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WATER-LEVEL CONDITIONS IN THE UPPER PERMEABLE ZONE OF THE FLORIDAN AQUIFER IN THE SOUTH CAROLINA LOW COUNTRY, JUNE 1985

By

Michael S. Crouch
Principal Investigator

Mark Davies, Jeffrey A. Hassen and W. Brian Hughes

Division of Geology and Hydrology
South Carolina Water Resources Commission

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I Introduction

Water levels in selected wells finished in the upper permeable zone of the Floridan aquifer in Beaufort, Jasper, Colleton, and Hampton Counties were measured between June 24 and 27 1985. The SCWRC monitors water levels at least twice yearly, once in spring when ground water pumping is minimal, and once in summer when ground water withdrawals are at a maximum. In 1985 these water level runs were conducted in March and June as well as one in May at the request of the U.S. Geological Survey. This report is the third in a series of reports concerning the water level conditions of the South Carolina Low Country. The reports are brief updates of the general conditions of the water levels and are not intended to be complete treatises on the hydrology of the area. The purpose of these reports, and the monitoring effort, is to present a record of the changes in water levels in the area with time. The reports are similar in format, and sometimes identical in wording, so that comparisons of the major water level conditions can be made easily.

II Methodology

The Low Country was divided into four separate areas and each worker was assigned an area. In the field, the geologist measured the water levels in selected wells using the steel tape method. Water levels were recorded and when data collection was complete the water levels were corrected for tidal effects. The corrected data were plotted on detailed maps of Hilton Head Island (Fig. 2), the Port Royal Island area (Fig. 4), and Ladies/St. Helena Islands (Fig. 3) and on a generalized map of the Low Country (Fig. 1). All data were plotted in terms of mean sea level (msl).

II Summary

1) Ground water flow is generally toward the southeast in Colleton, Hampton, and northern Jasper and Beaufort Counties. This is representative of the regional flow from outcrop to coast.

2) The direction of flow deviates from natural conditions southwest of the Broad River. The deviation is probably due to withdrawals in the Savannah area. The potentiometric contours illustrate a cone of depression with Savannah as the center.

3) Generally, water levels were 0-2 feet lower then in March 1985.

4) The islands in Beaufort County are generally areas of recharge, with ground water moving towards the tidal bodies. This is due to the relatively high land surface and leaky confining beds.

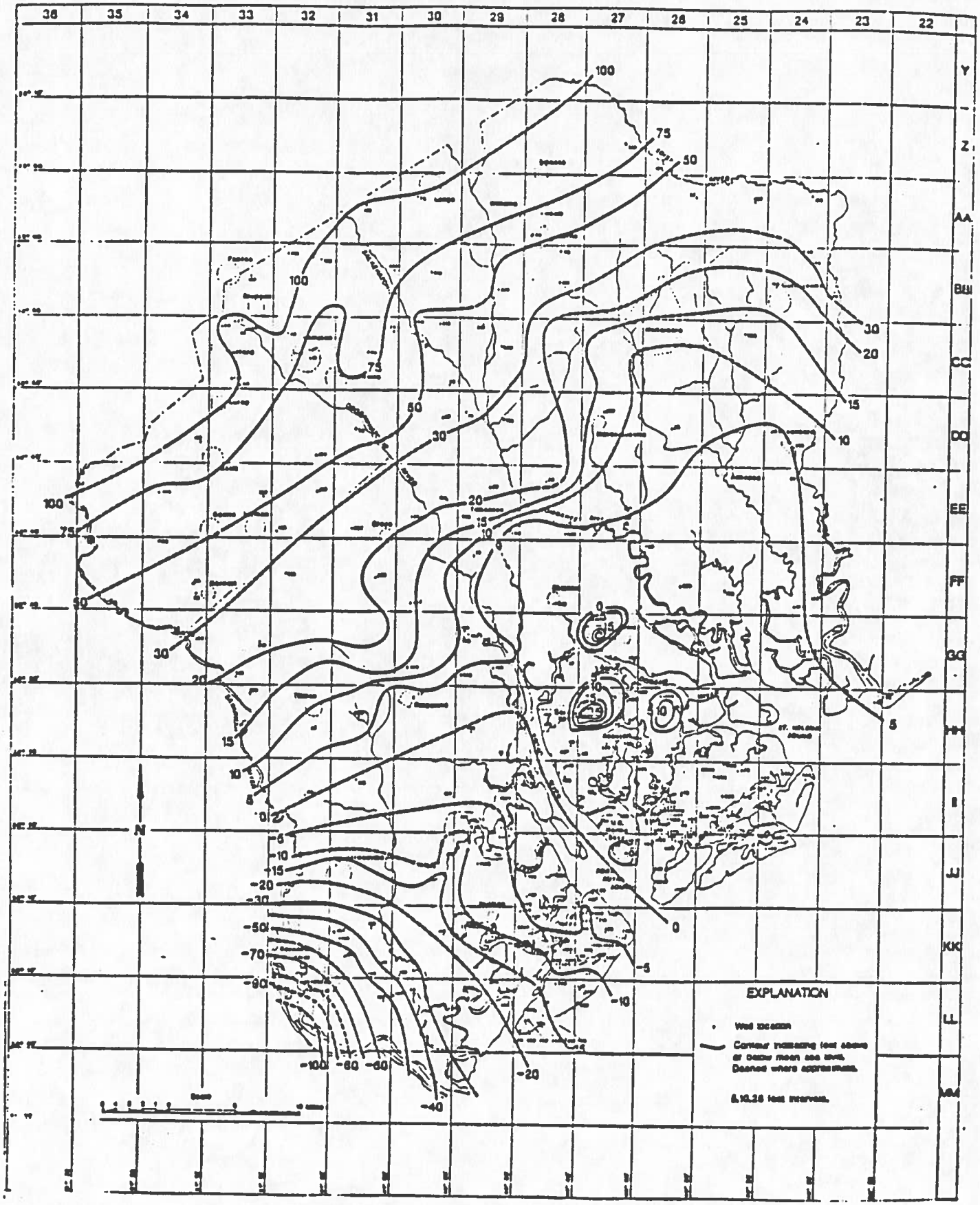

Figure 1. Water level contours of the Floridan aquifer, June 1985, South Carolina Low Country.

5) Small cones of depression caused by pumping exist in the Hampton and Lobeco areas.

6) The overall gradient between the Broad River and the Savannah River is 2.7 ft/mile. The gradient steepens from 0.9 ft/mile on northern Hilton Head Island to over 10 ft/mile near the Savannah River.

7) The addition of new monitoring wells has improved detail in northern Jasper County, indicating that the apparent potentiometric trough is not as dramatic as indicated on previous potentiometric maps.

   Water levels dropped 2-3 feet in southern Jasper County near the Savannah River since March 1985.

8) Coverage in northeastern Colleton County remains poor. Contours are dashed in this area due to poor areal coverage of data. No significant changes have occurred since March.

9) The following wells had anomalous water levels:

	WELL NUMBER		REMARKS
a)	JAS 154	(29GG-r2)	Very low; new information indicates well finished in Hawthorn and Floridan.
b)	COL 164	(29DD-l1)	Very low; not leveled
c)	COL 190	(23BB-p2)	Slightly high
d)	COL 194	(26Z-x2)	Very low; historically higher levels until 1984.
e)	COL 213	(29BB-x1)	Too low; not leveled; ignored
f)	COL 217	(29BB-s1)	Too low; not leveled; ignored
g)	COL 222	(29CC-i3)	Too high
h)	COL 225	(24DD-r1)	Slightly low; pumping well
i)	BFT 19	(27II-n2)	Too low; not leveled; many other wells in area.
j)	BFT 476	(28II-b1)	" " " " " "
k)	BFT 1702	(27II-b15)	" " " " " "
l)	BFT 1714	(27HH-w3)	" " " " " "
m)	BFT 1721	(27II-f4)	" " " " " "
n)	BFT 1736	(28II-b4)	" " " " " "

III Localized Conditions

1) Beaufort Area (Fig. 4) - The Beaufort area is dominated by a large potentiometric high. Water levels centered near the Marine Corps Air Station were measured as high as 26 ft msl. The cone of impression extends approximately 6 miles north and south and 4 miles east and west of its center.

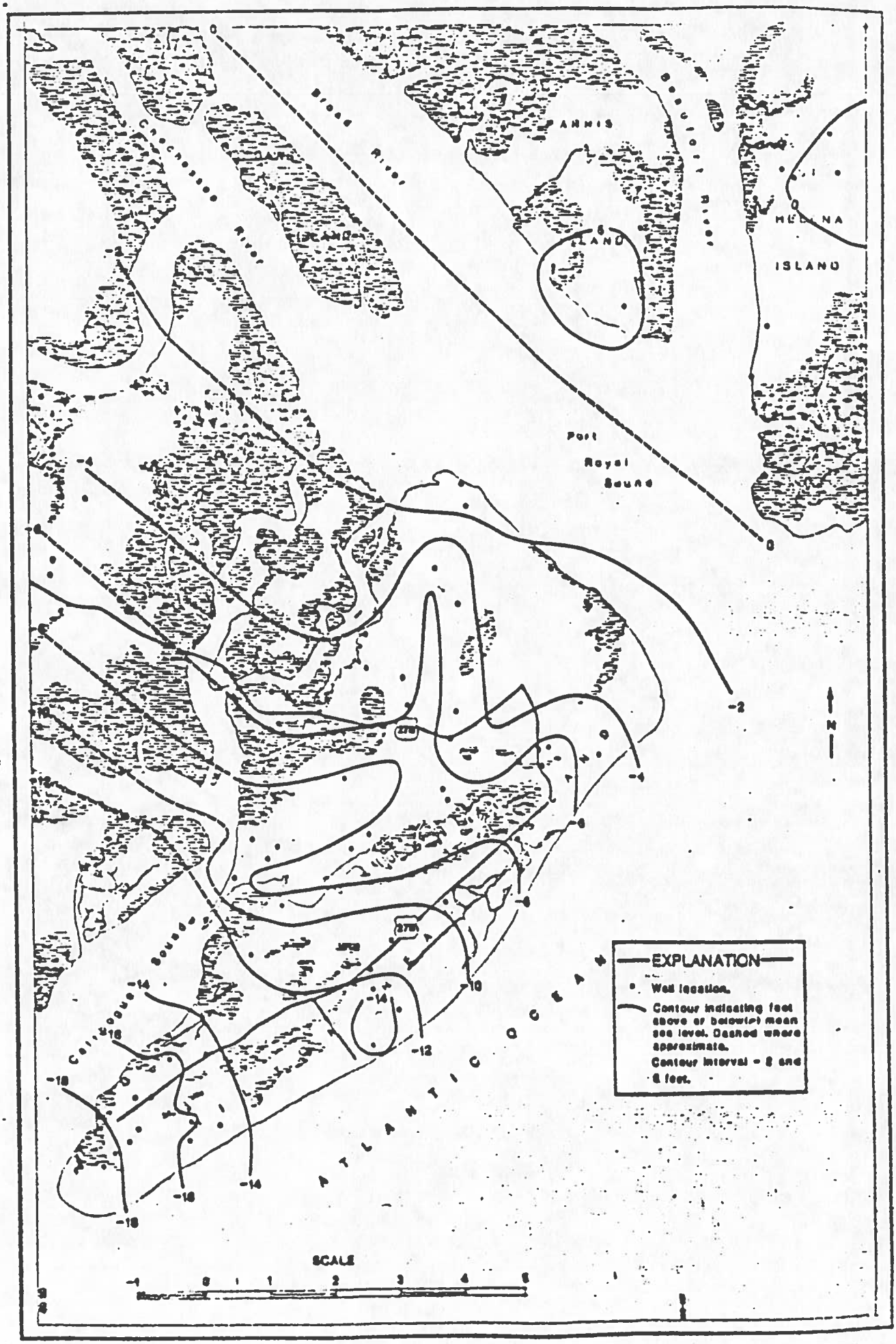

Figure 2. Water level contours of the upper Floridan aquifer,

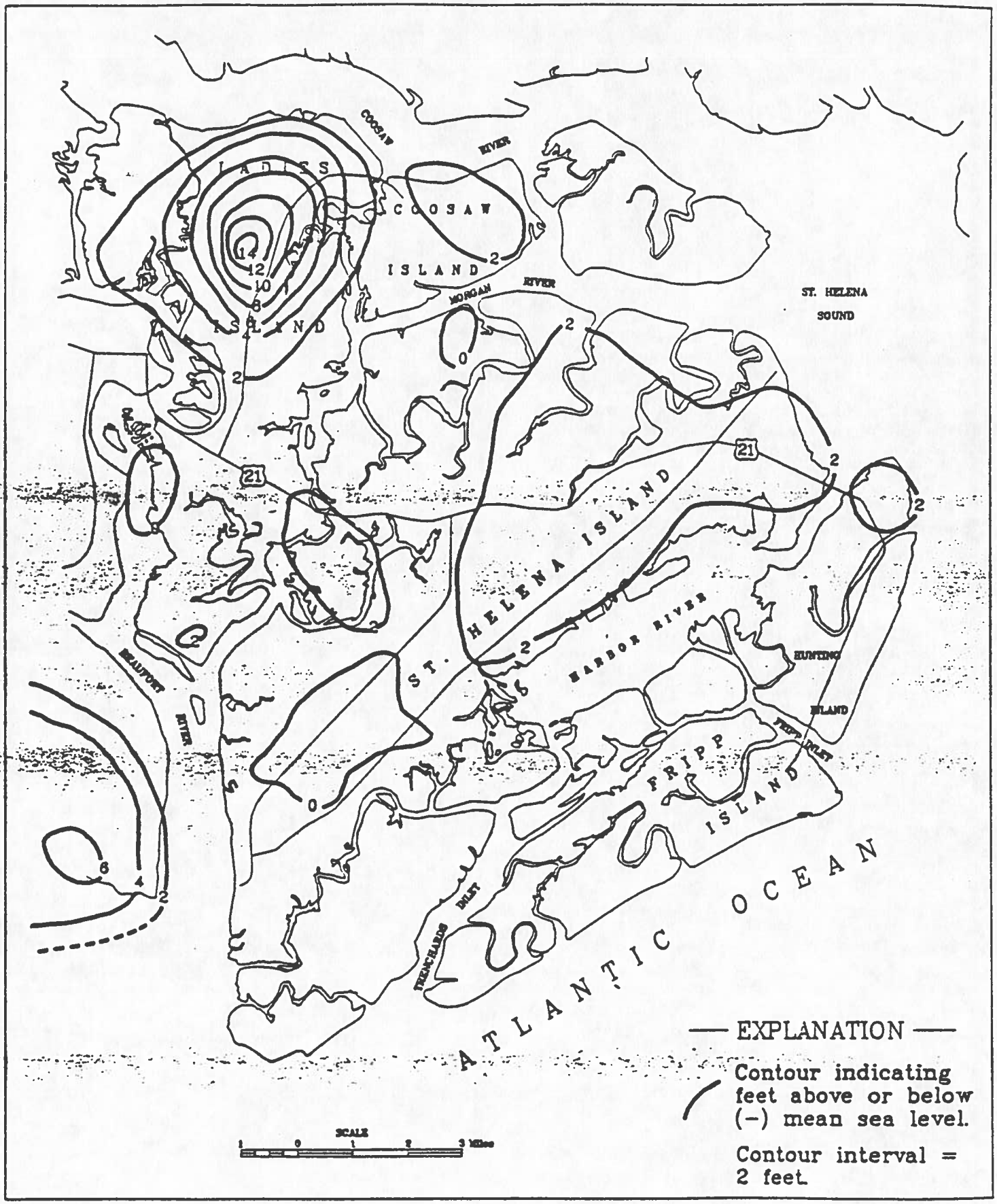

Figure 3. Water levels in the Floridan Aquifer, June 1985.

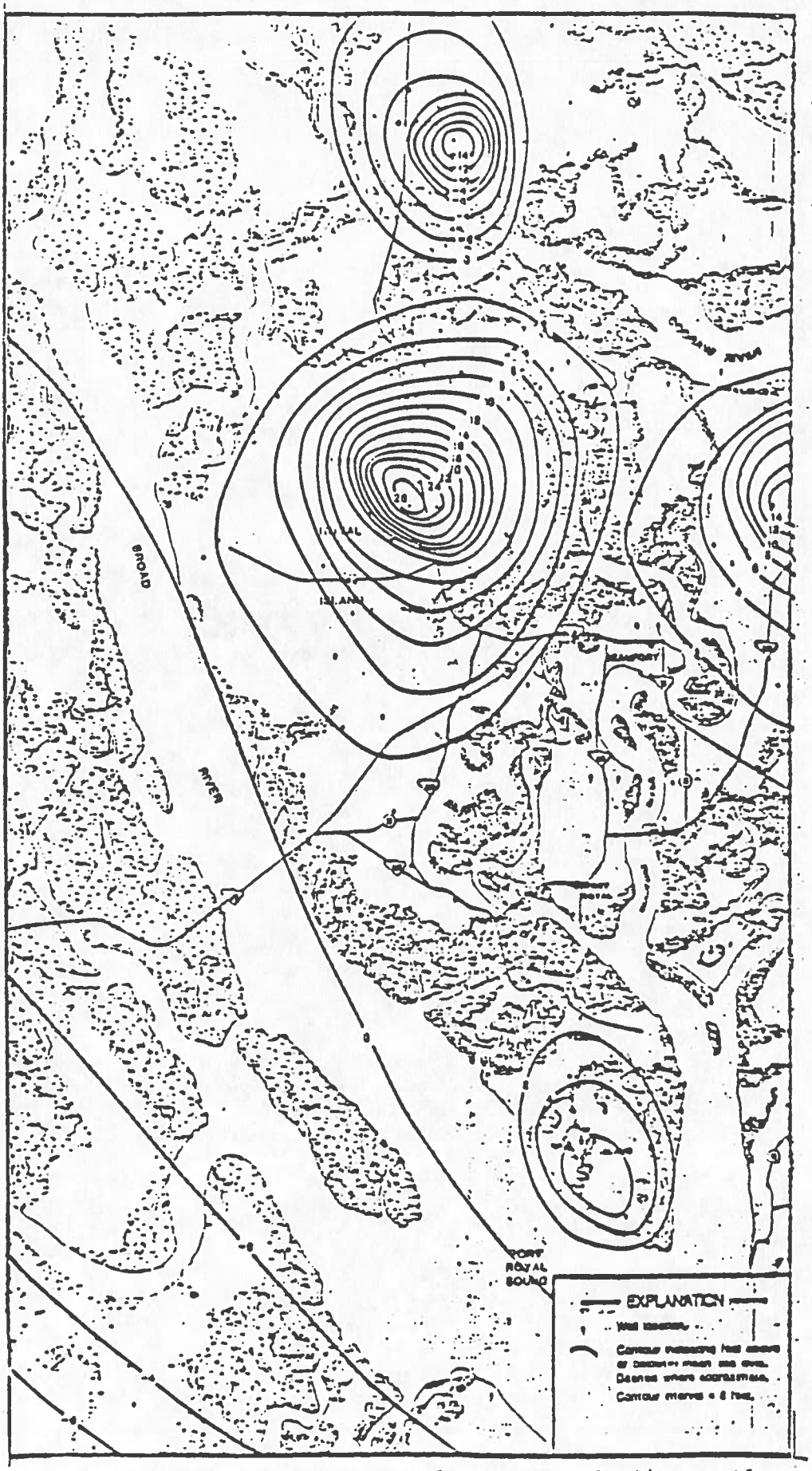

Figure 4. Water level contours of the upper Floridan aquifer, June 1985, Port Royal Island area.

A preliminary flow net analysis of the area shows recharge to the entire area to be approximately 4.5 million gallons per day based on an average transmissivity (T) of 5,000 ft/day. This transmissivity is an average of values calculated from aquifer tests in the recharge mound. The calculated value of recharge is very sensitive to transmissivity; therefore, this recharge value is only as accurate as the transmissivity value. The T value is considered reliable, since several aquifer tests have been analyzed in the area and give consistent results. A more detailed flow net analysis will be done after wells in the area are leveled.

2) Ladies/St. Helena Islands (Fig. 3) - Generally, water levels dropped 0.5-1.0 feet since March. This area is characterized by freshwater lenses under land areas, with flow moving radially outward toward tidal bodies. The potentiometric surface parallels the topographic surface, indicating the aquifer is poorly confined or unconfined.

   Datha Island appears to be the center of a small cone of depression with water levels -1 ft msl at the center. East of Datha is a recharge mound with a gentle hydraulic gradient. The peak water level was 3.02 ft msl.

   The dominant feature on Ladies Island is a large recharge mound with water levels approaching 15 ft msl at the center. The center of this mound has shifted 0.5 miles south of its March position. Otherwise, it is the same except water levels are approximately 1 ft. lower. This mound extends westward to Brickyard Creek where it meets the downgradient section of the Beaufort potentiometric high. This meeting of the mounds indicates discharge is occurring near Brickyard Creek.

   A cone of depression has formed in grids 26II and 26JJ due to ground water pumping for irrigation. Water levels are 3-5 feet lower than in March.

3) Parris Island (Fig. 4) - A small potentiometric high exists on Parris Island. Although small, it has a steep hydraulic gradient of 10 ft/mile.

4) Lobeco (Fig. 4) - A cone of depression exists in the Lobeco area. Alternate pumping of two closely spaced wells causes the depression. Discharge averaged 270,000 gpd in April-June. A preliminary flow net analysis indicates a low transmissivity of approximately 1,200 ft^2/day. This deep depression is typical for a confined aquifer with low transmissivity.

5) Yemassee (Fig 1) - The hydraulic gradient is 5.0 ft/mile in a southerly direction. West of Yemassee the potentiometric surface dips toward the east with a gradient of 1.4 ft/mile

6) Walterboro (Fig. 1) - This area needs much better coverage in order to determine gradients and hydrologic conditions.

7) Hilton Head Island/Bluffton (Fig. 2) - Water levels have generally dropped 1-3 feet. The southern tip of the island underwent lowering of 2-3 feet. Coverage is good in the Hilton Head area but needs to be improved to construct a reliable 1 foot contour map. Some additional detail was obtained by the addition of new wells since March.

   The gradient is .85 ft/mile on northern Hilton Head Island and steepens to 3.6 ft/mile at the southwest tip of the island. Local pumping seems to be the major factor affecting the shape of the potentiometric contours and pumping in Savannah is the significant factor affecting the general gradient.

   The zero contour is located 1-2 miles east of Hilton Head Island in Port Royal Sound and the -2 foot contour roughly parallels the east shoreline. This shows that there exists a potential for saltwater movement downward into the Floridan aquifer.

IV Comparison to Hayes (1979) Potentiometric Map (Figure 19)

The potentiometric map (Fig. 1) was compared to an equivalent map for December 1976 constructed by Larry Hayes. Differences in the maps can be attributed to differences in coverage, interpretation, different stresses on the system at different times, and physical changes in the hydrology of the area.

1) The northeast sections of the maps are much different, and this is probably due to differences in well coverage. The contours are shifted northward approximately 4 miles on the 1985 map, but coverage is poor in this area and it is difficult to verify physical changes.

2) Hayes shows 5- and 10- ft contours bending southward along the Combahee River, whereas the 1985 map shows much more gentle bends.

3) The large recharge mound centered near the Marine Corps Air Station is not as extensive as shown on the 1976 map. The 1985 map probably is more representative of fact, owing to the increase in the number of monitoring wells in the Port Royal Island area since 1976. The 1985 map also shows a small but steep recharge mound on the south end of Parris Island.

4) The size and shape of the Ladies Island potentiometric high has been better defined since 1976. The area is now monitored closely.

5) The zero contour near Hilton Head Island has apparently moved northeastward 1 to 2 miles since 1976. The -10 and -5 contours have also moved northeastward, which indicates that Savannah's cone of depression is spreading or local pumping is producing an effect.

V Review of Water Level Network

A) 300 wells were measured in June 1985.

1) 28 wells in Hampton County.
2) 36 wells in Colleton County.
3) 54 wells in Hilton Head Island/Bluffton area.
4) 80 wells in St. Helena/Ladies Island area.
5) 37 wells in Jasper County.
6) 65 wells in Port Royal Island study area.

B) 5-minute grids with no monitoring wells are:

1)	24CC	9)	27EE	17)	31GG
2)	25BB	10)	27FF	18)	32GG
3)	25EE	11)	28Z	19)	33DD
4)	26BB	12)	28CC	20)	33FF
5)	26CC	13)	28DD	21)	35EE
6)	26EE	14)	29AA	22)	35FF
7)	27AA	15)	29Z		
8)	27BB	16)	30II		

C) 5-minute grids requiring additional wells are listed below, along with the number of additional wells required. Asterisks indicate high priority areas.

1)	24CC (1)	14)	28CC (2*)	26)	31EE (1)
2)	25BB (1)	15)	28DD (2*)	27)	31FF (1)
3)	25EE (1)	16)	28EE (1)	28)	31GG (2*)
4)	26BB (1*)	17)	28FF (1)	29)	32DD (1)
5)	26CC (1)	18)	29Z (1)	30)	32FF (1)
6)	26DD (1)	19)	29AA (1)	31)	32GG (2*)
7)	26EE (1)	20)	29FF (1*)	32)	32HH (1*)
8)	27AA (1)	21)	29GG (1*)	33)	33DD (1)
9)	27BB (1)	22)	29JJ (1)	34)	33FF (1)
10)	27CC (1*)	23)	29KK (1*)	35)	33GG (1*)
11)	27EE (1)	24)	30GG (1)	36)	35EE (1)
12)	27FF (1)	25)	30II (1)	37)	35FF (1)
13)	28Z (1)				

38) Hilton Head Island's monitoring network should be increased to approximately 85 wells in order to construct a reliable 1 foot contour map.

D) The 5-minute grids requiring wells are shown on the enclosed map (Fig. 5). Numerals in the grids indicate the number of additions desired. High priority areas are shaded in red.

E) All wells to be used in constructing potentiometric maps with contours of 5 feet or less should be leveled in. This is not the case in the Low Country network. The following is a summary of leveled and unleveled wells.

	Leveled	Unleveled
Colleton County	0	36
Hilton Head Area	25	54
Hampton County	1	27
Jasper County	1	29
Port Royal Island	31	64
Ladies/St. Helena Islands	79	80

All wells in the Hilton Head and Port Royal Island area should be leveled as well as several wells in Jasper County. Although potentiometric maps drawn from Jasper County need only have 5 foot contours, leveling is desirable due to the poor quality of the topographic maps in the area, thus making it difficult to pick accurate altitudes for the data points.

F) Water levels for June 1985 were corrected for tidal effects. This improves the accuracy of the potentiometric maps. However, the data concerning tidal effects in different areas need to be improved. Graphs of tidal efficiency versus distance to tidal body are poor for Hilton Head and nonexistent elsewhere with the exception of Ladies/St. Helena Islands where tide gauging was performed for an earlier study. An extensive study is planned for the Hilton Head area concerning tidal effects on the ground water regime.

G) There is some doubt as to the validity of data from various wells in the network for reasons other then those previously mentioned. These wells are as follows:

a) 31HH-hl Data indicates open above and below confining unit.
b) 34GG-il Open interval = 40-185 ft. Probably open to shallow aquifer.
c) 32FF-nl Lack of data concerning construction.
d) 29GG-yl Open interval = 80-160 below LSD. Gamma log indicates limestone occurs at a depth of 125 ft.

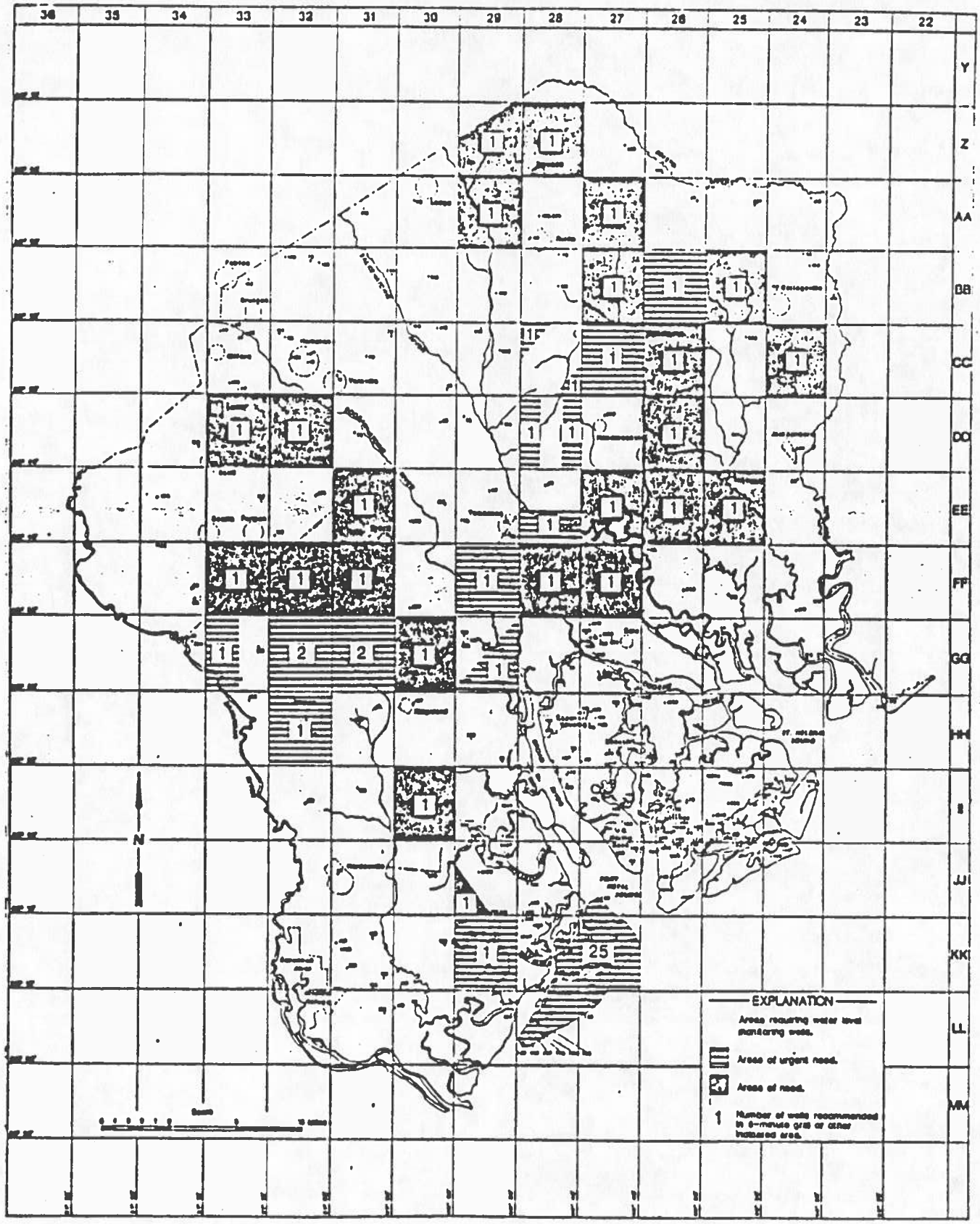

Figure 5. Areas needing additional monitoring wells.

e) 31HH-n1 May be open at shallow depth. Poor records.
f) 29HH-n5 Open interval = 60-178 ft. Limestone occurs at depth of 130 ft.
g) 29HH-v1 Open interval = 86-149 ft. Depth to limestone = 120 feet.
h) 32CC-e3 Well may be too shallow.
i) 33CC-d1 Too shallow

H) The following wells are open to deeper permeable zones within the Floridan aquifer. The heads may therefore be affected although some believe the difference to be minor in the various permeable zones.

a) 26FF-e1
b) 26FF-c3
c) 25FF-q2
d) 24FF-w1
e) 24GG-k2
f) 24GG-l1
g) 24EE-c1
h) 24DD-r1
i) 30AA-v1
j) 30CC-e2
k) 32CC-e1
l) 32BB-i1
m) 32FF-s2
n) 34GG-h1

I) The following wells normally on the network presented problems in obtaining measurements.

a) 24FF-v1 Taken off run at owner's request
b) 27JJ-g1 Blocked at 40 feet.
c) 27KK-p4 Pump house locked.
d) 27KK-h2 Need key.
e) 27KK-b12 Cannot get tape down.
f) 28LL-m6 Tape broke in well.
g) 28LL-m2 Tape broke in well.
h) 28JJ-n1 Well blocked at 50 feet.
i) 29II-t2 Dogs
j) 27HH-s1 Cannot locate.
k) 27II-i1 Need air pump.
l) 27GG-y4 Need key.
m) 27GG-p3 Need key.
n) 26HH-s2 Well under pressure.
o) 25HH-x7 Cannot locate.
p) 25HH-v5 Pump on well.

VI Ground Water Use

Ground water pumpage is a controlling factor of the shape and distribution of the potentiometric surface. It is valuable to know areas of high pumpage in order to understand why the potentiometric looks as it does.

The SCWRC monitors Class-A water users. Class-A users are those who, on at least one day in the year, pump 100,000 gallons. These users are required to report pumpage. The total pumpage for April through June, 1985 is tabulated in Table 1. Hampton County data were unavailable for 1985 so value for the equivalent period in 1984 were used. It is believed pumpage will be similar.

TABLE 1. Total Ground Water Use April-June 1985 (in million gallons)

	Beaufort County	Jasper County	Colleton County	Hampton County*
Hilton Head	760.4	84.3	286.1	421.2
Bluffton	126.3			
Ladies Island	.62*			
St. Helena Island	225.5			
Port Royal Island	10.7			
Other	36.9			
	1,160.4			

Total Use 1,951.9

*1984 Data

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
23BB-p2	COL-0190	33.64	34.43	33.96
24BB-c1	COL-0052	35.68	35.53	35.01
24BB-h2	COL-0185	23.92	23.61	22.06
24BB-o1	COL-0186	17.44		16.42
24DD-r1	COL-0225	2.31	0.63	0.50
24EE-c1	COL-0096	4.41	5.35	5.22
24FF-w1	COL-0149	4.76	5.09	4.97
24GG-k2	COL-0173		4.78	5.31
24GG-l1	COL-0051	1.84	2.09	2.24
24HH-q4	BFT-1604	1.34	0.23	0.12
24HH-x5	BFT-1542	3.97	2.52	3.02
24II-d1	BFT-0562	3.14		3.02
24II-e3	BFT-0412	4.04	3.07	2.72
24II-f3	BFT-0497	1.41	0.52	0.60
24II-i1	BFT-0452	2.29	4.52	3.32
24JJ-c1	BFT-0449	1.44	1.83	0.89
24JJ-d1	BFT-0455	1.20	1.90	1.26
24JJ-e1	BFT-0456	1.42	1.60	1.18
25AA-l1	COL-0227	38.80	38.75	37.75
25CC-i1	COL-0226	13.00	12.73	12.26
25DD-l1	COL-0224	5.27	5.03	4.25
25FF-q2	COL-0170	-.50	-1.18	
25GG-d1	COL-0094	-1.65	-1.87	-1.98
25HH-n2	BFT-1609	0.82	1.97	2.60
25HH-p2	BFT-1645	0.15	1.02	0.23
25HH-p3	BFT-1457	-.92	0.90	
25HH-p4	BFT-1458		1.35	-.08
25HH-p5	BFT-1459	-.99	-.86	-.79
25HH-r8	BFT-1538	2.48	2.15	2.22
25HH-s3	BFT-1540	2.67	2.76	2.56
25HH-v3	BFT-0595		2.78	
25HH-w5	BFT-1537	2.61	2.46	2.35
25HH-x7	BFT-1535	2.06		
25II-a7	BFT-0488	3.72	2.03	2.49
25II-a8	BFT-1548	3.58	3.20	2.66
25II-c1	BFT-0473	4.49	3.01	3.02
25II-c18	BFT-1260	3.68	3.02	2.94
25II-d4	BFT-1252	4.57	3.38	3.36
25II-h2	BFT-1514	4.58	3.75	3.48
25II-i3	BFT-1550	2.86	2.24	2.61
25II-m2	BFT-0563	0.97		2.78
25II-p3	BFT-1247		1.23	0.51
25II-q3	BFT-0600	3.16	2.52	2.30
26AA-k1	COL-0097	38.10	37.52	37.15
26DD-n2	COL-0032			1.80
26FF-c3	COL-0243			9.32
26FF-e1	COL-0092	3.95	4.26	3.90
26HH-d2	BFT-0782	7.57	8.06	8.08
26HH-d4	BFT-0837	4.40	3.34	3.51

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
26HH-g2	BFT-0585			15.39
26HH-g8	BFT-1489	8.91	7.81	8.28
26HH-g9	BFT-1598	13.88		
26HH-h3	BFT-1599	14.05	12.35	11.78
26HH-j13	BFT-1463	1.60	1.65	2.51
26HH-l4	BFT-1605	2.75	2.22	1.54
26HH-m1	BFT-1466	4.93	4.33	4.66
26HH-o2	BFT-1031	6.22	5.33	4.16
26HH-o4	BFT-0830	11.46	7.21	10.17
26HH-p7	BFT-1583	4.66	3.25	3.65
26HH-u3	BFT-1618	1.40	1.92	0.40
26II-a1	BFT-1496	2.57	2.33	1.63
26II-b2	BFT-1511	1.15	1.62	1.31
26II-b4	BFT-1513	2.47	1.72	1.37
26II-e1	BFT-1526	2.24	2.27	2.22
26II-h11	BFT-1417	2.36	2.48	2.97
26II-h3	BFT-1400	1.59	1.27	3.44
26II-h7	BFT-1404	2.39	2.63	2.26
26II-i3	BFT-1518	2.44	2.69	3.08
26II-i5	BFT-1520	5.28	1.96	3.04
26II-i6	BFT-1530	2.53	2.17	1.87
26II-j7	BFT-1527	2.67	1.63	1.46
26II-k3	BFT-1551	2.32	2.04	1.30
26II-l1	BFT-0470	1.29		2.66
26II-m1	BFT-0977	1.65	-5.76	-6.34
26II-o4	BFT-1610		-4.23	0.59
26II-o5	BFT-1633		1.54	2.37
26II-p1	BFT-0982	2.66	1.58	1.95
26II-r12	BFT-1290	2.32	-.52	0.45
26II-r6	BFT-1292	2.77	0.19	0.34
26II-r7	BFT-0447	2.40	0.35	0.04
26II-t3	BFT-1592	1.93	-.37	-.07
26II-u3	BFT-0535	3.74		
26II-u3	BFT-0535	3.74		
26II-u5	BFT-0976	2.74	0.98	-.59
26II-u9	BFT-1234	2.96	-8.25	-2.00
26II-v1	BFT-0192	3.16	-2.05	-.82
26II-w2	BFT-0564	2.23	-.92	-.83
26II-w3	BFT-1289	2.28	-.80	-.69
26II-x2	BFT-1199	2.26	0.17	2.75
26JJ-b3	BFT-0538	5.46		1.70
26JJ-b6	BFT-1203	2.38	-2.45	-1.86
26JJ-d1	BFT-0791	2.42	1.06	0.94
26JJ-d4	BFT-1288	1.97	-.15	-.86
26JJ-g5	BFT-1554	2.11	1.30	1.19
26JJ-g6	BFT-1555	2.06	1.58	1.13
26JJ-h4	BFT-1556	1.85		
26JJ-n1	BFT-0430	1.14	0.92	0.62
27CC-b1	COL-0198	6.66	11.09	2.10

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
27DD-g1	COL-0209	15.93	14.38	13.16
27GG-c5	BFT-1313	.57	-0.42	0.38
27GG-e1	BFT-1212	-2.85	-3.78	-2.35
27GG-f1	BFT-0145	-8.87	-8.03	-6.50
27GG-f7	BFT-1210	-8.54	-8.59	-6.41
27GG-f8	BFT-1211	-8.09	-6.14	-5.04
27GG-g1	BFT-0420	-14.27	-12.32	-15.10
27GG-g4	BFT-1209	-6.90	-6.99	-5.76
27GG-h1	BFT-0504	-.64	-.82	-.08
27GG-o3	BFT-1208	17.65	16.15	18.24
27GG-p4	BFT-1743	0.03	-.20	
27GG-q1	BFT-0133	2.28	2.13	0.85
27GG-q2	BFT-1534	1.78	2.09	0.85
27GG-r1	BFT-1709	4.64	4.21	4.91
27GG-t3	BFT-0797	2.04	1.25	1.40
27GG-v1	BFT-0834	2.97	1.99	3.01
27GG-w3	BFT-1311	4.15	3.05	3.84
27GG-w4	BFT-1734	2.16	2.04	1.57
27GG-y1	BFT-1204	3.64	3.17	3.96
27GG-y3	BFT-1733	7.98	6.36	5.32
27HH-a1	BFT-0467	3.34	1.51	1.90
27HH-b2	BFT-0569	2.95	1.75	2.44
27HH-c2	BFT-1746	10.44	10.36	10.88
27HH-d2	BFT-1708	14.59		13.89
27HH-e4	BFT-0798	17.67	17.22	17.12
27HH-e6	BFT-1732	22.72	20.22	21.42
27HH-e7	BFT-1735	4.81	4.25	4.88
27HH-f1	BFT-0981	25.94	24.96	25.19
27HH-f14	BFT-1690	21.28	21.23	22.70
27HH-f4	BFT-0124	25.64	24.69	25.14
27HH-h1	BFT-0170	6.76	6.20	6.63
27HH-j2	BFT-1506	3.89	-2.43	-1.61
27HH-k3	BFT-1509	2.32	0.58	2.38
27HH-o1	BFT-0121	21.03	19.78	20.68
27HH-o9	BFT-1728	16.38	14.33	15.15
27HH-q10	BFT-1717	2.00	2.14	1.81
27HH-r1	BFT-0474	3.89	1.45	4.36
27HH-t1	BFT-0801	4.75		
27HH-t1	BFT-0801	5.02	4.06	5.16
27HH-t11	BFT-1515	3.16	2.39	2.76
27HH-t7	BFT-0198	3.63	3.26	3.67
27HH-u1	BFT-0559	1.72	1.95	2.17
27HH-w3	BFT-1714	3.31	2.74	2.45
27HH-w4	BFT-1718	3.12	1.32	2.16
27HH-y1	BFT-0118	2.43	1.87	1.67
27II-a1	BFT-0471	-.08	0.43	-.18
27II-a6	BFT-1602		-.60	-.15
27II-a7	BFT-1611	1.64		
27II-a7	BFT-1611	1.98	.87	1.65

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
27II-b15	BFT-1702	3.23	2.63	3.13
27II-e1	BFT-0109	2.66	2.16	2.07
27II-f3	BFT-0331	2.34	2.06	1.93
27II-f4	BFT-1721	2.53	2.38	2.18
27II-h8	BFT-1701	2.55	2.29	2.33
27II-j1	BFT-0557	-.56	0.62	-.90
27II-l6	BFT-0800	-.03	2.11	2.48
27II-n2	BFT-0019	0.37	2.11	1.93
27II-s1	BFT-0566	1.89	2.11	1.85
27JJ-a1	BFT-0565	5.49	5.30	4.98
27JJ-i1	BFT-0459	5.43	5.41	5.09
27JJ-j1	BFT-0181	6.08	6.06	6.02
27JJ-q1	BFT-0739	-4.50	-5.44	-6.46
27JJ-x1	BFT-0315	-.57	-1.45	-1.68
27KK-b2	BFT-0787	-1.79	-2.39	-3.31
27KK-c2	BFT-0714	-2.69	-3.81	-4.97
27KK-d2	BFT-0441	-3.40	-3.11	-5.32
27KK-d4	BFT-0697			-4.94
27KK-e5	BFT-0561	-10.37		-12.30
27KK-f11	BFT-0651	-3.61	-3.93	-4.96
27KK-f12	BFT-0738		-6.78	-9.94
27KK-f13	BFT-0779		-4.15	-5.14
27KK-g3	BFT-0696		-4.88	-6.29
27KK-i2	BFT-0771	-7.32		
27KK-l10	BFT-1335	-4.92	-6.65	-7.47
27KK-l2	BFT-0342		-4.56	
27KK-l3	BFT-0777	-3.16	-4.46	-5.29
27KK-m1	BFT-0767	-4.99	-5.93	-7.08
27KK-m7	BFT-1334	-5.09	-6.58	-5.59
27KK-n15	BFT-1685		-9.08	-10.34
27KK-n4	BFT-0717			-5.59
27KK-o1	BFT-0317			-12.06
27KK-o3	BFT-0808			-6.43
27KK-p2	BFT-0835	-6.81	-7.18	-8.03
27KK-q4	BFT-0833	-5.00	-6.01	-6.94
27KK-r13	BFT-1742			-7.74
27KK-r8	BFT-0832			-7.41
27KK-x1	BFT-0444		-11.29	-9.70
27KK-y1	BFT-0101	-6.88	-10.39	-11.28
27LL-e2	BFT-0437		-13.57	-12.74
27LL-e3	BFT-0349	-9.87	-12.25	-13.20
27LL-e8	BFT-1239	-7.11	-9.18	-10.04
27LL-f1	BFT-0436	-10.45	-12.07	-14.95
27Z-r1	COL-0228	92.99	92.20	91.65
28AA-h1	COL-0159	66.92	66.66	
28AA-h2	COL-0221	55.46	54.37	
28BB-b1	COL-0073	39.24	45.11	44.67
28BB-m1	COL-0211	34.48	33.75	33.45
28EE-g1	COL-0093	30.70	29.94	31.43

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
28GG-s1	BFT-0037	3.47	2.53	0.58
28GG-w3	BFT-1712	0.33		
28HH-b4	BFT-0392	4.98	4.99	3.87
28HH-j1	BFT-1395	23.03	20.43	21.73
28HH-j11	BFT-1730	22.86	20.33	21.72
28HH-j2	BFT-1396	20.38		11.66
28HH-k11	BFT-1727	9.41	8.03	8.12
28HH-k12	BFT-1731	8.65	7.63	7.47
28HH-k5	BFT-1306	13.40	11.29	12.36
28HH-m2	BFT-0173	-1.66	-4.74	0.23
28HH-m3	BFT-0174	0.99	1.55	2.40
28HH-t1	BFT-0112	5.56	4.40	4.27
28HH-t3	BFT-0116	2.65	2.45	2.30
28HH-u4	BFT-1705	1.76	1.18	0.78
28II-a3	BFT-1725	0.50		
28II-b1	BFT-0476	1.51		
28II-b4	BFT-1736	0.90	.004	-0.66
28II-i1	BFT-0453	1.36	1.21	0.20
28II-j3	BFT-1274	20.35		
28JJ-i1	BFT-1689	-3.52	-5.20	
28JJ-n1	BFT-0501	-.01	-.33	
28JJ-y1	BFT-0429	-3.59	-4.66	
28JJ-y3	BFT-0500	-5.00	-6.84	-6.51
28KK-d6	BFT-1330	-8.96	-9.49	-11.05
28KK-e1	BFT-0358	-5.30	-6.99	-6.80
28KK-f3	BFT-0374	-13.06	-10.98	
28KK-i1	BFT-0718	-3.80	-4.85	-5.24
28KK-j12	BFT-1748			-10.25
28KK-k8	BFT-1294	-8.09	-9.17	-10.06
28KK-l3	BFT-0580		-5.66	-5.71
28KK-s13	BFT-0824		-7.90	-8.78
28KK-s2	BFT-0799	-14.37	-8.53	-8.36
28KK-t2	BFT-0668	-9.10	-9.11	-9.91
28KK-v2	BFT-0712		-7.90	-8.67
28KK-v4	BFT-0805	-6.98	-7.81	-8.18
28KK-w1	BFT-0337	-12.87	-11.67	-12.28
28LL-b1	BFT-0744	-13.77		-11.84
28LL-g3	BFT-0754	-13.73	-15.25	-16.06
28LL-h1	BFT-0210	-11.76	-13.31	-14.41
28LL-h2	BFT-0439	-14.11	-15.57	-16.47
28LL-j2	BFT-0435	-11.03	-11.48	-12.94
28LL-j4	BFT-0343	-13.30		
28LL-m1	BFT-0706	-13.49		-15.72
28LL-m3	BFT-0750		-16.82	-17.85
28LL-m5	BFT-0709	-13.54	-14.86	-15.55
28LL-n4	BFT-0747	-15.38	-17.16	-17.71
28LL-n5	BFT-0751		-14.07	-15.04
28LL-n6	BFT-0753	-14.63	-16.40	-17.20
28LL-n8	BFT-0346	-17.61	-17.61	-18.12

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
29BB-s1	COL-0217	30.43	29.84	29.40
29BB-x1	COL-0213	27.40	25.30	24.70
29CC-g1	COL-0214	42.89	41.75	41.67
29CC-i3	COL-0222	46.33	44.81	45.01
29DD-f2	HAM-0076	38.35	37.74	37.25
29DD-l1	COL-0164	16.56	14.35	14.66
29EE-h1	HAM-0077	26.10	26.20	25.90
29EE-p1	HAM-0078	16.90	16.72	16.33
29EE-s1	HAM-0083	10.55	10.81	10.68
29GG-f2	JAS-0166	9.52	9.37	9.05
29GG-s1	JAS-0330			5.73
29GG-y1	JAS-0322	4.78	4.22	3.64
29HH-n5	JAS-0298	1.23	0.57	0.04
29HH-v1	JAS-0094	-.97	-1.65	-2.17
29II-l2	BFT-0154	-2.80	-3.07	-4.00
29II-v1	BFT-0844	-3.65	-4.50	
29JJ-e12	BFT-1767		-12.88	-13.95
29JJ-q2	BFT-1418			
29JJ-r3	BFT-1422	-6.04	-6.55	-6.29
29KK-a1	BFT-0357	-8.36	-9.41	-10.22
29ii-x1	BFT-0301	-6.80		
30AA-n1	COL-0072	98.15	97.59	97.16
30AA-v1	COL-0220	101.47		
30BB-h1	COL-0216	73.57	70.63	68.72
30CC-b1	COL-0215	51.16	50.00	49.03
30CC-e2	COL-0183	49.44	49.27	49.15
30CC-u1	HAM-0099	34.48	33.88	32.40
30DD-i1	HAM-0098	39.42	38.82	37.99
30EE-q1	JAS-0305	25.24	24.69	23.92
30FF-x2	JAS-0297	18.41	17.83	17.14
30GG-g1	JAS-0360		17.89	17.11
30HH-d1	JAS-0157	4.93	-6.17	3.68
30JJ-g2	BFT-0570	-7.94	-8.59	-9.26
30KK-y1	JAS-0139	-36.25	-38.61	-39.13
30LL-d1	JAS-0080	-30.24	-31.60	-32.44
30LL-e1	JAS-0136	-39.53	-41.13	-41.55
31AA-r1	COL-0219	96.10	92.13	93.33
31CC-i2	HAM-0073	54.70	54.45	53.88
31CC-m1	HAM-0074	82.62	81.25	79.70
31CC-p1	HAM-0018	78.80	78.48	77.94
31DD-n1	HAM-0079	59.56	58.47	57.48
31EE-s2	JAS-0364		5.89	6.50
31FF-l1	JAS-0308	9.86	10.73	
31GG-x1	JAS-0358		14.11	13.54
31HH-a2	JAS-0357		4.45	3.66
31HH-n1	JAS-0303	8.84	7.77	7.18
31II-h1	JAS-0109	-.10	-.74	-1.36
31JJ-o2	JAS-0111	-14.90	-16.13	-15.81
31KK-e1	JAS-0122		-26.62	

MONITORED WATER LEVEL WELLS

SCWRC WELL #	COUNTY #	MARCH 1985	MAY 1985	JUNE 1985
31KK-f2	JAS-0147	-40.44	-41.22	-41.32
31KK-i2	JAS-0159		-34.52	-34.70
31KK-o1	JAS-0128	-50.69	-51.83	-52.90
31KK-o4	JAS-0126	-44.86	-44.50	-45.86
31KK-u2	JAS-0138	-33.95	-34.29	-34.67
31KK-v1	JAS-0150	-47.19	-46.84	-47.32
31LL-j2	JAS-0134	-47.93	-48.77	-51.18
32BB-h1	HAM-0130	108.85	109.03	108.82
32BB-i1	HAM-0072	101.85	100.92	99.35
32BB-i3	HAM-0129	95.22	95.69	94.20
32CC-e1	HAM-0090	91.30	89.34	88.01
32CC-e3	HAM-0141	105.65	103.59	102.37
32CC-l1	HAM-0019	67.40	66.93	67.75
32CC-l5	HAM-0043	47.60	45.47	46.99
32CC-n1	HAM-0151	94.50	92.64	90.95
32EE-i1	HAM-0105	46.70	45.15	43.68
32EE-t1	JAS-0366		8.59	
32EE-y2	HAM-0132	32.65	32.85	31.31
32FF-n1	JAS-0314	17.35	15.65	14.39
32FF-v1	JAS-0359	23.45	22.94	22.12
32GG-m1	JAS-0367		23.32	22.61
32HH-i4	JAS-0369		13.24	12.72
32HH-s1	JAS-0007		-3.00	8.57
32II-m2	JAS-0316	3.22	3.51	1.78
32LL-b1	JAS-0112		-43.47	-43.31
33CC-p2	HAM-0080	97.56	95.80	95.61
33CC-w1	HAM-0082		94.10	92.68
33CC-x1	HAM-0142	105.35	102.67	101.00
33EE-k1	HAM-0147	39.62	57.49	56.36
33GG-c1	JAS-0368	29.20	29.01	27.03
33GG-l1	JAS-0319	7.17	4.73	4.93
33GG-x1	JAS-0310			20.99
33HH-b2	JAS-0304	28.24	27.10	27.23
34DD-s1	HAM-0108	100.95	97.37	94.97
34EE-n4	HAM-0144	75.22	71.92	70.37
34FF-e2	HAM-0122	59.52	57.61	57.19
34GG-i1	JAS-0309	28.74	27.43	30.79