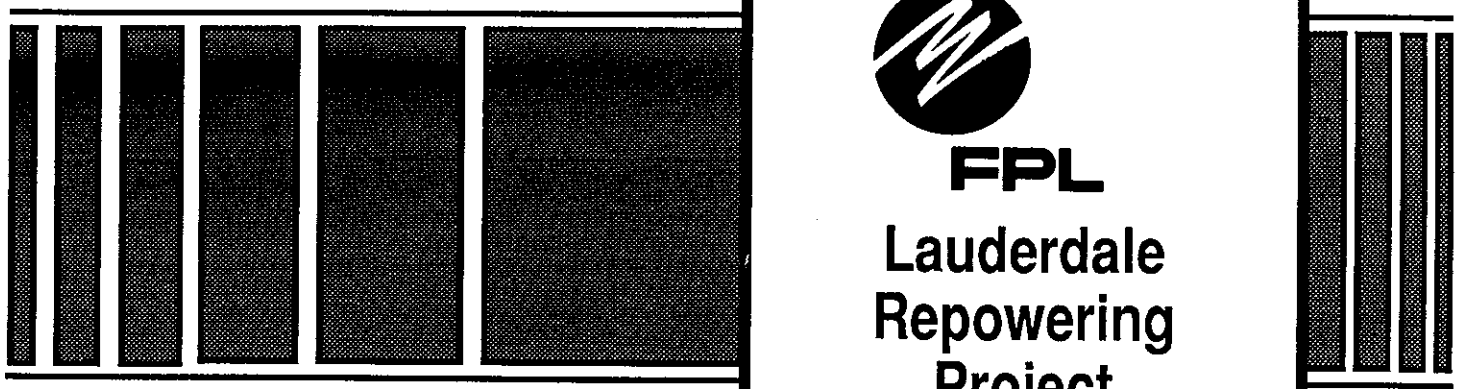

FPL

Lauderdale Repowering Project

HYDROGEOLOGIC REPORT

May 7, 1990

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EXECUTIVE SUMMARY

This hydrogeological report describes the hydrogeological investigation conducted at the Florida Power & Light (FPL) Company Lauderdale Plant site during February through May 1990. The hydrogeological investigation included preliminary groundwater flow modeling based on aquifer parameter data available in published literature to design an aquifer performance test (APT), installation of 14 observation wells screened in 4 vertical intervals of the Biscayne aquifer, performance of a 72-hour APT at a pumpage rate that simulates the requested FPL water use allocation, groundwater quality monitoring, APT data analysis, and regional groundwater flow modeling using aquifer parameter data obtained from the APT to determine impacts from the requested water use.

FPL conducted a comprehensive environmental investigation at the Lauderdale Plant site in conjunction with the preparation and submittal of a Site Certification Application (SCA) for the Lauderdale Repowering Project. The SCA for the Lauderdale Repowering Project was submitted to the Florida Department of Environmental Regulation (FDER) on November 27, 1989. The SCA document included a hydrogeologic investigation that defined existing conditions at the site as well as current and potential future impacts from groundwater withdrawals at the site.

In response to the hydrogeologic evaluation presented in the SCA, the South Florida Water Management District (SFWMD) expressed concerns about the groundwater flow modeling conducted at the site. These concerns included reservations about the assumption that canals adjacent to the site serve as constant-head boundaries and the lack of site-specific aquifer parameter data. To satisfy these SFWMD concerns, FPL agreed to conduct the detailed hydrogeologic investigation described in this report at the Lauderdale Plant site.

SFWMD water use permitting criteria require that all water use in the district be a reasonable beneficial use, not interfere with any presently

existing legal use of water, and be consistent with the public interest. The Lauderdale Plant generates electricity for industrial, commercial, and residential users in south Florida; therefore, a reasonable beneficial use of water consistent with the public interest was demonstrated in the SCA document. SFWMD concerns focused on potential interference with existing legal users of water from FPL withdrawals. Specifically, the District had concerns that existing and proposed groundwater withdrawals by FPL may potentially impact the Broward County Utilities District 3A wellfield, an existing legal user of groundwater, via an increased threat of saline intrusion.

The APT was conducted using one of the two existing supply wells at the Lauderdale Plant site. The well was pumped at a rate of 3,000 gallons per minute for 72 hours, while water level responses were monitored in the production well, 14 newly installed observation wells, and two existing observation wells. Maximum drawdown observed during the APT was 5.61 ft in the production well, whereas the maximum drawdown recorded in the observation wells was 2.93 ft in OW-11 located approximately 25 ft from the production well and screened in the production interval. Maximum off-site drawdown, recorded in OW-14 which is screened in the production interval, was 0.32 ft.

APT data were analyzed using type-curves for the Hantush-Jacob method of analyzing drawdown in a leaky artesian aquifer to determine aquifer characteristics underlying the Lauderdale Plant site. Aquifer responses observed during the APT were compared to modeled aquifer responses to determine transmissivity, storage coefficient, and leakance values for the aquifer. Computer simulation of the APT substantiated results obtained by the curve-matching analyses performed on the APT data.

Aquifer parameters for the Biscayne aquifer determined from the APT were used to model potential impacts from the requested water use allocation by FPL for average and maximum daily withdrawal rates during operation of the Lauderdale Repowering Project. Under average daily withdrawals, the

simulated extent of 0.1 ft of drawdown in the production zone is 420 ft from the supply well. Under maximum daily withdrawal, the simulated extent of 0.1 ft of drawdown in the production zone ranges from 960 to 1,300 ft with maximum off-site drawdown of approximately 0.35 ft.

Water quality monitoring was conducted during the pre-test phase to determine background conditions, during the pumping phase to determine impacts associated with withdrawals, and during the post-test phase to determine aquifer recovery.

Water quality in the Biscayne aquifer in the vicinity of the Lauderdale Plant site is influenced by water quality in the Dania Cut-Off Canal and the Discharge Canal, which are both tidally influenced and brackish. During the APT conducted at the site, chloride concentrations decreased in all observation wells located on the Lauderdale Plant site and increased following termination of the pumping phase of the APT. Based on these data, there is no indication pumpage of the requested groundwater use allocation by FPL would cause adverse water quality impacts to the resource or legal existing users.

1.0 INTRODUCTION

Florida Power & Light Company (FPL) conducted a comprehensive environmental investigation at the Lauderdale Plant in conjunction with the preparation and submittal of a Site Certification Application (SCA) for the Lauderdale Repowering Project. The SCA for the Lauderdale Repowering Project was submitted to the Florida Department of Environmental Regulation (FDER) on November 27, 1989. As part of the SCA document, a hydrogeologic investigation was conducted to define existing conditions as well as current and potential future impacts from groundwater withdrawals at the site.

The Lauderdale Repowering Project consists of replacing the existing Units 4 and 5 steam generators with combustion turbines (CTs) and heat recovery steam generators (HRSGs). The CTs exhaust through the HRSGs, producing steam in the HRSG to replace the steam-generating function of the existing boilers. The existing steam turbines, electric generators, and associated condenser cooling system will remain inservice as part of the repowered units. The CTs and associated HRSGs will be located directly east of the existing Units 4 and 5.

The existing condenser cooling water system, which draws brackish cooling water from the Dania Cut-Off Canal through intake structures, will be used. The water is cooled in a manmade cooling canal/pond system and discharged to the South Fork New River. Groundwater withdrawals from on-site wells 4B and 5B will be used for auxiliary cooling purposes. However, average daily groundwater withdrawals will be reduced from 8.64 million gallons per day (mgd) to 1.56 mgd, whereas maximum daily withdrawals will remain at the current usage of 8.64 mgd.

The hydrogeologic investigation conducted at the Lauderdale Plant site as part of the SCA included groundwater flow modeling to evaluate impacts to the Biscayne aquifer from current withdrawals at the Lauderdale Plant site. The two-dimensional groundwater flow model PLASM, developed by Prickett and

Lonnquist (1971) of the Illinois State Water Survey, simulates water levels in an aquifer in response to stress such as that caused by pumping wells. The modeling was performed simulating pumping from the two on-site wells at the existing pumping rate of 3,000 gallons per minute (gpm) each, with the canals surrounding the site serving as constant-head recharge boundaries. Results of the model indicated a cone of depression would develop around the pumping wells with a maximum drawdown in the wells of approximately 2.5 feet (ft).

In response to the geohydrological evaluations presented in the SCA, South Florida Water Management District (SFWMD) expressed concerns about the groundwater flow modeling conducted at the site. These concerns included reservations about the assumption that the canals serve as constant-head boundaries and the lack of site-specific aquifer parameter data. District criteria require that all water use applicants provide reasonable assurance that the requested withdrawals will not adversely impact the resource or existing legal users. The District had concerns that existing and proposed groundwater withdrawals by FPL might potentially impact existing legal users, including the Broward County Utilities District 3A wellfield, via an increased threat of saline intrusion.

To satisfy SFWMD concerns about potential impacts to groundwater resources or existing legal users, FPL retained KBN Engineering and Applied Sciences, Inc. (KBN) and Environmental Science and Engineering - Sarasota (ESE) to conduct a detailed hydrogeologic investigation at the Lauderdale Plant site. The hydrogeologic investigation included an aquifer performance test (APT), water quality analyses, and groundwater flow modeling. The scope of work for the hydrogeologic investigation was approved by SFWMD prior to its initiation and is described in Section 1.4 of this report.

This hydrogeologic report details the findings of the hydrogeologic investigation conducted at the Lauderdale Plant site and presents all data collected during the investigation.

1.1 SITE LOCATION

The FPL Lauderdale Plant site is located in unincorporated eastern Broward County (Figure 1-1). A portion of the site is in the process of being annexed into the City of Hollywood. The plant site lies about 1 mile east of the Florida Turnpike and 1 mile west of Interstate 95 (I-95). The Fort Lauderdale-Hollywood International Airport is immediately east of I-95. State Road 84 and I-595, which is under construction, are north of the plant site. Griffin Road is approximately 0.5 mile south of the site.

Adjacent properties in the area include a mixture of residential, commercial, and industrial uses. Property located immediately west and northwest of the site is owned by the City of Fort Lauderdale and Broward County. The City of Fort Lauderdale operates a compost facility, and the South Broward County Resource Recovery Project (SBCRRP) and its associated landfill are being constructed. The proposed Pond Apple Slough Park (formerly referred to as the Ann Kolb Park) will be developed north of the Lauderdale Plant site.

A multi-use development, Port 95 Commerce Park, has been approved by the Broward County Commission Ordinance No. 88-82. This development is located directly east of the site and is currently under construction. Low-density residential and open land lies immediately south of the site.

1.2 SITE DESCRIPTION

The Lauderdale Plant site occupies 392 acres south of the South New River Canal and north of the Dania Cut-Off Canal (Figure 1-2). Approximately one-half of this site is occupied by a cooling canal/pond system with a point of discharge to the South Fork New River near the northeast corner of the site. The existing surface water intakes for the fossil-fuel-fired steam electric generating units are located on the Dania Cut-Off Canal.

Electric generating units have been operating at the Lauderdale Plant site since the 1920s. The two original generating units and a third unit placed in service in 1941 have been retired. Currently, the FPL Lauderdale Plant

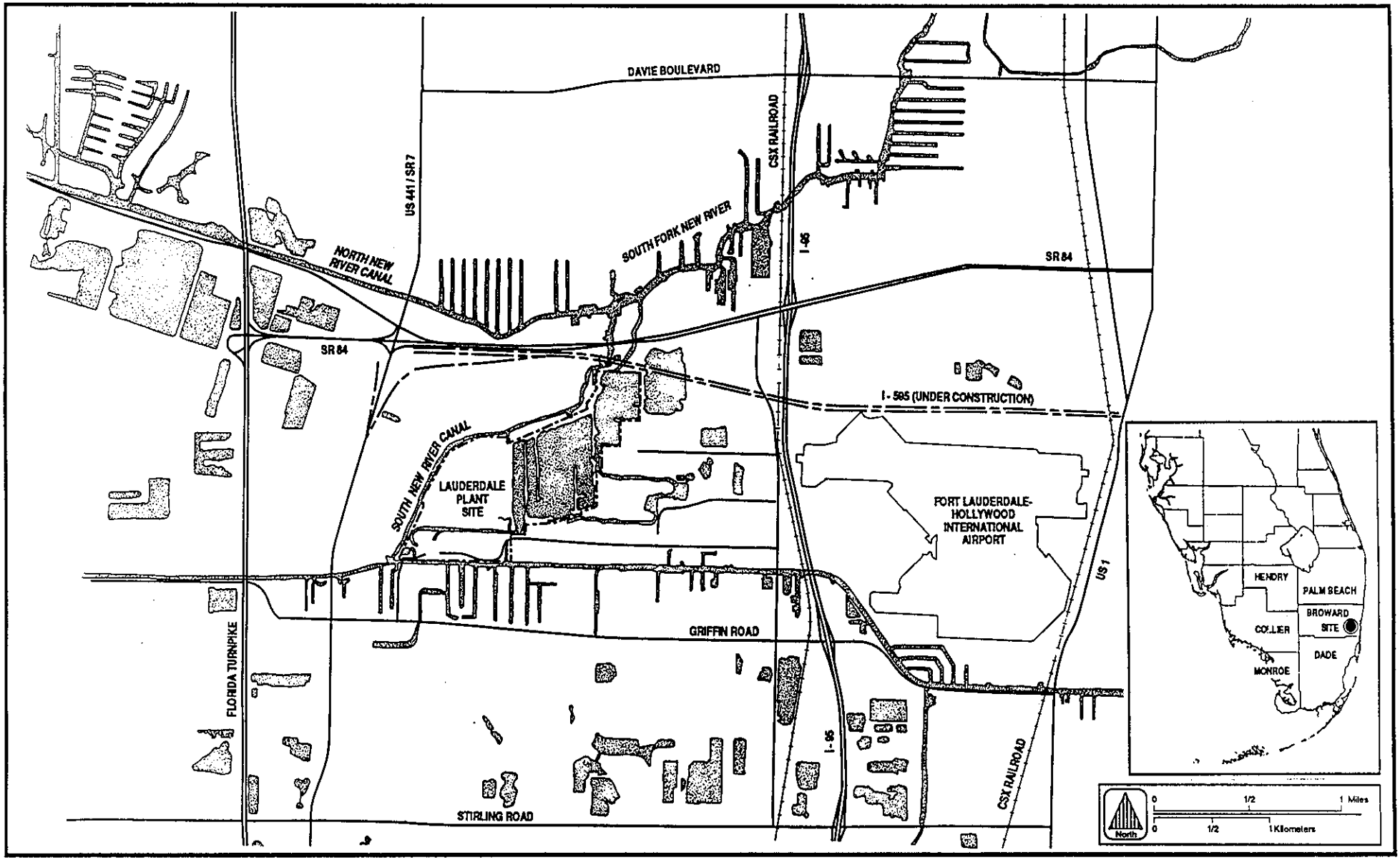

Figure 1-1 SITE LOCATION MAP

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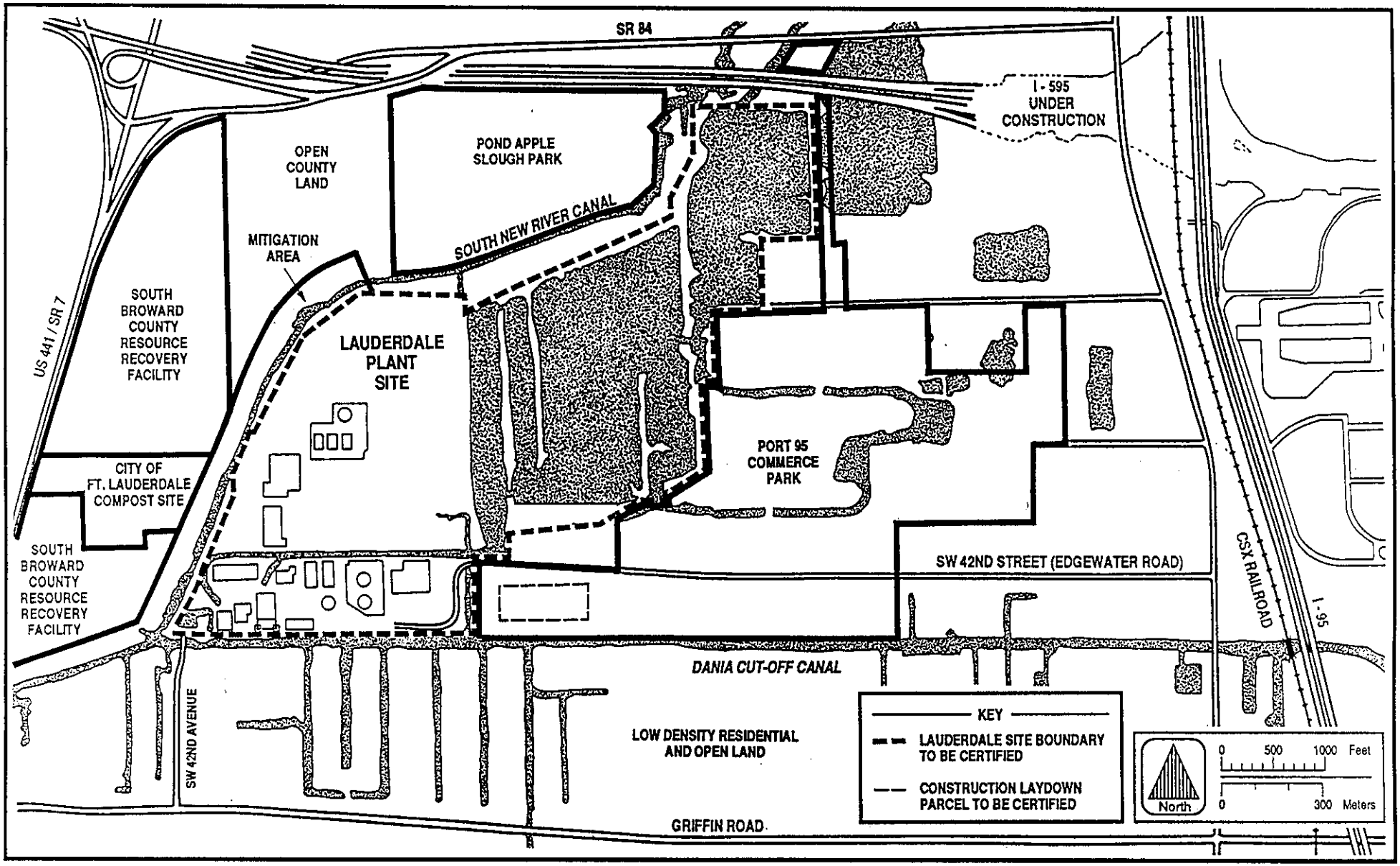

Figure 1-2 LAUDERDALE PLANT SITE
VICINITY AND ADJACENT PROPERTIES

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consists of two fossil-fuel-fired steam units and 24 gas turbine (GT) units with a total plant net summer capability of 1,126 MW and a total plant net winter capability of 1,248 MW. The fossil-fuel-fired steam units, Units 4 and 5, have a combined net summer generating capability of 274 MW and a net winter capability of 276 MW. These units are designed to burn natural gas and/or oil. Units 4 and 5 have been operational since 1957 and 1958, respectively.

Units 4 and 5 use groundwater for auxiliary cooling purposes. The groundwater is obtained from on-site supply wells 4B and 5B (Figure 1-3), which provide auxiliary cooling water to Units 4 and 5, respectively. Wells 4B and 5B were installed at the time of construction of the fossil-fuel-fired steam units and provide a total of 8.64 mgd of groundwater to the plant. These wells are pumped continuously with the exception of periodic shutdown for maintenance. The pump schedule for wells 4B and 5B during the period 1987 through 1989 is presented in Table 1-1.

Operation of the Lauderdale Plant currently is authorized under various environmental permits issued by federal, state, regional, and local regulatory agencies. In addition to these operations permits, FPL has right-of-way permits granted by the SFWMD.

Pursuant to the Florida Water Resources Act of 1972, FPL submitted a Consumptive Use Permit (CUP) application to the Central and Southern Florida Flood Control District (CSFFCD) on February 26, 1976. No permit was issued by CSFFCD at that time. FPL again requested clarification from SFWMD whether withdrawals from supply wells 4B and 5B required a CUP on May 10, 1982. FPL received notification from SFWMD in a May 13, 1982, correspondence that a CUP was not required by the District for supply wells 4B and 5B. FPL initiated efforts to obtain a CUP for on-site groundwater withdrawals again in 1989, which culminated in the performance of an APT and groundwater flow modeling at the site and the preparation of this hydrogeologic report. A chronology of events of the current permitting effort is detailed in Section 1.3 of this report.

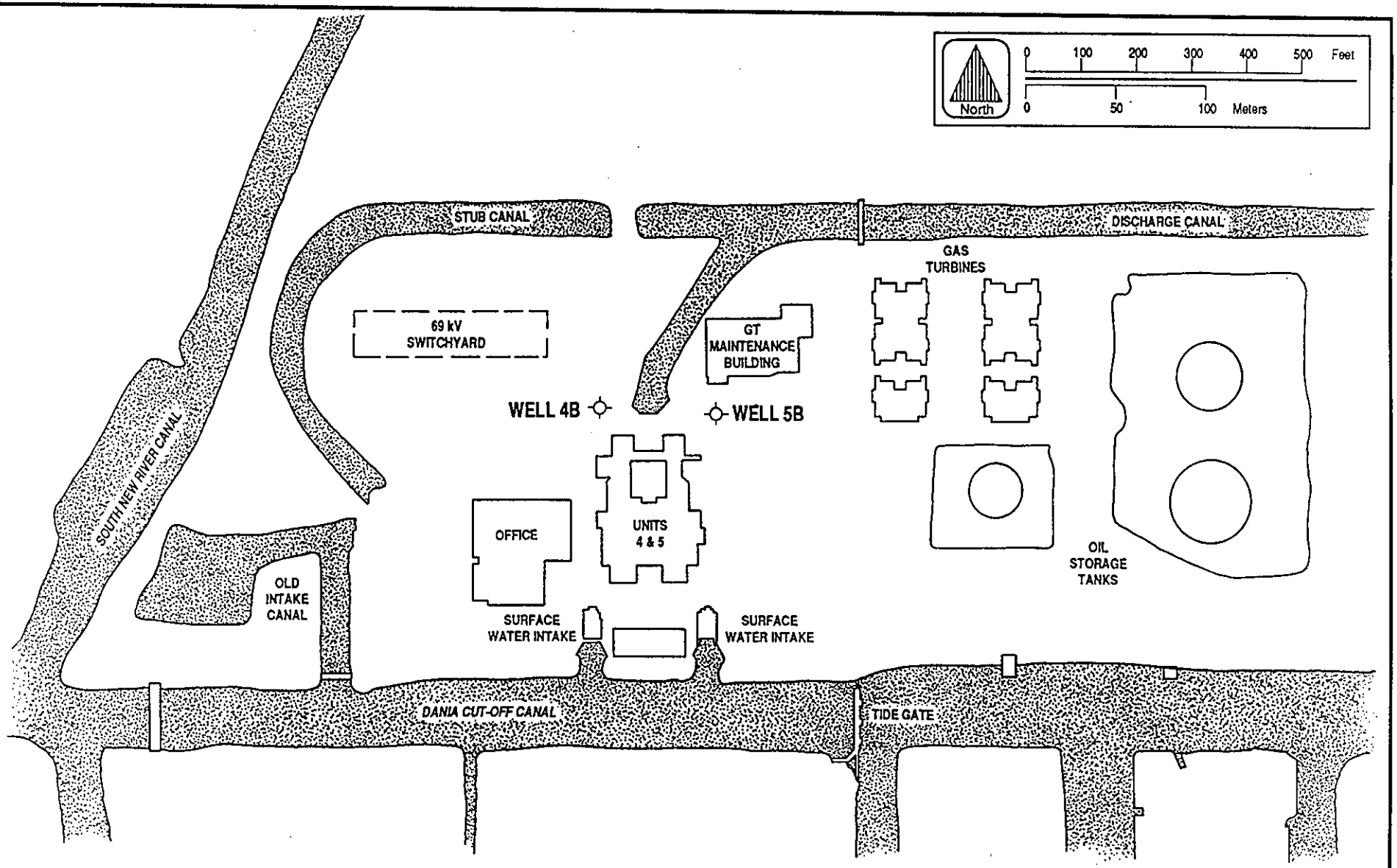

Figure 1-3 LAUDERDALE PLANT SITE POWER BLOCK AREA

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Table 1-1. Operational Schedule for Groundwater Supply Wells 4B and 5B at the Lauderdale Plant, 1987--1989

Well	Well Shutdown Date	Well Shutdown Time	Well Back On-Line Date	Well Back On-Line Time	Total Hours Shutdown
4B	05 Jan 1989	2330	06 Jan 1989	0300	3.5
	02 May 1989	2330	04 May 1989	0730	32.0
	25 May 1989	2330	26 May 1989	0030	1.0
	06 Sep 1989	0130	07 Sep 1989	0730	30.0
			Well 4B Total Hours Shutdown	=	66.5
5B	07 Oct 1987	2330	08 Oct 1987	0400	4.5
	02 Jun 1988	0930	02 Jun 1988	1600	6.5
	13 Jun 1988	0730	14 Jun 1988	1200	28.5
	08 Aug 1988	1600	08 Aug 1988	1830	2.5
	04 Dec 1989	2330	05 Dec 1989	0130	2.0
			Well 5B Total Hours Shutdown	=	44.0

1.3 CHRONOLOGY OF THE 1989-1990 CONSUMPTIVE USE PERMITTING EFFORT

FPL submitted an application to SFWMD for a water use permit for the groundwater withdrawals from on-site wells 4B and 5B at the Lauderdale Plant site on June 27, 1989. The permit submittal fee was provided to SFWMD on July 18, 1989. SFWMD provided a request for additional information on August 18, 1989, which included seven comments to FPL concerning water use at the Lauderdale Plant and suggested the performance of a site-specific hydrogeologic study. FPL responded to the SFWMD request for additional information on November 7, 1989, addressing each of the seven comments in the SFWMD correspondence.

Attachment D to the November 7, 1989 FPL correspondence incorrectly reported the operation schedule for supply wells 4B and 5B. The proper operation schedule for supply wells 4B and 5B is presented in Table 1-1 of this report.

SFWMD requested further clarification of FPLs response to comments, requiring the performance of a hydrogeologic investigation at the site. FPL environmental permitting staff met with SFWMD staff on January 12 and 18, 1990, to determine the necessary scope of the hydrogeologic investigation to meet the data requirements of the District for completion of the review of the water use permit application for the site. FPL requested an extension of time to perform the hydrogeologic investigation in a January 23, 1990, correspondence to SFWMD.

FPL presented the proposed scope of the hydrogeologic investigation to SFWMD at a February 8, 1990, meeting with the District permitting staff. The proposed scope, which included preliminary modeling and the performance of an APT, was approved by SFWMD. FPL presented the findings of the preliminary modeling and the design of the APT to SFWMD on February 23, 1990. The District approved the design of the APT and authorized FPL to proceed with the test. FPL submitted the findings of the APT to SFWMD on April 5, 1990, and established May 7, 1990, as the submittal date of the hydrogeologic report.

SFWMD requested additional information to be included in the hydrogeologic report in an April 13, 1990, correspondence. Specifically, the District requested the following five items be addressed.

1. Provide the operating schedule for the on-site production wells for the last 3 years, with particular emphasis on the last several months. The operating schedule for the period 1987 through 1989 is presented in Table 1-1. During 1990, the on-site production wells were pumped continuously at full capacity from January 1 through February 12. Pumping was terminated on February 12, and the wells remained inactive (no withdrawals) through the date of submittal of this report.
2. Perform groundwater flow modeling for both average and maximum daily demands during operation of the Repowering Project. Groundwater flow modeling for average (1.56 mgd) and maximum (8.64 mgd) daily withdrawal is presented in Section 4.2.1 of this report.
3. Provide water level data for all observation wells presented in tabular form. All water level data for observation wells are presented in Appendix E of this report.
4. Provide an analysis/clarification of the inconsistencies between chloride concentrations and conductivity measurements for certain observation wells. An analysis/clarification of the inconsistencies between chloride concentrations and conductivity measurements in certain observation wells is provide in Section 4.2.2 of this report.
5. Provide an analysis of the impacts of the proposed dewatering activities associated with the Repowering Project. In the FPL Response to SFWMD Comments for the Lauderdale Repowering Project SCA document, the impact from dewatering was addressed in comment No. SFWMD-30. Due to lowered water levels in response to the ongoing drought in south Florida, it is anticipated no dewatering activities will be required during repowering construction activities. If, in fact, dewatering becomes necessary during

construction, FPL will provide hydrogeological modeling of the impacts prior to commencing dewatering activities.

All correspondence associated with the current request for a water use permit at the Lauderdale Plant site are included in Appendix A.

1.4 HYDROGEOLOGIC INVESTIGATION SCOPE OF WORK

Due to the complexity of the Lauderdale Plant site's hydrologic setting, with numerous canals partially penetrating the aquifer, preliminary modeling was performed to determine the optimal design for the pump test, particularly placement and vertical screening of observation wells. The preliminary model was used to determine the appropriate length of time FPL needed to shut down existing withdrawals for the aquifer to reach equilibrium, predict tidal effects, and identify canal partial penetration and complex boundary geometries.

The pump test required the construction of observation wells screened to appropriate depths based on the results of the preliminary modeling. Fourteen new and two existing observation wells were used to monitor water level fluctuations in the Biscayne aquifer during the pump test as well as impacts to water quality characteristics (i.e., chloride concentrations) from groundwater withdrawals. The observation wells were installed to varying depths ranging from 20 to 150 ft within the Biscayne aquifer to evaluate hydraulic conductivity anistropy and chloride concentration variability.

Geophysical logging was performed on the deepest well in each well cluster in accordance with SFWMD requirements. Natural gamma logs were performed on cased wells, whereas natural gamma and caliper logs were performed on open hole completions (i.e., supply well 5B). Additionally, all wells and surface water monitoring stations were surveyed to 0.01 ft accuracy referenced to the National Geodetic Vertical Datum (NGVD) of 1929.

Water levels in observation wells were recorded continuously with electronic water level recorders and data loggers for 5 days prior to the APT to determine natural fluctuations in the water table surface. The APT was performed using supply well 5B, which was pumped at a rate that stressed the aquifer (approximately 3,000 gpm). The duration of pumping for the APT was 72 hours, followed by a 3-hour recovery period during which time the aquifer fully recovered. Water quality samples were collected preceding, during, and following the APT and analyzed for chloride to assess water quality impacts from pumpage of the on-site wells.

Analytical calculations and type-curve matching were performed using the pump test data to determine physical characteristics of the aquifer. Three-dimensional groundwater flow modeling of the site was conducted to assist in the evaluation of aquifer parameters and assess the impacts from pumpage. Several parameters were varied to match pump test results with model results. The model was used to simulate the proposed water withdrawals requested in the water use permit application.

1.5 WELL INVENTORY

An inventory of permitted wells in the vicinity of the Lauderdale Plant site was conducted as part of the SCA. SFWMD and the Broward County Health Department were contacted to obtain information about water wells in the vicinity of the site. There are more than 20 wells located within 1,500 ft of the site; these wells are private irrigation wells and are located in the vicinity of SW 37th Avenue and SW 38th Terrace. These wells are exempt from permit requirements as nonpotable sources, generally used for local lawn irrigation only. An inventory and description of privately owned, permitted supply wells and utility water supply facilities located within a 1-mile radius of the Lauderdale Plant site are presented in Table 1-2.

The Broward County Utilities District 3A wellfield is located approximately 0.5 mile southwest of the Lauderdale Plant site. This wellfield consists of four operating production wells. A fifth well, located to the south of the existing 3A wellfield, is currently under construction. Figure 1-4

Table 1-2. Off-Site Well Inventory of Permitted Wells Within a 1-Mile Radius of the Lauderdale Plant Site

Location	Description
General Use Permit (Non-Community System)	
Oakridge Country Club 3490 Griffin Road	One well, 75 ft deep, 4-inch-diameter, pump capacity 180 to 240 gallons per minute (gpm)
Marino's Italian Restaurant 5191 S. SR 7	One well, depth unknown
Charge Service Station 4700 S. SR 7	One well, depth unknown
Oasis Truck Stop 5470 S. SR 7	One well, depth unknown
Woods Nursery 3400 S. SR 7	One well, depth unknown
Amoco Service Station 3612 S. SR 7	One well, depth unknown
Powell Brothers North of Dania Cut-Off Canal 9th East of 441 (4400 S. SR 7)	One well, depth unknown
Consumptive Use Permit (Community System)	
Broward County Utility 3A Wellfield SW 40 Ave. and Griffin Rd.	Four wells, 100 ft deep, casing diameter 10 inches, cased section 0 to 100 ft, open interval 100 to 110 ft, permitted pumpage 4.288 mgd
Ferncrest Utilities, Inc. 3015 SW 54th Avenue Average Pumpage: 2.1 mgd	Two wells; well No. 1 89 ft deep, 6 inches diameter; well No.2 87 ft deep, 4 inches diameter; cased and open intervals not available, average pumpage 2.1 mgd

Sources: Technos, 1984; FPL, 1989.

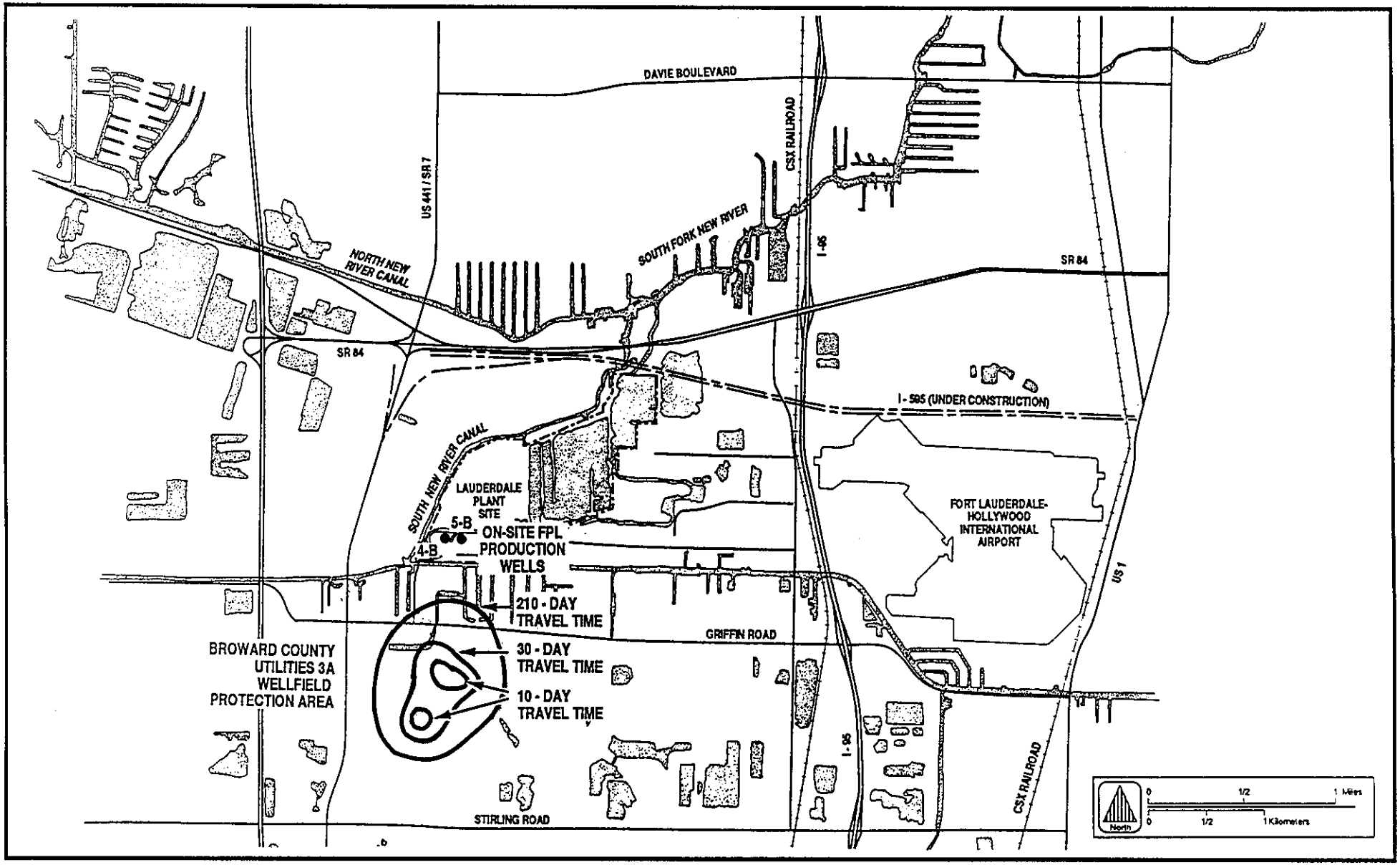

Figure 1-4 LOCATION OF BROWARD COUNTY UTILITIES DISTRICT 3A WELLFIELD PROTECTION ZONES AND LAUDERDALE PLANT ON-SITE PRODUCTION WELLS

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indicates the extent of the wellfield protection zones surrounding the wellfield. The District 3A wellfield is currently permitted to withdraw an average of 4.288 mgd and a maximum daily allocation of 5.430 mgd. The Lauderdale Plant site is not within the protected 210-day travel time zone surrounding this public utility. When the new production well at the 3A wellfield becomes operational, the wellfield protection zone will be expanded to the south, which will not affect current or proposed FPL activities.

2.0 REGIONAL ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND TOPOGRAPHY

Broward County is located in the Coastal Plain physiographic province of peninsular Florida, a region of low relief underlain by unconsolidated to poorly consolidated sediments and indurated carbonate rocks. The Lauderdale Plant site is located on the Atlantic Coastal Ridge, which is bounded on the east by the Atlantic Ocean and on the west by the Everglades. The land surface rises to approximately 22 ft above mean sea level (msl) at the crest of the ridge, which is 2 miles inland and parallel to the coast. The ridge is mantled by white quartz sand, which is thickest at the crest and thins westward. West of the crest of the ridge the land surface descends to approximately 5 ft above msl at the contact between the Atlantic Coastal Ridge and the Everglades.

2.2 GEOLOGIC SETTING

The subsurface stratigraphy in the vicinity of the Lauderdale Plant site (Table 2-1) consists of approximately 15,000 ft of sedimentary rocks of late Cretaceous through late Quaternary age overlying igneous and metamorphic rocks. The igneous and metamorphic basement rocks are overlain by a thick sequence (up to 10,000 ft) of late Cretaceous carbonate rocks of the Austin Limestone, the Pine Key Formation, and the Lawson Limestone (Carter, 1984). Overlying the Cretaceous rocks are 600 to 1,800 ft of Eocene through Early Miocene carbonates of the Oldsmar, Lake City, and Avon Park Limestones, the Ocala Group, the Suwannee Limestone, and the Tampa Limestone. These highly transmissive solution-cavity-riddled rocks comprise the Floridan aquifer in south Florida (Florida Bureau of Geology, 1986). Overlying the Floridan aquifer is a thick sequence (up to 600 ft) of low-permeability clays and marls of the Miocene Hawthorn Formation and the lower portion of the Miocene Tamiami Formation (Anderson et al., 1986).

Overlying these low-permeability clays and marls is a series of porous clastic and carbonate sedimentary rocks of Miocene to late Quaternary age, which comprise the Biscayne aquifer. Distinct lithologic units within the

Table 2-1. Stratigraphic Column of Rock Units in the Vicinity of the Lauderdale Plant Site (Page 1 of 2)

Age	Formation	Lithologic Description	Thickness (ft)	Water-bearing Unit
Holocene	Soils	Peat and muck.	0-12	
	Lake Flirt Marl	White to gray calcareous mud, rich with shells of Helisoma sp., a fresh-water gastropod. In some places cemented to form dense limestone. Relatively impermeable.	0-6	
Pleistocene (formations are contemporaneous in part)	Pamlico Sand	Quartz sand, white to black or red, depending upon nature of staining materials, very fine-to coarse-grained, average medium-grained. Mantles large areas underlain by Miami oolite and Anastasia Formation.	0-40	Biscayne aquifer
	Oolite facies of the Miami Limestone	Limestone, oolitic, soft, white to yellowish containing thin layers of calcite, massive to crossbedded and stratified; generally perforated with vertical solution holes. Fair to good aquifer.	0-40	Biscayne aquifer
	Anastasia Formation	Coquina, sand, calcareous sandstone, sandy limestone, and shell marl. Probably composed of deposits equivalent in age to marine members of Fort Thompson Formation. Fair to good aquifer.	0-120	Biscayne aquifer
	Key Largo Limestone	Coralline reef rock, ranging from hard and dense to soft and cavernous. Probably interfingers with the marine members of the Fort Thompson Formation. Crops out along southeastern coastline of Florida from Soldier Key in Biscayne Bay to Bahia Honda. Excellent aquifer.	0-60	Biscayne aquifer
	Fort Thompson Formation	Alternating marine, brackish-water and fresh-water marls, limestones, and sandstone. A major component of the highly permeable Biscayne aquifer of coastal Dade and Broward Counties, which yields copious supplies of groundwater.	0-150	Biscayne aquifer
Pliocene	Caloosahatchee Marl	Sandy marl, clay, silt, sand, and shell beds. Yields groundwater less abundantly than most other parts of the Biscayne aquifer.	0-25	Biscayne aquifer

Table 2-1. Stratigraphic Column of Rock Units in the Vicinity of the Lauderdale Plant Site (Page 2 of 2)

Age	Formation	Characteristics	Thickness (ft)	Water-bearing Unit
Miocene	Tamiami Formation	Cream, white and greenish-gray clayey marl, silty and shelly sands, and shelly marl, locally hardened to limestone. Upper part, where permeability is high, forms the lower part of the Biscayne aquifer. Lower and major part of formation is low permeability and forms the upper beds of the aquiclude that confines water in the Floridan aquifer below.	0-500	Biscayne aquifer and confining horizon
	Hawthorn Formation	Sandy, phosphatic marl, interbedded with clay, shell, marl, silt, and sand. Greenish color predominates. Water is generally scarce, of poor quality, and in the permeable beds is confined under low-pressure head. Comprises the major part of aquiclude confining the Floridan aquifer.	50-500	Confining horizon
	Tampa Limestone	White to tan, soft to hard, often partially recrystallized limestone. Yields artesian water but not as abundantly as lower parts of the Floridan aquifer.	150-250	Floridan aquifer
Oligocene	Suwannee Limestone	Creamy soft to hard limestone, lithologically similar to underlying Ocala Limestone.	0-450	Floridan aquifer
Eocene	Ocala Group Avon Park Limestone Lake City Limestone Oldsmar Limestone	Crystalline carbonate rocks; limestone and dolomite, generally yields highly mineralized water.	1,500-3,000	Floridan aquifer
Paleocene	Absent	--	--	Not a source of water
Cretaceous	Lawson Limestone Pine Key Formation Austin Age Limestone	Crystalline carbonate rocks; limestone and dolomite, not used as source of water.	>10,000	Not a source of water
Precambrian and Palezoic	--	Crystallized igneous and metamorphic rocks.	--	Not a source of water

Sources: Schroeder et al., 1958; Carter, 1984; Sherwood et al., 1973; Vecchiolo and Foose, 1984; Florida Bureau of Geology, 1986; and Anderson et al., 1986.

Biscayne aquifer include the upper portion of the Miocene Tamiami Formation, the Pliocene Caloosahatchee Marl, and the Pleistocene Fort Thompson Formation, Key Largo Limestone, Anastasia Formation, Miami Limestone, and Pamlico Sand (Schroeder et al., 1958). The Tamiami Formation varies in composition from pure quartz sand to highly permeable indurated beds of pure limestone. The proportion of limestone to sand increases with depth. The Caloosahatchee Marl consists of sandy marl, clay, silt, and sand with shell beds and yields less water than other parts of the Biscayne aquifer.

The Pleistocene formations of the Biscayne aquifer are contemporaneous, in part, with the basal Fort Thompson Formation composed of marls, limestones, and sandstones interfingering with coralline reef limestone of the Key Largo Limestone. The Anastasia Formation consists predominantly of coquina and calcareous sandstone representing littoral facies equivalents of the Fort Thompson Formation and Key Largo Limestone. These three units range in thickness from 0 to 150 ft thick (Sherwood et al., 1973). The overlying Miami Oolite is an oolitic facies of the Miami Limestone and is often perforated by vertical solution holes caused by burrowing and slightly developed karst activity. The Pamlico Sand is a well sorted fine to coarse grained quartz sand of littoral origin. Both the Miami Oolite and Pamlico Sand range in thickness from 0 to 40 ft.

The near-surface soils overlying the Biscayne aquifer consist of sand with limestone fragments and organic deposits (peat), the latter of which is characteristic of the flatland areas west of the Atlantic Coastal Ridge.

No karst development has been reported in south Florida in the geologic literature (Sinclair and Stewart, 1985; Lane, 1986). A first-order photo analysis previously performed at the Lauderdale Plant site (Technos, 1984) indicated no evidence of any paleo or recent karst activity.

2.3 HYDROGEOLOGY

Broward County is underlain by two aquifer systems: the shallow Biscayne aquifer, which is unconfined, and the deeper Floridan aquifer, which is artesian (Sherwood et al., 1973). The Biscayne aquifer is the source of potable water in Broward County. The top of the Biscayne aquifer generally occurs 10 to 20 ft below ground surface and extends to depths of greater than 200 ft below ground surface near the coast. It is a highly permeable wedge-shaped hydrostratigraphic unit that thins landward to less than 30 ft thick in western Broward County. The Biscayne aquifer is underlain by 500 to 600 ft of low permeability clays and marls which serve as a confining unit between it and the underlying Floridan aquifer. The top of the Floridan aquifer occurs approximately 900 ft below ground surface in coastal Broward County and extends to a depth of more than 3,000 ft below ground surface. The water from the Floridan aquifer is highly mineralized, generally containing more than 1,500 milligrams per liter (mg/L) chloride and 3,500 mg/L total dissolved solids (TDS). The Floridan water is sulfurous, hard, and corrosive in this area and not currently suitable as a potable water source.

The Biscayne aquifer is a single hydrologic unit of permeable materials ranging in age from late Miocene through Quaternary. The extent of the aquifer, both horizontal and vertical, is not set by lithologic contacts or chronostratigraphic boundaries but by differences in the hydrologic properties of the sediments. The lowermost component of the Biscayne aquifer is a limestone or shelly calcareous sandstone of the upper part of the Tamiami Formation in the northeastern part of Dade County and the southeastern part of Broward County. The remaining and major portion of the Biscayne aquifer is composed of rocks ranging in age from Pliocene through late Quaternary including in ascending sequence the Caloosahatchee Marl (as erosional remnants), Fort Thompson Formation, Key Largo Limestone, Anastasia Formation, oolitic and burrowed facies of the Miami Limestone, and Pamlico Sand. The aquifer is underlain by a relatively impermeable greenish marl of the Tamiami Formation. The contact between the marl and the limestone of the Tamiami, Fort Thompson, or Anastasia Formations, or

the Key Largo Limestone, forms the lower boundary of the aquifer (Schroeder et al., 1958). A description of each of these rock units is provided in the stratigraphic column presented in Table 2-1.

The Biscayne aquifer is composed predominantly of limestone, sandstone, and sand of marine origin. The aquifer is reportedly more than 200 ft thick along the coast in Broward County. The thickness of the consolidated limestone sections and the permeability of the aquifer as a unit generally decrease to the north. The aquifer also thins westward to about 70 ft at U.S. Highway 27 in central Broward County and wedges out near the surface in the vicinity of the Collier-Broward county line (Sherwood et al., 1973). In the vicinity of the Lauderdale Plant site, the Biscayne aquifer is approximately 155 to 175 ft thick (Figure 2-1).

The Biscayne aquifer is capable of yielding large amounts of water to wells. Wells that tap the thick limestone in the deeper part of the aquifer commonly yield more than 1,500 gpm with only 3 to 6 ft of drawdown (Sherwood et al., 1973). Permeable units in the shallower portion of the aquifer are also capable of yielding large quantities of water to wells.

The regional flow of groundwater in the Biscayne aquifer is seaward. Locally, however, the direction of flow may be influenced by drainage canals or well fields. Water levels are highest in the water-conservation areas and lowest along the coast, along uncontrolled reaches of canals, and in the centers of large municipal well fields. Rainy season high-water levels of June 1968, some of the highest on record in southeast Florida, showed a maximum water level elevation of approximately 4 ft above msl in the vicinity of the Lauderdale Plant site (Leach et al., 1972). Average water level elevations at the site are approximately 1 to 2 ft above msl (Technos, 1984).

Infiltration of rainfall through surface materials and seepage from controlled canals and the conservation areas are the principal means of recharging the Biscayne aquifer. Recharge by rainfall is greatest during

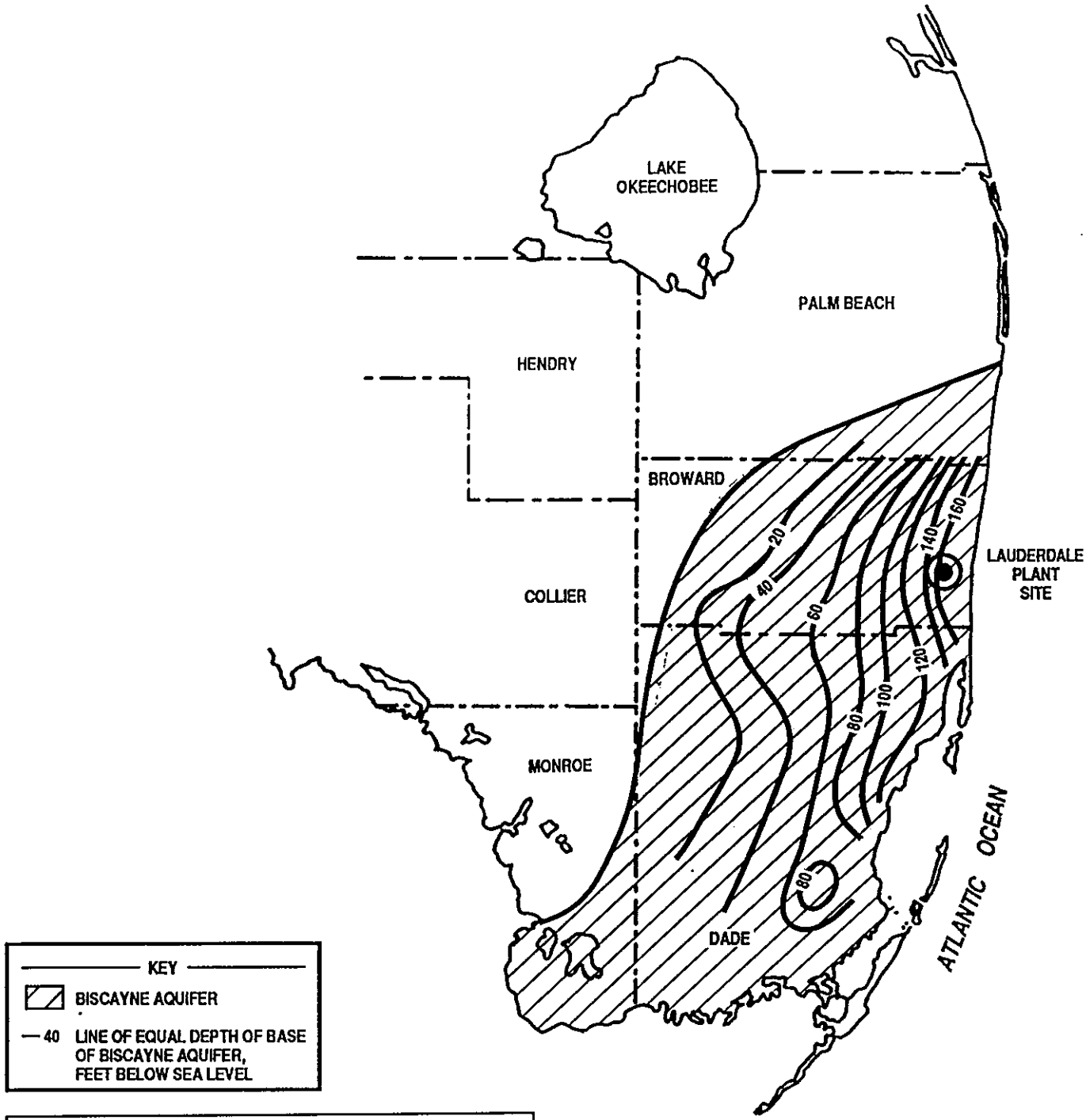

Figure 2-1 ISOPLETH MAP OF BISCAYNE AQUIFER

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the rainy season from June to November. Recharge from canals is greatest during the dry season, December to May, when canal levels are maintained at higher levels than adjacent water levels in the aquifer. High vertical permeabilities of surficial sediments permit rapid infiltration of rainfall to recharge the Biscayne aquifer.

Discharge from the aquifer is by evapotranspiration, by groundwater flow to canals and to the sea, and by pumping from wells. Discharge by groundwater flow to canals and by evapotranspiration is greatest after periods of rainfall when water table levels are high; discharge by pumping from wells is greatest during the dry season as a result of the overall increase in demand from heavy irrigation use when water levels are low. Well yield is only a small part of the total discharge from the aquifer, but during the dry season its importance is amplified because it occurs when recharge and aquifer storage are reduced.

Calculated transmissivity and storativity values for the Biscayne aquifer in Broward County based on aquifer tests have been reported by various authors including Parker (1951), Vorhis (1948), Parker et al. (1955), Schroeder et al. (1958), Sherwood et al. (1973), and Klein and Hull (1978), and summarized by Anderson et al. (1986). Reported transmissivity values range from approximately 0.3 million gallon per day per foot (mgd/ft) in northeast coastal Broward County to approximately 3 mgd/ft in southeast Broward County. Storativity values, which are dimensionless, generally range from 0.10 to 0.35 and average approximately 0.20. Due to the permeable nature of the limestone, hydraulic conductivity values are high in southeastern Broward County.

The chemical quality of the groundwater of the Biscayne aquifer in Broward County is generally good. Water quality in the Biscayne aquifer differs slightly from place to place; most differences in quality are related to the nature of the aquifer and local land use. In general, the water is hard, a calcium bicarbonate type, neutral to slightly alkaline, and contains different amounts of dissolved iron (Klein and Hull, 1978).

Dissolved constituents in the groundwater are influenced by rainfall and dry fallout, reaction with soil and aquifer material, application of fertilizers and pesticides, biological processes at the surface and within the aquifer, infiltration of wastes, chemical reactions among constituents, temperature, and pressure. Groundwater quality in the vicinity of canals is also affected by canal water during dry seasons.

Saltwater intrusion affects the entire coastal zone of the Biscayne aquifer. Saltwater extends inland from the coast and tidal streams; manmade canals also serve as avenues of intrusion. It moves inland and upward in response to low groundwater levels, and seaward and downward in response to high groundwater levels. Saltwater encroachment in Broward County (Figure 2-2) has progressed farthest inland in the vicinity of the North New River and South New River canals, in the vicinity of the Lauderdale Plant site.

To prevent further saltwater intrusion in this area, salinity barriers have been constructed and operated on the North New River Canal and South New River Canal by SFWMD. These salinity barriers are located west of SR 7 (US 441). Due to the proximity and brackish nature of the South New River Canal, the Dania Cut-Off Canal, and the cooling canal/pond system of the Lauderdale Plant site, water quality in the Biscayne aquifer obtained from the on-site cooling water wells is brackish with elevated chloride and TDS concentrations.

Underlying the Biscayne aquifer at the Lauderdale Plant site and elsewhere in southeast Florida, confining beds of the Tamiami and Hawthorn Formations are reportedly 500 to 600 ft thick (Parker et al., 1955). These low permeability units are composed of marl and clay and are laterally continuous in south Florida. These units have not been encountered in wells at the FPL Lauderdale facility. Leakance of this low-permeability interval (i.e., Tamiami and Hawthorn Formations) in Dade County was calculated at approximately 1.0×10^{-4} gallon per day per cubic foot

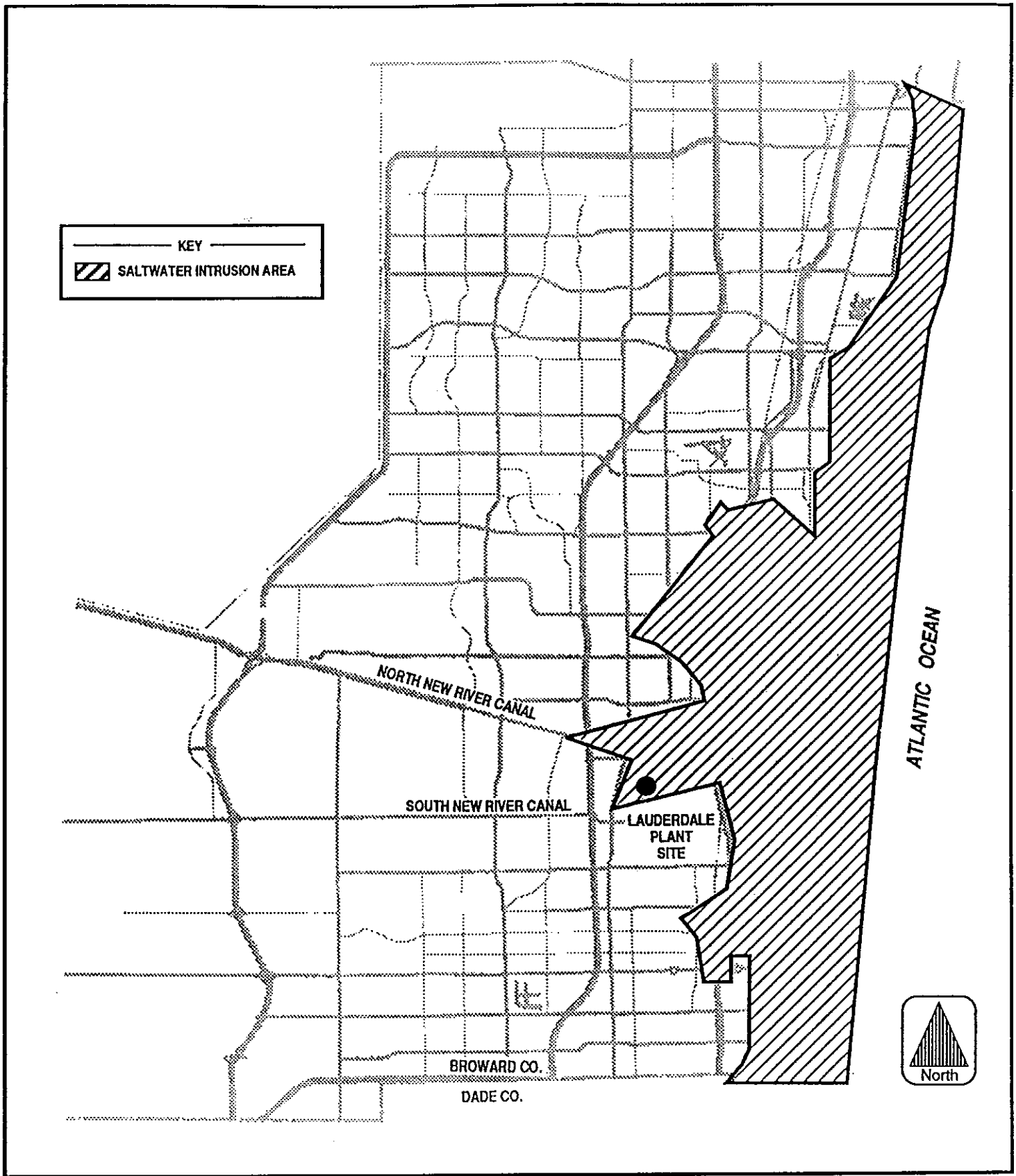

Figure 2-2 SALTWATER INTRUSION AREAS IN BROWARD COUNTY

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(gpd/ft^3) based on aquifer tests performed on the Floridan aquifer (FPL, 1979).

The Floridan aquifer is a thick section of carbonate and evaporite rocks underlying all of Florida and parts of Georgia and Alabama. In southeastern Florida, the aquifer underlies a thick section of impermeable marl and clay at depths below 900 ft and extending to depths of more than 3,000 ft. It is composed primarily of a series of limestones of varying permeability that dips eastward and southward and is thought to intersect the Straits of Florida several miles offshore along the Continental Slope (Sherwood et al., 1973).

In Broward County, water in wells that tap the Floridan aquifer will rise almost 40 ft above msl. Artesian flows range from 75 gpm to over 2,000 gpm and average about 750 gpm (Parker et al., 1955). The water is highly mineralized, containing more than 1,500 mg/L of chloride and 3,500 mg/L of TDS, and is sulfurous, hard, and corrosive.

2.4 SURFACE WATER

Several surface water features border the Lauderdale Plant site. The Dania Cut-Off Canal is located south of the site, whereas the South New River Canal is located west and north of the site. A cooling canal/pond system of approximately 185 acres is located on the northeast portion of the site. The cooling system is manmade and was created by rock and sand removal.

The condenser cooling system is a once through system which uses the Dania Cut-Off Canal as the cooling water source and flows through the cooling canal/pond system. The discharge from the cooling canal/pond system is through a box culvert under State Road 84 to a 1,100-ft canal connected to the South Fork New River. The former intake canal, which is connected to the Dania Cut-off Canal and South New River Canal, is located in the southwestern portion of the site. A map of the surface water features relevant to the Lauderdale Plant site is shown in Figure 2-3.

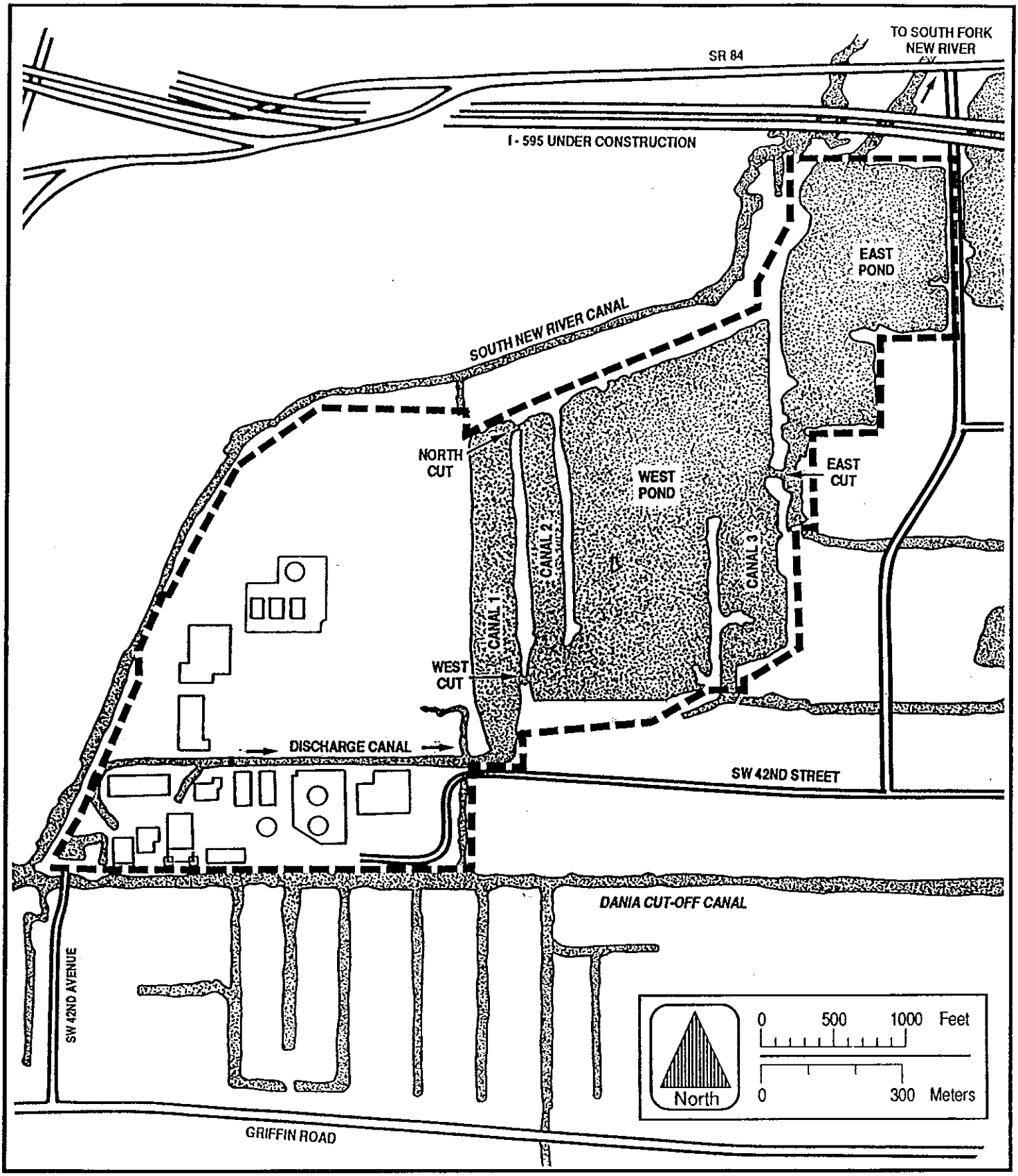

Figure 2-3 SURFACE WATER FEATURES IN THE VICINITY OF THE LAUDERDALE PLANT SITE

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The flow of fresh water into the South New River Canal and the South Fork New River is controlled by SFWMD at structures located approximately 1 mile west of the plant site. Freshwater flows in the Dania Cut-Off Canal are from the South New River Canal. All surface water bodies adjacent to the site (including the cooling canal/pond system) are tidally influenced.

The cooling canal/pond system can receive surface flow either from the cooling water condenser (at the west end of the system) or from tidal inflow from the South Fork New River at the northeast end of the system. The sole surface water discharge from the cooling canal/pond system is to the South Fork New River.

The U.S. Geological Survey (USGS) operates a stream gauging station on the South New River Canal upstream of the site. The daily flow records from the period 1957 to 1985 indicate streamflow in the South New River Canal (and hence, the Dania Cut-Off Canal) can be less than or equal to 0 during all months of the year. Releases of fresh water from the upstream control structure are variable in timing and quantity. The monthly average flow rate in the South New River Canal is fairly consistent throughout the year, ranging from 115 cfs in April to 219 cfs in June and July. Minimum flows show somewhat more temporal variability, with lower flows reported for the period from August to December. The highly controlled nature of the South New River Canal obscures the seasonal trends that would otherwise be evident. Flows to the west (i.e., negative flows) are due to back pumping at the control structure by SFWMD.

All surface water in the immediate vicinity of the Lauderdale Plant site is tidally affected. The tides in the area are semi-diurnal (i.e., two high and two low tides per day). The USGS maintained a tide gauge on the South New River Canal from 1974 through 1985 immediately east of U.S. Highway 441. A review of the average daily high and low tide elevations from this station show that the average tidal range in the South New River Canal is 1.6 ft with a maximum average tidal range of 2.4 ft.

The cooling canal/pond system was created by the excavation of rock and sand in an area northeast of the Lauderdale Plant power block. The system originally consisted of a series of serpentine canals. As currently configured, the berms between most adjacent canals have been excavated, resulting in the formation of two ponds and three canals as shown in Figure 2-3. The approximate surface area of the cooling canal/pond system is 185 acres. The system has an average depth of approximately 33 ft, with a shallow area present in the northeast corner of the west pond.

2.5 CLIMATE

The climate of south Florida is classified as subtropical savanna with distinctive periods of wet and dry. Mean annual temperature in Fort Lauderdale is 73 degrees Fahrenheit (°F), with monthly average temperatures ranging from 66 to 83°F in January and August, respectively. The average annual rainfall in the Fort Lauderdale area is approximately 60 inches, with wide fluctuations in yearly totals. Rainfall is unevenly distributed throughout the year, with roughly 75 percent of the rain falling during June through October. January is usually the driest month, whereas September is usually the wettest month.

The average annual rainfall of approximately 60 inches, if distributed evenly over Broward County, would be equivalent to approximately 3,400 mgd. Evaporation from surface waters would return approximately 22 inches (1,250 mgd) to the atmosphere. Transpiration from the water table would return approximately 20 inches (1,135 mgd) to the atmosphere. Total evapotranspiration would return approximately 42 inches (2,385 mgd), or 70 percent of the total rainfall, back to the atmosphere. Approximately 1 inch (60 mgd) of total rainfall would run off directly to the canal system. The remaining 17 inches of precipitation percolates into the aquifer, with less than 2.5 inches (142 mgd) withdrawn for use and approximately 14.5 inches (820 mgd) discharged to the sea by coastal canals (13.5 inches) or groundwater outflow (1 inch). These data, derived from Sherwood et al. (1973), are highly generalized and do not take into account temporal and spatial variations in rainfall and minor changes in aquifer

storage. In addition, water imported into the county by canals of the SFWMD flood control system and introduced to the aquifer plays a role in the total flow system.

3.0 HYDROGEOLOGIC INVESTIGATION

3.1 EXPLORATORY BORING

An exploratory boring was drilled to 150 ft depth at the Lauderdale Plant site during February 14 through 16, 1990 to determine the lithologic characteristics of the Biscayne aquifer underlying the site. The boring location was approximately 25 ft from supply well 5B (Figure 3-1). Standard Penetration Test (SPT) samples were collected at 5-ft intervals, with the exception of hard cemented intervals which caused SPT refusal. No SPT samples were collected below 100 ft depth due to the cemented nature of the strata.

The boring was advanced using mud-rotary techniques, with cuttings screened to obtain a continuous lithologic record of the borehole. Drilling was performed with a Central Mine Equipment (CME) Model 55 drill rig. A 12-inch-diameter drill bit was advanced to 60 ft depth. Loss of drilling fluid circulation was incurred from 25 to 60 ft depth. Eight-inch-diameter surface casing was set to a depth of 60 ft to maintain the integrity of the borehole and prevent continued lost circulation. The borehole was advanced with a 7-7/8-inch-diameter drill bit to a total depth of 150 ft.

Following completion of the exploratory boring, a 4-inch diameter observation well was constructed in the borehole. The observation well, designated OW-1, was screened from 140 to 150 ft to monitor the lower portion of the aquifer. The annular space of the borehole surrounding the screened interval was filled with silica sand, with the remainder of the annular space backfilled with bentonite-grout cement. The observation well was completed subgrade with locking cap and protective meter box cover.

The lithologic data collected was used in the development of the preliminary model conducted to attain optimal APT design. Additionally, in the absence of existing information the exploratory boring lithology served to represent the aquifer lithologic characteristics in supply well 5B.

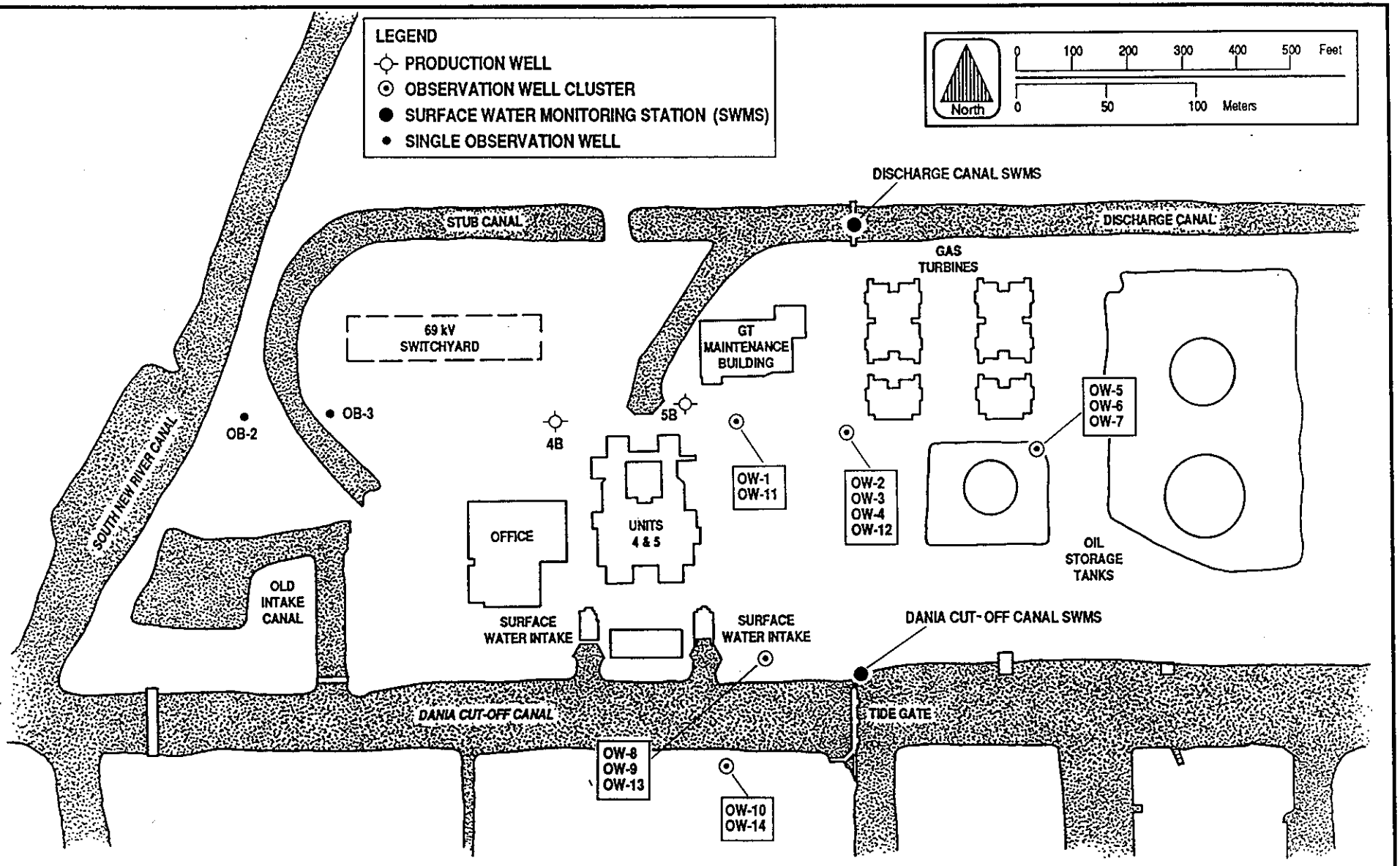

Figure 3-1 OBSERVATION NETWORK FOR AQUIFER PERFORMANCE TEST CONDUCTED 20 MAR 1990 THROUGH 23 MAR 1990

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The lithologic boring log for observation well OW-1 is presented in Appendix B. The well construction diagram for OW-1 is included in Appendix C.

3.2 PRELIMINARY HYDROGEOLOGIC MODELING

InterSat, a three-dimensional, groundwater flow simulation program (Voorhees, 1989), was used prior to the APT to evaluate the drawdown of water levels at the site for a range of aquifer characteristics. Preliminary modeling provided ancillary information for selecting the location and depth of observation wells required to monitor drawdown during the APT.

The Biscayne aquifer is represented by the model as a 165-ft-thick system segmented into 6 layers as illustrated in Figure 3-2. Layer 1 represents the surficial sand and Layers 2 through 6 represent the Biscayne aquifer. The modeling area was divided, in plan view, into a grid of square blocks. The grid consists of 41 columns and 41 rows with 100-ft spacing between successive columns or rows. The model area encompasses 1.6×10^7 square feet (ft^2), or 0.57 square mile (mi^2), centered on supply well 5B.

The simulated sources of water withdrawn from supply wells 4B and 5B are regional groundwater inflow to the modeling area and leakage from surface water features such as Dania Cut-Off Canal, South New River Canal, and the Lauderdale Plant Discharge Canal and cooling ponds. Localized recharge from precipitation was excluded from consideration. Regional inflow and leakage are represented in the model by a head-controlled flux boundary condition expressed as:

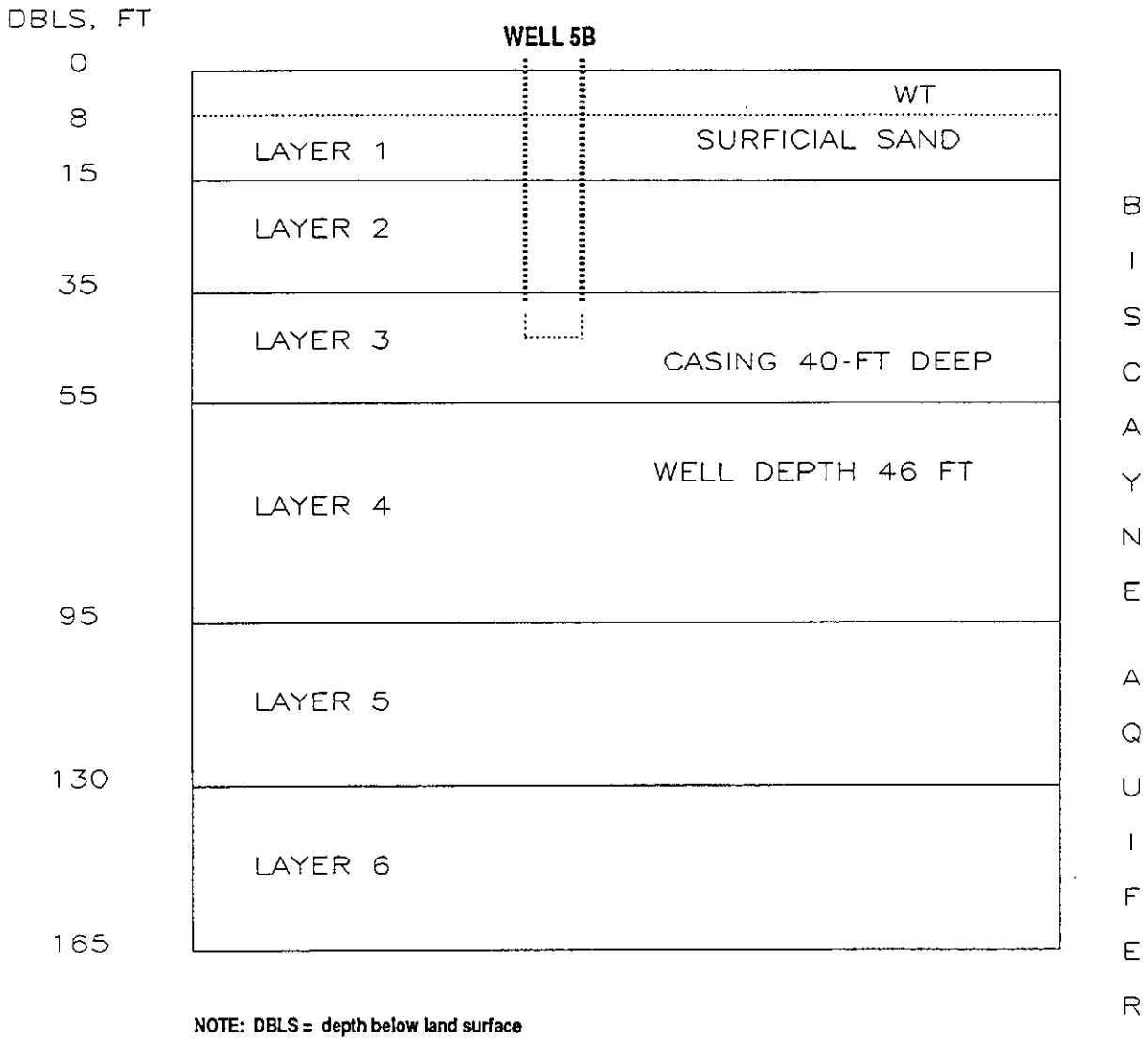
$$Q_r = (k)(A)(s_l - s)/b$$

where

Q_r = lateral flux through the exterior of modeling area or sides of canal, in gallons per day per square foot (gpd/ft^2);

k = horizontal hydraulic conductivity of aquifer, in gpd/ft^2;

A = area through which flux occurs, in ft^2;



NOTE: DBLS = depth below land surface

Figure 3-2 SCHEMATIC OF MODEL REPRESENTATION OF BISCAYNE AQUIFER UNDERLYING THE LAUDERDALE PLANT SITE

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s_l = prescribed limiting drawdown at the boundary, in ft;
s = model calculated drawdown at the boundary, in ft; and
b = distance over which change in head occurs, in ft.

The withdrawal of ground water is represented as a constant flux boundary. During the preliminary modeling, a pumpage rate of 3,000 gpm was simulated as being withdrawn from Layer 4 because the well was believed to be open to the aquifer from 40- to 95-ft below land surface. Subsequent to determining that well 5B was originally open from 40 to 55 ft and has since filled to a depth of 46.5 ft, the simulated withdrawals were prescribed to be from Layer 3 as shown in Figure 3-2.

A total of six sets of aquifer characteristics, referred to as scenarios, were simulated to evaluate the sensitivity of drawdown to factors such as hydraulic conductivity, anisotropy, and canal leakage. Table 3-1 lists the model parameters that were prescribed for each scenario. Contours of drawdowns simulated for Layers 1, 4, and 6 at the end of 1 day of pumping at 3,000 gpm were mapped for each scenario. These maps were then evaluated to determine the number, location, and depth of observation wells required to define optimal APT data collection design.

3.3 OBSERVATION WELL NETWORK

3.3.1 OBSERVATION WELL LOCATIONS

Based on the results of the preliminary modeling, the APT was designed with 10 observation wells located in 5 cluster sites (see Figure 3-1). Vertical intervals screened included 10 to 20 ft, 75 to 95 ft, and 125 to 135 ft. These intervals were selected based on the reported depth of supply well 5B of 95 ft with open hole completion from 40 to 95 ft. Lateral distance of cluster sites from supply well 5B is approximately 25 ft, 270 ft, 450 ft, and 625 ft on the Lauderdale Plant site. In addition, one cluster site is located south of Dania Cut-Off Canal approximately 660 ft from supply well 5B.

Table 3-1. Summary of Conditions Simulated During Preliminary Modeling

Scenario/ Layer	Horizontal Hydraulic Conductivity, in gpd/ft²				Anisotropy		Storage Coefficient	
	1	2	3&4	5&6	1	2-6	1	2 - 6
1	150	6,700	6,700	6,700	10	100	0.2	0.001
2	150	13,400	13,400	13,400	10	100	0.2	0.001
3	150	6,700	6,700	6,700	10	400	0.2	0.001
4	150	6,700	6,700	6,700	10	10	0.2	0.001
5	150	6,700	6,700	6,700	10	100	0.2	0.001
6	150	3,350	11,700	3,350	10	100	0.2	0.001

Scenario 1: Transmissivity of surficial layer is 2,500 gpd/ft; transmissivity of Biscayne aquifer is 1 MGD/ft.
Scenario 2: Similar to scenario 1 but transmissivity of Biscayne aquifer is 2 MGD/ft.
Scenario 3: Similar to scenario 1 but anisotropy of Biscayne aquifer is 400 to 1.
Scenario 4: Similar to scenario 1 but anisotropy of Biscayne aquifer is 10 to 1.
Scenario 5: Similar to scenario 1 but heads in canals were varied ± 1 foot to represent 2-per day tide cycle.
Scenario 6: Similar to scenario 1 but 70-percent of the transmissivity of the Biscayne aquifer is represented by Layers 3 and 4.

During geophysical logging of supply well 5B and a subsequent record search at the Lauderdale Plant site, it was determined supply well 5B was originally drilled to a depth of 55 ft and currently is 46.5 ft deep, with the well open to the aquifer from 40 to 46.5 ft. Based on these findings, four additional observation wells were constructed at existing cluster sites and screened from 40 to 50 ft in the production zone.

Additional observation locations included two existing wells (OB-2 and OB-3) and surface water stations in the Discharge Canal and the Dania Cut-Off Canal. Observation well locations are delineated in Figure 3-1, and depths and screened intervals are presented in Table 3-2.

3.3.2 WELL CONSTRUCTION DETAILS

Observation wells were constructed to depths ranging from 20 to 135 ft to monitor water level fluctuations and water quality impacts during the APT performed at the Lauderdale Plant site. The observation wells, constructed between February 26 and March 15, 1990, were also used to determine the lithologic characteristics of the Biscayne aquifer underlying the site. The boring locations, screened intervals, and total depths of the observation wells are presented in Table 3-2.

SPT samples were collected at 5 ft intervals from the deepest well at each cluster site, with the exception of hard cemented intervals which caused SPT refusal. No SPT samples were collected below 100 ft depth due to the cemented nature of the strata.

The deep borings (i.e., 135 ft) were advanced using mud-rotary techniques, with cuttings screened to obtain a continuous lithologic record of the borehole. All other drilling was performed using hollow-stem auger (HSA) techniques. Drilling was performed with a CME Model 55 drill rig. A 12-inch-diameter drill bit was advanced to 60 ft depth for the two deep borings (OW-2 and OW-5), with 8-inch-diameter surface casing set to a depth of 60 ft to maintain the integrity of the borehole. No lost circulation occurred at either borehole. The deep boreholes below 60 ft depth were

Table 3-2. Location, Depth, Elevation, Screened Interval, and Water Level Monitoring Instrumentation Established for Aquifer Performance Test Observation Wells

Station ID	Top of Casing Elevation, (ft above NGVD)	Depth (ft below) land surface)	Monitoring Interval (ft below land surface)	Distance From Production Well (ft)	Measuring Apparatus
Station 1					
5B (PW)	7.6	46.5	40-46.5	0	Data logger
OW-1[a]	5.92	150	140-150	25.17	Electric tape
OW-11[a]	5.80	50	40-50	22.	Data logger
OW-2[a]	4.88	135	125-135	272.14	Electric tape
OW-3[a]	4.89	95	75-95	272.14	Data logger
OW-4[a]	4.95	20	10-20	268.10	Data logger
OW-12	5.22	50	40-50	270.	Data logger
Station 2					
OW-8[a]	4.91	95	75-95	453.65	Data logger
OW-9[a]	4.93	20	10-20	454.82	Data logger
OW-13[a]	5.08	50	40-50	454.	Data logger
Station 3					
OW-5	7.79	135	125-135	624.60	Electric tape
OW-6	7.77	95	75-95	624.60	Electric tape
OW-7	7.86	20	10-20	627.13	Hand-held pressure transducer
Station 4					
OW-10	6.11	95	75-95	662.07	Electric tape
OW-14	6.35	50	40-50	661.	Stevens F-type
Other Stations					
OB-2	6.95	23	13-23	750.63	Stevens A-type
OB-3[a]	7.58	23	13-23	687.88	Stevens A-type
SW-Dania[a]	5.39	--	---	670	Stevens F-type
SW-Discharge[a]	4.03	--	---	560	Stevens F-type

Note: NGVD = National geodetic vertical datum of 1929.
OB = Existing observation well.
OW = Observation well installed for aquifer performance test.
PW = Production well.
SW = Surface water gauging station.

Manual measurements were made using an electric tape at all locations equipped with data loggers.

[a]Location used for background monitoring.

advanced with a 7-7/8-inch-diameter drill bit to the designated depth of the borings, whereas the HSA borings were advanced with an 8-inch-diameter bit the entire length of the boreholes.

Following completion of each boring, a 2-inch-diameter observation well was constructed in the borehole. At the two deep borings, both the 135-ft and 95-ft observation wells were installed inside the 8-inch-diameter surface casing. The screened interval of the two wells were separated by bentonite grout in the annular space. The annular space of the borehole surrounding the screened interval at all observation wells was filled with silica sand, with the remainder of the annular space backfilled with bentonite-grout cement. The observation wells were completed subgrade with locking caps and protective meter box covers.

The lithologic boring logs for the observation wells are presented in Appendix B. The well construction diagrams for the observation wells are included in Appendix C.

3.3.3 GEOPHYSICAL LOGGING

Geophysical logging was conducted in the deepest well at each cluster site. Natural gamma logs were run inside the well casing at OW-1, OW-2, OW-5, OW-8, and OW-10. In addition, natural gamma and caliper logs were run inside supply well 5B. Results of the geophysical logs were used to perform lithologic interpretation of the Biscayne aquifer during preparation of geologic cross-sections of the site.

The geophysical logs are included as Appendix D of this report.

3.3.4 SURVEYING

The newly installed observation wells, the existing observation wells used during the APT, supply well 5B, and the surface water stations in the Discharge Canal and the Dania Cut-Off Canal were surveyed to determine elevations to 0.01 ft accuracy referenced to NGVD. Survey results were incorporated into the existing survey grid for the Lauderdale Repowering

Project, with the observation wells plotted on the site basemap. Survey elevations of all monitoring stations are presented in Table 3-2.

3.4 WATER LEVEL MONITORING

3.4.1 SENSING EQUIPMENT

The APT was conducted using one on-site supply well (5B), two surface water monitoring stations, and 16 observation wells identified in Figure 3-1. Well construction information including well depth, monitoring interval, top of casing elevation, and distance from the production well is provided in Table 3-2. In general, the observation wells monitored intervals within the Biscayne aquifer ranging from 10 to 20 ft, 40 to 50 ft, 75 to 95 ft, and 125 to 135 ft below land surface (bls). Well depths and monitoring intervals were based on lithologic data obtained during the drilling of OW-1 and the results of the preliminary groundwater flow modeling.

The 16 observation wells comprised four clusters of monitoring locations at the Lauderdale Plant site and one cluster location south of Dania Cut-Off Canal. Within each cluster, the observation wells monitored discrete intervals within the Biscayne aquifer. In general, each station consisted of a shallow, upper intermediate, lower intermediate, and deep observation well or some combination of these vertical intervals. Station identifications were assigned based on sensing equipment, with wells OW-1 and OW-11 included as part of Station 1 because of their proximity to supply well 5B and their attachment to the Station 1 data logger.

Water levels were monitored using electronic data loggers equipped with pressure transducers, Stevens Type A and Type F graphic water-level recorders, hand-held electric tapes, and a hand-held pressure transducer. The type of measuring device utilized at each monitoring location is identified in Table 3-2.

A non-recording rain gauge was monitored for the duration of the APT. The gauge was located near the mouth of the FPL Discharge Canal.

3.4.2 BACKGROUND MONITORING

Water levels in the Dania Cut-Off Canal, Discharge Canal, and selected observation wells and rainfall were monitored for a 5-day period prior to the constant-rate discharge test to describe ambient conditions including tidal effects. Pre-test data were collected from 0930 on Wednesday March 14 through 0930 on March 19, 1990. All background data, except for a 2.5-day period of fragmentary stage record from March 14 - 16 for the canals, are provided in Appendix E.

Pre-test data were collected at 11 monitoring locations identified in Table 3-2. In general, water levels were recorded at 15-minute intervals at locations equipped with data loggers. Continuous records of water levels were collected at locations equipped with Stevens recorders. A data logger with pressure transducers located at Station 2 malfunctioned during the pre-test monitoring period on March 15 and was replaced.

Stages in the Dania Cut-Off Canal and the Discharge Canal varied about 1.2 to 1.6 ft between high and low tides. The time between successive high or successive low tides was approximately 12 hours. Hydrographs of the water level in the Dania Cut-Off Canal and the Discharge Canal illustrating tidal fluctuations during the pre-test monitoring are presented in Figure 3-3 and Figure 3-4, respectively.

Tidal effects were measured in the observation wells monitored during the pre-test period. Water levels in shallow wells near canals, such as OB-2, fluctuated approximately 1 ft in response to tidal effects. Water levels in deeper wells such as OW-14 (50 ft deep) and OW-1 (150 ft deep) fluctuated about 0.35 ft in response to changing tides. Figures 3-5 through 3-7 illustrate groundwater hydrographs that typify conditions observed during the pre-test period for wells screened in the shallow interval (10 to 20 ft), intermediate interval (75 to 95 ft), and deep interval (140 to 150 ft) of the aquifer, respectively.

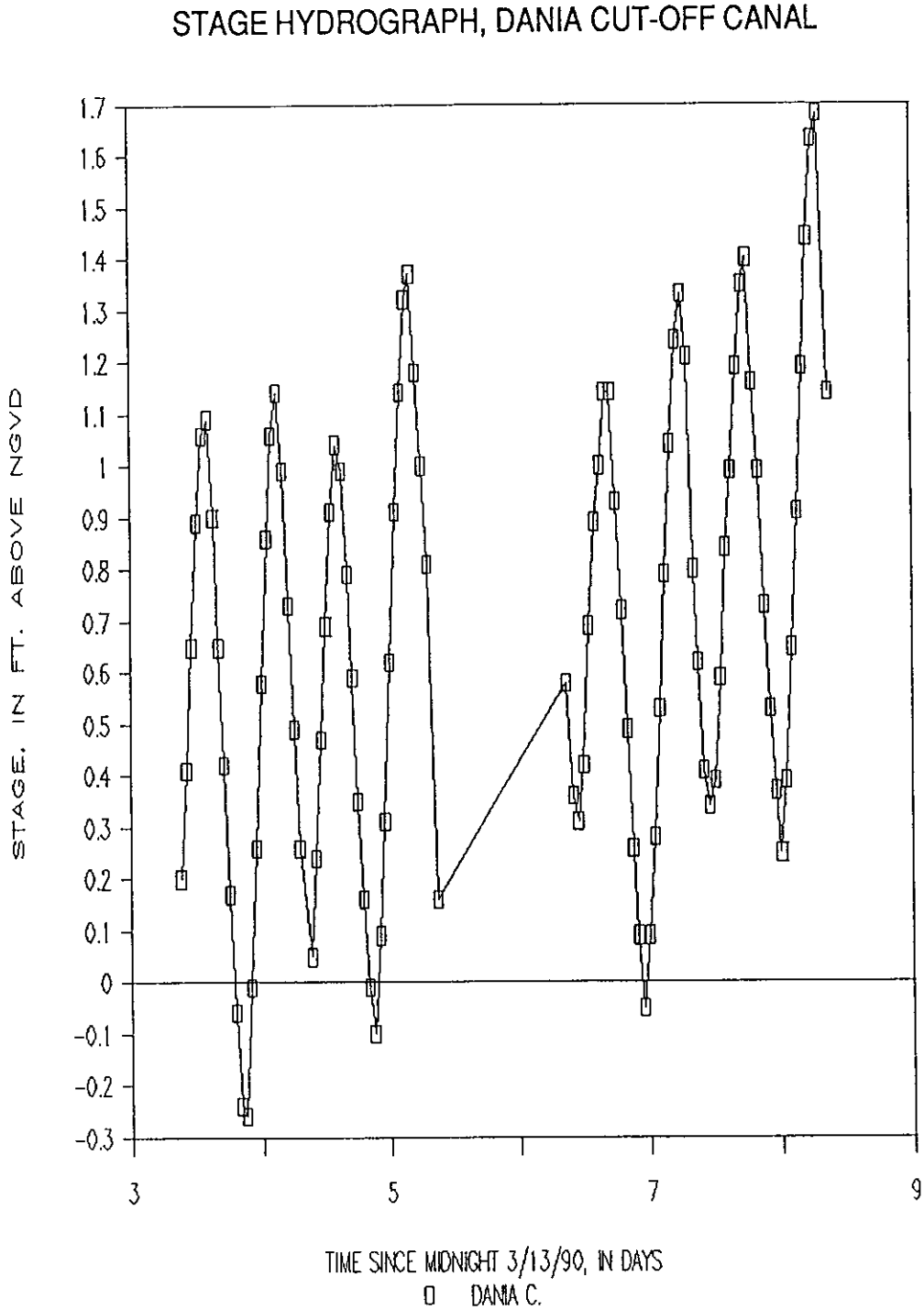

Figure 3-3 HYDROGRAPH FOR DANIA CUT-OFF CANAL DURING PRE-TEST

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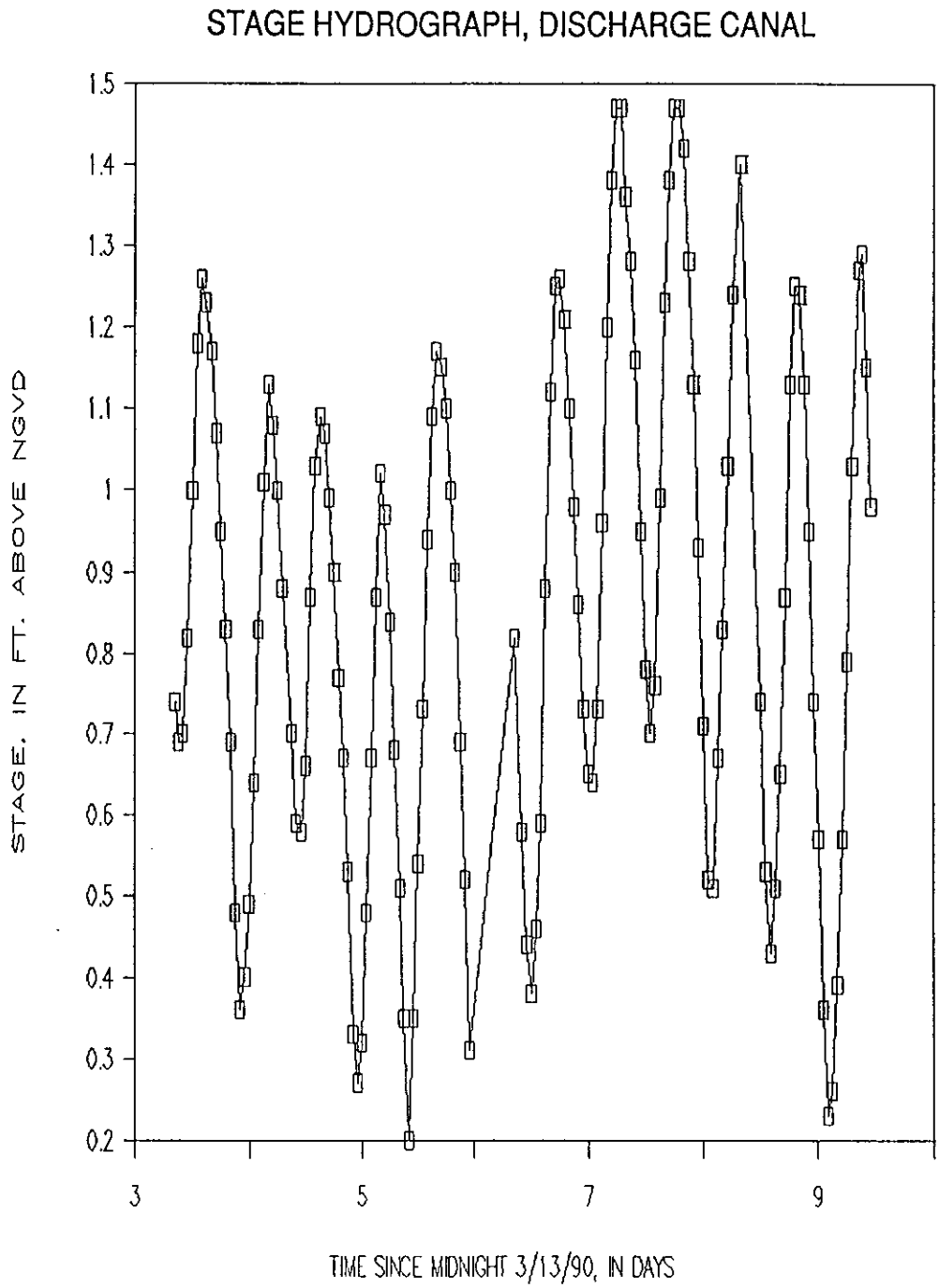

Figure 3-4 HYDROGRAPH FOR DISCHARGE CANAL DURING PRE-TEST

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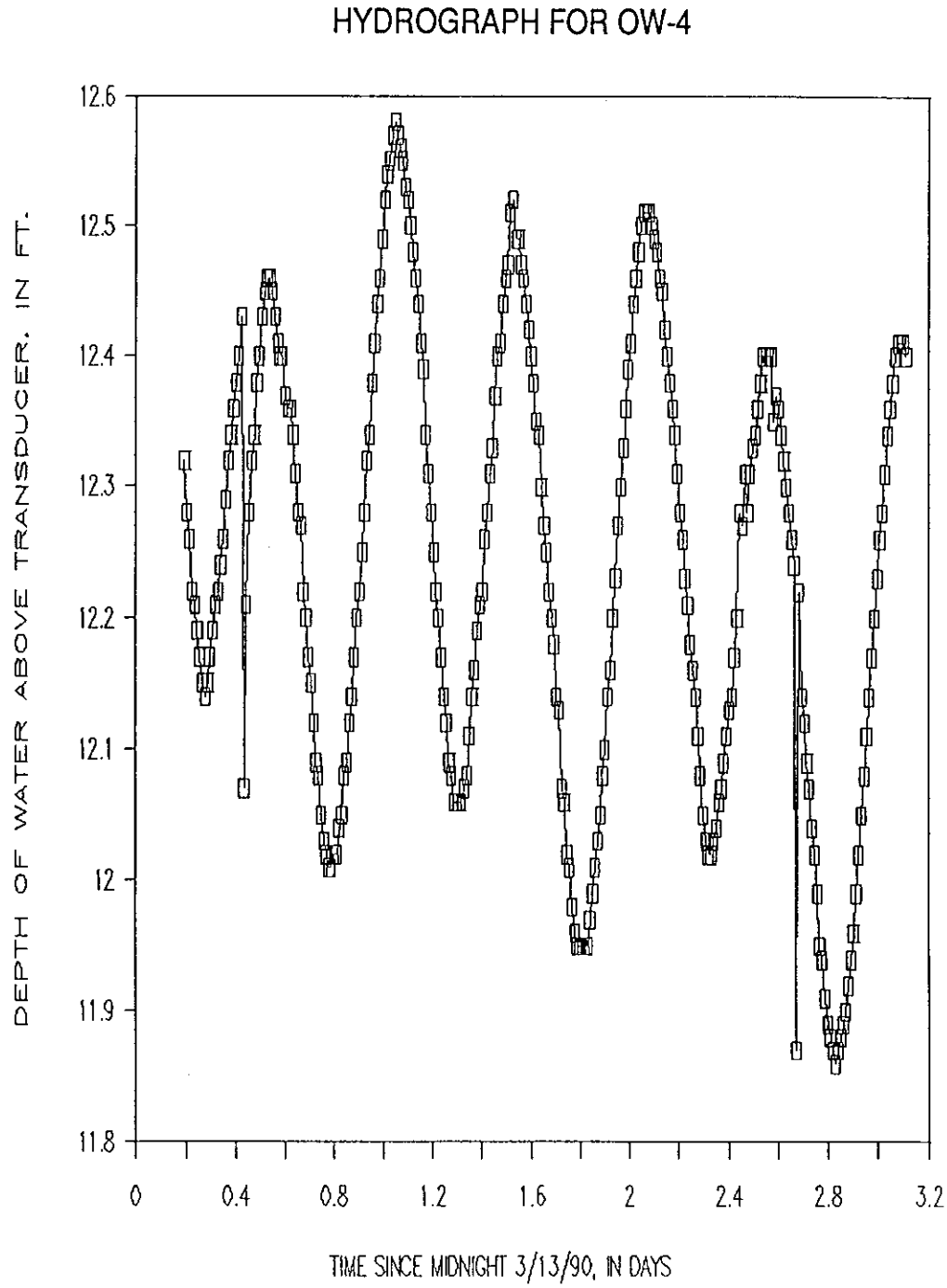

Figure 3-5 HYDROGRAPH FOR SHALLOW WELL DURING PRE-TEST

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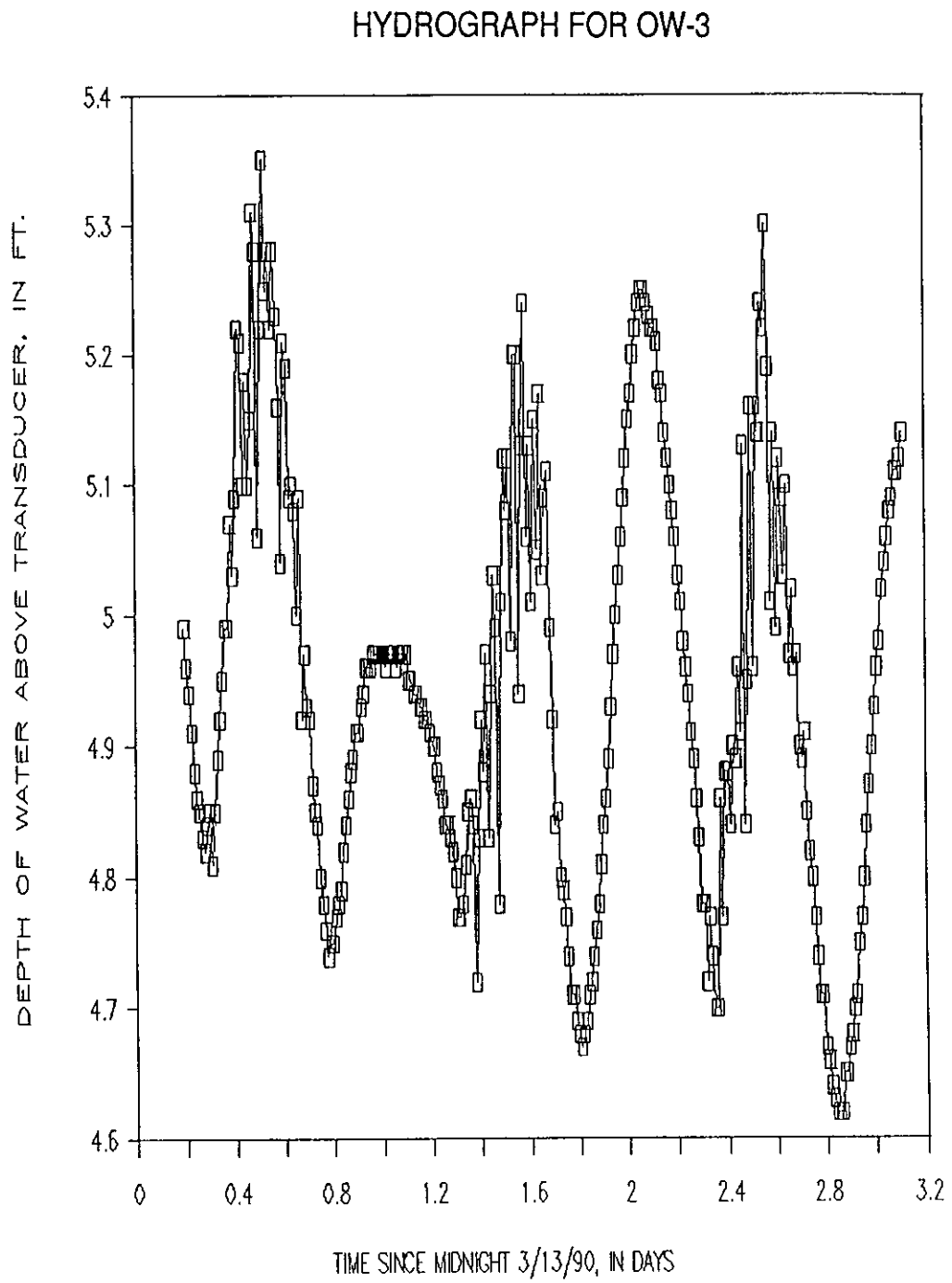

Figure 3-6 HYDROGRAPH FOR DEEP WELL DURING PRE-TEST

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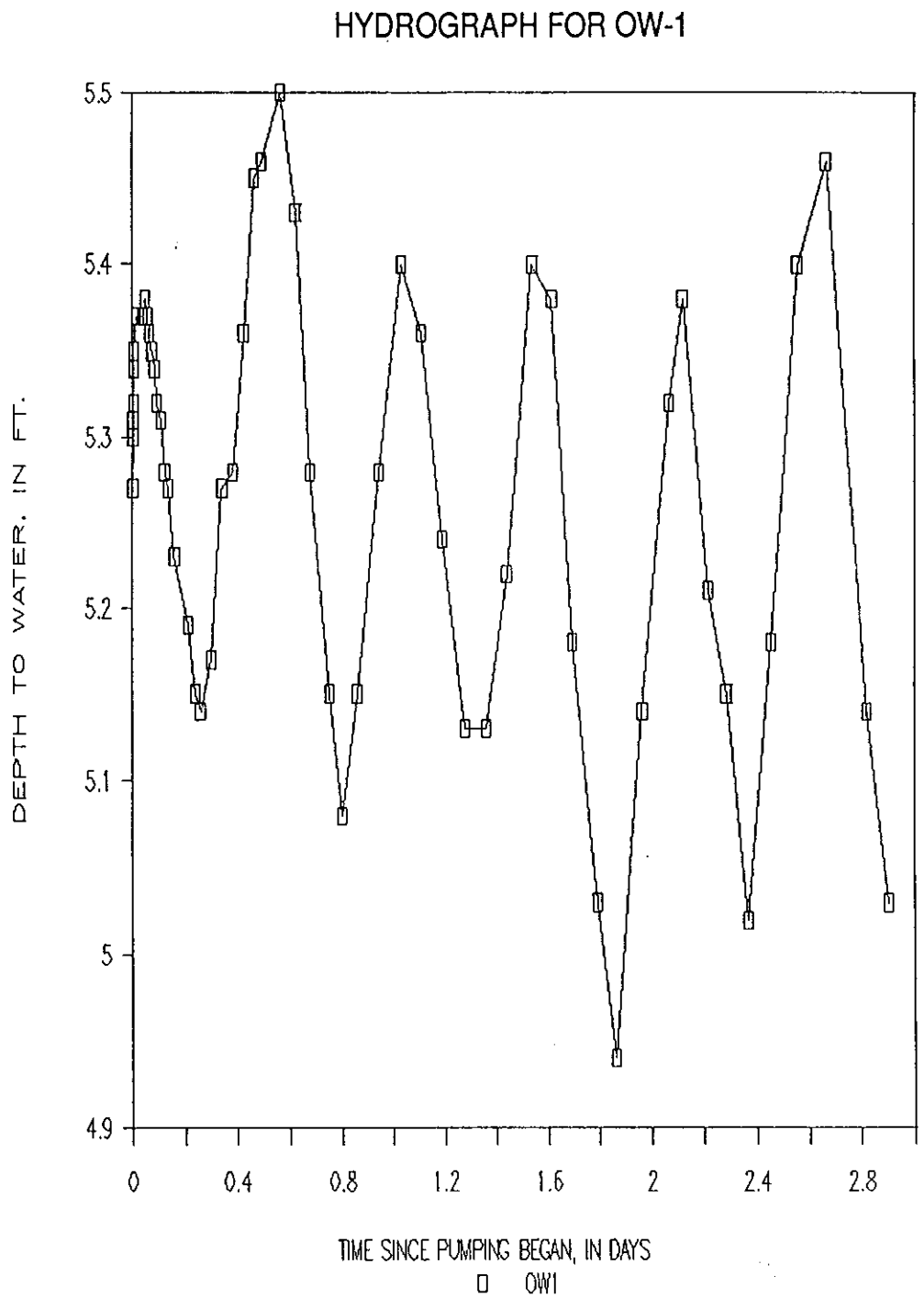

Figure 3-7 HYDROGRAPH FOR OW-1 DURING APT

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A total of 1.35 inches of rainfall was measured at the site during the period March 17 through 19. About 0.6 inch of rain fell March 17 - 18, and 0.75 inch was measured on March 19. Initiation of the constant-rate discharge test was postponed 1 day, from March 19 to March 20, because of rain. No measurable change in groundwater levels due to rainfall was observed in the observation wells.

3.5 AQUIFER PERFORMANCE TEST

3.5.1 PRODUCTION WELL AND DISCHARGE PIPING

Supply well 5B was used as the production well for the APT. This well was originally reported as 95 ft, but was determined to be 46.5 ft deep during geophysical logging of the well. A subsequent records search indicated that supply well 5B was originally drilled to a depth of 55 ft, and was opened to approximately 60 ft following development. The open hole section of the well has apparently filled to 46.5 ft since the well was constructed. Surface casing with 20-inch inside diameter is set to a depth of 40 ft with open hole completion below this depth. The maximum diameter of the open hole interval from the caliper log was 28 inches.

A vertical centrifugal Peerless Pump rated for 3,000 gpm at 95 ft of head is installed in supply well 5B. The depth of the pump intake is 22.5 ft below ground surface.

Supply well 5B is located approximately 100 ft east of the cooling water discharge outfall, and 300 ft south of the Discharge Canal connected to the cooling pond. The Dania Cut-Off Canal is located approximately 500 ft south of supply well 5B.

During the APT, a 10-inch-diameter discharge line was constructed from supply well 5B to the Discharge Canal. The terminal end of the discharge line was joined to 8 ft of 12-inch-diameter piping which preceded a 12-inch to 10-inch orifice weir. The orifice weir was calibrated to determine discharge flow during the APT.

3.5.2 CONSTANT-RATE DISCHARGE TEST

3.5.2.1 Test Schedule and Duration

A constant-rate discharge test was initiated prior to low tide at 1030 on March 20 and completed at 1230 on March 23, 1990. The rate of withdrawal from supply well 5B was continuously maintained within 5 percent of the planned rate of 3,000 gpm throughout the test. The pump was shut off at 1030 on March 23. The recovery of groundwater levels was monitored continuously until 1230 on March 23 when water levels began to decline in response to tidal effects.

3.5.2.2 Data Collection

During the APT, 19 monitoring locations were utilized; supply well 5B, 16 observation wells, and 2 surface water gauging stations. Well characteristics and monitoring instrumentation for these locations are described in Section 3.4.1.

Prior to initiating the constant-rate discharge test, the data loggers at Stations 1 and 2 were preset to record water levels at segmented intervals of time. The programmed recording intervals were varied so that water levels were recorded more frequently during the early part of the test and less frequently during the later part of the test in accordance with SFWMD guidelines. The recording intervals used during the APT are presented in Table 3-3.

Hand-held measuring devices were used to measure water levels at all locations that were not equipped with data loggers. Manual measurements were made at varying intervals of time.

System operation checks were performed throughout the test to ensure that all sensing and recording equipment was functioning properly. Digital data-logger readings, concurrent manual water level measurement, and discharge measurements were recorded at specific time intervals.

Table 3-3. Frequency of Water Level Measurements Collected During the APT with Electronic Data Logging Equipment

Segment No.	Recording Interval	Duration	Cumulative Time
Constant Rate Discharge Phase			
1	1 second	2 minutes	2 minutes
2	15 seconds	13 minutes	15 minutes
3	30 seconds	45 minutes	1 hour
4	1 minute	30 minutes	1.5 hours
5	15 minutes	6 hours	7.5 hours
6	30 minutes	64.5 hours	72 hours→
Recovery Phase			
1	1 second	3 minutes	3 minutes
2	15 seconds	5 minutes	8 minutes
3	30 seconds	10 minutes	18 minutes
4	1 minute	30 minutes	48 minutes
5	5 minutes	60 minutes	108 minutes

Following the conclusion of the 72-hour, constant-rate discharge test, the recovery phase of the APT was monitored. All monitoring locations were checked prior to initiating the recovery phase to ensure that monitoring equipment was operational. The data loggers at Stations 1 and 2 were reprogrammed with new recording-interval segments approximately 30 minutes prior to turning the pump off. The segmented recording intervals used to record the recovery of water levels following termination of pumping are presented in Table 3-3.

The production well was shut down at 1030 on March 23, and the recovery (rise) of water levels was monitored until tidal effects (from an outgoing tide) dominated, causing water levels to drop at observation stations. Monitoring of recovery was terminated approximately 2 hours after shutdown of pumping at 1230 March 23.

All of the data collected during the constant-rate discharge test and the recovery phase monitoring are provided in Appendix E. The continuous graphic records of water levels were computerized at an interval of 1 hour, and a listing of these data is also included in the appendix.

3.6 WATER QUALITY MONITORING

Three rounds of water quality sampling and analysis for chloride were performed in conjunction with the APT. Pre-test background monitoring was conducted March 16, 1990 after all FPL pumpage had ceased and the aquifer had sufficient time to equilibrate. A second round of water quality samples was collected on March 23, 1990 at the completion of the 72-hour pumping segment of the APT, but prior to pump shutdown. A third round of water quality samples was collected March 27, 1990, approximately 96 hours after termination of the APT.

Water quality samples were collected from the 14 newly installed observation wells and previously existing monitor well OB-3 during all three sampling events. During the background monitoring (March 16, 1990), samples were collected from the Discharge Canal and the Dania Cut-Off

Canal. During the APT (March 23, 1990), a sample was collected from the pump test discharge of supply well 5B.

Field analytical parameters included temperature, salinity, and specific conductance. Analyses were performed with a Yellow Springs Instrument (YSI) Company Model 33 salinity/conductivity/temperature (SCT) meter.

Laboratory analyses were performed for chloride by Pace Laboratories, Inc. (Pace) of Tampa, Florida. Pace is a state certified laboratory by the Department of Health and Rehabilitative Services (HRS). The laboratory certification for environmental serves is HRS No. E84003, and for Florida Safe Drinking Water Act (SDWA) is HRS No. 84125. Laboratory analytical data collected during the APT are presented in Appendix F.

3.7 DATA ANALYSIS

Hydraulic aquifer characteristics were determined using data collected during the first 2 hours of the APT. Tidal effects were observed in all of the observation wells; therefore, static or near-static water levels never existed. The drawdown of water levels at distal observation wells (i.e., OW-5, OW-6, OW-7, OB-3, OW-10 and OW-14 which are located approximately 600 to 700 ft from supply well 5B) was difficult to measure reliably because the high transmissivity of the aquifer resulted in a shallow, low-gradient cone of depression.

Computer-screen plots of time-drawdown relations were developed for each well and reviewed to determine whether they were suitable for analysis using graphical type-curve solutions. The time-drawdown relations for wells OW-12 and OW-13, which are screened in the production zone, were deemed most suitable for graphical analysis. Time-drawdown relations for wells in which water levels were measured using an electric tape did not illustrate a monotonic increasing relation with enough accuracy to warrant graphical analysis. Graphic records of water levels at the three wells equipped with Stevens recorders also did not illustrate time-drawdown relations that would provide reliable results based on graphical

techniques. However, the data collected at all wells are suitable for analyzing distance-drawdown relations.

Logarithmic plots of the time-drawdown relations for OW-12 and OW-13 are illustrated in Figures 3-8 and 3-9, respectively. Each figure illustrates the drawdown measured during the first 2 hours of the constant-rate discharge test. The effects of an incoming tide which caused a decline in drawdown are apparent in the data points plotted at later times on these graphs.

Type curves for the Hantush-Jacob method of analyzing drawdown in a leaky artesian aquifer (Lohman, 1979) were superimposed on each graph until a suitable match between type curve and time-drawdown relation was found. Match points used to relate parameters in analytical equations for nonsteady radial flow in an infinite leaky confined aquifer with the observed time-drawdown relation are indicated on each figure. Because the simulated drawdowns in the surficial sand are very small at early times in the APT, the aquifer system can be approximated by a leaky system.

Aquifer transmissivity is calculated using the equation:

$$T = (Q)[L(u,v)]/[(4)(\pi)(s)]$$

where

T = transmissivity in ft^2/min;

Q = constant discharge rate, in ft^3/min;

$L(u,v)$ = leakance function, dimensionless; and

s = drawdown, in ft.

Aquifer storage coefficient is calculated using the equation:

$$S = (4)(T)(t/r^2)/(1/u)$$

where

S = storage coefficient, dimensionless;

T = transmissivity, in ft^2/min;

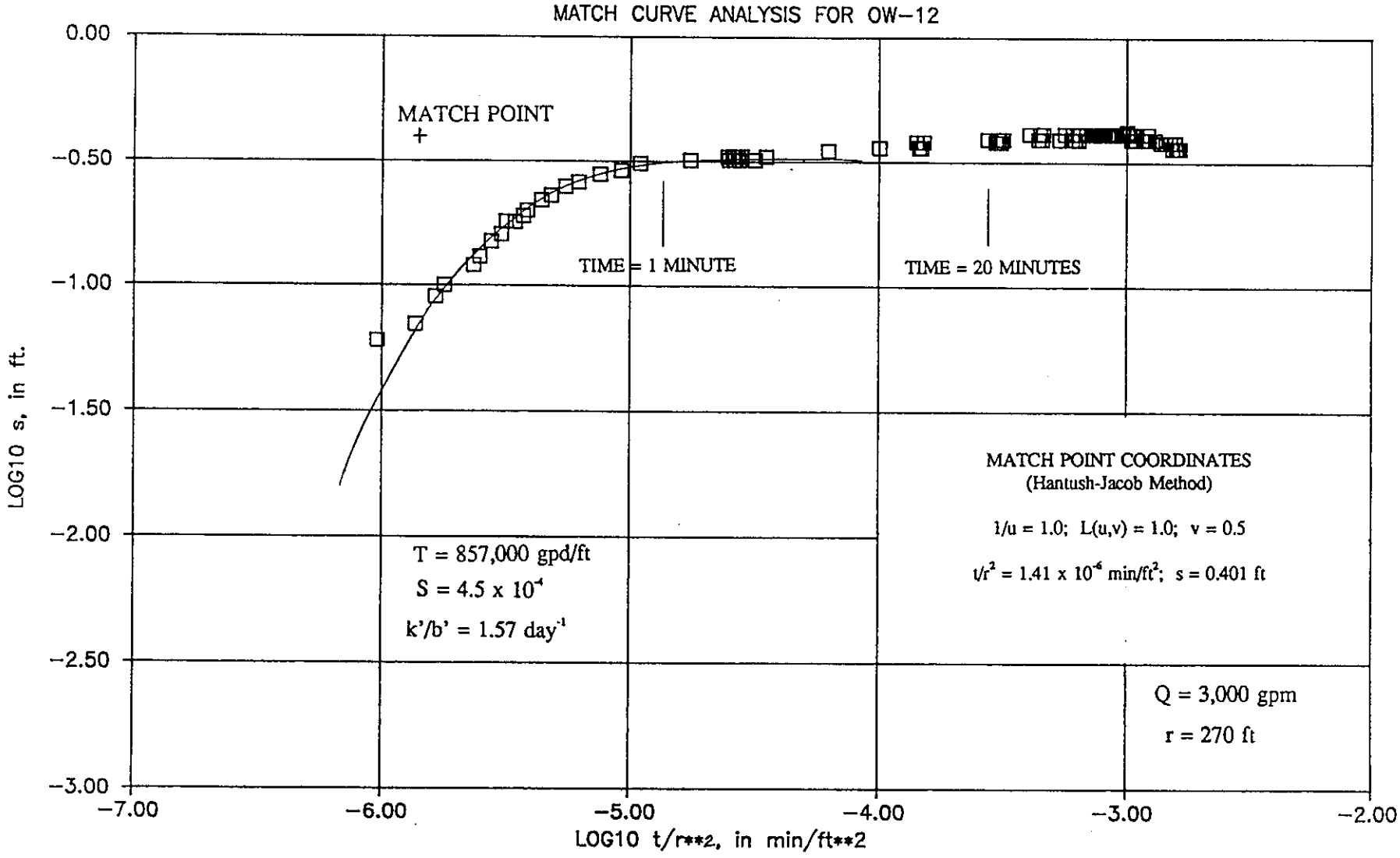

Figure 3-8 TIME-DRAWDOWN RELATION FOR OW-12

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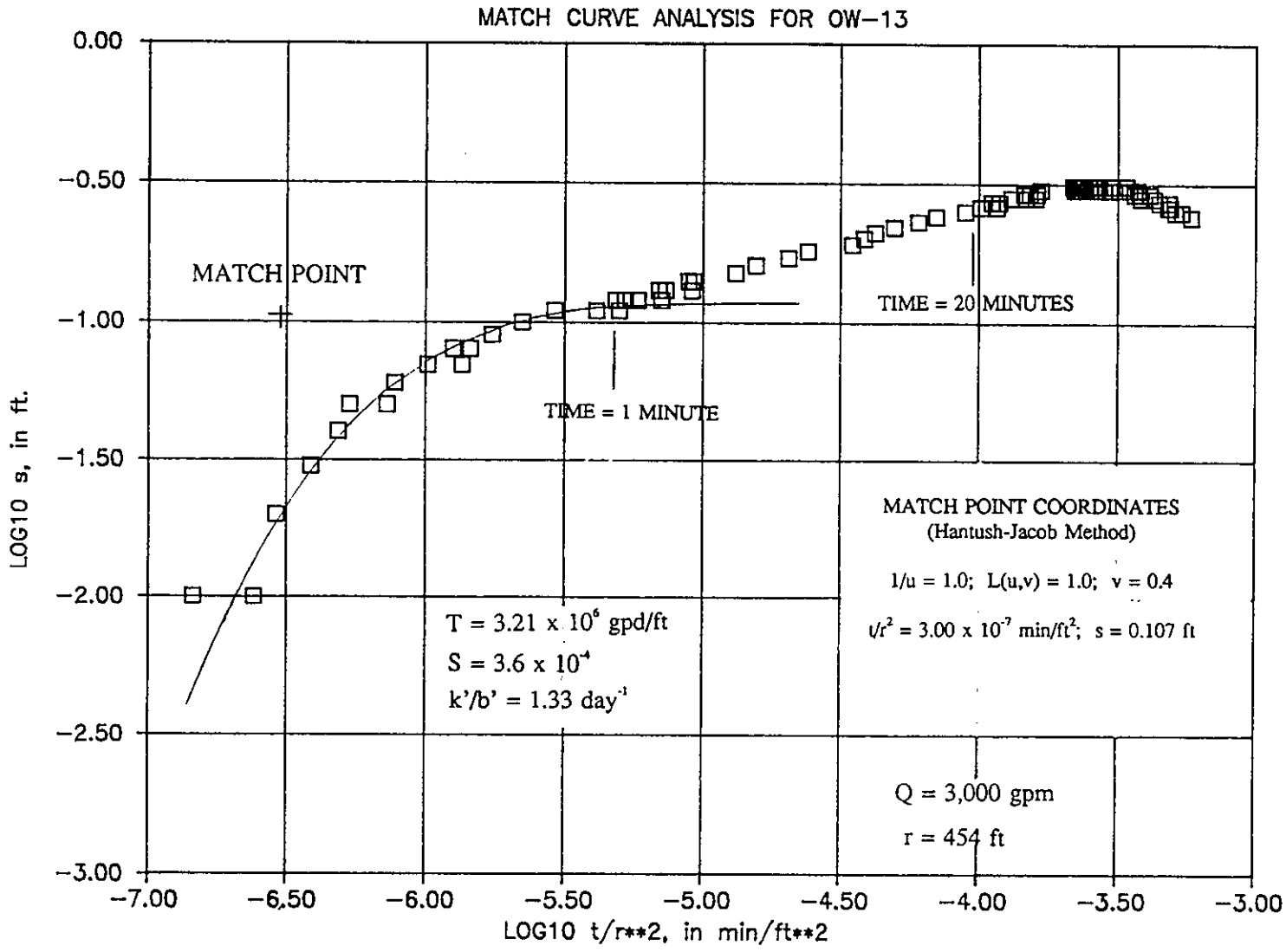

Figure 3-9 TIME-DRAWDOWN RELATION FOR OW-13

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t = time since pumping began, in minutes;

r = radial distance from production well to observation well, in ft; and

u = variable of integration, dimensionless.

Leakance is calculated using the equation:

$$k'/b' = (4)(T)(v^2/r^2)$$

where

k' = vertical hydraulic conductivity of aquifer, in ft/min;

b' = thickness of the confining unit, in ft;

T = transmissivity in ft^2/min;

v = type-curve parameter, dimensionless; and

r = radial distance from production well to observation well, in ft.

The parameters and match points determined from the type-curve analysis of data collected at OW-12 are as follows:

$Q = 3{,}000$ gpm $= 401\ ft^3/min$	$r = 270$ ft
$1/u = 1.0$	$v = 0.5$
$t/r^2 = 1.41 \times 10^{-6}\ min/ft^2$	$s = 0.401$ ft.
$L(u,v) = 1.0$	

The transmissivity, storage coefficient, and leakance of the aquifer are determined by substituting these values into the above equations and calculating the following:

$$T = (401)[1.0]/[(4)(\pi)(.401)]$$
$$= 79.6\ ft^2/min \times 7.48\ gal/ft^3 \times 1{,}440\ min/day$$
$$= 8.57 \times 10^5\ gpd/ft.$$

$$S = (4)(79.6)(1.41 \times 10^{-6})/(1.0)$$
$$= 4.5 \times 10^{-4}.$$

$k'/b' = (4)(79.6)(0.5^2/270^2)$
$= 1.09 \times 10^{-3}$ minute^{-1} x 1,440 min/day
$= 1.57$ day^{-1}.

The parameters and match points determined from the type-curve analysis of data collected at OW-13 are as follows:

$Q = 3{,}000$ gpm $= 401$ ft^3/min	$r = 454$ ft
$1/u = 1.0$;	$L(u,v) = 1.0$
$t/r^2 = 3.00 \times 10^{-7}$ min/ft^2	$s = 0.107$ ft
	$v = 0.4$

The transmissivity, storage coefficient, and leakance of the aquifer are determined by substituting these values into the above equations and calculating the following:

$T = (401)[1.0]/[(4)(\pi)(.107)]$
$= 298$ ft^2/min x 7.48 gal/ft^3 x 1,440 min/day
$= 3.21 \times 10^6$ gpd/ft.

$S = (4)(298)(3.0 \times 10^{-7})/(1.0)$
$= 3.6 \times 10^{-4}$.

$k'/b' = (4)(298)(0.4^2/454^2)$
$= 9.25 \times 10^{-4}$ minute^{-1} x 1,440 min/day
$= 1.33$ day^{-1}.

The groundwater flow model that was developed to perform preliminary modeling was used to evaluate the distance-drawdown characteristics of the APT. The canals in close proximity of supply well 5B and the observation wells are sources of recharge to the Biscayne aquifer. A modeling analysis was deemed more practicable to perform than graphical analysis because of the varied orientation of the canals and number of observation locations utilized during the APT.

Groundwater flow physics associated with the APT are relatively complex as a result of:

1. Partially penetrating canal boundary conditions,
2. Vertical anisotropy,
3. Partially penetrating production well, and
4. Water table conditions.

The most effective means of addressing these conditions was deemed to be the use of a numerical model. The general model formulation presented for the preliminary drawdown modeling was utilized, with the exception of the basic aquifer parameters and some of the boundary conditions. The results previously presented for the OW-13 Hantush-Jacob data analysis can be tested with the fewer assumptions used in the numerical model. The observed distance-drawdown relationships after 30 minutes of pumpage were selected for comparison with model-generated results.

Boundary conditions which were changed from the preliminary drawdown modeling include the following:

1. The canals were assumed to penetrate model Layer 1 as well as the uppermost Biscayne aquifer model layer (i.e., Layer 2). The canal conductances were selected to be consistent with the horizontal aquifer conductance associated with each model layer. In the preliminary drawdown modeling, penetration of only model Layer 1 was assumed. Multiple-layer penetration was assumed as a result of the observed tidal responses in the observation wells during pre-test monitoring.
2. The production well was approximated to fully penetrate only model Layer 3.

Aquifer characteristics assumed in the model are summarized in Table 3-4.

These parameters are consistent with those determined from the match-curve analysis using observation well OW-13. The anisotropy for model Layer 1 was estimated based on literature values, while the anisotropy for Layers 2

Table 3-4. Aquifer Performance Test InterSat Simulation Parameters

Model Layer	Storage Coefficient (dimensionless)	Hydraulic Conductance (gpd/ft^2)	Thickness (ft)	Horizontal/Vertical Anisotropy (dimensionless)
1	0.2	150	10	10:1
2	0.585×10^{-4}	21,510	20	54:1
3	0.585×10^{-4}	21,510	20	54:1
4	0.117×10^{-3}	21,510	40	54:1
5	0.1024×10^{-3}	21,510	35	54:1
6	0.1024×10^{-3}	21,510	35	54:1

through 6 was estimated from the OW-13 leakance using a thickness of 40 ft (approximate distance from model Layer 1 midpoint to the midpoint of the production internal model Layer 3). This assumption is valid in that a large amount of the water during the APT was released from storage from Layer 1 for the 30-minute observation time and earlier (Table 3-5).

The drawdown results of the aquifer performance test at the end of 30 minutes were used as a comparison with the model results. Table 3-6 presents the result of the distance-drawdown comparison for 30 minutes. The comparative results are similar. The simulated and observed drawdowns are relatively close.

It should be noted that the simulated drawdowns for wells 5B and OW-11 were generated using the axisymmetric or radial InterSat option and the aquifer parameters summarized in Table 3-4. Cartesian simulation was not deemed to be accurate enough to simulate responses in the near-well regime. Axisymmetric modeling was performed by selecting an interior radius of 1.17 ft which is equivalent to production well open-hole caliper-measured radius. An arbitrary exterior radius of 20,000 ft (approximately infinite for the 30-minute simulation time) was chosen. Radial gridding near the production well was on the order of 1 ft. None of the complex boundary conditions associated with the cartesian model were incorporated in the axisymmetric model. This is an adequate assumption for the short time period examined in this analysis. A multi-time-step, transient InterSat simulation was then performed to 30 minutes.

In conclusion, InterSat simulation of the aquifer performance test results substantiates results obtained by curve-matching using the Hantush-Jacob non-steady-state curve-matching analysis for OW-13. Therefore, the parameters determined by using OW-13 time-drawdown data are viewed as representing accurate approximations of the aquifer characteristics at the Lauderdale Plant site.

Table 3-5. Simulated Source of Water After 30 Minutes of Pumping 3,000 gpm

Water Source	Percent of Pumpage
Release from Storage, Layer 1	31
Leakage from Canals, Layer 1	0.5
Regional Inflow and Canal Leakage, Layer 2	47
Regional Inflow, Layer 3	2.4
Regional Inflow, Layer 4	6.1
Regional Inflow, Layer 5	6.2
Regional Inflow, Layer 6	6.6
TOTAL	99.8

Table 3-6. Observed and Simulated Drawdown After 30 Minutes for the Aquifer Performance Test

Identifier	Drawdown After 30 Minutes (ft) Distance[a]	Observed	Simulated
Shallow wells (Model Layer 2):			
OW-4	268 E	0.45	0.32
OW-9	455 S	0.15	0.14
OW-7	627 E	0.1	0.12
OB-3	687 W	0.08	0.08
Production Zone (Model Layer 3):			
5B	0	5.4	8.0[b]
OW-11	22 E	2.43	3.7[b]
OW-12	270 E	0.35	0.37
OW-13	454 S	0.19	0.16
OW-14	661 S	0.21	0.08
Intermediate Zone (Model Layer 4):			
OW-3	272 E	0.32	0.26
OW-8	454 S	0.19	0.16
OW-6	625 E	0.10	0.13
OW-10	662 S	0.13	0.11
Deep Zone (Model Layer 6):			
OW-1	25.2 E	0.13	0.15
OW-2	272 E	0.11	0.14
OW-5	625 E	0.18	0.10

[a]Distance, in feet, from production well. General direction from production well indicated by E for East, S for South, etc.
[b]Estimated using an equivalent radial-flow InterSat model.

4.0 RESULTS

4.1 SITE CONDITIONS

4.1.1 SITE GEOLOGY

Lithologic descriptions were made during the installation of the deepest boring in each of the five well cluster sites at the Lauderdale Plant site. These lithologic descriptions, included in Appendix B, in conjunction with geophysical well logs, provide the data utilized for the stratigraphic interpretation of the Biscayne aquifer underlying the site. A geologic cross-section of strata underlying the site is presented in Figure 4-1.

The surficial soil horizon consists of fill material underlain by fine- to medium-grained silty sand. This silty sand, typically 3 to 6 ft thick, is underlain by a peat horizon. The peat was encountered in all borings constructed at the site, ranging from 1 to 4 ft thick. This peat unit is slightly silty, rooted, dark brown, and moist to saturated. Underlying the peat unit is fine- to medium-grained sand, ranging from 3 to 7 ft thick.

Underlying this sand unit is sandy limestone. This sandy limestone, typically encountered between 12 to 17 ft bls, is approximately 30 ft thick extending to a depth of 45 to 47 ft bls. This unit is moderately to very sandy, crystalline with uncemented calcareous silt matrix, fossiliferous, and consists of alternating hard and soft intervals downward. There is increased sand content downward through the unit, with a gradational contact with the underlying sand and sandstone unit.

Sand and sandstone underlie the sandy limestone, generally extending from 45 to 55 ft bls. This unit consists of fine-grained, well-sorted sand. It is composed dominantly of calcareous material with a slight to moderate heavy mineral component. This unit alternated from soft to hard as intervals of cemented sandstone were interspersed with loose sand.

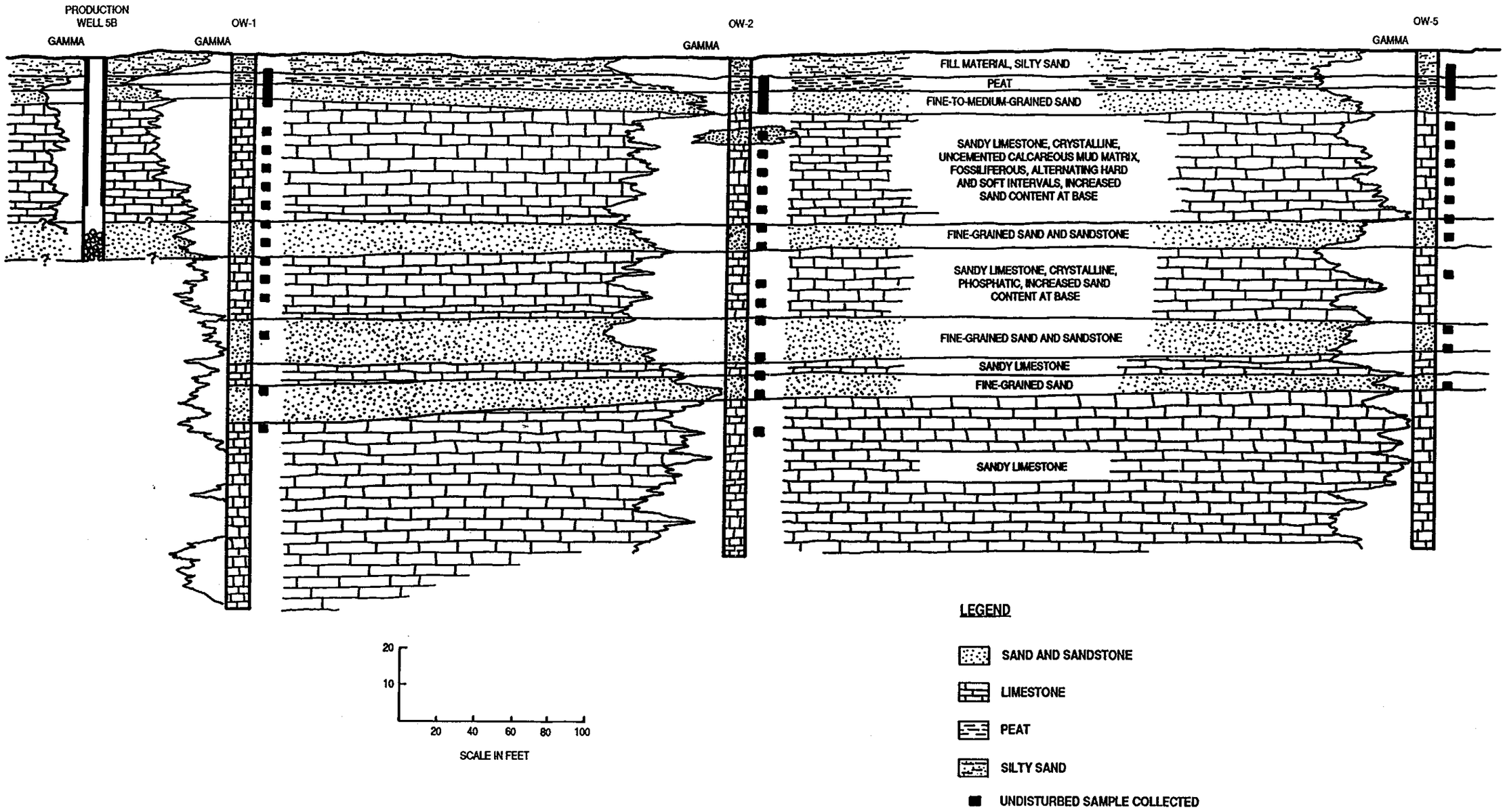

Figure 4-1 EAST-WEST GEOLOGIC CROSS-SECTION OF THE FPL LAUDERDALE FACILITY

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Underlying this sand unit is 13 to 22 ft of sandy limestone, extending to a depth of approximately 70 ft bls. This limestone is slightly to very sandy, crystalline with uncemented silt matrix, phosphatic, and slightly fossiliferous. Dissolution of fossil molds and casts has created visible porosity in samples collected from this interval.

Sand and sandstone underlie this limestone, generally extending from 70 to 95 ft bls. A limestone stringer, ranging from 2 to 6 ft thick, was encountered in all wells at approximately 85 ft bls. The limestone stringer was similar in composition to the limestone encountered between 55 to 70 ft bls. The sand and sandstone unit consists of fine- to medium-grained, well-sorted sand. It is quartzitic with slight to moderate phosphatic content, and locally is slightly shelly. This unit alternated from soft to hard as intervals of cemented sandstone were interspersed with dense uncemented sand.

This sand and sandstone unit was underlain by crystalline limestone, extending from approximately 95 ft bls to the base of all borings. Observation well OW-1, drilled to 150 ft, terminated boring in this limestone interval. The unit is slightly to very sandy, phosphatic, and fossiliferous. It is cemented through the entire section encountered.

4.1.2 SITE HYDROGEOLOGY

The Lauderdale Plant site is underlain by the Biscayne aquifer, extending to a depth of at least 150 ft based on borings installed during the hydrogeologic investigation conducted at the site. The findings of the on-site borings are in concurrence with the reported thickness of the Biscayne aquifer in eastern Broward County (Klein and Hull, 1978).

The Biscayne aquifer underlying the site consists of alternating sand, sandstone, and sandy limestone units. Sand and sandstone units typically are fine- to medium-grained, calcareous to quartzitic, slightly phosphatic with varying amounts of shell material. These units alternate from

cemented to uncemented. Samples collected from a sandstone unit at approximately 72 ft bls in OW-1 displayed visible porosity. Limestone intervals typically are moderately to very sandy, crystalline with uncemented calcareous mud matrix, phosphatic, and fossiliferous. The lowermost limestone unit, encountered below 95 ft, was cemented through the entire section drilled. Dissolution of fossil molds and casts has created visible porosity in several of the limestone units encountered.

The water table was encountered under static conditions at elevations ranging from 0.0 to 1.0 ft above NGVD during the field investigation conducted at the site in March 1990. Fluctuation of the water table in response to tidal flow was detected in all wells, including the wells screened in the lower portion of the aquifer (i.e., 125 to 150 ft bls). The fluctuation of the water table in response to tidal flow in all observation wells indicates hydraulic connection occurs throughout the Biscayne aquifer at the Lauderdale Plant site. However, the magnitude of the fluctuation was diminished at greater depth indicating vertical anistropy of the aquifer.

4.2 IMPACTS OF PROPOSED GROUNDWATER WITHDRAWAL

4.2.1 WATER LEVEL/ZONE OF INFLUENCE

Zones of influence associated with two pumping scenarios were evaluated using InterSat. One scenario represents the average annual withdrawal of 1.56 mgd (1,085 gpm) which would be withdrawn from supply well 5B. The second scenario represents a maximum daily withdrawal of 8.64 mgd (6,000 gpm) from supply wells 4B and 5B.

The analysis of zones of influence was performed using the model developed and calibrated using data collected during the APT (see Section 3.7). The aquifer transmissivity, storage coefficients, anisotropy, and hydraulic connection of canals determined from the analysis of APT data were utilized for this impact analysis. The rate of withdrawal at supply wells 4B and 5B was varied for the analysis of each pumping scenario (i.e., daily average

and maximum daily withdrawals). The analysis was also based on the assumption that there is no change in recharge of the groundwater system by rainfall.

Each withdrawal scenario was simulated for a period of 3 days, when a steady-state condition was reached. Steady state is defined as the condition when the rate of discharge of water from aquifer storage is less than 2 percent of the simulated withdrawal rate. The simulated drawdowns associated with zones of influence at the end of 30, 60, 90, and 180 days of pumpage are within 0.01 ft of the simulated drawdowns after 3 days of pumping.

The simulated zones of influence for each withdrawal scenario are illustrated as contours of drawdown. Figures 4-2 through 4-4 illustrate results for an average daily withdrawal of 1.56 mgd for Layer 1, Layer 3, and Layer 6, respectively. Greater drawdown will exist in the production zone (model Layer 3, Figure 4-3) than in the surficial sand (model Layer 1, Figure 4-2) and deepest zone of the Biscayne aquifer (model Layer 6, Figure 4-4) because the production well partially penetrates the aquifer. The simulated extent of 0.1 ft of drawdown in the production zone is approximately concentrical centered at supply well 5B with a radius of approximately 420 ft. A similar extent is predicted for water levels in the surficial sand although the distribution of drawdown is distorted by leakage from canals. The predicted drawdown near the base of the Biscayne aquifer (Figure 4-4) is 0.05 ft at a distance of 480 ft from supply well 5B.

Figures 4-5 through 4-7 illustrate the zones of influence predicted for the withdrawal rate of 8.64 mgd for Layer 1, Layer 3, and Layer 6, respectively. Contours of drawdown for this scenario are approximately concentric, centered on the midpoint between supply wells 4B and 5B. The simulated extent of 0.1 ft drawdown in the production zone ranges from

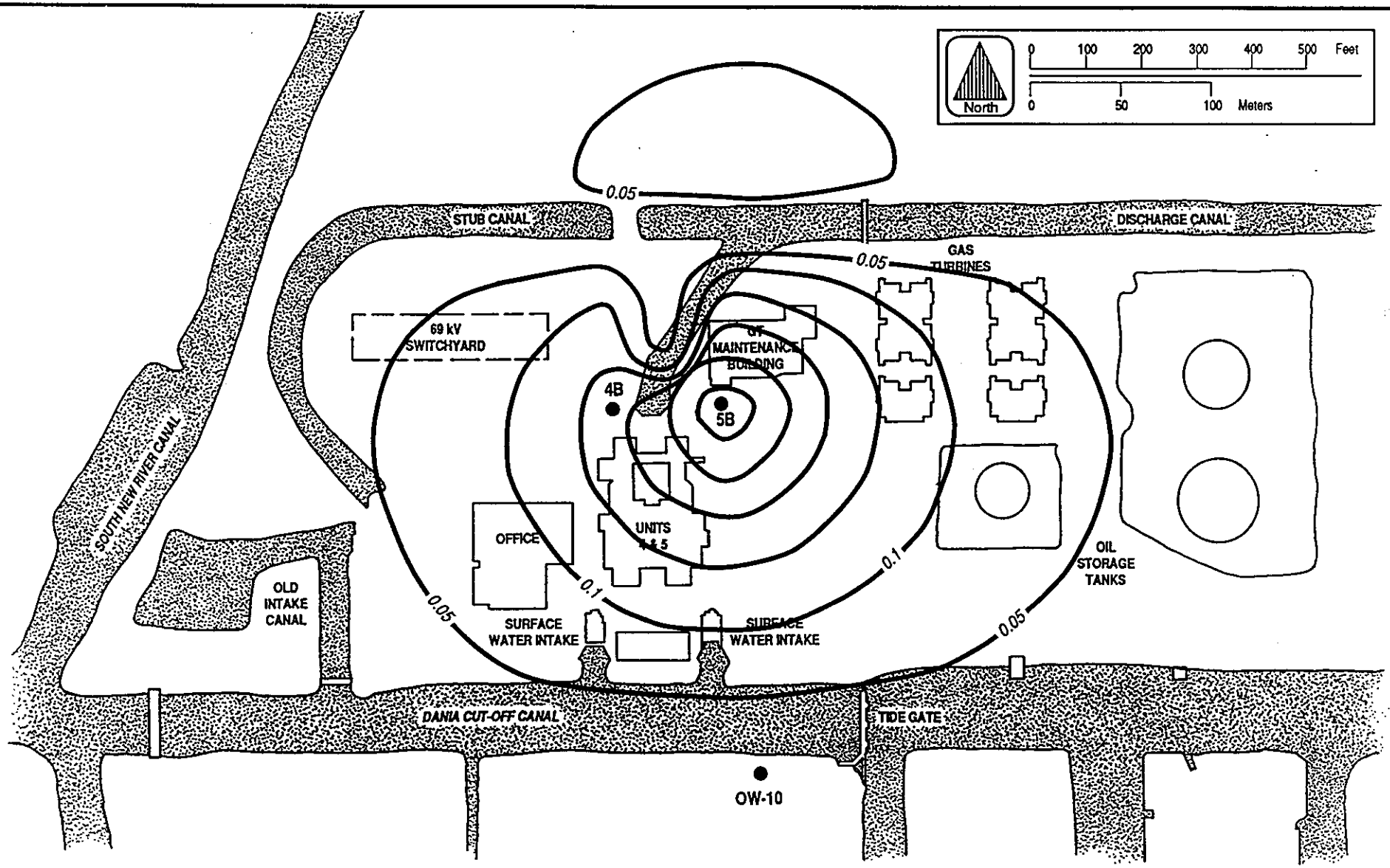

Figure 4-2 DRAWDOWN CONTOUR, LAYER 1
1,085-gpm WITHDRAWAL

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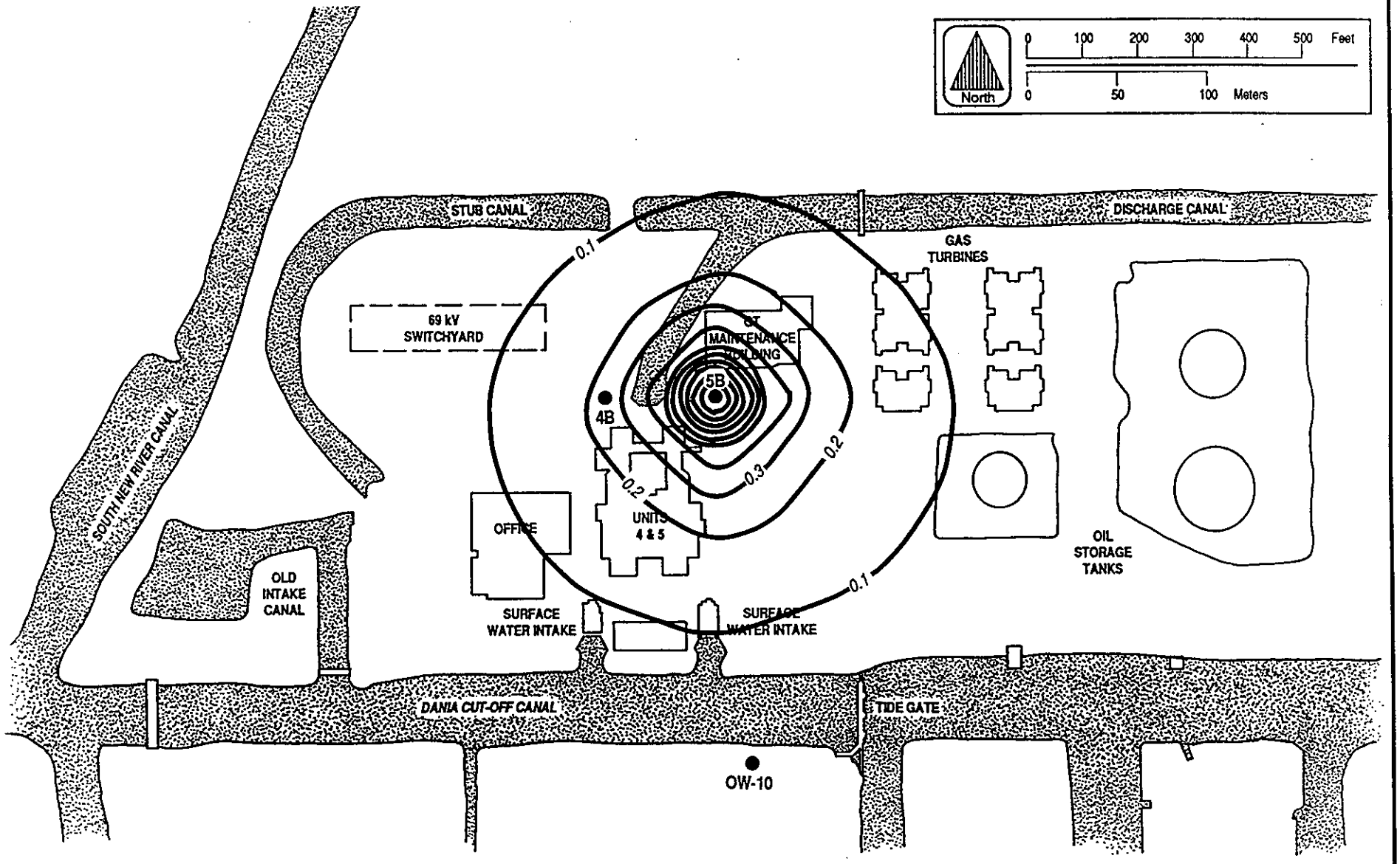

Figure 4-3 DRAWDOWN CONTOUR, LAYER 3
1,085-gpm WITHDRAWAL

Lauderdale Repowering Project

FPL

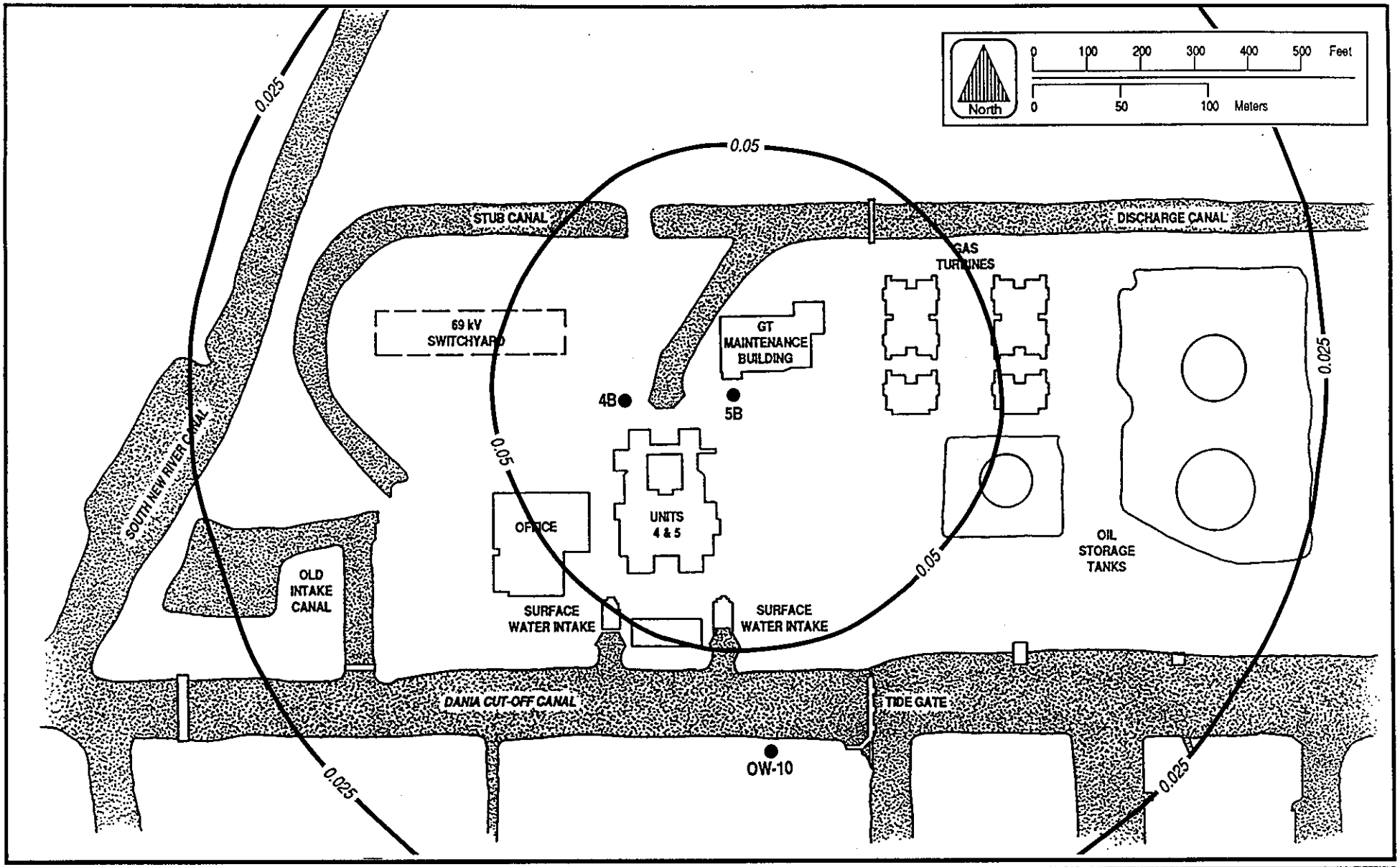

Figure 4-4 DRAWDOWN CONTOUR, LAYER 6
1,085-gpm WITHDRAWAL

Lauderdale Repowering Project

FPL

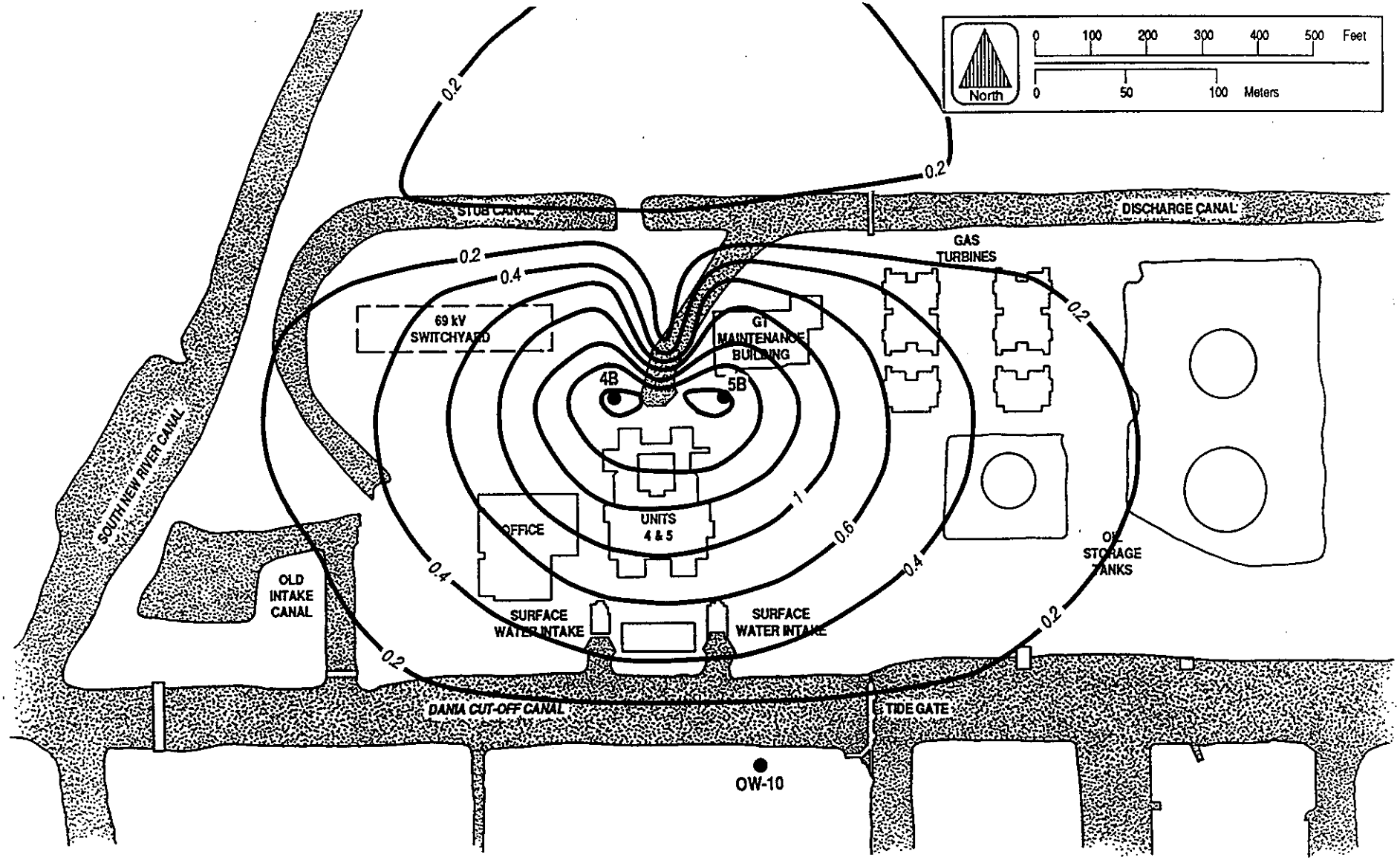

Figure 4-5 DRAWDOWN CONTOUR, LAYER 1
6,000-gpm WITHDRAWAL

Lauderdale Repowering Project

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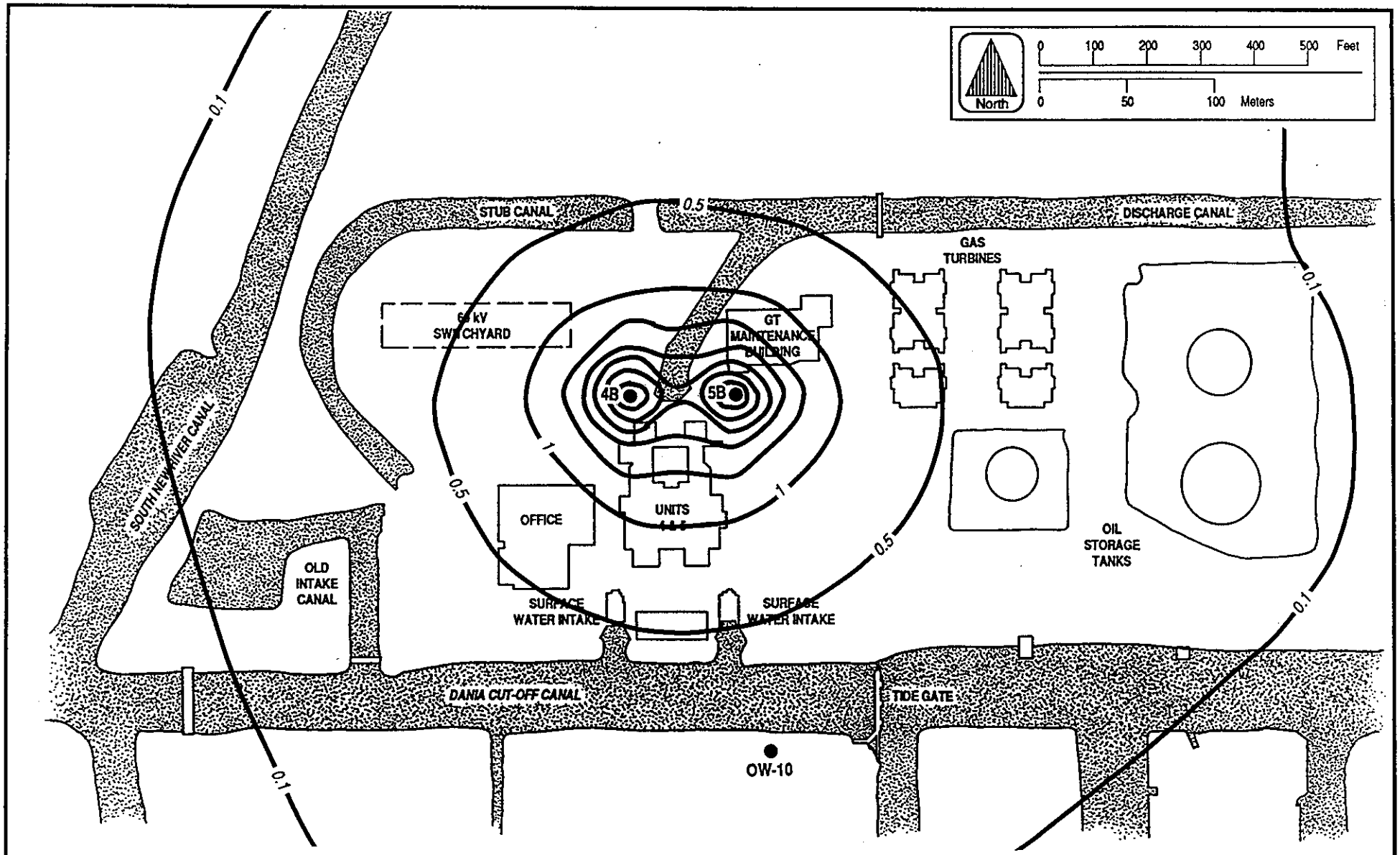

Figure 4-6 DRAWDOWN CONTOUR, LAYER 3
6,000-gpm WITHDRAWAL

Lauderdale Repowering Project

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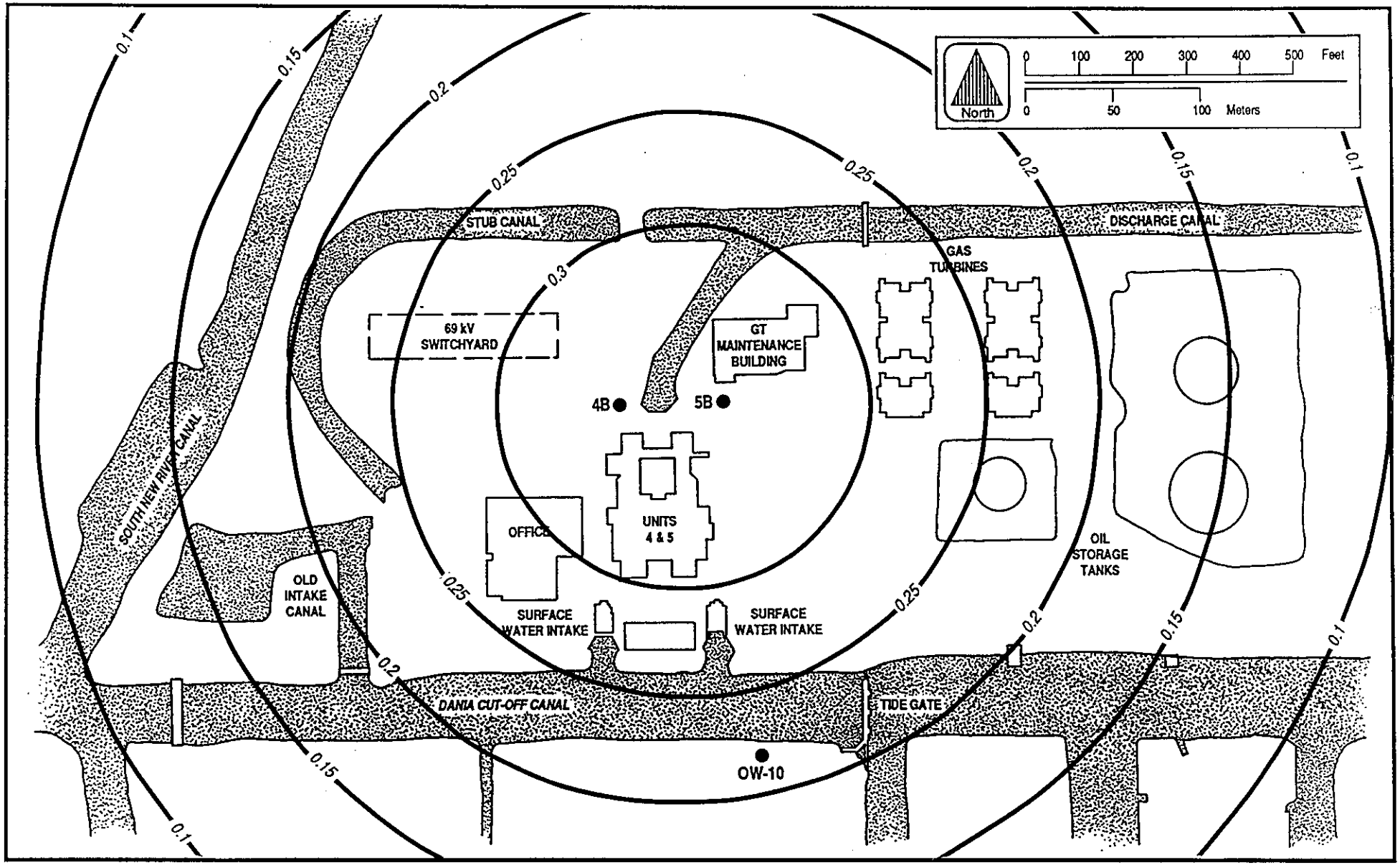

Figure 4-7 DRAWDOWN CONTOUR, LAYER 6
6,000-gpm WITHDRAWAL

Lauderdale Repowering Project

FPL

approximately 960 ft to 1,300 ft from the production wells (Figure 4-6). Leakage from the canals is evidenced by distortion in the 0.1-ft drawdown contour. The simulated drawdown of water levels in the surficial sand (Figure 4-5) is less than the drawdown illustrated for the production zone and reflects the effect of canal leakage. The distribution of drawdown near the base of the Biscayne aquifer (Figure 4-7) becomes similar to that in the production zone at distance when effects due to partial penetration of the aquifer by the production wells decrease. The simulated extent of 0.1 ft of drawdown near the base of the aquifer is approximately 1,600 ft.

4.2.2 WATER QUALITY

Water quality samples were collected for groundwater and surface water at the Lauderdale Plant site during pre-test background monitoring on March 16, 1990, at the end of the pumping phase of the APT on March 23, 1990, and following recovery of the aquifer on March 27, 1990. Chloride data, as well as field measurements for temperature, salinity, and specific conductance, are presented in Table 4-1. Figure 4-8 through 4-11 present chloride concentrations in the 10 to 23 ft depth interval, the 40 to 50 ft depth interval, the 75 to 95 ft depth interval, and the 125 to 150 ft depth interval, respectively, for all three rounds of water quality sampling. The complete analytical report is included in Appendix F.

The Biscayne aquifer underlying the Lauderdale Plant site is brackish, with chloride concentrations varying in response to depth and proximity to surface water features. The Dania Cut-off Canal and the Discharge Canal are brackish, with chloride concentrations of 12,000 mg/L measured during the pre-test background monitoring conducted for the APT. Observation wells in close proximity to these canals typically had increased chloride concentrations compared to observation wells screened in the same interval but further removed from the canals.

Background monitoring indicated chloride concentrations ranged from 84 to 1,900 mg/L in the 10 to 23 ft depth interval (Figure 4-8). Background

Table 4-1. Water Quality of Observation Wells: Background Monitoring (3/16/90), During Pumping (3/23/90), and Post-Recovery (3/27/90)

Well Depth (ft)	Well No.	Chloride (mg/L)			Conductance (umho/cm)			Salinity (ppt)			Temperature (°C)		
		3/16/90	3/23/90	3/27/90	3/16/90	3/23/90	3/27/90	3/16/90	3/23/90	3/27/90	3/16/90	3/23/90	3/27/90
150	OW-1	3900	3400	3700	12000	600	12200	7.0	3.3	5.1	27.5	27.0	28.0
50	OW-11	3900	2300	3100	11800	9000	10800	7.0	5	4.4	28.5	26.0	29.5
135	OW-2	3900	3200	3600	11000	11800	12100	6.2	6.3	5	27.5	28.0	29.0
95	OW-3	3500	3200	4000	11000	10900	13000	6.2	6.1	5.2	27.5	25.5	29.0
20	OW-4	1200	890	1100	4300	4300	4120	2.5	2.4	1.7	30.0	25.0	27.0
50	OW-12	3000	2700	3100	9500	9900	10300	5.0	5.5	4.2	28.5	25.5	27.5
135	OW-5	3500	2800	3400	13000	10600	11200	7.0	5.9	4.6	28.5	28.0	26.8
95	OW-6	3500	2800	3300	10500	10500	11000	6.0	6	4.5	28.5	26.0	27.0
20	OW-7	500	180	500	2200	2300	2280	1.2	1.2	0.9	29.5	25.0	26.0
95	OW-8	9700	8500	9600	26000	24900	28800	15.0	14.9	12.3	27.5	25.5	28.0
20	OW-9	1900	1800	1900	6500	6800	6900	3.5	3.9	2.8	28.0	25.1	28.5
50	OW-13	4100	3200	3500	11500	11200	12000	6.5	6.4	5	28.5	25.5	28.2
95	OW-10	7100	7400	7800	19000	22200	23200	11.5	13.7	9.8	26.0	25.0	26.5
50	OW-14	3500	3400	3700	10000	11500	12500	5.6	6.7	5.1	27.0	25.5	27.5
23	OB-3	84	71	130	950	800	1100	0.5	0.1	0.3	27.5	26.5	26.5

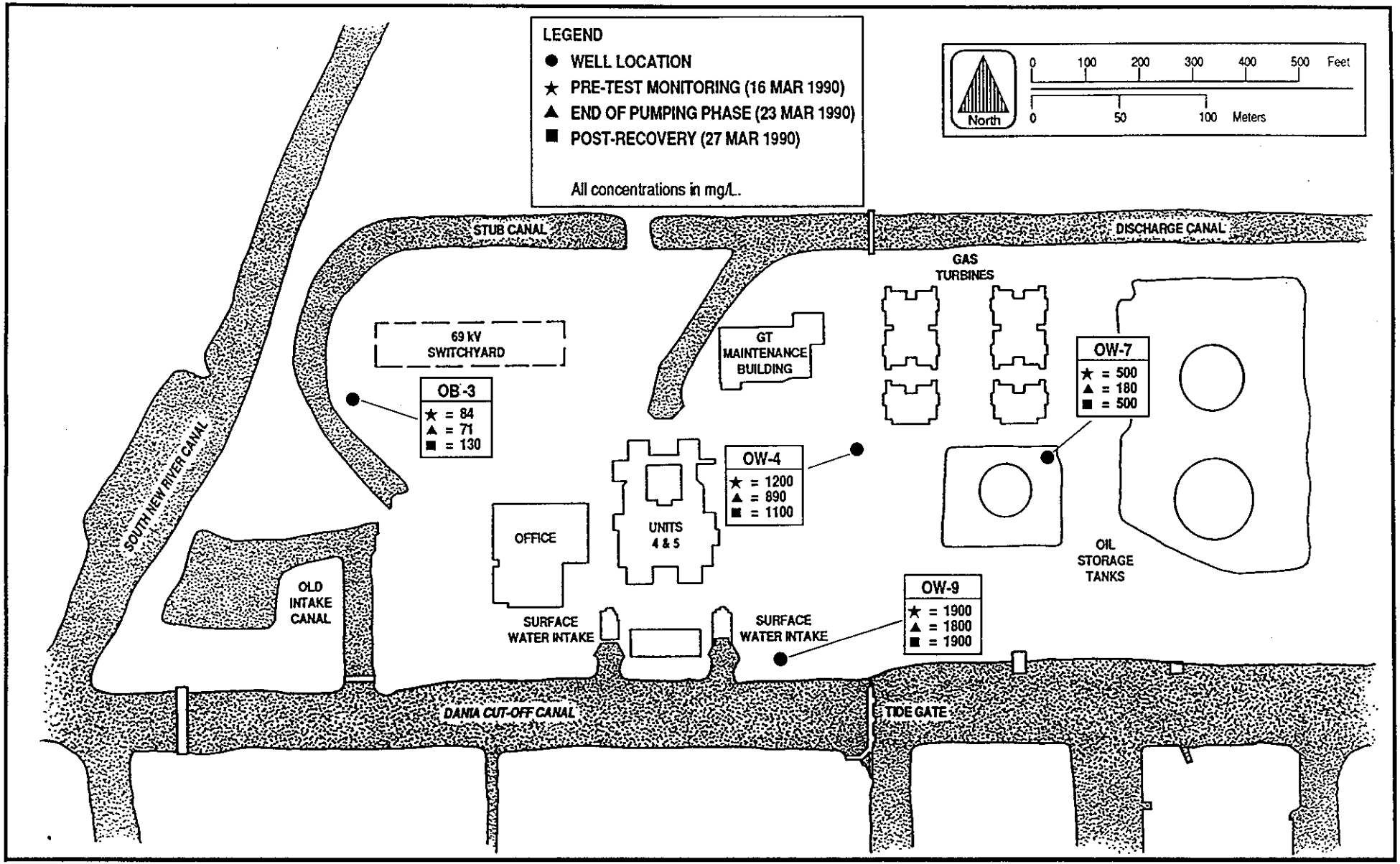

Figure 4-8 CHLORIDE CONCENTRATIONS DURING THE PRE-TEST, PUMPING, AND POST-RECOVERY PHASES OF THE APT FOR OBSERVATION WELLS SCREENED IN THE 10 TO 23 FT INTERVAL

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monitoring indicated chloride concentrations ranged from 3,000 to 4,100 mg/L in the 40 to 50 ft depth interval (Figure 4-9). Background monitoring indicated chloride concentrations ranged from 3,500 to 9,700 mg/L in the 75 to 95 ft depth interval (Figure 4-10). Background monitoring indicated chloride concentrations ranged from 3,500 to 3,900 mg/L in the 125 to 150 ft depth interval (Figure 4-11).

During the APT, the aquifer was pumped at a rate of approximately 3000 gpm for 72 hours. During the pumping phase of the APT, the temperature, salinity, and specific conductance of the pumped discharge water was measured periodically. The results of the field measurement of the discharge water are presented in Table 4-2.

Water quality samples were collected from 15 observation wells at the end of the pumping phase of the APT, but prior to shutdown of the pump. With the exception of OW-10, the chloride concentration dropped during the pumping phase from the pre-test background concentration in all observation wells. Observation well OW-10, located south of Dania Cut-off Canal and screened from 75 to 95 ft bls, had an increase in chloride concentration from 7,100 to 7,400 mg/L.

Chloride concentrations recovered to approximately the pre-test concentration during the post-recovery water quality monitoring conducted 4 days after completion of the APT.

SFWMD requested an analysis/clarification of the data presented in Table 4-1 in their April 13, 1990 (included in Appendix A). Specifically, SFWMD requested an explanation for the inconsistencies between chloride concentrations and conductivity measurements for some of the observation wells. While chloride concentrations decreased during the APT, conductivity values measured in the field at the time of sample collection increased from pre-test values in observation wells OW-2, OW-12, OW-7,

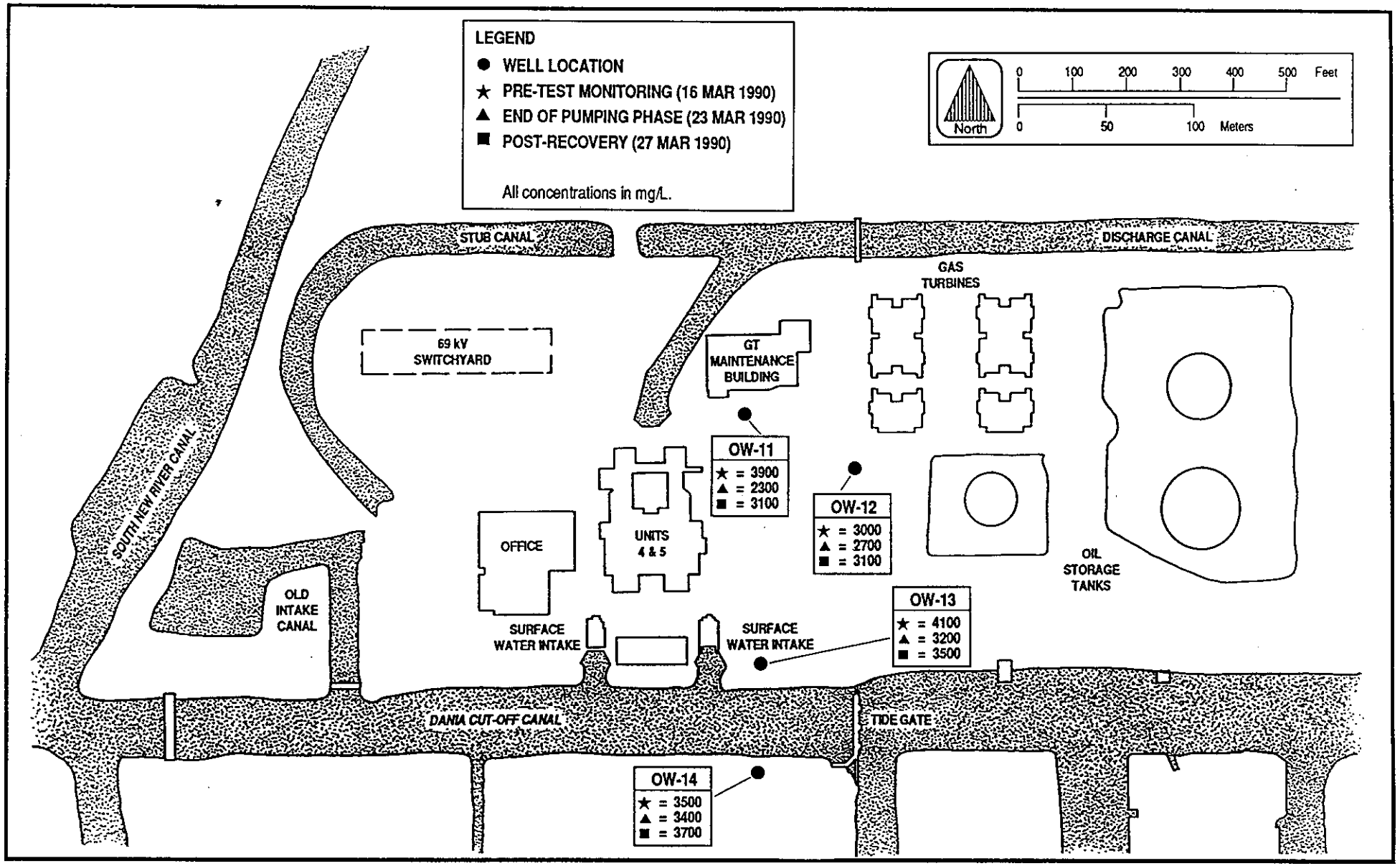

Figure 4-9 CHLORIDE CONCENTRATIONS DURING THE PRE-TEST, PUMPING, AND POST-RECOVERY PHASES OF THE APT FOR OBSERVATION WELLS SCREENED IN THE 40 TO 50 FT INTERVAL

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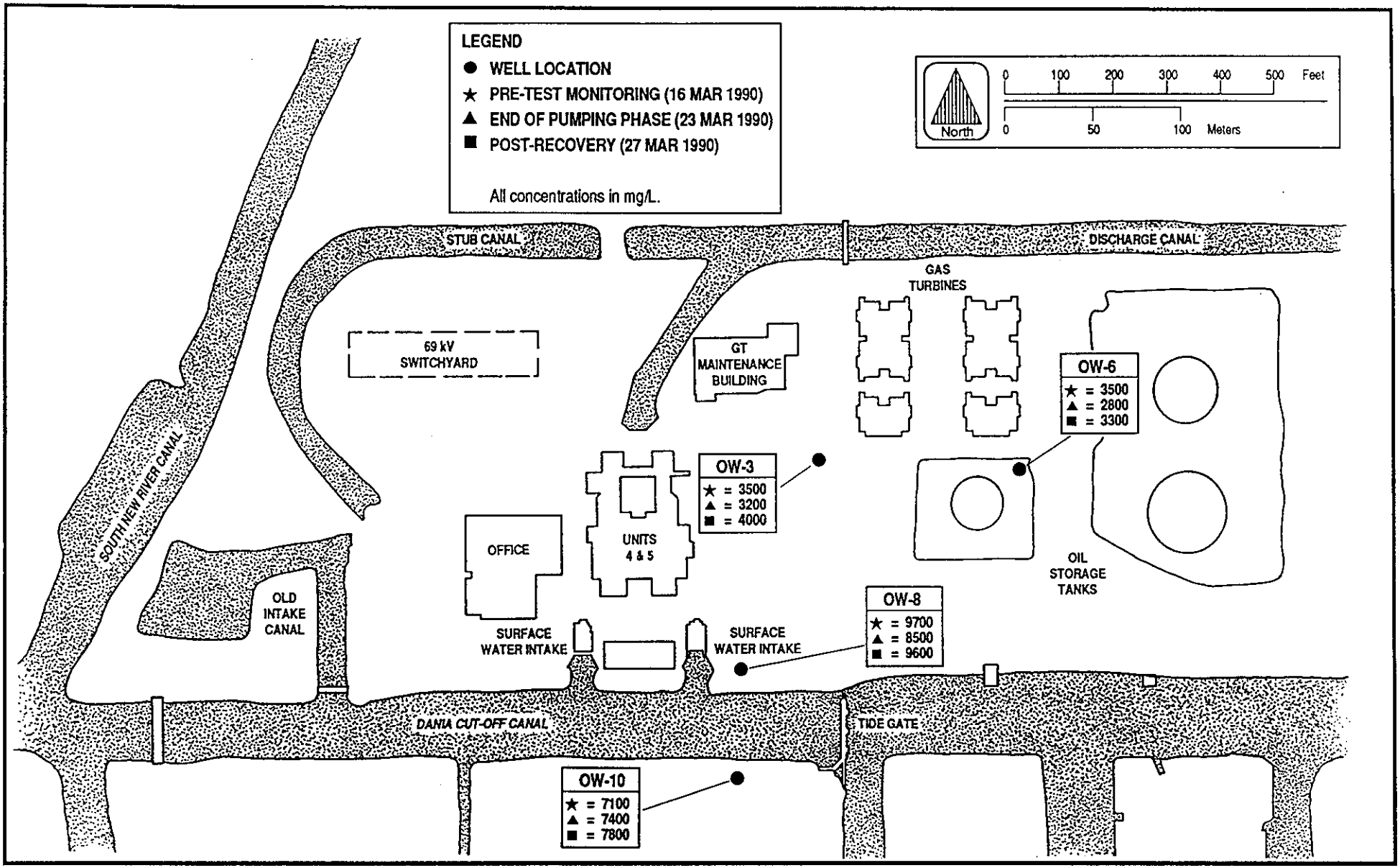

Figure 4-10 CHLORIDE CONCENTRATIONS DURING THE PRE-TEST, PUMPING, AND POST-RECOVERY PHASES OF THE APT FOR OBSERVATION WELLS SCREENED IN THE 75 TO 95 FT INTERVAL

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FPL

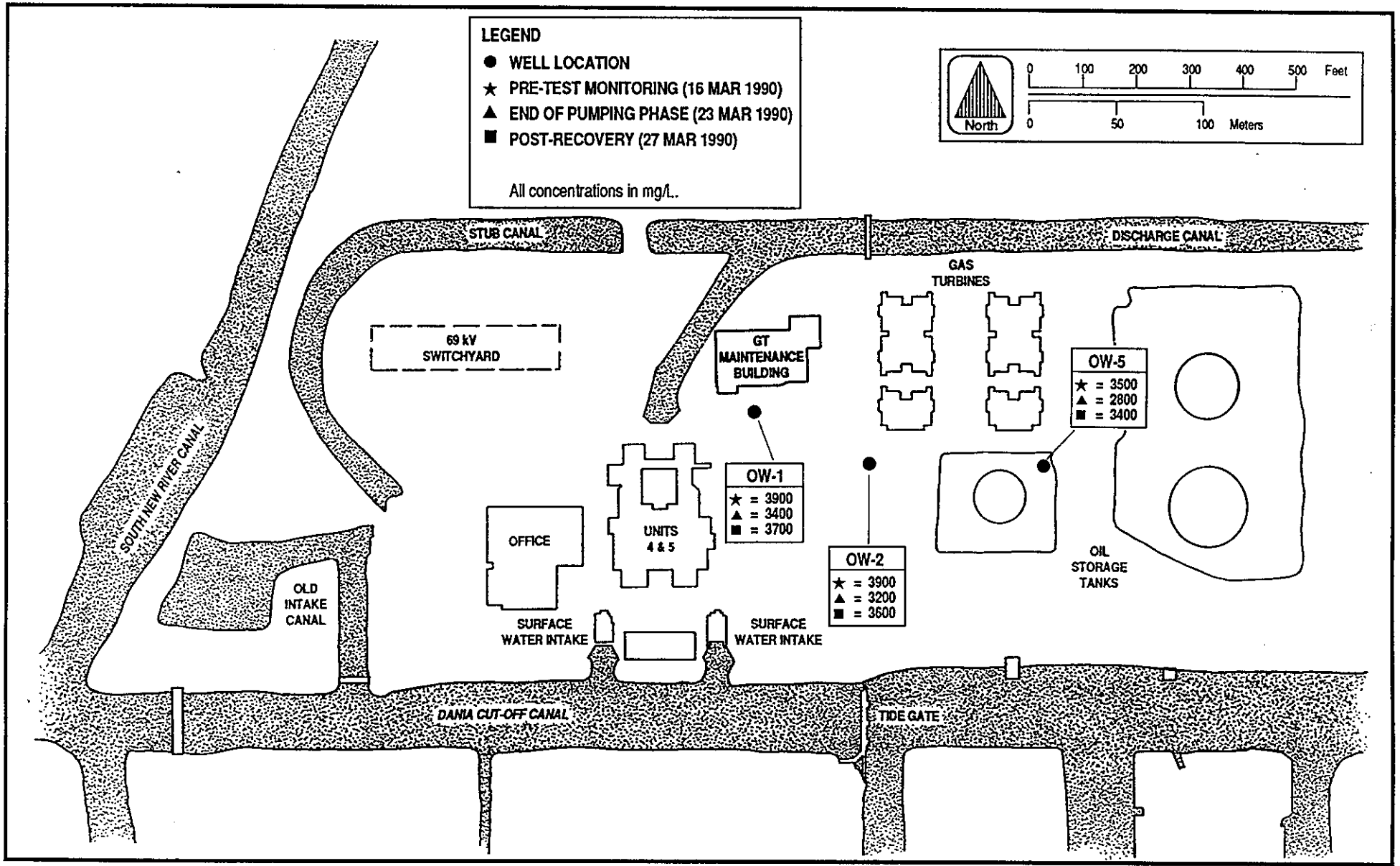

Figure 4-11 CHLORIDE CONCENTRATIONS DURING THE PRE-TEST, PUMPING, AND POST-RECOVERY PHASES OF THE APT FOR OBSERVATION WELLS SCREENED IN THE 125 TO 150 FT INTERVAL

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Table 4-2. Water Quality Data for Production Well Discharge During the Aquifer Performance Test

Date	Time	Temperature (°C)	Salinity (ppt)	Conductance (umho/cm)
3/20/90	1130	26.0	4.80	8800
	1230	25.5	5.00	9000
	1330	26.0	5.10	9200
	1500	26.5	5.40	9700
	1600	26.0	5.30	9700
	1700	26.0	5.30	9600
	1800	26.0	5.40	9700
	1900	25.0	5.30	9600
	2000	25.5	5.40	9700
3/21/90	0045	25.0	5.25	9250
	0350	26.0	5.20	9200
	0815	25.0	5.30	9400
	1115	26.5	5.40	9800
	1400	26.5	5.40	9900
	1530	26.1	5.50	9900
	1845	26.0	5.50	9900
	2326	25.5	5.50	10000
3/22/90	0238	25.5	5.80	10000
	0500	26.0	5.50	9950
	0944	26.0	5.80	10100
	1200	26.7	5.80	10200
	1400	26.6	5.90	10400
	1600	26.5	5.90	10400
	1720	26.0	5.90	10300
	1925	25.3	6.00	10600
	2132	25.5	6.00	10750
	2355	25.5	6.00	10700
3/23/90	0540	25.5	6.10	10800
	0817	25.5	6.00	10300
	1010	27.0	6.10	11000

OW-9, and OW-14. Two possible explanations for these inconsistencies are presented below.

1. Field measurements were performed with a YSI Model 33 SCT meter. Proper operation of this meter requires red-line adjustment, followed by setting the temperature knob to the field-measured temperature of the sample. These procedures were followed during water quality sampling at the Lauderdale Plant site. However, no calibration of the meter was performed using calibration standards with known conductivity values, as no adjustment of the meter is possible for deviation of reported conductivities from known conductivity standards. Therefore, the possibility exists erroneous conductivity data could have been collected and recorded in the field. Pace Laboratories,Inc., the analytical subcontractor for the chloride analyses, ran a quality control check which indicated no erroneous chloride concentrations were reported.

2. A second possible explanation for the inconsistencies between chloride concentrations and conductivity measurements is additional ions contributing to the conductivity values measured during the pumping phase of the APT. The Biscayne aquifer is a carbonate aquifer system, with abundant calcium and magnesium in solution which would affect the measured conductivity values. This would be particularly true for highly mineralized water derived from lower intervals in the aquifer. Additionally, the discharge water from the APT had a distinct sulfide odor, indicating potentially a reducing environment exists underlying the site. The peat horizon underlying the site would be a source of carbon and iron, which when reduced would provide dissolved ions to the aquifer and increase groundwater conductivity.

In summary, water quality in the Biscayne aquifer is influenced by water quality in the Dania Cut-off Canal and the Discharge Canal, which are both

tidally influenced and brackish. During the APT conducted at the site, chloride concentrations decreased in all observation wells located on the Lauderdale Plant site, and increased following termination of the pumping phase of the APT. Based on these data, there is no indication pumpage of the requested groundwater use allocation by FPL will cause adverse water quality impacts to the resource or legal existing users.

5.0 REFERENCES

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APPENDIX A

CORRESPONDENCE ASSOCIATED WITH REQUEST FOR A WATER USE PERMIT

P. O. Box 078768, West Palm Beach, FL 33407-0768
6001 Village Blvd.

FPL

June 27, 1989 HAND DELIVERED

Mr. Steve Lamb
Water Use Division
Department of Resource Control
South Florida Water Management District
P. O. Box 24680
West Palm Beach, Florida 33416-4680

Re: **Request for Water Use Permit**
Lauderdale Power Plant
Broward County, Florida

Dear Mr. Lamb:

Enclosed, please find four (4) copies of an application and supplemental information for the above-referenced water use permit application.

Please contact Winifred Perkins at (407) 640-2023 with any questions concerning the application.

Sincerely,

Martin A. Smith, Ph.D.
Acting Manager
Environmental Permitting and Programs
Florida Power & Light Company

MAS:WGP:eh

Enclosures

bcc: D. N. Arnott - PFL
R. H. Hix - JEN/EDO
W. G. Perkins - JEN/EDO
P. J. Diehl - JPE/EDO
P. A. Wilson - PRS/GO
C. D. Henderson - JEN/EDO
P. Cunningham - HBGS
J. Dunbar - PRS/GO

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
WEST PALM BEACH, FL. 33416-4680
TELEPHONE (305) 686-8800 TOLL FREE 1-800-432-2045

(FOR USE BY SFWMD PERSONNEL ONLY) DATE REC'D: APPL. NO.

APPLICATION TO SOUTH FLORIDA WATER MANAGEMENT DISTRICT FOR A PERMIT FOR
(X) WATER USE
( ) SURFACE WATER MANAGEMENT (DRAINAGE) ([ ] CONCEPTUAL APPROVAL)
( ) UTILIZATION OF DISTRICT WORKS
( ) MODIFICATION OF EXISTING PERMIT NUMBER: _____

OWNER'S NAME: Florida Power & Light Company (Attention: Dr. Martin A. Smith)
ADDRESS: P.O. Box 078768
CITY: West Palm Beach STATE: Florida ZIP: 33407 PHONE: (407) 640-2030
DEVELOPER'S NAME: Not Applicable
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____ PHONE: _____

PROJECT ENGINEER: Not Applicable
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____ PHONE: _____

PROJECT NAME: Lauderdale Power Plant
LOCATION: Fort Lauderdale (CITY) Broward (COUNTY) 30 (SECTION(S)) 50S (TOWNSHIP(S)) S 42E (RANGE(S)) E

PURPOSE: Power Supply (RESIDENTIAL, AGRICUL., PUB. WTR. SUPPLY, ETC.) ZONING: Industrial

PROJECT SIZE: 391 ACRES

PROJECT IS: ( ) PROPOSED (X) EXISTING ( ) TO BE MODIFIED

IF THIS APPLICATION IS FOR WATER USE, WHAT IS THE SOURCE OF WATER? 2 brackish water wells from groundwater

IF THIS APPLICATION IS FOR DRAINAGE, WHERE WILL THE WATER DISCHARGE? Not Applicable

IF THIS IS A REQUEST TO MODIFY AN EXISTING PERMIT, DESCRIBE THE REQUESTED CHANGES. Not Applicable

IF THIS APPLICATION INCLUDES USE OF DISTRICT WORKS, DESCRIBE THE USE: Not Applicable
(CULVERT, BOAT DOCK, FENCE, BEAUTIFICATION, ETC. NOTE! INCLUDE CANAL NAME)

NOTE! IN ALL CASES AN ACCURATE LOCATION MAP WITH THE PROJECT BOUNDARIES CLEARLY SHOWN MUST BE SUBMITTED. ALSO, IF THIS IS A PROPOSED OR EXPANDED PROJECT SUBMIT A CURRENT AERIAL PHOTOGRAPH SHOWING THE PROJECT BOUNDARIES.

RULES 40E-2.101, 40E-4.101, and 40E-6.101 F.A.C. SPECIFY DATA REQUIREMENTS TO CONSTITUTE A COMPLETE PERMIT APPLICATION. A LIST OF THE REFERENCED RULES IS PROVIDED ON THE BACK OF THIS FORM. ANY NECESSARY CHECKLIST MAY BE OBTAINED FROM THE DISTRICT AT THE ABOVE ADDRESS.

_____ DATE: _____
OWNER'S SIGNATURE (IF NOT THE OWNER, CERTIFY BELOW)

I HEREBY CERTIFY THAT I AM AN AUTHORIZED AGENT OF THE OWNER:

6/27/89

Martin A. Smith, Ph.D. TITLE: Acting Manager Environmental Permitting & Program

NOTE! MANY PROJECTS ALSO REQUIRE APPROVAL BY OTHER STATE AND FEDERAL AGENCIES. SFWMD INFORMS SOME AGENCIES OF PERMIT APPLICATIONS RECEIVED BUT THE RESPONSIBILITY FOR REQUESTING APPROVALS RESTS WITH THE OWNER.

Checklist for Industrial Water Use

A. GENERAL

1. **Describe the purpose of the application.**

The purpose of this application is to obtain a Consumptive Use Permit for two on-site water supply wells at Florida Power & Light (FPL) Company's Lauderdale Plant at Southwest 42nd Street, Ft. Lauderdale, Florida. This Consumptive Use Permit will supplement an existing Consumptive Use Permit for off-site wells (Permit No. 06-00503-W issued 15 December 1983 and valid for 10 years) owned and operated by the FPL Lauderdale Plant. Water obtained from the on-site wells described in this permit application will be used to supply auxiliary cooling water for plant operations.

FPL's Lauderdale Plant has been in existence since 1926. An application for a Consumptive Use Permit of groundwater was filed with the Central and Southern Florida Flood Control District (CSFFCD) on February 26, 1976. However, no permit was issued by the district at that time. (Please see Appendix 1 for information pertaining to the 1976 application.)

2. **Indicate the quantity of water applied for as an annual allocation (gallons/year).**

3.1536 Billion gallons/year (BGY).

3. **Explain briefly the derivation of the requested allocation.**

Water withdrawal equals 3000 gallons/minute (gpm) per well.

Permit requested for 2 wells so:

3000 gpm x 60 minutes/hour x 24 hour/day = 4.32 million gallons/day (MGD) per well

4.32 MGD x 2 wells = 8.64 MGD

8.64 MGD x 365 days/year = 3.1536 BGY

4. **Indicate the maximum daily pumpage associated with the projected average day pumpage.**

The maximum daily pumpage is not anticipated to exceed the projected average day pumpage.

5. **Indicate the maximum day to average day demand ratio used in calculating the projected maximum day pumpage.**

   Not applicable.

6. **Designate the future year in which the quantity of water to be allocated will be used.**

   Consumptive water use will commence upon permit receipt and FPL requests that the use be permitted for the maximum time allowed by regulations.

7. **If new pumps, wells, or culverts are needed, describe the reason for construction and placement of each.**

   No new pumps, wells, or culverts will be needed at the facility.

8. **Indicate the source of water.**

   The source of water will be the Biscayne Aquifer.

9. **Indicate the date on which the use of water was initiated or is proposed for initiation and the duration of the use of water.**

   Water use was initiated following construction of Wells 4B (1955) and 5B (1956) and has continued to present. The FPL facility will continue to operate for an indefinite period of time.

B. LOCATION

1. **Provide a location map.**

   See attachments 1A and 1B.

2. **Provide a site map.**

   See attachments 2A and 2B.

C. FACILITIES

1. **Describe all existing and proposed wells by completing Table A for each well.**

   See Table A - Supplemental Information.

2. **Describe all existing and proposed surface water pumps by completing Table B for each pump.**

   Application is for groundwater withdrawal only.

3. Describe all existing and proposed irrigation withdrawal culverts by completing Table C for each culvert.

- All irrigation groundwater withdrawals are obtained from a separate irrigation well with a General Use Permit (No. 88-137-W) issued 21 April 1988 from SFWMD.

4. Describe existing and proposed water treatment plants, plant capacity, treated water storage capacity and in-plant losses.

Not applicable - raw water is used for auxiliary cooling only (i.e., no treatment required).

5. Describe existing fire-flow capability and standby capacity.

Not Applicable - water source for which permit is being requested is not used for fire-flow capability.

6. Describe the existing pump operation schedule.

There is one pump per well which is the primary pump - no secondary or standby pumps exist. The pumps run 24 hours per day at full capacity unless they are shut down for maintenance purposes.

7. Describe existing legal right to proposed well or wellfield sites.

FPL owns the property upon which the two wells are located.

D. PROCESS

Describe the process and how water is used in the process.

The FPL Lauderdale Plant consists of two steam driven electric generating units. Water from wells 4B and 5B are used for auxiliary cooling water of mechanical equipment (bearings, fans, blowers, preheaters, etc.). The only modification to water quality prior to discharge is an approximately 10°F rise in temperature.

E. WATER USAGE

Fill out Table D using the most recent 12 months of pumpage records.

In accordance with the 1976 application permit to the CSFFCD, no meters were installed on wells 4B and 5B because no fresh water is withdrawn from the aquifer. The water produced from the wells is brackish (see item F - Water Problems below). The pumps in each of the two wells have a maximum capacity of 3000 gpm each and run at full capacity 24 hours per day producing approximately 4.32 MGD per well.

F. WATER PROBLEMS

Explain any water problems currently experienced within one mile of the project site.

Groundwater quality in the vicinity of the FPL facility is brackish with chloride concentrations ranging from 932 to 1547 milligrams per liter (mg/L). Elevated chloride concentrations result from the close proximity to the facility of tidally-influenced, brackish water canals (see Attachment 2A).

G. WASTE WATER DISPOSAL

Describe the manner in which waste water is disposed.

Waste water is released into the Discharge Canal-Pond System at the discharge point indicated in Attachment 2B.

H. WATER CONSERVATION

Describe any water conservation techniques or methods of water use optimization.

The system design reflects good engineering practice for providing efficient heat removal from the equipment. After use, groundwater is recycled to the surface water environment on site.

I. IMPACTS

Document any impact on other users, the saline water interface, adjacent water bodies, land uses, or pollution sources that the proposed withdrawals may have.

This water use is not expected to affect any domestic, irrigation, or public supply wells. Adjacent water bodies include the Dania Cutoff Canal, South New River Canal, and the Discharge Canal-Pond System, which show more variation in water level from tidal fluctuations than from the effects of groundwater withdrawal at the facility. Any effect to the saline water interface should be localized in the immediate vicinity of the FPL site. No land use or pollution sources should be affected by this water use. The rate of sinkhole formation is not expected to change.

J. PRESENT AND PROPOSED ZONING

Submit evidence of compatible zoning.

Appendix 2 presents a discussion of the Broward County zoning ordinance and a map of zoning classifications in the vicinity of the FPL Lauderdale site.

K. ADJACENT USES OF WATER

Submit the names and complete addresses of adjacent owners that are withdrawing water from either groundwater or surface water within 300 feet of the wells or pumps for which this permit is required.

The wells for which this permit is requested are not within 300 feet of the FPL property boundary; therefore, no other sources of water are within 300 feet of these wells.

L. PROPOSED SURFACE WATER MANAGEMENT SYSTEM

If the Applicant proposes a new surface water management system, then an evaluation of the impact of the proposed withdrawal on the lake system and, conversely, the impact of the control elevations of the surface water management system on the withdrawal and water availability at the project site must be submitted.

No new surface water management system is being proposed at this time.

TABLE A

DESCRIPTION OF WELLS

WELL NO.	4B	5B		
Map Designation	4B	5B		
Existing/Proposed	Existing	Existing		
Diameter (Inches)	20	20		
Total Depth	55'	55'		
Cased Depth	55'	55'		
Screened Interval	No information	No information		
Pumped or Flowing	Pumped	Pumped		
Working Valve If Artesian (Yes/No)	--	--		
Pump Manufacturer and Model No.	Peerless 18MA	Peerless 18MA		
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	Centrifugal (vertical turbine)			
Intake Depth (NGVD)	-22.5' NGVD	-22.5' NGVD		
Pump Capacity (GPM at FT of head at PSI)	3000 gpm at 95 ft of head	3000 gpm at 95 ft of head		
Active (Yes/No)	yes	yes		
Year Drilled	1955	1956		
Type of Meter	No meter exists	No meter exists		
Florida Plane Coordinates	631500N 762900E	631500N 763100E		

February 26, 1976

Mr. G. E. Dail, Jr., Director
Regulations Division
Central and Southern Florida
Flood Control District
P. O. Box V
West Palm Beach, Florida 33402

Dear Mr. Dail:

Re: Application for Water Use Permit
Lauderdale Power Plant, Broward County
FPL File No. PEL-J2-5

Enclosed are permit application numbers 21836, 21837 and 21839 for uses of water at Florida Power & Light Company's Lauderdale Power Plant. The water uses involve withdrawals of water from the Dania Cut-Off Canal, groundwater from two on-site cooling water wells, and raw water from three off-site wells.

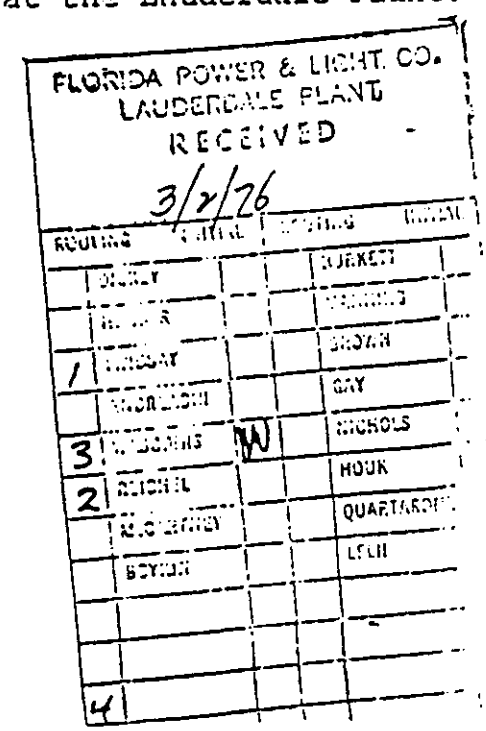
A water use permit is required by Central and Southern Florida Flood Control District Rules and Regulations pursuant to the Florida Water Resources Act of 1972. Included with the application is supplemental information further describing the water use at the Lauderdale Plant.

Sincerely,

W. Samuel Tucker, Jr., Manager
Environmental Affairs

WST:JDB
Enc.

bcc: J. W. Dickey
A. D. Schmidt/R. A. Watson



APPENDIX 2

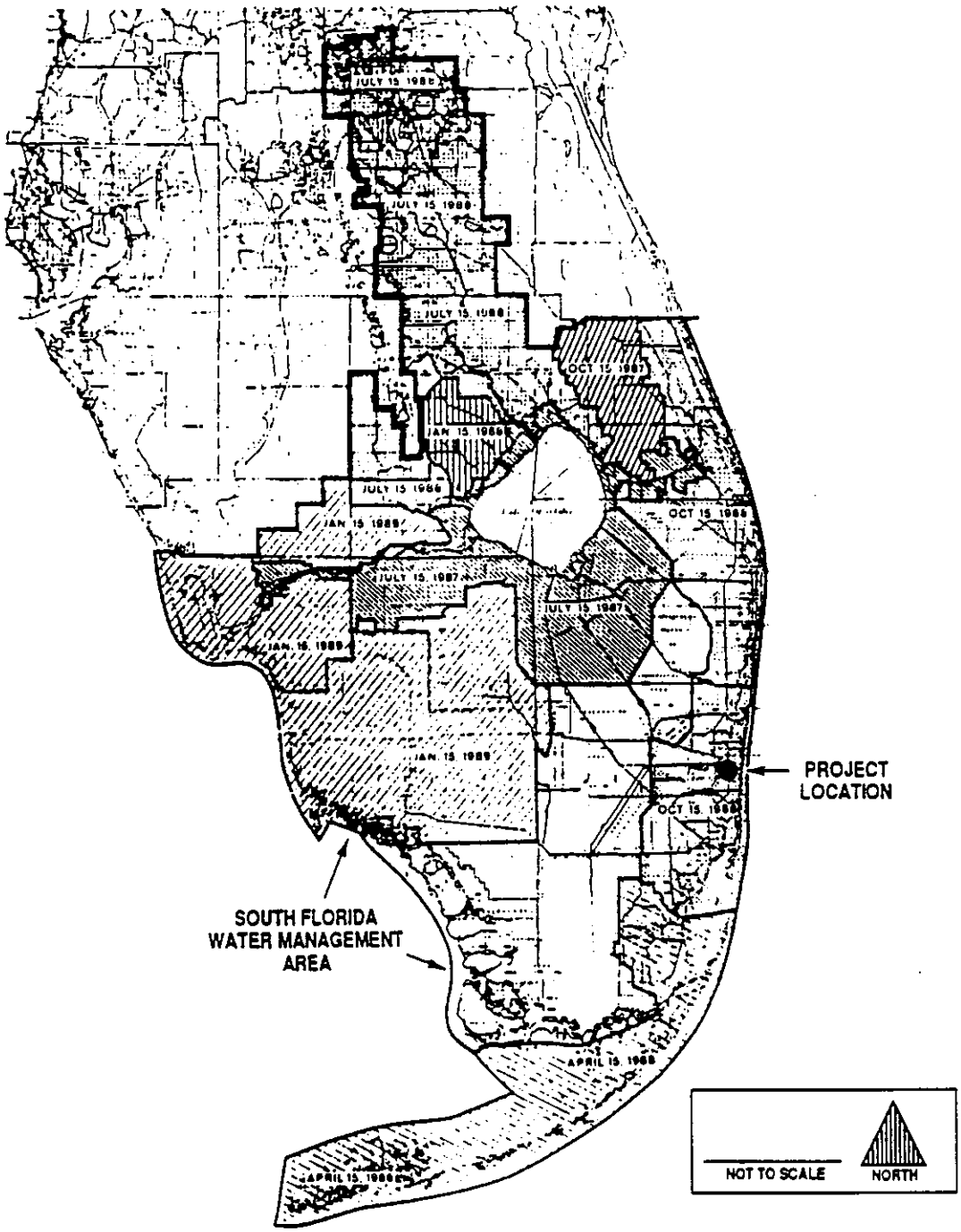
SUMMARY OF BROWARD COUNTY

ZONING ORDINANCE IN THE VICINITY

OF THE FPL LAUDERDALE SITE

The FPL site is located in unincorporated Broward County. Development is generally regulated by the Zoning Ordinance of the Code of Broward County, Florida; the Unincorporated Area Land Use Plan adopted on September 4, 1979, and amended April 29, 1980; and associated land use plan maps.

Most of the proposed site is zoned M-3: General Industrial District. A portion of the site along the northeastern boundary is zoned M-1: Light Industrial District (See attachment 3A). These districts are two of six industrial categories in the Zoning Ordinance, ranging from M-1A to M-5. In general, the M-1A District (Industrial Park) was developed for research development and the manufacture of small products. Districts M-1, M-2, M-3, M-4, and M-5 allow progressively heavier uses. The purpose of the M-3 and M-1 districts, as well as uses permitted and prohibited, height, plot size, and other performance criteria, are found in the zoning descriptions. The existing power plant and associated facilities are located in District M-3. The M-1 district contains a portion of the cooling pond. The Broward County Office of Planning has determined that the existing zoning of the Lauderdale site is consistent with power plant uses.

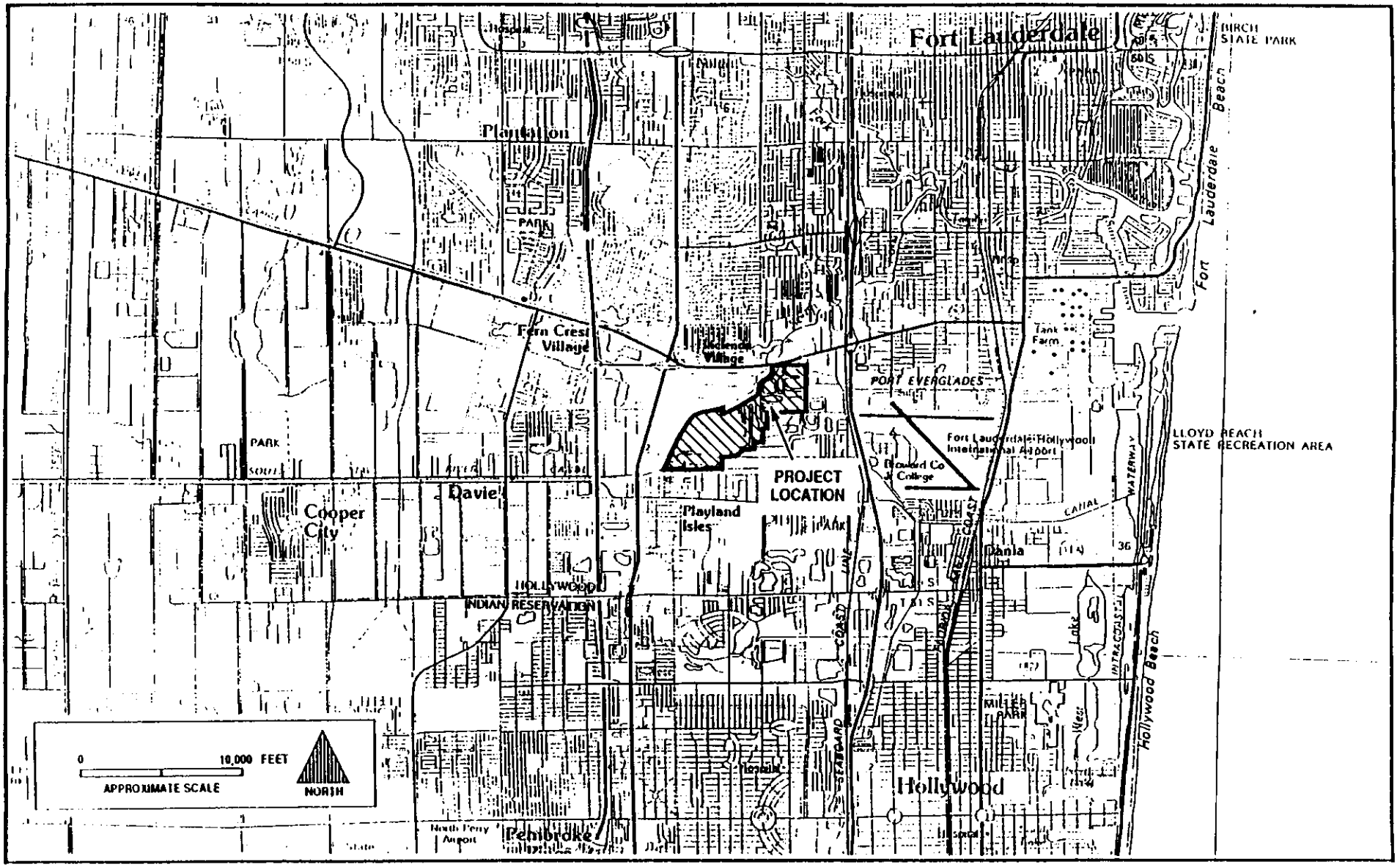


Attachment 1A PROJECT LOCATION MAP

SOURCE: SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Consumptive Use Permit Application

FPL

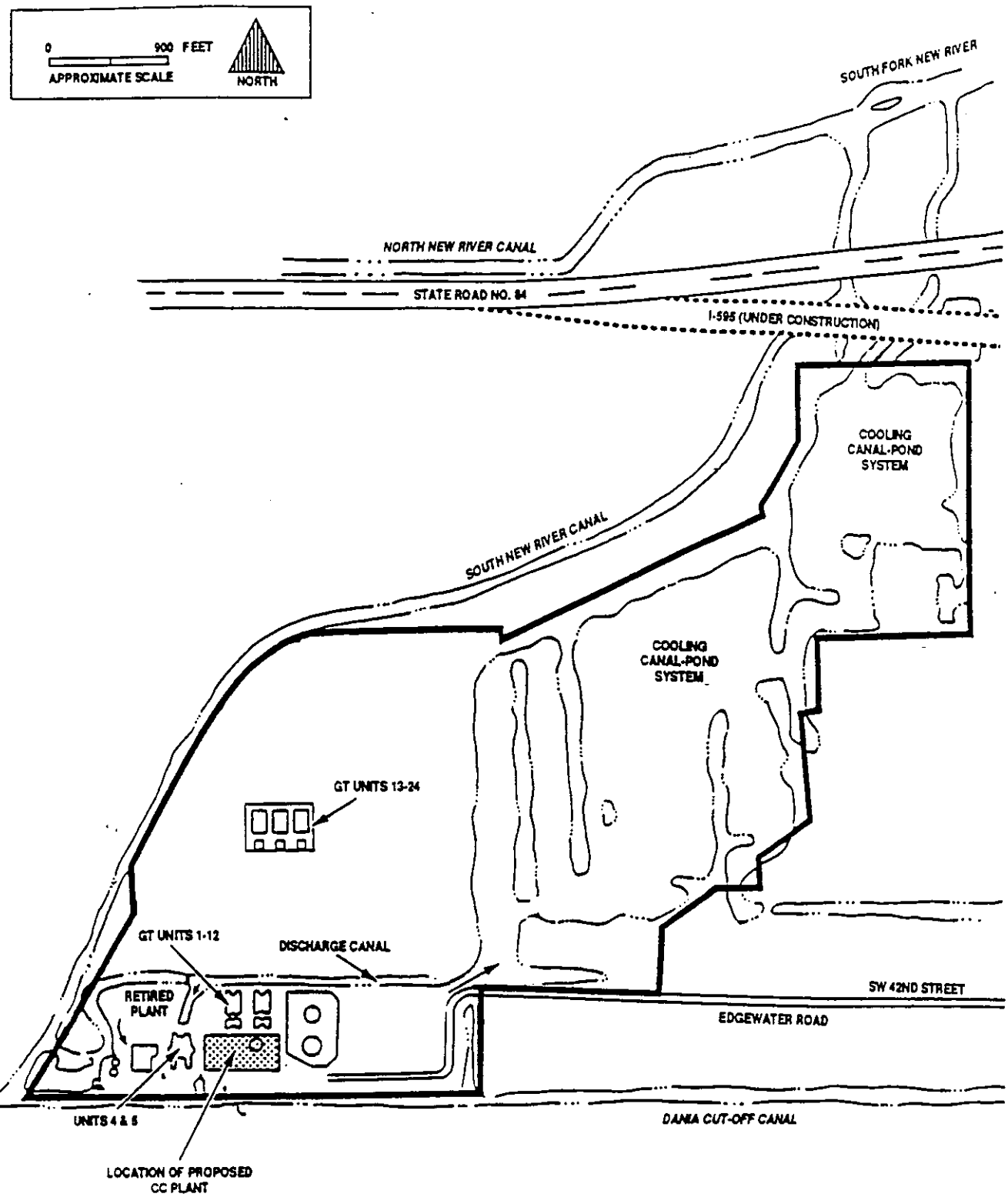


Attachment 1B PROJECT LOCATION MAP

SOURCE: USGS, 1981.

Consumptive Use Permit Application

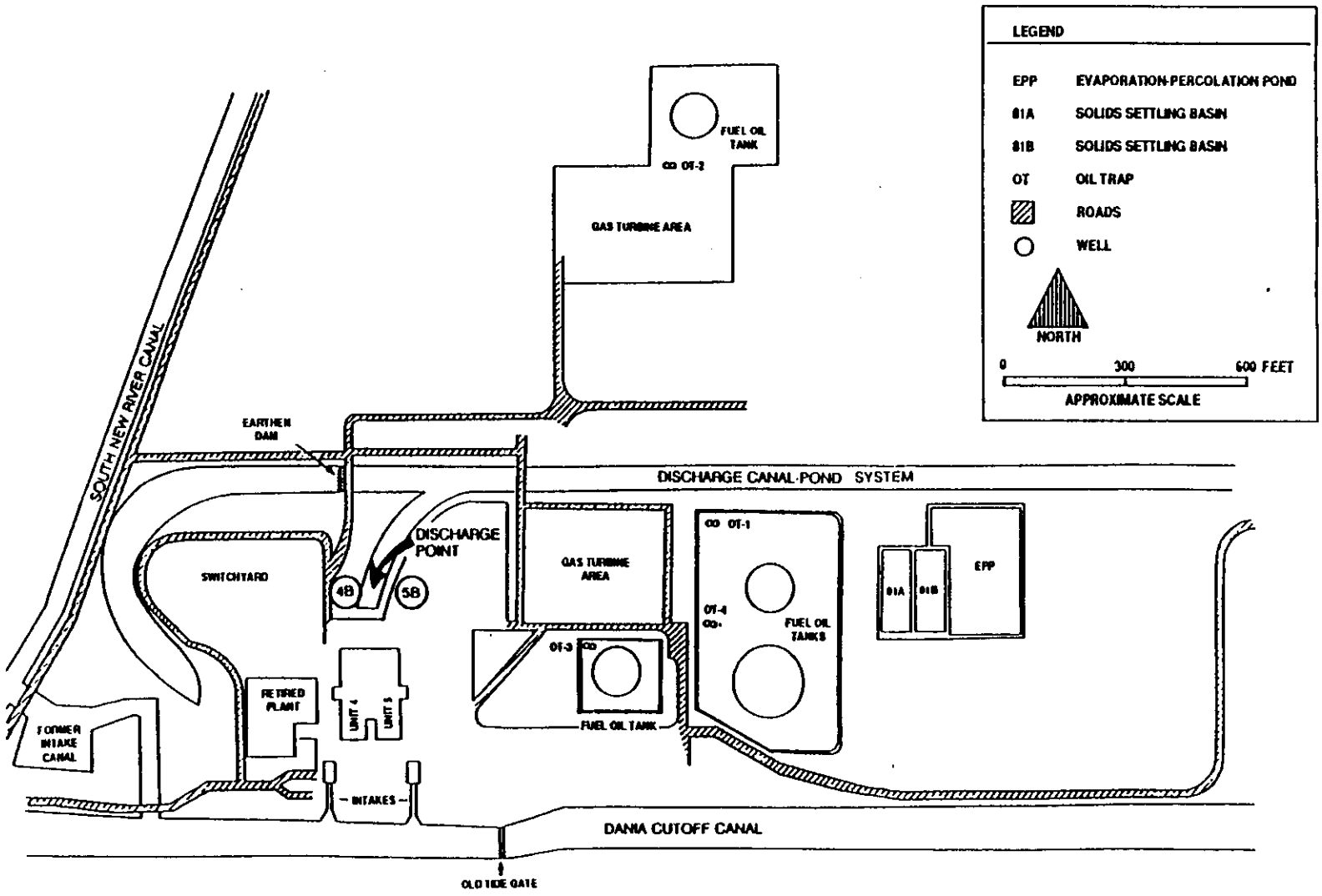
FPL



Attachment 2A SITE LOCATION MAP
SHOWING PROPERTY BOUNDARIES

Consumptive Use Permit Application

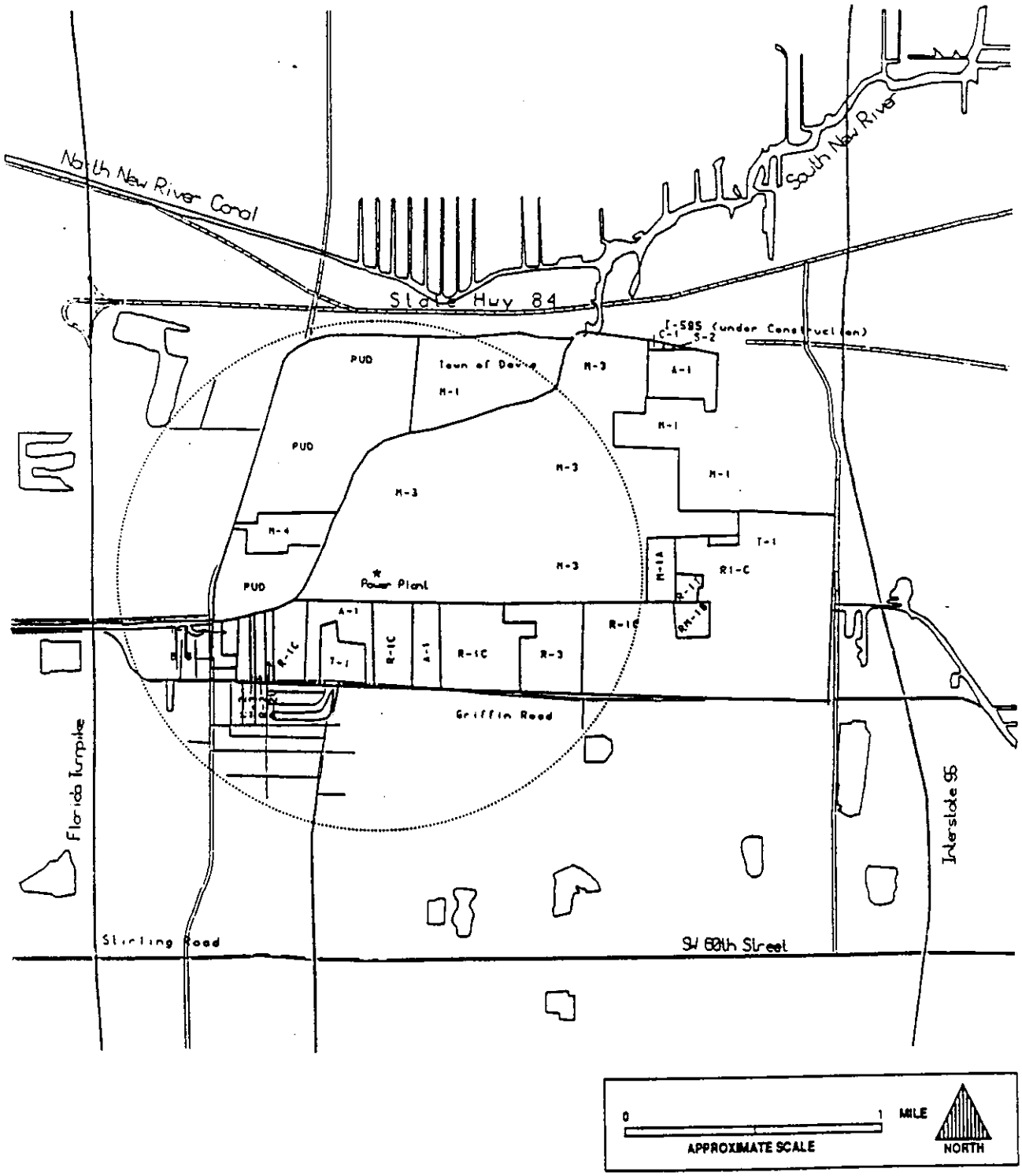
FPL



Attachment 2B SITE LOCATION MAP SHOWING WELL LOCATIONS AND DISCHARGE POINT

Consumptive Use Permit Application

FPL



Attachment 3A ZONING MAP OF PROPOSED SITE AND ADJACENT PROPERTIES

Consumptive Use Permit Application

FPL

P. O. Box 078768, West Palm Beach, FL 33407-0768
6001 Village Blvd.

FPL

Certified Mail
Return Receipt Requested

July 18, 1989

Mr. Steve Lamb
Water Use Division
Department of Resource Control
South Florida Water Management District
P. O. Box 24680
West Palm Beach, FL 33416-4680

Re: **Permit Processing Fee**
Water Use Permit Numbers:
06-00503-W - Lauderdale Plant
35-00007-W - Ft. Myers Plant

Dear Steve:

On June 27, 1989, when we hand delivered two requests to modify the above-referenced permits, Florida Power and Light Company (FPL) did not realize that fees were required to process these applications. After our meeting, we received a telephone call from your office advising us of the permit fee requirements. As a result of this, FPL has prepared and enclosed two checks in the amount of $875.00 each for the permit processing fees.

Check No. 12352 covers the Lauderdale Plant and Check No. 12375 covers the Fort Myers Plant.

Please feel free to call me at 640-2023 if you have any questions concerning this matter.

Sincerely,

Winifred Perkins

Winifred G. Perkins
Senior Environmental Coordinator

WGP:eh

Enclosures

Protecting South Florida's Water Resources for 40 Years
1949-1989

South Florida Water Management District

P.O. Box 24680 • 3301 Gun Club Road • West Palm Beach, FL 33416-4680 • (407) 686-8800 • FL WATS 1-800-432-2045

August 18, 1989

RECEIVED
AUG 2 3 1989
Env. Affairs

Ms. Winifred Perkins
Florida Power and Light
P. O. Box 078768
West Palm Beach, Fla. 33407-0768

Dear Ms. Perkins:

Subject: Application No. 890720-12
Project: Lauderdale Power Plant
location: Section 30, Township 50S, Range 42E
County: Broward

A preliminary review of the above project indicates that additional information will be required in order to complete the evaluation, pursuant to Rule 40E-1.603, Florida Administrative Code (FAC). The District does not grant conceptual water use permits. Please complete all parts of the following five questions.

1. Florida Power and Light is presently permitted to withdraw 432,000 gallons per day to meet water demands for the pretreat system at the above referenced project. In the application that was submitted, it was indicated that FPL requests 8.6 MGD to supply auxiliary cooling water for plant operations. A review of existing information in the file indicates that the cooling water and water for the screen wash system is obtained from the on-site wells and the Dania Cut-off canal. Please provide past pumpage records, if available, from the Dania Cut-off canal, the wells supplying the cooling water, and the wells supplying the pretreat system.

2. We can modify the existing permit to incorporate the canal withdrawals at the Lauderdale Power Plant. In order to do this, please indicate the quantity of water that is required for this project for the pretreat system, the screen wash system, the cooling system, and any other uses within the plant not supplied by a utility. Please also indicate source(s) of water for each of these systems and include an explanation regarding the derivation of the requested allocation.

3. Please supply chloride data from wells 4B, 5B, 8, 9, the discharge canal and the Dania Cut-off canal.

4. Please provide an operation schedule for the plant's use of all water. The schedule should include the rotation schedule for the wells and the canal which is supplying water for the cooling purposes of the plant. Please also indicate how and where the water is disposed of after leaving the plant.

5. Please provide a map showing the location of the canal intake pumps.

6. Please complete the enclosed Table B for all canal intake pumps.

7. FPL, in the previous application, had requested to use the on-site wells to supply 4.3 MGD on an annual basis for cooling purposes. At the time of the previous permit issuance, it was determined that this withdrawal did not need a permit. In this application it was requested to use the on-site wells to supply 8.6 MGD for cooling purposes. Due to the location of the project, District staff is concerned that the increased withdrawals from the on-site wells may impact existing legal users. Prior to receiving approval, the applicant must provide the District with reasonable assurance that the increase in withdrawals from 4.3 to 8.6 MGD will not cause significant movement of the saline interface. In order to meet these criteria, staff requests that the applicant conduct a site-specific hydrogeologic study. The report should demonstrate that the proposed withdrawals will not cause inland movement of the saline interface. Although the project is surrounded by saline canals, the cone of influence associated with the withdrawals may extend beneath the canals and potential impact existing users located across from the project site.

When the preceding information has been provided, we will continue the review of the application for water use. In accordance with Rule 40E-1.603(5) FAC, if a response is not received within 90 days, this application may be processed for denial, if not withdrawn by the applicant. If you have any questions, please contact Mr. Jeff Giddings of this office (ext. 6939).

Thank you for your continuing cooperation.

Sincerely,

Greg F. Rawl, P.G.
Supervising Professional
Water Use Division
Resource Control Department
/jg
Enclosures

P. O. Box 078768, West Palm Beach, FL 33407-0768
6001 Village Blvd.

FPL

November 7, 1989

Mr. Greg F. Rawl, P. G.
South Florida Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

RE: **Application No. 890720-12**
Project: Lauderdale Power Plant
Location: Section 30, Township 50S, Range 42 E
Broward County, Florida

Dear Mr. Rawl:

As requested in your letter of August 18, 1989, the following is Florida Power & Light Company's (FPL) response regarding Items 1 through 7 of your request for additional information.

Item 1: The only records of past pumpage rates available are for thruput of the pretreatment system. It should be noted that this data is submitted to the District monthly. The last eighteen months worth of data is included as Attachment A. However, Attachment D indicates that the Auxiliary Cooling System pumping occurs around the clock throughout the year to support plant equipment, and the circulating water pumps run during unit operation.

Item 2: This relates to permitting for surface water withdrawals. In FPL's June 27, 1989 application we did not request a water use permit for the typically brackish Dania Cutoff Canal surface water withdrawals. This surface water is not consumed but rather is returned to the surrounding canal system. Surface water in the vicinity of the Plant is typified by chloride levels ranging from 856-4119 ppm. A full explanation of the water systems, uses, and withdrawal sources is contained in FPL's original 1976 application to the Central and Southern Florida Flood Control District. A copy of this application is enclosed as Attachment-B. Minor changes to the original application are shown, in handwritten comments.

It should be noted that a Site Certification Application for the Lauderdale Repowering Project will be submitted latter this year. This application will address the future surface water withdrawals of this project as described in the Plan of Study previously reviewed by the District.

Item 3: Chloride data is recorded only for Wells 8, 9, 4B, and 5B and the Dania Cutoff Canal, Please see Attachment-C.

Item 4: The schedule for the plant's pumping operation and the final discharge of this water can be found in Attachment-D.

Item 5: A map showing the location of the intake pumps can be found in Attachment-E.

Item 6: Please find the completed Table B for the canal intake pumps in Attachment-F.

Item 7: In February, 1976, FPL requested a Water Use permit from the District, please see Attachment-B. At the time the District reviewed this permit application, it was determined by the District that the requested withdrawal did not require a permit, as stated in the District's August 18, 1989 correspondence. In the Supplemental Information submitted with the 1976 application, FPL indicated that the maximum potential withdrawal of water was 8.64 MGD, therefore no modification to increase pumpages from groundwater is requested in FPL's 1989 Water Use Permit Application No. 890720-12 for the Lauderdale Power Plant. In reviewing the request to perform a hydrogeologic study, FPL does not believe it is necessary to perform such a study since the withdrawals will not increase above the 1976 application pumpage allocations.

If you have any questions or comments concerning this matter, please feel free to call Mark McLean at (407) 640-2018.

Sincerely,

Martin A. Smith, Ph. D.
Manager
Environmental Permitting and Programs

MAS[redacted]jlf

Enclosures

bcc: D. H. Arnott - PFL
P. J. Diehl - JPE/EDO
C. Dorn - PFL
J. Dunbar - PRS/EDO
C. D. Henderson - JEN/EDO
R. H. Hix - JEN/EDO
D. Keightley - SEU/SED
K. F. Kosky - KBN
W. G. Perkins - JEN/EDO

bcc: D. H. Arnott - PFL
P. J. Diehl - JPE/EDO
C. Dorn - PFL
J. Dunbar - PRS/EDO
C. D. Henderson - JEN/EDO
R. H. Hix - JEN/EDO
D. Keightley - SEU/SED
K. F. Kosky - KBN
W. G. Perkins - JEN/EDO

ATTACHMENT — A

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: AUGUST, 19 89
6. TOTAL MONTHLY PUMPAGES: 2,383,200 GALLONS

DAY		DAY	
1	107000 GALLONS	16	84800 GALLONS
2	63500 GALLONS	19	59200 GALLONS
3	95300 GALLONS	20	33500 GALLONS
4	61900 GALLONS	21	33400 GALLONS
5	62300 GALLONS	22	45600 GALLONS
6	64200 GALLONS	23	71500 GALLONS
7	55800 GALLONS	24	69800 GALLONS
8	87400 GALLONS	25	82000 GALLONS
9	78400 GALLONS	26	138000 GALLONS
10	120000 GALLONS	27	116630 GALLONS
11	117300 GALLONS	28	113100 GALLONS
12	70800 GALLONS	29	125900 GALLONS
13	116100 GALLONS	30	152500 GALLONS
14	59800 GALLONS	31	127900 GALLONS
15	43300 GALLONS		
16	54200 GALLONS		
17	17800 GALLONS		

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER
Print or Type

SIGNATURE: Richard G. Piper DATE: 9/5/89

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: July, 19 89
6. TOTAL MONTHLY PUMPAGES: 2,007,100 GALLONS

DAY		DAY	
1	11300 GALLONS	16	161000 GALLONS
2	65100 GALLONS	19	73300 GALLONS
3	81300 GALLONS	20	27800 GALLONS
4	23100 GALLONS	21	64700 GALLONS
5	38300 GALLONS	22	58800 GALLONS
6	63400 GALLONS	23	20500 GALLONS
7	64000 GALLONS	24	72900 GALLONS
8	90400 GALLONS	25	39700 GALLONS
9	70600 GALLONS	26	29400 GALLONS
10	59100 GALLONS	27	60250 GALLONS
11	12400 GALLONS	28	80600 GALLONS
12	33700 GALLONS	29	93200 GALLONS
13	79200 GALLONS	30	33400 GALLONS
14	129500 GALLONS	31	77300 GALLONS
15	99100 GALLONS		
16	90600 GALLONS		
17	36720 GALLONS		

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER
Print or Type

SIGNATURE: Richard G. Piper DATE: 8/9/89

RECEIVED

JUL 17 1989

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: JUNE, 1989
6. TOTAL MONTHLY PUMPAGES: 1480900 GALLONS

DAY			DAY	
1	10800	GALLONS	16	75630	GALLONS
2	52300	GALLONS	19	70400	GALLONS
3	33300	GALLONS	20	81200	GALLONS
4	35900	GALLONS	21	71200	GALLONS
5	46000	GALLONS	22	75000	GALLONS
6	74500	GALLONS	23	54500	GALLONS
7	71200	GALLONS	24	54000	GALLONS
8	44300	GALLONS	25	12400	GALLONS
9	87000	GALLONS	26	27200	GALLONS
10	92800	GALLONS	27	89100	GALLONS
11	79600	GALLONS	28	57400	GALLONS
12	60400	GALLONS	29	34700	GALLONS
13	75600	GALLONS	30	58000	GALLONS
14	111500	GALLONS	31		GALLONS
15	101300	GALLONS			
16	68100	GALLONS			
17	72100	GALLONS			

NAME OF PERSON COMPLETING FORM: RICHARD PIPER
Print or Type

SIGNATURE: Richard Piper DATE: 7/14/89

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: MAY, 19 89
6. TOTAL MONTHLY PUMPAGES: 2,280,900 GALLONS

MAY			MAY	
1	51100	GALLONS	16	84700	GALLONS
2	97600	GALLONS	17	81090	GALLONS
3	34100	GALLONS	18	72800	GALLONS
4	90200	GALLONS	19	75100	GALLONS
5	62400	GALLONS	20	93300	GALLONS
6	72400	GALLONS	21	93500	GALLONS
7	119000	GALLONS	22	38000	GALLONS
8	97400	GALLONS	23	103800	GALLONS
9	115800	GALLONS	24	31600	GALLONS
10	96300	GALLONS	25	108500	GALLONS
11	54100	GALLONS	26	42600	GALLONS
12	128500	GALLONS	27	89300	GALLONS
13	51200	GALLONS	28	34700	GALLONS
14	93800	GALLONS	29	40200	GALLONS
15	124300	GALLONS			
16	130000	GALLONS			
17	69000	GALLONS			

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER
Print or Type

SIGNATURE: Richard G. Piper DATE: June 2, 1989

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (CLAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: APRIL, 19 89
6. TOTAL MONTHLY PUMPAGES: 1,762,100 GALLONS

DAY		DAY	
1	61000 GALLONS	16	72706 GALLONS
2	61000 GALLONS	17	91605 GALLONS
3	119900 GALLONS	18	91505 GALLONS
4	53100 GALLONS	19	58800 GALLONS
5	92805 GALLONS	20	25500 GALLONS
6	46300 GALLONS	21	43400 GALLONS
7	57800 GALLONS	22	59600 GALLONS
8	94900 GALLONS	23	43600 GALLONS
9	52500 GALLONS	24	59005 GALLONS
10	72300 GALLONS	25	16200 GALLONS
11	42600 GALLONS	26	75400 GALLONS
12	55000 GALLONS	27	59300 GALLONS
13	85300 GALLONS	28	82600 GALLONS
14	64005 GALLONS	29	GALLONS
15	32305 GALLONS	30	GALLONS
16	104300 GALLONS	31	GALLONS
17	77800 GALLONS		

NAME OF PERSON COMPLETING FORM: Richard Piper
Print or Type

SIGNATURE: Richard H. Piper DATE: May 5, 1989

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: March, 19 89
6. TOTAL MONTHLY PUMPAGES: 1973,600 GALLONS

DAY		DAY	
1	60600 GALLONS	16	57500 GALLONS
2	56700 GALLONS	17	26500 GALLONS
3	38500 GALLONS	18	15200 GALLONS
4	34000 GALLONS	19	73960 GALLONS
5	33600 GALLONS	20	65800 GALLONS
6	25000 GALLONS	21	72600 GALLONS
7	62700 GALLONS	22	65700 GALLONS
8	[illegible] GALLONS	23	98700 GALLONS
9	86600 GALLONS	24	34000 GALLONS
10	13510 0 GALLONS	25	39700 GALLONS
11	12480 0 GALLONS	26	69200 GALLONS
12	12470 0 GALLONS	27	81500 GALLONS
13	76200 GALLONS	28	97000 GALLONS
14	12290 0 GALLONS	29	91700 GALLONS
15	54300 GALLONS		
16	57700 GALLONS		
17	57700 GALLONS		

NAME OF PERSON COMPLETING FORM: Michael SHRADER
Print or Type

SIGNATURE: Michael Shrader DATE: 4/4/89

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: CA-DD503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: February, 19 89
6. TOTAL MONTHLY PUMPAGES: 2,046,400 GALLONS

DAY		DAY	
1	123300 GALLONS	16	87700 GALLONS
2	119900 GALLONS	17	45600 GALLONS
3	77800 GALLONS	18	61100 GALLONS
4	69700 GALLONS	19	69700 GALLONS
5	75100 GALLONS	20	75800 GALLONS
6	67900 GALLONS	21	56700 GALLONS
7	57600 GALLONS	22	59600 GALLONS
8	66600 GALLONS	23	192000 GALLONS
9	141000 GALLONS	24	58100 GALLONS
10	133800 GALLONS	25	00000 GALLONS
11	63000 GALLONS	26	71500 GALLONS
12	79700 GALLONS	27	GALLONS
13	000000 GALLONS	28	GALLONS
14	126200 GALLONS	29	GALLONS
15	53000 GALLONS	30	GALLONS
16	92000 GALLONS	31	GALLONS
17	189300 GALLONS		

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER
Print or Type

SIGNATURE: Richard G. Piper DATE: 3/2/89

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: [illegible], 19 [illegible]
6. TOTAL MONTHLY PUMPAGES: [illegible] GALLONS

DAY			DAY		
1	573[illegible]	GALLONS	18	[illegible]	GALLONS
2	[illegible]	GALLONS	19	11[illegible]	GALLONS
3	78800	GALLONS	20	[illegible]	GALLONS
4	79400	GALLONS	21	61[illegible]	GALLONS
5	100000	GALLONS	22	80400	GALLONS
6	146600	GALLONS	23	156500	GALLONS
7	75900	GALLONS	24	[illegible]	GALLONS
8	37900	GALLONS	25	[illegible]	GALLONS
9	70700	GALLONS	26	[illegible]	GALLONS
10	75000	GALLONS	27	77700	GALLONS
11	99100	GALLONS	28	57[illegible]	GALLONS
12	125200	GALLONS	29	36500	GALLONS
13	84300	GALLONS	30	[illegible]	GALLONS
14	26900	GALLONS	31	135800	GALLONS
15	31600	GALLONS			
16	00	GALLONS			
17	00	GALLONS			

NAME OF PERSON COMPLETING FORM: [illegible]
Print or Type

SIGNATURE: [illegible] DATE: ______

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: DL-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: December, 19 89
6. TOTAL MONTHLY PUMPAGES: 2,478,800 GALLONS

MAY			MAY	
1	85500	GALLONS	16	127200	GALLONS
2	66100	GALLONS	17	169300	GALLONS
3	102300	GALLONS	18	93700	GALLONS
4	84200	GALLONS	19	80000	GALLONS
5	91500	GALLONS	20	69900	GALLONS
6	134100	GALLONS	21	1----	GALLONS
7	65400	GALLONS	22	-----	GALLONS
8	64100	GALLONS	23	-----	GALLONS
9	69300	GALLONS	24	-----	GALLONS
10	63500	GALLONS	25	102700	GALLONS
11	72400	GALLONS	26	99000	GALLONS
12	83100	GALLONS	27	101200	GALLONS
13	102700	GALLONS	28	118700	GALLONS
14	41300	GALLONS	29	72300	GALLONS
15	118700	GALLONS			
16	93700	GALLONS			
17	106200	GALLONS			

NAME OF PERSON COMPLETING FORM: Michael L. SHRADER
Print or Type

SIGNATURE: Michael L Shrader DATE: 1/9/89

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: DA-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (CLAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: Nov, 19 88
6. TOTAL MONTHLY PUMPAGES: 2,404,200 GALLONS

DAY		DAY	
1	89300 GALLONS	16	49560 GALLONS
2	26500 GALLONS	17	88400 GALLONS
3	47400 GALLONS	18	96000 GALLONS
4	37200 GALLONS	19	124700 GALLONS
5	77800 GALLONS	20	55600 GALLONS
6	66600 GALLONS	21	89200 GALLONS
7	73200 GALLONS	22	82400 GALLONS
8	106200 GALLONS	23	73600 GALLONS
9	68000 GALLONS	24	30900 GALLONS
10	61700 GALLONS	25	65100 GALLONS
11	90700 GALLONS	26	73800 GALLONS
12	92400 GALLONS	27	157500 GALLONS
13	79600 GALLONS	28	91700 GALLONS
14	72400 GALLONS	29	GALLONS
15	99600 GALLONS	30	GALLONS
16	70800 GALLONS	31	GALLONS
17	114300 GALLONS		

NAME OF PERSON COMPLETING FORM: Michael SHRADER
Print or Type

SIGNATURE: [signature] DATE: 12/14/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: OCTOBER, 19 88
6. TOTAL MONTHLY PUMPAGES: 3/34/00 GALLONS

DAY			DAY	
1	116900	GALLONS	16	29000	GALLONS
2	90600	GALLONS	17	26400	GALLONS
3	28400	GALLONS	18	15260	GALLONS
4	11100	GALLONS	19	163700	GALLONS
5	51300	GALLONS	20	154200	GALLONS
6	60200	GALLONS	21	64000	GALLONS
7	160900	GALLONS	22	85200	GALLONS
8	139600	GALLONS	23	122900	GALLONS
9	63200	GALLONS	24	139900	GALLONS
10	103000	GALLONS	25	136400	GALLONS
11	109800	GALLONS	26	147800	GALLONS
12	51900	GALLONS	27	75300	GALLONS
13	84900	GALLONS	28	84800	GALLONS
14	80000	GALLONS	29	84000	GALLONS
15	94600	GALLONS			
16	90500	GALLONS			
17	108400	GALLONS			

NAME OF PERSON COMPLETING FORM: MIKE DORADO
Print or Type

SIGNATURE: Michael A. Dorado DATE: 10/31/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: SEPTEMBER, 19 88
6. TOTAL MONTHLY PUMPAGES: 2,986,100 GALLONS

DAY		DAY	
1	78000 GALLONS	16	93200 GALLONS
2	109700 GALLONS	17	97700 GALLONS
3	119500 GALLONS	18	147600 GALLONS
4	52600 GALLONS	19	68800 GALLONS
5	59800 GALLONS	20	102400 GALLONS
6	68800 GALLONS	21	122300 GALLONS
7	52600 GALLONS	22	76500 GALLONS
8	60100 GALLONS	23	95600 GALLONS
9	173200 GALLONS	24	129700 GALLONS
10	147200 GALLONS	25	94400 GALLONS
11	86200 GALLONS	26	106900 GALLONS
12	105900 GALLONS	27	101600 GALLONS
13	146100 GALLONS	28	128600 GALLONS
14	133800 GALLONS	29	GALLONS
15	114900 GALLONS	30	GALLONS
16	69700 GALLONS	31	GALLONS
17	83700 GALLONS		

NAME OF PERSON COMPLETING FORM: Michael SHRADER
Print or Type

SIGNATURE: Michael Shrader DATE: 10/3/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: AUGUST, 19 88
6. TOTAL MONTHLY PUMPAGES: 3697200 GALLONS

DAY		DAY	
1	84500 GALLONS	16	118800 GALLONS
2	111600 GALLONS	17	140800 GALLONS
3	65400 GALLONS	18	123900 GALLONS
4	69100 GALLONS	19	118600 GALLONS
5	157400 GALLONS	20	109800 GALLONS
6	93900 GALLONS	21	100000 GALLONS
7	177600 GALLONS	22	118100 GALLONS
8	179300 GALLONS	23	37900 GALLONS
9	157100 GALLONS	24	86200 GALLONS
10	155000 GALLONS	25	111300 GALLONS
11	140700 GALLONS	26	100500 GALLONS
12	169400 GALLONS	27	111500 GALLONS
13	162300 GALLONS	28	104000 GALLONS
14	136600 GALLONS	29	85900 GALLONS
15	142200 GALLONS		
16	109900 GALLONS		
17	125200 GALLONS		

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER II
Print or Type

SIGNATURE: Richard G. Piper II DATE: 9/8/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: July, 19 88
6. TOTAL MONTHLY PUMPAGES: 2963500 GALLONS

DAY		DAY	
1	130200 GALLONS	16	123300 GALLONS
2	109000 GALLONS	17	95600 GALLONS
3	99200 GALLONS	18	81900 GALLONS
4	149300 GALLONS	19	87200 GALLONS
5	88100 GALLONS	20	81300 GALLONS
6	69700 GALLONS	21	92500 GALLONS
7	79200 GALLONS	22	110100 GALLONS
8	126800 GALLONS	23	115900 GALLONS
9	124100 GALLONS	24	113500 GALLONS
10	117400 GALLONS	25	48300 GALLONS
11	103300 GALLONS	26	72500 GALLONS
12	113500 GALLONS	27	117800 GALLONS
13	81100 GALLONS	28	80400 GALLONS
14	57700 GALLONS	29	113100 GALLONS
15	101700 GALLONS		
16	97900 GALLONS		
17	101800 GALLONS		

NAME OF PERSON COMPLETING FORM: MICHAEL L SHRADER
Print or Type

SIGNATURE: Michael L Shrader DATE: 8/2/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: June, 19 77
6. TOTAL MONTHLY PUMPAGES: 3,024,300 GALLONS

DAY		DAY	
1	98400 GALLONS	16	87000 GALLONS
2	91900 GALLONS	17	117600 GALLONS
3	125800 GALLONS	18	227000 GALLONS
4	157400 GALLONS	19	34000 GALLONS
5	139900 GALLONS	20	113200 GALLONS
6	119800 GALLONS	21	91600 GALLONS
7	105500 GALLONS	22	124500 GALLONS
8	107500 GALLONS	23	119000 GALLONS
9	111200 GALLONS	24	123500 GALLONS
10	99200 GALLONS	25	91500 GALLONS
11	101200 GALLONS	26	115800 GALLONS
12	35900 GALLONS	27	111030 GALLONS
13	80400 GALLONS	28	118130 GALLONS
14	82500 GALLONS	29	GALLONS
15	98500 GALLONS	30	GALLONS
16	67000 GALLONS	31	GALLONS
17	111900 GALLONS		

NAME OF PERSON COMPLETING FORM: MICHAEL L. SCHRADER
Print or Type

SIGNATURE: Michael L. Schrader DATE: 7/3/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: DA-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month
5. MONTH: May, 19 88
6. TOTAL MONTHLY PUMPAGES: 446,500 GALLONS

DAY		DAY	
1	106700 GALLONS	16	102800 GALLONS
2	125000 GALLONS	17	117200 GALLONS
3	81800 GALLONS	18	114900 GALLONS
4	39400 GALLONS	19	159400 GALLONS
5	67500 GALLONS	20	121900 GALLONS
6	101000 GALLONS	21	153300 GALLONS
7	208500 GALLONS	22	149700 GALLONS
8	89000 GALLONS	23	120000 GALLONS
9	41500 GALLONS	24	114000 GALLONS
10	112800 GALLONS	25	152400 GALLONS
11	119400 GALLONS	26	139300 GALLONS
12	114300 GALLONS	27	103800 GALLONS
13	205600 GALLONS	28	127600 GALLONS
14	117500 GALLONS	29	70500 GALLONS
15	139500 GALLONS		
16	111800 GALLONS		
17	91200 GALLONS		

NAME OF PERSON COMPLETING FORM: Michael L. Shrader
Print or Type

SIGNATURE: Michael L. Shrader DATE: 6/6/88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: 06-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY (LAUDERDALE STEAM ELECTRIC PLANT)
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: APRIL, 19 88
6. TOTAL MONTHLY PUMPAGES: 2,363,000 GALLONS

DAY		DAY	
1	72500 GALLONS	16	75000 GALLONS
2	30800 GALLONS	17	19400 GALLONS
3	28400 GALLONS	18	60100 GALLONS
4	109500 GALLONS	19	120400 GALLONS
5	67200 GALLONS	20	129800 GALLONS
6	101100 GALLONS	21	111700 GALLONS
7	84000 GALLONS	22	102200 GALLONS
8	110300 GALLONS	23	57400 GALLONS
9	146400 GALLONS	24	147400 GALLONS
10	78400 GALLONS	25	124500 GALLONS
11	69400 GALLONS	26	39900 GALLONS
12	126200 GALLONS	27	71500 GALLONS
13	60100 GALLONS	28	91200 GALLONS
14	27700 GALLONS	29	GALLONS
15	24800 GALLONS	30	GALLONS
16	24800 GALLONS	31	GALLONS
17	24900 GALLONS		

NAME OF PERSON COMPLETING FORM: Michael SHRADER
Print or Type

SIGNATURE: Michael Shrader DATE: 5-6-88

RETURN TO:
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX V, WEST PALM BEACH, FLORIDA 33402
ATTN: RESOURCE CONTROL DEPARTMENT

This report must be completed and submitted to the South Florida Water Management District as required by Special Condition No. 7 of your Permit.

1. PERMIT NUMBER: CA-00503-W
2. ISSUED TO: FLORIDA POWER & LIGHT COMPANY CLAUDERDALE STEAM ELECTRIC PLANT
3. RECORDING PERIOD: Daily
4. REPORT DUE: At the end of each month.
5. MONTH: March, 19 88
6. TOTAL MONTHLY PUMPAGES: 2,333,300 GALLONS

DAY			DAY		
1	133000	GALLONS 92	16	58800	GALLONS 41
2	119200	GALLONS 83	17	41800	GALLONS 29
3	135100	GALLONS 94	18	41900	GALLONS 29
4	89600	GALLONS 62	19	58800	GALLONS 29
5	101800	GALLONS 71	20	129700	GALLONS 90
6	137200	GALLONS 95	21	52500	GALLONS 36
7	137200	GALLONS 95	22	44000	GALLONS 31
8	100800	GALLONS 70	23	90400	GALLONS 63
9	56400	GALLONS 39	24	5600	GALLONS 4
10	78600	GALLONS 65	25	46200	GALLONS 32
11	20500	GALLONS 14	26	49500	GALLONS 34
12	47400	GALLONS 33	27	149300	GALLONS 104
13	47400	GALLONS 33	28	80000	GALLONS 55
14	47400	GALLONS 33	29	90900	GALLONS 63
15	47400	GALLONS 33			
16	36100	GALLONS 25			
17	58800	GALLONS 41			

NAME OF PERSON COMPLETING FORM: RICHARD G. PIPER
Print or Type

SIGNATURE: Richard G. Piper DATE: 4/01/88

February 26, 1976

Mr. G. E. Dail, Jr., Director
Regulations Division
Central and Southern Florida
Flood Control District
P. O. Box V
West Palm Beach, Florida 33402

Dear Mr. Dail:

Re: Application for Water Use Permit
Lauderdale Power Plant, Broward County
FPL File No. PFL-J2-5

Enclosed are permit application numbers 21836, 21837 and 21839 for uses of water at Florida Power & Light Company's Lauderdale Power Plant. The water uses involve withdrawals of water from the Dania Cut-Off Canal, groundwater from two on-site cooling water wells, and raw water from ~~three~~ two off-site wells.

A water use permit is required by Central and Southern Florida Flood Control District Rules and Regulations pursuant to the Florida Water Resources Act of 1972. Included with the application is supplemental information further describing the water use at the Lauderdale Plant.

Sincerely,

W. Samuel Tucker, Jr., Manager
Environmental Affairs

WST:JEB
Enc.

2/24/76

SUPPLEMENTAL INFORMATION
WATER USE PERMIT APPLICATION
FLORIDA POWER & LIGHT COMPANY
LAUDERDALE POWER PLANT

Florida Power & Light Company's Lauderdale Power Plant consists of Unit No. 4, Unit No. 5 and twenty four gas turbine peaking units. Unit No. 4 has a summer peak generating capability of 157MW and was placed into service in 1957. Unit No. 5 is rated at 150MW summer peak generating capability and was placed into service in 1958. Each of the twenty four gas turbine units is rated at 37MW for short duration operation. Units No. 1 and 2 were retired in 1964 and Unit No. 3 was retired in 1965. The plant site consists of approximately 70 acres of land located about 4 miles west of Dania in Broward County. The site is bounded by the Dania Cut-Off Canal on the south, the South New River Canal on the west, the circulating water canal on the north, and an unnamed abandoned canal on the east. Attachment No. 1 shows the location of the Lauderdale Plant. Attachment No. 2 shows the plot plan.

Under Section 16 CA-2.06 of the Rules and Regulations of the Central and Southern Florida Flood Control District, certain existing uses of water at this power plant must be permitted. There are three specific applicable uses:

1. Circulating water, which flows through the main plant condenser returning the steam from the turbines to water;

2. The water in the open cooling water system which flows through heat exchanger for the closed cooling water system, in turn serving the turbine lube oil coolers, the hydrogen coolers, and various other plant equipment, and;

3. Raw water for plant cleaning and other uses.

The uses of water to be permitted by the Flood Control District at the Lauderdale Plant are reasonable, beneficial, and in the interest of the safety, health and welfare of the public. The use of water as described herein is essential to the process of generating electricity, which is the function of this facility. The benefits of electricity are well recognized with no need for further elaboration on the necessity of the service the Lauderdale generating facility provides to the public. The plant provides service to the people in the vicinity of its location, and, tied into the statewide transmission network, contributes to the supply of electricity provided FPL's system.

The uses herein described have been in effect for at least five years and have not, and are not, interfering with any existing legal use of water.

The use of this water at the Lauderdale Power Plant will not foreseeably alter the quantity of the source of the water. Circulating water for both generating units is canal water from the Dania Cut-Off Canal. Cooling water is taken from cooling wells located on the plant site, or alternatively, from the Dania Cut-Off Canal. The use is determined by equipment availability, water temperature, and canal water cleanliness. Raw water, involving considerably less amounts, is supplied from three fresh water wells.

These uses do not adversely affect the character of adjacent environmental features, or cause salt water contamination of a groundwater source.

Circulating and Cooling Water

Circulating water for the condensers is canal water taken from the Dania Cut-Off Canal. The water is withdrawn through two intake structures (one for each unit) connected to the Dania Cut-Off Canal by unlined channels. Each intake structure is separated into two bays. Each bay has a 58,000 gpm Foster Wheeler, mixed flow, circulating water pump. Each circulating water pump discharges into a 54 in. diameter line connected to the condenser. The water is chlorinated before going through the condenser. After passing through the condenser, the water is discharged through two 54 in. outlet lines to the discharge structures and thus back to the Dania Cut-Off Canal. The discharge structure is located at the head of an unlined ditch that will connect to the discharge canal. The location of the intake and discharge system is shown in Attachment No. 3. Additional data on the four circulating water pumps is provided in Attachments No. 4 and 5.

The maximum potential water withdrawal from the Dania Cut-Off Canal from the four circulating water pumps is 232,000 gpm, or 334,080,000 gpd.

PP

The well cooling water system's pumps supply water to the hydrogen coolers, the turbine lube oil coolers and the bearing cooling water heat exchangers. The spent water from the turbine lube oil coolers and from the bearing cooling water heat exchangers joins the water from the hydrogen coolers and is piped to the circulating water discharge.

There are two cooling water wells at the Lauderdale Plant. Each well is 20 in. diameter, approximately 60 ft. deep, and is equipped with a 3,000 gpm Peerless vertical centrifugal type pump. The location of the wells is shown on Attachment No. 6, and pump specifications are shown in Attachments No. 7 and 8. The well cooling water system is supplied by an on-site vertical well pump

PP { ALSO, TWO (2) SCREEN WASH PUMPS (1 PER UNIT) EACH HAVING A CAPACITY OF 600 GPM, FOR A TOTAL ADDITIONAL WITHDRAWL OF 1,720,000 GPD.

or alternatively by a vertical pump mounted on the intake structure. Hence this system can utilize either groundwater (from wells 4B and 5B) or water from the Dania Cut-Off Canal (from ~~wells~~ PUMPS 4A & 5A).

The maximum potential withdrawal of water from the well cooling water system is 6,000 gpm, or 8,640,000 gpd.

Raw Water

Raw water for the plant is supplied from ~~three~~ FOUR 125 GPM* field well pumps located as shown on Attachments 9 and 10. The ~~three~~ TWO* off-site field wells are ~~8~~ in. diameter, ~~135~~ 55* ft. deep with an approximate draw of ~~300~~* 250 gpm each.

Raw water is delivered to the Pretreat Tower located on the plant site. The raw water is treated at this point and distributed to the plant for the following uses; plant wash down, service water and supply water for the demineralizer. ~~and drinking water~~.

THE TWO
~~Thre three~~ wells have a total capacity of ~~900~~ 500* gpm or ~~1,296,000~~ 720,000* gpd. The approximate average industrial use of raw water at the Lauderdale Plant is ~~10,000~~ * 100,000 gpd.

An analysis or the raw water is included as Attachment No. 11.

* REVISED SINCE 1976.

ATTACHMENT – C

Dania Cut–Off Canal Chlorides (ppm)
1987

January	February	March	April	May	June	July	August	September	October	November	December
461	728	445	515	248	599		454	7202	345	212	352
	364		229	125	630		4094	6209	330	606	273
			395	471	4242		4885	1606	575	909	272
			260		2758		5036	1570		733	296
							7000	727		2090	
							7212	624		2752	
								1900			

Dania Cut–Off Canal Chlorides (ppm)
1988

January	February	March	April	May	June	July	August	September	October
212	1789	30	364	394	5513	1285	1818	103	667
150	358	406	1121	6206	242	121	606	30	352
	273	48	4382	5504	1757	255	242	30	321
	588		4242			150	319	83	358
						135	280	67	342
						1200	200	152	
							255	141	
							121	1224	

Raw Water Chlorides

Well 8		Well 9	
Date	Chlorides (ppm)	Date	Chlorides
5-05-89	129	5-02-89	254
5-09-89	188	5-10-89	255
5-10-89	164	5-11-89	364
5-11-89	161	6-03-89	187
6-03-89	94	6-04-89	202
6-04-89	95	6-05-89	252
6-05-89	115	6-06-89	264
6-06-89	113	6-07-89	305
6-07-89	94	6-08-89	295
6-08-89	91	6-09-89	271
6-09-89	94	6-11-89	161
6-10-89	66	6-14-89	177
6-14-89	71	6-20-89	228
6-20-89	85	6-21-89	355
6-21-89	64	6-23-89	318
6-22-89	43	6-25-89	185
6-23-89	54	6-26-89	197
6-25-89	90	6-27-89	217
6-26-89	55	6-30-89	124
6-27-89	80	7-10-89	143
6-30-89	85	7-14-89	120
7-10-89	47	7-18-89	146
7-14-89	78	7-21-89	87
7-18-89	63	7-29-89	107
7-21-89	44	8-02-89	306
7-27-89	107	8-04-89	188
8-02-89	68	8-09-89	180
8-04-89	61	8-25-89	86
8-09-89	73	9-11-89	160
8-25-89	51		
9-11-89	37		

Raw Water Chlorides

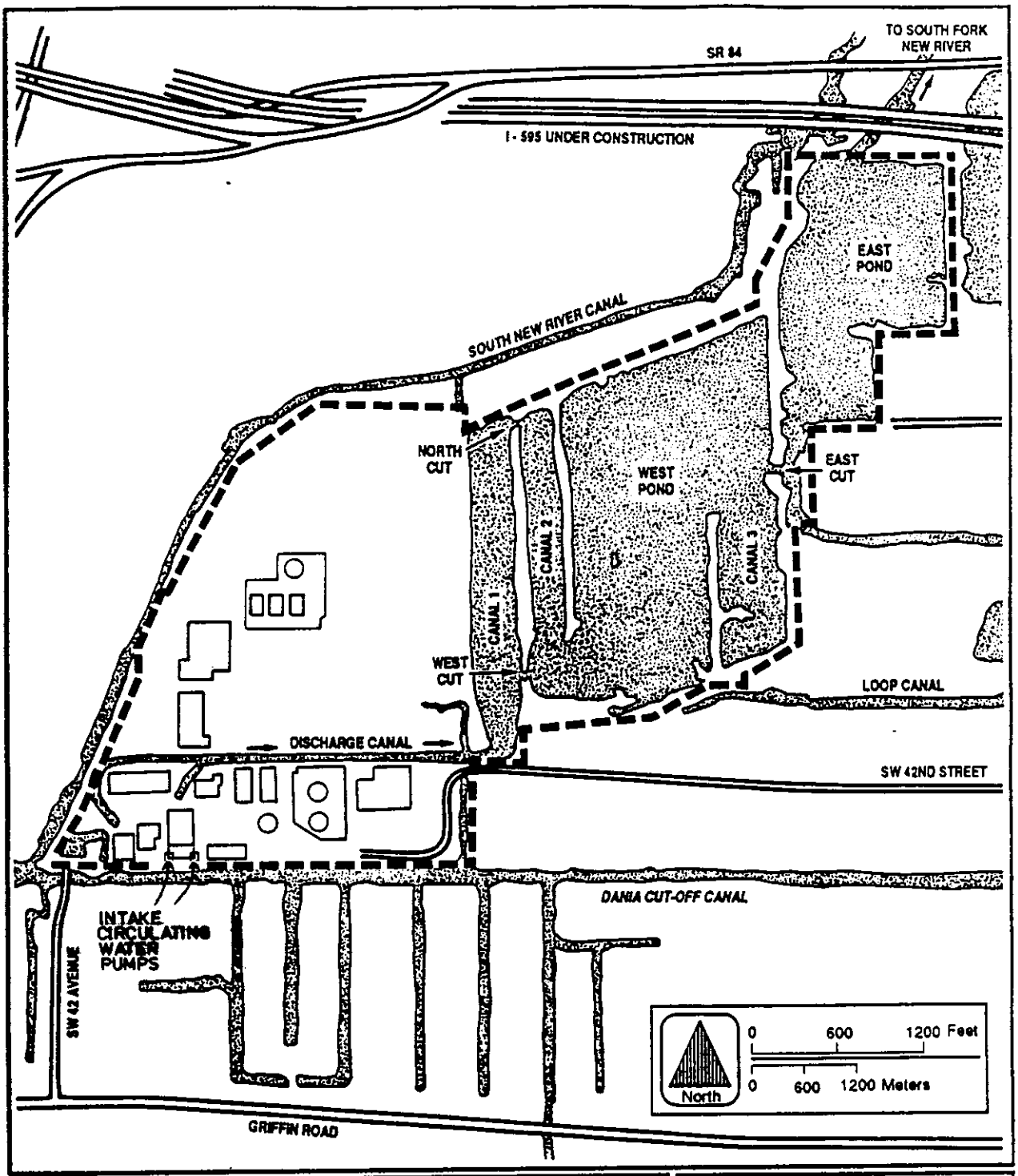
Well 4B		Well 5B	
Date:	Chlorides (ppm):	Date:	Chlorides (ppm):
08-05-89	2740	09-15-89	2240
09-15-89	2790	09-29-89	2230
09-29-89	2770	10-04-89	2380
10-04-89	2820	10-19-89	2650
10-19-89	2890	11-01-89	2960
11-01-89	3070		

ATTACHMENT D

LAUDERDALE PLANT
WATER USE OPERATIONS SCHEDULE

WELL	DESIGNATION	USE	OPERATING SCHEDULE
8 & 9	Field Wells (groundwater)	Make up water to boilers. Plant flushing and washdown. Make up water to closed cooling water.	Each well (at 2 pumps operates with one pum in the "lead" and one pump in the "lag". This is usually well followed by well 9. See pumpage reports for daily amounts. Discharged to groundwater.
4B & 5B	Aux. Cooling Water Wells (groundwater)	Provide cooling water to heat exchangers.	Run 24 hrs. per day only when 4B & 5B pumps are non-operational. Discharged to discharge canal.
4A & 5A	Aux. Cooling Water Pumps.	Provide cooling water to heat exchangers.	Run 24 hrs. per day only when 4B & 5B pumps are non-operational. Discharged to discharge canal.
4 & 5 Screen Wash Pumps	Screen water wash pump. (Surface water-Dania Cutoff Canal).	Dislodge debris from traveling screens.	Run when unit is operating. Discharge into the intake canal
4A/4B & 5A/5B CWP	Circulating Water Pumps. (Surface water-Dania Cutoff Canal). Pumps.	Provide cooling water for steam turbine condensers.	Run When unit is operating. Discharged into the discharge canal.

ATTACHMENT -E



COOLING CANAL/POND SYSTEM LAYOUT

Lauderdale

FPL

ATTACHMENT--F
TABLE B
DESCRIPTION OF SURFACE WATER PUMPS

DRAINAGE DISTRICT				
PUMP NUMBER	5A CIRCULATING WATER PUMP	5B CIRCULATING WATER PUMP	5 SCREEN WASH	5A AUXILIARY COOLING WATER
MAP DESIGNATION	COOLING WATER 5A PUMP	COOLING WATER 5B PUMP	5 SCREEN WASH	5A WELL COOLING WATER
SURFACE WATER BODY	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL
EXISTING OR PROPOSED	N/A	N/A	N/A	N/A
PUMP TYPE	VERTICAL SINGLE STAGE	VERTICAL SINGLE STAGE	VERTICAL TURBINE PUMP	VERTICLE TURBINE PUMP
PUMP MANUFACTURER AND MODEL NUMBER	FOSTER WHEELER 54 MF2-K4.85	FOSTER WHEELER 54 MF2-K4.85	PEERLESS 10 MA-8STG	PEERLESS 18MAX-1 STAGE DLS
PUMP CAPACITY (GPM)	58000	58000	600	3000
PUMP HORSEPOWER	450	450	60	100
PUMP DIAMETER	N/A	N/A	7 1/8"	12 7/8"
ELEVATION OF INTAKE (NGVD)*	N/A	N/A	N/A	N/A
IS PUMP A TWO WAY PUMP	NO	NO	NO	NO
FLORIDA PLANE COORDINATES	N/A	N/A	N/A	N/A

*NGVD IS APPROXIMATELY EQUAL TO MEAN SEA LEVEL

ATTACHMENT--F
TABLE B
DESCRIPTION OF SURFACE WATER PUMPS

DRAINAGE DISTRICT				
PUMP NUMBER	4A CIRCULATING WATER PUMP	4B CIRCULATING WATER PUMP	4 SCREEN WASH	4A AUXILIARY COOLING WATER
MAP DESIGNATION	COOLING WATER 4A PUMP	COOLING WATER 4B PUMP	4 SCREEN WASH	4A WELL COOLING WATER
SURFACE WATER BODY	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL	DANIA CUTOFF CANAL
EXISTING OR PROPOSED	N/A	N/A	N/A	N/A
PUMP TYPE	VERTICAL SINGLE STAGE	VERTICAL SINGLE STAGE	VERTICAL TURBINE PUMP	VERTICLE TURBINE PUMP
PUMP MANUFACTURER AND MODEL NUMBER	FOSTER WHEELER 54 MF2-K4.85	FOSTER WHEELER 54 MF2-K4.85	PEERLESS 10 MA-8STG	PEERLESS 18MAX-1 STAGE DLS
PUMP CAPACITY (GPM)	58000	58000	600	3000
PUMP HORSEPOWER	450	450	60	100
PUMP DIAMETER	N/A	N/A	7 1/8"	12 7/8"
ELEVATION OF INTAKE (NGVD)*	N/A	N/A	N/A	N/A
IS PUMP A TWO WAY PUMP	NO	NO	NO	NO
FLORIDA PLANE COORDINATES	N/A	N/A	N/A	N/A

*NGVD IS APPROXIMATELY EQUAL TO MEAN SEA LEVEL

Protecting South Florida's Water Resources for 40 Years
1949-1989

South Florida Water Management District

P.O. Box 24680 • 3301 Gun Club Road • West Palm Beach, FL 33416-4680 • (407) 686-8800 • FL WATS 1-800-432-2045

December 18, 1989

RECEIVED
DEC 27 198
MANAGER
PERMITTING & PROC

Mr. Martin A. Smith, Environmental Permitting and Programs
Florida Power and Light
P. O. Box 078768
W. Palm Beach, Fla. 33407-0768

Dear Sir:

Subject: Application No. 890720-12
Project: Lauderdale Power Plant
Permit No: 06-00503-W
County: Broward

The District is in receipt of your letter addressing our request for additional information concerning the above referenced project. After reviewing the response, further clarification will be required to complete out review, pursuant to Rule 40E-1.603, Florida Administrative Code (FAC). Please complete the following question.

1. The water used from the Dania Cut-off canal for any purpose by FPL is not exempt for District permitting criteria because it does not meet the criteria of salt water (19,000 ppm of chloride). Therefore, the use of surface water from the Dania Cut-off canal will require a permit from the District. Please indicate the quantity of surface water that is required for cooling and circulation purposes and provide a brief explanation regarding the derivation of the requested allocation.

2. Rule 6.0, Basis of Review, Management of Water Use, Permit Information Manual Volume III, June 1985, states that all renewals are to be treated and applied for in the same manner as initial applications. District criteria requires that all applicants must provide reasonable assurance that the requested withdrawals will not adversely impact the resource or existing legal users. The District has concerns that the groundwater withdrawals by FPL may potentially impact existing legal users including the Broward County 3-A wellfield and thus increase the threat of saline intrusion. To provide assurances against potential impacts, FPL must satisfactory complete question seven (7) of the original request for additional information. This question stated that withdrawals by FPL must not cause significant movement of the saline interface. In order to meet these criteria, FPL is to conduct a site specific hydrogeologic study. The report should demonstrate that the withdrawals will not cause inland movement of the saline interface, impact existing legal users or adversely impact the resource.

When the preceding information has been provided, we will continue the review of the application for water use. In accordance with Rule 40E-1.603(5) FAC, if a response is not received within 30 days, this application may be processed for denial, if not withdrawn by the applicant. If you have any questions, please contact Mr. Jeff Giddings of this office (ext. 6939).

Thank you for your continuing cooperation.

Sincerely,

Greg F. Rawl, P.G.
Supervising Professional
Water Use Division
Regulation Department

/jg

P. O. Box 078768, West Palm Beach, FL 33407-0768
6001 Village Blvd.

FPL

January 23, 1990

Mr. Greg F. Rawl, P.G.
Water Use Division
Regulation Department
South Florida Water Management District
P. O. Box 24680
West Palm Beach, Florida 33416-4680

RE: **Application No. 890720-12**
Project: Lauderdale Power Plant
Permit No: 06-00503-W
County: Broward

In accordance with the meetings on January 12 and 18, 1990 between you and my staff and consistent with the provisions set forth in Chapter 120, Florida Statutes, Florida Power and Light Company (FPL) here by officially requests an extension of time to collect and evaluate information in response to your December 18, 1989 letter requesting additional information.

If you have any questions or comments concerning this matter, please feel free to call Mark McLean at (407) 640-2018.

Sincerely,

Winifred Perkins

(for) Martin A. Smith, Ph.D.
Manager
Environmental Permitting and Programs

MAS/MLM/jlf

bcc: C.D. Henderson
S. Moore
W.G. Perkins
D.C. Pasley

South Florida Water Management District

P.O. Box 24680 • 3301 Gun Club Road • West Palm Beach, FL 33416-4680 • (407) 686-8800 • FL WATS 1-800-432-2045

April 13, 1990

Mr. Sheppard N. Moore
Senior Coordinator, Environmental Affairs
Florida Power & Light Company
P.O. Box 078768
West Palm Beach, Florida 33407-0768

Dear Shep:

Re: FP&L Ft. Lauderdale Repowering Project

I am writing in follow-up to our meeting last Thursday, April 5, 1990 at which FP&L and its consultants presented the preliminary findings from the Aquifer Performance Test conducted March 20 - 23, 1990 on the Ft. Lauderdale Power Plant site.

We are very pleased with FP&L's responsiveness to the District's concerns regarding this site and, in particular, your ability to stay on schedule so that the results could be evaluated in a timely manner. The installation of an additional network of monitoring wells at a 50 foot depth, in response to the District's recommendation, when it was determined that the production zone for the existing wells was at that level is indicative of your efforts to work with the District on this matter.

As we discussed in our meeting, the Hydrogeologic Investigation Report should include the following items, in addition to those identified in the Draft Outline, in order to adequately address the District's concerns:

(1) The operating schedule for the on-site production wells (or, if unavailable or incomplete, for the power generating facilities) for the last three years, with particular emphasis on the last several months.

(2) Modeling for both average and maximum day demands.

(3) Water level data for all observation wells presented in tabular form.

(4) An analysis/clarification of the inconsistencies between chlorides and conductivity for certain of the observation wells (see page 33 of the April 5, 1990 Preliminary Summary Report).

(5) An analysis of the impacts of the proposed dewatering activities associated with the repowering project.

Please provide four copies of the Hydrogeologic Investigation Report in order to facilitate staff's review.

If you wish, staff will be available to review a draft of the Hydrogeologic Investigation Report at any time prior to your planned May 7, 1990 submittal date. Should you have any questions on the above, please give me a call.

Sincerely,

Susan M. Coughanour
Senior Review Coordinator
Regulation Department

SMC:sk

cc: Mark J. Jordana, KBN
Michael L. Voorhees, ESE
Hamilton S. Oven, DER

APPENDIX B

WELL LOG REPORT FORMS

Well Log Report Form

Boring no.: OW-1
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 4"
Material: Schedule 40 PVC
Casing length: 140 feet *Diameter:* 4"
Material: Schedule 40 PVC
Date start: 14 Feb. 1990 *Finish:* 16 Feb. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3111.74
E: 2490.48
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air; > 500 gallons
Static water level: +0.68 ft. MSL (20 Mar. 1990)
Top of well elevation: +5.92 ft. MSL
Drill type: Mud Rotary

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
0-4	Not sampled	Limerock Fill, Soil Horizon	Post Hole	–
4-6	4-6	**SILTY SAND**, Fine-to-med. gr., moderately silty, light grayish brown, well sorted, moist, loose		4-4-8-6
6-8	6-8	**PEAT**, slightly-to-moderately silty, dark brown, rooted, moist to saturated	WT ▼~8'	3-2-3-2
8-10	8-9	**PEAT**, as above		1-2-1-1
	9-10	**SAND**, Fine-to-med. gr., slightly silty, light brown, mod. well sorted, loose		
10-12	10-12	**SAND**, as above		1-1-1-2
12-14	12-14	**LIMESTONE**, crystalline, indurated, slightly sandy, slightly fossiliferous, white, hard, retrieved in fractured pieces		3-3-3-4
14-20	cuttings	**LIMESTONE**, as above	drilling response indicates rock	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
20-22	20-22	**LIMESTONE**, as above, increased sand content from 12-14 ft. interval; equally indurated and retrieved in fractured pieces		5-5-6-8
22-25	not sampled	**LIMESTONE**, as above, alternating hard and soft intervals	Lost Circulation	–
25-27	25-27	**LIMESTONE**, as above,similar to 20-22 ft. interval		5-6-4-5
27-30	not sampled	**LIMESTONE**, as above, alternating hard and soft intervals	Lost Circulation	–
30-32	30-32 (poor recovery)	**LIMESTONE**, as above, sandy, indurated, crystalline, white		3-3-3-2
32-35	not sampled	**LIMESTONE**, as above, alternating hard and soft intervals	Lost Circulation	–
35-37	35-37	**LIMESTONE**, as above, increased sand content, indurated, crystalline, w/small pelecypod molds		7-7-8-5
37-40	not sampled	**LIMESTONE**, as above, alternating hard and soft intervals	Lost Circulation	–
40-42	40-42	**LIMESTONE**, as above, increased recovery of soft (unconsolidated) material, pelecypod molds & casts		4-4-5-4
42-45	not sampled	**LIMESTONE**, as above, alternating hard and soft intervals	Lost Circulation	–
45-47	45-47	**SAND**, fine gr., well sorted, rounded-to-sub angular, dominantly calcareous material w/heavy minerals (phosphate?), with pebble size calcareous material, unconsolidated, white-to-tan		8- 10-10-12
47-50	not sampled	**SAND**, as above, with alternating cemented intervals	Lost Circulation	–
50-52	50-52	**SAND**, as above, similar to 45-47 ft. interval, dense		16-36-28-16
52-55	not sampled	**SAND**, as above, alternating cemented intervals	Lost Circulation	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
55-57	55-56 (no sample @ 56-57')	**LIMESTONE**, crystalline, sandy, hard slightly fossiliferous, light brown, slightly phosphatic	Hard Drilling	45-100-X-X (refusal)
57-60	not sampled	**LIMESTONE**, as above, hard	Lost Circulation-Hard Drilling	–
60-62	not sampled	**LIMESTONE**, as above	8" surface casing set to 60 ft.	100-X-X-X (refusal)
62-65	cuttings	**LIMESTONE**, sandy, cs. gr., crystalline, phosphatic, indurated, white to light gray	Begin air rotary	–
65-66	65-65.5	**LIMESTONE**, sandy, crystalline, phosphatic, fossiliferous, visible porosity, white to light gray		100 (4") (refusal)
66-70	cuttings	**LIMESTONE**, as above		–
70-72	cuttings	**LIMESTONE**, as above, increased sand content, becoming dominantly sand		–
72-74	cuttings	**SANDSTONE**, fine-to-med. gr. cemented, with shells, phosphatic, visible porosity, light gray to tan		–
75-77	75-77	**SAND**, fine-to-med. gr., well sorted, sub-rounded, phosphatic, with cemented intervals, white-to-light gray, very dense, slightly shelly	Flowing sands in drill rod above bit	12-40-56-90
77-80	cuttings	**SANDSTONE**, alternating w/SAND (unconsolidated), lithologically similar to 72-77 ft. interval	Alternating hard & soft intervals could not maintain borehole wall w/air rotary; convert back to mud rotary	–
80-84	not sampled	**SAND**, as above	continued soft drilling through unconsolidated material	–
84-90	cuttings	**LIMESTONE**, sand, crystalline, slightly fossiliferous, lt. gray to lt. brown	Alternating hard and soft intervals	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
90-92	90-92	**SAND**, fine gr., well sorted, sub-rounded to rounded, unconsolidated, thin cemented intervals, phosphatic, white-to-lt. brown, dense		29-35-45-46
92-100	cuttings	**SANDSTONE**, fine-to-med. gr., cemented, quartzose, phosphatic, white to lt. gray, soft white clay in cuttings indicates clay stringers occur in 95-100 ft. interval	Consistent drill rate 92-95 ft.; intermittent soft intervals 95-100 ft.	–
100-102	100-101	**LIMESTONE**, slightly to moderately sandy, cemented, fossiliferous, very hard		30-100(5")-X-X (refusal)
102-110	cuttings	**LIMESTONE**, as above, increased sand content	Hard intervals 102'; 104-105'; and 108-110	–
110-115	cuttings	**LIMESTONE**, as above, increased sand content, cemented	Hard drilling	No spoon attempted in rock
115-120	cuttings	**LIMESTONE**, very sandy, fine-to-med. gr., lt. gray, indurated, crystalline, phosphatic		No spoon attempted in rock
120-125	cuttings	**LIMESTONE**, as above, slightly shelly	Very hard drilling (30 minutes to advance 5 ft.) Partial circulation lost	No spoon attempted in rock
125-130	cuttings	**LIMESTONE**, as above, increased fossil content	Partial circulation lost	No spoon attempted in rock
130-135	cuttings	**LIMESTONE**, as above	Drilling mud thickened; regained 100% circulation	No spoon attempted in rock
135-140	cuttings	**LIMESTONE**, as above	Very hard interval at 137 ft.	No spoon attempted in rock
140-145	cuttings	**LIMESTONE**, as above	Very hard interval at 144 ft.	No spoon attempted in rock
145-150	cuttings	**LIMESTONE**, as above		No spoon attempted in rock
		TERMINATE BORING AT 150 FT.		

Well Log Report Form

Boring no.: OW-2
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 125 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 26 Feb. 1990 *Finish:* 02 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3038.89
E: 2729.98
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air; > 500 gallons
Static water level: +0.68 ft. MSL (20 Mar. 1990)
Top of well elevation: +4.88 ft. MSL
Drill type: Mud Rotary

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
0-5	Post Hole	Limerock Fill, Soil,Sand	Post Hole	–
5-7	5-7	**PEAT**, dark brown, slightly silty, rooted, moist		2-3-3-4
			WT ▼~7'	
7-9	7-9	**PEAT**, as above, increased rooting		3-2-3-4
9-11	9-11	**SAND**, fine-to-med. gr., well sorted, subrounded, lt. brown		15-13-13-15
11-13	11-13	**SAND**, as above		10-12-12-14
13-15	13-14.5	**SAND**, as above		10-12-8-16
	14.5-14.8	**CLAYEY SAND**, fine gr., moderately clayey		
	14.8-15.0	**LIMESTONE**, sandy, very fossiliferous, visible porosity from cast dissolution		
15-20	not sampled	**LIMESTONE**, as above, alternating w/ **SAND**	alternating hard and soft intervals	–
20-22	20-22	**SAND**, fine gr., quartzitic, moderately clayey, w/ considerably cemented calcareous material including cemented worm tubes/coral		9-8-7-8

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
22-25	cuttings	**LIMESTONE**, sandy, fossiliferous, lt. brown to lt. gray, soft intervals may be sand similar to 20-22 ft.	Alternating hard to soft intervals	–
25-27	25-27	**LIMESTONE**, sandy, clayey, cemented calcareous material interspersed w/ loose calcareous, mud, fossiliferous		6-8-7-6
27-30	cuttings	**LIMESTONE**, as above	Alternating hard and soft intervals	–
30-32	30-32	**LIMESTONE**, as above, very clayey, fossiliferous		6-4-4-5
32-35	cuttings	**LIMESTONE**, as above	Dominantly hard interval	–
35-37	35-37	**LIMESTONE**, as above, crystalline, w/ clay matrix, hard, fossiliferous		20-14-16-15
37-40	cuttings	**LIMESTONE**, as above, increasing sand content, not as cemented 38-40 ft. interval	Soft Drilling 38-40 ft.	–
40-42	40-42	**LIMESTONE**, very sandy, uncemented w/ cemented calcareous material, fossiliferous, becoming SANDSTONE and SAND		10-7-7-9
42-45	cuttings	**LIMESTONE**, as above, to very calcareous SANDSTONE	Soft & Hard Drilling	–
45-47	45-47	**SAND**, fine gr., well sorted, subrounded-to-rounded, quartzitic, w/ heavy minerals, dense, unconsolidated		25-19-17-39
47-50	cuttings	**SAND** and **SANDSTONE**, w/ calcareous matrix	Alternating hard and soft intervals	–
50-52	50-51.5	**SAND** and **SANDSTONE**, as above		12-26-50(5") -X (refusal)
	at 51.5 ft.	**LIMESTONE**, crystalline, sandy, phosphatic, very hard, lt. brown	Collected at base of spoon from 50-52'	
52-55	cuttings	**LIMESTONE**, crystalline, moderately to very sandy, sl. phosphatic, lt. brown to lt. gray	Hard Drilling	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
55-60	cuttings	**LIMESTONE**, as above	Hard drilling, sl. softer 59-60 ft.	No spoon collected at 55-57 ' because of rock
60.0-60.5	60.0-60.5	**LIMESTONE**, as above, sandy, fossiliferous	Set surface casing (8") to 60'	50(6") -X-X-X
60-65	cuttings	**LIMESTONE**, as above		–
65-67	65-65.5	**LIMESTONE**, as above, crystalline, sandy, visible porosity		50(4") -X-X-X
67-70	cuttings	**LIMESTONE**, as above		–
70-72	70-72	**SAND**, fine gr., well sorted, clean, unconsolidated, quartzitic, w/ phosphatic material, dense		14-26-19-20
72-75	cuttings	**SANDSTONE**, similar to overlying sand except cemented, w/ SAND	Very hard 74-75 ft.	–
75-80	cuttings	**SANDSTONE**, as above, w/ SAND		No SPT at 75' due to hard rock
80-82		**SAND**, as above, w/ cemented intervals, w/ increased calcareous material, dense		26-26-30-30
82-85	cuttings	**LIMESTONE**, crystalline, sandy, phosphatic	Hard drilling	–
85-87	85-86	**SAND**, V. fine-to-fine gr., sl. clayey, w/ cemented intervals, w/ calcareous materials, phosphatic, unconsolidated		24-50(5")-X-X
87-90	cuttings	**SANDSTONE**, fine-to-med. gr., cemented, quartzose, phosphatic, lt. gray		–
90-92	90-92	**SAND**, fine, gr., loose w/ cemented intervals, phosphatic, lt. gray, well sorted, dense		20-20-22-21
92-95	cuttings	**LIMESTONE**, slightly-to-moderately sandy, cemented, lt. grayish brown, phosphatic	Hard drilling	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
95-100	cuttings	**LIMESTONE**, as above		No spoon attempted in rock
100-102	no recovery	**LIMESTONE**, as above		50(4")-X-X-X SPT terminated at 100 ft.
102-105	cuttings	**LIMESTONE**, as above	Hard drilling	
105-110	cuttings	**LIMESTONE**, as above		
110-115	cuttings	**LIMESTONE**, as above	Continued hard drilling to 135 ft.	
115-120	cuttings	**LIMESTONE**, as above		
120-125	cuttings	**LIMESTONE**, as above		
125-130	cuttings	**LIMESTONE**, as above, increased sand content, slightly darker gray		
130-135	cuttings	**LIMESTONE**, as above		
		TERMINATE BORING AT 135 FT.		

KBN 10 /EBASCO WELL LOG FORM.2 pg4 4/90PH

Well Log Report Form

Boring no.: OW-3
Boring diameter: 8" *Slot:* 0.010"
Screen length: 20 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 75 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 26 Feb. 1990 *Finish:* 02 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3038.89
E: 2729.98
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air; > 500 gallons
Static water level: +0.92 ft. MSL (20 Mar. 1990)
Top of well elevation: +4.89 ft. MSL
Drill type: Mud Rotary

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-2 Boring Log OW-3 completed inside same 8" diameter surface casing as OW-2; total depth of OW-3=95 ft. Screened interval of OW-3 is 75-95 ft. depth		

Well Log Report Form

Boring no.: OW-4
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 10 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 01 Mar. 1990 *Finish:* 01 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3036.85
E: 2724.94
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 250 gallons
Static water level: +0.77 ft. MSL (20 Mar. 1990)
Top of well elevation: +4.95 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-2 Boring Log		
		Boring terminated at 20 ft.		
		Screened interval 10-20 ft. depth		

KBN 10 / EBASCO WELL LOG FORM.4 pg1 4/90PH

Well Log Report Form

Boring no.: OW-5
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 125 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 28 Feb. 1990 *Finish:* 01 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3056.02
E: 3093.88
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air: > 500 gallons
Static water level: +0.87 ft. MSL (20 Mar. 1990)
Top of well elevation: +7.79 ft. MSL
Drill type: Mud Rotary

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
0-4	Not sampled	Limerock Fill, Soil Horizon	Post Hole	–
4-6	4-6	**SAND**, fine -to-med. gr., silty, gray to brown, moist		4-3-3-4
6-8	6-7.5	**SAND**, as above, decreased silt content		2-2-3-4
	7.5-8	**PEAT**, rooted, sl. silty, dark brown, moist to saturated	WT ▼~8'	
8-10	8-10	**PEAT**, as above, very rooted		4-3-2-1
10-12	10-12	**SAND**, fine-to-med. gr., mod. silty 10.0 - 11.0, decreased silt content downward, brown becoming lt. gray, loose		2-2-1-2
12-14	12-14	**SAND**, as above, sl. silty, lt. brown		1-2-2-1
14-17	not sampled	**SAND**, as above	Same drilling conditions as overlying sand	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
17-20	cuttings	**LIMESTONE**, cemented, lt. gray	change in drilling conditions, rock	–
20-22	20-22	**LIMESTONE**, cemented, fossiliferous, porous, sl. sandy	–	1-3-3-5
22-25	not sampled	**LIMESTONE**, as above	alternating hard and soft intervals	–
25-27	25-27	**LIMESTONE**, as above, sandy, fossiliferous, w/ calcareous mud matrix (uncemented)	–	5-4-4-2
27-30	cuttings	**LIMESTONE**, as above	alternating hard and soft intervals	–
30-32	30-32	**LIMESTONE**, as above		7-6-4-2
32-35	cuttings	**LIMESTONE**, as above		–
35-37	35-37	**LIMESTONE**, as above		7-7-5-2
37-40	cuttings (poor recovery)	**LIMESTONE**, as above, w/ sandstone fragments in cuttings	alternating hard and soft intervals Lost Circulation 35-38 ft. thickened mud, regained circulation	–
40-42	40-42	**LIMESTONE**, as above, softer, less cemented, increased mud matrix (uncemented), w/ sand in matrix		3-3-3-3
42-45	cuttings	**LIMESTONE**, as above		–
45-47	45-46	**LIMESTONE**, as above, increased sand content, gradational contact becoming:		3-3-7-9
	46-47	**SAND**, fine gr., well sorted, subrounded-to-subangular, quartzitic, w/ phosphatic material, unconsolidated, dense		
47-50	not sampled (no coarse cuttings)	**SAND**, as above	easy drilling	–

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
50-52	50-52	**SAND**, as above, dom. unconsolidated, w/ sl. cemented intervals		9-10-12-25
52-55	cuttings	**SAND**, as above, becoming:	easy drilling to 53 ft.; hard interval 53-54 ft.; very hard drilling 54-55 ft.	–
	at 53 ft.	**LIMESTONE**, sandy, well cemented, crystalline, white to lt. gray		
55-60	cuttings	**LIMESTONE**, crystalline, sandy, cemented	hard drilling, softer below 58 ft.	no spoon at 55 ft. due to hard rock
60-62	60-62	**LIMESTONE**, as above, w/ uncemented calcareous mud matrix	8- inch diameter surface casing set to 60 ft.	8-10-10-12
62-65	cuttings	**LIMESTONE**, as above		–
65-70	cuttings	**LIMESTONE**, as above, increased sand content downward		no SPT at 65 ft. due to hard rock
70-75	cuttings	**LIMESTONE**, as above, increased sand content	hard drilling, softer below 73 ft.	no SPT at 70 ft. due to hard rock
75-77	75-76.5	**SAND**, fine gr., well sorted, subangular-to-subrounded, quartzitic w/ phosphatic material, dom. unconsolidated w/ cemented fragments		38-32-40-35
	76.5-77.0	**SANDSTONE**, similar to overlying sand but cemented		
77-80	cuttings	**SANDSTONE**, as above		–
80-82	80.0-80.5	**SANDSTONE**, as above, med.-to-coarse gr., very shelly		50(5")-X-X-X

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
82-85	cuttings	**LIMESTONE**, crystalline, very sandy, phosphatic	hard drilling	no spoon at 85 ft. due to hard rock
85-90	cuttings	**LIMESTONE**, as above		–
90-92	90-91	**SAND**, fine gr.,well sorted, quartzitic, abundant shell material, mod. phosphatic, dense, unconsolidated		14-50-X-X
92-95	cuttings	**LIMESTONE**, crystalline, very sandy, phosphatic	drilling becomes harder at 92 ft.	– no spoon at 95 ft. due to hard rock
95-100	cuttings	**LIMESTONE**, as above	very hard drilling at 95 ft.	– no spoon at 100 ft. due to hard rock
100-105	cuttings	**LIMESTONE**, as above	continued consistent hard drilling	terminate SPT at 100 ft.
105-110	cuttings	**LIMESTONE**, as above		
110-115	cuttings	**LIMESTONE**, as above		
115-120	cuttings	**LIMESTONE**, as above		
120-125	cuttings	**LIMESTONE**, as above		
125-130	cuttings	**LIMESTONE**, as above		
130-135	cuttings	**LIMESTONE**, as above		
		TERMINATE BORING AT 135 FT.		

Well Log Report Form

Boring no.: OW-6
Boring diameter: 8" *Slot:* 0.010"
Screen length: 20 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 75 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 28 Feb. 1990 *Finish:* 01 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3056.02
E: 3093.88
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air; > 500 gallons
Static water level: +0.74 ft. MSL (20 Mar. 1990)
Top of well elevation: +7.77 ft. MSL
Drill type: Mud Rotary

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-5 Boring Log OW-6 completed inside same 8" diameter surface casing as OW-5; total depth of OW-6 = 95 ft. Screened interval of OW-6 is 75-95 ft. depth		

Well Log Report Form

Boring no.: OW-7
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 10 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 01 Mar. 1990 *Finish:* 01 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3045.94
E: 3095.12
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 250 gallons
Static water level: +0.81 ft. MSL (20 Mar. 1990)
Top of well elevation: +7.86 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-5 Boring Log Boring terminated at 20 ft. Screened interval is 10-20 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.7pg1 4/90PH

Well Log Report Form

Boring no.: OW-8
Boring diameter: 8" *Slot:* 0.010"
Screen length: 20 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 75 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 01 Mar. 1990 *Finish:* 01 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 2677.29
E: 2492.75
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 500 gallons
Static water level:
Top of well elevation: +4.91 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
0-5	Not sampled	Soil Horizon	Post Hole	–
5-7	5-6	**PEAT**, rooted, dark brown, moist to saturated		3-1-1-1
	6-7	**SAND**, fine-to-med. gr., mod., well sorted, light brown, sl. silty, loose		
7-10	not sampled		no sampling between spooned intervals due to unreliability of cuttings retrieved from augers	
10-12	10-12	**SAND**, as above, light gray		2-2-1-1
12-15	not sampled			
15-17		**LIMESTONE**, cemented w/ mud matrix (uncemented), sandy, fossiliferous, visible porosity		2-2-2-3
17-20	not sampled			
20-22	20-21	**SAND**, fine-to-med. gr., well sorted, lt. gray, clean, loose-to-mod. dense		7-7-10-12
	21-22	**LIMESTONE**, sandy, cemented, w/ uncemented mud matrix, fossiliferous, similar to 15-17 ft. interval, w/ sand in matrix	similiar drilling from 17 ft. through this interval ↓	
22-25	not sampled			–

KBN 11 / EBASCO WELL LOG FORM.8 pg1 4/90PH

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
25-27	25-27	**LIMESTONE**, as above, very sandy		9-9-12-11
27-30	not sampled			–
30-32		**LIMESTONE**, as above		10-6-4-3
32-35	not sampled			–
35-37	35-37	**LIMESTONE**, as above, very sandy		6-6-3-4
37-40	not sampled		alternating hard and soft intervals	–
40-42	40-42	**LIMESTONE**, as above		6-6-6-7
42-45	not sampled			–
45-47	45-47	**SAND**, fine gr., calcareous, w/ cemented fragments (gravel size), w/ small shell material		8-9-8-9
47-50	not sampled			–
50-52		**SAND**, as above		6-5-6-15
52-55	not sampled			–
55-57	55.0-55.3	**LIMESTONE**, crystalline, visible porosity, fossiliferous, pelecypod molds		100(3")-X-X-X
57-60	not sampled			–
60-62	60-62	**LIMESTONE**, as above		2-5-10-12
62-65	not sampled		alternating hard and soft intervals hard drilling 64-65 ft.	–
65-67	65-67	**LIMESTONE**, very sandy, very fossiliferous, cemented w/ mud matrix, phosphatic, visible porosity		5-11-59-32
67-70	not sampled		hard drilling to 68 ft., soft below 68 ft.	–
	68	**SAND**, at 68 ft. (from drilling response)		

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
70-72	70-72	**SANDSTONE**, fine gr., cemented, phosphatic, sl. shelly		3-3-5-12 (upper 1.5 ft. of sample not representative)
72-75	not sampled			–
75-77	75-77	**SAND**, fine gr., well sorted, quartzitic, phosphatic, and **SANDSTONE**, similar lithology to sand but cemented		3-7-11-29
77-80	not sampled			–
80-82	80-82	**SAND**, as above, with some cemented fragments		12-15-41-46
82-85	not sampled		hard drilling	–
85-87	85-87	**LIMESTONE**, crystalline, sandy, w/ unconsolidated sand & mud matrix, light gray		6-8-11-14
81-90	not sampled	**SAND ?**	soft drilling	–
90-92	poor recovery	**LIMESTONE**, crystalline, very sandy, visible porosity	hard drilling	6-9-23-19
92-95	not sampled			–
		TERMINATE BORING AT 95 FT.		

Well Log Report Form

Boring no.: OW-9
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 10 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 02 Mar. 1990 *Finish:* 02 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 2676.38
E: 2498.23
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 250 gallons
Static water level: +0.64 ft. MSL (20 Mar. 1990)
Top of well elevation: +4.93 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-8 Boring Log Boring terminated at 20 ft. Screened interval is 10-20 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.9pg1 4/90PH

Well Log Report Form

Boring no.: OW-10
Boring diameter: 8" *Slot:* 0.010"
Screen length: 20 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 75 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 05 Mar. 1990 *Finish:* 05 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 2470.10
E: 2520.23
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Air; > 500 gallons
Static water level: ±0.47 ft. MSL (20 Mar. 1990)
Top of well elevation: +6.11 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
0-4	Not sampled	FILL, Soil Horizon	Post Hole	–
4-7	Cuttings (from auger)	SAND, fine-to-med. gr., very silty, brown, moist		–
7-10	cuttings	PEAT, silty, dark brown, rooted, moist to saturated	WT ▼~8'	–
10-12	10-12	SAND, med. gr., slightly silty, top becoming mod. to very silty at base, lt. brown to brown		1-1-1-2
12-20	not sampled			–
20-22	20-22	LIMESTONE, cemented w/ uncemented mud matrix		2-4-2-2
22-30	not sampled		Alternating hard & soft intervals	–
30-32	30-32	LIMESTONE, as above, crystalline w/uncemented matrix		6-5-3-3
32-40	not sampled		Alternating hard & soft intervals	–
40-42	40-42	LIMESTONE, as above, sand & mud matrix		7-9-11-14
42-50	not sampled		Alternating hard & soft intervals	–

KBN 11 / EBASCO WELL LOG FORM.10 pg1 4/90PH

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
50-52	50-52	**SAND**, fine gr., calcareous, w/ **SANDSTONE**, phosphatic w/small shell fragments		6-5-5-8
52-55	not sampled			–
55-57	55-57	**LIMESTONE**, crystalline, very sandy, slightly phosphatic, sl. fossiliferous		13-13-20-27
57-62	not sampled		Hard drilling 57-68 ft; w/very thin soft intervals (clay stringers?)	–
62 ft	62 (from bit)	**CALCAREOUS CLAY**		
62-70	not sampled			–
70-72	70-72	**SAND**, fine gr., very calcareous (mud); and **SANDSTONE**, visible porosity, fine-to-course gr., phosphatic		4-33-30-40
72-80	not sampled		Hard and soft intervals	–
80-82	80.0-81.8	**SAND**, very calcareous (mud); w/cemented intervals		10-14-22-28
	81.8-82.0	**LIMESTONE**, crystalline, very sandy	Hard drilling	Bottom of spoon
82-90	not sampled			–
90-92	90-92	**SAND**, fine-to-medium gr., moderately well sorted, uncemented, phosphatic, dense, white-to-light gray	Soft drilling	12-12-17-19
90-97	not sampled			–
97-97.5	97-97.5	**LIMESTONE**, crystalline, light gray, sandy	Hard drilling; sample from bit of auger	
		TERMINATE BORING AT 97.5 FT		

Well Log Report Form

Boring no.: OW-11
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 40 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 14 Mar. 1990 *Finish:* 14 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3107.17
E: 2490.54
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 300 gallons
Static water level: +0.63 ft. MSL (20 Mar. 1990)
Top of well elevation: +5.80 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-1 Boring Log Boring terminated at 50 ft. Screened interval is 40-50 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.11 pg1 4/90PH

Well Log Report Form

Boring no.: OW-12
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 40 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 14 Mar. 1990 *Finish:* 14 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 3041.06
E: 2724.93
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 300 gallons
Static water level: +0.72 ft. MSL (20 Mar. 1990)
Top of well elevation: +5.22 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-2 Boring Log Boring terminated at 50 ft. Screened interval is 40-50 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.12 pg1 4/90PH

Well Log Report Form

Boring no.: OW-13
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 40 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 14 Mar. 1990 *Finish:* 14 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 2679.26
E: 2495.30
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 300 gallons
Static water level: +0.60 ft. MSL (20 Mar. 1990)
Top of well elevation: +5.08 ft. MSL
Drill type: Hollow Stem Auger

Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-8 Boring Log		
		Boring terminated at 50 ft.		
		Screened interval is 40-50 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.13 pg1 4/90PH

Well Log Report Form

Boring no.: OW-14
Boring diameter: 8" *Slot:* 0.010"
Screen length: 10 feet *Diameter:* 2"
Material: Schedule 40 PVC
Casing length: 40 ft. *Diameter:* 2"
Material: Schedule 40 PVC
Date start: 15 Mar. 1990 *Finish:* 15 Mar. 1990
Contractor: Groundwater Protection *Geologist:* M. Jordana

EBASCO coordinates: N: 2471.03
E: 2513.72
Filter materials: 20/30 Silica sand
Grout type: Bentonite/Portland Cement
Development: Pump & Surge; > 300 gallons
Static water level: +0.69 ft MSL (20 Mar. 1990)
Top of well elevation: +6.35 ft MSL
Drill type: Hollow Stem Auger

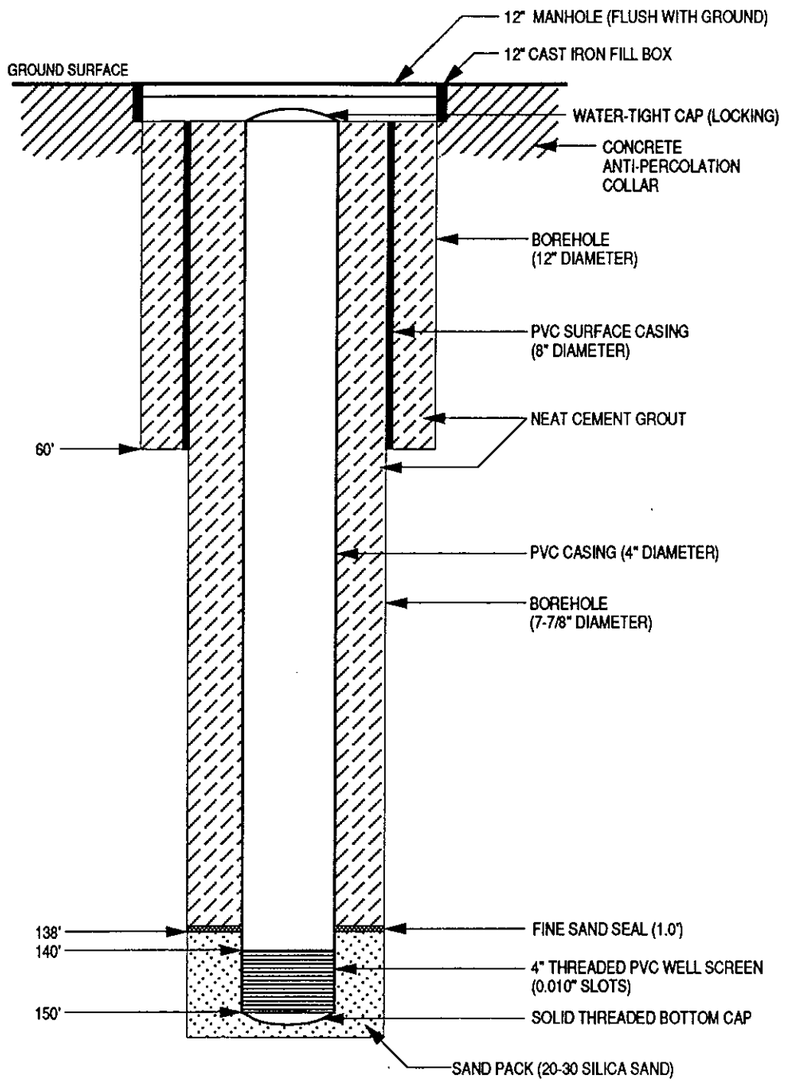
Depth (ft)	Sample	Lithology, Color	Drilling Conditions	Standard Penetration Blow Count
		Lithologic Description Provided On OW-10 Boring Log		
		Boring terminated at 50 ft.		
		Screened interval is 40-50 ft. depth		

KBN 11 / EBASCO WELL LOG FORM.14 pg1 4/90PH

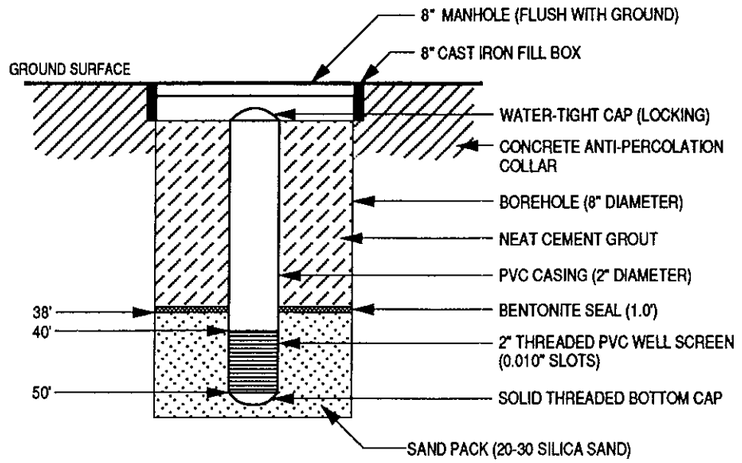
APPENDIX C

CONSTRUCTION DETAILS FOR OBSERVATION WELLS

OW-1



OW-11



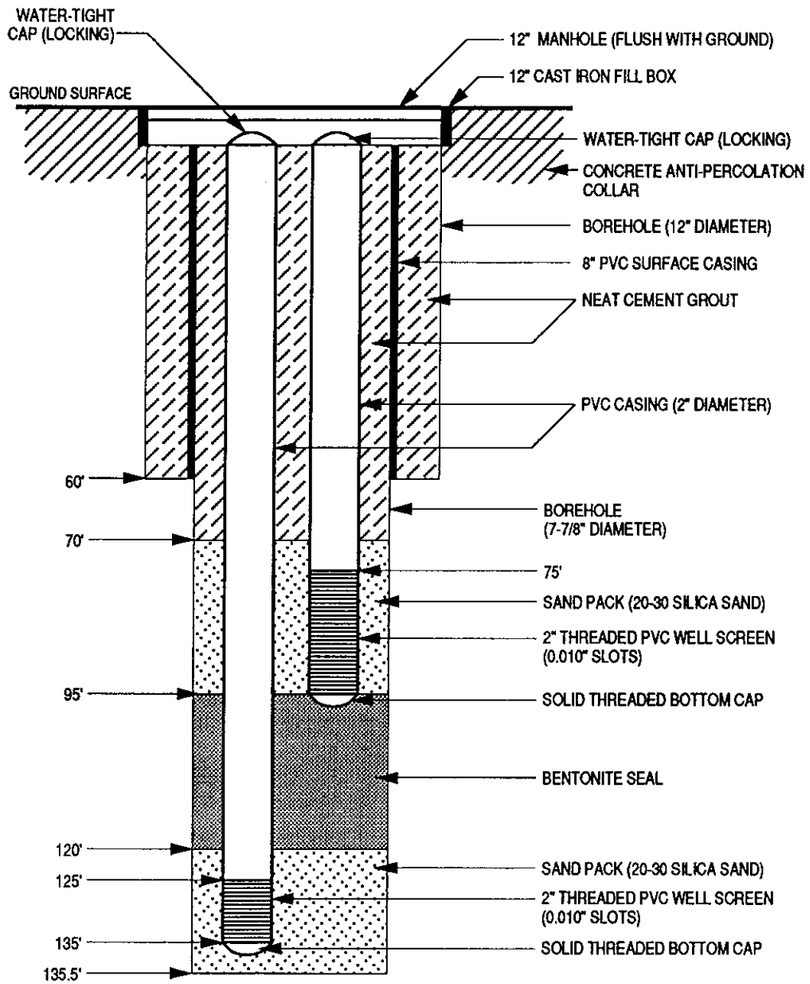
NOT TO SCALE

CONSTRUCTION DETAILS FOR OBSERVATION WELLS OW-1 AND OW-11

Lauderdale Repowering Project

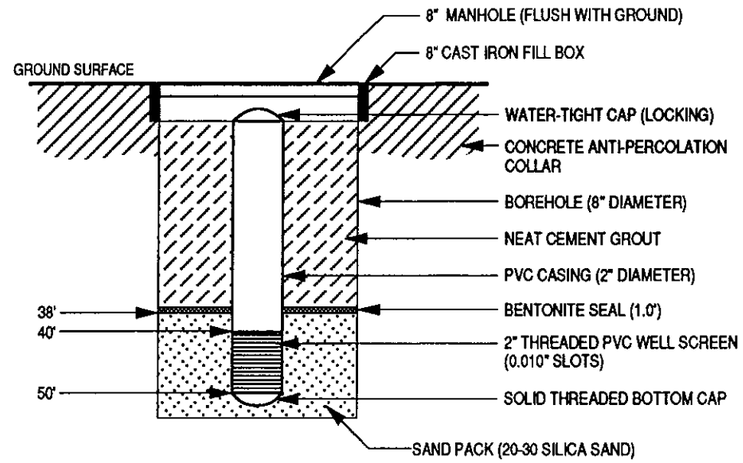
FPL

OW-2 OW-3

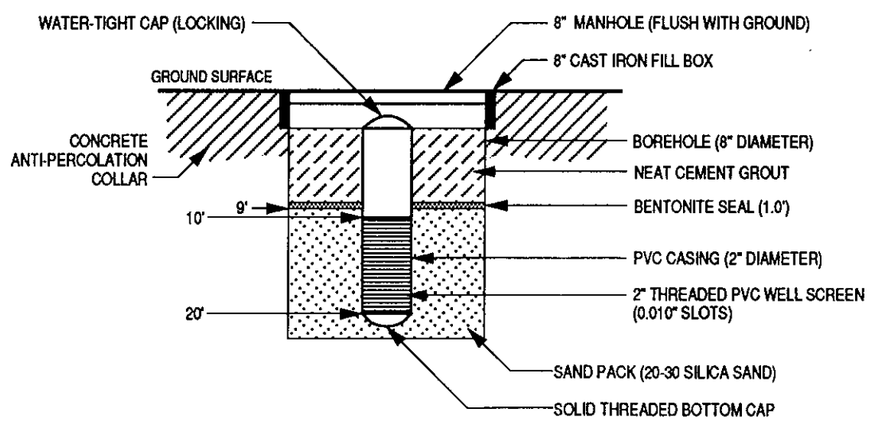


NOTE: BOTH WELLS OW-2 AND OW-3 WERE COMPLETED INSIDE THE SAME 8" PVC SURFACE CASING.

OW-12



OW-4

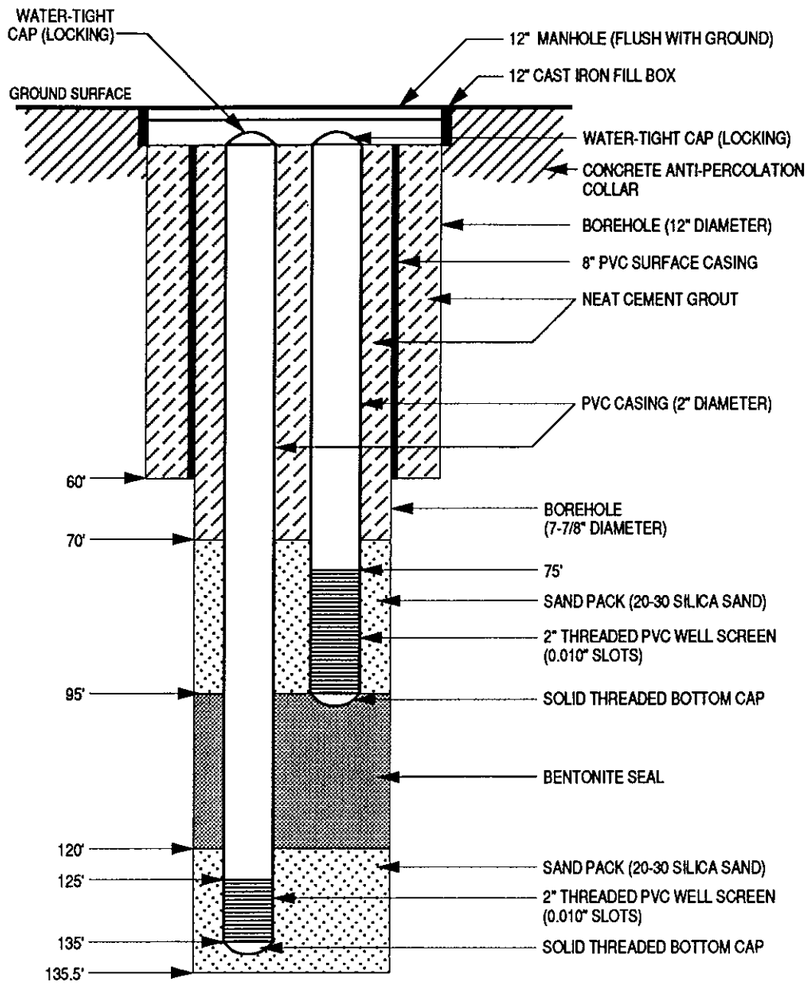


NOT TO SCALE

CONSTRUCTION DETAILS FOR OBSERVATION WELLS
OW-2, OW-3, OW-4, AND OW-12

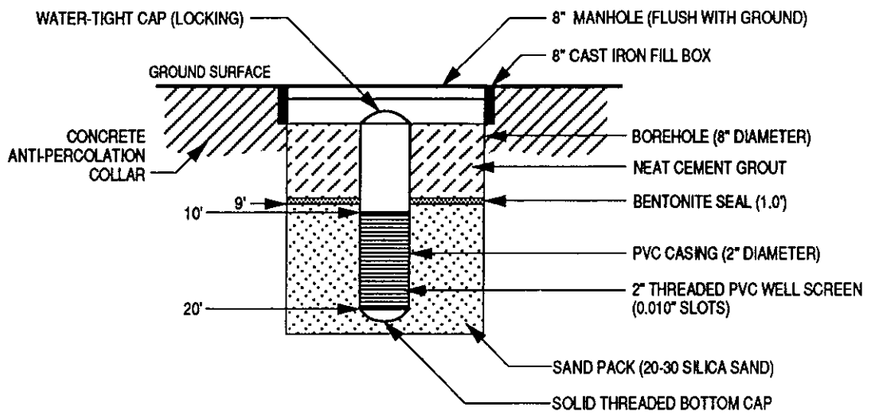
Lauderdale Repowering Project
FPL

OW-5 OW-6



NOTE: BOTH WELLS OW-5 AND OW-6 WERE COMPLETED INSIDE THE SAME 8" PVC SURFACE CASING.

OW-7



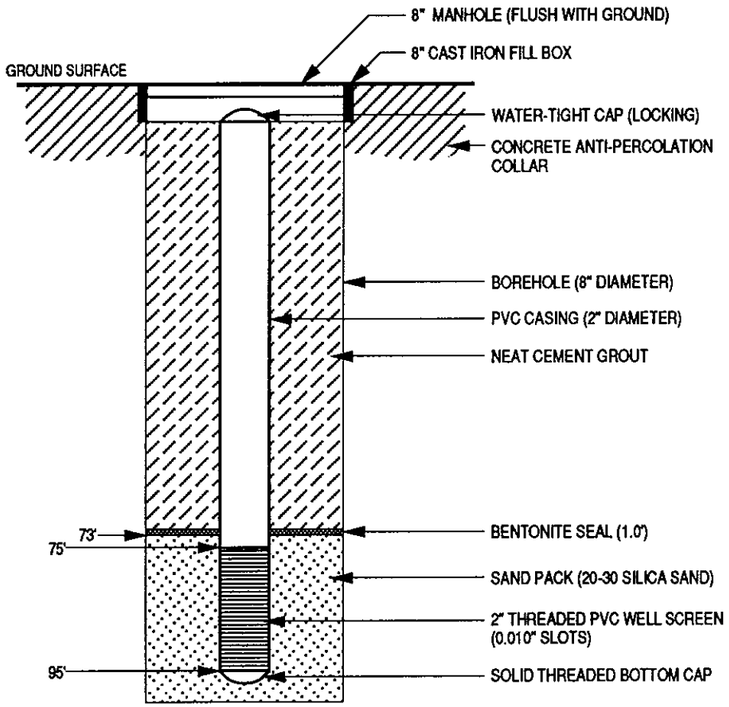
NOT TO SCALE

CONSTRUCTION DETAILS FOR OBSERVATION WELLS OW-5, OW-6, AND OW-7

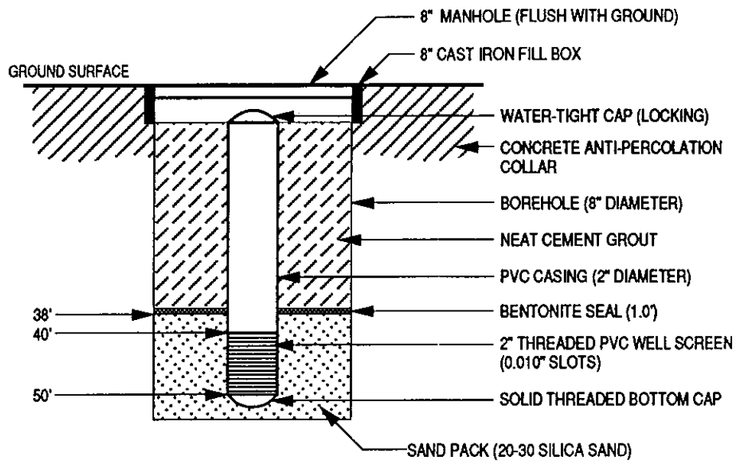
Lauderdale Repowering Project

FPL

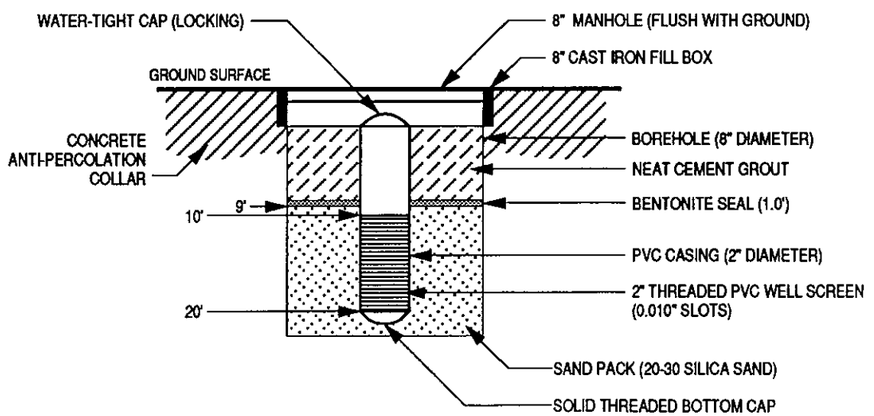
OW-8



OW-13



OW-9



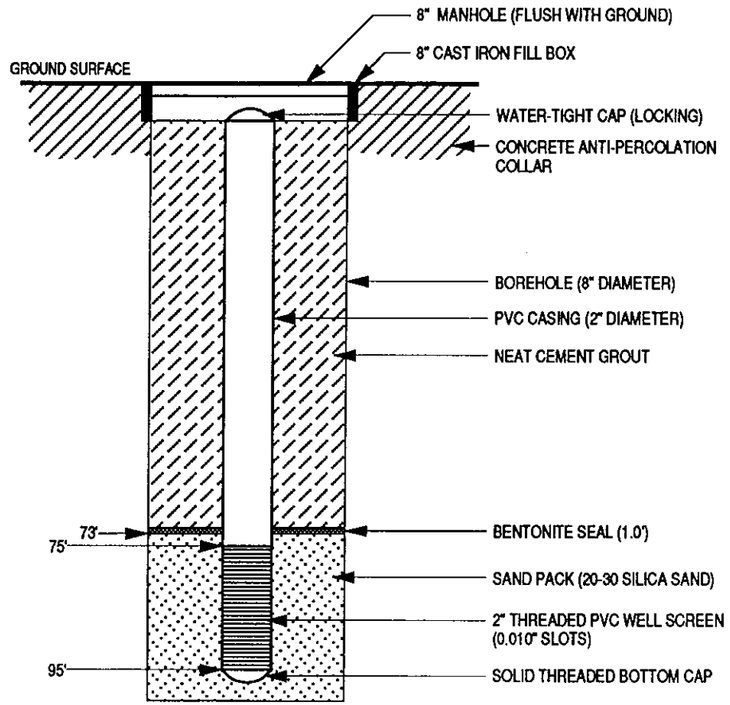
NOT TO SCALE

CONSTRUCTION DETAILS FOR OBSERVATION WELLS OW-8, OW-9, AND OW-13

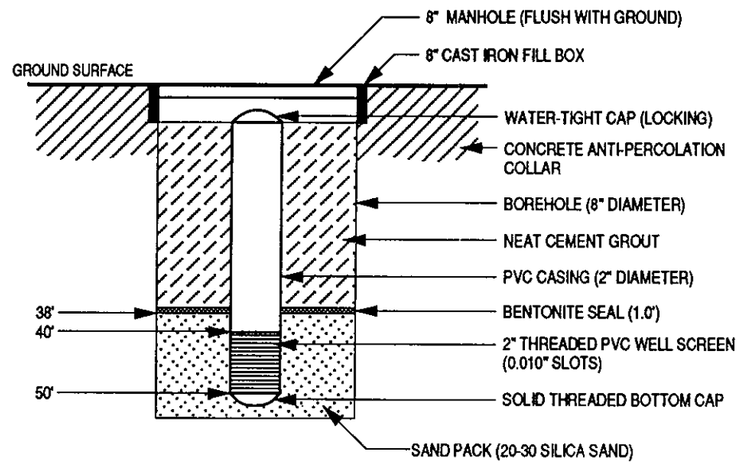
Lauderdale Repowering Project

FPL

OW-10



OW-14



NOT TO SCALE

CONSTRUCTION DETAILS FOR OBSERVATION WELLS OW-10 AND OW-14

Lauderdale Repowering Project

FPL

APPENDIX D

GEOPHYSICAL LOGS

SOUTHERN RESOURCE EXPLORATION
P.O. Box 14311
Gainesville, FL 32604
904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ■ Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/8/90
Well No. OW-1 Project No.

Location: State FLORIDA County BROWARD
☐ N ☐ E
____ ¼ ____ ¼ ____ ¼ Sec. ____ T. ____ ☐ S R ____ ☐ W
Logged by M. FRIED Observer M. JORDAN

Owner: FLORIDA POWER AND LIGHT CO.
Well: OBSERVATION WELL #OW-1
Driller: Date Drilled
☐ Estimated
Surface Elevation: ____ ft. ☐ Measured Above MSL
T.D. Logged 146 T.D. Drilled
Hole Dia.
Casing Dia. 2" PVC
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
☐ Above ☐ Above
Water Level: ____ ft. ☐ Below MP, TOC ☐ Below Land Surface
Yield: Flow ____ gpm Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res ____ ohm-meters/inch
Res ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm.
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec.
Logging speed 30 FPM

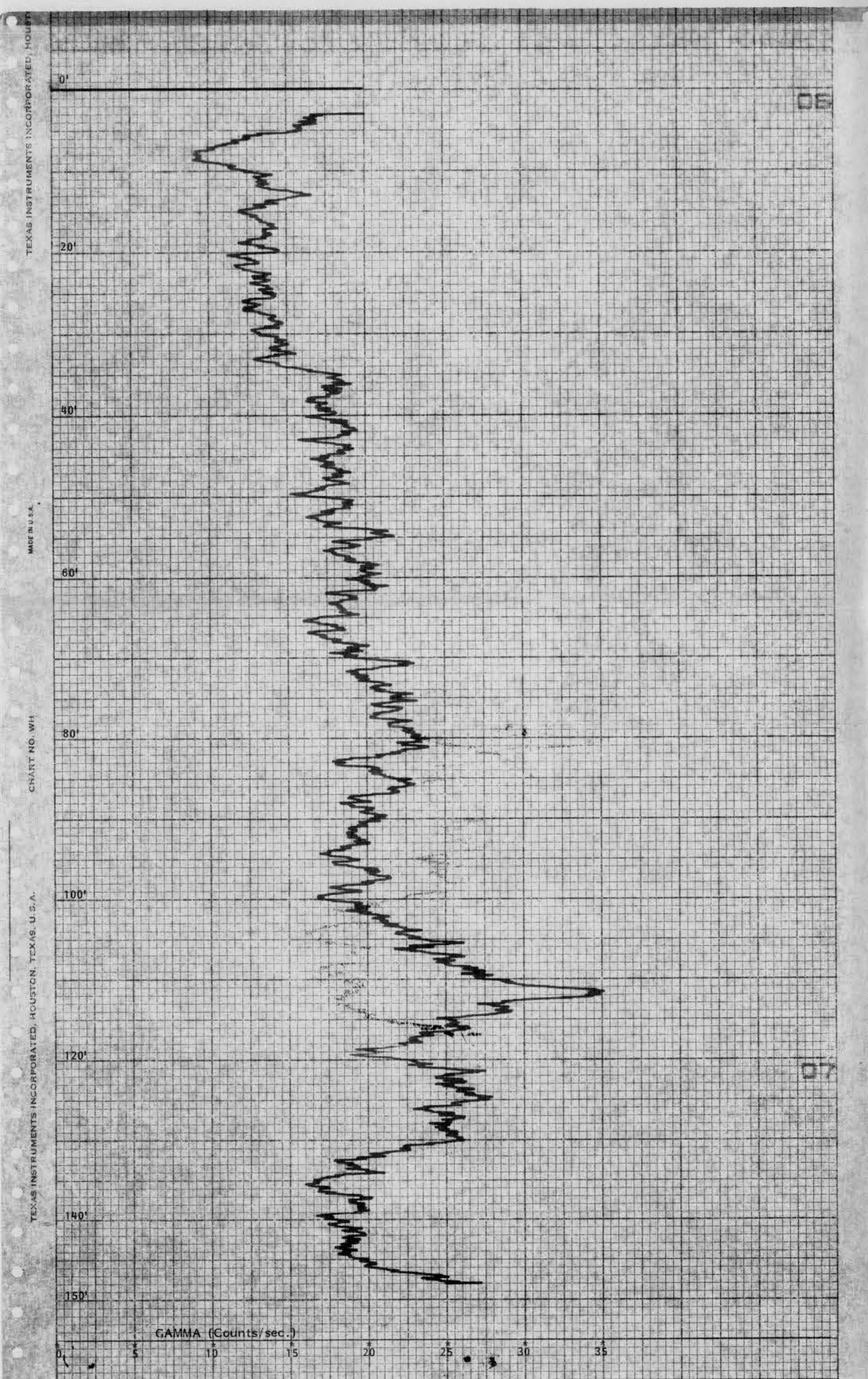
Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
____ inches to ____ inches
Logging speed 30 FPM

Water Samples
Depths sampled: ____, ____, ____, ____, ____

Remarks:



SOUTHERN RESOURCE EXPLORATION
P.O. Box 14311
Gainesville, FL 32604
904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ● Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/8/90
Well No. OW-2 Project No.

Location: State FLORIDA County BROWARD
____ ¼ ____ ¼ ____ ¼ Sec. ____ T ____ ☐ N ☐ E ☐ S ☐ R ____ ☐ W
Logged by M. FRIED Observer M. JOHNSON

Owner FLORIDA POWER AND LIGHT CO.
Well OBSERVATION WELL #OW-2
Driller: Date Drilled
Surface Elevation: ____ ft. ☐ Estimated ☐ Measured Above MSL
T.D. Logged 134' T.D. Drilled
Hole Dia.
Casing Dia. 2" PVC
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
Water Level: ____ ft. ☐ Above ☐ Below MP, TOC ☐ Above ☐ Below Land Surface
Yield: Flow ____ gpm Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res. ____ ohm-meters/inch
Res ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 1 sec
Logging speed 30 FPM

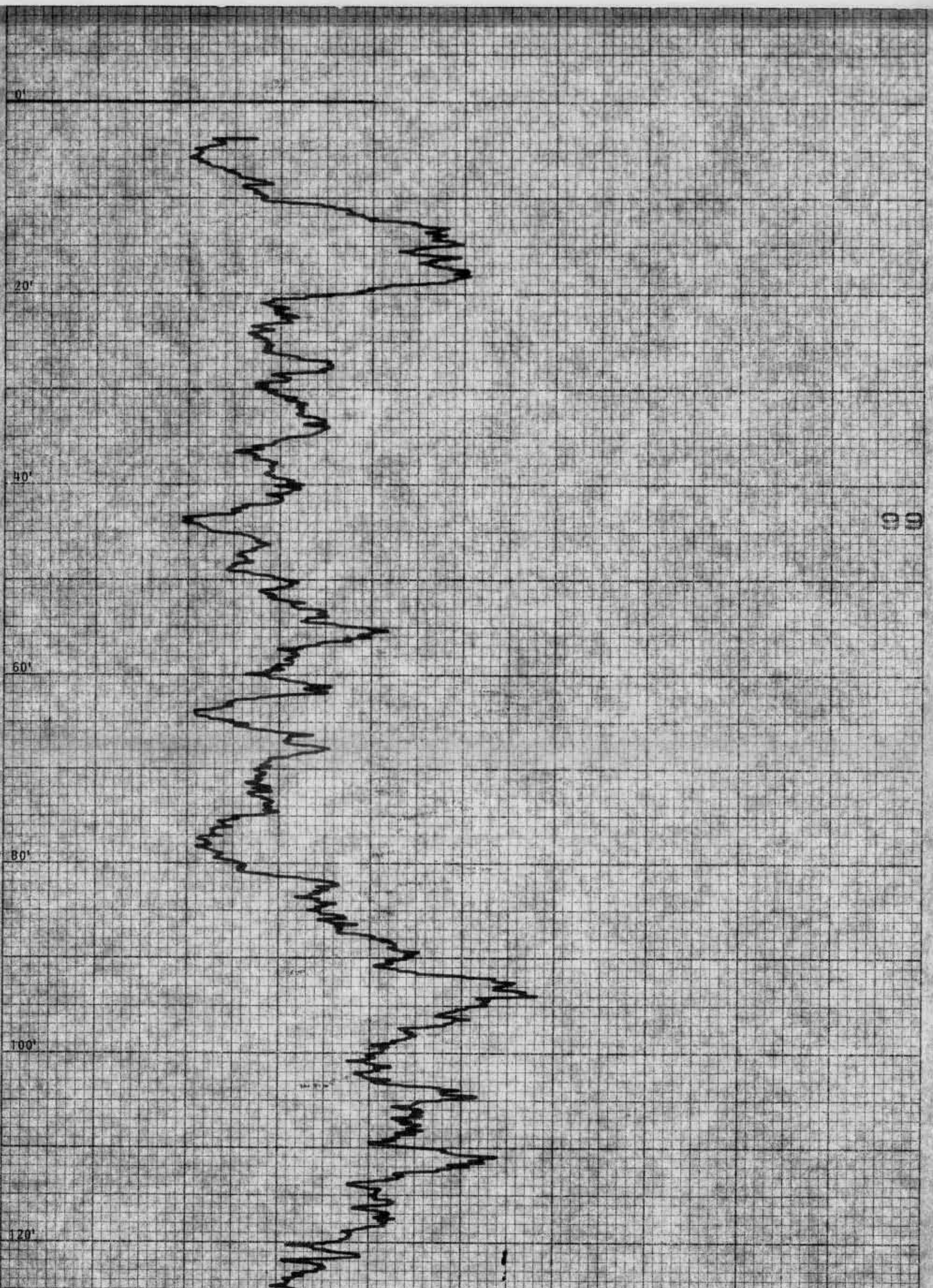
Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
____ inches to ____ inches
Logging speed 30 FPM

Water Samples
Depths sampled: ____, ____, ____, ____, ____

Remarks:



SOUTHERN RESOURCE EXPLORATION
P.O. Box 14311
Gainesville, FL 32604
904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ■ Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/6/90
Well No. OW-5 Project No.

Location: State FLORIDA County BROWARD
☐ N ☐ E
___ ¼ ___ ¼ ___ ¼ Sec. ___ T ___ ☐ S R ___ ☐ W
Logged by M. FRIED Observer M. JORDANO

Owner: FLORIDA POWER AND LIGHT CO.
Well: OBSERVATION WELL #OW-5
Driller: Date Drilled
☐ Estimated
Surface Elevation: ___ ft ☐ Measured Above MSL
T.D. Logged 133' T.D. Drilled
Hole Dia.
Casing Dia. 2" PVC
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
☐ Above ☐ Above
Water Level: ___ ft. ☐ Below MP. TOC ☐ Below Land Surface
Yield: Flow ___ gpm Pump ___ gpm

Log Scales

Electric Log
SP ___ millivolts/5 inches
Res. ___ ohm-meters/inch
Res. ___ ohms/5 inches

Fluid Resistivity/Conductivity
___ ohm meters/inch
___ to ___ m.mhos/cm
@ ___ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec
Logging speed 30 FPM

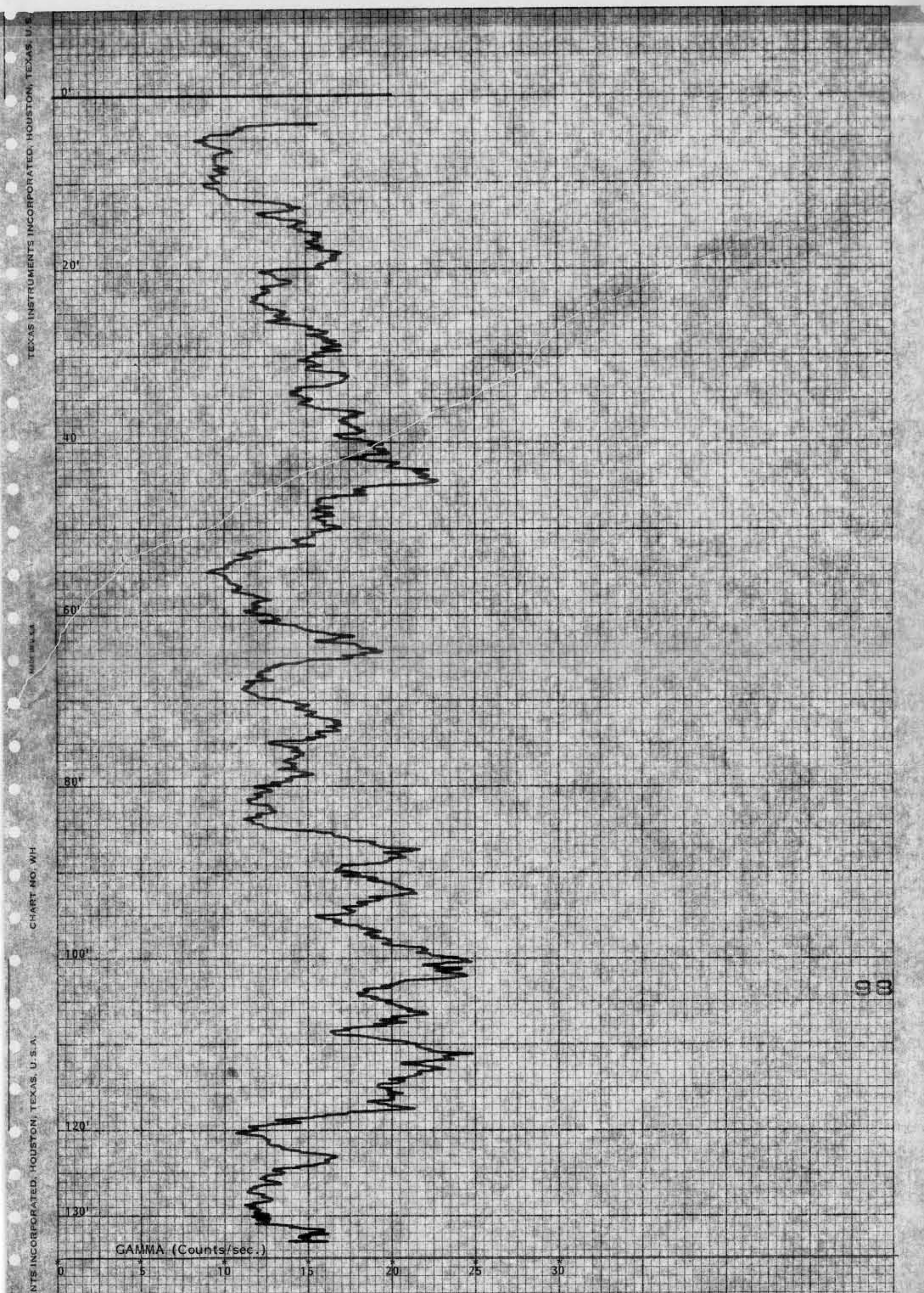
Fluid Velocity
___ Rev./min/inch
___ FPM (Continuous)
Q = ___ gpm

Temperature
___ °F to ___ °F
Logging speed ___ FPM

Caliper
___ inches to ___ inches
Logging speed 30 FPM

Water Samples
Depths sampled: ___, ___, ___, ___, ___

Remarks:



SOUTHERN RESOURCE EXPLORATION
P.O. Box 14311
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904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ■ Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/8/90
Well No. OW-B Project No.

Location: State FLORIDA County BROWARD
☐ N ☐ E
____ ¼ ____ ¼ ____ ¼ Sec. ____ T ____ ☐ S ☐ R ____ ☐ W
Logged by M. FRIED Observer M. JORDANA

Owner: FLORIDA POWER AND LIGHT CO.
Well: OBSERVATION WELL #OW-B
Driller: Date Drilled
☐ Estimated
Surface Elevation: ____ ft. ☐ Measured Above MSL
T.D. Logged 90.5' T.D. Drilled
Hole Dia.
Casing Dia. 2" PVC
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
☐ Above ☐ Above
Water Level: ____ ft. ☐ Below MP. TOC ☐ Below Land Surface
Yield: Flow ____ gpm Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res. ____ ohm-meters/inch
Res. ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm.
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec
Logging speed 30 FPM

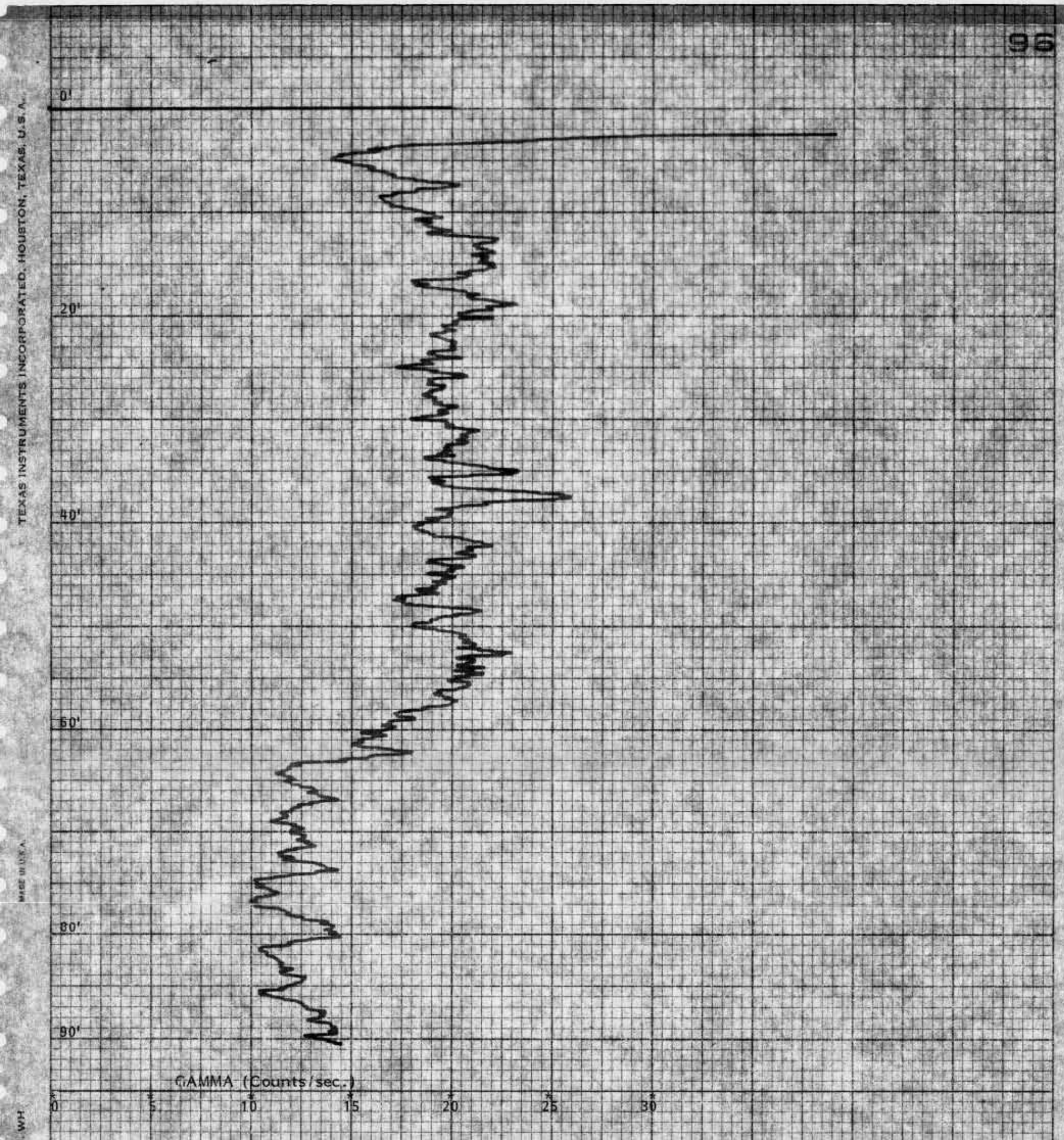
Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
____ inches to ____ inches
Logging speed 30 FPM

Water Samples
Depths sampled ____, ____, ____, ____, ____

Remarks:



SOUTHERN RESOURCE EXPLORATION

P.O. Box 14311
Gainesville, FL 32604
904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 1 of 2

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ■ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ☐ Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/8/90
Well No. PW-5B Project No.

Location: State FLORIDA County BROWARD
____ ¼ ____ ¼ ____ ¼ Sec ____ T ____ ☐ N ☐ E ☐ S R ____ ☐ W
Logged by M. FRIED Observer M. JORDAN

Owner FLORIDA POWER AND LIGHT CO.
Well PRODUCTION WELL #PW-5B
Driller: Date Drilled
Surface Elevation: ____ ft ☐ Estimated ☐ Measured Above MSL
T.D. Logged 47' T.D. Drilled
Hole Dia. 24"
Casing Dia. 18" TO 40'
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
Water Level: ____ ft. ☐ Above ☐ Below
Yield: Flow ____ gpm
MP. TOC ☐ Above ☐ Below Land Surface
Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res ____ ohm-meters/inch
Res ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec
Logging speed 30 FPM

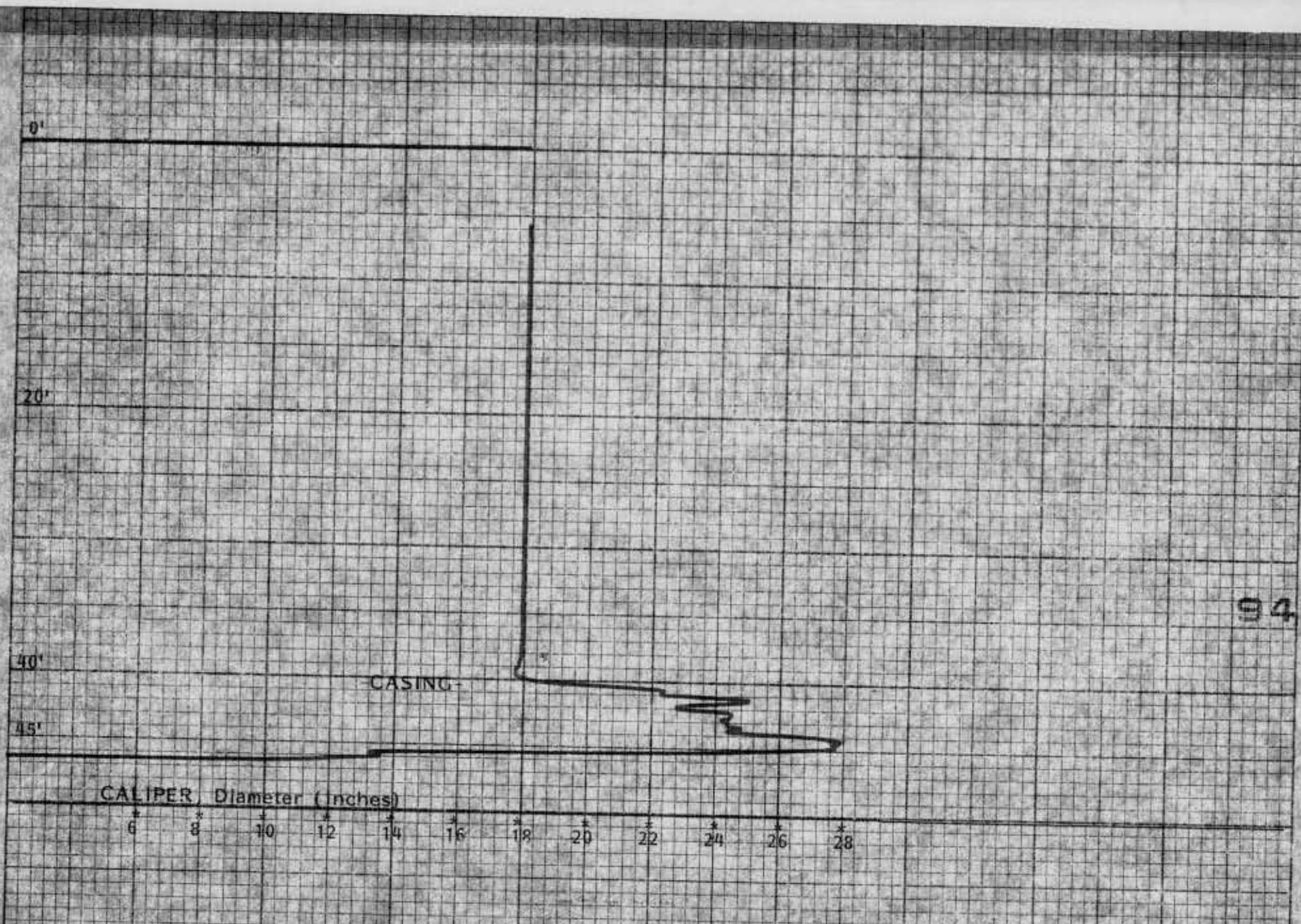
Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
4 inches to 36 inches
Logging speed 30 FPM

Water Samples
Depths sampled: ____, ____, ____, ____, ____

Remarks:



SOUTHERN RESOURCE EXPLORATION

P.O. Box 14311
Gainesville, FL 32604
904-372-5950

GEOPHYSICAL WELL SURVEY

Sheet 2 of 2

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ■ Gamma Ray
- ☐ Temperature

CLIENT KBN ENGINEERING INC. Date 3/6/90
Well No. PW-5B Project No.

Location: State FLORIDA County BROWARD
☐ N ☐ E
____ ¼ ____ ¼ ____ ¼ Sec. ____ T ____ ☐ S R ____ ☐ W
Logged by M. FRIED Observer M. JORDAN

Owner: FLORIDA POWER AND LIGHT CO.
Well: PRODUCTION WELL #PW-5B
Driller: ____ Date Drilled: ____
☐ Estimated
Surface Elevation: ____ ft ☐ Measured Above MSL
T.D. Logged 47 T.D. Drilled ____
Hole Dia. 24"
Casing Dia. 18" TO 40'
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
☐ Above ☐ Above
Water Level: ____ ft. ☐ Below MP. TOC ☐ Below Land Surface
Yield: Flow ____ gpm Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res. ____ ohm-meters/inch
Res. ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm.
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec
Logging speed 30 FPM

Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
6 inches to 36 inches
Logging speed 30 FPM

Water Samples
Depths sampled: ____, ____, ____, ____, ____

Remarks: ____

SOUTHERN RESOURCE EXPLORATION
P.O. Box 14311
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GEOPHYSICAL WELL SURVEY

Sheet 1 of 1

Electric
- ☐ 16" Normal
- ☐ 64" Normal
- ☐ Single Point
- ☐ S.P.

- ☐ Caliper
- ☐ Fluid Resistivity
- ☐ Fluid Velocity
- ■ Gamma Ray
- ☐ Temperature

CLIENT KEN ENGINEERING INC. Date 3/8/90
Well No. OW-10 Project No

Location: State FLORIDA County BROWARD
____ ¼ ____ ¼ ____ ¼ Sec ____ T ____ ☐ N ☐ S R ____ ☐ E ☐ W
Logged by M. FRIED Observer M. JORDANA

Owner FLORIDA POWER AND LIGHT CO.
Well OBSERVATION WELL #OW-10
Driller ____ Date Drilled ____
Surface Elevation: ____ ft ☐ Estimated ☐ Measured Above MSL
T.D. Logged 85 T.D. Drilled ____
Hole Dia. ____
Casing Dia. 2" PVC
Finish: ☐ Open Hole ☐ Screen ☐ Gravel ☐ Other
Water Level: ____ ft. ☐ Above ☐ Below
MP. TOC ☐ Above ☐ Below Land Surface
Yield: Flow ____ gpm Pump ____ gpm

Log Scales

Electric Log
SP ____ millivolts/5 inches
Res ____ ohm-meters/inch
Res ____ ohms/5 inches

Fluid Resistivity/Conductivity
____ ohm meters/inch
____ to ____ m.mhos/cm.
@ ____ °F

Gamma Ray Log
5 Counts/sec/inch
Time Constant 4 sec
Logging speed 30 FPM

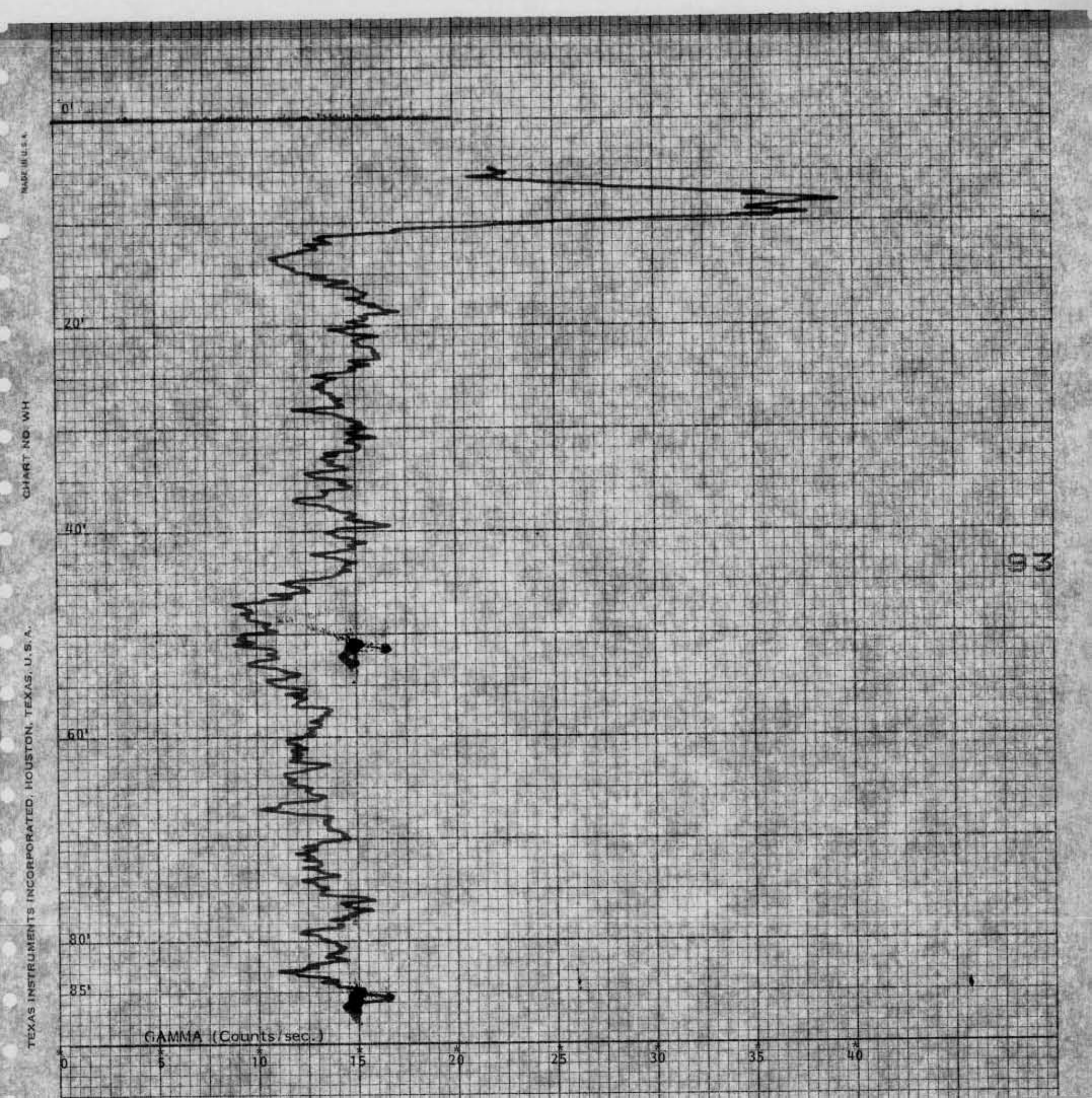
Fluid Velocity
____ Rev./min/inch
____ FPM (Continuous)
Q = ____ gpm

Temperature
____ °F to ____ °F
Logging speed ____ FPM

Caliper
____ inches to ____ inches
Logging speed 30 FPM

Water Samples
Depths sampled: ____, ____, ____, ____, ____

Remarks: ____



APPENDIX E

WATER LEVEL DATA

```
C  STATION # 1
C  RECORDS OF WATER-LEVEL MEASUREMENTS AT FPL OW-1
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 5.92 FT. MSL
C  DISTANCE FROM PUMPING WELL = 25.17 FEET
C  DEPTH OF WELL 150 FEET
C  DEPTH TO WATER BEFORE PUMPING = 5.05 FT AT 08:00 ON 03/20/90
C  DEPTH TO WATER BEFORE PUMPING = 5.24 FT AT 10:23 ON 03/20/90
C  START OF PUMPING-TEST DATA
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-1
C
C                  CHANNEL
C                     ^
C                           WL
C                           ^
 90/03/20 10:30:31    1   5.27
 90/03/20 10:31:00    1   5.30
 90/03/20 10:31:30    1   5.30
 90/03/20 10:32:00    1   5.31
 90/03/20 10:32:30    1   5.32
 90/03/20 10:34:00    1   5.34
 90/03/20 10:35:30    1   5.34
 90/03/20 10:37:00    1   5.35
 90/03/20 10:53:00    1   5.37
 90/03/20 11:20:00    1   5.37
 90/03/20 11:29:00    1   5.37
 90/03/20 11:31:00    1   5.37
 90/03/20 11:38:00    1   5.38
 90/03/20 11:52:00    1   5.37
 90/03/20 12:02:00    1   5.36
 90/03/20 12:13:00    1   5.35
 90/03/20 12:20:00    1   5.35
 90/03/20 12:30:00    1   5.34
 90/03/20 12:43:00    1   5.32
 90/03/20 13:03:00    1   5.31
 90/03/20 13:25:00    1   5.28
 90/03/20 13:44:00    1   5.27
 90/03/20 14:20:00    1   5.23
 90/03/20 15:33:15    1   5.19
 90/03/20 16:12:00    1   5.15
 90/03/20 16:42:00    1   5.14
 90/03/20 17:39:00    1   5.17
 90/03/20 18:39:00    1   5.27
 90/03/20 19:37:00    1   5.28
 90/03/20 20:38:00    1   5.36
 90/03/20 21:34:00    1   5.45
 90/03/20 22:18:00    1   5.46
 90/03/20 23:57:00    1   5.50
 90/03/21 01:23:00    1   5.43
 90/03/21 02:45:00    1   5.28
 90/03/21 04:36:00    1   5.15
 90/03/21 05:46:00    1   5.08
 90/03/21 07:08:30    1   5.15
 90/03/21 09:11:00    1   5.28
 90/03/21 11:14:00    1   5.40
 90/03/21 13:07:00    1   5.36
 90/03/21 15:05:00    1   5.24
```

```
 90/03/21 17:07:00    1   5.13
 90/03/21 19:10:00    1   5.13
 90/03/21 21:04:00    1   5.22
 90/03/21 23:23:00    1   5.40
 90/03/22 01:15:00    1   5.38
 90/03/22 03:11:00    1   5.18
 90/03/22 05:28:00    1   5.03
 90/03/22 07:14:00    1   4.94
 90/03/22 09:38:00    1   5.14
 90/03/22 12:06:00    1   5.32
 90/03/22 13:21:00    1   5.38
 90/03/22 15:37:00    1   5.21
 90/03/22 17:17:00    1   5.15
 90/03/22 19:20:00    1   5.02
 90/03/22 21:23:00    1   5.18
 90/03/22 23:51:00    1   5.40
 90/03/23 02:28:00    1   5.46
 90/03/23 06:10:00    1   5.14
 90/03/23 08:07:00    1   5.03
C  END OF DATA DURING PUMP TEST; RECOVERY NOT MEASURED.
```

```
C  STATION # 1
C  RECORDS OF MANUAL WATER-LEVEL MEASUREMENTS AT FPL OW-2
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 4.88 FT. MSL
C  DEPTH OF WELL 135 FEET
C  DISTANCE FROM PUMPING WELL = 272.14 FEET
C  DEPTH TO WATER BEFORE PUMPING = 3.98 FT AT 07:55 ON 03/20/90
C  DEPTH TO WATER BEFORE PUMPING = 4.20 FT AT 10:23 ON 03/20/90
C  START OF PUMPING-TEST DATA
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-2
C
C                  CHANNEL
C                     ^
C                          WL
C                          ^
 90/03/20 10:31:00    1  4.22
 90/03/20 10:37:30    1  4.22
 90/03/20 10:43:00    1  4.22
 90/03/20 10:46:30    1  4.26
 90/03/20 10:56:00    1  4.30
 90/03/20 11:11:00    1  4.32
 90/03/20 11:32:30    1  4.33
 90/03/20 12:00:00    1  4.33
 90/03/20 12:24:00    1  4.32
 90/03/20 12:46:00    1  4.26
 90/03/20 13:15:00    1  4.28
 90/03/20 15:01:00    1  4.18
 90/03/20 15:02:00    1  4.14
 90/03/20 15:50:00    1  4.06
 90/03/20 16:16:00    1  4.02
 90/03/20 16:44:00    1  4.00
 90/03/20 17:40:00    1  4.02
 90/03/20 18:40:00    1  4.12
 90/03/20 19:39:00    1  4.18
 90/03/20 20:40:00    1  4.23
 90/03/20 21:13:00    1  4.32
 90/03/20 22:00:00    1  4.33
 90/03/20 23:31:00    1  4.34
 90/03/21 01:01:00    1  4.35
 90/03/21 02:30:00    1  4.22
 90/03/21 04:18:00    1  4.08
 90/03/21 05:30:00    1  4.02
 90/03/21 06:55:00    1  4.05
 90/03/21 09:17:00    1  4.20
 90/03/21 11:19:00    1  4.31
 90/03/21 13:09:00    1  4.27
 90/03/21 15:06:00    1  4.15
 90/03/21 17:09:00    1  4.00
 90/03/21 19:13:00    1  4.01
 90/03/21 20:47:00    1  4.09
 90/03/21 22:50:00    1  4.27
 90/03/22 00:49:00    1  4.31
 90/03/22 02:47:00    1  4.18
 90/03/22 05:03:00    1  3.93
 90/03/22 06:49:00    1  3.86
 90/03/22 09:25:00    1  4.02
 90/03/22 12:14:00    1  4.24
```

```
 90/03/22 13:25:00    1  4.28
 90/03/22 15:13:00    1  4.17
 90/03/22 17:01:00    1  4.03
 90/03/22 19:01:00    1  3.92
 90/03/22 21:01:00    1  4.05
 90/03/22 23:43:00    1  4.30
 90/03/23 01:55:00    1  4.41
 90/03/23 06:01:00    1  4.06
 90/03/23 07:58:00    1  3.92
C  END OF PUMP TEST DATA. RECOVERY NOT MEASURED.
```

```
C  STATION # 3
C  RECORDS OF MANUAL WATER-LEVEL MEASUREMENTS AT FPL OW-5
C  AS DEPTH TO WATER IN FEET
C  START OF PUMPING-TEST DATA
C  WATER LEVEL JUST BEFORE PUMPING = 6.92 FT AT 10:16 ON 3/20/90
C  DISTANCE FROM PRODUCTION WELL = 624.60 FEET
C  DEPTH OF WELL = 135 FEET
C  ELEVATION OF MEASURING POINT TOC = 7.79 FEET NGVD
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-5
C
C                  CHANNEL
C                     ^
C                            WL
C                            ^
 90/03/20 10:16:00    1   6.92
 90/03/20 10:31:45    1   6.98
 90/03/20 10:35:00    1   7.02
 90/03/20 10:37:32    1   7.06
 90/03/20 10:40:15    1   7.07
 90/03/20 10:42:30    1   7.08
 90/03/20 10:44:45    1   7.08
 90/03/20 10:51:00    1   7.09
 90/03/20 10:55:00    1   7.09
 90/03/20 11:00:45    1   7.10
 90/03/20 11:14:00    1   7.10
 90/03/20 11:31:30    1   7.10
 90/03/20 11:46:00    1   7.09
 90/03/20 12:00:30    1   7.06
 90/03/20 12:17:15    1   7.06
 90/03/20 12:29:45    1   7.06
 90/03/20 12:52:45    1   7.01
 90/03/20 13:43:45    1   7.00
 90/03/20 14:00:00    1   6.98
 90/03/20 14:30:15    1   6.90
 90/03/20 15:00:15    1   6.92
 90/03/20 15:29:30    1   6.91
 90/03/20 16:01:00    1   6.88
 90/03/20 16:30:00    1   6.87
 90/03/20 17:32:00    1   6.84
 90/03/20 18:35:00    1   6.95
 90/03/20 19:30:00    1   6.99
 90/03/20 20:27:00    1   7.04
 90/03/20 21:19:00    1   7.11
 90/03/20 22:07:00    1   7.13
 90/03/20 23:43:00    1   7.25
 90/03/21 01:10:00    1   7.15
 90/03/21 02:36:00    1   7.03
 90/03/21 04:24:00    1   6.90
 90/03/21 05:36:00    1   6.79
 90/03/21 07:00:00    1   6.85
 90/03/21 09:01:00    1   6.98
 90/03/21 11:00:00    1   7.10
 90/03/21 13:00:00    1   7.07
 90/03/21 14:59:00    1   6.97
 90/03/21 17:01:00    1   6.81
 90/03/21 19:02:00    1   6.82
 90/03/21 20:58:30    1   6.94
```

```
 90/03/21 23:08:00   1  7.05
 90/03/22 00:58:00   1  7.10
 90/03/22 02:56:00   1  6.95
 90/03/22 05:10:00   1  6.76
 90/03/22 06:55:00   1  6.69
 90/03/22 09:29:00   1  6.84
 90/03/22 11:43:00   1  7.01
 90/03/22 15:21:00   1  6.95
 90/03/22 17:08:00   1  6.84
 90/03/22 19:07:00   1  6.69
 90/03/22 21:15:00   1  6.90
 90/03/22 23:47:00   1  7.10
 90/03/23 01:59:00   1  7.20
 90/03/23 06:16:00   1  6.83
 90/03/23 08:18:00   1  6.74
C END OF DATA
```

```
C  STATION # 3
C  RECORDS OF MANUAL WATER-LEVEL MEASUREMENTS AT FPL OW-6
C  AS DEPTH TO WATER IN FEET
C  START OF PUMPING-TEST DATA
C  WATER LEVEL JUST BEFORE PUMPING = 7.03 FEET AT 10:15 ON 3/20/90
C  DISTANCE FROM PUMPING WELL = 624.60 FEET
C  DEPTH OF WELL = 95 FEET
C  ELEVATION OF MEASURING POINT = 7.77 FEET NGVD
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-6
C
C                    CHANNEL
C                       ^
C                             WL
C                             ^
 90/03/20 10:15:00    1   7.03
 90/03/20 10:33:34    1   7.08
 90/03/20 10:36:30    1   7.12
 90/03/20 10:39:00    1   7.11
 90/03/20 10:41:15    1   7.11
 90/03/20 10:43:30    1   7.12
 90/03/20 10:45:45    1   7.12
 90/03/20 10:50:30    1   7.13
 90/03/20 10:55:30    1   7.13
 90/03/20 11:00:00    1   7.13
 90/03/20 11:15:00    1   7.13
 90/03/20 11:30:30    1   7.14
 90/03/20 11:45:00    1   7.14
 90/03/20 12:00:00    1   7.10
 90/03/20 12:16:15    1   7.08
 90/03/20 12:30:15    1   7.09
 90/03/20 12:52:00    1   7.04
 90/03/20 13:44:30    1   7.01
 90/03/20 14:00:30    1   7.00
 90/03/20 14:31:00    1   6.95
 90/03/20 15:01:00    1   6.95
 90/03/20 15:30:00    1   6.92
 90/03/20 16:02:00    1   6.89
 90/03/20 16:31:00    1   6.88
 90/03/20 17:33:00    1   6.89
 90/03/20 18:36:00    1   6.98
 90/03/20 19:31:00    1   7.02
 90/03/20 20:28:00    1   7.10
 90/03/20 21:18:00    1   7.18
 90/03/20 22:06:00    1   7.21
 90/03/20 23:45:00    1   7.21
 90/03/21 01:10:00    1   7.18
 90/03/21 02:37:00    1   7.05
 90/03/21 04:25:00    1   6.90
 90/03/21 05:35:00    1   6.77
 90/03/21 07:00:00    1   6.87
 90/03/21 09:02:00    1   7.01
 90/03/21 11:08:00    1   7.13
 90/03/21 13:00:00    1   7.10
 90/03/21 14:59:00    1   6.98
 90/03/21 17:02:00    1   6.82
 90/03/21 19:03:00    1   6.82
 90/03/21 20:58:00    1   6.96
```

```
 90/03/21 23:09:00    1   7.11
 90/03/22 01:01:00    1   7.11
 90/03/22 02:58:00    1   6.92
 90/03/22 05:11:00    1   6.70
 90/03/22 06:55:00    1   6.67
 90/03/22 09:30:00    1   6.87
 90/03/22 11:44:00    1   7.04
 90/03/22 13:11:00    1   7.12
 90/03/22 15:22:00    1   6.96
 90/03/22 17:09:00    1   6.86
 90/03/22 19:09:00    1   6.69
 90/03/22 21:16:30    1   6.92
 90/03/22 23:46:00    1   7.12
 90/03/23 02:00:00    1   7.25
 90/03/23 06:17:00    1   6.84
 90/03/23 08:19:00    1   6.74
C END OF DATA
```

```
                        C  STATION # 3
C  RECORDS OF WATER-LEVEL MEASUREMENTS MEASURED USING
C  A HAND-HELD PRESSURE TRANSDUCER AT FPL OW-7 (EXCEPT AS NOTED)
C  AS DEPTH TO WATER IN FEET
C  START OF PUMPING-TEST DATA
C  WATER LEVEL JUST BEFORE PUMPING = 7.00 FEET AT 10:12 ON 3/20/90
C  DEPTH OF WELL = 20 FEET
C  DISTANCE FROM PUMPING WELL = 627.13 FEET
C  ELEVATION OF MEASURING POINT = 7.86 FEET NGVD
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-7
C
C                    CHANNEL
C                       ^
C                             WL
C                             ^
 90/03/20 10:12:00    1   7.05 - SLOPE INDICATOR
 90/03/20 10:30:00    1   7.0
 90/03/20 10:30:15    1   7.0
 90/03/20 10:30:45    1   7.2
 90/03/20 10:31:00    1   7.2
 90/03/20 10:32:45    1   7.0
 90/03/20 10:34:00    1   7.2
 90/03/20 10:36:00    1   7.2
 90/03/20 10:38:00    1   7.2
 90/03/20 10:39:30    1   7.2
 90/03/20 10:40:30    1   7.2
 90/03/20 10:41:30    1   7.2
 90/03/20 10:42:45    1   7.2
 90/03/20 10:45:00    1   7.2
 90/03/20 10:51:00    1   7.2
 90/03/20 10:55:45    1   7.2
 90/03/20 11:00:30    1   7.2
 90/03/20 11:15:15    1   7.2
 90/03/20 11:30:45    1   7.2
 90/03/20 11:46:15    1   7.2
 90/03/20 11:57:00    1   7.14 - SLOPE INDICATOR
 90/03/20 12:00:00    1   7.2
 90/03/20 12:16:45    1   7.0
 90/03/20 12:28:30    1   7.0
 90/03/20 12:50:00    1   7.0
 90/03/20 13:45:15    1   7.0
 90/03/20 14:01:30    1   7.0
 90/03/20 14:31:30    1   7.0
 90/03/20 15:01:00    1   7.0
 90/03/20 15:30:30    1   7.0
 90/03/20 16:03:00    1   6.8
 90/03/20 16:32:00    1   6.8
 90/03/20 17:33:00    1   6.8
 90/03/20 18:35:00    1   7.0
 90/03/20 19:31:00    1   7.0
 90/03/20 20:28:00    1   7.0
 90/03/20 21:21:00    1   7.2
 90/03/20 22:05:00    1   7.2
 90/03/20 23:41:00    1   7.4
 90/03/21 01:09:00    1   7.2
 90/03/21 02:35:00    1   7.0
 90/03/21 04:23:00    1   7.0
```

```
 90/03/21 05:34:00   1  6.8
 90/03/21 06:59:00   1  6.8
 90/03/21 09:03:00   1  7.0
 90/03/21 11:08:00   1  7.2
 90/03/21 13:00:00   1  7.2
 90/03/21 14:58:00   1  7.0
 90/03/21 17:01:00   1  7.0
 90/03/21 19:02:00   1  6.8
 90/03/21 20:52:00   1  7.0
 90/03/21 23:06:00   1  7.2
 90/03/22 00:58:00   1  7.2
 90/03/22 02:54:00   1  7.0
 90/03/22 05:09:00   1  6.8
 90/03/22 06:54:00   1  6.6
 90/03/22 09:28:00   1  6.90 - SLOPE INDICATOR
 90/03/22 11:40:00   1  7.07 - SLOPE INDICATOR
 90/03/22 13:09:00   1  7.14 - SLOPE INDICATOR
 90/03/22 15:20:00   1  7.0
 90/03/22 17:06:00   1  7.0
 90/03/22 19:07:00   1  6.8
 90/03/22 21:14:00   1  6.8
 90/03/22 23:45:00   1  7.0
 90/03/23 01:59:00   1  7.2
 90/03/23 06:14:00   1  6.89 - SLOPE INDICATOR
 90/03/23 08:20:00   1  6.81 - SLOPE INDICATOR
 90/03/23 10:17:00   1  7.0
C END OF DATA
```

```
C  SOUTH OF DANIA CANAL
C  RECORDS OF MANUAL WATER-LEVEL MEASUREMENTS AT FPL OW-10
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  SOUTH OF DANIA CANAL
C  DEPTH OF WELL 95 FEET
C  ELEVATION OF T.O.C. = 6.11 FT. MSL
C  DISTANCE FROM PUMPING WELL = 662.07 FEET
C  DEPTH TO WATER BEFORE PUMPING = 5.64 FT AT 10:30 ON 03/20/90
C  START OF PUMPING-TEST DATA
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-10
C
C                  CHANNEL
C                     ^
C                           WL
C                           ^
 90/03/20 10:30:45    1  5.78
 90/03/20 10:36:00    1  5.68
 90/03/20 10:38:00    1  5.76
 90/03/20 10:39:30    1  5.74
 90/03/20 10:41:30    1  5.70
 90/03/20 10:43:45    1  5.72
 90/03/20 10:44:45    1  5.72
 90/03/20 10:50:00    1  5.80
 90/03/20 10:55:00    1  5.79
 90/03/20 11:00:00    1  5.77
 90/03/20 11:05:00    1  5.80
 90/03/20 11:10:00    1  5.78
 90/03/20 11:15:00    1  5.74
 90/03/20 11:20:00    1  5.83
 90/03/20 11:25:00    1  5.79
 90/03/20 11:30:00    1  5.75
 90/03/20 11:45:00    1  5.74
 90/03/20 12:00:00    1  5.70
 90/03/20 12:15:00    1  5.78
 90/03/20 12:30:00    1  5.77
 90/03/20 12:45:00    1  5.76
 90/03/20 13:00:00    1  5.74
 90/03/20 13:15:00    1  5.72
 90/03/20 13:30:00    1  5.68
 90/03/20 13:45:00    1  5.66
 90/03/20 14:00:00    1  5.67
 90/03/20 14:30:00    1  5.60
 90/03/20 15:00:00    1  5.62
 90/03/20 16:55:00    1  5.49
 90/03/20 17:48:00    1  5.73
 90/03/20 22:36:00    1  6.00
 90/03/21 03:00:00    1  5.65
 90/03/21 05:57:00    1  5.45
 90/03/21 09:43:00    1  5.76
 90/03/21 11:37:00    1  5.85
 90/03/21 13:24:00    1  5.76
 90/03/21 15:35:00    1  5.59
 90/03/21 17:18:00    1  5.41
 90/03/21 19:23:00    1  5.45
 90/03/21 21:22:00    1  5.70
 90/03/22 03:23:00    1  5.53
 90/03/22 15:53:00    1  5.57
```

```
 90/03/22 17:39:00    1  5.50
 90/03/23 06:37:00    1  5.43
 90/03/23 09:34:00    1  5.48
C   END OF DATA.
```

```
C  SOUTH OF DANIA CANAL
C  RECORDS OF MANUAL WATER-LEVEL MEASUREMENTS AT FPL OW-14
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 6.35 FT. MSL
C  DEPTH OF WELL 50 FEET
C  DISTANCE FROM PUMPING WELL = 661 FEET
C  DEPTH TO WATER BEFORE PUMPING = 5.66 FT AT 10:18 ON 03/20/90
C  START OF PUMPING-TEST DATA
C
C  MANUAL READINGS
C
C  CHANNEL 1 - OW-14
C
C                   CHANNEL
C                      ^
C                            WL
C                            ^
 90/03/20 10:46:00    1   5.84
 90/03/20 11:00:00    1   5.87
 90/03/20 11:16:00    1   5.87
 90/03/20 11:31:00    1   5.87
 90/03/20 11:46:00    1   5.84
 90/03/20 12:01:00    1   5.85
 90/03/20 12:16:00    1   5.80
 90/03/20 12:31:00    1   5.81
 90/03/20 12:46:00    1   5.80
 90/03/20 13:01:00    1   5.78
 90/03/20 13:16:00    1   5.75
 90/03/20 13:31:00    1   5.74
 90/03/20 13:46:00    1   5.72
 90/03/20 14:01:00    1   5.70
 90/03/20 14:31:00    1   5.66
 90/03/20 15:01:00    1   5.66
 90/03/20 17:00:00    1   5.55
 90/03/20 22:40:00    1   5.98
 90/03/21 02:52:00    1   5.73
 90/03/21 05:55:00    1   5.49
 90/03/21 09:45:00    1   5.82
 90/03/21 11:48:00    1   5.89
 90/03/21 13:21:00    1   5.80
 90/03/21 15:36:00    1   5.62
 90/03/21 17:19:00    1   5.50
 90/03/21 19:25:00    1   5.53
 90/03/21 20:15:00    1   5.73
 90/03/22 03:22:00    1   5.62
 90/03/22 12:30:00    1   5.79
 90/03/22 15:50:00    1   5.62
 90/03/22 17:35:00    1   5.54
 90/03/23 06:35:00    1   5.47
 90/03/23 09:30:00    1   5.50
C   END OF DATA.
```

```
C  SOUTH OF DANIA CANAL
C  RECORDS OF WATER-LEVEL MEASUREMENTS AT FPL OW-14
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 6.35 FT. MSL
C  DISTANCE FROM PUMPING WELL = 611 FEET
C  DEPTH TO WATER BEFORE PUMPING = 5.66 FT AT 10:09 ON 03/18/90
C  DEPTH OF WELL 50 FEET
C
C  READINGS TAKEN FROM STEVENS TYPE A WATER LEVEL RECORDER CHARTS
C
C  CHANNEL 1 - OW-14
C
C                  CHANNEL
C                     ^
C                            WL
C                            ^
 90/03/18 17:45:00    1   5.77
 90/03/18 19:00:00    1   5.85
 90/03/18 20:00:00    1   5.89
 90/03/18 21:00:00    1   5.95
 90/03/18 22:00:00    1   5.95
 90/03/18 23:00:00    1   5.95
 90/03/19 00:00:00    1   5.95
 90/03/19 01:00:00    1   5.85
 90/03/19 02:00:00    1   5.77
 90/03/19 03:00:00    1   5.68
 90/03/19 04:00:00    1   5.69
 90/03/19 05:00:00    1   5.69
 90/03/19 06:00:00    1   5.69
 90/03/19 07:00:00    1   5.69
 90/03/19 08:00:00    1   5.74
 90/03/19 09:20:00    1   5.83
 90/03/19 09:45:00    1   5.83
 90/03/19 11:00:00    1   5.83
 90/03/19 12:00:00    1   5.83
 90/03/19 13:00:00    1   5.82
 90/03/19 14:00:00    1   5.74
 90/03/19 15:00:00    1   5.67
 90/03/19 16:00:00    1   5.63
 90/03/19 17:00:00    1   5.63
 90/03/19 18:00:00    1   5.63
 90/03/19 19:00:00    1   5.63
 90/03/19 20:00:00    1   5.62
 90/03/19 21:00:00    1   5.68
 90/03/19 22:00:00    1   5.74
 90/03/19 23:00:00    1   5.81
 90/03/20 00:00:00    1   5.81
 90/03/20 01:00:00    1   5.78
 90/03/20 02:00:00    1   5.69
 90/03/20 03:00:00    1   5.59
 90/03/20 04:00:00    1   5.50
 90/03/20 05:00:00    1   5.48
 90/03/20 06:00:00    1   5.48
 90/03/20 07:00:00    1   5.48
 90/03/20 08:00:00    1   5.49
 90/03/20 09:00:00    1   5.59
 90/03/20 10:09:00    1   5.66
 90/03/20 10:30:00    1   5.66
 90/03/20 11:00:00    1   5.87
 90/03/20 12:01:00    1   5.85
```

90/03/20	13:31:00	1	5.74
90/03/20	14:31:00	1	5.66
90/03/20	15:30:00	1	5.61
90/03/20	16:30:00	1	5.61
90/03/20	17:30:00	1	5.60
90/03/20	18:00:00	1	5.70
90/03/20	19:00:00	1	5.70
90/03/20	20:00:00	1	5.76
90/03/20	21:00:00	1	5.85
90/03/20	22:00:00	1	5.93
90/03/20	22:40:00	1	5.98
90/03/21	00:00:00	1	5.98
90/03/21	01:00:00	1	5.98
90/03/21	02:00:00	1	5.98
90/03/21	02:52:00	1	5.73
90/03/21	04:00:00	1	5.73
90/03/21	05:00:00	1	5.72
90/03/21	05:55:00	1	5.49
90/03/21	07:00:00	1	5.49
90/03/21	08:00:00	1	5.49
90/03/21	09:00:00	1	5.52
90/03/21	10:00:00	1	5.59
90/03/21	11:00:00	1	5.59
90/03/21	12:00:00	1	5.75
90/03/21	13:00:00	1	5.75
90/03/21	14:00:00	1	5.75
90/03/21	15:00:00	1	5.71
90/03/21	16:00:00	1	5.64
90/03/21	17:00:00	1	5.61
90/03/21	18:00:00	1	5.55
90/03/21	19:00:00	1	5.55
90/03/21	20:00:00	1	5.62
90/03/21	21:14:00	1	5.73
90/03/21	22:00:00	1	5.73
90/03/21	23:00:00	1	5.73
90/03/22	00:00:00	1	5.73
90/03/22	01:00:00	1	5.73
90/03/22	02:00:00	1	5.73
90/03/22	03:22:00	1	5.62
90/03/22	04:00:00	1	5.62
90/03/22	05:00:00	1	5.59
90/03/22	06:00:00	1	5.53
90/03/22	07:00:00	1	5.47
90/03/22	08:00:00	1	5.47
90/03/22	09:00:00	1	5.47
90/03/22	10:00:00	1	5.49
90/03/22	11:00:00	1	5.55
90/03/22	12:32:00	1	5.79
90/03/22	13:30:00	1	5.79
90/03/22	14:00:00	1	5.90
90/03/22	15:00:00	1	5.83
90/03/22	15:50:00	1	5.62
90/03/22	17:00:00	1	5.56
90/03/22	17:35:00	1	5.54
90/03/22	18:00:00	1	5.44
90/03/22	19:00:00	1	5.43
90/03/22	20:00:00	1	5.43
90/03/22	21:00:00	1	5.43
90/03/22	22:00:00	1	5.46
90/03/22	23:00:00	1	5.57

```
90/03/23 00:00:00    1  5.69
90/03/23 01:00:00    1  5.70
90/03/23 02:00:00    1  5.83
90/03/23 03:00:00    1  5.83
90/03/23 04:00:00    1  5.66
90/03/23 05:00:00    1  5.54
90/03/23 06:35:00    1  5.47
90/03/23 07:00:00    1  5.45
90/03/23 08:00:00    1  5.45
90/03/23 09:30:00    1  5.50
90/03/23 10:00:00    1  5.60
90/03/23 11:00:00    1  5.62
90/03/23 12:00:00    1  5.65
90/03/23 13:00:00    1  5.90
90/03/23 14:00:00    1  5.90
C END OF DATA ON STEVENS TYPE "A" RECORDER CHART
```

```
C  WELL OB-2
C  RECORDS OF WATER-LEVEL MEASUREMENTS AT FPL OB-2
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 6.95 FT. MSL
C  DISTANCE FROM PUMPING WELL = 750.63 FEET
C  DEPTH TO WATER BEFORE PUMPING = 6.03 FT AT 08:41 ON 03/20/90
C  DEPTH OF WELL 23 FEET
C
C  READINGS TAKEN FROM STEVENS TYPE A WATER LEVEL RECORDER CHART
C
C  CHANNEL 1 - OB-2
C
C                  CHANNEL
C                     ^
C                           WL
C                           ^
 90/03/17 12:00:00    1   5.94
 90/03/17 13:00:00    1   5.89
 90/03/17 14:00:00    1   5.82
 90/03/17 15:00:00    1   5.82
 90/03/17 16:00:00    1   5.88
 90/03/17 17:00:00    1   5.96
 90/03/17 18:00:00    1   6.11
 90/03/17 19:00:00    1   6.25
 90/03/17 20:00:00    1   6.45
 90/03/17 21:00:00    1   6.45
 90/03/17 22:00:00    1   6.45
 90/03/17 23:00:00    1   6.45
 90/03/18 00:00:00    1   6.27
 90/03/18 01:00:00    1   6.14
 90/03/18 02:00:00    1   6.00
 90/03/18 03:00:00    1   5.90
 90/03/18 04:00:00    1   5.76
 90/03/18 05:00:00    1   5.76
 90/03/18 06:00:00    1   5.89
 90/03/18 07:00:00    1   6.00
 90/03/18 08:30:00    1   6.36
 90/03/18 09:00:00    1   6.36
 90/03/18 10:00:00    1   6.36
 90/03/18 11:00:00    1   6.36
 90/03/18 12:00:00    1   6.33
 90/03/18 13:00:00    1   6.23
 90/03/18 14:00:00    1   6.11
 90/03/18 15:00:00    1   6.05
 90/03/18 16:00:00    1   6.05
 90/03/18 17:00:00    1   6.05
 90/03/18 18:00:00    1   6.11
 90/03/18 19:00:00    1   6.25
 90/03/18 20:00:00    1   6.37
 90/03/18 20:30:00    1   6.49
 90/03/18 21:00:00    1   6.49
 90/03/18 22:00:00    1   6.49
 90/03/18 23:00:00    1   6.49
 90/03/19 00:00:00    1   6.42
 90/03/19 01:00:00    1   6.25
 90/03/19 02:00:00    1   6.11
 90/03/19 03:00:00    1   6.00
 90/03/19 04:00:00    1   5.96
 90/03/19 05:00:00    1   5.96
 90/03/19 06:00:00    1   5.96
```

90/03/19	07:00:00	1	5.96
90/03/19	08:00:00	1	6.11
90/03/19	09:00:00	1	6.25
90/03/19	10:00:00	1	6.25
90/03/19	11:00:00	1	6.25
90/03/19	11:40:00	1	6.22
90/03/19	13:00:00	1	6.33
90/03/19	14:00:00	1	6.25
90/03/19	15:00:00	1	6.09
90/03/19	16:00:00	1	6.03
90/03/19	17:00:00	1	6.02
90/03/19	18:00:00	1	6.02
90/03/19	19:00:00	1	6.02
90/03/19	20:00:00	1	6.08
90/03/19	21:00:00	1	6.13
90/03/19	22:00:00	1	6.26
90/03/19	22:30:00	1	6.28
90/03/19	23:00:00	1	6.28
90/03/20	00:00:00	1	6.28
90/03/20	01:00:00	1	6.28
90/03/20	02:00:00	1	6.13
90/03/20	03:00:00	1	6.00
90/03/20	04:00:00	1	5.91
90/03/20	05:00:00	1	5.83
90/03/20	06:00:00	1	5.83
90/03/20	07:00:00	1	5.83
90/03/20	08:00:00	1	5.90
90/03/20	08:41:00	1	6.03
90/03/20	10:00:00	1	6.03
90/03/20	11:00:00	1	6.16
90/03/20	12:00:00	1	6.16
90/03/20	13:00:00	1	6.16
90/03/20	14:00:00	1	6.16
90/03/20	15:00:00	1	6.16
90/03/20	16:00:00	1	6.16
90/03/20	17:00:00	1	6.16
90/03/20	18:00:00	1	6.15
90/03/20	19:00:00	1	6.15
90/03/20	20:00:00	1	6.24
90/03/20	21:00:00	1	6.24
90/03/20	22:00:00	1	6.48
90/03/20	23:00:00	1	6.63
90/03/21	00:00:00	1	6.63
90/03/21	01:00:00	1	6.63
90/03/21	02:00:00	1	6.54
90/03/21	03:00:00	1	6.42
90/03/21	04:00:00	1	6.27
90/03/21	05:00:00	1	6.15
90/03/21	06:00:00	1	6.11
90/03/21	07:00:00	1	6.11
90/03/21	08:30:00	1	6.11
90/03/21	09:00:00	1	6.16
90/03/21	10:00:00	1	6.23
90/03/21	11:00:00	1	6.34
90/03/21	12:00:00	1	6.34
90/03/21	13:00:00	1	6.34
90/03/21	14:00:00	1	6.34
90/03/21	15:00:00	1	6.31
90/03/21	16:00:00	1	6.21
90/03/21	17:00:00	1	6.08

```
90/03/21 18:00:00    1   6.02
90/03/21 19:00:00    1   6.02
90/03/21 20:00:00    1   6.02
90/03/21 21:00:00    1   6.03
90/03/21 22:00:00    1   6.17
90/03/21 23:00:00    1   6.23
90/03/22 00:00:00    1   6.36
90/03/22 01:00:00    1   6.36
90/03/22 02:00:00    1   6.36
90/03/22 03:00:00    1   6.33
90/03/22 04:00:00    1   6.16
90/03/22 05:00:00    1   6.01
90/03/22 06:00:00    1   5.91
90/03/22 07:00:00    1   5.86
90/03/22 08:00:00    1   5.86
90/03/22 08:40:00    1   5.86
90/03/22 10:00:00    1   5.94
90/03/22 11:00:00    1   6.02
90/03/22 12:00:00    1   6.16
90/03/22 13:00:00    1   6.30
90/03/22 13:55:00    1   6.45
90/03/22 15:00:00    1   6.45
90/03/22 16:00:00    1   6.40
90/03/22 17:00:00    1   6.30
90/03/22 18:00:00    1   6.20
90/03/22 19:00:00    1   6.13
90/03/22 20:00:00    1   6.13
90/03/22 21:00:00    1   6.13
90/03/22 22:00:00    1   6.15
90/03/22 23:00:00    1   6.30
90/03/23 00:00:00    1   6.38
90/03/23 01:00:00    1   6.55
90/03/23 02:00:00    1   6.58
90/03/23 03:00:00    1   6.58
90/03/23 04:00:00    1   6.58
90/03/23 05:00:00    1   6.48
90/03/23 06:00:00    1   6.30
90/03/23 07:00:00    1   6.15
90/03/23 08:00:00    1   6.02
90/03/23 09:00:00    1   6.02
90/03/23 10:00:00    1   6.02
90/03/23 11:00:00    1   6.10
90/03/23 12:00:00    1   6.15
90/03/23 13:00:00    1   6.25
90/03/23 14:00:00    1   6.47
C END OF DATA ON STEVENS TYPE "A" RECORDER CHART
```

```
C  WELL OB-3
C  RECORDS OF WATER-LEVEL MEASUREMENTS AT FPL OB-3
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 7.58 FT. MSL
C  DISTANCE FROM PUMPING WELL = 687.88 FEET
C  DEPTH TO WATER BEFORE PUMPING = 6.58 FT AT 8:35 ON 03/20/90
C  DEPTH OF WELL 23 FEET
C
C  READINGS TAKEN FROM STEVENS TYPE A WATER LEVEL RECORDER CHART
C
C  CHANNEL 1 - OB-3
C
C                    CHANNEL
C                       ^
C                              WL
C                              ^
 90/03/14 09:40:00    1   6.43
 90/03/14 11:00:00    1   6.32
 90/03/14 12:00:00    1   6.26
 90/03/14 13:00:00    1   6.26
 90/03/14 14:00:00    1   6.32
 90/03/14 15:00:00    1   6.46
 90/03/14 16:00:00    1   6.61
 90/03/14 17:00:00    1   6.78
 90/03/14 18:00:00    1   6.85
 90/03/14 19:00:00    1   6.86
 90/03/14 20:00:00    1   6.86
 90/03/14 21:00:00    1   6.73
 90/03/14 22:00:00    1   6.56
 90/03/14 23:00:00    1   6.36
 90/03/15 00:00:00    1   6.26
 90/03/15 01:00:00    1   6.23
 90/03/15 02:00:00    1   6.23
 90/03/15 03:00:00    1   6.30
 90/03/15 04:00:00    1   6.43
 90/03/15 05:00:00    1   6.58
 90/03/15 06:00:00    1   6.70
 90/03/15 07:00:00    1   6.80
 90/03/15 08:00:00    1   6.80
 90/03/15 09:28:00    1   6.56
 90/03/15 09:37:00    1   6.56
 90/03/15 11:00:00    1   6.46
 90/03/15 12:00:00    1   6.38
 90/03/15 13:00:00    1   6.32
 90/03/15 14:00:00    1   6.34
 90/03/15 15:00:00    1   6.47
 90/03/15 16:00:00    1   6.58
 90/03/15 17:00:00    1   6.72
 90/03/15 18:00:00    1   6.87
 90/03/15 19:00:00    1   6.96
 90/03/15 20:00:00    1   6.96
 90/03/15 21:00:00    1   6.93
 90/03/15 22:00:00    1   6.74
 90/03/15 23:00:00    1   6.56
 90/03/16 00:00:00    1   6.43
 90/03/16 01:00:00    1   6.33
 90/03/16 02:00:00    1   6.32
 90/03/16 03:00:00    1   6.32
 90/03/16 04:00:00    1   6.37
 90/03/16 05:00:00    1   6.50
```

90/03/16	06:00:00	1	6.61
90/03/16	07:00:00	1	6.75
90/03/16	08:00:00	1	6.80
90/03/16	09:14:00	1	6.74
90/03/16	09:18:00	1	6.74
90/03/16	11:00:00	1	6.59
90/03/16	12:00:00	1	6.49
90/03/16	13:00:00	1	6.43
90/03/16	14:00:00	1	6.42
90/03/16	15:00:00	1	6.44
90/03/16	16:00:00	1	6.59
90/03/16	17:00:00	1	6.68
90/03/16	18:00:00	1	6.76
90/03/16	19:00:00	1	6.91
90/03/16	20:00:00	1	6.99
90/03/16	21:00:00	1	6.99
90/03/16	22:00:00	1	6.92
90/03/16	23:00:00	1	6.72
90/03/17	00:00:00	1	6.58
90/03/17	01:00:00	1	6.47
90/03/17	02:00:00	1	6.41
90/03/17	03:00:00	1	6.41
90/03/17	04:00:00	1	6.41
90/03/17	05:00:00	1	6.49
90/03/17	06:00:00	1	6.63
90/03/17	07:00:00	1	6.74
90/03/17	08:30:00	1	6.89
90/03/17	08:35:00	1	6.89
90/03/17	10:00:00	1	6.86
90/03/17	11:00:00	1	6.69
90/03/17	12:00:00	1	6.58
90/03/17	13:00:00	1	6.50
90/03/17	14:00:00	1	6.49
90/03/17	15:00:00	1	6.50
90/03/17	16:00:00	1	6.60
90/03/17	17:00:00	1	6.72
90/03/17	18:00:00	1	6.88
90/03/17	19:00:00	1	7.00
90/03/17	20:00:00	1	7.10
90/03/17	21:00:00	1	7.10
90/03/17	22:00:00	1	7.04
90/03/17	23:00:00	1	6.90
90/03/18	00:00:00	1	6.73
90/03/18	01:00:00	1	6.60
90/03/18	02:00:00	1	6.54
90/03/18	03:00:00	1	6.40
90/03/18	04:00:00	1	6.40
90/03/18	05:00:00	1	6.48
90/03/18	06:00:00	1	6.59
90/03/18	07:00:00	1	6.73
90/03/18	08:00:00	1	6.91
90/03/18	08:20:00	1	6.91
90/03/18	10:00:00	1	6.91
90/03/18	11:00:00	1	6.91
90/03/18	12:00:00	1	6.79
90/03/18	13:00:00	1	6.69
90/03/18	14:00:00	1	6.65
90/03/18	15:00:00	1	6.63
90/03/18	16:00:00	1	6.64
90/03/18	17:00:00	1	6.74

```
 90/03/18 18:00:00   1  6.85
 90/03/18 19:00:00   1  6.98
 90/03/18 20:00:00   1  7.03
 90/03/18 21:00:00   1  7.13
 90/03/18 22:00:00   1  7.13
 90/03/18 23:00:00   1  6.98
 90/03/19 00:00:00   1  6.83
 90/03/19 01:00:00   1  6.71
 90/03/19 02:00:00   1  6.62
 90/03/19 03:00:00   1  6.56
 90/03/19 04:00:00   1  6.55
 90/03/19 05:00:00   1  6.55
 90/03/19 06:00:00   1  6.60
 90/03/19 07:00:00   1  6.70
 90/03/19 08:40:00   1  6.88
C MALFUNCTION
 90/03/19 11:32:00   1  6.83
 90/03/19 12:00:00   1  6.84
 90/03/19 13:00:00   1  6.77
 90/03/19 14:00:00   1  6.67
 90/03/19 15:00:00   1  6.55
 90/03/19 16:00:00   1  6.53
 90/03/19 17:00:00   1  6.53
 90/03/19 18:00:00   1  6.57
 90/03/19 19:00:00   1  6.63
 90/03/19 20:00:00   1  6.66
 90/03/19 21:00:00   1  6.73
 90/03/19 22:00:00   1  6.79
 90/03/19 23:00:00   1  6.83
 90/03/20 00:00:00   1  6.83
 90/03/20 01:00:00   1  6.70
 90/03/20 02:00:00   1  6.56
 90/03/20 03:00:00   1  6.48
 90/03/20 04:00:00   1  6.42
 90/03/20 05:00:00   1  6.39
 90/03/20 06:00:00   1  6.39
 90/03/20 07:00:00   1  6.45
 90/03/20 08:27:00   1  6.58
 90/03/20 08:35:00   1  6.58
 90/03/20 09:00:00   1  6.64
 90/03/20 10:00:00   1  6.66
 90/03/20 11:00:00   1  6.87
 90/03/20 12:00:00   1  6.87
 90/03/20 13:00:00   1  6.85
 90/03/20 14:00:00   1  6.77
 90/03/20 15:00:00   1  6.69
 90/03/20 16:00:00   1  6.68
 90/03/20 17:00:00   1  6.65
 90/03/20 18:00:00   1  6.65
 90/03/20 19:00:00   1  6.72
 90/03/20 20:00:00   1  6.76
 90/03/20 21:00:00   1  6.88
 90/03/20 22:00:00   1  6.98
 90/03/20 23:00:00   1  7.08
 90/03/21 00:00:00   1  7.08
 90/03/21 01:00:00   1  7.08
 90/03/21 02:00:00   1  6.93
 90/03/21 03:00:00   1  6.82
 90/03/21 04:00:00   1  6.72
 90/03/21 05:00:00   1  6.64
```

```
 90/03/21 06:00:00    1   6.59
 90/03/21 07:00:00    1   6.59
 90/03/21 08:30:00    1   6.78
 90/03/21 09:00:00    1   6.89
 90/03/21 10:00:00    1   6.96
 90/03/21 11:00:00    1   7.00
 90/03/21 12:00:00    1   7.00
 90/03/21 13:00:00    1   6.93
 90/03/21 14:00:00    1   6.88
 90/03/21 15:00:00    1   6.78
 90/03/21 16:00:00    1   6.66
 90/03/21 17:00:00    1   6.60
 90/03/21 18:00:00    1   6.58
 90/03/21 19:00:00    1   6.59
 90/03/21 20:00:00    1   6.66
 90/03/21 21:00:00    1   6.78
 90/03/21 22:00:00    1   6.89
 90/03/21 23:00:00    1   6.99
 90/03/22 00:00:00    1   7.05
 90/03/22 01:00:00    1   7.03
 90/03/22 02:00:00    1   6.89
 90/03/22 03:00:00    1   6.78
 90/03/22 04:00:00    1   6.63
 90/03/22 05:00:00    1   6.54
 90/03/22 06:00:00    1   6.47
 90/03/22 07:00:00    1   6.45
 90/03/22 08:15:00    1   6.50
 90/03/22 08:30:00    1   6.53
 90/03/22 09:00:00    1   6.55
 90/03/22 10:00:00    1   6.68
 90/03/22 11:00:00    1   6.80
 90/03/22 12:00:00    1   6.90
 90/03/22 13:00:00    1   6.99
 90/03/22 14:00:00    1   6.98
 90/03/22 15:00:00    1   6.89
 90/03/22 16:00:00    1   6.79
 90/03/22 17:00:00    1   6.70
 90/03/22 18:00:00    1   6.59
 90/03/22 19:00:00    1   6.57
 90/03/22 20:00:00    1   6.58
 90/03/22 21:00:00    1   6.66
 90/03/22 22:00:00    1   6.81
 90/03/22 23:00:00    1   6.95
 90/03/23 00:00:00    1   7.09
 90/03/23 01:00:00    1   7.11
 90/03/23 02:00:00    1   7.11
 90/03/23 03:00:00    1   7.06
 90/03/23 04:00:00    1   6.93
 90/03/23 05:00:00    1   6.78
 90/03/23 06:00:00    1   6.65
 90/03/23 07:00:00    1   6.53
 90/03/23 08:00:00    1   6.53
 90/03/23 09:22:00    1   6.56
C END OF DATA
```

```
                C  DANIA CANAL TIDAL GATE
C  RECORDS OF STEVENS WATER-LEVEL CHARTS; FPL AT DANIA CANAL
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 5.39 FT. MSL
C
C  READINGS TAKEN FROM STEVENS TYPE F WATER LEVEL RECORDER CHART
C
C  CHANNEL 1 - DANIA CANAL
C
C                  CHANNEL
C                     ^
C                           WL
C                           ^
C90/03/14 - 90/03/17 FRAGMENTED RECORD AVAILABLE IN GRAPHIC FORM
 90/03/17 09:00:00    1  5.19
 90/03/17 10:00:00    1  4.98
 90/03/17 11:00:00    1  4.74
 90/03/17 12:00:00    1  4.50
 90/03/17 13:00:00    1  4.33
 90/03/17 14:00:00    1  4.30
 90/03/17 15:00:00    1  4.49
 90/03/17 16:00:00    1  4.74
 90/03/17 17:00:00    1  4.97
 90/03/17 18:00:00    1  5.22
 90/03/17 19:00:00    1  5.45
 90/03/17 20:00:00    1  5.63
 90/03/17 21:00:00    1  5.65
 90/03/17 22:00:00    1  5.40
 90/03/17 23:00:00    1  5.13
 90/03/17 24:00:00    1  4.81
 90/03/18 01:00:00    1  4.53
 90/03/18 02:00:00    1  4.33
 90/03/18 03:00:00    1  4.25
 90/03/18 04:00:00    1  4.40
 90/03/18 05:00:00    1  4.66
 90/03/18 06:00:00    1  4.90
 90/03/18 07:00:00    1  5.13
 90/03/18 09:10:00    1  5.34
 90/03/18 10:00:00    1  5.15
 90/03/18 11:00:00    1  4.92
 90/03/18 12:00:00    1  4.70
 90/03/18 13:00:00    1  4.48
 90/03/18 14:00:00    1  4.35
 90/03/18 15:00:00    1  4.40
 90/03/18 16:00:00    1  4.60
 90/03/18 17:00:00    1  4.80
 90/03/18 18:00:00    1  5.04
 90/03/18 19:00:00    1  5.23
 90/03/18 20:00:00    1  5.40
 90/03/18 21:00:00    1  5.49
 90/03/18 22:00:00    1  5.30
 90/03/18 23:00:00    1  5.08
 90/03/18 24:00:00    1  4.77
 90/03/19 01:00:00    1  4.48
 90/03/19 02:00:00    1  4.25
 90/03/19 03:00:00    1  4.07
 90/03/19 04:00:00    1  4.02
 90/03/19 05:00:00    1  4.21
 90/03/19 06:00:00    1  4.39
 90/03/19 07:00:00    1  4.58
```

```
 90/03/19 08:50:00   1  5.23
C  CLOCK RAN OUT
 90/03/20 08:45:00   1  4.81
 90/03/20 10:00:00   1  5.03
 90/03/20 11:00:00   1  5.08
 90/03/20 12:00:00   1  4.97
 90/03/20 13:00:00   1  4.70
 90/03/20 14:00:00   1  4.50
 90/03/20 15:00:00   1  4.39
 90/03/20 16:00:00   1  4.25
 90/03/20 17:00:00   1  4.25
 90/03/20 18:00:00   1  4.46
 90/03/20 19:00:00   1  4.67
 90/03/20 20:00:00   1  4.90
 90/03/20 21:00:00   1  5.13
 90/03/20 22:00:00   1  5.30
 90/03/20 23:00:00   1  5.44
 90/03/20 24:00:00   1  5.30
 90/03/21 01:00:00   1  5.11
 90/03/21 02:00:00   1  4.86
 90/03/21 03:00:00   1  4.60
 90/03/21 04:00:00   1  4.35
 90/03/21 05:00:00   1  4.15
 90/03/21 06:00:00   1  4.06
 90/03/21 07:00:00   1  4.18
 90/03/21 08:08:00   1  4.59
 90/03/21 09:00:00   1  4.77
 90/03/21 10:00:00   1  4.98
 90/03/21 11:00:00   1  5.05
 90/03/21 12:00:00   1  5.00
 90/03/21 13:00:00   1  4.80
 90/03/21 14:00:00   1  4.55
 90/03/21 15:00:00   1  4.40
 90/03/21 16:00:00   1  4.20
 90/03/21 17:00:00   1  4.04
 90/03/21 18:00:00   1  3.99
 90/03/21 19:00:00   1  4.23
 90/03/21 20:00:00   1  4.40
 90/03/21 21:00:00   1  4.66
 90/03/21 22:00:00   1  4.86
 90/03/21 23:00:00   1  5.02
 90/03/21 24:00:00   1  5.14
 90/03/22 01:00:00   1  5.00
 90/03/22 02:00:00   1  4.74
 90/03/22 03:00:00   1  4.48
 90/03/22 04:00:00   1  4.20
 90/03/22 05:00:00   1  3.95
 90/03/22 06:00:00   1  3.76
 90/03/22 07:00:00   1  3.71
 90/03/22 08:50:00   1  4.25
C DATA NOT SHOWN 3/22/90 - 3/23/90 ; LOST DATA
C END OF DATA
```

```
                C  DISCHARGE CANAL
C  RECORDS OF STEVENS WATER-LEVEL CHARTS; FPL AT DISCHARGE CANAL
C  AS DEPTH TO WATER, IN FEET, BELOW T.O.C.
C  ELEVATION OF T.O.C. = 4.03 FT. MSL
C
C  READINGS TAKEN FROM STEVENS TYPE F WATER LEVEL RECORDER CHARTS
C
C  CHANNEL 1 - DISCHARGE CANAL
C
C                  CHANNEL
C                     ^
C                           WL
C                           ^
C90/03/14 - 90/03/17 DATA AVAILABLE IN GRAPHIC FORM
 90/03/17 08:20:00   1  3.29
 90/03/17 09:00:00   1  3.34
 90/03/17 10:00:00   1  3.33
 90/03/17 11:00:00   1  3.21
 90/03/17 12:00:00   1  3.03
 90/03/17 13:00:00   1  2.85
 90/03/17 14:00:00   1  2.77
 90/03/17 15:00:00   1  2.80
 90/03/17 16:00:00   1  2.86
 90/03/17 17:00:00   1  2.96
 90/03/17 18:00:00   1  3.08
 90/03/17 19:00:00   1  3.20
 90/03/17 20:00:00   1  3.34
 90/03/17 21:00:00   1  3.55
 90/03/17 22:00:00   1  3.67
 90/03/17 23:00:00   1  3.63
 90/03/17 24:00:00   1  3.54
 90/03/18 01:00:00   1  3.39
 90/03/18 02:00:00   1  3.20
 90/03/18 03:00:00   1  3.02
 90/03/18 04:00:00   1  2.90
 90/03/18 05:00:00   1  2.95
 90/03/18 06:00:00   1  3.03
 90/03/18 07:00:00   1  3.15
 90/03/18 09:00:00   1  3.33
 90/03/18 10:00:00   1  3.44
 90/03/18 11:00:00   1  3.45
 90/03/18 12:00:00   1  3.37
 90/03/18 13:00:00   1  3.16
 90/03/18 14:00:00   1  3.00
 90/03/18 15:00:00   1  2.94
 90/03/18 16:00:00   1  2.96
 90/03/18 17:00:00   1  3.04
 90/03/18 18:00:00   1  3.13
 90/03/18 19:00:00   1  3.26
 90/03/18 20:00:00   1  3.36
 90/03/18 21:00:00   1  3.50
 90/03/18 22:00:00   1  3.70
 90/03/18 23:00:00   1  3.76
 90/03/18 24:00:00   1  3.71
 90/03/19 01:00:00   1  3.55
 90/03/19 02:00:00   1  3.36
 90/03/19 03:00:00   1  3.16
 90/03/19 04:00:00   1  3.01
 90/03/19 05:00:00   1  3.06
 90/03/19 06:00:00   1  3.19
```

```
 90/03/19 07:00:00   1  3.35
 90/03/19 08:20:00   1  3.52
 90/03/19 09:00:00   1  3.68
 90/03/19 10:00:00   1  3.83
 90/03/19 11:00:00   1  3.68
 90/03/19 12:00:00   1  3.49
 90/03/19 13:00:00   1  3.30
 90/03/19 14:00:00   1  3.09
 90/03/19 15:00:00   1  2.94
 90/03/19 16:00:00   1  2.86
 90/03/19 17:00:00   1  2.88
 90/03/19 18:00:00   1  2.93
 90/03/19 19:00:00   1  3.03
 90/03/19 20:00:00   1  3.13
 90/03/19 21:00:00   1  3.34
 90/03/19 22:00:00   1  3.51
 90/03/19 23:00:00   1  3.72
C  MISSING RECORD
 90/03/20 08:30:00   1  3.21
 90/03/20 10:00:00   1  3.45
 90/03/20 11:00:00   1  3.59
 90/03/20 12:00:00   1  3.65
 90/03/20 13:00:00   1  3.57
 90/03/20 14:00:00   1  3.44
 90/03/20 15:00:00   1  3.15
 90/03/20 16:00:00   1  2.91
 90/03/20 17:00:00   1  2.78
 90/03/20 18:00:00   1  2.77
 90/03/20 19:00:00   1  2.82
 90/03/20 20:00:00   1  2.93
 90/03/20 21:00:00   1  3.05
 90/03/20 22:00:00   1  3.17
 90/03/20 23:00:00   1  3.30
 90/03/20 24:00:00   1  3.38
 90/03/21 01:00:00   1  3.39
 90/03/21 02:00:00   1  3.30
 90/03/21 03:00:00   1  3.07
 90/03/21 04:00:00   1  2.83
 90/03/21 05:00:00   1  2.65
 90/03/21 06:00:00   1  2.56
 90/03/21 07:00:00   1  2.56
 90/03/21 07:52:00   1  2.67
 90/03/21 09:00:00   1  2.75
 90/03/21 10:00:00   1  2.87
 90/03/21 11:00:00   1  3.08
 90/03/21 12:00:00   1  3.25
 90/03/21 13:00:00   1  3.33
 90/03/21 14:00:00   1  3.27
 90/03/21 15:00:00   1  3.04
 90/03/21 16:00:00   1  2.80
 90/03/21 17:00:00   1  2.65
 90/03/21 18:00:00   1  2.56
 90/03/21 19:00:00   1  2.56
 90/03/21 20:00:00   1  2.61
 90/03/21 21:00:00   1  2.75
 90/03/21 22:00:00   1  2.90
 90/03/21 23:00:00   1  3.10
 90/03/21 24:00:00   1  3.32
 90/03/22 01:00:00   1  3.51
 90/03/22 02:00:00   1  3.52
```

```
 90/03/22 03:00:00   1  3.36
 90/03/22 04:00:00   1  3.20
 90/03/22 05:00:00   1  3.00
 90/03/22 06:00:00   1  2.79
 90/03/22 07:45:00   1  2.63
C  MISSING RECORD UNTIL 11:52
 90/03/22 11:52:00   1  3.29
 90/03/22 13:00:00   1  3.50
 90/03/22 14:00:00   1  3.60
 90/03/22 15:00:00   1  3.52
 90/03/22 16:00:00   1  3.38
 90/03/22 17:00:00   1  3.16
 90/03/22 18:00:00   1  2.90
 90/03/22 19:00:00   1  2.78
 90/03/22 20:00:00   1  2.79
 90/03/22 21:00:00   1  2.90
 90/03/22 22:00:00   1  3.08
 90/03/22 23:00:00   1  3.29
 90/03/22 24:00:00   1  3.46
 90/03/23 01:00:00   1  3.67
 90/03/23 02:00:00   1  3.80
 90/03/23 03:00:00   1  3.77
 90/03/23 04:00:00   1  3.64
 90/03/23 05:00:00   1  3.46
 90/03/23 06:00:00   1  3.24
 90/03/23 07:00:00   1  3.00
 90/03/23 08:30:00   1  2.76
 90/03/23 09:00:00   1  2.74
 90/03/23 10:00:00   1  2.88
 90/03/23 11:00:00   1  3.05
 C END OF DATA
```

```
C  FILES FOR CONTINUOUS RECORD FOR STATION # 01
C  4-2-90
C  CBK
C  ***** FILE S10320D1.FRW (FOR ESE USE ONLY)
C
C  TOC MSL ELEVATION IN FEET
C
C         5B          -
C         OW-1        - 5.92
C         OW-2        - 4.88
C         OW-3        - 4.89
C         OW-4        - 4.95
C         OW-11       - 5.80
C         OW-12       - 5.22
C
C  CHANNEL #'S CORRESPONDING TO WELL #'S
C
C  CHANNEL  1  -  5B  (PUMPING WELL)
C           2  -  OW1 (CHANGED TO OW11 AT 1650 3-15-90)
C           3  -  OW3
C           4  -  OW2 (CHANGED TO OW12 AT 0800 3-19-90)
C           5  -  OW4
C
C   DISTANCE FROM PUMPING WELL IN FEET
C
C          5B   - PUMPING WELL
C          OW1  - 25.17
C          OW2  - 272.14
C          OW3  - 272.14
C          OW4  - 270.
C          OW11 - 22.
C          OW12 - 270.
C
C  DEPTH OF WELLS IN FEET
C
C          5B   - ORIGINALLY DRILLED 55 FT, MEASURED 46.5 FT IN 3/90
C          OW1  - 150
C          OW2  - 135
C          OW3  - 95
C          OW4  - 20
C          OW11 - 50
C          OW12 - 50
C
C  DATA LOGGER READINGS, IN FEET, ABOVE TRANSDUCER
C
C                    CHANNEL    CHANNEL    CHANNEL    CHANNEL    CHANNEL
C                       ^          ^          ^          ^          ^
C                             WL         WL         WL         WL         WL
C                             ^          ^          ^          ^          ^
 90/03/13 19:38:00    1   8.59   2  14.71   3   4.78   4   9.28   5  12.01
 90/03/13 19:53:00    1   8.62   2  14.71   3   4.76   4   9.31   5  12.05
 90/03/13 20:08:00    1   8.74   2  14.72   3   4.79   4   9.33   5  12.08
 90/03/13 20:23:00    1   8.77   2  14.73   3   4.83   4   9.36   5  12.12
 90/03/13 20:38:00    1   8.81   2  14.75   3   4.86   4   9.39   5  12.15
 90/03/13 20:53:00    1   8.84   2  14.76   3   4.89   4   9.41   5  12.20
 90/03/13 21:08:00    1   8.87   2  14.79   3   4.93   4   9.44   5  12.23
 90/03/13 21:23:00    1   8.90   2  14.82   3   4.96   4   9.47   5  12.27
 90/03/13 21:38:00    1   8.91   2  14.83   3   4.99   4   9.50   5  12.31
 90/03/13 21:53:00    1   8.94   2  14.85   3   5.03   4   9.53   5  12.35
 90/03/13 22:08:00    1   8.97   2  14.88   3   5.07   4   9.57   5  12.40
```

90/03/13	22:23:00	1	9.00	2	14.91	3	5.11	4	9.60	5	12.43
90/03/13	22:38:00	1	9.02	2	14.94	3	5.15	4	9.63	5	12.47
90/03/13	22:53:00	1	9.04	2	14.96	3	5.17	4	9.66	5	12.51
90/03/13	23:08:00	1	9.05	2	14.98	3	5.22	4	9.69	5	12.54
90/03/13	23:23:00	1	9.07	2	14.99	3	5.23	4	9.72	5	12.57
90/03/13	23:38:00	1	9.07	2	15.01	3	5.27	4	9.75	5	12.60
90/03/13	23:53:00	1	9.08	2	15.04	3	5.29	4	9.76	5	12.63
C 23:53	90/03/13	#01									
90/03/14	00:08:00	1	9.08	2	15.04	3	5.30	4	9.77	5	12.65
90/03/14	00:23:00	1	9.04	2	15.04	3	5.32	4	9.79	5	12.66
90/03/14	00:38:00	1	9.02	2	15.02	3	5.32	4	9.79	5	12.66
90/03/14	00:53:00	1	9.01	2	15.04	3	5.30	4	9.77	5	12.66
90/03/14	01:08:00	1	8.98	2	15.04	3	5.29	4	9.76	5	12.64
90/03/14	01:23:00	1	8.94	2	15.01	3	5.29	4	9.76	5	12.63
90/03/14	01:38:00	1	8.91	2	14.99	3	5.28	4	9.75	5	12.62
90/03/14	01:53:00	1	8.88	2	14.99	3	5.25	4	9.73	5	12.60
90/03/14	02:08:00	1	8.87	2	14.98	3	5.23	4	9.72	5	12.59
90/03/14	02:23:00	1	8.84	2	14.98	3	5.22	4	9.70	5	12.56
90/03/14	02:38:00	1	8.77	2	14.92	3	5.19	4	9.67	5	12.54
90/03/14	02:53:00	1	8.71	2	14.91	3	5.18	4	9.66	5	12.52
90/03/14	03:08:00	1	8.68	2	14.89	3	5.15	4	9.64	5	12.49
90/03/14	03:23:00	1	8.61	2	14.85	3	5.12	4	9.62	5	12.46
90/03/14	03:38:00	1	8.56	2	14.83	3	5.09	4	9.59	5	12.44
90/03/14	03:53:00	1	8.52	2	14.81	3	5.07	4	9.57	5	12.41
90/03/14	04:08:00	1	8.51	2	14.81	3	5.04	4	9.54	5	12.38
90/03/14	04:23:00	1	8.43	2	14.76	3	5.01	4	9.52	5	12.35
90/03/14	04:38:00	1	8.42	2	14.75	3	4.99	4	9.49	5	12.32
90/03/14	04:53:00	1	8.41	2	14.75	3	4.96	4	9.47	5	12.28
90/03/14	05:08:00	1	8.38	2	14.72	3	4.94	4	9.44	5	12.26
90/03/14	05:23:00	1	8.35	2	14.71	3	4.91	4	9.41	5	12.22
90/03/14	05:38:00	1	8.33	2	14.68	3	4.88	4	9.40	5	12.21
90/03/14	05:53:00	1	8.32	2	14.68	3	4.86	4	9.39	5	12.19
90/03/14	06:08:00	1	8.30	2	14.66	3	4.85	4	9.37	5	12.17
90/03/14	06:23:00	1	8.29	2	14.65	3	4.83	4	9.36	5	12.15
90/03/14	06:38:00	1	8.20	2	14.63	3	4.82	4	9.34	5	12.14
90/03/14	06:53:00	1	8.19	2	14.62	3	4.84	4	9.36	5	12.15
90/03/14	07:08:00	1	8.13	2	14.60	3	4.85	4	9.37	5	12.17
90/03/14	07:23:00	1	8.06	2	14.59	3	4.81	4	9.37	5	12.19
90/03/14	07:38:00	1	7.97	2	14.56	3	4.85	4	9.39	5	12.21
90/03/14	07:53:00	1	7.91	2	14.53	3	4.89	4	9.40	5	12.22
90/03/14	08:08:00	1	7.80	2	14.45	3	4.92	4	9.41	5	12.24
90/03/14	08:23:00	1	7.79	2	14.46	3	4.95	4	9.44	5	12.26
90/03/14	08:38:00	1	7.71	2	14.47	3	4.99	4	9.46	5	12.29
90/03/14	08:53:00	1	7.57	2	14.43	3	4.99	4	9.47	5	12.32
90/03/14	09:08:00	1	7.47	2	14.43	3	5.07	4	9.50	5	12.34
90/03/14	09:23:00	1	7.48	2	14.52	3	5.03	4	9.53	5	12.36
90/03/14	09:38:00	1	7.51	2	14.60	3	5.09	4	9.54	5	12.38
90/03/14	09:53:00	1	7.45	2	14.60	3	5.22	4	9.59	5	12.40
90/03/14	10:08:00	1	7.35	2	14.60	3	5.21	4	9.60	5	12.43
90/03/14	10:23:00	1	7.31	2	14.65	3	5.10	4	9.63	5	12.07
90/03/14	10:38:00	1	7.24	2	14.62	3	5.18	4	9.67	5	12.21
90/03/14	10:53:00	1	7.09	2	14.55	3	5.10	4	9.70	5	12.28
90/03/14	11:08:00	1	6.99	2	14.55	3	5.15	4	9.72	5	12.32
90/03/14	11:23:00	1	7.31	2	14.91	3	5.31	4	9.76	5	12.34
90/03/14	11:38:00	1	7.24	2	14.88	3	5.28	4	9.75	5	12.38
90/03/14	11:53:00	1	6.92	2	14.66	3	5.06	4	9.75	5	12.40
90/03/14	12:08:00	1	7.24	2	14.95	3	5.22	4	9.77	5	12.43
90/03/14	12:23:00	1	7.21	2	14.94	3	5.35	4	9.80	5	12.45
90/03/14	12:38:00	1	6.89	2	14.88	3	5.25	4	9.77	5	12.46
90/03/14	12:53:00	1	7.11	2	14.88	3	5.28	4	9.80	5	12.46

90/03/14	13:08:00	1	6.92	2	14.88	3	5.22	4	9.76	5	12.45
90/03/14	13:23:00	1	7.09	2	14.82	3	5.28	4	9.77	5	12.43
90/03/14	13:38:00	1	6.95	2	14.76	3	5.23	4	9.75	5	12.41
90/03/14	13:53:00	1	6.88	2	14.69	3	5.16	4	9.72	5	12.40
90/03/14	14:08:00	1	7.01	2	14.66	3	5.04	4	9.70	5	12.40
90/03/14	14:23:00	1	7.41	2	14.75	3	5.21	4	9.70	5	12.37
90/03/14	14:38:00	1	7.28	2	14.71	3	5.19	4	9.69	5	12.36
90/03/14	14:53:00	1	7.18	2	14.71	3	5.09	4	9.60	5	12.36
90/03/14	15:08:00	1	7.21	2	14.72	3	5.10	4	9.64	5	12.34
90/03/14	15:23:00	1	7.19	2	14.69	3	5.08	4	9.62	5	12.31
90/03/14	15:38:00	1	7.21	2	14.78	3	5.00	4	9.59	5	12.28
90/03/14	15:53:00	1	7.41	2	14.95	3	5.09	4	9.57	5	12.27
90/03/14	16:08:00	1	7.41	2	14.94	3	4.92	4	9.53	5	12.22
90/03/14	16:23:00	1	7.45	2	14.94	3	4.97	4	9.52	5	12.20
90/03/14	16:38:00	1	7.63	2	15.01	3	4.93	4	9.49	5	12.17
90/03/14	16:53:00	1	7.55	2	14.89	3	4.92	4	9.46	5	12.15
90/03/14	17:08:00	1	7.63	2	14.92	3	4.87	4	9.44	5	12.12
90/03/14	17:23:00	1	7.58	2	14.91	3	4.85	4	9.41	5	12.09
90/03/14	17:38:00	1	7.60	2	14.85	3	4.84	4	9.40	5	12.08
90/03/14	17:53:00	1	7.66	2	14.88	3	4.80	4	9.37	5	12.05
90/03/14	18:08:00	1	7.70	2	14.86	3	4.78	4	9.36	5	12.03
90/03/14	18:23:00	1	7.71	2	14.85	3	4.76	4	9.34	5	12.02
90/03/14	18:38:00	1	7.74	2	14.82	3	4.74	4	9.34	5	12.01
90/03/14	18:53:00	1	7.83	2	14.81	3	4.75	4	9.34	5	12.01
90/03/14	19:08:00	1	7.86	2	14.79	3	4.75	4	9.34	5	12.02
90/03/14	19:23:00	1	7.97	2	14.76	3	4.77	4	9.36	5	12.02
90/03/14	19:38:00	1	8.02	2	14.78	3	4.78	4	9.37	5	12.04
90/03/14	19:53:00	1	8.06	2	14.78	3	4.79	4	9.39	5	12.05
90/03/14	20:08:00	1	8.07	2	14.76	3	4.82	4	9.40	5	12.08
90/03/14	20:23:00	1	8.10	2	14.76	3	4.84	4	9.41	5	12.09
90/03/14	20:38:00	1	8.13	2	14.78	3	4.86	4	9.43	5	12.12
90/03/14	20:53:00	1	8.17	2	14.79	3	4.88	4	9.46	5	12.14
90/03/14	21:08:00	1	8.20	2	14.79	3	4.89	4	9.49	5	12.17
90/03/14	21:23:00	1	8.22	2	14.79	3	4.91	4	9.50	5	12.20
90/03/14	21:38:00	1	8.25	2	14.82	3	4.91	4	9.53	5	12.22
90/03/14	21:53:00	1	8.28	2	14.83	3	4.93	4	9.56	5	12.25
90/03/14	22:08:00	1	8.30	2	14.86	3	4.94	4	9.59	5	12.28
90/03/14	22:23:00	1	8.35	2	14.89	3	4.96	4	9.62	5	12.32
90/03/14	22:38:00	1	8.38	2	14.91	3	4.96	4	9.64	5	12.34
90/03/14	22:53:00	1	8.43	2	14.95	3	4.96	4	9.67	5	12.38
90/03/14	23:08:00	1	8.46	2	14.98	3	4.97	4	9.70	5	12.41
90/03/14	23:23:00	1	8.49	2	14.99	3	4.97	4	9.73	5	12.44
90/03/14	23:38:00	1	8.52	2	15.02	3	4.97	4	9.76	5	12.46
90/03/14	23:53:00	1	8.53	2	15.05	3	4.97	4	9.79	5	12.49
C 23:53	90/03/14	#01									
90/03/15	00:08:00	1	8.56	2	15.07	3	4.97	4	9.82	5	12.52
90/03/15	00:23:00	1	8.58	2	15.07	3	4.96	4	9.83	5	12.54
90/03/15	00:38:00	1	8.59	2	15.08	3	4.97	4	9.85	5	12.55
90/03/15	00:53:00	1	8.59	2	15.09	3	4.97	4	9.86	5	12.57
90/03/15	01:08:00	1	8.59	2	15.09	3	4.97	4	9.86	5	12.58
90/03/15	01:23:00	1	8.59	2	15.09	3	4.96	4	9.86	5	12.57
90/03/15	01:38:00	1	8.56	2	15.08	3	4.97	4	9.85	5	12.56
90/03/15	01:53:00	1	8.55	2	15.07	3	4.97	4	9.83	5	12.55
90/03/15	02:08:00	1	8.52	2	15.05	3	4.97	4	9.83	5	12.53
90/03/15	02:23:00	1	8.51	2	15.04	3	4.97	4	9.80	5	12.52
90/03/15	02:38:00	1	8.46	2	14.99	3	4.95	4	9.79	5	12.50
90/03/15	02:53:00	1	8.43	2	14.98	3	4.95	4	9.77	5	12.48
90/03/15	03:08:00	1	8.41	2	14.96	3	4.94	4	9.76	5	12.46
90/03/15	03:23:00	1	8.38	2	14.95	3	4.94	4	9.75	5	12.44
90/03/15	03:38:00	1	8.35	2	14.94	3	4.93	4	9.72	5	12.41

```
 90/03/15 03:53:00   1   8.32  2  14.91  3   4.93  4   9.70  5  12.39
 90/03/15 04:08:00   1   8.28  2  14.88  3   4.92  4   9.66  5  12.34
 90/03/15 04:23:00   1   8.23  2  14.85  3   4.92  4   9.63  5  12.31
 90/03/15 04:38:00   1   8.19  2  14.81  3   4.91  4   9.62  5  12.28
 90/03/15 04:53:00   1   8.13  2  14.76  3   4.90  4   9.59  5  12.25
 90/03/15 05:08:00   1   8.07  2  14.73  3   4.90  4   9.56  5  12.22
 90/03/15 05:23:00   1   8.02  2  14.69  3   4.88  4   9.53  5  12.20
 90/03/15 05:38:00   1   7.99  2  14.66  3   4.87  4   9.50  5  12.17
 90/03/15 05:53:00   1   7.96  2  14.66  3   4.86  4   9.49  5  12.14
 90/03/15 06:08:00   1   7.94  2  14.65  3   4.84  4   9.46  5  12.12
 90/03/15 06:23:00   1   7.91  2  14.62  3   4.84  4   9.43  5  12.09
 90/03/15 06:38:00   1   7.84  2  14.60  3   4.83  4   9.41  5  12.08
 90/03/15 06:53:00   1   7.81  2  14.59  3   4.82  4   9.40  5  12.06
 90/03/15 07:08:00   1   7.79  2  14.55  3   4.80  4   9.40  5  12.06
 90/03/15 07:23:00   1   7.73  2  14.49  3   4.77  4   9.40  5  12.06
 90/03/15 07:38:00   1   7.68  2  14.49  3   4.77  4   9.40  5  12.06
 90/03/15 07:53:00   1   7.57  2  14.43  3   4.78  4   9.40  5  12.07
 90/03/15 08:08:00   1   7.61  2  14.50  3   4.81  4   9.41  5  12.08
 90/03/15 08:23:00   1   7.47  2  14.46  3   4.85  4   9.43  5  12.11
 90/03/15 08:38:00   1   7.54  2  14.53  3   4.86  4   9.46  5  12.14
 90/03/15 08:53:00   1   7.42  2  14.47  3   4.84  4   9.49  5  12.16
 90/03/15 09:08:00   1   7.18  2  14.30  3   4.72  4   9.49  5  12.19
 90/03/15 09:23:00   1   7.24  2  14.40  3   4.83  4   9.52  5  12.21
 90/03/15 09:38:00   1   7.11  2  14.34  3   4.92  4   9.53  5  12.22
 90/03/15 09:53:00   1   6.98  2  14.26  3   4.88  4   9.56  5  12.26
 90/03/15 10:08:00   1   7.11  2  14.43  3   4.97  4   9.60  5  12.28
 90/03/15 10:23:00   1   7.18  2  14.58  3   4.83  4   9.62  5  12.31
 90/03/15 10:38:00   1   6.98  2  14.47  3   4.94  4   9.63  5  12.33
 90/03/15 10:53:00   1   7.18  2  14.65  3   5.03  4   9.67  5  12.37
 90/03/15 11:08:00   1   6.95  2  14.50  3   4.99  4   9.67  5  12.40
 90/03/15 11:23:00   1   6.80  2  14.43  3   4.78  4   9.69  5  12.41
 90/03/15 11:38:00   1   7.29  2  14.85  3   5.01  4   9.75  5  12.44
 90/03/15 11:53:00   1   7.08  2  14.72  3   5.12  4   9.75  5  12.46
 90/03/15 12:08:00   1   7.12  2  14.78  3   5.08  4   9.77  5  12.47
 90/03/15 12:23:00   1   7.06  2  14.73  3   5.12  4   9.79  5  12.51
 90/03/15 12:38:00   1   6.89  2  14.62  3   4.98  4   9.76  5  12.52
 90/03/15 12:53:00   1   6.91  2  14.66  3   5.20  4   9.79  5  12.49
 90/03/15 13:08:00   1   6.83  2  14.60  3   5.20  4   9.79  5  12.49
 90/03/15 13:23:00   1   6.93  2  14.72  3   4.94  4   9.77  5  12.47
 90/03/15 13:38:00   1   6.91  2  14.69  3   5.13  4   9.76  5  12.46
 90/03/15 13:53:00   1   7.05  2  14.85  3   5.24  4   9.75  5  12.44
 90/03/15 14:08:00   1   6.98  2  14.82  3   5.06  4   9.72  5  12.42
 90/03/15 14:23:00   1   7.12  2  14.94  3   5.13  4   9.72  5  12.40
 90/03/15 14:38:00   1   6.92  2  14.81  3   5.01  4   9.69  5  12.38
 90/03/15 14:53:00   1   6.98  2  14.85  3   5.15  4   9.67  5  12.35
 90/03/15 15:08:00   1   6.95  2  14.81  3   5.05  4   9.66  5  12.34
 90/03/15 15:23:00   1   6.86  2  14.78  3   5.17  4   9.63  5  12.30
 90/03/15 15:38:00   1   7.02  2  14.86  3   5.03  4   9.62  5  12.27
 90/03/15 15:53:00   1   7.15  2  14.96  3   5.09  4   9.60  5  12.25
 90/03/15 16:08:00   1   7.11  2  14.88  3   5.11  4   9.57  5  12.22
 90/03/15 16:23:00   1   7.21  2  14.91  3   4.99  4   9.56  5  12.20
 90/03/15 16:38:00   1   7.24  2  14.91  3   4.92  4   9.53  5  12.18
C
C   ******  CHANNEL 2 CHANGED FROM OW1 TO OW11 AT 1650
C
 90/03/15 16:53:00   1   7.15  2  11.79  3   4.84  4   9.50  5  12.14
 90/03/15 17:08:00   1   7.24  2  11.87  3   4.85  4   9.47  5  12.13
 90/03/15 17:23:00   1   7.27  2  11.89  3   4.80  4   9.44  5  12.07
 90/03/15 17:38:00   1   7.37  2  11.89  3   4.79  4   9.43  5  12.06
 90/03/15 17:53:00   1   7.37  2  11.89  3   4.77  4   9.40  5  12.02
```

90/03/15 18:08:00	1	7.38	2	11.85	3	4.74	4	9.39	5	12.01
90/03/15 18:23:00	1	7.42	2	11.85	3	4.71	4	9.37	5	11.98
90/03/15 18:38:00	1	7.60	2	11.82	3	4.71	4	9.36	5	11.96
90/03/15 18:53:00	1	7.64	2	11.82	3	4.69	4	9.36	5	11.95
90/03/15 19:08:00	1	7.66	2	11.79	3	4.68	4	9.34	5	11.95
90/03/15 19:23:00	1	7.66	2	11.76	3	4.67	4	9.34	5	11.95
90/03/15 19:38:00	1	7.67	2	11.75	3	4.68	4	9.34	5	11.95
90/03/15 19:53:00	1	7.68	2	11.75	3	4.69	4	9.36	5	11.95
90/03/15 20:08:00	1	7.71	2	11.75	3	4.71	4	9.37	5	11.97
90/03/15 20:23:00	1	7.74	2	11.76	3	4.72	4	9.39	5	11.99
90/03/15 20:38:00	1	7.77	2	11.76	3	4.74	4	9.40	5	12.01
90/03/15 20:53:00	1	7.83	2	11.79	3	4.76	4	9.43	5	12.03
90/03/15 21:08:00	1	7.87	2	11.81	3	4.78	4	9.44	5	12.05
90/03/15 21:23:00	1	7.90	2	11.82	3	4.81	4	9.47	5	12.08
90/03/15 21:38:00	1	7.93	2	11.84	3	4.84	4	9.49	5	12.10
90/03/15 21:53:00	1	7.94	2	11.85	3	4.86	4	9.52	5	12.14
90/03/15 22:08:00	1	7.97	2	11.87	3	4.89	4	9.54	5	12.16
90/03/15 22:23:00	1	8.02	2	11.89	3	4.93	4	9.57	5	12.20
90/03/15 22:38:00	1	8.04	2	11.92	3	4.97	4	9.60	5	12.23
90/03/15 22:53:00	1	8.07	2	11.95	3	5.00	4	9.63	5	12.27
90/03/15 23:08:00	1	8.12	2	11.99	3	5.03	4	9.66	5	12.30
90/03/15 23:23:00	1	8.15	2	12.02	3	5.06	4	9.69	5	12.33
90/03/15 23:38:00	1	8.16	2	12.04	3	5.09	4	9.72	5	12.36
90/03/15 23:53:00	1	8.19	2	12.07	3	5.12	4	9.75	5	12.39
C 23:53 90/03/15 #01										
90/03/16 00:08:00	1	8.23	2	12.10	3	5.15	4	9.77	5	12.41
90/03/16 00:23:00	1	8.23	2	12.11	3	5.17	4	9.80	5	12.44
90/03/16 00:38:00	1	8.25	2	12.12	3	5.20	4	9.82	5	12.46
90/03/16 00:53:00	1	8.26	2	12.15	3	5.22	4	9.83	5	12.48
90/03/16 01:08:00	1	8.29	2	12.18	3	5.24	4	9.86	5	12.50
90/03/16 01:23:00	1	8.29	2	12.18	3	5.25	4	9.86	5	12.51
90/03/16 01:38:00	1	8.28	2	12.17	3	5.25	4	9.86	5	12.51
90/03/16 01:53:00	1	8.26	2	12.17	3	5.24	4	9.86	5	12.51
90/03/16 02:08:00	1	8.25	2	12.15	3	5.23	4	9.86	5	12.50
90/03/16 02:23:00	1	8.26	2	12.17	3	5.22	4	9.85	5	12.49
90/03/16 02:38:00	1	8.26	2	12.17	3	5.22	4	9.85	5	12.48
90/03/16 02:53:00	1	8.23	2	12.14	3	5.21	4	9.83	5	12.46
90/03/16 03:08:00	1	8.22	2	12.12	3	5.18	4	9.82	5	12.45
90/03/16 03:23:00	1	8.19	2	12.10	3	5.17	4	9.79	5	12.42
90/03/16 03:38:00	1	8.15	2	12.07	3	5.14	4	9.77	5	12.40
90/03/16 03:53:00	1	8.12	2	12.04	3	5.12	4	9.76	5	12.38
90/03/16 04:08:00	1	8.10	2	12.02	3	5.10	4	9.75	5	12.36
90/03/16 04:23:00	1	8.09	2	12.01	3	5.08	4	9.72	5	12.34
90/03/16 04:38:00	1	8.07	2	11.99	3	5.06	4	9.70	5	12.31
90/03/16 04:53:00	1	8.04	2	11.97	3	5.03	4	9.67	5	12.28
90/03/16 05:08:00	1	8.02	2	11.94	3	5.01	4	9.66	5	12.26
90/03/16 05:23:00	1	7.96	2	11.89	3	4.98	4	9.63	5	12.23
90/03/16 05:38:00	1	7.94	2	11.88	3	4.96	4	9.62	5	12.21
90/03/16 05:53:00	1	7.90	2	11.84	3	4.94	4	9.59	5	12.18
90/03/16 06:08:00	1	7.87	2	11.82	3	4.91	4	9.57	5	12.16
90/03/16 06:23:00	1	7.86	2	11.79	3	4.89	4	9.54	5	12.14
90/03/16 06:38:00	1	7.79	2	11.76	3	4.86	4	9.52	5	12.11
90/03/16 06:53:00	1	7.73	2	11.71	3	4.83	4	9.49	5	12.08
90/03/16 07:08:00	1	7.63	2	11.63	3	4.78	4	9.46	5	12.05
90/03/16 07:23:00	1	7.55	2	11.58	3	4.78	4	9.44	5	12.03
90/03/16 07:38:00	1	7.51	2	11.55	3	4.72	4	9.44	5	12.02
90/03/16 07:53:00	1	7.37	2	11.45	3	4.77	4	9.44	5	12.02
90/03/16 08:08:00	1	7.38	2	11.46	3	4.74	4	9.43	5	12.03
90/03/16 08:23:00	1	7.17	2	11.32	3	4.70	4	9.44	5	12.04
90/03/16 08:38:00	1	7.08	2	11.26	3	4.70	4	9.44	5	12.06

90/03/16 08:53:00	1	6.99	2	11.20	3	4.86	4	9.46	5	12.07
90/03/16 09:08:00	1	7.04	2	11.27	3	4.77	4	9.49	5	12.09
90/03/16 09:23:00	1	7.14	2	11.39	3	4.88	4	9.50	5	12.11
90/03/16 09:38:00	1	7.02	2	11.33	3	4.88	4	9.52	5	12.13
90/03/16 09:53:00	1	6.72	2	11.14	3	4.84	4	9.53	5	12.14
90/03/16 10:08:00	1	6.75	2	11.23	3	4.90	4	9.54	5	12.17
90/03/16 10:23:00	1	6.72	2	11.27	3	4.89	4	9.56	5	12.20
90/03/16 10:38:00	1	6.88	2	11.48	3	4.96	4	9.64	5	12.28
90/03/16 10:53:00	1	6.73	2	11.43	3	4.91	4	9.63	5	12.27
90/03/16 11:08:00	1	6.59	2	11.45	3	5.13	4	9.64	5	12.31
90/03/16 11:23:00	1	6.50	2	11.49	3	4.84	4	9.64	5	12.28
90/03/16 11:38:00	1	6.72	2	11.69	3	4.95	4	9.67	5	12.31
90/03/16 11:53:00	1	6.56	2	11.62	3	5.16	4	9.70	5	12.33
90/03/16 12:08:00	1	6.47	2	11.66	3	4.96	4	9.72	5	12.34
90/03/16 12:23:00	1	6.18	2	11.39	3	5.16	4	9.73	5	12.36
90/03/16 12:38:00	1	6.27	2	11.46	3	5.14	4	9.76	5	12.38
90/03/16 12:53:00	1	6.39	2	11.66	3	5.24	4	9.77	5	12.40
90/03/16 13:08:00	1	6.30	2	11.58	3	5.22	4	9.77	5	12.40
90/03/16 13:23:00	1	6.43	2	11.68	3	5.30	4	9.80	5	12.40
90/03/16 13:38:00	1	6.13	2	11.49	3	5.19	4	9.79	5	12.40
90/03/16 13:53:00	1	5.94	2	11.37	3	5.01	4	9.75	5	12.35
90/03/16 14:08:00	1	6.10	2	11.46	3	5.14	4	9.75	5	12.37
90/03/16 14:23:00	1	6.20	2	11.63	3	4.99	4	9.75	5	12.36
90/03/16 14:38:00	1	6.47	2	11.94	3	5.12	4	9.73	5	12.34
90/03/16 14:53:00	1	6.60	2	12.02	3	5.09	4	9.72	5	12.32
90/03/16 15:08:00	1	6.55	2	12.01	3	5.03	4	9.69	5	12.30
90/03/16 15:23:00	1	6.57	2	11.97	3	5.10	4	9.69	5	12.28
90/03/16 15:38:00	1	6.78	2	12.08	3	4.97	4	9.66	5	12.26
90/03/16 15:53:00	1	6.91	2	12.20	3	5.02	4	9.63	5	12.24
C CHECK DATA										
90/03/16 16:08:00	1	1.44	2	9.99	3	4.96	4	9.53	5	11.87
90/03/16 16:23:00	1	7.01	2	12.28	3	4.97	4	9.59	5	12.22
90/03/16 16:38:00	1	7.17	2	12.46	3	4.90	4	9.56	5	12.14
90/03/16 16:53:00	1	7.24	2	12.56	3	4.89	4	9.54	5	12.12
90/03/16 17:08:00	1	7.19	2	12.51	3	4.91	4	9.53	5	12.09
90/03/16 17:23:00	1	7.28	2	12.66	3	4.85	4	9.50	5	12.07
90/03/16 17:38:00	1	7.27	2	12.66	3	4.82	4	9.47	5	12.04
90/03/16 17:53:00	1	7.35	2	12.74	3	4.80	4	9.46	5	12.02
90/03/16 18:08:00	1	7.40	2	12.82	3	4.77	4	9.44	5	11.99
90/03/16 18:23:00	1	7.42	2	12.86	3	4.74	4	9.41	5	11.95
90/03/16 18:38:00	1	7.45	2	12.89	3	4.71	4	9.40	5	11.94
90/03/16 18:53:00	1	7.45	2	12.89	3	4.71	4	9.37	5	11.91
90/03/16 19:08:00	1	7.45	2	12.89	3	4.67	4	9.36	5	11.89
90/03/16 19:23:00	1	7.45	2	12.89	3	4.66	4	9.34	5	11.88
90/03/16 19:38:00	1	7.45	2	12.87	3	4.64	4	9.33	5	11.87
90/03/16 19:53:00	1	7.45	2	12.87	3	4.63	4	9.33	5	11.86
90/03/16 20:08:00	1	7.47	2	12.87	3	4.62	4	9.33	5	11.87
90/03/16 20:23:00	1	7.48	2	12.87	3	4.62	4	9.34	5	11.88
90/03/16 20:38:00	1	7.45	2	12.83	3	4.62	4	9.34	5	11.89
90/03/16 20:53:00	1	7.48	2	12.85	3	4.65	4	9.36	5	11.90
90/03/16 21:08:00	1	7.53	2	12.86	3	4.65	4	9.37	5	11.92
90/03/16 21:23:00	1	7.55	2	12.87	3	4.67	4	9.40	5	11.94
90/03/16 21:38:00	1	7.58	2	12.87	3	4.68	4	9.41	5	11.96
90/03/16 21:53:00	1	7.61	2	12.90	3	4.70	4	9.44	5	11.99
90/03/16 22:08:00	1	7.64	2	12.92	3	4.71	4	9.46	5	12.02
90/03/16 22:23:00	1	7.68	2	12.93	3	4.75	4	9.49	5	12.05
90/03/16 22:38:00	1	7.70	2	12.95	3	4.77	4	9.52	5	12.08
90/03/16 22:53:00	1	7.71	2	12.95	3	4.80	4	9.54	5	12.11
90/03/16 23:08:00	1	7.74	2	12.95	3	4.84	4	9.57	5	12.14
90/03/16 23:23:00	1	7.77	2	12.96	3	4.87	4	9.60	5	12.17

90/03/16	23:38:00	1	7.81	2	12.99	3	4.90	4	9.63	5	12.20
90/03/16	23:53:00	1	7.84	2	13.00	3	4.93	4	9.66	5	12.23
C 23:53	90/03/16	#01									
90/03/17	00:08:00	1	7.87	2	13.02	3	4.96	4	9.67	5	12.26
90/03/17	00:23:00	1	7.87	2	13.02	3	4.98	4	9.70	5	12.28
90/03/17	00:38:00	1	7.90	2	13.03	3	5.02	4	9.73	5	12.31
90/03/17	00:53:00	1	7.91	2	13.05	3	5.04	4	9.75	5	12.34
90/03/17	01:08:00	1	7.93	2	13.05	3	5.06	4	9.77	5	12.36
90/03/17	01:23:00	1	7.94	2	13.06	3	5.08	4	9.79	5	12.38
90/03/17	01:38:00	1	7.96	2	13.05	3	5.09	4	9.80	5	12.40
90/03/17	01:53:00	1	7.97	2	13.05	3	5.11	4	9.82	5	12.41
90/03/17	02:08:00	1	7.97	2	13.03	3	5.11	4	9.82	5	12.41
90/03/17	02:23:00	1	7.96	2	13.02	3	5.12	4	9.83	5	12.41
90/03/17	02:38:00	1	7.96	2	13.00	3	5.14	4	9.82	5	12.40
90/03/17	02:53:00	1	7.93	2	12.98	3	5.15	4	9.82	5	12.40
90/03/17	03:08:00	1	7.91	2	12.95	3	5.16	4	9.80	5	12.39
90/03/17	03:23:00	1	7.89	2	12.90	3	5.16	4	9.79	5	12.38
90/03/17	03:38:00	1	7.87	2	12.87	3	5.17	4	9.79	5	12.36
90/03/17	03:53:00	1	7.87	2	12.86	3	5.18	4	9.77	5	12.34
90/03/17	04:08:00	1	7.83	2	12.80	3	5.18	4	9.75	5	12.33
90/03/17	04:23:00	1	7.80	2	12.77	3	5.19	4	9.75	5	12.31
90/03/17	04:38:00	1	7.77	2	12.73	3	5.19	4	9.72	5	12.28
90/03/17	04:53:00	1	7.73	2	12.67	3	5.21	4	9.70	5	12.27
90/03/17	05:08:00	1	7.70	2	12.63	3	5.21	4	9.67	5	12.24
90/03/17	05:23:00	1	7.68	2	12.60	3	5.22	4	9.66	5	12.21
90/03/17	05:38:00	1	7.64	2	12.56	3	5.22	4	9.63	5	12.18
90/03/17	05:53:00	1	7.58	2	12.50	3	5.22	4	9.59	5	12.14
90/03/17	06:08:00	1	7.57	2	12.49	3	5.23	4	9.57	5	12.12
90/03/17	06:23:00	1	7.54	2	12.44	3	5.23	4	9.54	5	12.09
90/03/17	06:38:00	1	7.42	2	12.37	3	5.23	4	9.52	5	12.07
90/03/17	06:53:00	1	7.41	2	12.34	3	5.24	4	9.50	5	12.05
90/03/17	07:08:00	1	7.32	2	12.23	3	5.24	4	9.47	5	12.02
90/03/17	07:23:00	1	7.27	2	12.15	3	5.24	4	9.46	5	12.00
90/03/17	07:38:00	1	7.19	2	12.05	3	5.22	4	9.44	5	11.98
90/03/17	07:53:00	1	7.17	2	11.99	3	5.29	4	9.43	5	11.97
90/03/17	08:08:00	1	7.08	2	11.88	3	5.24	4	9.41	5	11.96
90/03/17	08:23:00	1	6.99	2	11.79	3	5.22	4	9.41	5	11.96
90/03/17	08:38:00	1	6.78	2	11.53	3	5.25	4	9.41	5	11.96
90/03/17	08:53:00	1	6.80	2	11.48	3	5.22	4	9.43	5	11.98
90/03/17	09:08:00	1	6.70	2	11.32	3	5.22	4	9.43	5	11.99
90/03/17	09:23:00	1	6.59	2	11.10	3	5.33	4	9.44	5	12.01
90/03/17	09:38:00	1	6.63	2	11.12	3	5.33	4	9.46	5	12.02
90/03/17	09:53:00	1	6.59	2	11.07	3	5.33	4	9.47	5	12.04
90/03/17	10:08:00	1	6.56	2	11.01	3	5.16	4	9.47	5	12.05
90/03/17	10:23:00	1	6.57	2	11.00	3	5.45	4	9.50	5	12.10
90/03/17	10:38:00	1	6.56	2	11.00	3	5.51	4	9.54	5	12.14
90/03/17	10:53:00	1	6.68	2	11.12	3	5.42	4	9.54	5	12.17
90/03/17	11:08:00	1	6.60	2	11.06	3	5.59	4	9.57	5	12.21
90/03/17	11:23:00	1	6.26	2	10.70	3	5.32	4	9.57	5	12.24
90/03/17	11:38:00	1	6.14	2	10.52	3	5.37	4	9.60	5	12.27
90/03/17	11:53:00	1	6.06	2	10.44	3	5.35	4	9.60	5	12.30
90/03/17	12:08:00	1	6.06	2	10.34	3	5.44	4	9.63	5	12.33
90/03/17	12:23:00	1	5.97	2	10.22	3	5.52	4	9.64	5	12.34
90/03/17	12:38:00	1	6.07	2	10.37	3	5.48	4	9.66	5	12.38
90/03/17	12:53:00	1	6.11	2	10.50	3	5.62	4	9.69	5	12.40
90/03/17	13:08:00	1	6.26	2	10.63	3	5.66	4	9.70	5	12.42
90/03/17	13:23:00	1	6.36	2	10.90	3	5.56	4	9.70	5	12.44
90/03/17	13:38:00	1	6.44	2	10.94	3	5.53	4	9.72	5	12.46
90/03/17	13:53:00	1	6.53	2	11.04	3	5.62	4	9.70	5	12.46
90/03/17	14:08:00	1	6.56	2	11.04	3	5.49	4	9.72	5	12.12

90/03/17	14:23:00	1	6.63	2	11.16	3	5.55	4	9.72	5	12.25
90/03/17	14:38:00	1	6.68	2	11.22	3	5.57	4	9.70	5	12.28
90/03/17	14:53:00	1	6.57	2	11.14	3	5.63	4	9.67	5	12.31
90/03/17	15:08:00	1	6.66	2	11.25	3	5.59	4	9.67	5	12.16
90/03/17	15:23:00	1	6.69	2	11.26	3	5.64	4	9.67	5	12.18
90/03/17	15:38:00	1	6.75	2	11.32	3	5.61	4	9.66	5	12.18
90/03/17	15:53:00	1	6.86	2	11.48	3	5.69	4	9.64	5	12.16
90/03/17	16:08:00	1	6.80	2	11.42	3	5.69	4	9.63	5	12.14
90/03/17	16:23:00	1	6.95	2	11.58	3	5.71	4	9.62	5	12.13
90/03/17	16:38:00	1	7.05	2	11.72	3	5.76	4	9.60	5	12.10
90/03/17	16:53:00	1	7.09	2	11.81	3	5.74	4	9.57	5	12.08
90/03/17	17:08:00	1	7.14	2	11.89	3	5.77	4	9.56	5	12.06
90/03/17	17:23:00	1	7.09	2	11.87	3	5.77	4	9.53	5	12.04
90/03/17	17:38:00	1	7.14	2	11.95	3	5.80	4	9.52	5	12.02
90/03/17	17:53:00	1	7.17	2	11.99	3	5.80	4	9.49	5	11.99
90/03/17	18:08:00	1	7.22	2	12.08	3	5.80	4	9.47	5	11.97
90/03/17	18:23:00	1	7.24	2	12.14	3	5.81	4	9.44	5	11.95
90/03/17	18:38:00	1	7.25	2	12.18	3	5.83	4	9.43	5	11.92
90/03/17	18:53:00	1	7.29	2	12.18	3	5.83	4	9.41	5	11.90
90/03/17	19:08:00	1	7.31	2	12.20	3	5.84	4	9.39	5	11.88
90/03/17	19:23:00	1	7.31	2	12.21	3	5.84	4	9.37	5	11.86
90/03/17	19:38:00	1	7.29	2	12.21	3	5.85	4	9.36	5	11.84
90/03/17	19:53:00	1	7.29	2	12.21	3	5.86	4	9.33	5	11.82
90/03/17	20:08:00	1	7.29	2	12.21	3	5.86	4	9.31	5	11.81
90/03/17	20:23:00	1	7.31	2	12.21	3	5.86	4	9.31	5	11.80
90/03/17	20:38:00	1	7.31	2	12.23	3	5.86	4	9.30	5	11.79
90/03/17	20:53:00	1	7.34	2	12.24	3	5.87	4	9.31	5	11.81
90/03/17	21:08:00	1	7.35	2	12.25	3	5.89	4	9.33	5	11.82
90/03/17	21:23:00	1	7.38	2	12.28	3	5.90	4	9.34	5	11.83
90/03/17	21:38:00	1	7.40	2	12.30	3	5.91	4	9.36	5	11.85
90/03/17	21:53:00	1	7.42	2	12.31	3	5.93	4	9.36	5	11.87
90/03/17	22:08:00	1	7.44	2	12.33	3	5.94	4	9.39	5	11.89
90/03/17	22:23:00	1	7.47	2	12.34	3	5.94	4	9.40	5	11.91
90/03/17	22:38:00	1	7.48	2	12.36	3	5.94	4	9.41	5	11.93
90/03/17	22:53:00	1	7.53	2	12.40	3	5.96	4	9.44	5	11.96
90/03/17	23:08:00	1	7.54	2	12.41	3	5.98	4	9.47	5	11.99
90/03/17	23:23:00	1	7.54	2	12.41	3	5.99	4	9.49	5	12.02
90/03/17	23:38:00	1	7.54	2	12.40	3	6.00	4	9.52	5	12.04
90/03/17	23:53:00	1	7.55	2	12.40	3	6.02	4	9.53	5	12.07
C 23:53	90/03/17	#01									
90/03/18	00:08:00	1	7.57	2	12.41	3	6.04	4	9.56	5	12.09
90/03/18	00:23:00	1	7.58	2	12.41	3	6.06	4	9.57	5	12.12
90/03/18	00:38:00	1	7.61	2	12.43	3	6.06	4	9.60	5	12.14
90/03/18	00:53:00	1	7.63	2	12.44	3	6.06	4	9.62	5	12.16
90/03/18	01:08:00	1	7.64	2	12.44	3	6.06	4	9.63	5	12.18
90/03/18	01:23:00	1	7.64	2	12.43	3	6.08	4	9.66	5	12.21
90/03/18	01:38:00	1	7.64	2	12.41	3	6.12	4	9.67	5	12.22
90/03/18	01:53:00	1	7.64	2	12.41	3	6.12	4	9.69	5	12.24
90/03/18	02:08:00	1	7.67	2	12.43	3	6.12	4	9.69	5	12.25
90/03/18	02:23:00	1	7.81	2	12.54	3	6.13	4	9.70	5	12.26
90/03/18	02:38:00	1	7.93	2	12.67	3	6.14	4	9.76	5	12.32
90/03/18	02:53:00	1	8.02	2	12.77	3	6.16	4	9.85	5	12.40
90/03/18	03:08:00	1	8.04	2	12.79	3	6.18	4	9.88	5	12.42
90/03/18	03:23:00	1	8.04	2	12.80	3	6.20	4	9.88	5	12.42
90/03/18	03:38:00	1	8.06	2	12.82	3	6.20	4	9.86	5	12.40
90/03/18	03:53:00	1	8.07	2	12.83	3	6.22	4	9.85	5	12.37
90/03/18	04:08:00	1	8.03	2	12.80	3	6.24	4	9.83	5	12.36
90/03/18	04:23:00	1	8.04	2	12.82	3	6.24	4	9.80	5	12.34
90/03/18	04:38:00	1	8.03	2	12.82	3	6.24	4	9.79	5	12.31
90/03/18	04:53:00	1	8.03	2	12.82	3	6.24	4	9.77	5	12.28

90/03/18	05:08:00	1	8.00	2	12.80	3	6.25	4	9.75	5	12.27
90/03/18	05:23:00	1	7.97	2	12.77	3	6.25	4	9.73	5	12.24
90/03/18	05:38:00	1	7.94	2	12.74	3	6.25	4	9.70	5	12.21
90/03/18	05:53:00	1	7.91	2	12.72	3	6.26	4	9.69	5	12.19
90/03/18	06:08:00	1	7.89	2	12.67	3	6.25	4	9.66	5	12.16
90/03/18	06:23:00	1	7.81	2	12.66	3	6.26	4	9.63	5	12.14
90/03/18	06:38:00	1	7.79	2	12.61	3	6.26	4	9.62	5	12.11
90/03/18	06:53:00	1	7.77	2	12.59	3	6.26	4	9.59	5	12.08
90/03/18	07:08:00	1	7.73	2	12.53	3	6.26	4	9.57	5	12.07
90/03/18	07:23:00	1	7.68	2	12.47	3	6.29	4	9.56	5	12.04
90/03/18	07:38:00	1	7.67	2	12.46	3	6.28	4	9.53	5	12.02
90/03/18	07:53:00	1	7.66	2	12.43	3	6.30	4	9.52	5	12.01
90/03/18	08:08:00	1	7.55	2	12.31	3	6.28	4	9.50	5	11.99
90/03/18	08:23:00	1	7.50	2	12.23	3	6.31	4	9.49	5	11.97
90/03/18	08:38:00	1	7.47	2	12.18	3	6.31	4	9.47	5	11.95
90/03/18	08:53:00	1	7.48	2	12.15	3	6.31	4	9.47	5	11.95
90/03/18	09:08:00	1	7.35	2	12.02	3	6.32	4	9.46	5	11.94
90/03/18	09:23:00	1	7.27	2	11.89	3	6.35	4	9.46	5	11.94
90/03/18	09:38:00	1	7.09	2	11.66	3	6.34	4	9.46	5	11.95
90/03/18	09:53:00	1	7.17	2	11.69	3	6.38	4	9.47	5	11.96
90/03/18	10:08:00	1	7.02	2	11.46	3	6.47	4	9.49	5	12.00
90/03/18	10:23:00	1	7.01	2	11.40	3	6.42	4	9.49	5	12.03
90/03/18	10:38:00	1	6.95	2	11.32	3	6.43	4	9.49	5	12.00
90/03/18	10:53:00	1	6.99	2	11.33	3	6.43	4	9.52	5	12.02
90/03/18	11:08:00	1	7.02	2	11.35	3	6.44	4	9.53	5	12.05
90/03/18	11:23:00	1	7.18	2	11.52	3	6.44	4	9.54	5	12.07
90/03/18	11:38:00	1	7.17	2	11.53	3	6.44	4	9.57	5	12.08
90/03/18	11:53:00	1	7.15	2	11.55	3	6.45	4	9.59	5	12.10
90/03/18	12:08:00	1	7.21	2	11.61	3	6.49	4	9.60	5	12.13
90/03/18	12:23:00	1	7.22	2	11.63	3	6.50	4	9.62	5	12.14
90/03/18	12:38:00	1	7.25	2	11.69	3	6.51	4	9.63	5	12.16
90/03/18	12:53:00	1	7.29	2	11.74	3	6.52	4	9.66	5	12.18
90/03/18	13:08:00	1	7.27	2	11.72	3	6.57	4	9.67	5	12.20
90/03/18	13:23:00	1	7.27	2	11.72	3	6.57	4	9.69	5	12.21
90/03/18	13:38:00	1	7.29	2	11.75	3	6.58	4	9.70	5	12.23
90/03/18	13:53:00	1	7.18	2	11.63	3	6.58	4	9.70	5	12.24
90/03/18	14:08:00	1	7.22	2	11.68	3	6.63	4	9.72	5	12.25
90/03/18	14:23:00	1	7.18	2	11.62	3	6.59	4	9.72	5	12.26
90/03/18	14:38:00	1	7.17	2	11.59	3	6.69	4	9.72	5	12.26
90/03/18	14:53:00	1	7.19	2	11.62	3	6.66	4	9.72	5	12.25
90/03/18	15:08:00	1	7.02	2	11.42	3	6.63	4	9.70	5	12.24
90/03/18	15:23:00	1	7.17	2	11.56	3	6.70	4	9.69	5	12.22
90/03/18	15:38:00	1	7.15	2	11.55	3	6.70	4	9.67	5	12.21
90/03/18	15:53:00	1	7.14	2	11.52	3	6.78	4	9.66	5	12.19
90/03/18	16:08:00	1	7.21	2	11.61	3	6.76	4	9.64	5	12.17
90/03/18	16:23:00	1	7.25	2	11.68	3	6.76	4	9.63	5	12.15
90/03/18	16:38:00	1	7.21	2	11.68	3	6.78	4	9.63	5	12.14
90/03/18	16:53:00	1	7.18	2	11.65	3	6.79	4	9.60	5	12.12
90/03/18	17:08:00	1	7.22	2	11.72	3	6.81	4	9.59	5	12.10
90/03/18	17:23:00	1	7.22	2	11.72	3	6.80	4	9.56	5	12.08
90/03/18	17:38:00	1	7.22	2	11.75	3	6.83	4	9.56	5	12.06
90/03/18	17:53:00	1	7.25	2	11.79	3	6.83	4	9.53	5	12.03
90/03/18	18:08:00	1	7.25	2	11.84	3	6.84	4	9.52	5	12.02
90/03/18	18:23:00	1	7.25	2	11.85	3	6.86	4	9.50	5	11.99
90/03/18	18:38:00	1	7.27	2	11.87	3	6.86	4	9.49	5	11.97
90/03/18	18:53:00	1	7.25	2	11.88	3	6.87	4	9.47	5	11.95
90/03/18	19:08:00	1	7.24	2	11.88	3	6.88	4	9.44	5	11.93
90/03/18	19:23:00	1	7.22	2	11.87	3	6.89	4	9.43	5	11.91
90/03/18	19:38:00	1	7.22	2	11.87	3	6.89	4	9.41	5	11.89
90/03/18	19:53:00	1	7.19	2	11.85	3	6.91	4	9.40	5	11.88

```
 90/03/18 20:08:00   1   7.18  2  11.84  3   6.92  4   9.37  5  11.85
 90/03/18 20:23:00   1   7.17  2  11.82  3   6.93  4   9.37  5  11.84
 90/03/18 20:38:00   1   7.15  2  11.81  3   6.94  4   9.36  5  11.83
 90/03/18 20:53:00   1   7.15  2  11.81  3   6.95  4   9.34  5  11.82
 90/03/18 21:08:00   1   7.17  2  11.82  3   6.95  4   9.36  5  11.82
 90/03/18 21:23:00   1   7.18  2  11.84  3   6.96  4   9.36  5  11.83
 90/03/18 21:38:00   1   7.19  2  11.84  3   6.97  4   9.37  5  11.85
 90/03/18 21:53:00   1   7.21  2  11.87  3   6.98  4   9.39  5  11.86
 90/03/18 22:08:00   1   7.21  2  11.87  3   6.99  4   9.40  5  11.88
 90/03/18 22:23:00   1   7.24  2  11.88  3   7.02  4   9.41  5  11.89
 90/03/18 22:38:00   1   7.25  2  11.89  3   7.03  4   9.43  5  11.91
 90/03/18 22:53:00   1   7.28  2  11.92  3   7.05  4   9.46  5  11.94
 90/03/18 23:08:00   1   7.32  2  11.98  3   7.06  4   9.47  5  11.96
 90/03/18 23:23:00   1   7.35  2  12.01  3   7.08  4   9.50  5  11.99
 90/03/18 23:38:00   1   7.38  2  12.04  3   7.09  4   9.52  5  12.01
 90/03/18 23:53:00   1   7.41  2  12.07  3   7.11  4   9.54  5  12.03
C  23:53  90/03/18 #01
C  CHANNEL 4 SWITCHED FROM WELL OW2 TO WELL OW12 AT 0800 3-19-90
 90/03/19 00:08:00   1   7.42  2  12.08  3   7.13  4   9.57  5  12.06
 90/03/19 00:23:00   1   7.42  2  12.07  3   7.14  4   9.59  5  12.08
 90/03/19 00:38:00   1   7.44  2  12.08  3   7.15  4   9.62  5  12.11
 90/03/19 00:53:00   1   7.45  2  12.10  3   7.17  4   9.63  5  12.14
 90/03/19 01:08:00   1   7.50  2  12.12  3   7.18  4   9.66  5  12.16
 90/03/19 01:23:00   1   7.48  2  12.10  3   7.21  4   9.67  5  12.18
 90/03/19 01:38:00   1   7.50  2  12.11  3   7.22  4   9.70  5  12.21
 90/03/19 01:53:00   1   7.51  2  12.11  3   7.24  4   9.72  5  12.23
 90/03/19 02:08:00   1   7.55  2  12.14  3   7.27  4   9.73  5  12.25
 90/03/19 02:23:00   1   7.57  2  12.15  3   7.27  4   9.76  5  12.27
 90/03/19 02:38:00   1   7.58  2  12.17  3   7.31  4   9.77  5  12.28
 90/03/19 02:53:00   1   7.61  2  12.18  3   7.32  4   9.79  5  12.30
 90/03/19 03:08:00   1   7.61  2  12.20  3   7.34  4   9.80  5  12.32
 90/03/19 03:23:00   1   7.61  2  12.20  3   7.34  4   9.80  5  12.33
 90/03/19 03:38:00   1   7.66  2  12.23  3   7.37  4   9.80  5  12.33
 90/03/19 03:53:00   1   7.66  2  12.23  3   7.39  4   9.80  5  12.32
 90/03/19 04:08:00   1   7.64  2  12.18  3   7.40  4   9.80  5  12.31
 90/03/19 04:23:00   1   7.64  2  12.21  3   7.41  4   9.79  5  12.30
 90/03/19 04:38:00   1   7.64  2  12.21  3   7.42  4   9.79  5  12.29
 90/03/19 04:53:00   1   7.61  2  12.20  3   7.44  4   9.77  5  12.27
 90/03/19 05:08:00   1   7.61  2  12.18  3   7.45  4   9.76  5  12.27
 90/03/19 05:23:00   1   7.60  2  12.18  3   7.47  4   9.75  5  12.25
 90/03/19 05:38:00   1   7.58  2  12.17  3   7.47  4   9.73  5  12.23
 90/03/19 05:53:00   1   7.55  2  12.14  3   7.48  4   9.72  5  12.21
 90/03/19 06:08:00   1   7.53  2  12.11  3   7.50  4   9.70  5  12.20
 90/03/19 06:23:00   1   7.48  2  12.08  3   7.51  4   9.69  5  12.18
 90/03/19 06:38:00   1   7.44  2  12.04  3   7.52  4   9.66  5  12.16
 90/03/19 06:53:00   1   7.38  2  11.98  3   7.53  4   9.64  5  12.14
 90/03/19 07:08:00   1   7.34  2  11.92  3   7.55  4   9.63  5  12.12
 90/03/19 07:23:00   1   7.31  2  11.88  3   7.55  4   9.60  5  12.09
 90/03/19 07:38:00   1   7.22  2  11.79  3   7.57  4   9.59  5  12.08
 90/03/19 07:53:00   1   7.14  2  11.71  3   7.58  4   9.57  5  12.06
 90/03/19 08:08:00   1   7.02  2  11.58  3   7.59  4   9.56  5  12.04
 90/03/19 08:23:00   1   6.92  2  11.45  3   7.59  4   9.53  5  12.02
 90/03/19 08:38:00   1   6.78  2  11.27  3   7.58  4   9.52  5  12.01
 90/03/19 08:53:00   1   7.01  2  11.19  3   7.66  4   9.50  5  11.99
 90/03/19 09:08:00   1   6.99  2  10.80  3   7.58  4   9.47  5  11.97
 90/03/19 09:23:00   1   6.96  2  10.41  3   7.49  4   9.44  5  11.95
 90/03/19 09:38:00   1   6.96  2  10.42  3   7.72  4   9.46  5  11.95
C  09:38  90/03/19 #01
C FILE TEMP01.FRW
C ON 3-19-90 TRANSDUCER IN WELL 5B (PRODUCTION WELL, CHAN 1)
```

```
C LOWERED, CHECK OTHER DATA ALSO
 90/03/20 00:06:50   1  13.60  2  12.05  3   4.81  4   9.43  5  12.18
 90/03/20 00:21:50   1  13.62  2  12.08  3   4.83  4   9.46  5  12.20
 90/03/20 00:36:50   1  13.64  2  12.08  3   4.84  4   9.47  5  12.21
 90/03/20 00:51:50   1  13.65  2  12.08  3   4.86  4   9.49  5  12.22
 90/03/20 01:06:50   1  13.70  2  12.11  3   4.90  4   9.53  5  12.25
 90/03/20 01:21:50   1  13.72  2  12.14  3   4.92  4   9.56  5  12.28
 90/03/20 01:36:50   1  13.75  2  12.17  3   4.95  4   9.59  5  12.31
 90/03/20 01:51:50   1  13.78  2  12.18  3   4.97  4   9.60  5  12.33
 90/03/20 02:06:50   1  13.80  2  12.20  3   5.00  4   9.63  5  12.35
 90/03/20 02:21:50   1  13.83  2  12.23  3   5.02  4   9.66  5  12.37
 90/03/20 02:36:50   1  13.85  2  12.24  3   5.04  4   9.67  5  12.40
 90/03/20 02:51:50   1  13.87  2  12.25  3   5.06  4   9.70  5  12.41
 90/03/20 03:06:50   1  13.90  2  12.28  3   5.09  4   9.72  5  12.43
 90/03/20 03:21:50   1  13.91  2  12.31  3   5.10  4   9.73  5  12.45
 90/03/20 03:36:50   1  13.94  2  12.34  3   5.12  4   9.76  5  12.46
 90/03/20 03:51:50   1  13.96  2  12.37  3   5.13  4   9.76  5  12.47
 90/03/20 04:06:50   1  13.97  2  12.43  3   5.14  4   9.77  5  12.49
 90/03/20 04:36:50   1  13.98  2  12.50  3   5.16  4   9.79  5  12.50
 90/03/20 05:06:50   1  13.96  2  12.53  3   5.15  4   9.79  5  12.50
 90/03/20 05:36:50   1  13.94  2  12.57  3   5.13  4   9.77  5  12.47
 90/03/20 06:06:50   1  13.91  2  12.56  3   5.09  4   9.75  5  12.45
 90/03/20 06:36:50   1  13.83  2  12.51  3   5.06  4   9.70  5  12.41
 90/03/20 07:06:50   1  13.75  2  12.43  3   5.02  4   9.67  5  12.37
 90/03/20 07:36:50   1  13.72  2  12.34  3   4.97  4   9.63  5  12.34
C ****FILE STA01B.FRW (FOR ESE USE ONLY)
C STATION ID = 01
C 07:45  90/03/20 #01
C   *****  PUMP TEST START AT 1030 3-20-90 *****
 90/03/20 10:29:49   1  11.23  2  10.87  3   4.73  4   9.40  5  12.03
 90/03/20 10:29:50   1   9.98  2  10.54  3   4.73  4   9.40  5  12.02
 90/03/20 10:29:51   1   9.34  2  10.32  3   4.72  4   9.39  5  12.01
 90/03/20 10:29:52   1   8.52  2  10.09  3   4.72  4   9.37  5  11.98
 90/03/20 10:29:53   1   8.13  2   9.88  3   4.71  4   9.36  5  11.95
 90/03/20 10:29:54   1   8.20  2   9.70  3   4.71  4   9.36  5  11.94
 90/03/20 10:29:55   1   8.20  2   9.57  3   4.70  4   9.34  5  11.92
 90/03/20 10:29:56   1   8.22  2   9.46  3   4.68  4   9.33  5  11.90
 90/03/20 10:29:57   1   8.15  2   9.39  3   4.67  4   9.31  5  11.88
 90/03/20 10:29:58   1   8.22  2   9.33  3   4.66  4   9.30  5  11.86
 90/03/20 10:29:59   1   8.16  2   9.27  3   4.65  4   9.28  5  11.85
 90/03/20 10:30:00   1   8.32  2   9.23  3   4.65  4   9.28  5  11.83
 90/03/20 10:30:01   1   8.13  2   9.20  3   4.64  4   9.27  5  11.82
 90/03/20 10:30:02   1   8.16  2   9.17  3   4.63  4   9.26  5  11.82
 90/03/20 10:30:03   1   8.00  2   9.15  3   4.63  4   9.26  5  11.81
 90/03/20 10:30:04   1   8.35  2   9.14  3   4.62  4   9.24  5  11.80
 90/03/20 10:30:05   1   7.90  2   9.13  3   4.62  4   9.24  5  11.79
 90/03/20 10:30:06   1   7.99  2   9.11  3   4.61  4   9.23  5  11.79
 90/03/20 10:30:07   1   7.99  2   9.10  3   4.61  4   9.23  5  11.78
 90/03/20 10:30:08   1   7.90  2   9.08  3   4.60  4   9.23  5  11.78
 90/03/20 10:30:09   1   7.93  2   9.07  3   4.60  4   9.21  5  11.77
 90/03/20 10:30:10   1   8.07  2   9.05  3   4.59  4   9.21  5  11.76
 90/03/20 10:30:11   1   7.99  2   9.05  3   4.59  4   9.21  5  11.76
 90/03/20 10:30:12   1   7.93  2   9.04  3   4.58  4   9.20  5  11.76
 90/03/20 10:30:13   1   7.96  2   9.04  3   4.58  4   9.20  5  11.76
 90/03/20 10:30:14   1   7.91  2   9.02  3   4.58  4   9.20  5  11.76
 90/03/20 10:30:15   1   8.00  2   9.02  3   4.58  4   9.20  5  11.75
 90/03/20 10:30:16   1   7.80  2   9.01  3   4.58  4   9.20  5  11.75
 90/03/20 10:30:17   1   7.96  2   9.00  3   4.58  4   9.20  5  11.75
 90/03/20 10:30:18   1   8.07  2   9.00  3   4.58  4   9.18  5  11.74
 90/03/20 10:30:19   1   7.84  2   9.00  3   4.58  4   9.18  5  11.74
```

90/03/20	10:30:20	1	7.99	2	8.98	3	4.57	4	9.18	5	11.74
90/03/20	10:30:21	1	7.97	2	8.98	3	4.57	4	9.18	5	11.74
90/03/20	10:30:22	1	7.87	2	8.98	3	4.57	4	9.18	5	11.73
90/03/20	10:30:23	1	7.97	2	8.98	3	4.57	4	9.18	5	11.73
90/03/20	10:30:24	1	7.94	2	8.97	3	4.57	4	9.18	5	11.73
90/03/20	10:30:25	1	7.81	2	8.97	3	4.56	4	9.17	5	11.73
90/03/20	10:30:26	1	8.00	2	8.97	3	4.56	4	9.17	5	11.73
90/03/20	10:30:27	1	8.02	2	8.95	3	4.56	4	9.17	5	11.72
90/03/20	10:30:28	1	8.03	2	8.95	3	4.56	4	9.17	5	11.72
90/03/20	10:30:29	1	7.89	2	8.95	3	4.56	4	9.17	5	11.72
90/03/20	10:30:30	1	7.94	2	8.95	3	4.56	4	9.17	5	11.72
90/03/20	10:30:31	1	8.15	2	8.95	3	4.56	4	9.17	5	11.72
90/03/20	10:30:32	1	7.71	2	8.94	3	4.56	4	9.17	5	11.72
90/03/20	10:30:33	1	7.77	2	8.94	3	4.55	4	9.15	5	11.71
90/03/20	10:30:34	1	7.93	2	8.94	3	4.55	4	9.15	5	11.71
90/03/20	10:30:35	1	7.99	2	8.92	3	4.55	4	9.15	5	11.71
90/03/20	10:30:36	1	7.93	2	8.92	3	4.55	4	9.15	5	11.71
90/03/20	10:30:37	1	7.93	2	8.92	3	4.55	4	9.15	5	11.71
90/03/20	10:30:38	1	7.86	2	8.94	3	4.55	4	9.15	5	11.71
90/03/20	10:30:39	1	8.04	2	8.94	3	4.55	4	9.15	5	11.71
90/03/20	10:30:40	1	8.03	2	8.92	3	4.54	4	9.15	5	11.71
90/03/20	10:30:41	1	8.06	2	8.92	3	4.54	4	9.15	5	11.71
90/03/20	10:30:42	1	8.10	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:43	1	8.03	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:44	1	7.87	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:45	1	7.99	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:46	1	8.06	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:47	1	7.93	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:48	1	7.96	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:49	1	7.97	2	8.94	3	4.54	4	9.15	5	11.70
90/03/20	10:30:50	1	8.13	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:51	1	8.15	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:52	1	8.16	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:53	1	8.28	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:54	1	8.00	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:55	1	8.06	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:56	1	8.15	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:57	1	8.20	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:58	1	8.09	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:30:59	1	8.13	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:31:00	1	8.12	2	8.95	3	4.54	4	9.15	5	11.70
90/03/20	10:31:01	1	7.99	2	8.95	3	4.53	4	9.14	5	11.69
90/03/20	10:31:02	1	8.03	2	8.95	3	4.53	4	9.14	5	11.69
90/03/20	10:31:03	1	8.03	2	8.95	3	4.53	4	9.14	5	11.69
90/03/20	10:31:04	1	8.00	2	8.95	3	4.53	4	9.14	5	11.69
90/03/20	10:31:05	1	8.04	2	8.95	3	4.53	4	9.14	5	11.69
90/03/20	10:31:06	1	8.13	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:07	1	7.97	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:08	1	8.16	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:09	1	8.07	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:10	1	8.07	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:11	1	8.23	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:12	1	8.00	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:13	1	8.23	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:14	1	8.12	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:15	1	8.10	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:16	1	8.22	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:17	1	8.12	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:18	1	8.00	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:19	1	8.07	2	8.94	3	4.53	4	9.14	5	11.69

90/03/20	10:31:20	1	8.04	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:21	1	8.02	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:22	1	8.30	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:23	1	8.03	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:24	1	8.16	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:25	1	7.99	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:26	1	8.10	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:27	1	8.02	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:28	1	8.09	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:29	1	8.13	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:30	1	7.99	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:31	1	7.91	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:32	1	8.25	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:33	1	8.13	2	8.94	3	4.53	4	9.13	5	11.69
90/03/20	10:31:34	1	8.22	2	8.94	3	4.53	4	9.14	5	11.69
90/03/20	10:31:35	1	8.10	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:36	1	7.97	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:37	1	8.06	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:38	1	8.03	2	8.92	3	4.53	4	9.13	5	11.69
90/03/20	10:31:39	1	8.04	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:40	1	8.22	2	8.92	3	4.53	4	9.13	5	11.69
90/03/20	10:31:41	1	8.16	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:42	1	8.28	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:43	1	8.15	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:44	1	7.93	2	8.92	3	4.53	4	9.13	5	11.69
90/03/20	10:31:45	1	8.06	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:46	1	8.10	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:47	1	8.15	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:31:48	1	8.19	2	8.91	3	4.52	4	9.13	5	11.69
90/03/20	10:31:49	1	8.20	2	8.92	3	4.53	4	9.13	5	11.69
90/03/20	10:32:04	1	8.17	2	8.92	3	4.53	4	9.14	5	11.69
90/03/20	10:32:19	1	8.12	2	8.91	3	4.52	4	9.13	5	11.68
90/03/20	10:32:34	1	8.00	2	8.91	3	4.52	4	9.13	5	11.68
90/03/20	10:32:49	1	8.28	2	8.91	3	4.53	4	9.13	5	11.68
90/03/20	10:33:04	1	8.12	2	8.91	3	4.53	4	9.13	5	11.68
90/03/20	10:33:19	1	8.13	2	8.90	3	4.53	4	9.13	5	11.68
90/03/20	10:33:34	1	7.91	2	8.90	3	4.53	4	9.13	5	11.68
90/03/20	10:33:49	1	8.03	2	8.90	3	4.53	4	9.13	5	11.68
90/03/20	10:34:04	1	8.15	2	8.88	3	4.52	4	9.13	5	11.68
90/03/20	10:34:19	1	8.13	2	8.88	3	4.52	4	9.11	5	11.68
90/03/20	10:34:34	1	7.97	2	8.87	3	4.52	4	9.11	5	11.67
90/03/20	10:34:49	1	8.15	2	8.87	3	4.51	4	9.11	5	11.67
90/03/20	10:35:04	1	8.04	2	8.87	3	4.50	4	9.11	5	11.67
90/03/20	10:35:19	1	7.99	2	8.88	3	4.50	4	9.11	5	11.67
90/03/20	10:35:34	1	7.97	2	8.87	3	4.49	4	9.11	5	11.67
90/03/20	10:35:49	1	8.15	2	8.87	3	4.49	4	9.11	5	11.67
90/03/20	10:36:04	1	8.20	2	8.85	3	4.48	4	9.11	5	11.67
90/03/20	10:36:19	1	8.03	2	8.85	3	4.47	4	9.11	5	11.67
90/03/20	10:36:34	1	8.10	2	8.84	3	4.47	4	9.11	5	11.67
90/03/20	10:36:49	1	8.09	2	8.84	3	4.48	4	9.11	5	11.67
90/03/20	10:37:04	1	8.07	2	8.84	3	4.48	4	9.10	5	11.67
90/03/20	10:37:19	1	7.93	2	8.82	3	4.47	4	9.10	5	11.67
90/03/20	10:37:34	1	8.00	2	8.82	3	4.47	4	9.10	5	11.67
90/03/20	10:37:49	1	8.04	2	8.81	3	4.46	4	9.10	5	11.67
90/03/20	10:38:04	1	8.00	2	8.79	3	4.46	4	9.10	5	11.67
90/03/20	10:38:19	1	8.17	2	8.79	3	4.45	4	9.10	5	11.67
90/03/20	10:38:34	1	7.96	2	8.79	3	4.46	4	9.10	5	11.67
90/03/20	10:38:49	1	8.13	2	8.78	3	4.45	4	9.10	5	11.67
90/03/20	10:39:04	1	8.10	2	8.78	3	4.46	4	9.10	5	11.67
90/03/20	10:39:19	1	7.96	2	8.77	3	4.45	4	9.10	5	11.67

90/03/20	10:39:34	1	8.07	2	8.77	3	4.45	4	9.10	5	11.67
90/03/20	10:39:49	1	8.13	2	8.77	3	4.46	4	9.10	5	11.67
90/03/20	10:40:04	1	8.12	2	8.75	3	4.45	4	9.08	5	11.66
90/03/20	10:40:19	1	7.99	2	8.72	3	4.45	4	9.10	5	11.67
90/03/20	10:40:34	1	8.06	2	8.72	3	4.45	4	9.10	5	11.67
90/03/20	10:40:49	1	8.23	2	8.72	3	4.45	4	9.08	5	11.66
90/03/20	10:41:04	1	8.09	2	8.72	3	4.45	4	9.08	5	11.66
90/03/20	10:41:19	1	8.07	2	8.71	3	4.45	4	9.08	5	11.66
90/03/20	10:41:34	1	7.97	2	8.71	3	4.45	4	9.08	5	11.66
90/03/20	10:41:49	1	7.97	2	8.71	3	4.44	4	9.08	5	11.66
90/03/20	10:42:04	1	7.99	2	8.69	3	4.45	4	9.08	5	11.66
90/03/20	10:42:19	1	7.86	2	8.69	3	4.45	4	9.08	5	11.66
90/03/20	10:42:34	1	8.10	2	8.68	3	4.47	4	9.08	5	11.66
90/03/20	10:42:49	1	7.93	2	8.68	3	4.47	4	9.08	5	11.66
90/03/20	10:43:04	1	8.22	2	8.68	3	4.47	4	9.08	5	11.66
90/03/20	10:43:19	1	8.15	2	8.68	3	4.46	4	9.08	5	11.66
90/03/20	10:43:34	1	8.22	2	8.68	3	4.49	4	9.08	5	11.66
90/03/20	10:43:49	1	8.25	2	8.66	3	4.48	4	9.08	5	11.66
90/03/20	10:44:04	1	8.09	2	8.66	3	4.47	4	9.08	5	11.66
90/03/20	10:44:19	1	8.10	2	8.65	3	4.46	4	9.08	5	11.66
90/03/20	10:44:34	1	8.00	2	8.65	3	4.46	4	9.08	5	11.66
90/03/20	10:44:49	1	8.02	2	8.65	3	4.46	4	9.08	5	11.66
90/03/20	10:45:19	1	8.09	2	8.65	3	4.48	4	9.08	5	11.66
90/03/20	10:45:49	1	7.91	2	8.65	3	4.50	4	9.08	5	11.66
90/03/20	10:46:19	1	8.09	2	8.65	3	4.52	4	9.08	5	11.66
90/03/20	10:46:49	1	8.17	2	8.64	3	4.53	4	9.08	5	11.66
90/03/20	10:47:19	1	8.10	2	8.64	3	4.53	4	9.08	5	11.66
90/03/20	10:47:49	1	8.09	2	8.65	3	4.53	4	9.08	5	11.66
90/03/20	10:48:19	1	8.04	2	8.66	3	4.52	4	9.08	5	11.66
90/03/20	10:48:49	1	8.07	2	8.66	3	4.52	4	9.08	5	11.67
90/03/20	10:49:19	1	8.04	2	8.66	3	4.52	4	9.08	5	11.66
90/03/20	10:49:49	1	8.02	2	8.66	3	4.50	4	9.07	5	11.66
90/03/20	10:50:19	1	8.03	2	8.65	3	4.49	4	9.07	5	11.66
90/03/20	10:50:49	1	7.96	2	8.64	3	4.47	4	9.07	5	11.66
90/03/20	10:51:19	1	7.97	2	8.64	3	4.47	4	9.08	5	11.67
90/03/20	10:51:49	1	8.04	2	8.62	3	4.45	4	9.07	5	11.66
90/03/20	10:52:19	1	8.06	2	8.64	3	4.45	4	9.08	5	11.67
90/03/20	10:52:49	1	8.03	2	8.64	3	4.46	4	9.07	5	11.66
90/03/20	10:53:19	1	8.09	2	8.64	3	4.48	4	9.07	5	11.67
90/03/20	10:53:49	1	8.12	2	8.62	3	4.49	4	9.07	5	11.67
90/03/20	10:54:19	1	8.20	2	8.61	3	4.49	4	9.07	5	11.67
90/03/20	10:54:49	1	8.07	2	8.61	3	4.50	4	9.07	5	11.66
90/03/20	10:55:19	1	8.02	2	8.61	3	4.51	4	9.07	5	11.67
90/03/20	10:55:49	1	8.04	2	8.61	3	4.52	4	9.07	5	11.67
90/03/20	10:56:19	1	8.26	2	8.62	3	4.52	4	9.07	5	11.67
90/03/20	10:56:49	1	7.99	2	8.62	3	4.52	4	9.07	5	11.67
90/03/20	10:57:19	1	8.06	2	8.61	3	4.51	4	9.07	5	11.67
90/03/20	10:57:49	1	8.13	2	8.62	3	4.50	4	9.07	5	11.67
90/03/20	10:58:19	1	7.83	2	8.62	3	4.50	4	9.07	5	11.67
90/03/20	10:58:49	1	8.19	2	8.61	3	4.50	4	9.07	5	11.67
90/03/20	10:59:19	1	8.09	2	8.61	3	4.48	4	9.05	5	11.67
90/03/20	10:59:49	1	7.99	2	8.59	3	4.47	4	9.05	5	11.67
90/03/20	11:00:19	1	7.96	2	9.07	3	4.46	4	9.05	5	11.67
90/03/20	11:00:49	1	8.20	2	9.23	3	4.45	4	9.05	5	11.67
90/03/20	11:01:19	1	8.12	2	9.26	3	4.45	4	9.05	5	11.67
90/03/20	11:01:49	1	8.06	2	9.26	3	4.45	4	9.07	5	11.68
90/03/20	11:02:19	1	8.13	2	9.26	3	4.47	4	9.05	5	11.67
90/03/20	11:02:49	1	8.06	2	9.27	3	4.49	4	9.07	5	11.68
90/03/20	11:03:19	1	8.04	2	9.26	3	4.49	4	9.05	5	11.67
90/03/20	11:03:49	1	7.89	2	9.26	3	4.50	4	9.05	5	11.68

90/03/20	11:04:19	1	8.06	2	9.26	3	4.48	4	9.05	5	11.68
90/03/20	11:04:49	1	8.04	2	9.26	3	4.48	4	9.05	5	11.68
90/03/20	11:05:19	1	8.03	2	9.26	3	4.47	4	9.05	5	11.68
90/03/20	11:05:49	1	8.10	2	9.26	3	4.45	4	9.05	5	11.68
90/03/20	11:06:19	1	8.12	2	9.24	3	4.44	4	9.05	5	11.68
90/03/20	11:06:49	1	8.10	2	9.26	3	4.44	4	9.05	5	11.68
90/03/20	11:07:19	1	8.12	2	9.26	3	4.45	4	9.05	5	11.68
90/03/20	11:07:49	1	7.90	2	9.26	3	4.46	4	9.05	5	11.68
90/03/20	11:08:19	1	8.19	2	9.27	3	4.48	4	9.05	5	11.68
90/03/20	11:08:49	1	8.19	2	9.28	3	4.52	4	9.07	5	11.69
90/03/20	11:09:19	1	8.12	2	9.28	3	4.54	4	9.07	5	11.69
90/03/20	11:09:49	1	8.06	2	9.27	3	4.55	4	9.07	5	11.69
90/03/20	11:10:19	1	8.00	2	9.27	3	4.57	4	9.07	5	11.69
90/03/20	11:10:49	1	8.25	2	9.27	3	4.56	4	9.05	5	11.69
90/03/20	11:11:19	1	8.28	2	9.27	3	4.53	4	9.05	5	11.69
90/03/20	11:11:49	1	7.97	2	9.27	3	4.51	4	9.05	5	11.69
90/03/20	11:12:19	1	8.15	2	9.27	3	4.51	4	9.05	5	11.69
90/03/20	11:12:49	1	8.16	2	9.27	3	4.50	4	9.05	5	11.69
90/03/20	11:13:19	1	8.23	2	9.27	3	4.51	4	9.07	5	11.69
90/03/20	11:13:49	1	8.00	2	9.27	3	4.51	4	9.05	5	11.69
90/03/20	11:14:19	1	8.16	2	9.27	3	4.51	4	9.05	5	11.69
90/03/20	11:14:49	1	8.06	2	9.27	3	4.52	4	9.07	5	11.69
90/03/20	11:15:19	1	8.12	2	9.26	3	4.52	4	9.07	5	11.69
90/03/20	11:15:49	1	8.25	2	9.27	3	4.52	4	9.05	5	11.69
90/03/20	11:16:19	1	8.23	2	9.27	3	4.53	4	9.07	5	11.69
90/03/20	11:16:49	1	8.26	2	9.27	3	4.52	4	9.05	5	11.69
90/03/20	11:17:19	1	8.19	2	9.31	3	4.52	4	9.05	5	11.69
90/03/20	11:17:49	1	8.32	2	9.26	3	4.52	4	9.05	5	11.69
90/03/20	11:18:19	1	8.29	2	9.26	3	4.50	4	9.05	5	11.69
90/03/20	11:18:49	1	8.03	2	9.26	3	4.49	4	9.05	5	11.70
90/03/20	11:19:19	1	8.10	2	9.26	3	4.49	4	9.05	5	11.70
90/03/20	11:19:49	1	8.12	2	9.26	3	4.47	4	9.05	5	11.70
90/03/20	11:20:19	1	8.19	2	9.26	3	4.47	4	9.05	5	11.70
90/03/20	11:20:49	1	8.03	2	9.26	3	4.47	4	9.05	5	11.70
90/03/20	11:21:19	1	8.16	2	9.24	3	4.48	4	9.05	5	11.70
90/03/20	11:21:49	1	8.17	2	9.26	3	4.49	4	9.05	5	11.70
90/03/20	11:22:19	1	8.33	2	9.26	3	4.49	4	9.05	5	11.70
90/03/20	11:22:49	1	8.25	2	9.26	3	4.48	4	9.05	5	11.70
90/03/20	11:23:19	1	8.13	2	9.23	3	4.49	4	9.05	5	11.70
90/03/20	11:23:49	1	8.23	2	9.23	3	4.49	4	9.05	5	11.70
90/03/20	11:24:19	1	8.03	2	9.23	3	4.49	4	9.05	5	11.70
90/03/20	11:24:49	1	8.07	2	9.23	3	4.50	4	9.05	5	11.70
90/03/20	11:25:19	1	7.94	2	9.21	3	4.49	4	9.05	5	11.70
90/03/20	11:25:49	1	8.16	2	9.20	3	4.52	4	9.05	5	11.70
90/03/20	11:26:19	1	8.02	2	9.18	3	4.54	4	9.05	5	11.70
90/03/20	11:26:49	1	8.07	2	9.15	3	4.53	4	9.05	5	11.71
90/03/20	11:27:19	1	7.91	2	9.14	3	4.52	4	9.05	5	11.71
90/03/20	11:27:49	1	8.16	2	9.13	3	4.49	4	9.05	5	11.71
90/03/20	11:28:19	1	8.04	2	9.13	3	4.47	4	9.05	5	11.71
90/03/20	11:28:49	1	8.07	2	9.11	3	4.45	4	9.05	5	11.71
90/03/20	11:29:19	1	8.04	2	9.13	3	4.47	4	9.05	5	11.71
90/03/20	11:29:49	1	8.25	2	9.11	3	4.48	4	9.05	5	11.71
90/03/20	11:30:49	1	8.23	2	9.10	3	4.45	4	9.05	5	11.71
90/03/20	11:31:49	1	8.06	2	9.10	3	4.41	4	9.05	5	11.71
90/03/20	11:32:49	1	8.15	2	9.08	3	4.44	4	9.05	5	11.72
90/03/20	11:33:49	1	8.09	2	9.07	3	4.44	4	9.05	5	11.72
90/03/20	11:34:49	1	7.91	2	9.07	3	4.45	4	9.05	5	11.72
90/03/20	11:35:49	1	8.09	2	9.08	3	4.54	4	9.05	5	11.72
90/03/20	11:36:49	1	8.09	2	9.08	3	4.58	4	9.05	5	11.72
90/03/20	11:37:49	1	7.94	2	9.08	3	4.63	4	9.05	5	11.72

90/03/20	11:38:49	1	8.07	2	9.08	3	4.60	4	9.05	5	11.73
90/03/20	11:39:49	1	8.12	2	9.07	3	4.57	4	9.05	5	11.73
90/03/20	11:40:49	1	7.94	2	9.04	3	4.49	4	9.04	5	11.73
90/03/20	11:41:49	1	8.03	2	9.02	3	4.32	4	9.04	5	11.73
90/03/20	11:42:49	1	8.06	2	9.04	3	4.27	4	9.04	5	11.73
90/03/20	11:43:49	1	8.13	2	9.04	3	4.30	4	9.05	5	11.74
90/03/20	11:44:49	1	8.16	2	9.05	3	4.30	4	9.05	5	11.74
90/03/20	11:45:49	1	8.15	2	9.10	3	4.58	4	9.07	5	11.75
90/03/20	11:46:49	1	8.16	2	9.05	3	4.62	4	9.05	5	11.74
90/03/20	11:47:49	1	8.13	2	9.07	3	4.59	4	9.07	5	11.75
90/03/20	11:48:49	1	8.03	2	9.08	3	4.64	4	9.07	5	11.75
90/03/20	11:49:49	1	8.10	2	9.07	3	4.62	4	9.05	5	11.75
90/03/20	11:50:49	1	8.06	2	9.04	3	4.55	4	9.05	5	11.75
90/03/20	11:51:49	1	8.36	2	9.07	3	4.53	4	9.07	5	11.76
90/03/20	11:52:49	1	8.13	2	9.05	3	4.54	4	9.07	5	11.76
90/03/20	11:53:49	1	8.23	2	9.04	3	4.52	4	9.07	5	11.76
90/03/20	11:54:49	1	7.96	2	9.04	3	4.53	4	9.07	5	11.76
90/03/20	11:55:49	1	8.19	2	9.04	3	4.58	4	9.07	5	11.76
90/03/20	11:56:49	1	8.00	2	9.04	3	4.58	4	9.07	5	11.76
90/03/20	11:57:49	1	8.00	2	9.02	3	4.58	4	9.07	5	11.76
90/03/20	11:58:49	1	8.17	2	9.00	3	4.46	4	9.05	5	11.76
90/03/20	11:59:49	1	8.23	2	9.02	3	4.43	4	9.07	5	11.76
90/03/20	12:00:49	1	8.16	2	9.04	3	4.50	4	9.07	5	11.76
90/03/20	12:01:49	1	8.12	2	9.04	3	4.57	4	9.07	5	11.76
90/03/20	12:02:49	1	8.13	2	9.04	3	4.61	4	9.07	5	11.77
90/03/20	12:03:49	1	8.10	2	9.04	3	4.61	4	9.07	5	11.77
90/03/20	12:04:49	1	8.15	2	9.02	3	4.58	4	9.07	5	11.77
90/03/20	12:05:49	1	8.17	2	9.04	3	4.58	4	9.07	5	11.77
90/03/20	12:06:49	1	8.10	2	9.05	3	4.64	4	9.08	5	11.78
90/03/20	12:07:49	1	8.28	2	9.04	3	4.64	4	9.08	5	11.78
90/03/20	12:08:49	1	7.96	2	9.02	3	4.60	4	9.08	5	11.78
90/03/20	12:09:49	1	8.17	2	9.02	3	4.58	4	9.08	5	11.78
90/03/20	12:10:49	1	8.13	2	9.04	3	4.60	4	9.08	5	11.79
90/03/20	12:11:49	1	8.13	2	9.04	3	4.58	4	9.08	5	11.79
90/03/20	12:12:49	1	8.03	2	9.02	3	4.58	4	9.08	5	11.79
90/03/20	12:13:49	1	8.23	2	9.02	3	4.58	4	9.08	5	11.79
90/03/20	12:14:49	1	8.20	2	9.04	3	4.60	4	9.08	5	11.79
90/03/20	12:15:49	1	8.09	2	9.02	3	4.60	4	9.08	5	11.79
90/03/20	12:16:49	1	8.07	2	9.04	3	4.60	4	9.08	5	11.80
90/03/20	12:17:49	1	8.16	2	9.04	3	4.57	4	9.08	5	11.80
90/03/20	12:18:49	1	8.12	2	9.02	3	4.57	4	9.08	5	11.80
90/03/20	12:19:49	1	7.97	2	9.02	3	4.55	4	9.08	5	11.80
90/03/20	12:20:49	1	8.06	2	9.04	3	4.56	4	9.08	5	11.81
90/03/20	12:21:49	1	8.32	2	9.04	3	4.58	4	9.10	5	11.81
90/03/20	12:22:49	1	8.03	2	9.04	3	4.58	4	9.08	5	11.81
90/03/20	12:23:49	1	8.15	2	9.04	3	4.59	4	9.08	5	11.81
90/03/20	12:24:49	1	8.20	2	9.02	3	4.59	4	9.08	5	11.81
90/03/20	12:25:49	1	8.28	2	9.04	3	4.61	4	9.10	5	11.82
90/03/20	12:26:49	1	8.03	2	9.04	3	4.63	4	9.10	5	11.82
90/03/20	12:27:49	1	8.10	2	9.04	3	4.63	4	9.10	5	11.82
90/03/20	12:28:49	1	8.07	2	9.04	3	4.61	4	9.10	5	11.82
90/03/20	12:29:49	1	8.15	2	9.02	3	4.60	4	9.10	5	11.82
90/03/20	12:30:49	1	8.25	2	9.02	3	4.59	4	9.10	5	11.82
90/03/20	12:31:49	1	8.03	2	9.02	3	4.58	4	9.10	5	11.82
90/03/20	12:32:49	1	8.09	2	9.02	3	4.58	4	9.10	5	11.82
90/03/20	12:33:49	1	8.20	2	9.02	3	4.58	4	9.10	5	11.82
90/03/20	12:34:49	1	8.04	2	9.02	3	4.57	4	9.10	5	11.82
90/03/20	12:35:49	1	8.16	2	9.02	3	4.58	4	9.10	5	11.82
90/03/20	12:36:49	1	8.09	2	9.02	3	4.59	4	9.10	5	11.83
90/03/20	12:37:49	1	8.10	2	9.02	3	4.59	4	9.10	5	11.83

90/03/20	12:38:49	1	8.12	2	9.02	3	4.59	4	9.11	5	11.83
90/03/20	12:39:49	1	8.00	2	9.04	3	4.60	4	9.11	5	11.84
90/03/20	12:40:49	1	8.17	2	9.04	3	4.60	4	9.11	5	11.84
90/03/20	12:41:49	1	8.20	2	9.02	3	4.58	4	9.11	5	11.84
90/03/20	12:42:49	1	8.07	2	9.02	3	4.59	4	9.11	5	11.84
90/03/20	12:43:49	1	8.15	2	9.04	3	4.59	4	9.11	5	11.84
90/03/20	12:44:49	1	8.26	2	9.04	3	4.59	4	9.11	5	11.85
90/03/20	12:45:49	1	8.23	2	9.02	3	4.58	4	9.11	5	11.85
90/03/20	12:46:49	1	8.32	2	9.04	3	4.60	4	9.11	5	11.85
90/03/20	12:47:49	1	8.15	2	9.02	3	4.59	4	9.11	5	11.85
90/03/20	12:48:49	1	8.19	2	9.02	3	4.59	4	9.11	5	11.86
90/03/20	12:49:49	1	8.12	2	9.04	3	4.59	4	9.13	5	11.86
90/03/20	12:50:49	1	8.07	2	9.04	3	4.59	4	9.11	5	11.86
90/03/20	12:51:49	1	8.04	2	9.04	3	4.59	4	9.13	5	11.86
90/03/20	12:52:49	1	8.15	2	9.04	3	4.61	4	9.13	5	11.86
90/03/20	12:53:49	1	8.13	2	9.04	3	4.61	4	9.13	5	11.87
90/03/20	12:54:49	1	8.15	2	9.04	3	4.60	4	9.13	5	11.87
90/03/20	12:55:49	1	8.12	2	9.04	3	4.58	4	9.11	5	11.86
90/03/20	12:56:49	1	8.19	2	9.04	3	4.58	4	9.13	5	11.87
90/03/20	12:57:49	1	8.12	2	9.04	3	4.58	4	9.13	5	11.87
90/03/20	12:58:49	1	8.23	2	9.04	3	4.58	4	9.13	5	11.87
90/03/20	12:59:49	1	8.12	2	9.04	3	4.58	4	9.13	5	11.87
90/03/20	13:00:49	1	8.10	2	9.04	3	4.58	4	9.13	5	11.87
90/03/20	13:01:49	1	8.09	2	9.07	3	4.59	4	9.13	5	11.88
90/03/20	13:02:49	1	8.25	2	9.05	3	4.60	4	9.13	5	11.88
90/03/20	13:03:49	1	8.12	2	9.05	3	4.61	4	9.13	5	11.87
90/03/20	13:04:49	1	8.10	2	9.04	3	4.60	4	9.13	5	11.88
90/03/20	13:05:49	1	8.13	2	9.04	3	4.58	4	9.13	5	11.88
90/03/20	13:06:49	1	8.09	2	9.04	3	4.56	4	9.13	5	11.88
90/03/20	13:07:49	1	8.03	2	9.04	3	4.58	4	9.13	5	11.88
90/03/20	13:08:49	1	8.22	2	9.04	3	4.58	4	9.13	5	11.88
90/03/20	13:09:49	1	8.17	2	9.04	3	4.58	4	9.13	5	11.89
90/03/20	13:10:49	1	8.16	2	9.04	3	4.59	4	9.13	5	11.89
90/03/20	13:11:49	1	8.29	2	9.04	3	4.58	4	9.13	5	11.89
90/03/20	13:12:49	1	8.02	2	9.04	3	4.58	4	9.13	5	11.89
90/03/20	13:13:49	1	8.22	2	9.04	3	4.58	4	9.13	5	11.89
90/03/20	13:14:49	1	8.02	2	9.04	3	4.63	4	9.14	5	11.89
90/03/20	13:15:49	1	8.16	2	9.04	3	4.62	4	9.14	5	11.89
90/03/20	13:16:49	1	8.16	2	9.05	3	4.63	4	9.14	5	11.89
90/03/20	13:17:49	1	8.04	2	9.05	3	4.67	4	9.14	5	11.89
90/03/20	13:18:49	1	8.10	2	9.04	3	4.65	4	9.14	5	11.90
90/03/20	13:19:49	1	8.23	2	9.05	3	4.67	4	9.14	5	11.90
90/03/20	13:20:49	1	8.15	2	9.07	3	4.65	4	9.14	5	11.90
90/03/20	13:21:49	1	8.15	2	9.05	3	4.61	4	9.14	5	11.90
90/03/20	13:22:49	1	8.16	2	9.05	3	4.58	4	9.14	5	11.90
90/03/20	13:23:49	1	8.15	2	9.05	3	4.59	4	9.14	5	11.90
90/03/20	13:24:49	1	8.17	2	9.04	3	4.55	4	9.14	5	11.90
90/03/20	13:25:49	1	8.04	2	9.07	3	4.59	4	9.15	5	11.90
90/03/20	13:26:49	1	8.10	2	9.07	3	4.66	4	9.15	5	11.91
90/03/20	13:27:49	1	8.17	2	9.07	3	4.65	4	9.15	5	11.91
90/03/20	13:28:49	1	8.36	2	9.07	3	4.65	4	9.15	5	11.91
90/03/20	13:29:49	1	8.17	2	9.07	3	4.66	4	9.15	5	11.91
90/03/20	13:30:49	1	8.25	2	9.08	3	4.66	4	9.15	5	11.91
90/03/20	13:31:49	1	8.26	2	9.07	3	4.66	4	9.15	5	11.91
90/03/20	13:32:49	1	8.09	2	9.07	3	4.66	4	9.15	5	11.92
90/03/20	13:33:49	1	8.22	2	9.07	3	4.65	4	9.15	5	11.92
90/03/20	13:34:49	1	8.30	2	9.07	3	4.65	4	9.15	5	11.92
90/03/20	13:35:49	1	8.17	2	9.07	3	4.63	4	9.15	5	11.92
90/03/20	13:36:49	1	8.23	2	9.08	3	4.65	4	9.15	5	11.92
90/03/20	13:37:49	1	8.29	2	9.08	3	4.67	4	9.17	5	11.92

90/03/20	13:38:49	1	8.09	2	9.07	3	4.68	4	9.15	5	11.92
90/03/20	13:39:49	1	8.22	2	9.07	3	4.70	4	9.17	5	11.93
90/03/20	13:40:49	1	8.22	2	9.07	3	4.67	4	9.17	5	11.93
90/03/20	13:41:49	1	8.25	2	9.07	3	4.64	4	9.17	5	11.93
90/03/20	13:42:49	1	8.13	2	9.07	3	4.65	4	9.17	5	11.93
90/03/20	13:43:49	1	8.15	2	9.07	3	4.67	4	9.17	5	11.93
90/03/20	13:44:49	1	8.29	2	9.08	3	4.66	4	9.17	5	11.93
90/03/20	13:45:49	1	8.17	2	9.08	3	4.64	4	9.17	5	11.94
90/03/20	13:46:49	1	8.20	2	9.08	3	4.60	4	9.17	5	11.94
90/03/20	13:47:49	1	8.20	2	9.08	3	4.61	4	9.17	5	11.94
90/03/20	13:48:49	1	8.10	2	9.08	3	4.64	4	9.17	5	11.94
90/03/20	13:49:49	1	8.36	2	9.08	3	4.65	4	9.17	5	11.94
90/03/20	13:50:49	1	8.13	2	9.08	3	4.69	4	9.17	5	11.94
90/03/20	13:51:49	1	8.29	2	9.10	3	4.71	4	9.18	5	11.94
90/03/20	13:52:49	1	8.32	2	9.08	3	4.69	4	9.17	5	11.94
90/03/20	13:53:49	1	8.15	2	9.08	3	4.65	4	9.17	5	11.94
90/03/20	13:54:49	1	8.32	2	9.08	3	4.65	4	9.18	5	11.95
90/03/20	13:55:49	1	8.25	2	9.08	3	4.67	4	9.18	5	11.95
90/03/20	13:56:49	1	8.23	2	9.10	3	4.67	4	9.18	5	11.95
90/03/20	13:57:49	1	8.23	2	9.08	3	4.64	4	9.18	5	11.95
90/03/20	13:58:49	1	8.33	2	9.10	3	4.65	4	9.18	5	11.95
90/03/20	13:59:49	1	8.23	2	9.10	3	4.67	4	9.18	5	11.95
90/03/20	14:00:49	1	8.29	2	9.08	3	4.67	4	9.18	5	11.95
90/03/20	14:01:49	1	8.19	2	9.08	3	4.65	4	9.18	5	11.95
90/03/20	14:02:49	1	8.17	2	9.10	3	4.68	4	9.20	5	11.95
90/03/20	14:03:49	1	8.29	2	9.10	3	4.71	4	9.20	5	11.95
90/03/20	14:04:49	1	8.32	2	9.10	3	4.70	4	9.20	5	11.95
90/03/20	14:05:49	1	8.32	2	9.10	3	4.69	4	9.20	5	11.95
90/03/20	14:06:49	1	8.43	2	9.10	3	4.71	4	9.20	5	11.95
90/03/20	14:07:49	1	8.28	2	9.10	3	4.70	4	9.20	5	11.95
90/03/20	14:08:49	1	8.07	2	9.08	3	4.65	4	9.18	5	11.95
90/03/20	14:09:49	1	8.09	2	9.08	3	4.57	4	9.18	5	11.95
90/03/20	14:10:49	1	8.26	2	9.07	3	4.56	4	9.18	5	11.95
90/03/20	14:11:49	1	8.28	2	9.07	3	4.49	4	9.18	5	11.95
90/03/20	14:12:49	1	8.13	2	9.08	3	4.45	4	9.18	5	11.95
90/03/20	14:13:49	1	8.23	2	9.11	3	4.54	4	9.20	5	11.95
90/03/20	14:14:49	1	8.39	2	9.13	3	4.71	4	9.21	5	11.96
90/03/20	14:15:49	1	8.33	2	9.13	3	4.88	4	9.21	5	11.96
90/03/20	14:16:49	1	8.20	2	9.08	3	4.79	4	9.20	5	11.96
90/03/20	14:17:49	1	8.15	2	9.08	3	4.63	4	9.20	5	11.96
90/03/20	14:18:49	1	8.15	2	9.08	3	4.53	4	9.20	5	11.96
90/03/20	14:19:49	1	8.42	2	9.10	3	4.55	4	9.20	5	11.96
90/03/20	14:20:49	1	8.39	2	9.10	3	4.60	4	9.20	5	11.96
90/03/20	14:21:49	1	8.22	2	9.10	3	4.61	4	9.20	5	11.96
90/03/20	14:22:49	1	8.32	2	9.13	3	4.70	4	9.21	5	11.97
90/03/20	14:23:49	1	8.42	2	9.14	3	4.89	4	9.23	5	11.97
90/03/20	14:24:49	1	8.17	2	9.14	3	4.91	4	9.23	5	11.97
90/03/20	14:25:49	1	8.26	2	9.13	3	4.85	4	9.21	5	11.97
90/03/20	14:26:49	1	8.25	2	9.11	3	4.72	4	9.21	5	11.97
90/03/20	14:27:49	1	8.39	2	9.10	3	4.61	4	9.21	5	11.97
90/03/20	14:28:49	1	8.06	2	9.11	3	4.63	4	9.23	5	11.97
90/03/20	14:29:49	1	8.38	2	9.11	3	4.72	4	9.23	5	11.97
90/03/20	14:30:49	1	8.15	2	9.13	3	4.72	4	9.23	5	11.97
90/03/20	14:31:49	1	8.25	2	9.13	3	4.78	4	9.21	5	11.97
90/03/20	14:32:49	1	8.25	2	9.13	3	4.76	4	9.23	5	11.97
90/03/20	14:33:49	1	8.49	2	9.13	3	4.78	4	9.23	5	11.98
90/03/20	14:34:49	1	8.32	2	9.13	3	4.77	4	9.23	5	11.98
90/03/20	14:35:49	1	8.38	2	9.14	3	4.77	4	9.24	5	11.98
90/03/20	14:36:49	1	8.35	2	9.11	3	4.70	4	9.23	5	11.98
90/03/20	14:37:49	1	8.38	2	9.13	3	4.68	4	9.23	5	11.98

90/03/20	14:38:49	1	8.26	2	9.14	3	4.70	4	9.23	5	11.97
90/03/20	14:39:49	1	8.33	2	9.11	3	4.70	4	9.23	5	11.97
90/03/20	14:40:49	1	8.33	2	9.13	3	4.74	4	9.23	5	11.97
90/03/20	14:41:49	1	8.17	2	9.11	3	4.75	4	9.21	5	11.96
90/03/20	14:42:49	1	8.10	2	9.13	3	4.71	4	9.23	5	11.96
90/03/20	14:43:49	1	8.28	2	9.10	3	4.68	4	9.21	5	11.96
90/03/20	14:44:49	1	8.25	2	9.11	3	4.70	4	9.23	5	11.96
90/03/20	14:45:49	1	8.29	2	9.13	3	4.71	4	9.23	5	11.97
90/03/20	14:46:49	1	8.32	2	9.13	3	4.72	4	9.23	5	11.97
90/03/20	14:47:49	1	8.48	2	9.11	3	4.74	4	9.23	5	11.97
90/03/20	14:48:49	1	8.33	2	9.13	3	4.72	4	9.23	5	11.97
90/03/20	14:49:49	1	8.25	2	9.13	3	4.71	4	9.23	5	11.97
90/03/20	14:50:49	1	8.33	2	9.13	3	4.72	4	9.23	5	11.97
90/03/20	14:51:49	1	8.17	2	9.10	3	4.69	4	9.21	5	11.97
90/03/20	14:52:49	1	8.26	2	9.13	3	4.69	4	9.23	5	11.97
90/03/20	14:53:49	1	8.23	2	9.13	3	4.71	4	9.23	5	11.97
90/03/20	14:54:49	1	8.07	2	9.13	3	4.71	4	9.23	5	11.97
90/03/20	14:55:49	1	8.28	2	9.11	3	4.68	4	9.21	5	11.96
90/03/20	14:56:49	1	8.30	2	9.14	3	4.71	4	9.24	5	11.97
90/03/20	14:57:49	1	8.22	2	9.14	3	4.72	4	9.23	5	11.97
90/03/20	14:58:49	1	8.33	2	9.14	3	4.76	4	9.24	5	11.97
90/03/20	14:59:49	1	8.38	2	9.15	3	4.80	4	9.24	5	11.97
90/03/20	15:00:49	1	8.13	2	9.13	3	4.74	4	9.23	5	11.97
90/03/20	15:01:49	1	8.15	2	9.13	3	4.65	4	9.24	5	11.97
90/03/20	15:02:49	1	8.30	2	9.14	3	4.71	4	9.24	5	11.97
90/03/20	15:03:49	1	8.38	2	9.14	3	4.71	4	9.24	5	11.97
90/03/20	15:04:49	1	8.33	2	9.15	3	4.78	4	9.24	5	11.97
90/03/20	15:05:49	1	8.30	2	9.14	3	4.77	4	9.24	5	11.97
90/03/20	15:06:49	1	8.39	2	9.13	3	4.77	4	9.24	5	11.97
90/03/20	15:07:49	1	8.39	2	9.13	3	4.73	4	9.24	5	11.97
90/03/20	15:08:49	1	8.28	2	9.11	3	4.63	4	9.24	5	11.97
90/03/20	15:09:49	1	8.39	2	9.13	3	4.61	4	9.24	5	11.97
90/03/20	15:10:49	1	8.52	2	9.14	3	4.64	4	9.24	5	11.97
90/03/20	15:11:49	1	8.23	2	9.14	3	4.73	4	9.24	5	11.97
90/03/20	15:12:49	1	8.45	2	9.15	3	4.71	4	9.26	5	11.98
90/03/20	15:13:49	1	8.03	2	9.13	3	4.68	4	9.24	5	11.97
90/03/20	15:14:49	1	8.15	2	9.13	3	4.65	4	9.24	5	11.98
90/03/20	15:15:49	1	8.33	2	9.14	3	4.67	4	9.26	5	11.98
90/03/20	15:16:49	1	8.23	2	9.14	3	4.66	4	9.24	5	11.98
90/03/20	15:17:49	1	8.28	2	9.14	3	4.66	4	9.24	5	11.98
90/03/20	15:18:49	1	8.32	2	9.14	3	4.70	4	9.26	5	11.98
90/03/20	15:19:49	1	8.22	2	9.15	3	4.71	4	9.26	5	11.98
90/03/20	15:20:49	1	8.33	2	9.17	3	4.75	4	9.26	5	11.98
90/03/20	15:21:49	1	8.12	2	9.15	3	4.75	4	9.26	5	11.98
90/03/20	15:22:49	1	8.36	2	9.15	3	4.75	4	9.26	5	11.98
90/03/20	15:23:49	1	8.32	2	9.14	3	4.73	4	9.26	5	11.98
90/03/20	15:24:49	1	8.55	2	9.14	3	4.75	4	9.26	5	11.98
90/03/20	15:25:49	1	8.32	2	9.15	3	4.77	4	9.26	5	11.98
90/03/20	15:26:49	1	8.09	2	9.15	3	4.77	4	9.26	5	11.98
90/03/20	15:27:49	1	8.23	2	9.15	3	4.77	4	9.27	5	11.99
90/03/20	15:28:49	1	8.26	2	9.15	3	4.74	4	9.26	5	11.98
90/03/20	15:29:49	1	8.43	2	9.17	3	4.74	4	9.27	5	11.99
90/03/20	15:30:49	1	8.15	2	9.18	3	4.81	4	9.27	5	11.98
90/03/20	15:31:49	1	8.52	2	9.18	3	4.85	4	9.27	5	11.98
90/03/20	15:32:49	1	8.41	2	9.17	3	4.85	4	9.27	5	11.98
90/03/20	15:33:49	1	8.36	2	9.17	3	4.80	4	9.27	5	11.98
90/03/20	15:34:49	1	8.35	2	9.15	3	4.73	4	9.27	5	11.98
90/03/20	15:35:49	1	8.29	2	9.15	3	4.74	4	9.27	5	11.98
90/03/20	15:36:49	1	8.23	2	9.15	3	4.68	4	9.27	5	11.99
90/03/20	15:37:49	1	8.30	2	9.17	3	4.71	4	9.27	5	11.99

90/03/20	15:38:49	1	8.25	2	9.17	3	4.72	4	9.28	5	11.99
90/03/20	15:39:49	1	8.38	2	9.18	3	4.81	4	9.28	5	11.99
90/03/20	15:40:49	1	8.45	2	9.18	3	4.84	4	9.28	5	11.99
90/03/20	15:41:49	1	8.45	2	9.18	3	4.83	4	9.28	5	11.99
90/03/20	15:42:49	1	8.46	2	9.18	3	4.80	4	9.28	5	11.99
90/03/20	15:43:49	1	8.33	2	9.18	3	4.79	4	9.28	5	11.99
90/03/20	15:44:49	1	8.26	2	9.17	3	4.75	4	9.28	5	11.99
90/03/20	15:45:49	1	8.58	2	9.17	3	4.74	4	9.28	5	11.99
90/03/20	15:46:49	1	8.42	2	9.18	3	4.77	4	9.28	5	11.99
90/03/20	15:47:49	1	8.26	2	9.17	3	4.73	4	9.28	5	11.99
90/03/20	15:48:49	1	8.45	2	9.18	3	4.73	4	9.28	5	11.99
90/03/20	15:49:49	1	8.41	2	9.15	3	4.72	4	9.28	5	11.99
90/03/20	15:50:49	1	8.51	2	9.17	3	4.69	4	9.27	5	11.99
90/03/20	15:51:49	1	8.39	2	9.17	3	4.68	4	9.28	5	11.99
90/03/20	15:52:49	1	8.53	2	9.18	3	4.72	4	9.28	5	11.99
90/03/20	15:53:49	1	8.39	2	9.18	3	4.70	4	9.28	5	12.00
90/03/20	15:54:49	1	8.41	2	9.18	3	4.75	4	9.28	5	12.00
90/03/20	15:55:49	1	8.51	2	9.18	3	4.75	4	9.28	5	12.00
90/03/20	15:56:49	1	8.33	2	9.18	3	4.75	4	9.28	5	12.00
90/03/20	15:57:49	1	8.42	2	9.18	3	4.75	4	9.28	5	12.00
90/03/20	15:58:49	1	8.42	2	9.18	3	4.73	4	9.28	5	12.00
90/03/20	15:59:49	1	8.49	2	9.20	3	4.77	4	9.30	5	12.00
90/03/20	16:00:49	1	8.35	2	9.20	3	4.83	4	9.30	5	12.00
90/03/20	16:01:49	1	8.30	2	9.20	3	4.84	4	9.30	5	12.00
90/03/20	16:02:49	1	8.28	2	9.21	3	4.83	4	9.30	5	12.00
90/03/20	16:03:49	1	8.35	2	9.20	3	4.83	4	9.30	5	12.00
90/03/20	16:04:49	1	8.52	2	9.20	3	4.83	4	9.30	5	12.01
90/03/20	16:05:49	1	8.09	2	9.21	3	4.82	4	9.30	5	12.00
90/03/20	16:06:49	1	8.41	2	9.20	3	4.77	4	9.30	5	12.00
90/03/20	16:07:49	1	8.36	2	9.20	3	4.77	4	9.30	5	12.00
90/03/20	16:08:49	1	8.23	2	9.20	3	4.77	4	9.30	5	12.00
90/03/20	16:09:49	1	8.29	2	9.18	3	4.74	4	9.30	5	12.00
90/03/20	16:10:49	1	8.23	2	9.18	3	4.71	4	9.30	5	12.01
90/03/20	16:11:49	1	8.25	2	9.18	3	4.71	4	9.30	5	12.01
90/03/20	16:12:49	1	8.39	2	9.20	3	4.76	4	9.31	5	12.01
90/03/20	16:13:49	1	8.48	2	9.20	3	4.78	4	9.31	5	12.01
90/03/20	16:14:49	1	8.35	2	9.20	3	4.77	4	9.31	5	12.01
90/03/20	16:15:49	1	8.35	2	9.21	3	4.77	4	9.30	5	12.01
90/03/20	16:16:49	1	8.36	2	9.21	3	4.77	4	9.30	5	12.01
90/03/20	16:17:49	1	8.38	2	9.21	3	4.76	4	9.30	5	12.01
90/03/20	16:18:49	1	8.26	2	9.21	3	4.77	4	9.31	5	12.01
90/03/20	16:19:49	1	8.56	2	9.23	3	4.79	4	9.31	5	12.01
90/03/20	16:20:49	1	8.43	2	9.23	3	4.79	4	9.30	5	12.00
90/03/20	16:21:49	1	8.09	2	9.23	3	4.79	4	9.31	5	12.01
90/03/20	16:22:49	1	8.42	2	9.23	3	4.78	4	9.31	5	12.01
90/03/20	16:23:49	1	8.48	2	9.23	3	4.78	4	9.31	5	12.01
90/03/20	16:24:49	1	8.58	2	9.23	3	4.78	4	9.31	5	12.01
90/03/20	16:25:49	1	8.38	2	9.23	3	4.77	4	9.31	5	12.01
90/03/20	16:26:49	1	8.42	2	9.23	3	4.78	4	9.31	5	12.01
90/03/20	16:27:49	1	8.46	2	9.23	3	4.80	4	9.31	5	12.01
90/03/20	16:28:49	1	8.35	2	9.21	3	4.78	4	9.31	5	12.01
90/03/20	16:29:49	1	8.55	2	9.23	3	4.77	4	9.31	5	12.01
90/03/20	16:44:49	1	8.43	2	9.21	3	4.79	4	9.31	5	12.00
90/03/20	16:59:49	1	8.48	2	9.21	3	4.78	4	9.31	5	12.00
90/03/20	17:14:49	1	8.52	2	9.20	3	4.77	4	9.30	5	11.98
90/03/20	17:29:49	1	8.42	2	9.20	3	4.77	4	9.30	5	11.96
90/03/20	17:44:49	1	8.32	2	9.18	3	4.76	4	9.28	5	11.95
90/03/20	17:59:49	1	8.35	2	9.17	3	4.75	4	9.27	5	11.93
90/03/20	18:14:49	1	8.51	2	9.17	3	4.72	4	9.26	5	11.91
90/03/20	18:29:49	1	8.61	2	9.14	3	4.71	4	9.24	5	11.89

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 90/03/20 18:44:49   1   8.36  2   9.13  3   4.69  4   9.23  5  11.88
 90/03/20 18:59:49   1   8.53  2   9.13  3   4.67  4   9.21  5  11.85
 90/03/20 19:14:49   1   8.52  2   9.10  3   4.65  4   9.18  5  11.83
 90/03/20 19:29:49   1   8.29  2   9.07  3   4.62  4   9.17  5  11.81
 90/03/20 19:44:49   1   8.41  2   9.04  3   4.59  4   9.14  5  11.78
 90/03/20 19:59:49   1   8.32  2   9.01  3   4.58  4   9.13  5  11.76
 90/03/20 20:14:49   1   8.41  2   9.00  3   4.54  4   9.10  5  11.74
 90/03/20 20:29:49   1   8.25  2   8.97  3   4.52  4   9.08  5  11.71
 90/03/20 20:44:49   1   8.28  2   8.94  3   4.51  4   9.05  5  11.69
 90/03/20 20:59:49   1   8.28  2   8.92  3   4.48  4   9.04  5  11.67
 90/03/20 21:14:49   1   8.17  2   8.90  3   4.45  4   9.01  5  11.64
 90/03/20 21:29:49   1   8.26  2   8.87  3   4.44  4   9.00  5  11.63
 90/03/20 21:44:49   1   8.42  2   8.85  3   4.42  4   8.97  5  11.60
 90/03/20 21:59:49   1   8.10  2   8.82  3   4.39  4   8.95  5  11.58
 90/03/20 22:14:49   1   7.96  2   8.81  3   4.38  4   8.94  5  11.57
 90/03/20 22:29:49   1   8.15  2   8.79  3   4.36  4   8.92  5  11.55
 90/03/20 22:59:49   1   8.16  2   8.77  3   4.34  4   8.90  5  11.52
 90/03/20 23:29:49   1   8.10  2   8.78  3   4.34  4   8.90  5  11.52
 90/03/20 23:59:49   1   8.16  2   8.81  3   4.37  4   8.92  5  11.54
 C  90/03/20
 90/03/21 00:29:49   1   8.19  2   8.84  3   4.40  4   8.95  5  11.57
 90/03/21 00:59:49   1   8.39  2   8.88  3   4.44  4   9.00  5  11.61
 90/03/21 01:29:49   1   8.36  2   8.92  3   4.48  4   9.04  5  11.65
 90/03/21 01:59:49   1   8.22  2   8.98  3   4.53  4   9.08  5  11.69
 90/03/21 02:29:49   1   8.32  2   9.04  3   4.58  4   9.14  5  11.74
 90/03/21 02:59:49   1   8.35  2   9.08  3   4.63  4   9.18  5  11.79
 90/03/21 03:29:49   1   8.52  2   9.14  3   4.67  4   9.23  5  11.83
C  STATION ID = 01
C   03:58
 90/03/21 04:02:00   1   8.51  2   9.18  3   4.71  4   9.27  5  11.88
 90/03/21 04:03:00   1   8.46  2   9.18  3   4.72  4   9.28  5  11.88
 90/03/21 04:04:00   1   8.61  2   9.18  3   4.72  4   9.28  5  11.88
 90/03/21 04:05:00   1   8.58  2   9.18  3   4.72  4   9.28  5  11.89
 90/03/21 04:06:00   1   8.64  2   9.18  3   4.72  4   9.28  5  11.88
 90/03/21 04:07:00   1   8.64  2   9.18  3   4.72  4   9.28  5  11.89
 90/03/21 04:10:00   1   8.49  2   9.20  3   4.72  4   9.28  5  11.89
 90/03/21 04:40:00   1   8.59  2   9.21  3   4.65  4   9.33  5  11.68
 90/03/21 05:10:00   1   8.53  2   9.24  3   4.70  4   9.36  5  11.76
 90/03/21 05:40:00   1   8.59  2   9.27  3   4.75  4   9.39  5  11.82
 90/03/21 06:10:00   1   8.45  2   9.26  3   4.77  4   9.39  5  11.84
 90/03/21 06:40:00   1   8.53  2   9.24  3   4.76  4   9.36  5  11.84
 90/03/21 07:10:00   1   8.51  2   9.21  3   4.73  4   9.31  5  11.83
 90/03/21 07:40:00   1   8.43  2   9.17  3   4.74  4   9.27  5  11.82
 90/03/21 08:10:00   1   8.36  2   9.13  3   4.67  4   9.23  5  11.80
 90/03/21 08:40:00   1   8.33  2   9.08  3   4.63  4   9.17  5  11.76
 90/03/21 09:10:00   1   8.33  2   9.02  3   4.57  4   9.13  5  11.74
 90/03/21 09:40:00   1   8.23  2   8.97  3   4.59  4   9.08  5  11.70
 90/03/21 10:10:00   1   8.26  2   8.94  3   4.67  4   9.05  5  11.68
 90/03/21 10:40:00   1   8.25  2   8.87  3   4.37  4   9.00  5  11.63
 90/03/21 11:10:00   1   7.99  2   8.84  3   4.23  4   9.00  5  11.63
 90/03/21 11:40:00   1   8.07  2   8.84  3   4.26  4   8.98  5  11.62
 90/03/21 12:10:00   1   8.10  2   8.90  3   4.75  4   9.01  5  11.63
 90/03/21 12:40:00   1   8.10  2   8.88  3   4.49  4   9.02  5  11.65
 90/03/21 13:10:00   1   8.10  2   8.94  3   4.70  4   9.07  5  11.68
 90/03/21 13:40:00   1   8.13  2   8.92  3   4.33  4   9.07  5  11.71
 90/03/21 14:10:00   1   8.16  2   8.98  3   4.53  4   9.11  5  11.75
 90/03/21 14:40:00   1   8.23  2   9.01  3   4.70  4   9.15  5  11.78
 90/03/21 15:10:00   1   8.28  2   9.07  3   4.64  4   9.18  5  11.82
 90/03/21 15:40:00   1   8.19  2   9.08  3   4.66  4   9.23  5  11.85
 90/03/21 16:10:00   1   8.38  2   9.14  3   4.68  4   9.26  5  11.89
```

90/03/21	16:40:00	1	8.41	2	9.18	3	4.79	4	9.30	5	11.92
90/03/21	17:10:00	1	8.56	2	9.23	3	4.84	4	9.34	5	11.95
90/03/21	17:40:00	1	8.51	2	9.24	3	4.85	4	9.36	5	11.97
90/03/21	18:10:00	1	8.48	2	9.26	3	4.86	4	9.36	5	12.01
90/03/21	18:40:00	1	8.64	2	9.23	3	4.84	4	9.36	5	11.97
90/03/21	19:10:00	1	8.55	2	9.20	3	4.81	4	9.33	5	11.95
90/03/21	19:40:00	1	8.48	2	9.17	3	4.77	4	9.30	5	11.91
90/03/21	20:10:00	1	8.55	2	9.14	3	4.73	4	9.26	5	11.88
90/03/21	20:40:00	1	8.26	2	9.10	3	4.69	4	9.21	5	11.83
90/03/21	21:10:00	1	8.42	2	9.05	3	4.65	4	9.18	5	11.79
90/03/21	21:40:00	1	8.29	2	9.01	3	4.62	4	9.15	5	11.76
90/03/21	22:10:00	1	8.35	2	8.97	3	4.57	4	9.11	5	11.72
90/03/21	22:40:00	1	8.19	2	8.92	3	4.54	4	9.07	5	11.69
90/03/21	23:10:00	1	8.28	2	8.88	3	4.51	4	9.02	5	11.64
90/03/21	23:40:00	1	8.13	2	8.85	3	4.46	4	9.00	5	11.62
C 23:40	90/03/21	#01									
90/03/22	00:10:00	1	8.22	2	8.84	3	4.46	4	9.00	5	11.61
90/03/22	00:40:00	1	8.12	2	8.85	3	4.48	4	9.01	5	11.62
90/03/22	01:10:00	1	8.30	2	8.90	3	4.52	4	9.05	5	11.65
90/03/22	01:40:00	1	8.19	2	8.92	3	4.55	4	9.08	5	11.69
90/03/22	02:10:00	1	8.32	2	8.97	3	4.58	4	9.13	5	11.72
90/03/22	02:40:00	1	8.42	2	9.04	3	4.63	4	9.17	5	11.77
90/03/22	03:10:00	1	8.43	2	9.10	3	4.68	4	9.23	5	11.82
90/03/22	03:40:00	1	8.51	2	9.14	3	4.74	4	9.28	5	11.87
90/03/22	04:10:00	1	8.53	2	9.17	3	4.77	4	9.33	5	11.91
90/03/22	04:40:00	1	8.71	2	9.21	3	4.82	4	9.37	5	11.95
90/03/22	05:10:00	1	8.56	2	9.26	3	4.86	4	9.41	5	11.99
90/03/22	05:40:00	1	8.71	2	9.30	3	4.91	4	9.46	5	12.04
90/03/22	06:10:00	1	8.65	2	9.33	3	4.93	4	9.49	5	12.07
90/03/22	06:40:00	1	8.66	2	9.36	3	4.95	4	9.49	5	12.10
90/03/22	07:10:00	1	8.72	2	9.36	3	4.96	4	9.49	5	12.14
90/03/22	07:40:00	1	8.61	2	9.33	3	4.92	4	9.46	5	12.14
90/03/22	08:10:00	1	8.56	2	9.28	3	4.90	4	9.43	5	12.14
90/03/22	08:40:00	1	8.64	2	9.27	3	4.90	4	9.40	5	12.14
90/03/22	09:10:00	1	8.48	2	9.21	3	4.91	4	9.34	5	12.11
90/03/22	09:40:00	1	8.43	2	9.17	3	4.78	4	9.30	5	12.08
90/03/22	10:10:00	1	8.53	2	9.14	3	4.76	4	9.27	5	12.03
90/03/22	10:40:00	1	8.48	2	9.07	3	4.50	4	9.21	5	11.98
90/03/22	11:10:00	1	8.41	2	9.01	3	4.48	4	9.17	5	11.93
90/03/22	11:40:00	1	8.30	2	9.02	3	4.86	4	9.14	5	11.87
90/03/22	12:10:00	1	8.30	2	8.94	3	4.45	4	9.10	5	11.82
90/03/22	12:40:00	1	8.23	2	8.90	3	4.42	4	9.07	5	11.76
90/03/22	13:10:00	1	8.25	2	8.88	3	4.39	4	9.05	5	11.74
90/03/22	13:40:00	1	8.25	2	8.91	3	4.55	4	9.08	5	11.74
90/03/22	14:10:00	1	8.28	2	8.95	3	4.53	4	9.11	5	11.76
90/03/22	14:40:00	1	8.45	2	8.98	3	4.57	4	9.14	5	11.78
90/03/22	15:10:00	1	8.28	2	9.01	3	4.51	4	9.18	5	11.64
90/03/22	15:40:00	1	8.36	2	9.07	3	4.65	4	9.24	5	11.69
90/03/22	16:10:00	1	8.46	2	9.14	3	4.69	4	9.28	5	11.76
90/03/22	16:40:00	1	8.53	2	9.15	3	4.63	4	9.33	5	11.82
90/03/22	17:10:00	1	8.56	2	9.20	3	4.72	4	9.36	5	11.85
90/03/22	17:40:00	1	8.62	2	9.20	3	4.78	4	9.39	5	11.89
90/03/22	18:10:00	1	8.64	2	9.27	3	4.83	4	9.44	5	11.96
90/03/22	18:40:00	1	8.79	2	9.28	3	4.84	4	9.46	5	11.99
90/03/22	19:10:00	1	8.62	2	9.27	3	4.84	4	9.46	5	11.98
90/03/22	19:40:00	1	8.71	2	9.26	3	4.82	4	9.44	5	11.97
90/03/22	20:10:00	1	8.64	2	9.23	3	4.80	4	9.41	5	11.95
90/03/22	20:40:00	1	8.64	2	9.20	3	4.77	4	9.39	5	11.92
90/03/22	21:10:00	1	8.58	2	9.15	3	4.73	4	9.34	5	11.89
90/03/22	21:40:00	1	8.49	2	9.13	3	4.70	4	9.30	5	11.85

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 90/03/22 22:10:00   1   8.48  2   9.07  3   4.65  4   9.26  5  11.81
 90/03/22 22:40:00   1   8.42  2   9.01  3   4.60  4   9.20  5  11.76
 90/03/22 23:10:00   1   8.49  2   8.98  3   4.57  4   9.15  5  11.71
 90/03/22 23:40:00   1   8.32  2   8.97  3   4.52  4   9.11  5  11.69
 C  23:40  90/03/22 #01
 90/03/23 00:10:00   1   8.38  2   8.88  3   4.48  4   9.05  5  11.69
 90/03/23 00:40:00   1   8.22  2   8.84  3   4.45  4   9.00  5  11.67
 90/03/23 01:10:00   1   8.26  2   8.81  3   4.43  4   8.97  5  11.66
 90/03/23 01:40:00   1   8.20  2   8.79  3   4.42  4   8.95  5  11.68
 90/03/23 02:10:00   1   8.26  2   8.82  3   4.45  4   8.98  5  11.72
 90/03/23 02:40:00   1   8.33  2   8.87  3   4.49  4   9.04  5  11.76
 90/03/23 03:10:00   1   8.33  2   8.92  3   4.52  4   9.08  5  11.80
 90/03/23 03:40:00   1   8.51  2   9.00  3   4.56  4   9.13  5  11.83
 90/03/23 04:10:00   1   8.55  2   9.05  3   4.62  4   9.18  5  11.87
 90/03/23 04:40:00   1   8.61  2   9.11  3   4.67  4   9.24  5  11.90
 90/03/23 05:10:00   1   8.62  2   9.17  3   4.72  4   9.28  5  11.94
 90/03/23 05:40:00   1   8.55  2   9.18  3   4.77  4   9.34  5  11.97
 90/03/23 06:10:00   1   8.53  2   9.24  3   4.83  4   9.39  5  11.98
 90/03/23 06:40:00   1   8.51  2   9.28  3   4.84  4   9.44  5  12.04
 90/03/23 07:10:00   1   8.71  2   9.31  3   4.87  4   9.46  5  12.06
 90/03/23 07:40:00   1   8.61  2   9.31  3   4.89  4   9.46  5  12.08
 90/03/23 08:10:00   1   8.58  2   9.18  3   4.90  4   9.46  5  12.07
 90/03/23 08:40:00   1   8.68  2   9.26  3   4.81  4   9.43  5  12.04
 90/03/23 09:10:00   1   8.59  2   9.20  3   4.78  4   9.39  5  12.01
 90/03/23 09:40:00   1   8.45  2   9.17  3   4.79  4   9.37  5  11.97
 90/03/23 10:10:00   1   8.48  2   9.13  3   4.70  4   9.31  5  11.92
C  10:10  90/03/23 #01
C  90/03/21
C  START RECOVERY
 90/03/23 10:22:42   1   8.58  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:43   1   8.55  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:44   1   8.48  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:45   1   8.43  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:46   1   8.45  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:47   1   8.51  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:48   1   8.69  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:49   1   8.58  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:50   1   8.56  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:51   1   8.51  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:52   1   8.46  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:53   1   8.58  2   9.10  3   4.82  4   9.31  5  11.90
 90/03/23 10:22:54   1   8.39  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:55   1   8.36  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:56   1   8.38  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:57   1   8.35  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:58   1   8.36  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:22:59   1   8.64  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:23:00   1   8.45  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:23:01   1   8.52  2   9.10  3   4.82  4   9.30  5  11.90
 90/03/23 10:23:02   1   8.32  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:03   1   8.39  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:04   1   8.48  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:05   1   8.56  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:06   1   8.51  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:07   1   8.53  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:08   1   8.46  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:09   1   8.42  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:10   1   8.52  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:11   1   8.49  2   9.10  3   4.81  4   9.30  5  11.90
 90/03/23 10:23:12   1   8.43  2   9.10  3   4.81  4   9.30  5  11.90
```

90/03/23	10:23:13	1	8.59	2	9.10	3	4.81	4	9.30	5	11.90
90/03/23	10:23:14	1	8.51	2	9.10	3	4.81	4	9.30	5	11.90
90/03/23	10:23:15	1	8.55	2	9.10	3	4.81	4	9.30	5	11.90
90/03/23	10:23:16	1	8.48	2	9.10	3	4.81	4	9.30	5	11.90
90/03/23	10:23:17	1	8.49	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:18	1	8.49	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:19	1	8.66	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:20	1	8.42	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:21	1	8.46	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:22	1	8.48	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:23	1	8.38	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:24	1	8.55	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:25	1	8.56	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:26	1	8.36	2	9.10	3	4.80	4	9.30	5	11.90
90/03/23	10:23:27	1	8.53	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:28	1	8.53	2	9.08	3	4.79	4	9.30	5	11.90
90/03/23	10:23:29	1	8.66	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:30	1	8.51	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:31	1	8.62	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:32	1	8.32	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:33	1	8.52	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:34	1	8.28	2	9.10	3	4.79	4	9.30	5	11.90
90/03/23	10:23:35	1	8.51	2	9.10	3	4.78	4	9.30	5	11.90
90/03/23	10:23:36	1	8.59	2	9.10	3	4.78	4	9.30	5	11.90
90/03/23	10:23:37	1	8.42	2	9.10	3	4.78	4	9.30	5	11.90
90/03/23	10:23:38	1	8.49	2	9.10	3	4.78	4	9.30	5	11.90
90/03/23	10:23:39	1	8.49	2	9.10	3	4.78	4	9.30	5	11.90
90/03/23	10:23:40	1	8.46	2	9.10	3	4.77	4	9.30	5	11.90
90/03/23	10:23:41	1	8.48	2	9.10	3	4.77	4	9.30	5	11.90
90/03/23	10:23:42	1	8.75	2	9.10	3	4.77	4	9.30	5	11.90
90/03/23	10:23:43	1	9.33	2	9.14	3	4.77	4	9.30	5	11.90
C CHECK DATA											
90/03/23	10:23:44	1	10.25	2	9.23	3	4.77	4	9.30	5	11.90
90/03/23	10:23:45	1	11.17	2	9.40	3	4.77	4	9.30	5	11.90
90/03/23	10:23:46	1	11.84	2	9.62	3	4.77	4	9.31	5	11.91
90/03/23	10:23:47	1	12.36	2	9.86	3	4.77	4	9.31	5	11.92
90/03/23	10:23:48	1	12.66	2	10.11	3	4.77	4	9.31	5	11.93
90/03/23	10:23:49	1	12.90	2	10.34	3	4.77	4	9.33	5	11.95
90/03/23	10:23:50	1	13.09	2	10.55	3	4.78	4	9.33	5	11.96
90/03/23	10:23:51	1	13.21	2	10.74	3	4.79	4	9.36	5	11.99
90/03/23	10:23:52	1	13.29	2	10.90	3	4.79	4	9.36	5	12.01
90/03/23	10:23:53	1	13.38	2	11.06	3	4.80	4	9.37	5	12.03
90/03/23	10:23:54	1	13.41	2	11.17	3	4.80	4	9.39	5	12.05
90/03/23	10:23:55	1	13.48	2	11.29	3	4.81	4	9.40	5	12.07
90/03/23	10:23:56	1	13.51	2	11.37	3	4.82	4	9.41	5	12.09
90/03/23	10:23:57	1	13.57	2	11.46	3	4.83	4	9.43	5	12.11
90/03/23	10:23:58	1	13.65	2	11.53	3	4.84	4	9.44	5	12.12
90/03/23	10:23:59	1	13.70	2	11.61	3	4.84	4	9.46	5	12.14
90/03/23	10:24:00	1	13.71	2	11.65	3	4.84	4	9.46	5	12.14
90/03/23	10:24:01	1	13.77	2	11.71	3	4.84	4	9.47	5	12.16
90/03/23	10:24:02	1	13.75	2	11.75	3	4.85	4	9.49	5	12.17
90/03/23	10:24:03	1	13.78	2	11.79	3	4.85	4	9.49	5	12.18
90/03/23	10:24:04	1	13.80	2	11.84	3	4.86	4	9.50	5	12.19
90/03/23	10:24:05	1	13.80	2	11.87	3	4.86	4	9.50	5	12.20
90/03/23	10:24:06	1	13.84	2	11.89	3	4.87	4	9.52	5	12.21
90/03/23	10:24:07	1	13.84	2	11.92	3	4.87	4	9.52	5	12.21
90/03/23	10:24:08	1	13.85	2	11.95	3	4.87	4	9.52	5	12.21
90/03/23	10:24:09	1	13.85	2	11.97	3	4.87	4	9.53	5	12.22
90/03/23	10:24:10	1	13.88	2	11.98	3	4.87	4	9.53	5	12.23
90/03/23	10:24:11	1	13.91	2	11.99	3	4.87	4	9.53	5	12.23

90/03/23	10:24:12	1	13.88	2	12.01	3	4.88	4	9.54	5	12.24
90/03/23	10:24:13	1	13.88	2	12.02	3	4.88	4	9.54	5	12.24
90/03/23	10:24:14	1	13.90	2	12.02	3	4.88	4	9.54	5	12.25
90/03/23	10:24:15	1	13.90	2	12.04	3	4.88	4	9.56	5	12.26
90/03/23	10:24:16	1	14.00	2	12.04	3	4.88	4	9.56	5	12.26
90/03/23	10:24:17	1	13.97	2	12.05	3	4.88	4	9.56	5	12.26
90/03/23	10:24:18	1	13.96	2	12.05	3	4.88	4	9.56	5	12.27
90/03/23	10:24:19	1	14.00	2	12.07	3	4.88	4	9.56	5	12.27
90/03/23	10:24:20	1	14.07	2	12.08	3	4.88	4	9.56	5	12.27
90/03/23	10:24:21	1	13.94	2	12.10	3	4.88	4	9.57	5	12.27
90/03/23	10:24:22	1	13.94	2	12.11	3	4.88	4	9.57	5	12.27
90/03/23	10:24:23	1	13.94	2	12.10	3	4.88	4	9.57	5	12.27
90/03/23	10:24:24	1	13.80	2	12.08	3	4.88	4	9.57	5	12.28
90/03/23	10:24:25	1	13.64	2	12.04	3	4.88	4	9.57	5	12.28
90/03/23	10:24:26	1	13.62	2	11.98	3	4.88	4	9.57	5	12.28
90/03/23	10:24:27	1	13.51	2	11.92	3	4.88	4	9.57	5	12.28
90/03/23	10:24:28	1	13.51	2	11.87	3	4.88	4	9.57	5	12.27
90/03/23	10:24:29	1	13.54	2	11.84	3	4.88	4	9.57	5	12.27
90/03/23	10:24:30	1	13.61	2	11.81	3	4.87	4	9.57	5	12.27
90/03/23	10:24:31	1	13.57	2	11.79	3	4.87	4	9.57	5	12.27
90/03/23	10:24:32	1	13.54	2	11.79	3	4.87	4	9.57	5	12.26
90/03/23	10:24:33	1	13.54	2	11.79	3	4.87	4	9.57	5	12.26
90/03/23	10:24:34	1	13.52	2	11.79	3	4.87	4	9.57	5	12.26
90/03/23	10:24:35	1	13.51	2	11.78	3	4.86	4	9.56	5	12.25
90/03/23	10:24:36	1	13.51	2	11.78	3	4.86	4	9.56	5	12.25
90/03/23	10:24:37	1	13.49	2	11.76	3	4.86	4	9.56	5	12.25
90/03/23	10:24:38	1	13.52	2	11.76	3	4.86	4	9.56	5	12.25
90/03/23	10:24:39	1	13.51	2	11.76	3	4.85	4	9.56	5	12.25
90/03/23	10:24:40	1	13.52	2	11.76	3	4.85	4	9.56	5	12.25
90/03/23	10:24:41	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:42	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:43	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:44	1	13.48	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:45	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:46	1	13.51	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:47	1	13.51	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:48	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:49	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:50	1	13.51	2	11.76	3	4.85	4	9.56	5	12.25
90/03/23	10:24:51	1	13.49	2	11.75	3	4.85	4	9.56	5	12.25
90/03/23	10:24:52	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:53	1	13.49	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:54	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:55	1	13.49	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:56	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:57	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:58	1	13.49	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:24:59	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:25:00	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:25:01	1	13.51	2	11.75	3	4.84	4	9.56	5	12.25
90/03/23	10:25:02	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:03	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:04	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:05	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:06	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:07	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:08	1	13.49	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:09	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:10	1	13.49	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:11	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25

90/03/23	10:25:12	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:13	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:14	1	13.51	2	11.76	3	4.84	4	9.57	5	12.26
90/03/23	10:25:15	1	13.51	2	11.76	3	4.84	4	9.57	5	12.26
90/03/23	10:25:16	1	13.51	2	11.76	3	4.84	4	9.57	5	12.26
90/03/23	10:25:17	1	13.51	2	11.76	3	4.84	4	9.57	5	12.26
90/03/23	10:25:18	1	13.51	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:19	1	13.51	2	11.76	3	4.84	4	9.56	5	12.25
90/03/23	10:25:20	1	13.49	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:21	1	13.51	2	11.78	3	4.85	4	9.57	5	12.26
90/03/23	10:25:22	1	13.51	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:23	1	13.51	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:24	1	13.51	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:25	1	13.52	2	11.76	3	4.85	4	9.57	5	12.26
90/03/23	10:25:26	1	13.51	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:27	1	13.49	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:28	1	13.51	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:29	1	13.52	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:30	1	13.52	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:31	1	13.51	2	11.76	3	4.86	4	9.57	5	12.26
90/03/23	10:25:32	1	13.52	2	11.78	3	4.86	4	9.57	5	12.26
90/03/23	10:25:33	1	13.51	2	11.76	3	4.86	4	9.57	5	12.26
90/03/23	10:25:34	1	13.51	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:35	1	13.52	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:36	1	13.52	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:37	1	13.52	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:38	1	13.52	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:39	1	13.52	2	11.78	3	4.87	4	9.57	5	12.26
90/03/23	10:25:40	1	13.51	2	11.76	3	4.87	4	9.57	5	12.26
90/03/23	10:25:41	1	13.51	2	11.76	3	4.87	4	9.57	5	12.26
90/03/23	10:25:42	1	13.51	2	11.76	3	4.87	4	9.57	5	12.26
90/03/23	10:25:57	1	13.52	2	11.78	3	4.88	4	9.57	5	12.26
90/03/23	10:26:12	1	13.52	2	11.78	3	4.89	4	9.57	5	12.27
90/03/23	10:26:27	1	13.52	2	11.79	3	4.91	4	9.59	5	12.27
90/03/23	10:26:42	1	13.55	2	11.82	3	4.97	4	9.60	5	12.27
90/03/23	10:26:57	1	13.55	2	11.84	3	5.02	4	9.60	5	12.27
90/03/23	10:27:12	1	13.57	2	11.84	3	5.04	4	9.59	5	12.27
90/03/23	10:27:27	1	13.57	2	11.84	3	5.04	4	9.59	5	12.27
90/03/23	10:27:42	1	13.54	2	11.81	3	5.03	4	9.57	5	12.27
90/03/23	10:27:57	1	13.52	2	11.79	3	5.00	4	9.57	5	12.27
90/03/23	10:28:12	1	13.52	2	11.79	3	4.97	4	9.57	5	12.27
90/03/23	10:28:27	1	13.52	2	11.79	3	4.96	4	9.59	5	12.27
90/03/23	10:28:42	1	13.54	2	11.79	3	4.95	4	9.59	5	12.27
90/03/23	10:28:57	1	13.52	2	11.79	3	4.96	4	9.59	5	12.27
90/03/23	10:29:12	1	13.52	2	11.79	3	4.97	4	9.59	5	12.27
90/03/23	10:29:27	1	13.52	2	11.79	3	4.99	4	9.59	5	12.27
90/03/23	10:29:42	1	13.54	2	11.79	3	5.01	4	9.59	5	12.27
90/03/23	10:29:57	1	13.54	2	11.79	3	5.01	4	9.59	5	12.27
90/03/23	10:30:12	1	13.54	2	11.81	3	5.00	4	9.59	5	12.27
90/03/23	10:30:27	1	13.54	2	11.81	3	4.98	4	9.59	5	12.27
90/03/23	10:30:42	1	13.52	2	11.79	3	4.96	4	9.59	5	12.27
90/03/23	10:31:12	1	13.54	2	11.81	3	4.90	4	9.59	5	12.27
90/03/23	10:31:42	1	13.54	2	11.81	3	4.87	4	9.59	5	12.27
90/03/23	10:32:12	1	13.55	2	11.81	3	4.88	4	9.59	5	12.27
90/03/23	10:32:42	1	13.55	2	11.81	3	4.89	4	9.59	5	12.27
90/03/23	10:33:12	1	13.55	2	11.81	3	4.92	4	9.59	5	12.27
90/03/23	10:33:42	1	13.54	2	11.81	3	4.94	4	9.59	5	12.27
90/03/23	10:34:12	1	13.54	2	11.81	3	4.94	4	9.59	5	12.27
90/03/23	10:34:42	1	13.57	2	11.81	3	4.93	4	9.59	5	12.27
90/03/23	10:35:12	1	13.55	2	11.79	3	4.92	4	9.59	5	12.28

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 90/03/23 10:35:42   1  13.55  2  11.81  3   4.96  4   9.60  5  12.27
 90/03/23 10:36:12   1  13.55  2  11.81  3   5.01  4   9.59  5  12.27
 90/03/23 10:36:42   1  13.55  2  11.81  3   4.98  4   9.59  5  12.27
 90/03/23 10:37:12   1  13.54  2  11.81  3   4.97  4   9.59  5  12.27
 90/03/23 10:37:42   1  13.58  2  11.84  3   4.96  4   9.60  5  12.27
 90/03/23 10:38:12   1  13.60  2  11.85  3   5.09  4   9.60  5  12.27
 90/03/23 10:38:42   1  13.58  2  11.85  3   5.21  4   9.60  5  12.27
 90/03/23 10:39:12   1  13.57  2  11.85  3   5.20  4   9.60  5  12.27
 90/03/23 10:39:42   1  13.54  2  11.81  3   5.09  4   9.59  5  12.27
 90/03/23 10:40:12   1  13.54  2  11.79  3   4.99  4   9.59  5  12.27
 90/03/23 10:40:42   1  13.52  2  11.78  3   4.92  4   9.59  5  12.27
 90/03/23 10:41:42   1  13.55  2  11.79  3   4.87  4   9.59  5  12.27
 90/03/23 10:42:42   1  13.57  2  11.82  3   4.87  4   9.59  5  12.27
 90/03/23 10:43:42   1  13.57  2  11.82  3   4.97  4   9.60  5  12.27
 90/03/23 10:44:42   1  13.58  2  11.85  3   5.22  4   9.62  5  12.27
 90/03/23 10:45:42   1  13.57  2  11.84  3   5.28  4   9.60  5  12.27
 90/03/23 10:46:42   1  13.52  2  11.78  3   5.04  4   9.57  5  12.27
 90/03/23 10:47:42   1  13.54  2  11.79  3   4.83  4   9.59  5  12.27
 90/03/23 10:48:42   1  13.54  2  11.79  3   4.75  4   9.57  5  12.27
 90/03/23 10:49:42   1  13.57  2  11.82  3   4.77  4   9.59  5  12.27
 90/03/23 10:50:42   1  13.51  2  11.78  3   4.84  4   9.57  5  12.26
 90/03/23 10:51:42   1  13.55  2  11.79  3   4.90  4   9.59  5  12.27
 90/03/23 10:52:42   1  13.55  2  11.81  3   4.98  4   9.57  5  12.26
 90/03/23 10:53:42   1  13.57  2  11.81  3   4.96  4   9.57  5  12.26
 90/03/23 10:54:42   1  13.55  2  11.81  3   4.90  4   9.57  5  12.26
 90/03/23 10:55:42   1  13.55  2  11.79  3   4.87  4   9.57  5  12.26
 90/03/23 10:56:42   1  13.54  2  11.78  3   4.85  4   9.57  5  12.26
 90/03/23 10:57:42   1  13.54  2  11.79  3   4.90  4   9.57  5  12.26
 90/03/23 10:58:42   1  13.58  2  11.85  3   5.06  4   9.59  5  12.26
 90/03/23 10:59:42   1  13.57  2  11.85  3   5.20  4   9.59  5  12.25
 90/03/23 11:00:42   1  13.57  2  11.84  3   5.22  4   9.59  5  12.25
 90/03/23 11:01:42   1  13.52  2  11.79  3   5.09  4   9.56  5  12.25
 90/03/23 11:02:42   1  13.49  2  11.75  3   4.84  4   9.56  5  12.24
 90/03/23 11:03:42   1  13.52  2  11.78  3   4.84  4   9.57  5  12.24
 90/03/23 11:04:42   1  13.52  2  11.78  3   4.90  4   9.56  5  12.24
 90/03/23 11:05:42   1  13.52  2  11.78  3   4.80  4   9.56  5  12.24
 90/03/23 11:06:42   1  13.52  2  11.78  3   4.78  4   9.56  5  12.24
 90/03/23 11:07:42   1  13.52  2  11.78  3   4.76  4   9.56  5  12.24
 90/03/23 11:08:42   1  13.54  2  11.78  3   4.80  4   9.54  5  12.23
 90/03/23 11:09:42   1  13.52  2  11.78  3   4.86  4   9.56  5  12.24
 90/03/23 11:10:42   1  13.54  2  11.79  3   4.89  4   9.54  5  12.23
C  CHECK CHANNEL 3
 90/03/23 11:15:42   1  13.52  2  11.79  3   5.17  4   9.56  5  12.22
 90/03/23 11:20:42   1  13.51  2  11.78  3   4.97  4   9.54  5  12.22
 90/03/23 11:25:42   1  13.48  2  11.76  3   4.89  4   9.54  5  12.21
 90/03/23 11:30:42   1  13.49  2  11.76  3   4.93  4   9.53  5  12.21
 90/03/23 11:35:42   1  13.48  2  11.72  3   4.78  4   9.50  5  12.20
 90/03/23 11:40:42   1  13.51  2  11.76  3   4.98  4   9.52  5  12.19
 90/03/23 11:45:42   1  13.45  2  11.69  3   4.84  4   9.50  5  12.18
 90/03/23 11:50:42   1  13.45  2  11.71  3   4.65  4   9.47  5  12.17
 90/03/23 11:55:42   1  13.45  2  11.69  3   4.76  4   9.47  5  12.16
 90/03/23 12:00:42   1  13.48  2  11.75  3   5.15  4   9.50  5  12.16
 90/03/23 12:05:42   1  13.44  2  11.68  3   4.67  4   9.46  5  12.14
C  STATION ID = 01
C  12:10  90/03/23 #01
 90/03/23 12:27:31   1  13.39  2  11.65  3   4.71  4   9.43  5  11.87
 90/03/23 12:27:32   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:33   1  13.41  2  11.66  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:34   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:35   1  13.41  2  11.66  3   4.71  4   9.44  5  11.87
```

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 90/03/23 12:27:36   1  13.41  2  11.66  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:37   1  13.41  2  11.66  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:38   1  13.39  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:39   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:40   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:41   1  13.39  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:42   1  13.38  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:43   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:44   1  13.41  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:45   1  13.39  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:46   1  13.39  2  11.65  3   4.71  4   9.44  5  11.87
 90/03/23 12:27:47   1  13.39  2  11.65  3   4.70  4   9.43  5  11.87
 90/03/23 12:27:48   1  13.41  2  11.65  3   4.70  4   9.44  5  11.87
 90/03/23 12:27:49   1  13.41  2  11.65  3   4.70  4   9.44  5  11.87
 90/03/23 12:27:50   1  13.39  2  11.65  3   4.70  4   9.44  5  11.87
 90/03/23 12:27:51   1  13.39  2  11.65  3   4.70  4   9.44  5  11.87
 90/03/23 12:27:52   1  13.39  2  11.65  3   4.70  4   9.44  5  11.87
 90/03/23 12:27:53   1  13.41  2  11.65  3   4.70  4   9.43  5  11.87
 90/03/23 12:27:54   1  13.41  2  11.65  3   4.70  4   9.43  5  11.87
 90/03/23 12:27:55   1  13.41  2  11.65  3   4.70  4   9.43  5  11.87
 90/03/23 12:27:56   1  13.39  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:27:57   1  13.39  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:27:58   1  13.39  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:27:59   1  13.39  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:28:00   1  13.41  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:28:01   1  13.41  2  11.65  3   4.70  4   9.44  5  11.88
 90/03/23 12:28:02   1  13.41  2  11.66  3   4.70  4   9.44  5  11.88
 90/03/23 12:28:03   1  13.39  2  11.65  3   4.69  4   9.43  5  11.87
 90/03/23 12:28:04   1  13.39  2  11.66  3   4.70  4   9.44  5  11.88
 90/03/23 12:28:05   1  13.41  2  11.66  3   4.69  4   9.43  5  11.87
 90/03/23 12:28:06   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:07   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:08   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:09   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:10   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:11   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:12   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:13   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:14   1  13.42  2  11.66  3   4.69  4   9.43  5  11.88
 90/03/23 12:28:15   1  13.41  2  11.66  3   4.69  4   9.43  5  11.88
 90/03/23 12:28:16   1  13.42  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:17   1  13.41  2  11.66  3   4.69  4   9.44  5  11.88
 90/03/23 12:28:18   1  13.41  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:19   1  13.41  2  11.66  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:20   1  13.41  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:21   1  13.41  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:22   1  13.41  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:23   1  13.41  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:24   1  13.39  2  11.65  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:25   1  13.41  2  11.66  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:26   1  13.41  2  11.66  3   4.68  4   9.43  5  11.88
 90/03/23 12:28:27   1  13.41  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:28   1  13.41  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:29   1  13.41  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:30   1  13.41  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:31   1  13.41  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:32   1  13.39  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:33   1  13.39  2  11.65  3   4.67  4   9.43  5  11.88
 90/03/23 12:28:34   1  13.41  2  11.66  3   4.67  4   9.43  5  11.88
C  END OF RECOVERY DATA
```

```
C  FILES FOR CONTINUOUS RECORD FOR STATION # 02
C  4-2-90
C  CBK
C *********FILE S2A0317.FRW  (FOR ESE USE ONLY)
C
C   CHANNEL #'S CORRESPONDING TO WELL #'S
C
C      CHANNEL  1 - OW8
C               2 - OW9
C               3 - OW13 (ADDED PRODUCTION ZONE WELL)
C
C   DEPTH OF WELLS IN FEET
C
C      OW8  - 95
C      OW9  - 20
C      OW13 - 50
C
C   DISTANCES FROM PUMPING WELL IN FEET
C
C      OW8  - 453.65
C      OW9  - 454.82
C      OW13 - 454.
C
C   TOC MSL ELEVATION IN FEET
C
C      OW8  - 4.91
C      OW9  - 4.93
C      OW13 - 5.08
C
C   READINGS FROM DATA LOGGER, IN FEET, ABOVE TRANSDUCER
C
C                  CHANNEL   CHANNEL
C                     ^         ^
C                           WL        WL
C                           ^         ^
 90/03/13 18:20:00   1  12.96  2  10.26
 90/03/13 18:35:00   1  12.98  2  10.28
 90/03/13 18:50:00   1  12.99  2  10.31
 90/03/13 19:05:00   1  13.01  2  10.35
 90/03/13 19:20:00   1  13.04  2  10.37
 90/03/13 19:35:00   1  13.05  2  10.41
 90/03/13 19:50:00   1  13.09  2  10.45
 90/03/13 20:05:00   1  13.11  2  10.49
 90/03/13 20:20:00   1  13.14  2  10.54
 90/03/13 20:35:00   1  13.17  2  10.58
 90/03/13 20:50:00   1  13.21  2  10.62
 90/03/13 21:05:00   1  13.24  2  10.67
 90/03/13 21:20:00   1  13.28  2  10.72
 90/03/13 21:35:00   1  13.31  2  10.76
 90/03/13 21:50:00   1  13.35  2  10.80
 90/03/13 22:05:00   1  13.38  2  10.86
 90/03/13 22:20:00   1  13.42  2  10.91
 90/03/13 22:35:00   1  13.46  2  10.95
 90/03/13 22:50:00   1  13.49  2  10.99
 90/03/13 23:05:00   1  13.53  2  11.03
 90/03/13 23:20:00   1  13.55  2  11.06
 90/03/13 23:35:00   1  13.58  2  11.10
 90/03/13 23:50:00   1  13.62  2  11.13
C  23:50  90/03/13 #02
 90/03/14 00:05:00   1  13.65  2  11.15
```

90/03/14	00:20:00	1	13.66	2	11.17
90/03/14	00:35:00	1	13.66	2	11.16
90/03/14	00:50:00	1	13.65	2	11.14
90/03/14	01:05:00	1	13.63	2	11.12
90/03/14	01:20:00	1	13.61	2	11.10
90/03/14	01:35:00	1	13.60	2	11.08
90/03/14	01:50:00	1	13.57	2	11.05
90/03/14	02:05:00	1	13.55	2	11.03
90/03/14	02:20:00	1	13.53	2	11.00
90/03/14	02:35:00	1	13.51	2	10.98
90/03/14	02:50:00	1	13.48	2	10.94
90/03/14	03:05:00	1	13.45	2	10.91
90/03/14	03:20:00	1	13.42	2	10.88
90/03/14	03:35:00	1	13.40	2	10.85
90/03/14	03:50:00	1	13.36	2	10.81
90/03/14	04:05:00	1	13.34	2	10.78
90/03/14	04:20:00	1	13.30	2	10.74
90/03/14	04:35:00	1	13.27	2	10.71
90/03/14	04:50:00	1	13.24	2	10.67
90/03/14	05:05:00	1	13.21	2	10.64
90/03/14	05:20:00	1	13.21	2	10.61
90/03/14	05:35:00	1	13.17	2	10.58
90/03/14	05:50:00	1	13.14	2	10.55
90/03/14	06:05:00	1	13.13	2	10.54
90/03/14	06:20:00	1	13.11	2	10.53
90/03/14	06:35:00	1	13.11	2	10.53
90/03/14	06:50:00	1	13.12	2	10.54
90/03/14	07:05:00	1	13.14	2	10.57
90/03/14	07:20:00	1	13.17	2	10.60
90/03/14	07:35:00	1	13.19	2	10.63
90/03/14	07:50:00	1	13.21	2	10.66
90/03/14	08:05:00	1	13.23	2	10.68
90/03/14	08:20:00	1	13.26	2	10.71
90/03/14	08:35:00	1	13.30	2	10.75
90/03/14	08:50:00	1	13.32	2	10.78
90/03/14	09:05:00	1	13.36	2	10.82
90/03/14	09:20:00	1	13.38	2	10.85
90/03/14	09:35:00	1	13.41	2	10.89
90/03/14	09:50:00	1	13.44	2	10.92
90/03/14	10:05:00	1	13.47	2	10.95
90/03/14	10:20:00	1	13.50	2	10.99
90/03/14	10:35:00	1	13.53	2	11.03
90/03/14	10:50:00	1	13.55	2	11.05
90/03/14	11:05:00	1	13.57	2	11.05
90/03/14	11:20:00	1	13.59	2	11.08
90/03/14	11:35:00	1	13.61	2	11.09
90/03/14	11:50:00	1	13.62	2	11.12
90/03/14	12:05:00	1	13.64	2	11.12
90/03/14	12:20:00	1	13.65	2	11.13
90/03/14	12:35:00	1	13.65	2	11.13
90/03/14	12:50:00	1	13.64	2	11.12
90/03/14	13:05:00	1	13.62	2	11.10
90/03/14	13:20:00	1	13.60	2	11.06
90/03/14	13:35:00	1	13.58	2	11.04
90/03/14	13:50:00	1	13.55	2	11.01
90/03/14	14:05:00	1	13.53	2	10.98
90/03/14	14:20:00	1	13.50	2	10.94
90/03/14	14:35:00	1	13.48	2	10.92
90/03/14	14:50:00	1	13.45	2	10.88
90/03/14	15:05:00	1	13.42	2	10.85

```
90/03/14 15:20:00    1   13.38   2   10.81
90/03/14 15:35:00    1   13.36   2   10.78
90/03/14 15:50:00    1   13.32   2   10.73
90/03/14 16:05:00    1   13.30   2   10.70
90/03/14 16:20:00    1   13.16   2   10.63
90/03/14 16:35:00    1   13.12   2   10.61
90/03/14 16:50:00    1   13.11   2   10.57
90/03/14 17:05:00    1   13.10   2   10.53
90/03/14 17:20:00    1   13.07   2   10.49
90/03/14 17:35:00    1   13.05   2   10.45
90/03/14 17:50:00    1   13.03   2   10.41
90/03/14 18:05:00    1   13.02   2   10.39
90/03/14 18:20:00    1   13.00   2   10.36
90/03/14 18:35:00    1   12.99   2   10.35
90/03/14 18:50:00    1   13.00   2   10.35
90/03/14 19:05:00    1   13.01   2   10.36
90/03/14 19:20:00    1   13.04   2   10.38
90/03/14 19:35:00    1   13.05   2   10.41
90/03/14 19:50:00    1   13.08   2   10.42
90/03/14 20:05:00    1   13.10   2   10.45
90/03/14 20:20:00    1   13.14   2   10.48
90/03/14 20:35:00    1   13.17   2   10.51
90/03/14 20:50:00    1   13.20   2   10.54
90/03/14 21:05:00    1   13.23   2   10.58
90/03/14 21:20:00    1   13.26   2   10.62
90/03/14 21:35:00    1   13.30   2   10.66
90/03/14 21:50:00    1   13.33   2   10.70
90/03/14 22:05:00    1   13.37   2   10.73
90/03/14 22:20:00    1   13.41   2   10.79
90/03/14 22:35:00    1   13.43   2   10.82
90/03/14 22:50:00    1   13.48   2   10.87
90/03/14 23:05:00    1   13.52   2   10.92
90/03/14 23:20:00    1   13.55   2   10.95
90/03/14 23:35:00    1   13.59   2   10.99
90/03/14 23:50:00    1   13.62   2   11.02
C  23:50  90/03/14 #02
90/03/15 00:05:00    1   13.64   2   11.05
90/03/15 00:20:00    1   13.67   2   11.08
90/03/15 00:35:00    1   13.68   2   11.10
90/03/15 00:50:00    1   13.70   2   11.12
90/03/15 01:05:00    1   13.71   2   11.12
90/03/15 01:20:00    1   13.71   2   11.12
90/03/15 01:35:00    1   13.69   2   11.10
90/03/15 01:50:00    1   13.68   2   11.08
90/03/15 02:05:00    1   13.66   2   11.05
90/03/15 02:20:00    1   13.64   2   11.04
90/03/15 02:35:00    1   13.62   2   11.01
90/03/15 02:50:00    1   13.60   2   10.99
90/03/15 03:05:00    1   13.57   2   10.96
90/03/15 03:20:00    1   13.55   2   10.93
90/03/15 03:35:00    1   13.52   2   10.90
90/03/15 03:50:00    1   13.49   2   10.87
90/03/15 04:05:00    1   13.45   2   10.81
90/03/15 04:20:00    1   13.41   2   10.76
90/03/15 04:35:00    1   13.37   2   10.73
90/03/15 04:50:00    1   13.34   2   10.69
90/03/15 05:05:00    1   13.30   2   10.66
90/03/15 05:20:00    1   13.28   2   10.62
90/03/15 05:35:00    1   13.23   2   10.59
90/03/15 05:50:00    1   13.20   2   10.55
```

```
C CHECK DATA - DATA LOGGER AND TRANDUCERS MALFUNCTIONED;
C SWITCHED DATA LOGGERS; REPLACED AND MOVED TRANSDUCERS;
C 0550 - 1115.
C *********FILE S20320D1.FRW (FOR ESE USE ONLY)
 90/03/15 11:15:00   1   8.58  2  12.34  3  10.80
 90/03/15 11:30:00   1   9.67  2  12.40  3  10.70
 90/03/15 11:45:00   1   9.64  2  12.40  3  10.67
 90/03/15 12:00:00   1   9.62  2  12.46  3  10.75
 90/03/15 12:15:00   1   9.64  2  12.46  3  10.80
 90/03/15 12:30:00   1   9.65  2  12.47  3  10.82
 90/03/15 12:45:00   1   9.65  2  12.46  3  10.84
 90/03/15 13:00:00   1   9.73  2  12.44  3  10.89
 90/03/15 13:15:00   1   9.64  2  12.45  3  10.81
 90/03/15 13:30:00   1   9.61  2  12.41  3  10.81
C CHECK CHANNEL 3
C WELL DEVELOPMENT OW-13, 1345 - 1745
 90/03/15 13:45:00   1   9.59  2  12.38  3   0.00
 90/03/15 14:00:00   1   9.57  2  12.34  3   0.03
 90/03/15 14:15:00   1   9.55  2  12.32  3   0.09
 90/03/15 14:30:00   1   9.52  2  12.28  3   0.09
 90/03/15 14:45:00   1   9.51  2  12.25  3   0.10
 90/03/15 15:00:00   1   9.48  2  12.21  3   0.10
 90/03/15 15:15:00   1   9.45  2  12.18  3   0.10
 90/03/15 15:30:00   1   9.42  2  12.14  3   0.10
 90/03/15 15:45:00   1   9.40  2  12.12  3   0.10
 90/03/15 16:00:00   1   9.37  2  12.08  3   0.09
 90/03/15 16:15:00   1   9.33  2  12.04  3   0.08
 90/03/15 16:30:00   1   9.30  2  12.00  3   0.05
 90/03/15 16:45:00   1   9.27  2  11.96  3   0.05
 90/03/15 17:00:00   1   9.24  2  11.93  3   0.05
 90/03/15 17:15:00   1   9.20  2  11.89  3   0.03
 90/03/15 17:30:00   1   9.17  2  11.84  3   0.03
 90/03/15 17:45:00   1   9.27  2  11.70  3   0.00
C
 90/03/15 18:00:00   1   9.12  2  11.76  3  10.35
 90/03/15 18:15:00   1   9.07  2  11.76  3  10.35
 90/03/15 18:30:00   1   9.04  2  11.74  3  10.33
 90/03/15 18:45:00   1   9.02  2  11.72  3  10.31
 90/03/15 19:00:00   1   9.00  2  11.70  3  10.29
 90/03/15 19:15:00   1   9.00  2  11.70  3  10.29
 90/03/15 19:30:00   1   9.00  2  11.70  3  10.29
 90/03/15 19:45:00   1   9.03  2  11.73  3  10.32
 90/03/15 20:00:00   1   9.05  2  11.76  3  10.34
 90/03/15 20:15:00   1   9.07  2  11.77  3  10.35
 90/03/15 20:30:00   1   9.09  2  11.80  3  10.38
 90/03/15 20:45:00   1   9.11  2  11.82  3  10.41
 90/03/15 21:00:00   1   9.13  2  11.86  3  10.43
 90/03/15 21:15:00   1   9.17  2  11.89  3  10.47
 90/03/15 21:30:00   1   9.20  2  11.93  3  10.49
 90/03/15 21:45:00   1   9.23  2  11.96  3  10.53
 90/03/15 22:00:00   1   9.26  2  12.01  3  10.56
 90/03/15 22:15:00   1   9.30  2  12.05  3  10.61
 90/03/15 22:30:00   1   9.33  2  12.10  3  10.65
 90/03/15 22:45:00   1   9.38  2  12.15  3  10.69
 90/03/15 23:00:00   1   9.42  2  12.21  3  10.73
 90/03/15 23:15:00   1   9.45  2  12.24  3  10.77
 90/03/15 23:30:00   1   9.48  2  12.28  3  10.80
 90/03/15 23:45:00   1   9.52  2  12.32  3  10.83
C  23:45  90/03/15 #02
 90/03/16 00:00:00   1   9.55  2  12.36  3  10.86
```

90/03/16	00:15:00	1	9.58	2	12.40	3	10.90
90/03/16	00:30:00	1	9.60	2	12.43	3	10.93
90/03/16	00:45:00	1	9.63	2	12.46	3	10.95
90/03/16	01:00:00	1	9.64	2	12.48	3	10.97
90/03/16	01:15:00	1	9.65	2	12.49	3	10.99
90/03/16	01:30:00	1	9.67	2	12.51	3	10.99
90/03/16	01:45:00	1	9.65	2	12.49	3	10.99
90/03/16	02:00:00	1	9.64	2	12.47	3	10.97
90/03/16	02:15:00	1	9.64	2	12.46	3	10.97
90/03/16	02:30:00	1	9.60	2	12.46	3	10.95
90/03/16	02:45:00	1	9.58	2	12.44	3	10.93
90/03/16	03:00:00	1	9.56	2	12.41	3	10.91
90/03/16	03:15:00	1	9.52	2	12.38	3	10.88
90/03/16	03:30:00	1	9.51	2	12.34	3	10.86
90/03/16	03:45:00	1	9.48	2	12.32	3	10.83
90/03/16	04:00:00	1	9.46	2	12.28	3	10.80
90/03/16	04:15:00	1	9.44	2	12.26	3	10.78
90/03/16	04:30:00	1	9.41	2	12.22	3	10.74
90/03/16	04:45:00	1	9.39	2	12.20	3	10.72
90/03/16	05:00:00	1	9.35	2	12.16	3	10.68
90/03/16	05:15:00	1	9.32	2	12.13	3	10.66
90/03/16	05:30:00	1	9.29	2	12.09	3	10.62
90/03/16	05:45:00	1	9.26	2	12.07	3	10.60
90/03/16	06:00:00	1	9.24	2	12.03	3	10.57
90/03/16	06:15:00	1	9.21	2	12.00	3	10.54
90/03/16	06:30:00	1	9.19	2	11.96	3	10.51
90/03/16	06:45:00	1	9.15	2	11.92	3	10.47
90/03/16	07:00:00	1	9.12	2	11.88	3	10.43
90/03/16	07:15:00	1	9.10	2	11.85	3	10.41
90/03/16	07:30:00	1	9.08	2	11.83	3	10.39
90/03/16	07:45:00	1	9.08	2	11.83	3	10.39
90/03/16	08:00:00	1	9.09	2	11.83	3	10.40
90/03/16	08:15:00	1	9.10	2	11.86	3	10.41
90/03/16	08:30:00	1	9.12	2	11.88	3	10.43
90/03/16	08:45:00	1	9.14	2	11.90	3	10.46
90/03/16	09:00:00	1	9.16	2	11.92	3	10.48
90/03/16	09:15:00	1	9.20	2	11.95	3	10.50
90/03/16	09:30:00	1	9.20	2	11.97	3	10.52
90/03/16	09:45:00	1	9.25	2	12.01	3	10.54
90/03/16	10:00:00	1	9.26	2	12.04	3	10.57
90/03/16	10:15:00	1	9.26	2	12.06	3	10.60
90/03/16	10:30:00	1	9.30	2	12.10	3	10.63
90/03/16	10:45:00	1	9.32	2	12.14	3	10.66
90/03/16	11:00:00	1	9.37	2	12.17	3	10.68
90/03/16	11:15:00	1	9.39	2	12.21	3	10.72
90/03/16	11:30:00	1	9.42	2	12.23	3	10.74
90/03/16	11:45:00	1	9.44	2	12.26	3	10.76
90/03/16	12:00:00	1	9.45	2	12.29	3	10.79
90/03/16	12:15:00	1	9.47	2	12.31	3	10.80
90/03/16	12:30:00	1	9.62	2	12.34	3	10.83
90/03/16	12:45:00	1	9.51	2	12.37	3	10.85
90/03/16	13:00:00	1	9.52	2	12.39	3	10.86
90/03/16	13:15:00	1	9.53	2	12.40	3	10.86
90/03/16	13:30:00	1	9.52	2	12.40	3	10.86
90/03/16	13:45:00	1	9.52	2	12.39	3	10.86
90/03/16	14:00:00	1	9.51	2	12.36	3	10.83
90/03/16	14:15:00	1	9.49	2	12.34	3	10.81
90/03/16	14:30:00	1	9.46	2	12.31	3	10.80
90/03/16	14:45:00	1	9.52	2	12.21	3	10.82
90/03/16	15:00:00	1	9.43	2	12.22	3	10.73

90/03/16	15:15:00	1	9.39	2	12.21	3	10.71
90/03/16	15:30:00	1	9.37	2	12.18	3	10.68
90/03/16	15:45:00	1	9.33	2	12.14	3	10.65
90/03/16	16:00:00	1	9.31	2	12.11	3	10.62
90/03/16	16:15:00	1	9.14	2	11.95	3	10.46
90/03/16	16:30:00	1	9.25	2	12.04	3	10.56
90/03/16	16:45:00	1	9.22	2	12.01	3	10.53
90/03/16	17:00:00	1	9.19	2	11.97	3	10.49
90/03/16	17:15:00	1	9.16	2	11.94	3	10.46
90/03/16	17:30:00	1	9.13	2	11.89	3	10.42
90/03/16	17:45:00	1	9.13	2	11.89	3	10.43
90/03/16	18:00:00	1	9.07	2	11.80	3	10.32
90/03/16	18:15:00	1	9.03	2	11.79	3	10.31
90/03/16	18:30:00	1	9.00	2	11.76	3	10.28
90/03/16	18:45:00	1	8.97	2	11.73	3	10.26
90/03/16	19:00:00	1	8.94	2	11.70	3	10.23
90/03/16	19:15:00	1	8.93	2	11.68	3	10.21
90/03/16	19:30:00	1	8.90	2	11.66	3	10.19
90/03/16	19:45:00	1	8.90	2	11.65	3	10.18
90/03/16	20:00:00	1	8.89	2	11.65	3	10.18
90/03/16	20:15:00	1	8.91	2	11.66	3	10.19
90/03/16	20:30:00	1	8.93	2	11.69	3	10.22
90/03/16	20:45:00	1	8.94	2	11.71	3	10.22
90/03/16	21:00:00	1	8.96	2	11.73	3	10.25
90/03/16	21:15:00	1	8.99	2	11.76	3	10.28
90/03/16	21:30:00	1	9.00	2	11.79	3	10.30
90/03/16	21:45:00	1	9.03	2	11.82	3	10.33
90/03/16	22:00:00	1	9.07	2	11.86	3	10.36
90/03/16	22:15:00	1	9.10	2	11.90	3	10.40
90/03/16	22:30:00	1	9.13	2	11.95	3	10.44
90/03/16	22:45:00	1	9.17	2	12.00	3	10.48
90/03/16	23:00:00	1	9.21	2	12.04	3	10.52
90/03/16	23:15:00	1	9.24	2	12.08	3	10.56
90/03/16	23:30:00	1	9.27	2	12.13	3	10.60
90/03/16	23:45:00	1	9.31	2	12.17	3	10.63
C 23:45	90/03/16	#02					
90/03/17	00:00:00	1	9.34	2	12.21	3	10.67
90/03/17	00:15:00	1	9.37	2	12.24	3	10.69
90/03/17	00:30:00	1	9.40	2	12.27	3	10.73
90/03/17	00:45:00	1	9.44	2	12.32	3	10.76
90/03/17	01:00:00	1	9.46	2	12.35	3	10.80
90/03/17	01:15:00	1	9.49	2	12.39	3	10.81
90/03/17	01:30:00	1	9.51	2	12.41	3	10.84
90/03/17	01:45:00	1	9.52	2	12.42	3	10.86
90/03/17	02:00:00	1	9.53	2	12.44	3	10.86
90/03/17	02:15:00	1	9.53	2	12.44	3	10.86
90/03/17	02:30:00	1	9.53	2	12.44	3	10.86
90/03/17	02:45:00	1	9.52	2	12.42	3	10.84
90/03/17	03:00:00	1	9.51	2	12.40	3	10.83
90/03/17	03:15:00	1	9.49	2	12.40	3	10.82
90/03/17	03:30:00	1	9.48	2	12.38	3	10.80
90/03/17	03:45:00	1	9.45	2	12.35	3	10.78
90/03/17	04:00:00	1	9.44	2	12.33	3	10.75
90/03/17	04:15:00	1	9.42	2	12.31	3	10.73
90/03/17	04:30:00	1	9.39	2	12.27	3	10.71
90/03/17	04:45:00	1	9.37	2	12.25	3	10.68
90/03/17	05:00:00	1	9.35	2	12.21	3	10.66
90/03/17	05:15:00	1	9.32	2	12.19	3	10.63
90/03/17	05:30:00	1	9.30	2	12.15	3	10.61
90/03/17	05:45:00	1	9.25	2	12.09	3	10.54

90/03/17	06:00:00	1	9.21	2	12.05	3	10.51
90/03/17	06:15:00	1	9.18	2	12.02	3	10.48
90/03/17	06:30:00	1	9.16	2	11.99	3	10.45
90/03/17	06:45:00	1	9.13	2	11.95	3	10.42
90/03/17	07:00:00	1	9.11	2	11.93	3	10.40
90/03/17	07:15:00	1	9.07	2	11.89	3	10.36
90/03/17	07:30:00	1	9.06	2	11.86	3	10.34
90/03/17	07:45:00	1	9.04	2	11.85	3	10.33
90/03/17	08:00:00	1	9.03	2	11.83	3	10.31
90/03/17	08:15:00	1	9.02	2	11.83	3	10.31
90/03/17	08:30:00	1	9.02	2	11.84	3	10.32
90/03/17	08:45:00	1	9.04	2	11.85	3	10.33
90/03/17	09:00:00	1	9.07	2	11.88	3	10.35
90/03/17	09:15:00	1	9.07	2	11.89	3	10.36
90/03/17	09:30:00	1	9.17	2	11.89	3	10.45
90/03/17	09:45:00	1	9.21	2	11.75	3	10.39
90/03/17	10:00:00	1	9.22	2	11.76	3	10.36
90/03/17	10:15:00	1	9.20	2	11.81	3	10.35
90/03/17	10:30:00	1	9.21	2	11.88	3	10.37
90/03/17	10:45:00	1	9.24	2	11.92	3	10.39
90/03/17	11:00:00	1	9.25	2	11.96	3	10.41
90/03/17	11:15:00	1	9.26	2	12.02	3	10.43
90/03/17	11:30:00	1	9.28	2	12.06	3	10.46
90/03/17	11:45:00	1	9.31	2	12.09	3	10.48
90/03/17	12:00:00	1	9.31	2	12.11	3	10.50
90/03/17	12:15:00	1	9.33	2	12.17	3	10.53
90/03/17	12:30:00	1	9.36	2	12.21	3	10.55
90/03/17	12:45:00	1	9.38	2	12.22	3	10.56
90/03/17	13:00:00	1	9.39	2	12.26	3	10.58
90/03/17	13:15:00	1	9.40	2	12.27	3	10.60
90/03/17	13:30:00	1	9.41	2	12.29	3	10.61
90/03/17	13:45:00	1	9.42	2	12.30	3	10.62
90/03/17	14:00:00	1	9.41	2	12.29	3	10.61
90/03/17	14:15:00	1	9.40	2	12.28	3	10.61
90/03/17	14:30:00	1	9.38	2	12.26	3	10.58
90/03/17	14:45:00	1	9.35	2	12.23	3	10.56
90/03/17	15:00:00	1	9.35	2	12.21	3	10.54
90/03/17	15:15:00	1	9.32	2	12.19	3	10.53
90/03/17	15:30:00	1	9.31	2	12.17	3	10.51
90/03/17	15:45:00	1	9.28	2	12.14	3	10.48
90/03/17	16:00:00	1	9.26	2	12.12	3	10.47
90/03/17	16:15:00	1	9.25	2	12.09	3	10.44
90/03/17	16:30:00	1	9.22	2	12.07	3	10.41
90/03/17	16:45:00	1	9.20	2	12.03	3	10.39
90/03/17	17:00:00	1	9.17	2	12.00	3	10.35
90/03/17	17:15:00	1	9.13	2	11.96	3	10.33
90/03/17	17:30:00	1	9.01	2	12.03	3	10.31
90/03/17	17:45:00	1	8.97	2	12.02	3	10.32
90/03/17	18:00:00	1	8.95	2	11.95	3	10.31
90/03/17	18:15:00	1	8.93	2	11.91	3	10.29
90/03/17	18:30:00	1	8.92	2	11.87	3	10.28
90/03/17	18:45:00	1	8.90	2	11.82	3	10.25
90/03/17	19:00:00	1	8.89	2	11.78	3	10.22
90/03/17	19:15:00	1	8.88	2	11.73	3	10.20
90/03/17	19:30:00	1	8.86	2	11.69	3	10.18
90/03/17	19:45:00	1	8.85	2	11.65	3	10.16
90/03/17	20:00:00	1	8.83	2	11.63	3	10.14
90/03/17	20:15:00	1	8.82	2	11.60	3	10.13
90/03/17	20:30:00	1	8.81	2	11.59	3	10.12
90/03/17	20:45:00	1	8.81	2	11.58	3	10.12

```
 90/03/17 21:00:00   1   8.84  2  11.62  3  10.15
 90/03/17 21:15:00   1   8.86  2  11.63  3  10.16
 90/03/17 21:30:00   1   8.88  2  11.65  3  10.18
 90/03/17 21:45:00   1   8.91  2  11.69  3  10.22
 90/03/17 22:00:00   1   8.93  2  11.71  3  10.24
 90/03/17 22:15:00   1   8.94  2  11.73  3  10.26
 90/03/17 22:30:00   1   8.98  2  11.77  3  10.28
 90/03/17 22:45:00   1   9.00  2  11.80  3  10.31
 90/03/17 23:00:00   1   9.04  2  11.85  3  10.35
 90/03/17 23:15:00   1   9.07  2  11.89  3  10.39
 90/03/17 23:30:00   1   9.10  2  11.93  3  10.42
 90/03/17 24:45:00   1   9.13  2  11.95  3  10.46
C  23:45  90/03/17 #02
 90/03/18 00:00:00   1   9.16  2  12.00  3  10.48
 90/03/18 00:15:00   1   9.19  2  12.02  3  10.52
 90/03/18 00:30:00   1   9.21  2  12.06  3  10.54
 90/03/18 00:45:00   1   9.24  2  12.08  3  10.58
 90/03/18 01:00:00   1   9.26  2  12.11  3  10.61
 90/03/18 01:15:00   1   9.29  2  12.14  3  10.63
 90/03/18 01:30:00   1   9.32  2  12.17  3  10.66
 90/03/18 01:45:00   1   9.33  2  12.19  3  10.67
 90/03/18 02:00:00   1   9.34  2  12.21  3  10.69
 90/03/18 02:15:00   1   9.36  2  12.21  3  10.70
 90/03/18 02:30:00   1   9.37  2  12.23  3  10.71
 90/03/18 02:45:00   1   9.42  2  12.27  3  10.76
 90/03/18 03:00:00   1   9.49  2  12.34  3  10.83
 90/03/18 03:15:00   1   9.52  2  12.36  3  10.85
 90/03/18 03:30:00   1   9.50  2  12.34  3  10.84
 90/03/18 03:45:00   1   9.47  2  12.30  3  10.80
 90/03/18 04:00:00   1   9.45  2  12.27  3  10.77
 90/03/18 04:15:00   1   9.43  2  12.24  3  10.75
 90/03/18 04:30:00   1   9.40  2  12.21  3  10.72
 90/03/18 04:45:00   1   9.38  2  12.18  3  10.69
 90/03/18 05:00:00   1   9.34  2  12.14  3  10.66
 90/03/18 05:15:00   1   9.32  2  12.11  3  10.63
 90/03/18 05:30:00   1   9.29  2  12.08  3  10.61
 90/03/18 05:45:00   1   9.26  2  12.04  3  10.57
 90/03/18 06:00:00   1   9.24  2  12.02  3  10.54
 90/03/18 06:15:00   1   9.20  2  11.97  3  10.51
 90/03/18 06:30:00   1   9.18  2  11.95  3  10.48
 90/03/18 06:45:00   1   9.15  2  11.92  3  10.46
 90/03/18 07:00:00   1   9.13  2  11.88  3  10.42
 90/03/18 07:15:00   1   9.10  2  11.85  3  10.40
 90/03/18 07:30:00   1   9.07  2  11.82  3  10.37
 90/03/18 07:45:00   1   9.04  2  11.79  3  10.34
 90/03/18 08:00:00   1   9.02  2  11.77  3  10.32
 90/03/18 08:15:00   1   9.00  2  11.75  3  10.29
 90/03/18 08:30:00   1   8.99  2  11.73  3  10.28
 90/03/18 08:45:00   1   8.97  2  11.72  3  10.27
 90/03/18 09:00:00   1   8.96  2  11.70  3  10.26
 90/03/18 09:15:00   1   8.96  2  11.70  3  10.26
 90/03/18 09:30:00   1   8.96  2  11.70  3  10.26
 90/03/18 09:45:00   1   9.03  2  11.72  3  10.32
 90/03/18 10:00:00   1   9.07  2  11.59  3  10.25
 90/03/18 10:15:00   1   9.08  2  11.59  3  10.23
 90/03/18 10:30:00   1   9.08  2  11.64  3  10.23
 90/03/18 10:45:00   1   9.08  2  11.69  3  10.24
 90/03/18 11:00:00   1   9.08  2  11.74  3  10.25
 90/03/18 11:15:00   1   9.09  2  11.79  3  10.28
 90/03/18 11:30:00   1   9.10  2  11.83  3  10.29
```

```
 90/03/18 11:45:00   1   9.11  2  11.88  3  10.30
 90/03/18 12:00:00   1   9.13  2  11.93  3  10.34
 90/03/18 12:15:00   1   9.15  2  11.95  3  10.35
 90/03/18 12:30:00   1   9.17  2  11.99  3  10.38
 90/03/18 12:45:00   1   9.19  2  12.03  3  10.41
 90/03/18 13:00:00   1   9.21  2  12.07  3  10.43
 90/03/18 13:15:00   1   9.23  2  12.08  3  10.45
 90/03/18 13:30:00   1   9.24  2  12.11  3  10.47
 90/03/18 13:45:00   1   9.26  2  12.14  3  10.48
 90/03/18 14:00:00   1   9.26  2  12.14  3  10.50
 90/03/18 14:15:00   1   9.28  2  12.15  3  10.51
 90/03/18 14:30:00   1   9.28  2  12.16  3  10.52
 90/03/18 14:45:00   1   9.28  2  12.16  3  10.52
 90/03/18 15:00:00   1   9.26  2  12.14  3  10.50
 90/03/18 15:15:00   1   9.26  2  12.14  3  10.49
 90/03/18 15:30:00   1   9.24  2  12.11  3  10.48
 90/03/18 15:45:00   1   9.22  2  12.09  3  10.46
 90/03/18 16:00:00   1   9.20  2  12.06  3  10.43
 90/03/18 16:15:00   1   9.19  2  12.04  3  10.41
 90/03/18 16:30:00   1   9.16  2  12.02  3  10.40
 90/03/18 16:45:00   1   9.13  2  11.99  3  10.37
 90/03/18 17:00:00   1   9.11  2  11.95  3  10.35
 90/03/18 17:15:00   1   9.08  2  11.93  3  10.32
 90/03/18 17:30:00   1   9.06  2  11.89  3  10.29
 90/03/18 17:45:00   1   9.04  2  11.88  3  10.27
 90/03/18 18:00:00   1   9.01  2  11.84  3  10.24
 90/03/18 18:15:00   1   8.99  2  11.82  3  10.22
 90/03/18 18:30:00   1   8.96  2  11.79  3  10.20
 90/03/18 18:45:00   1   8.94  2  11.76  3  10.17
 90/03/18 19:00:00   1   8.91  2  11.73  3  10.14
 90/03/18 19:15:00   1   8.88  2  11.69  3  10.12
 90/03/18 19:30:00   1   8.86  2  11.67  3  10.09
 90/03/18 19:45:00   1   8.84  2  11.65  3  10.07
 90/03/18 20:00:00   1   8.81  2  11.63  3  10.05
 90/03/18 20:15:00   1   8.80  2  11.60  3  10.03
 90/03/18 20:30:00   1   8.78  2  11.58  3  10.02
 90/03/18 20:45:00   1   8.77  2  11.57  3  10.01
 90/03/18 21:00:00   1   8.76  2  11.57  3  10.00
 90/03/18 21:15:00   1   8.77  2  11.58  3  10.02
 90/03/18 21:30:00   1   8.78  2  11.60  3  10.03
 90/03/18 21:45:00   1   8.80  2  11.62  3  10.04
 90/03/18 22:00:00   1   8.81  2  11.64  3  10.07
 90/03/18 22:15:00   1   8.83  2  11.67  3  10.09
 90/03/18 22:30:00   1   8.85  2  11.69  3  10.12
 90/03/18 22:45:00   1   8.88  2  11.72  3  10.14
 90/03/18 23:00:00   1   8.90  2  11.76  3  10.18
 90/03/18 23:15:00   1   8.94  2  11.81  3  10.21
 90/03/18 23:30:00   1   8.96  2  11.84  3  10.25
 90/03/18 23:45:00   1   9.00  2  11.88  3  10.28
C  23:45  90/03/18 #02
 90/03/19 00:00:00   1   9.02  2  11.91  3  10.31
 90/03/19 00:15:00   1   9.05  2  11.95  3  10.35
 90/03/19 00:30:00   1   9.08  2  11.99  3  10.38
 90/03/19 00:45:00   1   9.11  2  12.02  3  10.41
 90/03/19 01:00:00   1   9.13  2  12.05  3  10.44
 90/03/19 01:15:00   1   9.16  2  12.08  3  10.47
 90/03/19 01:30:00   1   9.19  2  12.11  3  10.49
 90/03/19 01:45:00   1   9.20  2  12.14  3  10.52
 90/03/19 02:00:00   1   9.24  2  12.17  3  10.55
 90/03/19 02:15:00   1   9.26  2  12.20  3  10.58
```

```
 90/03/19 02:30:00    1    9.28   2   12.22   3   10.60
 90/03/19 02:45:00    1    9.29   2   12.24   3   10.61
 90/03/19 03:00:00    1    9.31   2   12.25   3   10.63
 90/03/19 03:15:00    1    9.32   2   12.27   3   10.65
 90/03/19 03:30:00    1    9.32   2   12.27   3   10.66
 90/03/19 03:45:00    1    9.33   2   12.28   3   10.66
 90/03/19 04:00:00    1    9.32   2   12.27   3   10.65
 90/03/19 04:15:00    1    9.32   2   12.26   3   10.64
 90/03/19 04:30:00    1    9.30   2   12.23   3   10.62
 90/03/19 04:45:00    1    9.28   2   12.21   3   10.61
 90/03/19 05:00:00    1    9.26   2   12.20   3   10.59
 90/03/19 05:15:00    1    9.25   2   12.18   3   10.57
 90/03/19 05:30:00    1    9.24   2   12.16   3   10.56
 90/03/19 05:45:00    1    9.22   2   12.14   3   10.54
 90/03/19 06:00:00    1    9.20   2   12.10   3   10.52
 90/03/19 06:15:00    1    9.17   2   12.08   3   10.49
 90/03/19 06:30:00    1    9.15   2   12.05   3   10.47
 90/03/19 06:45:00    1    9.12   2   12.02   3   10.44
 90/03/19 07:00:00    1    9.10   2   12.00   3   10.42
 90/03/19 07:15:00    1    9.08   2   11.97   3   10.40
 90/03/19 07:30:00    1    9.06   2   11.95   3   10.37
 90/03/19 07:45:00    1    9.04   2   11.92   3   10.35
 90/03/19 08:00:00    1    9.02   2   11.90   3   10.34
 90/03/19 08:15:00    1    9.00   2   11.88   3   10.32
 90/03/19 08:30:00    1    8.99   2   11.86   3   10.29
 90/03/19 08:45:00    1    8.96   2   11.83   3   10.28
C  08:45  90/03/19 #02
C********FILE STA02B.FRW (FOR ESE USE ONLY)
C  STATION ID = 02
C  ****** START PUMP TEST AT 1030 3-20-90 *****
C  08:14  90/03/20 #02
 90/03/20 10:29:59    1    9.19   2   12.00   3   10.59
 90/03/20 10:30:00    1    9.19   2   12.00   3   10.59
 90/03/20 10:30:01    1    9.19   2   12.00   3   10.59
 90/03/20 10:30:02    1    9.18   2   11.99   3   10.58
 90/03/20 10:30:03    1    9.18   2   11.99   3   10.58
 90/03/20 10:30:04    1    9.17   2   11.98   3   10.58
 90/03/20 10:30:05    1    9.17   2   11.97   3   10.57
 90/03/20 10:30:06    1    9.15   2   11.96   3   10.56
 90/03/20 10:30:07    1    9.15   2   11.96   3   10.55
 90/03/20 10:30:08    1    9.14   2   11.95   3   10.54
 90/03/20 10:30:09    1    9.13   2   11.95   3   10.54
 90/03/20 10:30:10    1    9.13   2   11.95   3   10.54
 90/03/20 10:30:11    1    9.13   2   11.94   3   10.53
 90/03/20 10:30:12    1    9.13   2   11.94   3   10.53
 90/03/20 10:30:13    1    9.13   2   11.94   3   10.53
 90/03/20 10:30:14    1    9.13   2   11.93   3   10.52
 90/03/20 10:30:15    1    9.12   2   11.93   3   10.52
 90/03/20 10:30:16    1    9.12   2   11.93   3   10.52
 90/03/20 10:30:17    1    9.12   2   11.93   3   10.51
 90/03/20 10:30:18    1    9.11   2   11.92   3   10.52
 90/03/20 10:30:19    1    9.11   2   11.92   3   10.51
 90/03/20 10:30:20    1    9.11   2   11.92   3   10.51
 90/03/20 10:30:21    1    9.11   2   11.92   3   10.51
 90/03/20 10:30:22    1    9.11   2   11.92   3   10.51
 90/03/20 10:30:23    1    9.10   2   11.91   3   10.50
 90/03/20 10:30:24    1    9.10   2   11.91   3   10.50
 90/03/20 10:30:25    1    9.10   2   11.91   3   10.50
 90/03/20 10:30:26    1    9.10   2   11.91   3   10.50
 90/03/20 10:30:27    1    9.10   2   11.91   3   10.50
```

90/03/20	10:30:28	1	9.10	2	11.90	3	10.50
90/03/20	10:30:29	1	9.10	2	11.90	3	10.49
90/03/20	10:30:30	1	9.10	2	11.90	3	10.49
90/03/20	10:30:31	1	9.10	2	11.90	3	10.49
90/03/20	10:30:32	1	9.10	2	11.90	3	10.49
90/03/20	10:30:33	1	9.09	2	11.90	3	10.49
90/03/20	10:30:34	1	9.10	2	11.90	3	10.49
90/03/20	10:30:35	1	9.10	2	11.90	3	10.49
90/03/20	10:30:36	1	9.09	2	11.90	3	10.49
90/03/20	10:30:37	1	9.09	2	11.89	3	10.48
90/03/20	10:30:38	1	9.09	2	11.89	3	10.48
90/03/20	10:30:39	1	9.09	2	11.89	3	10.48
90/03/20	10:30:40	1	9.09	2	11.89	3	10.48
90/03/20	10:30:41	1	9.09	2	11.89	3	10.48
90/03/20	10:30:42	1	9.09	2	11.89	3	10.48
90/03/20	10:30:43	1	9.09	2	11.89	3	10.48
90/03/20	10:30:44	1	9.09	2	11.89	3	10.48
90/03/20	10:30:45	1	9.09	2	11.89	3	10.48
90/03/20	10:30:46	1	9.09	2	11.89	3	10.48
90/03/20	10:30:47	1	9.08	2	11.89	3	10.48
90/03/20	10:30:48	1	9.09	2	11.89	3	10.48
90/03/20	10:30:49	1	9.08	2	11.89	3	10.48
90/03/20	10:30:50	1	9.08	2	11.89	3	10.48
90/03/20	10:30:51	1	9.08	2	11.89	3	10.48
90/03/20	10:30:52	1	9.08	2	11.89	3	10.48
90/03/20	10:30:53	1	9.09	2	11.89	3	10.48
90/03/20	10:30:54	1	9.09	2	11.89	3	10.48
90/03/20	10:30:55	1	9.08	2	11.89	3	10.48
90/03/20	10:30:56	1	9.08	2	11.89	3	10.48
90/03/20	10:30:57	1	9.08	2	11.88	3	10.48
90/03/20	10:30:58	1	9.08	2	11.88	3	10.48
90/03/20	10:30:59	1	9.08	2	11.88	3	10.48
90/03/20	10:31:00	1	9.08	2	11.88	3	10.48
90/03/20	10:31:01	1	9.08	2	11.88	3	10.47
90/03/20	10:31:02	1	9.08	2	11.88	3	10.47
90/03/20	10:31:03	1	9.08	2	11.88	3	10.48
90/03/20	10:31:04	1	9.08	2	11.88	3	10.48
90/03/20	10:31:05	1	9.07	2	11.88	3	10.48
90/03/20	10:31:06	1	9.07	2	11.87	3	10.47
90/03/20	10:31:07	1	9.07	2	11.87	3	10.47
90/03/20	10:31:08	1	9.07	2	11.87	3	10.47
90/03/20	10:31:09	1	9.08	2	11.88	3	10.47
90/03/20	10:31:10	1	9.08	2	11.87	3	10.47
90/03/20	10:31:11	1	9.08	2	11.88	3	10.47
90/03/20	10:31:12	1	9.08	2	11.87	3	10.47
90/03/20	10:31:13	1	9.07	2	11.87	3	10.47
90/03/20	10:31:14	1	9.07	2	11.87	3	10.47
90/03/20	10:31:15	1	9.07	2	11.87	3	10.47
90/03/20	10:31:16	1	9.07	2	11.87	3	10.47
90/03/20	10:31:17	1	9.07	2	11.87	3	10.47
90/03/20	10:31:18	1	9.07	2	11.87	3	10.47
90/03/20	10:31:19	1	9.08	2	11.87	3	10.47
90/03/20	10:31:20	1	9.08	2	11.87	3	10.47
90/03/20	10:31:21	1	9.07	2	11.87	3	10.47
90/03/20	10:31:22	1	9.08	2	11.87	3	10.47
90/03/20	10:31:23	1	9.08	2	11.87	3	10.47
90/03/20	10:31:24	1	9.07	2	11.87	3	10.47
90/03/20	10:31:25	1	9.07	2	11.87	3	10.47
90/03/20	10:31:26	1	9.07	2	11.87	3	10.47
90/03/20	10:31:27	1	9.07	2	11.86	3	10.46

90/03/20	10:31:28	1	9.07	2	11.86	3	10.46
90/03/20	10:31:29	1	9.07	2	11.87	3	10.47
90/03/20	10:31:30	1	9.07	2	11.87	3	10.47
90/03/20	10:31:31	1	9.07	2	11.87	3	10.47
90/03/20	10:31:32	1	9.07	2	11.86	3	10.46
90/03/20	10:31:33	1	9.07	2	11.86	3	10.46
90/03/20	10:31:34	1	9.07	2	11.86	3	10.46
90/03/20	10:31:35	1	9.07	2	11.86	3	10.46
90/03/20	10:31:36	1	9.07	2	11.86	3	10.46
90/03/20	10:31:37	1	9.07	2	11.86	3	10.46
90/03/20	10:31:38	1	9.07	2	11.86	3	10.46
90/03/20	10:31:39	1	9.07	2	11.86	3	10.46
90/03/20	10:31:40	1	9.07	2	11.86	3	10.46
90/03/20	10:31:41	1	9.07	2	11.86	3	10.46
90/03/20	10:31:42	1	9.07	2	11.86	3	10.46
90/03/20	10:31:43	1	9.07	2	11.86	3	10.46
90/03/20	10:31:44	1	9.07	2	11.86	3	10.46
90/03/20	10:31:45	1	9.07	2	11.86	3	10.46
90/03/20	10:31:46	1	9.07	2	11.86	3	10.46
90/03/20	10:31:47	1	9.07	2	11.85	3	10.46
90/03/20	10:31:48	1	9.07	2	11.85	3	10.46
90/03/20	10:31:49	1	9.07	2	11.86	3	10.46
90/03/20	10:31:50	1	9.07	2	11.86	3	10.46
90/03/20	10:31:51	1	9.07	2	11.85	3	10.45
90/03/20	10:31:52	1	9.07	2	11.85	3	10.45
90/03/20	10:31:53	1	9.07	2	11.85	3	10.45
90/03/20	10:31:54	1	9.07	2	11.86	3	10.46
90/03/20	10:31:55	1	9.07	2	11.85	3	10.46
90/03/20	10:31:56	1	9.07	2	11.85	3	10.45
90/03/20	10:31:57	1	9.07	2	11.85	3	10.45
90/03/20	10:31:58	1	9.07	2	11.85	3	10.45
90/03/20	10:31:59	1	9.07	2	11.85	3	10.45
90/03/20	10:32:14	1	9.07	2	11.85	3	10.45
90/03/20	10:32:29	1	9.07	2	11.84	3	10.45
90/03/20	10:32:44	1	9.07	2	11.84	3	10.44
90/03/20	10:32:59	1	9.07	2	11.84	3	10.44
90/03/20	10:33:14	1	9.07	2	11.83	3	10.43
90/03/20	10:33:29	1	9.07	2	11.82	3	10.43
90/03/20	10:33:44	1	9.07	2	11.82	3	10.43
90/03/20	10:33:59	1	9.07	2	11.82	3	10.43
90/03/20	10:34:14	1	9.07	2	11.82	3	10.42
90/03/20	10:34:29	1	9.07	2	11.82	3	10.42
90/03/20	10:34:44	1	9.07	2	11.82	3	10.42
90/03/20	10:34:59	1	9.06	2	11.81	3	10.41
90/03/20	10:35:14	1	9.07	2	11.82	3	10.41
90/03/20	10:35:29	1	9.07	2	11.81	3	10.41
90/03/20	10:35:44	1	9.07	2	11.81	3	10.41
90/03/20	10:35:59	1	9.07	2	11.81	3	10.41
90/03/20	10:36:14	1	9.06	2	11.80	3	10.41
90/03/20	10:36:29	1	9.07	2	11.81	3	10.41
90/03/20	10:36:44	1	9.07	2	11.80	3	10.41
90/03/20	10:36:59	1	9.07	2	11.80	3	10.41
90/03/20	10:37:14	1	9.06	2	11.79	3	10.40
90/03/20	10:37:29	1	9.07	2	11.78	3	10.40
90/03/20	10:37:44	1	9.07	2	11.79	3	10.40
90/03/20	10:37:59	1	9.06	2	11.78	3	10.39
90/03/20	10:38:14	1	9.06	2	11.78	3	10.39
90/03/20	10:38:29	1	9.06	2	11.78	3	10.39
90/03/20	10:38:44	1	9.06	2	11.77	3	10.38
90/03/20	10:38:59	1	9.07	2	11.77	3	10.38

90/03/20	10:39:14	1	9.07	2	11.77	3	10.38
90/03/20	10:39:29	1	9.07	2	11.76	3	10.38
90/03/20	10:39:44	1	9.07	2	11.77	3	10.38
90/03/20	10:39:59	1	9.06	2	11.76	3	10.38
90/03/20	10:40:14	1	9.06	2	11.76	3	10.37
90/03/20	10:40:29	1	9.06	2	11.76	3	10.37
90/03/20	10:40:44	1	9.06	2	11.76	3	10.37
90/03/20	10:40:59	1	9.06	2	11.76	3	10.37
90/03/20	10:41:14	1	9.06	2	11.75	3	10.37
90/03/20	10:41:29	1	9.07	2	11.76	3	10.37
90/03/20	10:41:44	1	9.07	2	11.76	3	10.37
90/03/20	10:41:59	1	9.07	2	11.75	3	10.37
90/03/20	10:42:14	1	9.07	2	11.75	3	10.37
90/03/20	10:42:29	1	9.07	2	11.74	3	10.36
90/03/20	10:42:44	1	9.07	2	11.74	3	10.36
90/03/20	10:42:59	1	9.07	2	11.74	3	10.36
90/03/20	10:43:14	1	9.07	2	11.74	3	10.36
90/03/20	10:43:29	1	9.07	2	11.74	3	10.36
90/03/20	10:43:44	1	9.06	2	11.74	3	10.36
90/03/20	10:43:59	1	9.07	2	11.73	3	10.36
90/03/20	10:44:14	1	9.07	2	11.74	3	10.36
90/03/20	10:44:29	1	9.06	2	11.73	3	10.35
90/03/20	10:44:44	1	9.06	2	11.73	3	10.35
90/03/20	10:44:59	1	9.07	2	11.72	3	10.35
90/03/20	10:45:29	1	9.07	2	11.73	3	10.35
90/03/20	10:45:59	1	9.07	2	11.72	3	10.35
90/03/20	10:46:29	1	9.07	2	11.69	3	10.35
90/03/20	10:46:59	1	9.06	2	11.71	3	10.35
90/03/20	10:47:29	1	9.06	2	11.71	3	10.35
90/03/20	10:47:59	1	9.07	2	11.71	3	10.35
90/03/20	10:48:29	1	9.06	2	11.70	3	10.34
90/03/20	10:48:59	1	9.06	2	11.70	3	10.34
90/03/20	10:49:29	1	9.06	2	11.70	3	10.34
90/03/20	10:49:59	1	9.06	2	11.69	3	10.34
90/03/20	10:50:29	1	9.06	2	11.70	3	10.34
90/03/20	10:50:59	1	9.06	2	11.69	3	10.33
90/03/20	10:51:29	1	9.06	2	11.69	3	10.33
90/03/20	10:51:59	1	9.06	2	11.69	3	10.33
90/03/20	10:52:29	1	9.05	2	11.69	3	10.33
90/03/20	10:52:59	1	9.05	2	11.69	3	10.32
90/03/20	10:53:29	1	9.05	2	11.69	3	10.32
90/03/20	10:53:59	1	9.05	2	11.69	3	10.33
90/03/20	10:54:29	1	9.05	2	11.68	3	10.32
90/03/20	10:54:59	1	9.05	2	11.69	3	10.32
90/03/20	10:55:29	1	9.05	2	11.68	3	10.32
90/03/20	10:55:59	1	9.05	2	11.68	3	10.32
90/03/20	10:56:29	1	9.05	2	11.68	3	10.32
90/03/20	10:56:59	1	9.05	2	11.68	3	10.31
90/03/20	10:57:29	1	9.05	2	11.68	3	10.31
90/03/20	10:57:59	1	9.05	2	11.68	3	10.31
90/03/20	10:58:29	1	9.05	2	11.68	3	10.31
90/03/20	10:58:59	1	9.04	2	11.68	3	10.31
90/03/20	10:59:29	1	9.04	2	11.68	3	10.31
90/03/20	10:59:59	1	9.04	2	11.67	3	10.30
90/03/20	11:00:29	1	9.04	2	11.68	3	10.31
90/03/20	11:00:59	1	9.04	2	11.68	3	10.31
90/03/20	11:01:29	1	9.03	2	11.67	3	10.30
90/03/20	11:01:59	1	9.04	2	11.67	3	10.30
90/03/20	11:02:29	1	9.04	2	11.67	3	10.30
90/03/20	11:02:59	1	9.04	2	11.68	3	10.31

90/03/20	11:03:29	1	9.04	2	11.67	3	10.30
90/03/20	11:03:59	1	9.04	2	11.67	3	10.30
90/03/20	11:04:29	1	9.03	2	11.67	3	10.29
90/03/20	11:04:59	1	9.03	2	11.67	3	10.29
90/03/20	11:05:29	1	9.03	2	11.67	3	10.29
90/03/20	11:05:59	1	9.03	2	11.67	3	10.29
90/03/20	11:06:29	1	9.03	2	11.67	3	10.29
90/03/20	11:06:59	1	9.02	2	11.66	3	10.29
90/03/20	11:07:29	1	9.03	2	11.67	3	10.29
90/03/20	11:07:59	1	9.03	2	11.66	3	10.29
90/03/20	11:08:29	1	9.03	2	11.67	3	10.29
90/03/20	11:08:59	1	9.03	2	11.66	3	10.29
90/03/20	11:09:29	1	9.02	2	11.67	3	10.29
90/03/20	11:09:59	1	9.03	2	11.67	3	10.29
90/03/20	11:10:29	1	9.02	2	11.66	3	10.29
90/03/20	11:10:59	1	9.03	2	11.67	3	10.29
90/03/20	11:11:29	1	9.02	2	11.67	3	10.29
90/03/20	11:11:59	1	9.03	2	11.67	3	10.29
90/03/20	11:12:29	1	9.02	2	11.67	3	10.29
90/03/20	11:12:59	1	9.03	2	11.68	3	10.29
90/03/20	11:13:29	1	9.02	2	11.67	3	10.29
90/03/20	11:13:59	1	9.02	2	11.68	3	10.29
90/03/20	11:14:29	1	9.02	2	11.68	3	10.29
90/03/20	11:14:59	1	9.02	2	11.67	3	10.28
90/03/20	11:15:29	1	9.02	2	11.68	3	10.29
90/03/20	11:15:59	1	9.02	2	11.67	3	10.28
90/03/20	11:16:29	1	9.02	2	11.68	3	10.29
90/03/20	11:16:59	1	9.02	2	11.68	3	10.28
90/03/20	11:17:29	1	9.02	2	11.68	3	10.29
90/03/20	11:17:59	1	9.02	2	11.68	3	10.28
90/03/20	11:18:29	1	9.02	2	11.67	3	10.29
90/03/20	11:18:59	1	9.01	2	11.68	3	10.28
90/03/20	11:19:29	1	9.01	2	11.68	3	10.28
90/03/20	11:19:59	1	9.02	2	11.69	3	10.29
90/03/20	11:20:29	1	9.01	2	11.68	3	10.29
90/03/20	11:20:59	1	9.02	2	11.69	3	10.29
90/03/20	11:21:29	1	9.01	2	11.68	3	10.28
90/03/20	11:21:59	1	9.01	2	11.69	3	10.29
90/03/20	11:22:29	1	9.02	2	11.69	3	10.29
90/03/20	11:22:59	1	9.02	2	11.69	3	10.29
90/03/20	11:23:29	1	9.01	2	11.69	3	10.28
90/03/20	11:23:59	1	9.01	2	11.69	3	10.28
90/03/20	11:24:29	1	9.01	2	11.68	3	10.28
90/03/20	11:24:59	1	9.01	2	11.69	3	10.29
90/03/20	11:25:29	1	9.01	2	11.69	3	10.29
90/03/20	11:25:59	1	9.01	2	11.69	3	10.28
90/03/20	11:26:29	1	9.01	2	11.69	3	10.28
90/03/20	11:26:59	1	9.00	2	11.69	3	10.28
90/03/20	11:27:29	1	9.00	2	11.69	3	10.28
90/03/20	11:27:59	1	9.00	2	11.69	3	10.28
90/03/20	11:28:29	1	9.00	2	11.69	3	10.28
90/03/20	11:28:59	1	9.00	2	11.69	3	10.28
90/03/20	11:29:29	1	9.01	2	11.69	3	10.28
90/03/20	11:29:59	1	9.00	2	11.69	3	10.28
90/03/20	11:30:59	1	9.00	2	11.69	3	10.29
90/03/20	11:31:59	1	9.00	2	11.69	3	10.28
90/03/20	11:32:59	1	9.00	2	11.69	3	10.28
90/03/20	11:33:59	1	9.00	2	11.69	3	10.28
90/03/20	11:34:59	1	9.00	2	11.69	3	10.28
90/03/20	11:35:59	1	9.00	2	11.70	3	10.29

90/03/20	11:36:59	1	9.00	2	11.70	3	10.29
90/03/20	11:37:59	1	9.00	2	11.71	3	10.29
90/03/20	11:38:59	1	9.00	2	11.71	3	10.29
90/03/20	11:39:59	1	9.00	2	11.70	3	10.28
90/03/20	11:40:59	1	8.99	2	11.70	3	10.28
90/03/20	11:41:59	1	9.00	2	11.71	3	10.29
90/03/20	11:42:59	1	9.00	2	11.72	3	10.29
90/03/20	11:43:59	1	9.00	2	11.72	3	10.29
90/03/20	11:44:59	1	9.00	2	11.73	3	10.30
90/03/20	11:45:59	1	9.01	2	11.73	3	10.30
90/03/20	11:46:59	1	9.00	2	11.73	3	10.29
90/03/20	11:47:59	1	9.01	2	11.74	3	10.30
90/03/20	11:48:59	1	9.01	2	11.75	3	10.31
90/03/20	11:49:59	1	9.01	2	11.75	3	10.31
90/03/20	11:50:59	1	9.01	2	11.75	3	10.31
90/03/20	11:51:59	1	9.01	2	11.75	3	10.31
90/03/20	11:52:59	1	9.01	2	11.75	3	10.31
90/03/20	11:53:59	1	9.01	2	11.74	3	10.31
90/03/20	11:54:59	1	9.00	2	11.74	3	10.30
90/03/20	11:55:59	1	9.00	2	11.75	3	10.30
90/03/20	11:56:59	1	9.00	2	11.75	3	10.30
90/03/20	11:57:59	1	9.00	2	11.76	3	10.31
90/03/20	11:58:59	1	9.00	2	11.76	3	10.31
90/03/20	11:59:59	1	9.01	2	11.76	3	10.31
90/03/20	12:00:59	1	9.01	2	11.76	3	10.31
90/03/20	12:01:59	1	9.01	2	11.76	3	10.32
90/03/20	12:02:59	1	9.01	2	11.76	3	10.32
90/03/20	12:03:59	1	9.01	2	11.77	3	10.32
90/03/20	12:04:59	1	9.01	2	11.76	3	10.32
90/03/20	12:05:59	1	9.01	2	11.77	3	10.32
90/03/20	12:06:59	1	9.01	2	11.77	3	10.32
90/03/20	12:07:59	1	9.01	2	11.78	3	10.32
90/03/20	12:08:59	1	9.01	2	11.78	3	10.33
90/03/20	12:09:59	1	9.01	2	11.78	3	10.32
90/03/20	12:10:59	1	9.02	2	11.79	3	10.33
90/03/20	12:11:59	1	9.01	2	11.79	3	10.33
90/03/20	12:12:59	1	9.01	2	11.78	3	10.33
90/03/20	12:13:59	1	9.01	2	11.79	3	10.33
90/03/20	12:14:59	1	9.02	2	11.80	3	10.34
90/03/20	12:15:59	1	9.02	2	11.80	3	10.34
90/03/20	12:16:59	1	9.02	2	11.81	3	10.34
90/03/20	12:17:59	1	9.01	2	11.80	3	10.34
90/03/20	12:18:59	1	9.02	2	11.81	3	10.34
90/03/20	12:19:59	1	9.01	2	11.80	3	10.33
90/03/20	12:20:59	1	9.02	2	11.81	3	10.34
90/03/20	12:21:59	1	9.02	2	11.81	3	10.34
90/03/20	12:22:59	1	9.01	2	11.81	3	10.34
90/03/20	12:23:59	1	9.02	2	11.82	3	10.34
90/03/20	12:24:59	1	9.02	2	11.82	3	10.34
90/03/20	12:25:59	1	9.02	2	11.82	3	10.35
90/03/20	12:26:59	1	9.02	2	11.82	3	10.35
90/03/20	12:27:59	1	9.02	2	11.82	3	10.35
90/03/20	12:28:59	1	9.02	2	11.82	3	10.35
90/03/20	12:29:59	1	9.02	2	11.82	3	10.35
90/03/20	12:30:59	1	9.02	2	11.82	3	10.35
90/03/20	12:31:59	1	9.02	2	11.82	3	10.35
90/03/20	12:32:59	1	9.03	2	11.83	3	10.35
90/03/20	12:33:59	1	9.02	2	11.83	3	10.35
90/03/20	12:34:59	1	9.02	2	11.83	3	10.35
90/03/20	12:35:59	1	9.03	2	11.84	3	10.35

90/03/20	12:36:59	1	9.02	2	11.83	3	10.35
90/03/20	12:37:59	1	9.03	2	11.84	3	10.35
90/03/20	12:38:59	1	9.03	2	11.84	3	10.35
90/03/20	12:39:59	1	9.02	2	11.84	3	10.35
90/03/20	12:40:59	1	9.02	2	11.84	3	10.35
90/03/20	12:41:59	1	9.02	2	11.84	3	10.35
90/03/20	12:42:59	1	9.03	2	11.85	3	10.35
90/03/20	12:43:59	1	9.02	2	11.85	3	10.36
90/03/20	12:44:59	1	9.03	2	11.86	3	10.36
90/03/20	12:45:59	1	9.03	2	11.86	3	10.36
90/03/20	12:46:59	1	9.03	2	11.86	3	10.36
90/03/20	12:47:59	1	9.03	2	11.86	3	10.36
90/03/20	12:48:59	1	9.03	2	11.86	3	10.36
90/03/20	12:49:59	1	9.03	2	11.86	3	10.36
90/03/20	12:50:59	1	9.03	2	11.86	3	10.36
90/03/20	12:51:59	1	9.04	2	11.87	3	10.37
90/03/20	12:52:59	1	9.03	2	11.87	3	10.36
90/03/20	12:53:59	1	9.03	2	11.87	3	10.36
90/03/20	12:54:59	1	9.03	2	11.87	3	10.37
90/03/20	12:55:59	1	9.04	2	11.89	3	10.38
90/03/20	12:56:59	1	9.04	2	11.88	3	10.37
90/03/20	12:57:59	1	9.04	2	11.88	3	10.37
90/03/20	12:58:59	1	9.04	2	11.88	3	10.37
90/03/20	12:59:59	1	9.04	2	11.89	3	10.38
90/03/20	13:00:59	1	9.04	2	11.89	3	10.38
90/03/20	13:01:59	1	9.04	2	11.89	3	10.38
90/03/20	13:02:59	1	9.04	2	11.89	3	10.38
90/03/20	13:03:59	1	9.05	2	11.89	3	10.38
90/03/20	13:04:59	1	9.04	2	11.89	3	10.38
90/03/20	13:05:59	1	9.05	2	11.89	3	10.39
90/03/20	13:06:59	1	9.05	2	11.89	3	10.39
90/03/20	13:07:59	1	9.04	2	11.89	3	10.39
90/03/20	13:08:59	1	9.05	2	11.89	3	10.39
90/03/20	13:09:59	1	9.05	2	11.89	3	10.39
90/03/20	13:10:59	1	9.05	2	11.89	3	10.39
90/03/20	13:11:59	1	9.05	2	11.89	3	10.39
90/03/20	13:12:59	1	9.05	2	11.90	3	10.40
90/03/20	13:13:59	1	9.05	2	11.90	3	10.40
90/03/20	13:14:59	1	9.05	2	11.90	3	10.40
90/03/20	13:15:59	1	9.06	2	11.91	3	10.40
90/03/20	13:16:59	1	9.06	2	11.90	3	10.40
90/03/20	13:17:59	1	9.06	2	11.91	3	10.40
90/03/20	13:18:59	1	9.06	2	11.91	3	10.41
90/03/20	13:19:59	1	9.06	2	11.92	3	10.41
90/03/20	13:20:59	1	9.06	2	11.92	3	10.41
90/03/20	13:21:59	1	9.06	2	11.92	3	10.41
90/03/20	13:22:59	1	9.06	2	11.92	3	10.40
90/03/20	13:23:59	1	9.06	2	11.92	3	10.41
90/03/20	13:24:59	1	9.06	2	11.92	3	10.40
90/03/20	13:25:59	1	9.07	2	11.93	3	10.41
90/03/20	13:26:59	1	9.07	2	11.93	3	10.41
90/03/20	13:27:59	1	9.07	2	11.93	3	10.41
90/03/20	13:28:59	1	9.07	2	11.93	3	10.41
90/03/20	13:29:59	1	9.07	2	11.94	3	10.41
90/03/20	13:30:59	1	9.07	2	11.94	3	10.41
90/03/20	13:31:59	1	9.07	2	11.94	3	10.41
90/03/20	13:32:59	1	9.07	2	11.94	3	10.42
90/03/20	13:33:59	1	9.07	2	11.94	3	10.42
90/03/20	13:34:59	1	9.07	2	11.95	3	10.42
90/03/20	13:35:59	1	9.07	2	11.95	3	10.42

90/03/20	13:36:59	1	9.07	2	11.95	3	10.42
90/03/20	13:37:59	1	9.08	2	11.95	3	10.42
90/03/20	13:38:59	1	9.08	2	11.95	3	10.42
90/03/20	13:39:59	1	9.08	2	11.95	3	10.42
90/03/20	13:40:59	1	9.08	2	11.95	3	10.43
90/03/20	13:41:59	1	9.08	2	11.96	3	10.43
90/03/20	13:42:59	1	9.08	2	11.96	3	10.43
90/03/20	13:43:59	1	9.09	2	11.96	3	10.43
90/03/20	13:44:59	1	9.08	2	11.96	3	10.43
90/03/20	13:45:59	1	9.08	2	11.96	3	10.43
90/03/20	13:46:59	1	9.09	2	11.97	3	10.44
90/03/20	13:47:59	1	9.09	2	11.96	3	10.44
90/03/20	13:48:59	1	9.09	2	11.95	3	10.44
90/03/20	13:49:59	1	9.09	2	11.96	3	10.44
90/03/20	13:50:59	1	9.09	2	11.98	3	10.45
90/03/20	13:51:59	1	9.10	2	11.98	3	10.45
90/03/20	13:52:59	1	9.10	2	11.98	3	10.45
90/03/20	13:53:59	1	9.10	2	11.98	3	10.45
90/03/20	13:54:59	1	9.10	2	11.97	3	10.45
90/03/20	13:55:59	1	9.10	2	11.98	3	10.47
90/03/20	13:56:59	1	9.10	2	11.98	3	10.46
90/03/20	13:57:59	1	9.10	2	11.99	3	10.46
90/03/20	13:58:59	1	9.10	2	11.99	3	10.46
90/03/20	13:59:59	1	9.11	2	11.99	3	10.46
90/03/20	14:00:59	1	9.10	2	11.99	3	10.46
90/03/20	14:01:59	1	9.11	2	12.00	3	10.47
90/03/20	14:02:59	1	9.11	2	11.99	3	10.46
90/03/20	14:03:59	1	9.12	2	12.01	3	10.47
90/03/20	14:04:59	1	9.12	2	12.01	3	10.47
90/03/20	14:05:59	1	9.12	2	12.01	3	10.47
90/03/20	14:06:59	1	9.11	2	12.01	3	10.47
90/03/20	14:07:59	1	9.12	2	12.01	3	10.47
90/03/20	14:08:59	1	9.12	2	12.01	3	10.47
90/03/20	14:09:59	1	9.12	2	12.02	3	10.48
90/03/20	14:10:59	1	9.12	2	12.02	3	10.48
90/03/20	14:11:59	1	9.12	2	12.02	3	10.48
90/03/20	14:12:59	1	9.12	2	12.02	3	10.48
90/03/20	14:13:59	1	9.12	2	12.02	3	10.48
90/03/20	14:14:59	1	9.13	2	12.02	3	10.48
90/03/20	14:15:59	1	9.13	2	12.02	3	10.48
90/03/20	14:16:59	1	9.13	2	12.02	3	10.48
90/03/20	14:17:59	1	9.12	2	12.02	3	10.48
90/03/20	14:18:59	1	9.13	2	12.02	3	10.48
90/03/20	14:19:59	1	9.13	2	12.03	3	10.49
90/03/20	14:20:59	1	9.13	2	12.02	3	10.48
90/03/20	14:21:59	1	9.13	2	12.03	3	10.49
90/03/20	14:22:59	1	9.13	2	12.03	3	10.49
90/03/20	14:23:59	1	9.13	2	12.03	3	10.49
90/03/20	14:24:59	1	9.13	2	12.03	3	10.49
90/03/20	14:25:59	1	9.14	2	12.03	3	10.49
90/03/20	14:26:59	1	9.13	2	12.04	3	10.49
90/03/20	14:27:59	1	9.13	2	12.04	3	10.49
90/03/20	14:28:59	1	9.14	2	12.04	3	10.50
90/03/20	14:29:59	1	9.14	2	12.04	3	10.50
90/03/20	14:30:59	1	9.14	2	12.04	3	10.50
90/03/20	14:31:59	1	9.14	2	12.05	3	10.51
90/03/20	14:32:59	1	9.14	2	12.04	3	10.50
90/03/20	14:33:59	1	9.14	2	12.04	3	10.50
90/03/20	14:34:59	1	9.14	2	12.04	3	10.49
90/03/20	14:35:59	1	9.14	2	12.04	3	10.50

90/03/20	14:36:59	1	9.14	2	12.05	3	10.50
90/03/20	14:37:59	1	9.14	2	12.04	3	10.50
90/03/20	14:38:59	1	9.14	2	12.04	3	10.50
90/03/20	14:39:59	1	9.14	2	12.04	3	10.50
90/03/20	14:40:59	1	9.14	2	12.05	3	10.50
90/03/20	14:41:59	1	9.13	2	12.04	3	10.50
90/03/20	14:42:59	1	9.14	2	12.04	3	10.50
90/03/20	14:43:59	1	9.14	2	12.04	3	10.50
90/03/20	14:44:59	1	9.14	2	12.04	3	10.50
90/03/20	14:45:59	1	9.14	2	12.04	3	10.50
90/03/20	14:46:59	1	9.14	2	12.05	3	10.50
90/03/20	14:47:59	1	9.14	2	12.04	3	10.50
90/03/20	14:48:59	1	9.15	2	12.05	3	10.50
90/03/20	14:49:59	1	9.14	2	12.05	3	10.50
90/03/20	14:50:59	1	9.14	2	12.05	3	10.50
90/03/20	14:51:59	1	9.14	2	12.04	3	10.50
90/03/20	14:52:59	1	9.14	2	12.04	3	10.50
90/03/20	14:53:59	1	9.14	2	12.04	3	10.50
90/03/20	14:54:59	1	9.15	2	12.05	3	10.51
90/03/20	14:55:59	1	9.14	2	12.05	3	10.50
90/03/20	14:56:59	1	9.15	2	12.05	3	10.51
90/03/20	14:57:59	1	9.15	2	12.05	3	10.50
90/03/20	14:58:59	1	9.15	2	12.05	3	10.51
90/03/20	14:59:59	1	9.15	2	12.05	3	10.51
90/03/20	15:00:59	1	9.15	2	12.05	3	10.50
90/03/20	15:01:59	1	9.15	2	12.05	3	10.51
90/03/20	15:02:59	1	9.14	2	12.05	3	10.51
90/03/20	15:03:59	1	9.15	2	12.06	3	10.52
90/03/20	15:04:59	1	9.16	2	12.06	3	10.52
90/03/20	15:05:59	1	9.16	2	12.06	3	10.51
90/03/20	15:06:59	1	9.15	2	12.06	3	10.51
90/03/20	15:07:59	1	9.16	2	12.06	3	10.52
90/03/20	15:08:59	1	9.15	2	12.05	3	10.51
90/03/20	15:09:59	1	9.15	2	12.06	3	10.51
90/03/20	15:10:59	1	9.15	2	12.06	3	10.52
90/03/20	15:11:59	1	9.16	2	12.07	3	10.52
90/03/20	15:12:59	1	9.16	2	12.07	3	10.52
90/03/20	15:13:59	1	9.16	2	12.07	3	10.52
90/03/20	15:14:59	1	9.16	2	12.06	3	10.52
90/03/20	15:15:59	1	9.16	2	12.07	3	10.52
90/03/20	15:16:59	1	9.16	2	12.07	3	10.52
90/03/20	15:17:59	1	9.17	2	12.08	3	10.53
90/03/20	15:18:59	1	9.17	2	12.08	3	10.53
90/03/20	15:19:59	1	9.17	2	12.08	3	10.53
90/03/20	15:20:59	1	9.17	2	12.08	3	10.54
90/03/20	15:21:59	1	9.17	2	12.08	3	10.53
90/03/20	15:22:59	1	9.18	2	12.08	3	10.54
90/03/20	15:23:59	1	9.18	2	12.08	3	10.54
90/03/20	15:24:59	1	9.18	2	12.08	3	10.54
90/03/20	15:25:59	1	9.18	2	12.08	3	10.54
90/03/20	15:26:59	1	9.19	2	12.08	3	10.54
90/03/20	15:27:59	1	9.19	2	12.09	3	10.54
90/03/20	15:28:59	1	9.19	2	12.09	3	10.54
90/03/20	15:29:59	1	9.19	2	12.09	3	10.54
90/03/20	15:30:59	1	9.19	2	12.09	3	10.54
90/03/20	15:31:59	1	9.19	2	12.09	3	10.54
90/03/20	15:32:59	1	9.19	2	12.09	3	10.54
90/03/20	15:33:59	1	9.19	2	12.09	3	10.54
90/03/20	15:34:59	1	9.18	2	12.09	3	10.54
90/03/20	15:35:59	1	9.19	2	12.10	3	10.54

90/03/20	15:36:59	1	9.19	2	12.09	3	10.54
90/03/20	15:37:59	1	9.19	2	12.10	3	10.55
90/03/20	15:38:59	1	9.18	2	12.09	3	10.54
90/03/20	15:39:59	1	9.20	2	12.10	3	10.55
90/03/20	15:40:59	1	9.20	2	12.10	3	10.55
90/03/20	15:41:59	1	9.20	2	12.11	3	10.55
90/03/20	15:42:59	1	9.20	2	12.11	3	10.55
90/03/20	15:43:59	1	9.20	2	12.11	3	10.56
90/03/20	15:44:59	1	9.20	2	12.11	3	10.55
90/03/20	15:45:59	1	9.20	2	12.11	3	10.56
90/03/20	15:46:59	1	9.20	2	12.11	3	10.56
90/03/20	15:47:59	1	9.20	2	12.11	3	10.56
90/03/20	15:48:59	1	9.20	2	12.11	3	10.56
90/03/20	15:49:59	1	9.20	2	12.11	3	10.56
90/03/20	15:50:59	1	9.20	2	12.11	3	10.56
90/03/20	15:51:59	1	9.20	2	12.11	3	10.56
90/03/20	15:52:59	1	9.20	2	12.12	3	10.57
90/03/20	15:53:59	1	9.20	2	12.12	3	10.57
90/03/20	15:54:59	1	9.20	2	12.12	3	10.56
90/03/20	15:55:59	1	9.20	2	12.12	3	10.57
90/03/20	15:56:59	1	9.20	2	12.12	3	10.57
90/03/20	15:57:59	1	9.20	2	12.12	3	10.56
90/03/20	15:58:59	1	9.20	2	12.12	3	10.57
90/03/20	15:59:59	1	9.21	2	12.13	3	10.57
90/03/20	16:00:59	1	9.21	2	12.13	3	10.57
90/03/20	16:01:59	1	9.21	2	12.13	3	10.58
90/03/20	16:02:59	1	9.21	2	12.13	3	10.57
90/03/20	16:03:59	1	9.21	2	12.13	3	10.57
90/03/20	16:04:59	1	9.21	2	12.13	3	10.57
90/03/20	16:05:59	1	9.21	2	12.14	3	10.58
90/03/20	16:06:59	1	9.22	2	12.14	3	10.58
90/03/20	16:07:59	1	9.21	2	12.14	3	10.58
90/03/20	16:08:59	1	9.21	2	12.14	3	10.58
90/03/20	16:09:59	1	9.21	2	12.14	3	10.58
90/03/20	16:10:59	1	9.22	2	12.14	3	10.58
90/03/20	16:11:59	1	9.22	2	12.14	3	10.58
90/03/20	16:12:59	1	9.22	2	12.14	3	10.58
90/03/20	16:13:59	1	9.22	2	12.14	3	10.58
90/03/20	16:14:59	1	9.22	2	12.14	3	10.58
90/03/20	16:15:59	1	9.22	2	12.14	3	10.59
90/03/20	16:16:59	1	9.22	2	12.14	3	10.59
90/03/20	16:17:59	1	9.22	2	12.14	3	10.59
90/03/20	16:18:59	1	9.22	2	12.14	3	10.58
90/03/20	16:19:59	1	9.22	2	12.14	3	10.59
90/03/20	16:20:59	1	9.22	2	12.14	3	10.58
90/03/20	16:21:59	1	9.23	2	12.14	3	10.59
90/03/20	16:22:59	1	9.22	2	12.14	3	10.59
90/03/20	16:23:59	1	9.22	2	12.14	3	10.58
90/03/20	16:24:59	1	9.22	2	12.14	3	10.59
90/03/20	16:25:59	1	9.22	2	12.14	3	10.59
90/03/20	16:26:59	1	9.22	2	12.14	3	10.58
90/03/20	16:27:59	1	9.21	2	12.14	3	10.58
90/03/20	16:28:59	1	9.22	2	12.14	3	10.58
90/03/20	16:29:59	1	9.22	2	12.14	3	10.58
90/03/20	16:44:59	1	9.22	2	12.14	3	10.58
90/03/20	16:59:59	1	9.21	2	12.14	3	10.58
90/03/20	17:14:59	1	9.20	2	12.12	3	10.57
90/03/20	17:29:59	1	9.20	2	12.10	3	10.54
90/03/20	17:44:59	1	9.17	2	12.08	3	10.53
90/03/20	17:59:59	1	9.15	2	12.05	3	10.51

```
 90/03/20 18:14:59    1    9.13   2   12.02   3   10.48
 90/03/20 18:29:59    1    9.11   2   11.99   3   10.46
 90/03/20 18:44:59    1    9.08   2   11.96   3   10.44
 90/03/20 18:59:59    1    9.07   2   11.94   3   10.41
 90/03/20 19:14:59    1    9.04   2   11.90   3   10.38
 90/03/20 19:29:59    1    9.00   2   11.87   3   10.35
 90/03/20 19:44:59    1    8.99   2   11.84   3   10.33
 90/03/20 19:59:59    1    8.96   2   11.81   3   10.30
 90/03/20 20:14:59    1    8.94   2   11.78   3   10.28
 90/03/20 20:29:59    1    8.90   2   11.74   3   10.24
 90/03/20 20:44:59    1    8.88   2   11.71   3   10.22
 90/03/20 20:59:59    1    8.86   2   11.68   3   10.19
 90/03/20 21:14:59    1    8.83   2   11.65   3   10.16
 90/03/20 21:29:59    1    8.81   2   11.63   3   10.14
 90/03/20 21:44:59    1    8.78   2   11.60   3   10.11
 90/03/20 21:59:59    1    8.76   2   11.57   3   10.09
 90/03/20 22:14:59    1    8.75   2   11.56   3   10.08
 90/03/20 22:29:59    1    8.73   2   11.54   3   10.06
 90/03/20 22:59:59    1    8.70   2   11.50   3   10.03
 90/03/20 23:29:59    1    8.71   2   11.51   3   10.04
 90/03/20 23:59:59    1    8.73   2   11.55   3   10.07
C  90/03/20
 90/03/21 00:29:59    1    8.77   2   11.60   3   10.11
 90/03/21 00:59:59    1    8.81   2   11.66   3   10.16
 90/03/21 01:29:59    1    8.87   2   11.71   3   10.22
 90/03/21 01:59:59    1    8.91   2   11.77   3   10.27
 90/03/21 02:29:59    1    8.96   2   11.84   3   10.33
 90/03/21 02:59:59    1    9.02   2   11.90   3   10.39
 90/03/21 03:29:59    1    9.07   2   11.96   3   10.44
 90/03/21 03:59:59    1    9.12   2   12.02   3   10.49
 90/03/21 04:29:59    1    9.16   2   12.08   3   10.54
 90/03/21 04:59:59    1    9.20   2   12.11   3   10.58
 90/03/21 05:29:59    1    9.21   2   12.13   3   10.60
 90/03/21 05:59:59    1    9.22   2   12.14   3   10.61
 90/03/21 06:29:59    1    9.20   2   12.11   3   10.59
 90/03/21 06:59:59    1    9.17   2   12.06   3   10.54
 90/03/21 07:29:59    1    9.13   2   12.02   3   10.51
 90/03/21 07:59:59    1    9.11   2   11.97   3   10.48
 90/03/21 08:29:59    1    9.06   2   11.91   3   10.42
 90/03/21 08:59:59    1    9.03   2   11.88   3   10.39
 90/03/21 09:29:59    1    9.00   2   11.84   3   10.35
 90/03/21 09:59:59    1    8.96   2   11.79   3   10.31
 90/03/21 10:29:59    1    8.93   2   11.75   3   10.28
 90/03/21 10:59:59    1    8.92   2   11.73   3   10.26
 90/03/21 11:29:59    1    8.90   2   11.71   3   10.24
 90/03/21 11:59:59    1    8.89   2   11.72   3   10.24
 90/03/21 12:29:59    1    8.92   2   11.76   3   10.28
 90/03/21 12:59:59    1    8.96   2   11.82   3   10.32
 90/03/21 13:29:59    1    9.00   2   11.86   3   10.36
 90/03/21 13:59:59    1    9.04   2   11.91   3   10.41
 90/03/21 14:29:59    1    9.08   2   11.95   3   10.45
 90/03/21 14:59:59    1    9.12   2   11.99   3   10.48
 90/03/21 15:29:59    1    9.16   2   12.04   3   10.53
 90/03/21 15:59:59    1    9.19   2   12.08   3   10.57
 90/03/21 16:29:59    1    9.23   2   12.12   3   10.61
 90/03/21 16:59:59    1    9.26   2   12.17   3   10.65
 90/03/21 17:29:59    1    9.29   2   12.20   3   10.67
 90/03/21 17:59:59    1    9.30   2   12.21   3   10.68
 90/03/21 18:29:59    1    9.27   2   12.17   3   10.66
 90/03/21 18:59:59    1    9.24   2   12.13   3   10.62
```

```
 90/03/21 19:29:59    1    9.20   2   12.08   3   10.58
 90/03/21 19:59:59    1    9.16   2   12.02   3   10.54
 90/03/21 20:29:59    1    9.11   2   11.96   3   10.48
 90/03/21 20:59:59    1    9.07   2   11.90   3   10.42
 90/03/21 21:29:59    1    9.02   2   11.86   3   10.38
 90/03/21 21:59:59    1    8.99   2   11.81   3   10.34
 90/03/21 22:29:59    1    8.94   2   11.76   3   10.29
 90/03/21 22:59:59    1    8.90   2   11.71   3   10.25
 90/03/21 23:29:59    1    8.87   2   11.68   3   10.22
 90/03/21 23:59:59    1    8.84   2   11.65   3   10.19
C  90/03/21
 90/03/22 00:29:59    1    8.85   2   11.67   3   10.21
 90/03/22 00:59:59    1    8.89   2   11.71   3   10.25
 90/03/22 01:29:59    1    8.94   2   11.77   3   10.30
 90/03/22 01:59:59    1    8.97   2   11.82   3   10.34
 90/03/22 02:29:59    1    9.02   2   11.89   3   10.40
 90/03/22 02:59:59    1    9.07   2   11.95   3   10.45
 90/03/22 03:29:59    1    9.13   2   12.02   3   10.51
 90/03/22 03:59:59    1    9.19   2   12.08   3   10.57
 90/03/22 04:29:59    1    9.22   2   12.13   3   10.62
 90/03/22 04:59:59    1    9.27   2   12.18   3   10.67
 90/03/22 05:29:59    1    9.32   2   12.24   3   10.72
 90/03/22 05:59:59    1    9.37   2   12.29   3   10.77
 90/03/22 06:29:59    1    9.38   2   12.30   3   10.78
 90/03/22 06:59:59    1    9.38   2   12.30   3   10.79
 90/03/22 07:29:59    1    9.35   2   12.26   3   10.75
 90/03/22 07:59:59    1    9.32   2   12.21   3   10.71
 90/03/22 08:29:59    1    9.30   2   12.19   3   10.68
 90/03/22 08:59:59    1    9.26   2   12.14   3   10.64
 90/03/22 09:29:59    1    9.22   2   12.08   3   10.60
 90/03/22 09:59:59    1    9.17   2   12.02   3   10.54
 90/03/22 10:29:59    1    9.13   2   11.97   3   10.49
 90/03/22 10:59:59    1    9.07   2   11.91   3   10.44
 90/03/22 11:29:59    1    9.03   2   11.86   3   10.39
 90/03/22 11:59:59    1    8.99   2   11.81   3   10.35
 90/03/22 12:29:59    1    8.94   2   11.76   3   10.29
 90/03/22 12:59:59    1    8.92   2   11.72   3   10.27
 90/03/22 13:29:59    1    8.92   2   11.73   3   10.28
 90/03/22 13:59:59    1    8.95   2   11.77   3   10.31
 90/03/22 14:29:59    1    8.98   2   11.82   3   10.35
 90/03/22 14:59:59    1    8.95   2   11.88   3   10.40
C FOLLOWING DATA SUSPECT DUE TO LOW BATTERY VOLTAGE
 90/03/22 15:29:59    1    8.68   2   11.91   3   10.43
 90/03/22 15:59:59    1    8.28   2   11.97   3   10.50
 90/03/22 16:29:59    1    8.01   2   11.99   3   10.60
 90/03/22 16:59:59    1    7.83   2   11.84   3   10.68
 90/03/22 17:29:59    1    7.67   2   11.63   3   10.73
 90/03/22 17:59:59    1    7.58   2   11.49   3   10.73
 90/03/22 18:29:59    1    7.44   2   11.29   3   10.55
 90/03/22 18:59:59    1    7.27   2   11.05   3   10.31
 90/03/22 19:29:59    1    7.19   2   10.93   3   10.18
 90/03/22 19:59:59    1    7.02   2   10.67   3    9.93
 90/03/22 20:29:59    1    6.90   2   10.51   3    9.76
 90/03/22 20:59:59    1    6.82   2   10.38   3    9.64
 90/03/22 21:29:59    1    6.72   2   10.25   3    9.52
 90/03/22 21:59:59    1    6.62   2   10.10   3    9.38
 90/03/22 22:29:59    1    6.51   2    9.96   3    9.24
 90/03/22 22:59:59    1    6.43   2    9.84   3    9.13
 90/03/22 23:29:59    1    6.31   2    9.67   3    8.94
 90/03/22 23:59:59    1    6.22   2    9.55   3    8.82
```

```
C  90/03/22
 90/03/23 00:29:59    1    6.05   2    9.31   3    8.57
 90/03/23 00:59:59    1    5.85   2    9.03   3    8.29
 90/03/23 01:29:59    1    5.66   2    8.75   3    8.00
C BATTERIES REPLACED
 90/03/23 02:12:00    1    8.88   2   11.76   3   10.30
 90/03/23 02:42:00    1    8.89   2   11.88   3   10.35
 90/03/23 03:12:00    1    8.96   2   11.96   3   10.43
 90/03/23 03:42:00    1    9.03   2   11.99   3   10.50
 90/03/23 04:12:00    1    9.09   2   12.03   3   10.56
 90/03/23 04:42:00    1    9.16   2   12.08   3   10.63
 90/03/23 05:12:00    1    9.21   2   12.14   3   10.69
 90/03/23 05:42:00    1    9.26   2   12.20   3   10.74
 90/03/23 06:12:00    1    9.32   2   12.25   3   10.80
 90/03/23 06:42:00    1    9.42   2   12.04   3   10.74
 90/03/23 07:12:00    1    9.39   2   12.08   3   10.73
 90/03/23 07:42:00    1    9.32   2   12.17   3   10.73
 90/03/23 08:12:00    1    9.29   2   12.19   3   10.72
 90/03/23 08:42:00    1    9.26   2   12.17   3   10.67
 90/03/23 09:12:00    1    9.21   2   12.13   3   10.63
 90/03/23 09:42:00    1    9.20   2   12.11   3   10.61
C  10:12  90/03/23 #02
C  START RECOVERY
 90/03/23 10:27:07    1    9.14   2   12.12   3   10.58
 90/03/23 10:27:08    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:09    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:10    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:11    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:12    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:13    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:14    1    9.14   2   12.11   3   10.57
 90/03/23 10:27:15    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:16    1    9.15   2   12.12   3   10.58
 90/03/23 10:27:17    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:18    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:19    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:20    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:21    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:22    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:23    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:24    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:25    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:26    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:27    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:28    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:29    1    9.15   2   12.12   3   10.58
 90/03/23 10:27:30    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:31    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:32    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:33    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:34    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:35    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:36    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:37    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:38    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:39    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:40    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:41    1    9.15   2   12.11   3   10.58
 90/03/23 10:27:42    1    9.14   2   12.11   3   10.58
 90/03/23 10:27:43    1    9.14   2   12.11   3   10.58
```

90/03/23	10:27:44	1	9.15	2	12.13	3	10.58
90/03/23	10:27:45	1	9.14	2	12.13	3	10.58
90/03/23	10:27:46	1	9.15	2	12.13	3	10.58
90/03/23	10:27:47	1	9.14	2	12.12	3	10.58
90/03/23	10:27:48	1	9.14	2	12.12	3	10.58
90/03/23	10:27:49	1	9.14	2	12.11	3	10.58
90/03/23	10:27:50	1	9.14	2	12.11	3	10.58
90/03/23	10:27:51	1	9.14	2	12.11	3	10.58
90/03/23	10:27:52	1	9.15	2	12.11	3	10.58
90/03/23	10:27:53	1	9.15	2	12.11	3	10.58
90/03/23	10:27:54	1	9.15	2	12.11	3	10.58
90/03/23	10:27:55	1	9.15	2	12.10	3	10.58
90/03/23	10:27:56	1	9.15	2	12.10	3	10.58
90/03/23	10:27:57	1	9.15	2	12.10	3	10.58
90/03/23	10:27:58	1	9.15	2	12.11	3	10.58
90/03/23	10:27:59	1	9.14	2	12.10	3	10.57
90/03/23	10:28:00	1	9.14	2	12.10	3	10.57
90/03/23	10:28:01	1	9.14	2	12.10	3	10.57
90/03/23	10:28:02	1	9.14	2	12.10	3	10.57
90/03/23	10:28:03	1	9.15	2	12.10	3	10.57
90/03/23	10:28:04	1	9.14	2	12.10	3	10.57
90/03/23	10:28:05	1	9.15	2	12.10	3	10.57
90/03/23	10:28:06	1	9.14	2	12.10	3	10.57
90/03/23	10:28:07	1	9.14	2	12.10	3	10.57
90/03/23	10:28:08	1	9.14	2	12.10	3	10.57
90/03/23	10:28:09	1	9.15	2	12.12	3	10.58
90/03/23	10:28:10	1	9.14	2	12.11	3	10.57
90/03/23	10:28:11	1	9.14	2	12.11	3	10.58
90/03/23	10:28:12	1	9.15	2	12.11	3	10.58
90/03/23	10:28:13	1	9.15	2	12.11	3	10.58
90/03/23	10:28:14	1	9.16	2	12.12	3	10.59
90/03/23	10:28:15	1	9.17	2	12.12	3	10.59
90/03/23	10:28:16	1	9.17	2	12.13	3	10.60
90/03/23	10:28:17	1	9.18	2	12.13	3	10.60
90/03/23	10:28:18	1	9.19	2	12.14	3	10.61
90/03/23	10:28:19	1	9.19	2	12.14	3	10.61
90/03/23	10:28:20	1	9.19	2	12.14	3	10.61
90/03/23	10:28:21	1	9.20	2	12.14	3	10.62
90/03/23	10:28:22	1	9.20	2	12.14	3	10.62
90/03/23	10:28:23	1	9.20	2	12.14	3	10.63
90/03/23	10:28:24	1	9.21	2	12.15	3	10.64
90/03/23	10:28:25	1	9.21	2	12.16	3	10.64
90/03/23	10:28:26	1	9.21	2	12.16	3	10.64
90/03/23	10:28:27	1	9.22	2	12.17	3	10.65
90/03/23	10:28:28	1	9.23	2	12.17	3	10.65
90/03/23	10:28:29	1	9.23	2	12.17	3	10.65
90/03/23	10:28:30	1	9.23	2	12.18	3	10.66
90/03/23	10:28:31	1	9.23	2	12.18	3	10.66
90/03/23	10:28:32	1	9.23	2	12.17	3	10.66
90/03/23	10:28:33	1	9.24	2	12.18	3	10.66
90/03/23	10:28:34	1	9.24	2	12.18	3	10.67
90/03/23	10:28:35	1	9.24	2	12.18	3	10.67
90/03/23	10:28:36	1	9.25	2	12.19	3	10.67
90/03/23	10:28:37	1	9.25	2	12.19	3	10.67
90/03/23	10:28:38	1	9.25	2	12.19	3	10.67
90/03/23	10:28:39	1	9.25	2	12.19	3	10.67
90/03/23	10:28:40	1	9.25	2	12.19	3	10.67
90/03/23	10:28:41	1	9.25	2	12.19	3	10.67
90/03/23	10:28:42	1	9.26	2	12.20	3	10.67
90/03/23	10:28:43	1	9.25	2	12.19	3	10.67

90/03/23	10:28:44	1	9.26	2	12.20	3	10.68
90/03/23	10:28:45	1	9.26	2	12.20	3	10.68
90/03/23	10:28:46	1	9.26	2	12.20	3	10.68
90/03/23	10:28:47	1	9.26	2	12.20	3	10.68
90/03/23	10:28:48	1	9.26	2	12.20	3	10.68
90/03/23	10:28:49	1	9.26	2	12.20	3	10.68
90/03/23	10:28:50	1	9.26	2	12.21	3	10.69
90/03/23	10:28:51	1	9.26	2	12.20	3	10.68
90/03/23	10:28:52	1	9.26	2	12.20	3	10.68
90/03/23	10:28:53	1	9.26	2	12.20	3	10.69
90/03/23	10:28:54	1	9.26	2	12.20	3	10.68
90/03/23	10:28:55	1	9.26	2	12.20	3	10.68
90/03/23	10:28:56	1	9.26	2	12.19	3	10.68
90/03/23	10:28:57	1	9.26	2	12.19	3	10.68
90/03/23	10:28:58	1	9.26	2	12.19	3	10.68
90/03/23	10:28:59	1	9.26	2	12.19	3	10.68
90/03/23	10:29:00	1	9.26	2	12.20	3	10.68
90/03/23	10:29:01	1	9.26	2	12.20	3	10.68
90/03/23	10:29:02	1	9.26	2	12.20	3	10.68
90/03/23	10:29:03	1	9.26	2	12.20	3	10.68
90/03/23	10:29:04	1	9.26	2	12.20	3	10.68
90/03/23	10:29:05	1	9.26	2	12.20	3	10.68
90/03/23	10:29:06	1	9.26	2	12.20	3	10.68
90/03/23	10:29:07	1	9.26	2	12.20	3	10.68
90/03/23	10:29:08	1	9.26	2	12.20	3	10.68
90/03/23	10:29:09	1	9.26	2	12.20	3	10.68
90/03/23	10:29:10	1	9.26	2	12.19	3	10.68
90/03/23	10:29:11	1	9.26	2	12.20	3	10.68
90/03/23	10:29:12	1	9.26	2	12.20	3	10.68
90/03/23	10:29:13	1	9.26	2	12.20	3	10.68
90/03/23	10:29:14	1	9.26	2	12.20	3	10.67
90/03/23	10:29:15	1	9.26	2	12.20	3	10.68
90/03/23	10:29:16	1	9.26	2	12.20	3	10.68
90/03/23	10:29:17	1	9.26	2	12.20	3	10.68
90/03/23	10:29:18	1	9.26	2	12.20	3	10.68
90/03/23	10:29:19	1	9.26	2	12.20	3	10.68
90/03/23	10:29:20	1	9.26	2	12.20	3	10.68
90/03/23	10:29:21	1	9.26	2	12.20	3	10.68
90/03/23	10:29:22	1	9.26	2	12.20	3	10.68
90/03/23	10:29:23	1	9.26	2	12.20	3	10.67
90/03/23	10:29:24	1	9.26	2	12.19	3	10.67
90/03/23	10:29:25	1	9.26	2	12.20	3	10.68
90/03/23	10:29:26	1	9.26	2	12.20	3	10.68
90/03/23	10:29:27	1	9.26	2	12.20	3	10.68
90/03/23	10:29:28	1	9.26	2	12.20	3	10.68
90/03/23	10:29:29	1	9.26	2	12.20	3	10.68
90/03/23	10:29:30	1	9.26	2	12.19	3	10.67
90/03/23	10:29:31	1	9.26	2	12.19	3	10.68
90/03/23	10:29:32	1	9.26	2	12.18	3	10.68
90/03/23	10:29:33	1	9.26	2	12.18	3	10.68
90/03/23	10:29:34	1	9.26	2	12.18	3	10.68
90/03/23	10:29:35	1	9.26	2	12.18	3	10.67
90/03/23	10:29:36	1	9.26	2	12.19	3	10.68
90/03/23	10:29:37	1	9.26	2	12.19	3	10.68
90/03/23	10:29:38	1	9.26	2	12.18	3	10.68
90/03/23	10:29:39	1	9.26	2	12.18	3	10.67
90/03/23	10:29:40	1	9.26	2	12.19	3	10.68
90/03/23	10:29:41	1	9.26	2	12.19	3	10.68
90/03/23	10:29:42	1	9.26	2	12.19	3	10.68
90/03/23	10:29:43	1	9.26	2	12.19	3	10.68

90/03/23	10:29:44	1	9.26	2	12.19	3	10.68
90/03/23	10:29:45	1	9.26	2	12.19	3	10.68
90/03/23	10:29:46	1	9.26	2	12.18	3	10.68
90/03/23	10:29:47	1	9.26	2	12.18	3	10.68
90/03/23	10:29:48	1	9.26	2	12.18	3	10.68
90/03/23	10:29:49	1	9.26	2	12.18	3	10.68
90/03/23	10:29:50	1	9.27	2	12.19	3	10.68
90/03/23	10:29:51	1	9.27	2	12.18	3	10.68
90/03/23	10:29:52	1	9.27	2	12.19	3	10.68
90/03/23	10:29:53	1	9.27	2	12.19	3	10.68
90/03/23	10:29:54	1	9.27	2	12.19	3	10.68
90/03/23	10:29:55	1	9.27	2	12.19	3	10.68
90/03/23	10:29:56	1	9.27	2	12.19	3	10.68
90/03/23	10:29:57	1	9.27	2	12.19	3	10.68
90/03/23	10:29:58	1	9.27	2	12.19	3	10.68
90/03/23	10:29:59	1	9.27	2	12.19	3	10.68
90/03/23	10:30:00	1	9.27	2	12.19	3	10.68
90/03/23	10:30:01	1	9.27	2	12.19	3	10.68
90/03/23	10:30:02	1	9.27	2	12.19	3	10.68
90/03/23	10:30:03	1	9.27	2	12.19	3	10.68
90/03/23	10:30:04	1	9.27	2	12.19	3	10.68
90/03/23	10:30:05	1	9.27	2	12.19	3	10.68
90/03/23	10:30:06	1	9.27	2	12.19	3	10.68
90/03/23	10:30:07	1	9.26	2	12.19	3	10.68
90/03/23	10:30:22	1	9.27	2	12.19	3	10.68
90/03/23	10:30:37	1	9.27	2	12.20	3	10.69
90/03/23	10:30:52	1	9.29	2	12.20	3	10.69
90/03/23	10:31:07	1	9.29	2	12.20	3	10.69
90/03/23	10:31:22	1	9.29	2	12.20	3	10.69
90/03/23	10:31:37	1	9.29	2	12.19	3	10.69
90/03/23	10:31:52	1	9.28	2	12.19	3	10.69
90/03/23	10:32:07	1	9.28	2	12.19	3	10.68
90/03/23	10:32:22	1	9.28	2	12.18	3	10.68
90/03/23	10:32:37	1	9.27	2	12.16	3	10.67
90/03/23	10:32:52	1	9.28	2	12.17	3	10.68
90/03/23	10:33:07	1	9.28	2	12.16	3	10.68
90/03/23	10:33:22	1	9.28	2	12.18	3	10.68
90/03/23	10:33:37	1	9.29	2	12.18	3	10.68
90/03/23	10:33:52	1	9.29	2	12.16	3	10.68
90/03/23	10:34:07	1	9.28	2	12.16	3	10.67
90/03/23	10:34:22	1	9.28	2	12.15	3	10.67
90/03/23	10:34:37	1	9.28	2	12.15	3	10.67
90/03/23	10:34:52	1	9.28	2	12.14	3	10.67
90/03/23	10:35:07	1	9.28	2	12.15	3	10.67
90/03/23	10:35:37	1	9.29	2	12.16	3	10.67
90/03/23	10:36:07	1	9.28	2	12.15	3	10.67
90/03/23	10:36:37	1	9.28	2	12.16	3	10.67
90/03/23	10:37:07	1	9.29	2	12.15	3	10.67
90/03/23	10:37:37	1	9.28	2	12.15	3	10.67
90/03/23	10:38:07	1	9.29	2	12.15	3	10.67
90/03/23	10:38:37	1	9.29	2	12.15	3	10.67
90/03/23	10:39:07	1	9.29	2	12.14	3	10.67
90/03/23	10:39:37	1	9.28	2	12.14	3	10.67
90/03/23	10:40:07	1	9.29	2	12.14	3	10.67
90/03/23	10:40:37	1	9.30	2	12.14	3	10.67
90/03/23	10:41:07	1	9.29	2	12.14	3	10.67
90/03/23	10:41:37	1	9.28	2	12.14	3	10.67
90/03/23	10:42:07	1	9.28	2	12.14	3	10.66
90/03/23	10:42:37	1	9.30	2	12.14	3	10.67
90/03/23	10:43:07	1	9.30	2	12.14	3	10.66

```
 90/03/23 10:43:37   1   9.29  2  12.14  3  10.66
 90/03/23 10:44:07   1   9.28  2  12.13  3  10.66
 90/03/23 10:44:37   1   9.27  2  12.13  3  10.66
 90/03/23 10:45:07   1   9.28  2  12.12  3  10.65
 90/03/23 10:46:07   1   9.29  2  12.13  3  10.66
 90/03/23 10:47:07   1   9.28  2  12.12  3  10.65
 90/03/23 10:48:07   1   9.28  2  12.12  3  10.65
 90/03/23 10:49:07   1   9.29  2  12.11  3  10.65
 90/03/23 10:50:07   1   9.28  2  12.12  3  10.65
 90/03/23 10:51:07   1   9.27  2  12.11  3  10.64
 90/03/23 10:52:07   1   9.26  2  12.10  3  10.64
 90/03/23 10:53:07   1   9.26  2  12.10  3  10.63
 90/03/23 10:54:07   1   9.26  2  12.09  3  10.63
 90/03/23 10:55:07   1   9.26  2  12.08  3  10.63
 90/03/23 10:56:07   1   9.26  2  12.08  3  10.63
 90/03/23 10:57:07   1   9.26  2  12.08  3  10.62
 90/03/23 10:58:07   1   9.26  2  12.08  3  10.62
 90/03/23 10:59:07   1   9.26  2  12.07  3  10.62
 90/03/23 11:00:07   1   9.26  2  12.08  3  10.62
 90/03/23 11:01:07   1   9.25  2  12.07  3  10.61
 90/03/23 11:02:07   1   9.26  2  12.08  3  10.62
 90/03/23 11:03:07   1   9.26  2  12.08  3  10.61
 90/03/23 11:04:07   1   9.26  2  12.08  3  10.61
 90/03/23 11:05:07   1   9.25  2  12.07  3  10.61
 90/03/23 11:06:07   1   9.25  2  12.06  3  10.61
 90/03/23 11:07:07   1   9.23  2  12.07  3  10.61
 90/03/23 11:08:07   1   9.24  2  12.07  3  10.61
 90/03/23 11:09:07   1   9.23  2  12.07  3  10.60
 90/03/23 11:10:07   1   9.23  2  12.07  3  10.60
 90/03/23 11:11:07   1   9.22  2  12.06  3  10.60
 90/03/23 11:12:07   1   9.23  2  12.06  3  10.60
 90/03/23 11:13:07   1   9.23  2  12.06  3  10.59
 90/03/23 11:14:07   1   9.22  2  12.06  3  10.59
 90/03/23 11:15:07   1   9.22  2  12.06  3  10.59
 90/03/23 11:20:07   1   9.21  2  12.04  3  10.57
 90/03/23 11:25:07   1   9.20  2  12.04  3  10.57
 90/03/23 11:30:07   1   9.20  2  12.03  3  10.57
 90/03/23 11:35:07   1   9.20  2  12.03  3  10.56
 90/03/23 11:40:07   1   9.16  2  12.01  3  10.54
 90/03/23 11:45:07   1   9.17  2  12.01  3  10.54
 90/03/23 11:50:07   1   9.15  2  11.99  3  10.52
 90/03/23 11:55:07   1   9.13  2  11.98  3  10.51
 90/03/23 12:00:07   1   9.13  2  11.96  3  10.50
 90/03/23 12:05:07   1   9.13  2  11.96  3  10.49
 90/03/23 12:10:07   1   9.11  2  11.95  3  10.48
C  STATION ID = 02
C  12:15  90/03/23 #02
 90/03/23 12:32:08   1   9.07  2  11.93  3  10.45
 90/03/23 12:32:09   1   9.08  2  11.91  3  10.45
 90/03/23 12:32:10   1   9.08  2  11.91  3  10.45
 90/03/23 12:32:11   1   9.07  2  11.90  3  10.44
 90/03/23 12:32:12   1   9.07  2  11.91  3  10.44
 90/03/23 12:32:13   1   9.08  2  11.91  3  10.44
 90/03/23 12:32:14   1   9.07  2  11.90  3  10.45
 90/03/23 12:32:15   1   9.07  2  11.90  3  10.44
 90/03/23 12:32:16   1   9.07  2  11.90  3  10.44
 90/03/23 12:32:17   1   9.08  2  11.91  3  10.45
 90/03/23 12:32:18   1   9.07  2  11.90  3  10.44
 90/03/23 12:32:19   1   9.08  2  11.91  3  10.45
 90/03/23 12:32:20   1   9.08  2  11.91  3  10.45
```

90/03/23	12:32:21	1	9.07	2	11.89	3	10.44
90/03/23	12:32:22	1	9.07	2	11.89	3	10.44
90/03/23	12:32:23	1	9.08	2	11.89	3	10.44
90/03/23	12:32:24	1	9.07	2	11.89	3	10.44
90/03/23	12:32:25	1	9.08	2	11.90	3	10.44
90/03/23	12:32:26	1	9.08	2	11.90	3	10.44
90/03/23	12:32:27	1	9.07	2	11.89	3	10.44
90/03/23	12:32:28	1	9.08	2	11.90	3	10.44
90/03/23	12:32:29	1	9.07	2	11.91	3	10.45
90/03/23	12:32:30	1	9.08	2	11.91	3	10.45
90/03/23	12:32:31	1	9.07	2	11.91	3	10.45
90/03/23	12:32:32	1	9.08	2	11.91	3	10.45
90/03/23	12:32:33	1	9.07	2	11.91	3	10.44
90/03/23	12:32:34	1	9.07	2	11.90	3	10.44
90/03/23	12:32:35	1	9.08	2	11.91	3	10.45
90/03/23	12:32:36	1	9.08	2	11.91	3	10.45
90/03/23	12:32:37	1	9.08	2	11.91	3	10.44
90/03/23	12:32:38	1	9.08	2	11.91	3	10.45
90/03/23	12:32:39	1	9.08	2	11.91	3	10.45
90/03/23	12:32:40	1	9.07	2	11.91	3	10.45
90/03/23	12:32:41	1	9.07	2	11.91	3	10.45
90/03/23	12:32:42	1	9.07	2	11.91	3	10.44
90/03/23	12:32:43	1	9.07	2	11.90	3	10.44
90/03/23	12:32:44	1	9.07	2	11.90	3	10.44
90/03/23	12:32:45	1	9.07	2	11.91	3	10.44
90/03/23	12:32:46	1	9.07	2	11.90	3	10.44
90/03/23	12:32:47	1	9.07	2	11.91	3	10.44
90/03/23	12:32:48	1	9.07	2	11.90	3	10.44
90/03/23	12:32:49	1	9.07	2	11.91	3	10.44
90/03/23	12:32:50	1	9.07	2	11.90	3	10.44
90/03/23	12:32:51	1	9.08	2	11.90	3	10.44
90/03/23	12:32:52	1	9.08	2	11.91	3	10.45
90/03/23	12:32:53	1	9.07	2	11.89	3	10.44
90/03/23	12:32:54	1	9.07	2	11.90	3	10.44
90/03/23	12:32:55	1	9.07	2	11.90	3	10.44
90/03/23	12:32:56	1	9.07	2	11.90	3	10.44
90/03/23	12:32:57	1	9.08	2	11.91	3	10.44
90/03/23	12:32:58	1	9.08	2	11.91	3	10.44
90/03/23	12:32:59	1	9.08	2	11.91	3	10.44
90/03/23	12:33:00	1	9.08	2	11.91	3	10.44
90/03/23	12:33:01	1	9.07	2	11.90	3	10.44
90/03/23	12:33:02	1	9.08	2	11.91	3	10.44
90/03/23	12:33:03	1	9.08	2	11.91	3	10.44
90/03/23	12:33:04	1	9.07	2	11.90	3	10.44
90/03/23	12:33:05	1	9.08	2	11.91	3	10.44
90/03/23	12:33:06	1	9.08	2	11.91	3	10.44
90/03/23	12:33:07	1	9.08	2	11.90	3	10.45
90/03/23	12:33:08	1	9.08	2	11.91	3	10.44
90/03/23	12:33:09	1	9.08	2	11.91	3	10.45

C END OF RECOVERY DATA

```
C FILES FOR FOR CONTINUOUS RECORD FOR STATION # 03
C  4-2-90
C  CBK
C*******FILE S30320D2.FRW (FOR ESE USE ONLY)
C
C  TOC MSL ELEVATION IN FEET
C
C          OW-5  - 7.79
C          OW-6  - 7.77
C
C  CHANNEL #'S CORRESPONDING TO WELL #'S
C
C       CHANNEL   1  -  OW5
C                 2  -  OW6
C
C  DEPTH OF WELLS IN FEET
C
C       OW-5  - 135
C       OW-6  - 95
C
C  DISTANCE FROM PUMPING WELL IN FEET
C
C       OW-5  - 624.60
C       OW-6  - 624.60
C
C    NOTE : PRETEST DATA ONLY
C
C   DATA LOGGER READINGS, IN FEET, ABOVE TRANSDUCER
C
C                   CHANNEL   CHANNEL
C                      ^         ^
C                            WL        WL
C                            ^         ^
 90/03/15 15:03:00   1  12.76  2  14.60
 90/03/15 15:18:00   1  12.74  2  14.58
 90/03/15 15:33:00   1  12.73  2  14.55
 90/03/15 15:48:00   1  12.70  2  14.52
 90/03/15 16:03:00   1  12.69  2  14.50
 90/03/15 16:18:00   1  12.70  2  14.47
 90/03/15 16:33:00   1  12.67  2  14.43
 90/03/15 16:48:00   1  12.66  2  14.40
 90/03/15 17:03:00   1  12.64  2  14.39
 90/03/15 17:18:00   1  12.61  2  14.36
 90/03/15 17:33:00   1  12.60  2  14.33
 90/03/15 17:48:00   1  12.59  2  14.32
 90/03/15 18:03:00   1  12.56  2  14.29
 90/03/15 18:18:00   1  12.54  2  14.26
 90/03/15 18:33:00   1  12.51  2  14.25
 90/03/15 18:48:00   1  12.50  2  14.22
 90/03/15 19:03:00   1  12.49  2  14.21
 90/03/15 19:18:00   1  12.49  2  14.21
 90/03/15 19:33:00   1  12.49  2  14.21
 90/03/15 19:48:00   1  12.49  2  14.22
 90/03/15 20:03:00   1  12.50  2  14.23
 90/03/15 20:18:00   1  12.51  2  14.25
 90/03/15 20:33:00   1  12.53  2  14.26
 90/03/15 20:48:00   1  12.54  2  14.28
 90/03/15 21:03:00   1  12.56  2  14.30
 90/03/15 21:18:00   1  12.59  2  14.32
 90/03/15 21:33:00   1  12.60  2  14.35
```

```
 90/03/15 21:48:00   1  12.63  2  14.38
 90/03/15 22:03:00   1  12.66  2  14.41
 90/03/15 22:18:00   1  12.67  2  14.44
 90/03/15 22:33:00   1  12.72  2  14.47
 90/03/15 22:48:00   1  12.74  2  14.51
 90/03/15 23:03:00   1  12.76  2  14.53
 90/03/15 23:18:00   1  12.80  2  14.57
 90/03/15 23:33:00   1  12.82  2  14.59
 90/03/15 23:48:00   1  12.85  2  14.62
C  23:48  90/03/15 #03
 90/03/16 00:03:00   1  12.87  2  14.65
 90/03/16 00:18:00   1  12.89  2  14.67
 90/03/16 00:33:00   1  12.92  2  14.70
 90/03/16 00:48:00   1  12.93  2  14.71
 90/03/16 01:03:00   1  12.96  2  14.73
 90/03/16 01:18:00   1  12.96  2  14.75
 90/03/16 01:33:00   1  12.98  2  14.75
 90/03/16 01:48:00   1  12.98  2  14.75
 90/03/16 02:03:00   1  12.98  2  14.74
 90/03/16 02:18:00   1  12.96  2  14.73
 90/03/16 02:33:00   1  12.96  2  14.72
 90/03/16 02:48:00   1  12.95  2  14.71
 90/03/16 03:03:00   1  12.92  2  14.69
 90/03/16 03:18:00   1  12.92  2  14.68
 90/03/16 03:33:00   1  12.90  2  14.65
 90/03/16 03:48:00   1  12.89  2  14.64
 90/03/16 04:03:00   1  12.86  2  14.61
 90/03/16 04:18:00   1  12.85  2  14.59
 90/03/16 04:33:00   1  12.83  2  14.58
 90/03/16 04:48:00   1  12.80  2  14.55
 90/03/16 05:03:00   1  12.79  2  14.53
 90/03/16 05:18:00   1  12.77  2  14.51
 90/03/16 05:33:00   1  12.73  2  14.48
 90/03/16 05:48:00   1  12.72  2  14.45
 90/03/16 06:03:00   1  12.70  2  14.44
 90/03/16 06:18:00   1  12.67  2  14.41
 90/03/16 06:33:00   1  12.66  2  14.39
 90/03/16 06:48:00   1  12.63  2  14.36
 90/03/16 07:03:00   1  12.61  2  14.34
 90/03/16 07:18:00   1  12.59  2  14.32
 90/03/16 07:33:00   1  12.59  2  14.31
 90/03/16 07:48:00   1  12.57  2  14.30
 90/03/16 08:03:00   1  12.59  2  14.31
 90/03/16 08:18:00   1  12.59  2  14.31
 90/03/16 08:33:00   1  12.60  2  14.32
 90/03/16 08:48:00   1  12.61  2  14.34
 90/03/16 09:03:00   1  12.63  2  14.35
 90/03/16 09:18:00   1  12.63  2  14.36
 90/03/16 09:33:00   1  12.64  2  14.39
 90/03/16 09:48:00   1  12.66  2  14.39
 90/03/16 10:03:00   1  12.67  2  14.42
 90/03/16 10:18:00   1  12.70  2  14.44
 90/03/16 10:33:00   1  12.72  2  14.45
 90/03/16 10:48:00   1  12.74  2  14.47
 90/03/16 11:03:00   1  12.76  2  14.50
 90/03/16 11:18:00   1  12.77  2  14.52
 90/03/16 11:33:00   1  12.80  2  14.54
 90/03/16 11:48:00   1  12.82  2  14.57
 90/03/16 12:03:00   1  12.83  2  14.58
 90/03/16 12:18:00   1  12.85  2  14.61
```

```
 90/03/16 12:33:00    1  12.86  2  14.62
 90/03/16 12:48:00    1  12.87  2  14.63
 90/03/16 13:03:00    1  12.89  2  14.64
 90/03/16 13:18:00    1  12.89  2  14.65
 90/03/16 13:33:00    1  12.73  2  14.65
 90/03/16 13:48:00    1  12.93  2  14.64
 90/03/16 14:03:00    1  12.95  2  14.64
 90/03/16 14:18:00    1  12.93  2  14.62
 90/03/16 14:33:00    1  12.89  2  14.61
 90/03/16 14:48:00    1  12.90  2  14.59
 90/03/16 15:03:00    1  12.87  2  14.57
 90/03/16 15:18:00    1  12.87  2  14.55
 90/03/16 15:33:00    1  12.83  2  14.53
 90/03/16 15:48:00    1  12.83  2  14.51
 90/03/16 16:03:00    1  12.80  2  14.48
 90/03/16 16:18:00    1  12.74  2  14.45
 90/03/16 16:33:00    1  12.76  2  14.43
 90/03/16 16:48:00    1  12.74  2  14.41
 90/03/16 17:03:00    1  12.70  2  14.39
 90/03/16 17:18:00    1  12.70  2  14.37
 90/03/16 17:33:00    1  12.66  2  14.33
 90/03/16 17:48:00    1  12.63  2  14.32
 90/03/16 18:03:00    1  12.61  2  14.29
 90/03/16 18:18:00    1  12.59  2  14.27
 90/03/16 18:33:00    1  12.56  2  14.26
 90/03/16 18:48:00    1  12.53  2  14.24
 90/03/16 19:03:00    1  12.51  2  14.22
 90/03/16 19:18:00    1  12.50  2  14.20
 90/03/16 19:33:00    1  12.49  2  14.19
 90/03/16 19:48:00    1  12.47  2  14.19
 90/03/16 20:03:00    1  12.47  2  14.19
 90/03/16 20:18:00    1  12.47  2  14.19
 90/03/16 20:33:00    1  12.49  2  14.20
 90/03/16 20:48:00    1  12.49  2  14.22
 90/03/16 21:03:00    1  12.50  2  14.23
 90/03/16 21:18:00    1  12.51  2  14.26
 90/03/16 21:33:00    1  12.54  2  14.27
 90/03/16 21:48:00    1  12.56  2  14.29
 90/03/16 22:03:00    1  12.57  2  14.32
 90/03/16 22:18:00    1  12.60  2  14.35
 90/03/16 22:33:00    1  12.63  2  14.38
 90/03/16 22:48:00    1  12.64  2  14.40
 90/03/16 23:03:00    1  12.67  2  14.44
 90/03/16 23:18:00    1  12.70  2  14.46
 90/03/16 23:33:00    1  12.73  2  14.49
 90/03/16 23:48:00    1  12.76  2  14.51
C  23:48  90/03/16 #03
 90/03/17 00:03:00    1  12.77  2  14.55
 90/03/17 00:18:00    1  12.80  2  14.57
 90/03/17 00:33:00    1  12.83  2  14.60
 90/03/17 00:48:00    1  12.85  2  14.62
 90/03/17 01:03:00    1  12.87  2  14.64
 90/03/17 01:18:00    1  12.89  2  14.67
 90/03/17 01:33:00    1  12.90  2  14.69
 90/03/17 01:48:00    1  12.92  2  14.70
 90/03/17 02:03:00    1  12.93  2  14.71
 90/03/17 02:18:00    1  12.93  2  14.71
 90/03/17 02:33:00    1  12.93  2  14.71
 90/03/17 02:48:00    1  12.93  2  14.70
 90/03/17 03:03:00    1  12.93  2  14.69
```

```
 90/03/17 03:18:00   1  12.90  2  14.67
 90/03/17 03:33:00   1  12.90  2  14.66
 90/03/17 03:48:00   1  12.89  2  14.64
 90/03/17 04:03:00   1  12.87  2  14.64
 90/03/17 04:18:00   1  12.86  2  14.62
 90/03/17 04:33:00   1  12.85  2  14.59
 90/03/17 04:48:00   1  12.83  2  14.58
 90/03/17 05:03:00   1  12.80  2  14.56
 90/03/17 05:18:00   1  12.79  2  14.53
 90/03/17 05:33:00   1  12.76  2  14.51
 90/03/17 05:48:00   1  12.73  2  14.47
 90/03/17 06:03:00   1  12.70  2  14.45
 90/03/17 06:18:00   1  12.69  2  14.42
 90/03/17 06:33:00   1  12.66  2  14.39
 90/03/17 06:48:00   1  12.64  2  14.37
 90/03/17 07:03:00   1  12.61  2  14.35
 90/03/17 07:18:00   1  12.59  2  14.32
 90/03/17 07:33:00   1  12.59  2  14.31
 90/03/17 07:48:00   1  12.56  2  14.29
 90/03/17 08:03:00   1  12.56  2  14.28
 90/03/17 08:18:00   1  12.54  2  14.27
 90/03/17 08:33:00   1  12.59  2  14.28
 90/03/17 08:48:00   1  12.59  2  14.28
 90/03/17 09:03:00   1  12.59  2  14.29
 90/03/17 09:18:00   1  12.61  2  14.31
 90/03/17 09:33:00   1  12.63  2  14.32
 90/03/17 09:48:00   1  12.59  2  14.33
 90/03/17 10:03:00   1  12.63  2  14.34
 90/03/17 10:18:00   1  12.63  2  14.37
 90/03/17 10:33:00   1  12.61  2  14.39
 90/03/17 10:48:00   1  12.66  2  14.40
 90/03/17 11:03:00   1  12.67  2  14.41
 90/03/17 11:18:00   1  12.66  2  14.43
 90/03/17 11:33:00   1  12.72  2  14.45
 90/03/17 11:48:00   1  12.77  2  14.47
 90/03/17 12:03:00   1  12.74  2  14.49
 90/03/17 12:18:00   1  12.77  2  14.51
 90/03/17 12:33:00   1  12.79  2  14.52
 90/03/17 12:48:00   1  12.85  2  14.54
 90/03/17 13:03:00   1  12.82  2  14.55
 90/03/17 13:18:00   1  12.83  2  14.56
 90/03/17 13:33:00   1  12.85  2  14.57
 90/03/17 13:48:00   1  12.85  2  14.58
 90/03/17 14:03:00   1  12.85  2  14.58
 90/03/17 14:18:00   1  12.86  2  14.57
 90/03/17 14:33:00   1  12.83  2  14.55
 90/03/17 14:48:00   1  12.82  2  14.54
 90/03/17 15:03:00   1  12.82  2  14.52
 90/03/17 15:18:00   1  12.80  2  14.51
C  15:18  90/03/17 #03
C  END OF DATA
```

APPENDIX F

ANALYTICAL LABORATORY DATA

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			543820	543830	543840
Date Collected:			03/16/90	03/16/90	03/16/90
Date Received:			03/20/90	03/20/90	03/20/90
Parameter	Units	MDL	OW 10A	OW 14A	OW 13A
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	1.0	7100	3500	4100

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	543850 03/16/90 03/20/90 OW 8A	543860 03/16/90 03/20/90 OW 9A	543870 03/16/90 03/20/90 OW 7A
PACE Sample Number:					
Date Collected:					
Date Received:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	1.0	9700	1900	500

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			543880	543890	543900
Date Collected:			03/16/90	03/16/90	03/16/90
Date Received:			03/20/90	03/20/90	03/20/90
Parameter	Units	MDL	OW 6A	OW 5A	OW 4A
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	1.0	3500	3500	1200

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			543910	543920	543930
Date Collected:			03/16/90	03/16/90	03/16/90
Date Received:			03/20/90	03/20/90	03/20/90
Parameter	Units	MDL	OW 12A	OW 3A	OW 2A
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	1.0	3000	3500	3900

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			543940	543950	543960
Date Collected:			03/16/90	03/16/90	03/16/90
Date Received:			03/20/90	03/20/90	03/20/90
Parameter	Units	MDL	OW 1A	OW 11A	OB 3
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	1.0	3900	3900	84

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 02, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	PACE Sample Number: 543970 Date Collected: 03/16/90 Date Received: 03/20/90 Discharge Canal	PACE Sample Number: 543980 Date Collected: 03/16/90 Date Received: 03/20/90 Dania Canal
INORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Chloride	mg/L	1.0	12000	12000

MDL Method Detection Limit

The data contained in this report were obtained using EPA or other approved methodologies. All analyses were performed by me or under my supervision.

Dr. James M. O'Neal
Director, Sampling and Analytical Services

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KBN Engineering
1034 Northwest 57th Street
Gainesville, FL 32605

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	546180 03/23/90 03/28/90 OW4B	546190 03/23/90 03/28/90 OW3B	546200 03/23/90 03/28/90 OW12B
PACE Sample Number:					
Date Collected:					
Date Received:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	890	3200	2700

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			546210	546220	546230
Date Collected:			03/23/90	03/23/90	03/23/90
Date Received:			03/28/90	03/28/90	03/28/90
Parameter	Units	MDL	OW7B	OW6B	OW9B
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	180	2800	1800

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL			
PACE Sample Number:			546240	546250	546260
Date Collected:			03/23/90	03/23/90	03/23/90
Date Received:			03/28/90	03/28/90	03/28/90
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	8500	3200	2300

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	546270 03/23/90 03/28/90 OW14B	546280 03/23/90 03/26/90 OW 10 B	546290 03/23/90 03/26/90 OB 3B
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	3400	-	71
Chloride	mg/L	1	-	7400	-

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	546300 03/23/90 03/28/90 OW 2 B	546310 03/23/90 03/28/90 OW1B	546320 03/23/90 03/28/90 Discharge
PACE Sample Number:					
Date Collected:					
Date Received:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	3200	3400	3200

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	546330 OW5B	547490 OW-7C	547500 OW-6C
PACE Sample Number:			546330	547490	547500
Date Collected:			03/23/90	03/27/90	03/27/90
Date Received:			03/28/90	03/28/90	03/28/90
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	0.5	2800	-	-
Chloride	mg/L	2	-	500	3,300

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			547510	547520	547530
Date Collected:			03/27/90	03/27/90	03/27/90
Date Received:			03/28/90	03/28/90	03/28/90
Parameter	Units	MDL	OW-5C	OW-4C	OW-12C
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	2	3,400	1,100	3,100

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			547540	547550	547560
Date Collected:			03/27/90	03/27/90	03/27/90
Date Received:			03/28/90	03/28/90	03/28/90
Parameter	Units	MDL	OW-3C	OW-2C	OW-11C
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	2	4,000	3,600	3,100

MDL Method Detection Limit

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April 04, 1990
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Number: 200307532

FPL Lauderdale

PACE Sample Number:			547570	547580	547590
Date Collected:			03/27/90	03/27/90	03/27/90
Date Received:			03/28/90	03/28/90	03/28/90
Parameter	Units	MDL	OW-1C	OW-9C	OW-13C
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	2	3,700	1,900	3,500

MDL Method Detection Limit

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PACE Project
Number: 200307532

FPL Lauderdale

Parameter	Units	MDL	547600 03/27/90 03/28/90 OW-8C	547610 03/27/90 03/28/90 OB-3C	547620 03/27/90 03/28/90 OW-14C
PACE Sample Number:					
Date Collected:					
Date Received:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Chloride	mg/L	2	9,600	130	3,700

MDL Method Detection Limit

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Lab Certification: Florida Environmental Laboratory Certification HRS #E84003
Florida SDWA: HRS #84125
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REPORT OF LABORATORY ANALYSIS

April 04, 1990
PACE Project
Number: 200307532

FPL Lauderdale

PACE Sample Number:			547630
Date Collected:			03/27/90
Date Received:			03/28/90
Parameter	Units	MDL	OW-10C
INORGANIC ANALYSIS			
INDIVIDUAL PARAMETERS			
Chloride	mg/L	2	7,800

MDL Method Detection Limit

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