02286400 MIAMI CANAL AT S-354, AND S-3, AT LAKE HARBOR, FL

LOCATION.--Lat 26°41'42", long 80°48'25", in SE $^1/_4$ sec. 35, T.44 S., R.35 E., Palm Beach County, Hydrologic Unit 03090202, 0.25 mi downstream of S-354 and pump station 3 at Lake Okeechobee, 0.05 mi south of U.S. Highway 27 on the Miami Canal in Lake Harbor, FL.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Prior to October 1940, monthly discharge only, published in WSP 1304. October 1988 to current year. December 1939 to June 1943 (published as Miami Canal at Lake Harbor, October 1957 to September 1988, published as Miami Canal at HGS-3, and S-3, at Lake Harbor.

REVISED RECORDS.--WDR FL-93-2A, 1992

GAGE.--Satellite data collection platform with water-stage shaft encoder and acoustic doppler velocity meter. Datum of gage is National Geodetic Vertical Datum of 1929. December 1, 1939 to June 30, 1943, nonrecording gage at this site at same datum. October 1, 1957 to September 30, 1959, dual water-stage recorder at present site, at datum 0.05 ft lower and October 1, 1959 to February 7, 1962, at datum 0.22 ft lower. October 1, 1957 to September 30, 1968, two deflection vane recorders. From 1981 water year to April 1, 1987, electromagnetic velocity meter and digital recorder. Electromagnetic velocity meter reinstalled May 11, 1988 and discontinued in the 1992 water year, September 11,1991 to October 4, 2003, acoustic velocity meter. Satellite data collection platform installed September 11, 1991. Acoustic doppler velocity meter installed May 23, 2002 and ran simultaneously with the acoustic velocity meter until October 4, 2003 when the acoustic velocity meter was removed. Prior to October 1, 1998, lake stage published under station number 02286399. Lake station discontinued September 30, 1998.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by gates and pump station at Lake Okeechobee. Discharge is the flow through acoustic velocity meter site approximately 0.25 mi below S-354 structure. Stage collected also at the acoustic velocity meter site. Flow frequently reversed during and after periods of heavy rainfall by pumpage into the canal from agricultural lands in the Everglades, or by the operation of pump station 3 (negative figure indicates reverse flow). Discharge computed from relations between stage vs. area and index velocity vs. mean channel velocity.

COOPERATION.--S-3 pump, syphon record and S-354 gate-operation record provided by South Florida Water Management District.

ANNUAL MEAN and ANNUAL RUNOFF (AC-FT) SUMMARY STATISTICS.--Figures represent 39 complete water years of discharge (1957-89, 1993-97, 2001, 2004).

EXTREME CANAL STAGES FOR PERIOD OF RECORD.--Maximum gage height 14.92 ft, present datum, Mar. 21, 1960 and Oct. 2, 1965: minimum, 7.45 ft May 2, 2001.

EXTREME CANAL STAGES FOR CURRENT YEAR.--Maximum gage height, 12.49 ft Sept. 6; minimum, 9.23 ft Sept. 4.

REVISIONS.--The period of record annual and monthly statistics published in the 2001-2003 reports are accurate for the period of 1958-1997 only and did not include any data from 1998 to the published water year. The revised annual and monthly statistics for the 2001-2003 are published below.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2001, BY WATER YEAR (WY)

MEAN	-66.9	42.8	89.6	110	197	240	445	332	3.17	-72.9	-103	-174
MAX	609	420	385	634	1,439	1,415	1,480	1,065	1,157	936	302	1,191
(WY)	(1989)	(1974)	(1969)	(1993)	(1993)	(1966)	(1993)	(2000)	(1998)	(1992)	(1993)	(1992)
MIN	-1,167	-429	-330	-849	-373	-1,185	-316	-296	-897	-769	-899	-1,614
(WY)	(1961)	(1961)	(1958)	(1958)	(1983)	(1970)	(1958)	(1972)	(1968)	(1985)	(1981)	(1960)

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 1958 - 2001	
ANNUAL TOTAL	-28,273.27			
ANNUAL MEAN	-77.5		69.4	
HIGHEST ANNUAL MEAN			487	1993
LOWEST ANNUAL MEAN			-290	1960
HIGHEST DAILY MEAN	530	Dec 20	2,280	Mar 24, 1966
LOWEST DAILY MEAN	-1,870	Jul 26	-2,790	Mar 26, 1970
ANNUAL SEVEN-DAY MINIMUM	-1,420	Sep 9	-2,170	Jun 18, 1959
ANNUAL RUNOFF (AC-FT)	-56,080		50,280	
10 PERCENT EXCEEDS	302		542	
50 PERCENT EXCEEDS	23		0.00	
90 PERCENT EXCEEDS	-705		-391	

REVISED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002, BY WATER YEAR (WY)

MEAN	-68.4	41.3	85.5	106	193	240	444	332	3.17	-71.5	-100	-170
MAX	609	420	385	634	1,439	1,415	1,480	1,065	1,157	936	302	1,191
(WY)	(1989)	(1974)	(1969)	(1993)	(1993)	(1966)	(1993)	(2000)	(1998)	(1992)	(1993)	(1992)
MIN	-1,167	-429	-330	-849	-373	-1,185	-316	-296	-897	-769	-899	-1,614
(WY)	(1961)	(1961)	(1958)	(1958)	(1983)	(1970)	(1958)	(1972)	(1968)	(1985)	(1981)	(1960)

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		WATER YEARS 1958 - 2002	
ANNUAL TOTAL	-43,083.72			
ANNUAL MEAN	-118		69.4	
HIGHEST ANNUAL MEAN			487	1993
LOWEST ANNUAL MEAN			-290	1960
HIGHEST DAILY MEAN	460	Apr 18	2,280	Mar 24, 1966
LOWEST DAILY MEAN	-1,870	Jul 26	-2,790	Mar 26, 1970
ANNUAL SEVEN-DAY MINIMUM	-1,420	Sep 9	-2,170	Jun 18, 1959
ANNUAL RUNOFF (AC-FT)	-85,460		50,280	
10 PERCENT EXCEEDS	230		542	
50 PERCENT EXCEEDS	0.00		0.00	
90 PERCENT EXCEEDS	-675		-391	

REVISED

02286400 MIAMI CANAL AT S-354, AND S-3, AT LAKE HARBOR, FL-Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

MEAN	-66.8	41.3	83.8	104	189	240	444	330	3.27	-69.8	-97.6	-166
MAX	609	420	385	634	1,439	1,415	1,480	1,065	1,157	936	302	1,191
(WY)	(1989)	(1974)	(1969)	(1993)	(1993)	(1966)	(1993)	(2000)	(1998)	(1992)	(1993)	(1992)
MIN	-1,167	-429	-330	-849	-373	-1,185	-316	-296	-897	-769	-899	-1,614
(WY)	(1961)	(1961)	(1958)	(1958)	(1983)	(1970)	(1958)	(1972)	(1968)	(1985)	(1981)	(1960)

SUMMARY STATISTICS	WATER YEARS 1958 - 2003	
ANNUAL MEAN	69.4	
HIGHEST ANNUAL MEAN	487	1993
LOWEST ANNUAL MEAN	-290	1960
HIGHEST DAILY MEAN	2,280	Mar 24, 1966
LOWEST DAILY MEAN	-2,790	Mar 26, 1970
ANNUAL SEVEN-DAY MINIMUM	-2,170	Jun 18, 1959
ANNUAL RUNOFF (AC-FT)	50,280	
10 PERCENT EXCEEDS	542	
50 PERCENT EXCEEDS	0.00	
90 PERCENT EXCEEDS	-391	

REVISED

02286400 MIAMI CANAL AT S-354, AND S-3, AT LAKE HARBOR, FL-Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.72	10.76	10.85	10.68	10.76	10.56	11.20	11.22	11.61	10.57	10.71	10.30
2	11.03	10.66	11.18	10.67	10.34	10.81	11.11	10.97	11.63	10.72	11.12	9.95
3	10.68	10.99	11.16	10.70	10.09	10.94	11.04	10.39	10.62	10.75	11.20	9.79
4	10.28	11.16	11.19	10.73	10.66	10.75	11.16	10.30	10.28	10.73	11.13	9.50
5	11.07	10.51	11.03	10.75	10.76	11.00	11.23	10.58	10.51	10.71	10.57	10.58
6	10.14	10.26	10.64	10.69	10.90	10.73	11.27	---	10.40	10.67	10.54	12.05
7	10.23	10.29	10.50	10.64	10.48	10.80	11.15	10.55	10.46	---	10.32	12.17
8	10.87	10.34	10.81	10.62	10.43	---	11.13	11.08	10.11	10.69	10.65	11.60
9	10.78	10.41	11.16	10.65	10.36	10.54	11.14	11.10	10.44	10.75	10.77	11.46
10	---	10.50	10.93	10.58	10.44	10.51	11.23	---	---	11.22	10.18	11.12
11	10.89	10.32	10.87	10.76	10.64	10.66	11.16	---	10.27	11.22	10.22	10.36
12	11.04	10.24	10.89	10.55	10.87	10.62	10.84	11.04	10.22	11.17	10.65	10.27
13	10.91	10.33	11.03	10.53	10.88	10.77	11.13	11.27	10.52	---	10.62	9.93
14	10.88	10.71	10.86	10.66	10.79	10.68	11.05	---	10.65	11.04	10.44	9.89
15	11.06	10.62	10.88	10.50	10.72	10.75	11.01	11.59	10.85	11.10	10.51	9.77
16	10.84	10.75	10.33	10.41	10.55	10.75	10.76	11.59	10.83	---	10.40	9.81
17	10.88	10.75	10.97	10.62	10.68	10.64	10.60	11.52	10.64	11.54	9.95	9.51
18	10.88	10.79	10.85	10.89	10.62	10.44	10.52	11.52	10.33	11.46	9.93	9.78
19	11.07	10.87	10.43	11.11	10.65	10.54	10.37	11.47	10.52	11.49	10.34	9.85
20	11.11	10.74	10.69	11.05	10.66	10.58	10.48	11.57	10.64	10.49	10.14	10.02
21	10.98	10.66	10.77	10.71	10.66	10.68	10.56	11.55	10.67	---	9.83	10.05
22	10.89	10.45	10.75	10.58	10.61	10.72	10.50	11.58	10.49	10.25	9.84	10.49
23	10.83	10.46	10.63	10.72	---	11.18	10.83	11.58	10.29	10.38	9.81	10.23
24	10.73	10.73	10.69	10.87	10.62	11.13	11.28	11.53	10.33	---	10.01	10.00
25	10.82	10.83	10.68	10.99	---	10.93	11.20	11.63	10.49	10.55	10.14	9.56
26	---	10.83	10.65	11.04	11.02	11.24	11.04	11.54	10.51	10.39	10.02	10.92
27	10.93	10.72	10.67	10.97	10.75	11.08	11.13	11.53	10.57	10.52	9.91	11.38
28	10.97	10.61	10.63	10.52	10.79	10.94	10.51	11.60	10.52	10.72	9.68	10.86
29	---	10.55	10.69	10.67	10.72	10.98	10.50	11.60	10.61	9.98	9.84	10.20
30	10.99	10.61	10.70	10.76	---	11.08	---	11.62	10.65	9.95	10.12	10.23
31	10.92	---	10.69	11.13	---	11.04	---	11.56	---	10.17	10.47	---
TOTAL	---	318.45	334.80	332.75	---	---	---	---	---	---	320.06	311.63
MEAN	---	10.62	10.80	10.73	---	---	---	---	---	---	10.32	10.39
MAX	---	11.16	11.19	11.13	---	---	---	---	---	---	11.20	12.17
MIN	---	10.24	10.33	10.41	---	---	---	---	---	---	9.68	9.50

02286400 MIAMI CANAL AT S-354, AND S-3, AT LAKE HARBOR, FL-Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e-12	30	464	222	2.6	22	676	512	894	406	9.9	24
2	38	44	424	417	-4.9	-2.4	684	160	417	590	20	31
3	22	37	239	537	-0.68	0.55	679	e3.5	-1.6	542	-11	46
4	-6.3	11	257	484	-0.58	40	667	e149	0.32	519	23	2.3
5	-1.6	16	392	524	-6.1	-9.7	606	337	12	643	18	15
6	-7.2	1.2	-28	402	-13	12	354	e485	1.9	786	15	-0.32
7	0.07	16	65	155	-2.8	1.8	399	658	-14	e879	30	3.1
8	2.1	21	392	113	19	e191	402	957	-1.9	1,010	20	1.7
9	e-5.2	15	308	394	2.2	910	377	763	-4.7	1,390	-17	-2.5
10	e-24	42	280	496	195	1,110	369	e688	e15	1,270	1.3	-15
11	20	31	612	460	266	1,060	200	e769	24	1,130	7.4	-18
12	10	14	448	363	267	662	5.2	1,020	-1.2	1,040	20	-16
13	20	179	489	489	95	198	33	1,230	-1.5	e620	18	1.1
14	26	185	250	388	-32	76	-21	e1,120	3.0	691	27	16
15	28	99	16	26	8.4	41	-38	720	-6.0	738	12	2.3
16	-30	14	14	202	-12	-5.1	2.3	654	-6.3	e277	10	23
17	e-9.5	43	7.4	433	-14	-4.4	-16	641	33	19	-23	-3.2
18	e1.1	18	-14	240	-44	178	-36	e712	-3.9	25	13	4.7
19	e14	12	299	15	-32	436	92	762	8.8	17	0.08	6.9
20	11	-38	590	-7.3	-17	304	465	1,040	-1.9	-6.3	-17	44
21	-41	-10	585	-6.5	-18	311	461	1,090	7.6	e22	-11	46
22	-12	-14	509	381	-9.2	476	667	1,020	9.6	-9.5	-6.1	e7.1
23	-32	166	147	62	e5.0	650	1,200	975	13	-14	7.7	0.14
24	41	295	341	145	17	289	1,000	940	411	e-31	9.1	10
25	53	263	334	257	e26	449	698	1,280	1,000	-8.0	16	2.4
26	e88	127	270	287	e9.2	630	739	1,170	1,050	-4.7	19	64
27	181	24	246	342	-15	419	501	1,290	729	-13	6.8	-15
28	56	13	309	316	-12	535	107	1,240	98	18	-7.0	e9.0
29	e-1.7	202	335	276	4.8	670	386	1,230	6.7	36	-35	e16
30	14	85	387	170	---	699	e577	1,160	-22	-8.1	-10	e9.5
31	-10	---	295	24	---	697	---	1,180	---	-0.56	7.2	---
TOTAL	432.77	1,941.2	9,262.4	8,606.2	683.94	11,045.75	12,235.5	25,955.5	4,668.92	12,572.84	173.38	315.22
MEAN	14.0	64.7	299	278	23.6	356	408	837	156	406	5.59	10.5
MAX	181	295	612	537	267	1,110	1,200	1,290	1,050	1,390	30	64
MIN	-41	-38	-28	-7.3	-44	-9.7	-38	3.5	-22	-31	-35	-18
AC-FT	858	3,850	18,370	17,070	1,360	21,910	24,270	51,480	9,260	24,940	344	625

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2004, BY WATER YEAR (WY)

MEAN	-65.0	41.9	88.7	108	185	243	444	342	6.65	-59.7	-95.4	-162
MAX	609	420	385	634	1,439	1,415	1,480	1,065	1,157	936	302	1,191
(WY)	(1989)	(1974)	(1969)	(1993)	(1993)	(1966)	(1993)	(2000)	(1998)	(1992)	(1993)	(1992)
MIN	-1,167	-429	-330	-849	-373	-1,185	-316	-296	-897	-769	-899	-1,614
(WY)	(1961)	(1961)	(1958)	(1958)	(1983)	(1970)	(1958)	(1972)	(1968)	(1985)	(1981)	(1960)

SUMMARY STATISTICS	FOR 2004 WATER YEAR		WATER YEARS 1958 - 2004	
ANNUAL TOTAL	87,893.62			
ANNUAL MEAN	240		73.8	
HIGHEST ANNUAL MEAN			487	1993
LOWEST ANNUAL MEAN			-290	1960
HIGHEST DAILY MEAN	1,390	Jul 9	2,280	Mar 24, 1966
LOWEST DAILY MEAN	-44	Feb 18	-2,790	Mar 26, 1970
ANNUAL SEVEN-DAY MINIMUM	-21	Feb 16	-2,170	Jun 18, 1959
ANNUAL RUNOFF (AC-FT)	174,300		53,460	
10 PERCENT EXCEEDS	732		553	
50 PERCENT EXCEEDS	30		0.00	
90 PERCENT EXCEEDS	-12		-376	

e Estimated

The period of record statistics were computed from complete water year's of record. See the annual mean and annual runoff (ac-ft) summary statistics section of the manuscript.