SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
WEST PALM BEACH, FL. 33416-4680

·····NOTICE OF INTENT TO USE WATER (CHAPTER 40-20, F.A.C.)·····

APPLICANT'S NAME: General Development Utilities, Inc.

PROPERTY OWNER'S NAME: General Development Utilities, Inc.

MAILING ADDRESS: 1111 S. Bayshore Drive

CITY: Miami STATE: Florida ZIP: 33131 PHONE (305): 350-1600

PROJECT NAME: Port St. Lucie

PROJECT LOCATION: CITY: Port St. Lucie COUNTY: St. Lucie

SECTION (S): TOWNSHIP(S): 36 and 37 South RANGE(S): 39, 40, 41 East

ADDRESS OF PROJECT: 901 Prineville Road

CITY: Port St. Lucie STATE: Florida ZIP: 33452

USE IS: ( ) EXISTING ( ) PROPOSED (X) A PERMIT TO BE MODIFIED

IF EXISTING, HOW LONG HAS IT EXISTED? N/A

IF PROPOSED, HAS A SURFACE WATER MANAGEMENT PERMIT BEEN APPLIED FOR? N/A

ACREAGE IS: (X) OWNED ( ) LEASED NUMBER OF ACRES:

PURPOSE: Potable Supply
(PASTURE, GROVE, MOTEL, SWIMMING POOL SUPPLY, ETC.)

TYPE OF WATER USE: Public Water Supply
(IRRIGATION, PUBLIC WATER SUPPLY, ETC.)

IF IRRIGATION, ACRES IRRIGATED? N/A ACRES

GIVE ESTIMATED AVERAGE AMOUNT OF WATER TO BE USED: 4,260,000 GPD

GIVE ESTIMATED MAXIMUM AMOUNT OF WATER TO BE USED: 5,970,000 GPD

IF A PUBLIC WATER SUPPLY, WHAT IS THE:

TREATMENT PLANT CAPACITY: 6.0 MGD

ESTIMATED POPULATION SERVED:

NUMBER OF UNITS SERVED:

SOURCE DATA

(XX) SHALLOW WELLS ( ) FLORIDAN AQUIFER WELLS

(X) PUMPED
( ) FLOWING

( ) LAKE (SPECIFY NAME): N/A

September 4, 1987
Project No. 87-03048

TO: South Florida Water Management District
P. O. Box 24680
West Palm Beach, Florida 33416-4680

Attention: Mr. Steve Lamb, Director
Water Use Division

SUBJECT: General Development Utilities
North Port St. Lucie Facility
Modification of Existing WUP No. 56-00142-W

Dear Mr. Lamb:

As we discussed by telephone, General Development Utilities, Inc., (GDU) respectfully requests a modification to SFWMD Water Use Permit No. 56-00142-W issued on August 9, 1984 and expiring on August 9, 1994. The purpose of the permit modification is solely to allow for construction of two (2) new production wells and reincorporation of two (2) existing off-line production wells into the potable water supply system to partially regain lost pumping capacity apparently resulting from decreased performance of existing, permitted production wells. GDU is neither requesting an increase in annual allocation nor an increase in permitted daily withdrawal rates.

Addition of the four (4) additional production wells to GDU's potable water system is required to offset diminished well yields in order to meet peak demands on the system. GDU desires to have these wells on-line by early spring of 1988 when demands on the potable supply system are expected to be greatest as a result of historical dry season water usage.

EXISTING WITHDRAWAL FACILITIES

GDU's North Port St. Lucie (NPSL) water supply facility is currently permitted for 17 production wells, identified in Table I and located on Figure 1, attached. As shown in Table I, most of the existing wells have experienced significant reductions in capacity as compared to original design pumping rates. Based on actual pumping capacities determined by GDU plant personnel, the existing withdrawal facilities are capable of producing approximately 5.38 MGD with all seventeen (17) wells pumping simultaneously for 24 hours. This capacity includes the recent additions of wells PW-19 and PW-20 to the system. Descriptions of the existing on-line production wells as presented in Table II.

PROPOSED WITHDRAWAL FACILITIES

Drilling of two (2) new production wells and refurbishment of two (2) existing off-line production wells is proposed to partially regain the diminished withdrawal capability of the NPSL well field. As shown on Figure 1, two (2) new production wells are proposed at locations designated T-25 and T-27. Anticipated well designs for these locations are indicated below, based on the results of test drilling and short-term specific capacity tests on small-diameter test wells installed at the sites.

SITE	PROPOSED TOTAL WELL DEPTH	PROPOSED CASING DIAMETER	PROPOSED SCREENED INTERVAL	SCREEN SLOT SIZE	ESTIMATED PUMPING CAPACITY
T-25 (24)	±95 Ft.	8 In.	50-90 Ft	0.040 In.	100 gpm
T-27 (21)	90 Ft.	8 In.	45-90 Ft	0.040 In.	200 gpm

The two (2) existing off-line production wells PW-4 and PW-18 (Figure 1) are proposed for refurbishment and connection to the potable water distribution system. As part of an on-going investigation of additional water supply sources, both wells were recently re-developed by air-lift and surging followed by short-term specific-capacity testing. Results of these tests indicate available withdrawal capacities of approximately 120 gpm for PW-4 and 150 gpm for PW-18. Well construction data for these two (2) wells are presented below.

SITE	TOTAL WELL DEPTH	CASING DIAMETER	SCREENED INTERVAL	SCREEN SLOT SIZE	ESTIMATED PUMPING CAPACITY	DATE DRILLED
PW-4	114 Ft.	8 In.	79-109 Ft	0.040 In.	120 gpm	1974
PW-18	110 Ft.	8 In.	55-105 Ft	N/A	150 gpm	1983

Well PW-4 is currently fitted with a Stevens F-Type automatic water level recorder. Well PW-18 is unused and is capped with a welded-on steel cover.

Addition of the two (2) proposed new wells at sites T-25 and T-27 together with incorporation of wells PW-4 and PW-18 to the NPSL potable water supply system will increase the withdrawal capacity of the NPSL well field by approximately 570 gpm (0.82 MGD). These additions will bring the total available maximum withdrawal capacity of the facility to about 4,305 gpm (6.20 MGD).

LEGEND

- ● EXISTING ON-LINE POTABLE WATER PRODUCTION WELL
- ⊗ EXISTING OFF-LINE POTABLE WATER PRODUCTION WELL
- ▲ PROPOSED POTABLE WATER PRODUCTION WELL
- WTP WATER TREATMENT PLANT
- ~ LINE OF EQUAL DRAWDOWN

Simulated Drawdown Of 21
Wells Pumping For 365 Days
NORTH PORT ST. LUCIE
Port St. Lucie, Florida

JAMMAL & ASSOCIATES, INC. con

DATE 9-3-8	PROJ NO. 87-03448	FIGURE

DRAPHIX #232687

LEGEND

- ● EXISTING ON-LINE POTABLE WATER PRODUCTION WELL
- ⊗ EXISTING OFF-LINE POTABLE WATER PRODUCTION WELL
- ▲ PROPOSED POTABLE WATER PRODUCTION WELL
- WTP WATER TREATMENT PLANT
- ~ LINE OF EQUAL DRAWDOWN

Simulated Drawdown Of 17 Wells Pumping For 365 Days
NORTH PORT ST. LUCIE
Port St. Lucie, Florida

JAMMAL & ASSOCIATES, INC. Consu

DATE	PROJ NO	FIGURE
9-3-8	87-03448	

DRAPHIX #232687

DRAWN	M G
CHKD	C L S
APPVD	R L P
SCALE	1" = 1500'

DRAPHIX #232687

LEGEND

- ● EXISTING ON-LINE POTABLE WATER PRODUCTION WELL
- ⊗ EXISTING OFF-LINE POTABLE WATER PRODUCTION WELL
- ▲ PROPOSED POTABLE WATER PRODUCTION WELL
- WTP WATER TREATMENT PLANT

MG
CLS
NEA

1" = 1500'

Well Field
NORTH PORT ST. L
Port St. Lucie, F

JAMMAL & ASSOCIATES

DATE: 9-3-8
PROJ. NO: 87-03448

GROUNDWATER FLOW MODELING

Model simulations of the NPSL well field were conducted to estimate drawdown of the potentiometric surface in response to pumpage from the NPSL production wells. The aquifer was modeled as a leaky, confined artesian system using a computer-based digital model which solves the flow equations of the Modified Hantush-Jacob Method presented in Lohman (1972). Aquifer hydraulic values were assumed based on previous aquifer pumping tests at NPSL conducted by others. Values input to the model code were:

Transmissivity	30,000 gpd/ft
Storage	4.15×10^{-4}
Leakance	3.31×10^{-3} gpd/ft^3

The value for transmissivity was used to represent average conditions across the NPSL well field. Available pumping test data and results indicate that transmissivity of the artesian aquifer varies considerably from place to place within the well field area as a function of heterogenity of the sedimentary units and lithology of the deposits comprising the aquifer. Values for storage and leakance are averages derived from site-specific test data presented by others (CH^2M Hill, 1987).

Two (2) model runs were conducted to define alterations of the drawdown magnitude and configuration resulting from withdrawal at the seventeen (17) existing on-line production wells combined with simultaneous pumpage from the two (2) proposed wells at sites T-25 and T-27 and wells PW-4 and PW-18.

The results of the model simulations are presented on Figures 2 and 3. Figure 2 depicts drawdown of the potentiometric surfaces in response to one (1) year of continuous pumpage from the seventeen (17) existing on-line production wells at actual measured pumping rates shown in Table I previously. Figure 3 depicts simulated drawdown across the well field resulting from pumpage from the seventeen (17) existing on-line production wells combined with pumpage from well PW-4, PW-18 and production wells at site T-25 and T-27. Pumping rates input to the model for PW-4, PW-18, T-25 and T-27 were, 120 gpm, 150 gpm, 100 gpm and 200 gpm, respectively. As in the previous (Figure 2) simulation, the time of pumpage was one (1) year.

A completed SFWMD Application for Permit Modification is attached to this report. Also attached as Appendix to this report is a copy of the current SFWMD WUP No. 56-00142-W for the NPSL facility together with the attendant SFWMD staff report recommending approval of the allocation requested in 1984.

On behalf of GDU, we thank you for your considerations in regards to modification of the existing permit to allow addition of the four (4) proposed production wells to help regain lost well field capacity. If we can provide additional information to assist in your review of GDU's request, please contact the undersigned at your convenience.

Sincerely yours,

JAMMAL & ASSOCIATES, INC.

Richard L. Potts, Jr.
Senior Hydrogeologist

Nicolas E. Andreyev, P.E.
Senior Project Manager
Fl. Registration No. 35459

RLP:NEA/cah
Doc #0378Q

cc: Eric Meyers
General Development Utilities

Michael Yates
General Development Utilities

Gerry Hartman
Dyer, Riddle, Mills & Precourt, Inc.

Bob Leacock
Dyer, Riddle, Mills & Precourt, Inc.

TABLE I

NORTH PORT ST. LUCIE
EXISTING PRODUCTION WELL CAPACITY 1/

WELL NUMBER	DESIGN PUMPING RATE (gpm)	ACTUAL PUMPING RATE (gpm)	CAPACITY REDUCTION
PW-1	600	350	42%
PW-2	200	170	15%
PW-3	400	110	72%
PW-6	275	170	38%
PW-7	285	130	54%
PW-8	200	75	63%
PW-9	320	210	34%
PW-10	320	170	47%
PW-11	180	100	44%
PW-12	250	100	60%
PW-13	190	190	0
PW-14	315	315	0
PW-15	450	390	13%
PW-16	300	265	12%
PW-17	450	365	19%
PW-19	275	275 3/	-
PW-20	350	350 3/	-
TOTAL	5,360 gpm (7.72 MGD)	3,735 gpm (5.38 MGD)	34% (avg)

1/. Data provided by GDU Plant personnel
2/. Measured production rates reported by GDU
3/. Assumed--wells not on-line yet

TABLE II

DESCRIPTION OF WELLS

WELL NO.	1	2	3	4
Map Designation	As	Numbered		
Existing/Proposed	-------	Existing	-------	Off-Line
Diameter (Inches)	8 x 16	8 x 16	8 x 16	8 x 16
Total Depth	95',	103'	90'	114'
Cased Depth	60'	45'	45'	79'
Screened Interval	60'-90'	45'-85'	45'-85'	79'-109'
Pumped or Flowing	Pumped	----------	----------	----------
Working Valve If Artesian (Yes/No)	----------	N/A	----------	----------
Pump Manufacturer and Model No.	Peerless 8HxB	Peerless 8HxB	Peerless 8HxB	NONE
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	---------	Turbine	----------	----------
Intake Depth				
Pump Capacity (GPM @___FT of head @___PSI)	600 GPM @ 120'	200 GPM @ 110'	400 GPM @ 110'	125 GPM @ 140'
Active (Yes/No)	Yes	Yes	Yes	No
Year Drilled	1969	1969	1970	1974
Type of Meter	---------	Propeller	----------	----------
Planar Coordinates	X=713065 Y=1081466	X=713783 Y=1082277	X=713061 Y=1082173	X=710706 Y=1084079

TABLE II (cont)

DESCRIPTION OF WELLS

WELL NO.	6	7	8	9
Map Designation	Same	as	Numbered	
Existing/Proposed	----------	Existing	----------	
Diameter (Inches)	8 x 16	8 x 16	8 x 16	8 x 16
Total Depth	111'	111'	111'	110'
Cased Depth	76'	69.5'	75'	65'
Screened Interval	76'-106'	69.5'-99.5'	75'-105'	65'-105'
Pumped or Flowing	Pumped	----------	----------	----------
Working Valve If Artesian (Yes/No)	----------	N/A	----------	----------
Pump Manufacturer and Model No.	Layne 8LB	Peerless 8LB	Peerless 8LB	Layne 8LB
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	----------	Turbine	----------	----------
Intake Depth		68'	68'	65'
Pump Capacity (GPM @___FT of head @___PSI)	275 GPM @ 157'	265 GPM @ 166'	200 GPM @ 170'	320 GPM @ 152'
Active (Yes/No)	Yes	Yes	Yes	Yes
Year Drilled	1975	1975	1975	1974
Type of Meter	----------	Propeller	----------	----------
Planar Coordinates	X = 709609 Y = 1085186	X = 709609 Y = 1086901	X = 709604 Y = 1087809	X = 710700 Y = 1085190

TABLE II (cont)

DESCRIPTION OF WELLS

WELL NO.	10	11	12	13
Map Designation	Same	as	Numbered	
Existing/Proposed	----------	----Existing----	----------	
Diameter (Inches)	8 x 16	8 x 16	8 x 16	8 x 16
Total Depth	110'	111'	111'	99.5'
Cased Depth	70'	71'	71'	54.5'
Screened Interval	70'-105'	71'-106'	71'-106'	54.5'-94.5'
Pumped or Flowing	----------	Pumped	----------	
Working Valve If Artesian (Yes/No)	----------	----N/A----	----------	
Pump Manufacturer and Model No.	Layne 81130	Peerless 8LB	Layne 81131	Peerless 8LB
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	----------	----Turbine----	----------	
Intake Depth	63'	70'	69'	
Pump Capacity (GPM @___FT of head @___PSI)	320 GPM @ 156'	180 GPM @ 160'	255 GPM @ 165'	190 GPM @ 138'
Active (Yes/No)	Yes	Yes	Yes	Yes
Year Drilled	1975	1975	1975	1982
Type of Meter	----------	----Propeller----	----------	
Planar Coordinates	X=710696 Y=1086098	X=710681 Y=1086906	X=710687 Y=1087815	X=708716 Y=1085179

TABLE II (Cont)

DESCRIPTION OF WELLS

WELL NO.	14	15	16	17
Map Designation	Same	As	Numbered	
Existing/Proposed	---- Existing---			
Diameter (Inches)	8 x 16	8 x 16	8 x 16	8 x 16
Total Depth	100'	99.5'	90'	110'
Cased Depth	60'	64.5'	55'	55'
Screened Interval	60'-95'	64.5'-94.5'	55'-85'	55'-105'
Pumped or Flowing	----------Pumped----------			
Working Valve If Artesian (Yes/No)	----------N/A----------			
Pump Manufacturer and Model No.	Peerless 8MA	Peerless 8MA	Peerless 8MA	Peerless 8MA
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	----------Turbine----------			
Intake Depth				
Pump Capacity (GPM @___FT of head @___PSI)	300 GPM @ 87'	300 GPM @ 87'	300 GPM @ 87'	300 GPM @ 86'
Active (Yes/No)	------Yes------		--------No------	
Year Drilled	----------1982----------			
Type of Meter	----------Propeller----------			
Planar Coordinates	X=710094 Y=1080440	X=709197 Y=1079325	X=709833 Y=1078520	X=714787 Y=1080061

TABLE II (cont)
DESCRIPTION OF WELLS

WELL NO.	18	19	20	
Map Designation	SAME	SAME	SAME	
Existing/Proposed	EXISTING OFFLINE	EXISTING	EXISTING	
Diameter (Inches)	8 x 16	8 x 16	8 x 16	
Total Depth	95'	95'	105'	
Cased Depth	50'	60'	57'	
Screened Interval	50'-90'	60 - 90	57 - 62 70 - 100	
Pumped or Flowing	Pumped	Pumped	Pumped	
Working Valve If Artesian (Yes/No)	N/A	N/A	N/A	
Pump Manufacturer and Model No.	NONE	Peerless	Peerless	
Pump (Centrifugal, Type Jet, Deep Jet, Turbine, etc.)	Turbine	Turbine	Turbine	
Intake Depth				
Pump Capacity (GPM @___FT of head @___PSI)	100 GPM @ 85'	275 gpm @ 180 TDH	350 gpm @ 180 TDH	
Active (Yes/No)	NO	YES	YES	
Year Drilled	1982	1987	1987	
Type of Meter	Propeller	Propeller	Propeller	
Planar Coordinates	X=714341 Y=1078948			

FORM PA-31
REV. 11/79

South Florida
Water Management District
WATER USE PERMIT NO. RE-ISSUE 56-00142-W

(NON-ASSIGNABLE)

DATE ISSUED: August 9, 1984 EXPIRATION DATE August 9, 1994

AUTHORIZING: USE OF GROUND WATER FROM THE SHALLOW AQUIFER FOR PUBLIC WATER SUPPLY WITH AN ANNUAL ALLOCATION OF 1.555 BILLION GALLONS

LOCATED IN: St. Lucie COUNTY, SECTION -- TWP. 36,37S RGE. 40E

ISSUED TO: General Development Utilities, Inc.
(Port St. Lucie)
1111 South Bayshore Drive
Miami, FL 33131

This Permit is issued pursuant to Application for Permit No. -- dated -- , 19 -- for the Use of Water as specified above and subject to the Special Conditions set forth below. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

Upon written notice to the permittee, this permit may be temporarily modified, or restricted under a Declaration of Water Shortage or a Declaration of Emergency due to Water Shortage in accordance with provisions of Ch. 373, Fla. Statutes, 1973 and applicable rules and regulations of the South Florida Water Management District.

This Permit may be permanently or temporarily revoked, in whole or in part, for the violation of the conditions of the permit or for the violation of any provision of the Water Resources Act and regulations thereunder.

This Permit does not convey to permittee any property rights nor any privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation, or requirement affecting the rights of other bodies or agencies.

SPECIAL CONDITIONS ARE AS FOLLOWS:

SHEETS 2, 3 AND 4 OF 4 - 27 SPECIAL CONDITIONS

FILED WITH THE CLERK OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ON Original signed by: 2/10/84
BY Kaiser
DEPUTY CLERK

ISSUANCE RECOMMENDED:
Chief of Permits
By: _____
Director, Regulation Division:
By: _____

SOUTH FLORIDA WATER MANAGEMENT DISTRICT, BY ITS GOVERNING BOARD

By Original Signed By Thomas E. Huey
Secretary

RE-ISSUE

1. APPLICATION FOR AN ADDITIONAL ALLOCATION OR MODIFICATION MAY BE MADE AT ANY TIME.

2. THIS PERMIT SHALL EXPIRE 10 YEARS FROM THE DATE OF ISSUANCE.

3. MAXIMUM DAY WITHDRAWAL SHALL NOT EXCEED 5.97 MGD.

4. WATER USE PERMIT NUMBER SHALL BE A PART OF ALL CORRESPONDANCE, REPORTS AND DATA SUBMITTALS REQUIRED BY OTHER LIMITING CONDITIONS OF THIS PERMIT.

5. PERMITTEE SHALL SUBMIT TO THE DISTRICT COPIES OF THE MONTHLY D.E.R. WATER TREATMENT PLANT REPORTS.

   THE REPORTS SHALL BE SUBMITTED ON A MONTHLY BASIS FOLLOWING THE MONTH OF RECORD. PERMITTEE SHALL BEGIN SUBMITTING REPORTS IN THE MONTH FOLLOWING THE MONTH OF PERMIT ISSUANCE.

6. IN THE EVENT OF A DECLARED WATER SHORTAGE, WATER WITHDRAWAL REDUCTIONS SHALL BE MADE AS SPECIFIED BY THE DISTRICT.

7. PERMITTEE SHALL MITIGATE ANY ADVERSE IMPACT CAUSED BY WITHDRAWALS ON LEGAL USES WHICH EXISTED AT THE TIME OF PERMIT APPLICATION. DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF PUMPAGE CAUSES AN ADVERSE IMPACT ON LEGAL USES OF WATER WHICH EXISTED AT THE TIME OF APPLICATION. ADVERSE IMPACTS ARE EXEMPLIFIED BY BUT NOT LIMITED TO THE FOLLOWING: 1) REDUCTION IN WELL WATER LEVELS RESULTING IN A REDUCTION OF 10% IN THE ABILITY OF AN ADJACENT WELL TO PRODUCE WATER (AN ADJACENT WELL MAY BE A DOMESTIC WELL, LAWN IRRIGATION WELL, PUBLIC WATER SUPPLY WELL, ETC.), 2) SIGNIFICANT REDUCTION IN WATER LEVELS IN AN ADJACENT WATER BODY SUCH AS A LAKE, POND, OR A CANAL SYSTEM, RESULTING IN A SIGNIFICANT IMPAIRMENT OF THE USE OF WATER IN THAT WATER BODY, 3) SALINE WATER INTRUSION OR INDUCTION OF POLLUTANTS INTO THE WATER SUPPLY OF AN ADJACENT WATER USE RESULTING IN A SIGNIFICANT REDUCTION IN WATER QUALITY, 4) CHANGE IN WATER QUALITY RESULTING IN EITHER IMPAIRMENT OR LOSS OF USE OF A WELL OR WATER BODY.

8. PERMITTEE SHALL MITIGATE ANY ADVERSE IMPACT ON OFF-SITE LAND USE WHICH EXISTED AT THE TIME OF APPLICATION, AS A CONSEQUENCE OF WITHDRAWALS PERMITTED HEREIN TO THE SATISFACTION OF THE DISTRICT. THE DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF INCREASED WITHDRAWALS CAUSE AN ADVERSE IMPACT ON LAND USE WHICH EXISTED AT THE TIME OF APPLICATION. ADVERSE IMPACTS ARE EXEMPLIFIED BY BUT NOT LIMITED TO THE FOLLOWING: 1) SIGNIFICANT REDUCTION IN WATER LEVELS IN AN ADJACENT WATER BODY SUCH AS A LAKE, POND, OR CANAL SYSTEM WHICH IS NOT BEING USED AS A SOURCE OF WATER SUPPLY; 2) LAND COLLAPSE OR SUBSIDENCE CAUSED BY REDUCTION IN WATER LEVELS; 3) DAMAGE TO CROPS AND OTHER TYPES OF VEGETATION, THE ELIMINATION OF WHICH WOULD CAUSE FINANCIAL HARM TO THE LANDOWNER.

9. PERMITTEE SHALL NOT CAUSE SIGNIFICANT SALINE WATER INTRUSION. . THE DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF INCREASED WITHDRAWALS CAUSE SIGNIFICANT SALINE WATER INTRUSION.

10. IF THE PERMITTEE WILL NOT SERVE A NEW DEMAND LOCATED WITHIN THE SERVICE AREA FOR WHICH THE ANNUAL ALLOCATION WAS CALCULATED, THE ANNUAL ALLOCATION MAY BE SUBJECT TO MODIFICATION.

11. ONE MONTH PRIOR TO NEW WELL CONSTRUCTION, PERMITTEE SHALL SUBMIT TO THE DISTRICT ~~FOR APPROVAL~~ ALL OF THE FOLLOWING ITEMS FOR EACH PROPOSED WELL: PROPOSED DEPTH OF WELL, PROPOSED DEPTH OF CASING, LOCATION OF OTHER WELLS WITHIN 300' OF PROPOSED SITE, MAP OF PROPOSED SITE, INSTALLED CAPACITY, AND LOCATION OF ALL SOURCES OF POLLUTION WITHIN 300' (EXCLUDING SEPTIC TANKS).

12. PERMITTEE SHALL PERFORM STEP DRAWDOWN TESTS ON ALL NEW WELLS WITHIN ONE MONTH OF CONSTRUCTION. THESE DATA SHALL BE SUBMITTED TO THE DISTRICT WITHIN ONE MONTH. PERMITTEE SHALL SUBMIT THE PUMPING RATE, DURATION OF THE TEST AND THE DRAWDOWN AT THE END OF EACH STEP. (INFORMATION ON PERFORMING STEP-DRAWDOWN TESTS IS AVAILABLE FROM THE DISTRICT.)

13. NEW WELL CONSTRUCTION OR MODIFICATION OF EXISTING WELLS SHALL BE PERFORMED PER FAC 17-21 AND 17-22. NEW WELL OR MODIFICATIONS OF EXISTING WELLS SHALL BE UNDER THE DIRECTION AND UNDER THE SUPERVISION OF A WATER WELL CONTRACTOR LICENSED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION. PERMITTEE SHALL OBTAIN A DER WELL CONSTRUCTION PERMIT PRIOR TO CONSTRUCTING A WELL.

14. THE DISTRICT AND THE DEPARTMENT OF ENVIRONMENTAL REGULATION SHALL BE NOTIFIED AT LEAST 5 DAYS PRIOR TO THE CONSTRUCTION OF PROPOSED WELLS.

15. PERMITTEE SHALL SUPPLY THE FLORIDA BUREAU OF GEOLOGY WITH DRILL CUTTINGS FROM ANY NEW WELLS. THE CUTTINGS SHALL BE COLLECTED EVERY FIVE FEET OR EVERY FORMATION CHANGE, WHICHEVER COMES FIRST. SAMPLE BAGS SHALL BE PROVIDED BY THE PERMITTEE. FOR FLORIDAN AQUIFER WELLS, ONE WELL SHALL BE LOGGED USING RESISTIVITY, GAMMA-RAY, AND CALIPER TOOLS. LOGS AND LOCATION MAPS OF THE WELL SHALL BE SENT TO THE BUREAU OF GEOLOGY WITHIN ONE MONTH OF THE DATE OF CONSTRUCTION. THE ADDRESS OF THE FLORIDA BUREAU OF GEOLOGY IS AS FOLLOWS: FLORIDA BUREAU OF GEOLOGY, 903 W. TENNESSEE, TALLAHASSEE, FLORIDA 32304.

16. A DRILLER'S WELL COMPLETION REPORT FOR NEW OR MODIFIED WELLS SHALL BE PROVIDED TO THE DISTRICT WITHIN ONE MONTH OF DATE OF WELL CONSTRUCTION OR MODIFICATION.

17. SOURCE CLASSIFICATION IS GROUNDWATER FROM SHALLOW AQUIFER.

18. USE CLASSIFICATION IS PUBLIC SUPPLY.

19. DISTRICT AUTHORIZED REPRESENTATIVES SHALL BE PERMITTED TO ENTER, INSPECT AND OBSERVE THE PUBLIC WATER SYSTEM UPON DISTRICT STAFF IDENTIFICATION IN ORDER TO DETERMINE COMPLIANCE WITH SPECIAL CONDITIONS.

20. PERMITTEE SHALL MAKE DAILY OR CUMULATIVE WEEKLY RAINFALL MEASUREMENTS AT THE WELLFIELD AND REPORT THIS DATA TO THE DISTRICT EVERY SIX MONTHS. DATA COLLECTION SHALL BEGIN IN THE MONTH FOLLOWING THE MONTH OF PERMIT ISSUANCE.

21. IF ANY CONDITIONS OF THIS PERMIT ARE VIOLATED, THE PERMIT SHALL BE SUBJECT TO REVIEW AND POSSIBLE REVOCATION AND MODIFICATION, OR ENFORCEMENT ACTION.

22. IN THE EVENT OF A DECLARED WATER SHORTAGE, ALL DATA SUBMITTALS REQUIRED BY THE LIMITING CONDITIONS OF THIS PERMIT SHALL BE REPORTED TO THE DISTRICT BY TELEPHONE ON A WEEKLY OR MORE FREQUENT BASIS, IN ADDITION TO THE FORM AND FREQUENCY NORMALLY REQUIRED, FOR THE DURATION OF THE WATER SHORTAGE.

23. PERMITTEE SHALL DEVELOP AND IMPLEMENT A "WELLFIELD OPERATING PROGRAM" WITHIN SIX MONTHS OF DATE OF PERMIT ISSUANCE. THIS PROGRAM SHALL DETAIL WHICH WELLS ARE PRIMARY, SECONDARY, STANDBY (RESERVE), AND ANY OTHER ASPECTS OF WELLFIELD MANAGEMENT. THE WELLFIELD OPERATING PROGRAM MAY BE SUBMITTED AS A LETTER REPORT.

24. PERMITTEE SHALL DETERMINE "UNACCOUNTED FOR" DISTRIBUTION SYSTEM LOSSES IF THE PERMITTEE DISTRIBUTES WATER WITHIN ONE MILE OF SURFACE SALINE WATER. LOSSES SHALL BE DETERMINED FOR THE ENTIRE DISTRIBUTION SYSTEM ON A MONTHLY BASIS. PERMITTEE SHALL DEFINE THE MANNER IN WHICH "UNACCOUNTED FOR" LOSSES ARE CALCULATED. DATA COLLECTION SHALL BEGIN WITHIN SIX MONTHS OF PERMIT ISSUANCE. LOSSES SHALL BE SUBMITTED TO THE DISTRICT ON A YEARLY BASIS FROM THE DATE OF PERMIT ISSUANCE.

25. THE ANNUAL ALLOCATION SPECIFIED HEREIN IS NOT A GUARANTEE EITHER THAT THE WATER IS AVAILABLE OR THAT THE ANNUAL ALLOCATION WILL NOT PRODUCE AN ADVERSE IMPACT BUT REPRESENTS THE BEST EVALUATION BY DISTRICT STAFF OF AVAILABLE DATA.

26. PERMITTEE SHALL CONSTRUCT AND MAINTAIN A POTENTIOMETRIC HEAD MONITORING WELL WITH AN AUTOMATIC RECORDING DEVICE. THE WELL AND RECORDER SHALL BE INSTALLED WITH SIX MONTHS OF PERMIT ISSUANCE. THE WELL SHALL BE CONSTRUCTED IN A MANNER AND AT A LOCATION ACCEPTABLE TO BOTH PERMITTEE AND DISTRICT STAFF. WATER TABLE RECORDS SHALL BE SUBMITTED TO THE DISTRICT AS FREQUENTLY AS COLLECTED BUT NOT LATER THAN DECEMBER 31ST OF EACH YEAR.

27. PERMITTEE SHALL MONITOR WELLS SW-2S, SW-2D, SW-3S, SW-3D, SW-4S, SW-4M, SW-4D and PW-4 for CHLORIDES MONTHLY AND SUBMITTED TO THE DISTRICT IN MONTH FOLLOWING THE MONTH OF DATA COLLECTION.

REFERENCES

CH2 HILL, 1987, Draft Feasibility Study and Conceptual Design Memorandum, Aquifer Storage Recovery for North Port St. Lucie, Florida: fo General Development Utilities, Inc., Miami, Florida.

Lohman, S.W., 1972, Groundwater Hydraulics: U.S. Geological Survey Professional Paper 708, U.S. Geological Survey, Washington, D.C.

LAST DATE FOR BOARD ACTION:
AUGUST 9, 1984

DRAFT
Subject to Governing Board Approval

General Development Utilities, Inc.

Modification No. 56-00142-W

St. Lucie County

S T A F F R E P O R T

ABSTRACT

Application has been made by General Development Utilities Inc. for an annual allocation of 1,555 MGY (4.26 MGD) for a public water supply system serving a population of 22558 people. Withdrawals are from the Shallow Aquifer. The service area is located in Townships 36 and 37 South, Ranges 39, 40 and 41 East. Staff recommends an annual allocation of 1.555 BGY (4.26 MGD) and a 10 year permit subject to 27 Limiting Conditions.

THE APPLICATION

A. Purpose

Application is made for an existing public water supply system to increase the average and maximum day allocations as a result of increased population projections. The location of the applicant's service area is depicted in Exhibits 1, 2 and 3.

B. Existing Facilities

The applicant's total withdrawal capacity is 4630 GPM (6.7 MGD) from 17 wells whose location are shown in Exhibit 4. Pertinent well data for each well is presented as Exhibits 5a-e. Withdrawals are from the Shallow Aquifer. The existing rated capacity of the water treatment plant, as approved by DER, is 6.0 MGD. The storage facilities consist of 150000 gal. at North Port St. Lucie WTP 1, 600000 gal. at North Port St. Lucie WTP 2, and 300000 gal. at South Port St. Lucie WTP.

C. Proposed Facilities

The applicant proposes three new wells with a total capacity of 700 GPM. This will increase the total number of wells to 17. The location of the proposed facilities is shown in Exhibit 4 and described in Exhibits 5d and e.

D. Additional Descriptive Information

1. The continuous water level recorder on PW-4 will be moved to another well which is constructed in the production zone (70-120' BLS). The recorder location is being changed because of vandalism.
2. Exhibit 8 (Table E) gives the population for 1983 through September. This information has recently been updated to include October-December as follows:

Year	Population	No of Units (Cumulative)	Total Annual (MG)	Average Day (MGD)	Maximum Day (MGD)
1983	22,558	9023	669.78	1.84	2.97 (May)

3. There are only thirteen wells currently being utilized for production. Well No. 4 (Table A, Exhibit 5A) is not being pumped due to the high concentration of H_2S and low yield (approximately 40 GPM). Instead it has been used for a monitoring well for water levels and chloride concentrations (No. 1 above).
4. The expansion of the North Port Water Treatment Plant No. 2 has been completed and approved by FDER. The project completion was finalized officially December 22, 1983.

E. Background

The permittee was issued Water Use Permit No. 56-00142-W on January 7, 1982, authorizing the use of groundwater from the Shallow Aquifer, serving 6400 acres with an annual allocation of 894 MGY (2.45 MGD), for a period of 2 years. The permitted maximum day withdrawal is 4.0 MGD.

EVALUATION

A. Compliance with Limiting Conditions

Permittee has been incompliance with its Limiting Conditions.

B. Current Pumpage

Existing raw water pumpage during the 12 month interval from October 1982 to September 1983 was 714.0 MGY (1.925 MGD). Maximum day use during the same time interval was 3.127 MGD. The ratio of maximum day to average day pumpage was 1.4. The ratio of raw water to treated water was 1.08 (Exhibit 6). Existing per capita daily consumption is 100 GPCD based on the permanent population and raw water pumpage.

C. Applicant's Projected Population, Proposed Use and Requested Allocation

The applicant indicates an existing population of 22558. The applicant requests an allocation of 1555 MGY (4.26 MGD), which is based upon a projected average day use of 4.26 MGD in the year 1993 by a population of 42625 and a per capita daily use of 100 GPCD, as explicated in Exhibit 7. The Applicant requests a maximum daily withdrawal of 5.97 MGD, which was calculated by an average day to maximum day ratio of 1.4. The applicant's projections are based upon an analysis of historical demand records (Exhibit 8).

D. Staff Evaluation of Projected Population and Proposed Use

Staff agrees with the applicant's projected population and water use.

E. Water Availability

Staff concludes that water may be available in the amount recommended as an annual allocation.

F. Impact on Existing Legal Uses

No adverse impact on existing legal uses is anticipated as a consequence of the recommended allocation.

G. Saline Water Intrusion

The potential for saline water intrusion into the applicant's source of water supply is considered to be minimal.

H. Environmental Impact

The potential for adverse environmental impact due to the recommended withdrawals is minimal.

I. Potential Sources of Pollution

DER/Health Department review indicates no sources of pollution adjacent to the applicant's wellfield/point of intake and has indicated no objection to the allocation recommended in this report.

J. Allocation Recommended by Staff

Staff recommends an allocation of 1.555 BGY (4.26 MGD).

K. Maximum Day Withdrawal Recommended by Staff

Staff recommends that the maximum day withdrawal be limited to 5.97 MGD. This is calculated and based on the following: average day times 1.4.

L. Duration of Permit

Staff recommends that the duration of the permit be for 10 years from date of issuance.

M. Water Shortage

The recommended allocation is subject to a Water Shortage Plan (Chapter 40.E-21 F.A.C.) adopted by the District.

CONCLUSIONS

Staff has concluded that the water use as recommended by Staff represents a reasonable-beneficial use of the resource that will not impact adjacent existing legal uses. The use is in the public interest.

RECOMMENDATIONS

The Staff recommends that a Water Use Permit be issued to the applicant pursuant to Modification No. 56-00142-W for an annual allocation of 1.555 BGY for 10 years.

4.26 MGD AVF

It is further recommended that this permit be subjected to the following Limiting Conditions:

1. APPLICATION FOR AN ADDITIONAL ALLOCATION OR MODIFICATION MAY BE MADE AT ANY TIME.

2. THIS PERMIT SHALL EXPIRE 10 YEARS FROM THE DATE OF ISSUANCE.

3. MAXIMUM DAY WITHDRAWAL SHALL NOT EXCEED 5.97 MGD.

4. WATER USE PERMIT NUMBER SHALL BE A PART OF ALL CORRESPONDANCE, REPORTS AND DATA SUBMITTALS REQUIRED BY OTHER LIMITING CONDITIONS OF THIS PERMIT.

5. PERMITTEE SHALL SUBMIT TO THE DISTRICT COPIES OF THE MONTHLY D.E.R. WATER TREATMENT PLANT REPORTS.

   THE REPORTS SHALL BE SUBMITTED ON A MONTHLY BASIS FOLLOWING THE MONTH OF RECORD. PERMITTEE SHALL BEGIN SUBMITTING REPORTS IN THE MONTH FOLLOWING THE MONTH OF PERMIT ISSUANCE.

6. IN THE EVENT OF A DECLARED WATER SHORTAGE, WATER WITHDRAWAL REDUCTIONS SHALL BE MADE AS SPECIFIED BY THE DISTRICT.

7. PERMITTEE SHALL MITIGATE ANY ADVERSE IMPACT CAUSED BY WITHDRAWALS ON LEGAL USES WHICH EXISTED AT THE TIME OF PERMIT APPLICATION. DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF PUMPAGE CAUSES AN ADVERSE IMPACT ON LEGAL USES OF WATER WHICH EXISTED AT THE TIME OF APPLICATION. ADVERSE IMPACTS ARE EXEMPLIFIED BY BUT NOT LIMITED TO THE FOLLOWING: 1) REDUCTION IN WELL WATER LEVELS RESULTING IN A REDUCTION OF 10% IN THE ABILITY OF AN ADJACENT WELL TO PRODUCE WATER (AN ADJACENT WELL MAY BE A DOMESTIC WELL, LAWN IRRIGATION WELL, PUBLIC WATER SUPPLY WELL, ETC.), 2) SIGNIFICANT REDUCTION IN WATER LEVELS IN AN ADJACENT WATER BODY SUCH AS A LAKE, POND, OR A CANAL SYSTEM, RESULTING IN A SIGNIFICANT IMPAIRMENT OF THE USE OF WATER IN THAT WATER BODY, 3) SALINE WATER INTRUSION OR INDUCTION OF POLLUTANTS INTO THE WATER SUPPLY OF AN ADJACENT WATER USE RESULTING IN A SIGNIFICANT REDUCTION IN WATER QUALITY, 4) CHANGE IN WATER QUALITY RESULTING IN EITHER IMPAIRMENT OR LOSS OF USE OF A WELL OR WATER BODY.

8. PERMITTEE SHALL MITIGATE ANY ADVERSE IMPACT ON OFF-SITE LAND USE WHICH EXISTED AT THE TIME OF APPLICATION, AS A CONSEQUENCE OF WITHDRAWALS PERMITTED HEREIN TO THE SATISFACTION OF THE DISTRICT. THE DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF INCREASED WITHDRAWALS CAUSE AN ADVERSE IMPACT ON LAND USE WHICH EXISTED AT THE TIME OF APPLICATION. ADVERSE IMPACTS ARE EXEMPLIFIED BY BUT NOT LIMITED TO THE FOLLOWING: 1) SIGNIFICANT REDUCTION IN WATER LEVELS IN AN ADJACENT WATER BODY SUCH AS A LAKE, POND, OR CANAL SYSTEM WHICH IS NOT BEING USED AS A SOURCE OF WATER SUPPLY; 2) LAND COLLAPSE OR SUBSIDENCE CAUSED BY REDUCTION IN WATER LEVELS; 3) DAMAGE TO CROPS AND OTHER TYPES OF VEGETATION, THE ELIMINATION OF WHICH WOULD CAUSE FINANCIAL HARM TO THE LANDOWNER.

9. PERMITTEE SHALL NOT CAUSE SIGNIFICANT SALINE WATER INTRUSION. THE DISTRICT RESERVES THE RIGHT TO CURTAIL FUTURE PUMPAGE RATES IF INCREASED WITHDRAWALS CAUSE SIGNIFICANT SALINE WATER INTRUSION.

10. IF THE PERMITTEE WILL NOT SERVE A NEW DEMAND LOCATED WITHIN THE SERVICE AREA FOR WHICH THE ANNUAL ALLOCATION WAS CALCULATED, THE ANNUAL ALLOCATION MAY BE SUBJECT TO MODIFICATION.

11. ONE MONTH PRIOR TO NEW WELL CONSTRUCTION, PERMITTEE SHALL SUBMIT TO THE DISTRICT FOR APPROVAL ALL OF THE FOLLOWING ITEMS FOR EACH PROPOSED WELL: PROPOSED DEPTH OF WELL, PROPOSED DEPTH OF CASING, LOCATION OF OTHER WELLS WITHIN 300' OF PROPOSED SITE, MAP OF PROPOSED SITE, INSTALLED CAPACITY, AND LOCATION OF ALL SOURCES OF POLLUTION WITHIN 300' (EXCLUDING SEPTIC TANKS).

12. PERMITTEE SHALL PERFORM STEP DRAWDOWN TESTS ON ALL NEW WELLS WITHIN ONE MONTH OF CONSTRUCTION. THESE DATA SHALL BE SUBMITTED TO THE DISTRICT WITHIN ONE MONTH. PERMITTEE SHALL SUBMIT THE PUMPING RATE, DURATION OF THE TEST AND THE DRAWDOWN AT THE END OF EACH STEP. (INFORMATION ON PERFORMING STEP-DRAWDOWN TESTS IS AVAILABLE FROM THE DISTRICT.)

13. NEW WELL CONSTRUCTION OR MODIFICATION OF EXISTING WELLS SHALL BE PERFORMED PER FAC 17-21 AND 17-22. NEW WELL OR MODIFICATIONS OF EXISTING WELLS SHALL BE UNDER THE DIRECTION AND UNDER THE SUPERVISION OF A WATER WELL CONTRACTOR LICENSED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION. PERMITTEE SHALL OBTAIN A DER WELL CONSTRUCTION PERMIT PRIOR TO CONSTRUCTING A WELL.

14. THE DISTRICT AND THE DEPARTMENT OF ENVIRONMENTAL REGULATION SHALL BE NOTIFIED AT LEAST 5 DAYS PRIOR TO THE CONSTRUCTION OF PROPOSED WELLS.

15. PERMITTEE SHALL SUPPLY THE FLORIDA BUREAU OF GEOLOGY WITH DRILL CUTTINGS FROM ANY NEW WELLS. THE CUTTINGS SHALL BE COLLECTED EVERY FIVE FEET OR EVERY FORMATION CHANGE, WHICHEVER COMES FIRST. SAMPLE BAGS SHALL BE PROVIDED BY THE PERMITTEE. FOR FLORIDAN AQUIFER WELLS, ONE WELL SHALL BE LOGGED USING RESISTIVITY, GAMMA-RAY, AND CALIPER TOOLS. LOGS AND LOCATION MAPS OF THE WELL SHALL BE SENT TO THE BUREAU OF GEOLOGY WITHIN ONE MONTH OF THE DATE OF CONSTRUCTION. THE ADDRESS OF THE FLORIDA BUREAU OF GEOLOGY IS AS FOLLOWS: FLORIDA BUREAU OF GEOLOGY, 903 W. TENNESSEE, TALLAHASSEE, FLORIDA 32304.

16. A DRILLER'S WELL COMPLETION REPORT FOR NEW OR MODIFIED WELLS SHALL BE PROVIDED TO THE DISTRICT WITHIN ONE MONTH OF DATE OF WELL CONSTRUCTION OR MODIFICATION.

17. SOURCE CLASSIFICATION IS GROUNDWATER FROM SHALLOW AQUIFER.

18. USE CLASSIFICATION IS PUBLIC SUPPLY.

19. DISTRICT AUTHORIZED REPRESENTATIVES SHALL BE PERMITTED TO ENTER, INSPECT AND OBSERVE THE PUBLIC WATER SYSTEM UPON DISTRICT STAFF IDENTIFICATION IN ORDER TO DETERMINE COMPLIANCE WITH SPECIAL CONDITIONS.

20. PERMITTEE SHALL MAKE DAILY OR CUMULATIVE WEEKLY RAINFALL MEASUREMENTS AT THE WELLFIELD AND REPORT THIS DATA TO THE DISTRICT EVERY SIX MONTHS. DATA COLLECTION SHALL BEGIN IN THE MONTH FOLLOWING THE MONTH OF PERMIT ISSUANCE.

21. IF ANY CONDITIONS OF THIS PERMIT ARE VIOLATED, THE PERMIT SHALL BE SUBJECT TO REVIEW AND POSSIBLE REVOCATION AND MODIFICATION, OR ENFORCEMENT ACTION.

22. IN THE EVENT OF A DECLARED WATER SHORTAGE, ALL DATA SUBMITTALS REQUIRED BY THE LIMITING CONDITIONS OF THIS PERMIT SHALL BE REPORTED TO THE DISTRICT BY TELEPHONE ON A WEEKLY OR MORE FREQUENT BASIS, IN ADDITION TO THE FORM AND FREQUENCY NORMALLY REQUIRED, FOR THE DURATION OF THE WATER SHORTAGE.

23. PERMITTEE SHALL DEVELOP AND IMPLEMENT A "WELLFIELD OPERATING PROGRAM" WITHIN SIX MONTHS OF DATE OF PERMIT ISSUANCE. THIS PROGRAM SHALL DETAIL WHICH WELLS ARE PRIMARY, SECONDARY, STANDBY (RESERVE), AND ANY OTHER ASPECTS OF WELLFIELD MANAGEMENT. THE WELLFIELD OPERATING PROGRAM MAY BE SUBMITTED AS A LETTER REPORT.

24. PERMITTEE SHALL DETERMINE "UNACCOUNTED FOR" DISTRIBUTION SYSTEM LOSSES IF THE PERMITTEE DISTRIBUTES WATER WITHIN ONE MILE OF SURFACE SALINE WATER. LOSSES SHALL BE DETERMINED FOR THE ENTIRE DISTRIBUTION SYSTEM ON A MONTHLY BASIS. PERMITTEE SHALL DEFINE THE MANNER IN WHICH "UNACCOUNTED FOR" LOSSES ARE CALCULATED. DATA COLLECTION SHALL BEGIN WITHIN SIX MONTHS OF PERMIT ISSUANCE. LOSSES SHALL BE SUBMITTED TO THE DISTRICT ON A YEARLY BASIS FROM THE DATE OF PERMIT ISSUANCE.

25. THE ANNUAL ALLOCATION SPECIFIED HEREIN IS NOT A GUARANTEE EITHER THAT THE WATER IS AVAILABLE OR THAT THE ANNUAL ALLOCATION WILL NOT PRODUCE AN ADVERSE IMPACT BUT REPRESENTS THE BEST EVALUATION BY DISTRICT STAFF OF AVAILABLE DATA.

26. PERMITTEE SHALL CONSTRUCT AND MAINTAIN A POTENTIOMETRIC HEAD MONITORING WELL WITH AN AUTOMATIC RECORDING DEVICE. THE WELL AND RECORDER SHALL BE INSTALLED WITH SIX MONTHS OF PERMIT ISSUANCE. THE WELL SHALL BE CONSTRUCTED IN A MANNER AND AT A LOCATION ACCEPTABLE TO BOTH PERMITTEE AND DISTRICT STAFF. WATER TABLE RECORDS SHALL BE SUBMITTED TO THE DISTRICT AS FREQUENTLY AS COLLECTED BUT NOT LATER THAN DECEMBER 31ST OF EACH YEAR.

27. PERMITTEE SHALL MONITOR WELLS SW-2S, SW-2D, SW-3S, SW-3D, SW-4S, SW-4M, SW-4D and PW-4 for CHLORIDES MONTHLY AND SUBMITTED TO THE DISTRICT IN MONTH FOLLOWING THE MONTH OF DATA COLLECTION.

PERMITTEE SHALL MONITOR WATER LEVELS MONTHLY IN WELLS WT-2, WT-5, WT-17, WT-18, PH:WTP #2, PH:80-7, 80-7, PW-9 AND PW-4. WATER LEVEL DATA SHALL BE SUBMITTED IN THE MONTH FOLLOWING THE MONTH OF DATA COLLECTION.

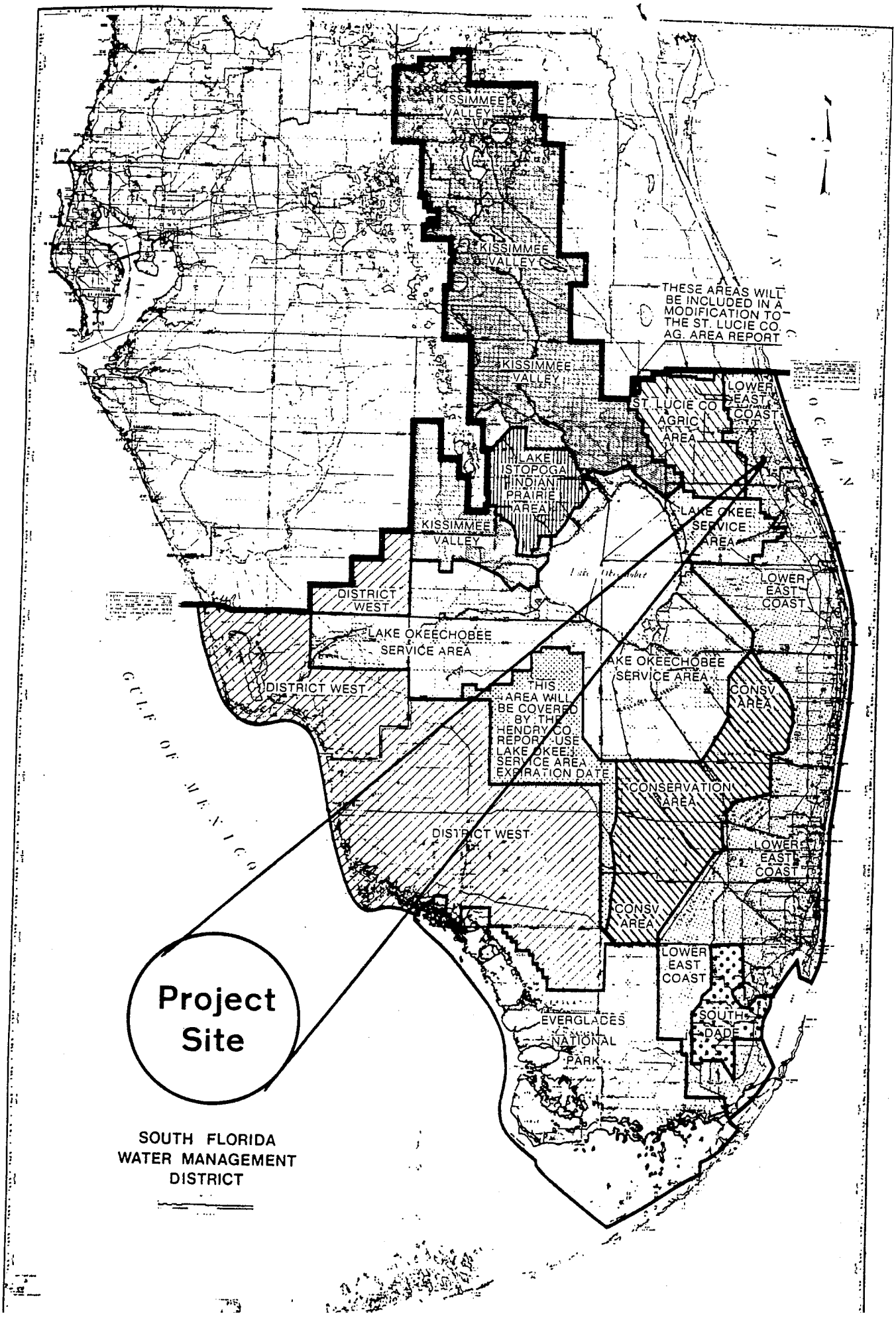
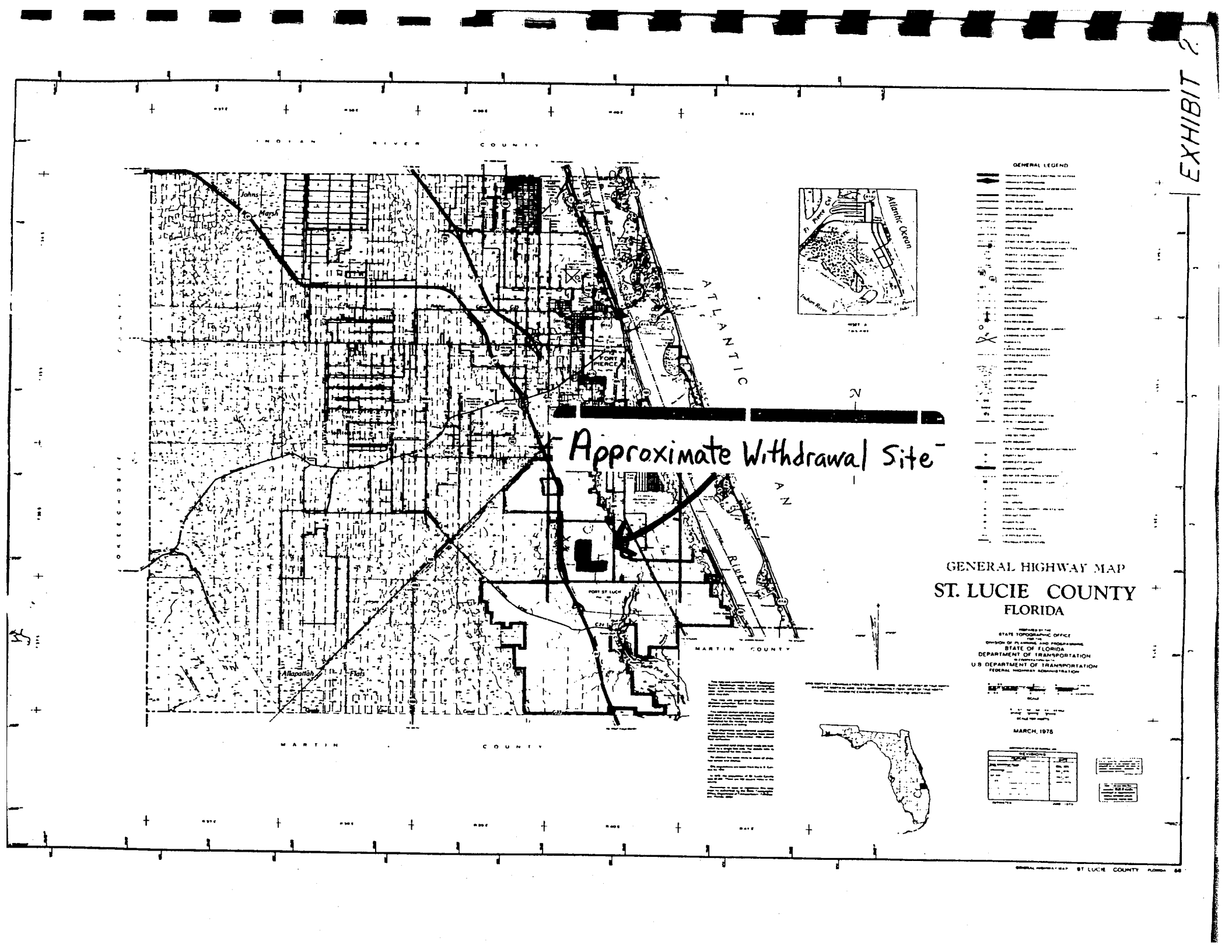

KISSIMMEE VALLEY
KISSIMMEE VALLEY
KISSIMMEE VALLEY
KISSIMMEE VALLEY
THESE AREAS WILL BE INCLUDED IN A MODIFICATION TO THE ST. LUCIE CO. AG. AREA REPORT
ST. LUCIE CO AGRIC AREA
LOWER EAST COAST
LAKE ISTOPOGA INDIAN PRAIRIE AREA
LAKE OKEE SERVICE AREA
LOWER EAST COAST
DISTRICT WEST
LAKE OKEECHOBEE SERVICE AREA
DISTRICT WEST
LAKE OKEECHOBEE SERVICE AREA
CONSV AREA
THIS AREA WILL BE COVERED BY THE HENDRY CO. REPORT. USE LAKE OKEE. SERVICE AREA EXPIRATION DATE
CONSERVATION AREA
DISTRICT WEST
LOWER EAST COAST
CONSV AREA
LOWER EAST COAST
SOUTH DADE
EVERGLADES NATIONAL PARK
GULF OF MEXICO
ATLANTIC OCEAN
Project Site
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

EXHIBIT 2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OKEECHOBEE COUNTY
ATLANTIC OCEAN
Approximate Withdrawal Site
MARTIN COUNTY
Allapattah Flats
Atlantic Ocean
GENERAL LEGEND
GENERAL HIGHWAY MAP
ST. LUCIE COUNTY
FLORIDA
STATE TOPOGRAPHIC OFFICE
DIVISION OF PLANNING AND PROGRAMMING
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
MARCH, 1978

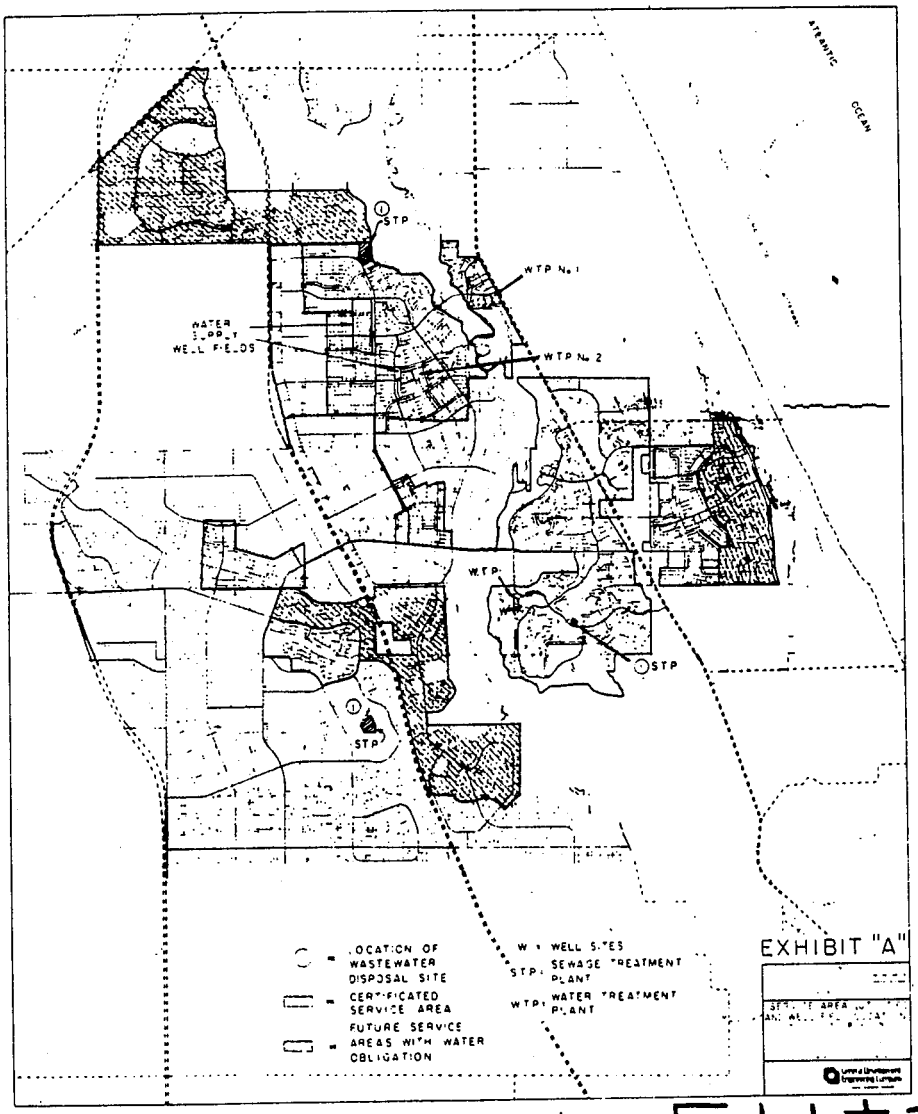
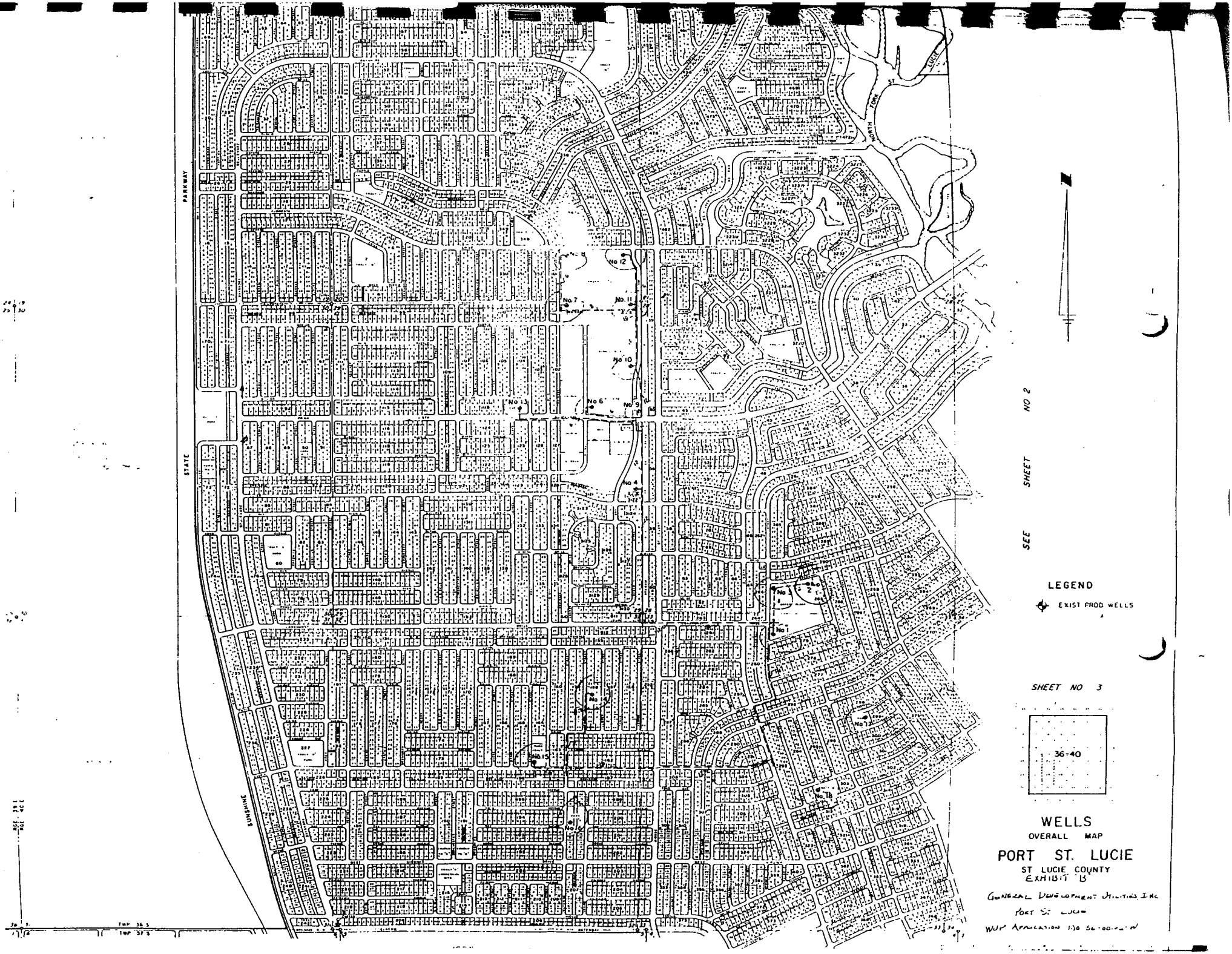

ATLANTIC OCEAN
STP
WTP No. 1
WATER SUPPLY WELL FIELDS
WTP No. 2
WTP
STP
STP
= LOCATION OF WASTEWATER DISPOSAL SITE
= CERTIFICATED SERVICE AREA
= FUTURE SERVICE AREAS WITH WATER OBLIGATION
W = WELL SITES
STP = SEWAGE TREATMENT PLANT
WTP = WATER TREATMENT PLANT
EXHIBIT "A"

Exhibit 3


SEE SHEET NO 4
SEE SHEET NO 2
PARKWAY
STATE
SUNSHINE
NORTH FORK
ST LUCIE
No 1
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No 13
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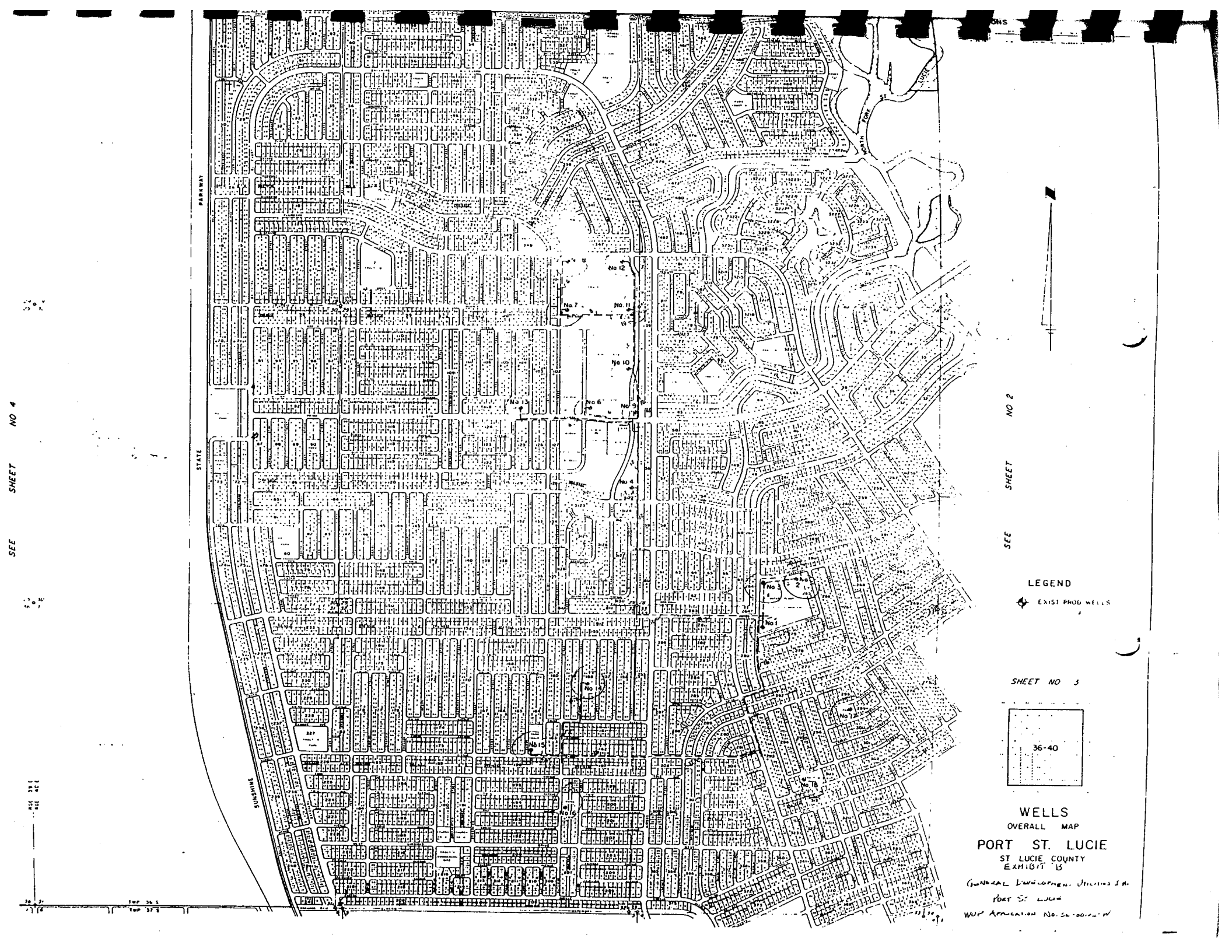
No 18
LEGEND
EXIST PROD WELLS
SHEET NO 3
36-40
WELLS
OVERALL MAP
PORT ST. LUCIE
ST LUCIE COUNTY
EXHIBIT 13
GENERAL DEVELOPMENT UTILITIES, INC
PORT ST. LUCIE
WUP APPLICATION 1130 SL-00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No 16
No 17
No 18
LEGEND
EXIST PROD WELLS
SHEET NO 3
36-40
WELLS
OVERALL MAP
PORT ST. LUCIE
ST LUCIE COUNTY
EXHIBIT B
GENERAL DEVELOPMENT UTILITIES INC.
PORT ST. LUCIE
WUP APPLICATION NO. 56-00054-W

Table D

Water Use Data for 12 Month Period

from October, 82 to September, 1983

	Month/Year	Raw Water Pumpage		Total Raw Water Pumpage (MGM)	Total Water Treated (MGM)
		Average Day (MGD)	Maximum Day (MGD)		
1.	October, 1982	1.719	1.972	53.293	51.487
2.	November, 1982	1.712	1.987	51.360	49.277
3.	December, 1982	1.780	2.089	55.181	52.833
4.	January, 1983	1.878	2.172	58.227	55.253
5.	February, 1983	1.879	2.172	56.602	49.203
6.	March, 1983	1.918	2.199	59.443	54.680
7.	April, 1983	2.021	2.319	60.640	53.254
8.	May, 1983	2.563	3.127	79.464	71.295
9.	June, 1983	1.974	2.612	59.230	55.068
10.	July, 1983	2.327	2.831	72.152	67.053
11.	August, 1983	1.675	1.902	54.777	51.938
12.	September, 1983	1.656	1.969	53.756	49.670
	Total	23.102		714.125	661.011
	Average	1.925		59.510	55.084

Ratio of water pumped to water treated 1.08.

Maximum day pumpage was 3.127 MGD and occurred on May 21, 1983.

Ratio of maximum day pumpage to average day pumpage was 1.62.

TABLE E

PAST WATER USE

Year	Past[a] Population	Number of Units (Cumulative)	Total Annual (MG)	Average Day (MGD)	Maximum Day (MGD)
1979	13,952	5,581	518.3	1.42	3.00
19 80	17,315	6,926	584.0	1.60	2.40
19 81	20,393	8,157	708.1	1.94	2.88
19 82	21,688	8,675	634.1	1.73	2.50
19 83[b]	22,370	8,948	507.4	1.85	2.97
19					
19					
19					
19					
19					

a - Based on 2.5 capita per unit
b - Through September 31, 1983

EXHIBIT 8

TABLE F

PROJECTED WATER USE

Year	Projected[a] Population	Number of Units* (Cumulative)	Total Annual (MG)	Average[b] Day (MGD)	Maximum[c] Day (MGD)
19 84	26,000	10,400	949.0	2.60	3.64
1985	27,850	11,140	1016.5	2.79	3.90
1986	29,750	11,900	1085.9	2.98	4.17
1987	31,625	12,650	1154.3	3.16	4.43
1988	33,425	13,370	1220.0	3.34	4.68
1989	35,300	14,120	1288.5	3.53	4.94
1990	37,200	14,880	1357.8	3.72	5.20
1991	39,000	15,600	1423.5	3.9	5.46
1992	40,750	16,300	1487.3	4.08	5.71
1993	42,625	17,050	1555.8	4.26	5.97

a - Based on 2.5 capita per unit.
b - Based on a rate of 250 gpd/conn. resulting from analysis of historical trends.
c - Based on a rate of 350 gpd/conn resulting from analysis of historical trends.

*On a separate sheet of paper separate units into the types of units, number of persons/unit, and water usage/unit for each year on a cumulative basis.

EXHIBIT 3

GENERAL DEVELOPMENT UTILITIES, INC.
Port St. Lucie - Water Use Permit No. 56-00142-W

Checklist for Public Water Supply

A. General

1. Describe the purpose of the application.

The purpose of this permit application is to renew the existing permit No. 56-00142-W which expires January 7, 1984 and to modify the allocation of said permit.

2. Indicate the quantity of water applied for as an annual allocation (gals/year). This quantity may equal the annual quantity which will be pumped at a future point in time, or may equal the applicant's existing pumpage if no future increases in pumpage are anticipated. The requested allocation should equal average daily pumpage multiplied by 365 days.

It is requested by this permit application that the permitted amount be increased to an annual allocation of 1,555.0 MGY resulting in an average annual daily demand of 4.26 MGD.

3. Explain briefly the derivation of annual allocation.

a. Indicate the projected population used in determining the annual allocation.

This increased allocation is requested through 1993 and is based on an analysis of historical demand records and a combined forecast analysis of a growth model by Paul Van Buskirk Associates and GDC marketing projections for the Port St. Lucie community.

Projections are actually made on the basis of housing units. Population is then estimated based on 2.5 persons per dwelling unit. Population and unit projections through the year 1993 are shown in Table F.

b. Indicate proposed consumption of water per capita on a permanent population basis. If proposed per capita consumption is greater than existing, explain difference.

Proposed consumption is based on a per unit basis. This approach provides an overall community wide water demand scenario which takes into consideration commercial and industrial uses and results in an equivalent residential connection demand rate. An analysis of treatment plant pumpage records from 1979 to the present indicate an average daily demand averaged over the nearly five years of record of 226 gallons per day (gpd) per connection. The projected water use shown in Table F was calculated at a rate of 250 gpd per connection to provide conservative "padding" should projections prove to be different than actual growth.

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

The maximum day demand requested by this application is 5.97 MG.

5. Indicate the maximum day to average day demand ratio used in calculating the projected maximum day pumpage. Explain briefly the basis for using this number.

The maximum day to average day demand ratio used in calculating the projected maximum day pumpage is 1.4. This rate of demand is based on an analysis of historical records of operation of the North Port St. Lucie Water Treatment facility from 1979 to the present. The pumpage records were examined to identify the three-consecutive maximum day for each year. The average of these values results in maximum day usage of 363 gpd per connection. However, records indicate a definite downward trend in this figure as a result of GDU's "Slow the Flow" water conservation program and a general increased consciousness of water usage on the part of customers and the Florida public in general. Therefore, the projected use calculations were made using a rate of 350 gpd per connection.

6. List the future year in which the quantity of water applied for will be used (ten years maximum except five years in Broward and Lee Counties).

It is projected that annual allocation of 1,555.0 MGY will be adequate to meet demands through the year 1993.

B. Location

1. Provide a location map.

Exhibit A is a Port St. Lucie project location map.

2. Provide a service area map and site map of existing and proposed wellfield and treatment plant facilities. Number wells, pumps and culverts to correspond with Tables A, B and C.

Exhibit A is a map indicating the certificated area within Port St. Lucie being served by GDU and the areas in Port St. Lucie for which GDU has future obligations to provide water service but which are not currently being served. The sites of the water and wastewater treatment plants can also be located on this map. It should be noted that only North Port St. Lucie Water Treatment Plant No. 2 is used for treatment. The other two are utilized for storage only.

Exhibit B is a larger scale map indicating the location of the wells and Water Treatment Plant No. 2. The wells on this map correspond to those listed in Table A.

3. Indicate on a map or sketch of the applicant's property and surrounding area:

a. Location of other wells not owned by the applicant including domestic wells, irrigation wells, public water supply wells, etc. within 1000'.

See Exhibit C. The red arrows on this map locate homes on domestic wells within 1000' of our supply wells. Most of these homes are located within the certificated area, however, and, although water distribution lines do not currently run past these homes, at some point in the near future these lines will be extended. At that time these homes will be required to connect to the central supply system.

The exception are those homes located near well No. 15. This area is not currently included within the certificated area.

b. Location of pollution sources within 1000' of the applicant's wells such as landfills, percolation ponds, hazardous waste disposal sites, sewage mains, etc. (septic tanks excluded).

None.

c. Location of nearest saline water or salinity control structure (if the distance is less than or equal to one mile).

None.

d. Location of any existing or proposed wastewater treatment and disposal facilities that will recharge the aquifer in the vicinity of the applicant's wellfield(s).

Not applicable.

e. Describe the location of existing flow meters, i.e., on individual wells, before treatment, after treatment and/or at customer's connections.

Flow meters are located at each of the individual wells, at the raw water influent point at the plant, in the distribution line leaving the plant and at all customer connections.

f. Describe existing storage capacity.

North Port St. Lucie WTP #1 (storage only)	150,000 gallons (ground)

North Port St. Lucie WTP #2	600,000 gallons (ground)
South Port St. Lucie WTP (storage only)	300,000 gallons (ground)

C. Facilities

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

   See Table A attached.

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

   Not applicable.

3. Describe all existing and proposed culverts essential to the operation of the wellfield by filling out Table C for each culvert.

   Not applicable.

4. Describe existing and proposed water treatment plants, DER rated capacity, potential capacity and method of treatment.

   The only water treatment plant (WTP) used for treatment in Port St. Lucie is the North Port St. Lucie WTP #2. The North Port St. Lucie (NPSL) WTP #1 located in the River Park area and South Port St. Lucie WTP located near the Sandpiper golf course are utilized solely for ground storage purposes at this time.

   The DER rated treatment capacity of the NPSL WTP #2 as of 10/17/83 was 3.0 MGD. GDU is currently operating under a construction permit to expand this facility to 6.0 MGD. This construction should be completed in January, 1984 at which time the rated capacity will be upgraded.

5. Describe fire flow and standby capacity. Standby and fire flow capacity consist of 2,500 gpm and 2,100 gpm pumps both of which are located at WTP No. 2.

6. Describe the existing wellfield operation schedule. Include in the description which wells are primary, secondary, stand-by, and well rotation schedule.

   There are ten primary and three secondary wells. The primary wells are operated on a rotation schedule with approximately eight hours per day rest cycle. The secondary wells are operated one day per week for eight hours each.

D. Population, Service Area, and Water Use

1. Indicate the number of people, and number of equivalent residential connections presently served.

   The number of people currently being served is approximately 22,370. The number of equivalent residential connections being served is approximately 11,200. This number does not include inactive connections. An inactive connection is a customer for which a bill is generated but no water is consumed during a billing period.

2. Indicate size of area served in acres.

   The size of the area currently included in the certificate is 9,900 acres.

3. List interconnections with other suppliers and indicate ability to supply water via the interconnect.

   Not applicable.

4. Provide information on present, past and future water use by filling out Tables D, E and F.

   See Tables D, E and F attached.

5. Indicate average daily sewage effluent production for the past 12 months. Indicate disposal point for effluent.

   There are three wastewater treatment plants currently serving Port St. Lucie. The average daily sewage effluent production for the past twelve months from these facilities is:

	(MGD)
North Port St. Lucie	0.70
South Port St. Lucie	0.86
West Port St. Lucie	0.12
Total	1.68

   The plant location and disposal points of these three facilities is indicated on Exhibit A.

   North Port St. Lucie - 230 acres of slow rate application spray irrigation.

   South Port St. Lucie - deep well injection capacity to 4.0 MGD with up to 1.0 MGD golf course irrigation during the dry season of the year.

   West Port St. Lucie - 61,000 S.F. of rapid rate application percolation ponds.

TABLE G
RAW WATER QUALITY
Composite Well Samples
(1983 Operations Reports)

Parameter	7/1	7/9	7/15	7/22	7/31	11/5	11/13	11/19	11/25
pH	7.5	7.5	7.6	7.4	7.5	7.4	7.3	7.2	7.1
M.O. Alkalinity	280	274	284	286	276	288	280	276	280
Total Hardness	290	286	286	282	278	280	272	298	292
Calcium Hardness	250	262	282	250	242	250	238	246	252
Magnesium Hardness	40	24	34	32	36	30	34	52	40
CO_2 Calc.	15	15	14	22	17	23	27	26	33
Iron as Fe	1.7	1.9	1.2	1.6	1.7	1.0	1.6	1.4	1.6
Color Units	72	83	51	68	70	81	72	111	88
Chlorides	84	76	86	81	76	72	78	66	65

E. Raw Water Quality
Provide recent information on raw water quality.

See Table G attached. Composite well raw water quality is analyzed weekly for the parameters indicated in the Table which are the results for November analyses.

F. Public Service Commission
Indicate number of Public Service Commission certificate if applicant is regulated by the PSC.

The FPSC certificate number for the area serviced by GDU in Port St. Lucie is No. 6-W.

G. Water Problems
Explain any problems the utility or any other user is currently experiencing or causing as a consequence of withdrawals, such as drawdowns of adjacent water bodies, saline water intrusion, adverse impact on adjacent land use, water quality problems, within one mile of wellfield.

Not applicable.

H. Irrigation
If any of the projected water use will be for irrigation of golf courses or park areas, please indicate the following:

a. Area in acres which will be irrigated.
b. Type of vegetation which will be irrigated.
c. Approximate maximum monthly water use.
d. Approximate average annual water use.
e. Show irrigated area on map.

Not applicable.

I. Impacts
Describe any environmental impact on wetlands, recreational areas, parks, water bodies, wildlife sanctuaries, or other environmentally sensitive areas that may be caused by future withdrawals. Detail any impact on other users, pollution sources, the saline water interface, adjacent water bodies or land uses that the proposed withdrawals may have.

A report entitled "Availability of Grond-Water Resources in Port St. Lucie and Vicinity" by Geraghty and Miller, Inc. examined the impact of the ultimate projected withdrawal as estimated to be required at build-out in Port St. Lucie. The report is included as a part of this permit application as Exhibit D.

J. Wastewater Recycling
Describe plans to recycle wastewater and indicate present and/or future quantities. IF WASTEWATER IS RECYCLED, THEN BOTH MONITORING AND HYDROGEOLOGIC STUDY REQUIREMENTS WILL BE REDUCED.

The North Port St. Lucie spray irrigation facility will be utilized up to a capacity of 0.75 MGD. The South Port St. Lucie facility will be required by 1985 to utilize up to 1.0 MGD for spray irrigation of the Sandpiper Bay golf course.

K. Reverse Osmosis Treatment
Not Applicable

L. New wellfield or additional wells
If a new wellfield or additional wells are proposed, indicate the following:

a. Why a new wellfield or wells are needed.

New wells are being constructed to meet the peak demand as projected to be required by 1992-1993. It is for this reason as well that the plant has been expanded to 6.0 MGD capacity in 1984 and to 9.0 MGD by 1990.

b. Choice of the specific site(s).

Sites have already been selected in accordance with the exploratory drilling conducted by Geraghty and Miller as described in the report referenced in 5.I above.

c. The legal right to use the proposed site(s) for wells, treatment plants, facilities (i.e., owned, leased, easement).

The sites selected are on GDC/GDU owned property.