



# LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

## Appendices 2.3A thru 2.4J. Volume VII

Exxon Minerals Company

[New York, N.Y.]: [Exxon Minerals Company], [s.d.]

<https://digital.library.wisc.edu/1711.dl/KV3TJMVMVSZ5Z8I>

<http://rightsstatements.org/vocab/InC/1.0/>

For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

LIST OF APPENDICES

<u>NUMBER</u>	<u>TITLE</u>
APPENDIX 2.3A	TABLE A-1, SUMMARY OF PIEZOMETER CONSTRUCTION DATA
APPENDIX 2.3B	PIEZOMETER HYDROGRAPHS FIGURES B-1 THROUGH B-47
TABLE B-1	GROUND WATER ELEVATIONS FOR SEPTEMBER 10 AND 11, 1980 FOR CONSTRUCTION OF THE GLACIAL DEPOSIT POTENTIOMETRIC MAP
TABLE B-2	GROUND WATER ELEVATIONS OF WELLS IN THE SITE AREA (SEPTEMBER 1980 THROUGH JULY 1984)
APPENDIX 2.3C	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES (TABLES C-1 THROUGH C-49)
TABLE C-1	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-4
TABLE C-2	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-10
TABLE C-3	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-13
TABLE C-4	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-16
TABLE C-5	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-17
TABLE C-6	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-19
TABLE C-7	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-22B
TABLE C-8	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-32A
TABLE C-9	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMA-48
TABLE C-10	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-1A
TABLE C-11	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-4
TABLE C-12	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-5A

TABLE C-13	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-7
TABLE C-14	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-8
TABLE C-15	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-18
TABLE C-16	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-20
TABLE C-17	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-20A
TABLE C-18	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-21
TABLE C-19	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-23
TABLE C-20	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-24
TABLE C-21	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-25
TABLE C-22	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-27
TABLE C-23	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-28
TABLE C-24	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMB-29
TABLE C-25	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMC-1
TABLE C-26	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMC-2
TABLE C-27	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER DMC-3
TABLE C-28	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM TEST WELL 1 (TW-1)
TABLE C-29	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM WATER WELL 1 (WW-1)

TABLE C-30	RESULTS OF THE CHEMICAL ANALYSES OF WATER SAMPLES FROM WATER WELL 2 (WW-2)
TABLE C-31	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE FOX WELL
TABLE C-32	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE MCGESHICK WELL
TABLE C-33	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE REYNOLDS WELL
TABLE C-34	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE SIMMONSEN WELL
TABLE C-35	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE VOLLMAR WELL
TABLE C-36	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM THE WALENTOWSKI WELL
TABLE C-37	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G40-J15
TABLE C-38	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G40-K13
TABLE C-39	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G40-L23
TABLE C-40	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G40-Q7
TABLE C-41	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G40-R23
TABLE C-42	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-C15
TABLE C-43	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-E13
TABLE C-44	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-G14A
TABLE C-45	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-G14B
TABLE C-46	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-G14C
TABLE C-47	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-G15A

TABLE C-48	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-G15B
TABLE C-49	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-P18B
TABLE C-50	RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES FROM PIEZOMETER G41-P24
APPENDIX 2.3D	RESULTS OF CHEMICAL ANALYSES OF GROUND WATER SAMPLES TAKEN FROM EXXON BOREHOLES
APPENDIX 2.3E	RESULTS OF FIELD PERMEABILITY TESTS
APPENDIX 2.3F	RESULTS OF LABORATORY PERMEABILITY TESTS AND HAZEN PERMEABILITY APPROXIMATIONS
APPENDIX 2.3G	INVENTORY OF WATER WELLS IN THE ENVIRONMENTAL STUDY AREA
APPENDIX 2.3H	CHARACTERISTICS OF INTERMITTENT STREAMS IN THE ENVIRONMENTAL STUDY AREA

## LIST OF APPENDICES

<u>NUMBER</u>	<u>TITLE</u>
2.4A	STREAM GAGE DATA (TABLES A-1 THROUGH A-15, FIGURE A-1)
2.4B	LAKE GAGE DATA (TABLES B-1 THROUGH B-10)
2.4C	USGS DAILY STREAM DISCHARGE RECORD FOR SWAMP CREEK (TABLES C-1 AND C-2)
2.4D	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSES AND BOTTOM SEDIMENT GRAIN SIZE ANALYSES (TABLES D-1 THROUGH D-12, FIGURE D-1)
2.4E	CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES (TABLES E-1 THROUGH E-4)
2.4F	WATER QUALITY DATA BY STATIONS (TABLES F-1 THROUGH F-29)
2.4G	WATER QUALITY DATA BY STATION SUMMARY OF MONTHLY MEANS AND RANGES (TABLES G-1 THROUGH G-29)
2.4H	SUPPLEMENTARY WATER CHEMISTRY DATA (TABLES H-1 THROUGH H-14)
2.4I	LAKE WATER SURFACE ELEVATIONS (FIGURE I-1, APRIL 1977 TO SEPTEMBER 1978; FIGURE I-2, MARCH TO MAY 1979 AND MARCH TO OCTOBER 1980)
2.4J	STREAM DISCHARGE HYDROGRAPHS (FIGURES J-1 THROUGH J-11)
2.4K	RATING CURVE DATA SUMMARIES (TABLES K-1 THROUGH K-12)
2.4L	REVIEW AND REVISION OF STREAM FLOW DATA

APPENDIX 2.3A

TABLE A-1

SUMMARY OF PIEZOMETER  
CONSTRUCTION DATA

SUMMARY OF PIEZOMETER CONSTRUCTION DATA

PIEZOMETER NUMBER <sup>a</sup>	HORIZONTAL CONTROL		VERTICAL CONTROL		DEPTH OF BORING <sup>b</sup>	SCREENED INTERVAL <sup>b</sup>	EFFECTIVE INTERVAL (feet)	DIAMETER (inches)
	NORTH (feet)	EAST (feet)	GROUND SURFACE (feet above MSL)	TOP OF CASING (feet above MSL)				
DMI-1	116,747	2,278,815	1636.74	1638.29	109.0	106.0 - 108.5	52 - 109	1
DMI-2U	116,609	2,278,750	1629.43	1630.77	139.0	50.0 - 53.0	40 - 53	1
DMI-2L	116,609	2,278,750	1629.43	1630.77	139.0	134.0 - 139.0	88 - 139	3/4
DW-1A	116,335	2,276,266	1648.49	1649.64	71.0	58.0 - 70.0	51 - 71	1
DW-1U	116,321	2,276,261	1648.32	1649.68	215.0	92.0 - 97.0	83 - 105	1
DW-1L	116,321	2,276,261	1648.32	1649.68	215.0	137.0 - 147.0	130 - 150	1
DW-2U	116,777	2,279,794	1600.74	1601.86	95.0	55.0 - 70.0	47 - 71	1
DW-2L	116,777	2,279,794	1600.74	1601.86	95.0	85.0 - 90.0	76 - 95	3/4
DW-3U	116,255	2,274,840	1657.07	1658.74	168.5	88.0 - 98.0	83 - 98	1-1/4
DW-3L	116,255	2,274,840	1657.07	1658.74	168.5	128.0 - 133.0	121 - 133	3/4
TW-1	116,884	2,279,723	1601.19	1602.63	55.0	40.0 - 55.0	30 - 55	8
WW-2	116,442	2,276,157	1645.39	1645.92	155.0	140.0 - 155.0	140 - 155	8
DMS-1	117,104	2,278,220	1661.65	1663.79	128.0	95.0 - 105.0	50 - 105	2
DMS-2	117,927	2,277,890	1641.19	1643.35	184.0	80.0 - 90.0	50 - 90	2
DMA-1N	113,665	2,272,030	1637.96	1638.87	55.0	14.0 - 18.0	10 - 18	2
DMA-1S	113,660	2,272,030	1637.96	1638.89	55.0	51.0 - 55.0	44.5 - 55	2

<sup>a</sup>The locations of these piezometers are shown on Figure 2.3-1.

<sup>b</sup>Feet below ground surface.



TABLE A-1 (continued)

PIEZOMETER NUMBER <sup>a</sup>	HORIZONTAL CONTROL		VERTICAL CONTROL		DEPTH OF BORING <sup>b</sup>	SCREENED INTERVAL <sup>b</sup>	EFFECTIVE INTERVAL (feet)	DIAMETER (inches)
	NORTH (feet)	EAST (feet)	GROUND SURFACE (feet above MSL)	TOP OF CASING (feet above MSL)				
DMA-3	115,494	2,273,938	1647.51	1648.84	45.0	39.0 - 43.0	32 - 45	2
DMA-4	111,425	2,280,847	1612.03	1613.57	30.0	26.0 - 30.0	14 - 30	2
DMA-10	110,510	2,275,400	1593.58	1595.18	46.0	42.0 - 46.0	32 - 46	2
DMA-12	117,887	2,279,966	1621.18	1623.04	45.0	41.0 - 45.0	35 - 45	2
DMA-13	110,450	2,265,800	1554.66	1555.99	40.5	35.0 - 39.0	32.5 - 40.5	2
DMA-16	123,793	2,271,254	1589.93	1591.32	60.3	56.0 - 60.0	52 - 60.3	2
DMA-17	106,565	2,275,547	1563.95	1565.48	36.0	27.5 - 31.5	20 - 36	2
DMA-18	111,758	2,269,884	1619.36	1621.18	70.5	66.0 - 70.0	55 - 70.5	2
DMA-19	115,004	2,279,720	1597.24	1598.54	30.0	22.0 - 26.0	15 - 30	2
DMA-20	119,200	2,272,622	1591.97	1593.15	54.0	50.0 - 54.0	36 - 54	2
DMA-29	101,230	2,251,380	1537.11	1538.52	40.0	17.0 - 21.0	9 - 40	2
DMA-29AU	101,250	2,251,380	1536.69	1538.38	53.0	42.0 - 46.0	38.5 - 46	2
DMA-29AL	101,250	2,251,380	1536.69	1538.38	53.0	50.0 - 53.0	48 - 53	3/4
DMA-31	120,160	2,281,570	1592.09	1593.49	25.0	21.0 - 24.0	15 - 25	2
DMA-32A	112,050	2,290,580	1592.14	1593.54	175.0	33.0 - 37.0	30 - 42	2
DMA-43	137,000	2,272,720	1624.70	1626.62	40.0	36.0 - 40.0	25 - 40	2
DMA-47	121,393	2,276,058	1573.62	1574.84	31.0	23.0 - 27.0	17.0 - 31	2
DMA-48	118,981	2,268,709	1547.42	1548.68	29.5	24.0 - 28.0	20 - 29.5	2

TABLE A-1 (continued)

PIEZOMETER NUMBER <sup>a</sup>	HORIZONTAL CONTROL		VERTICAL CONTROL		DEPTH OF BORING <sup>b</sup>	SCREENED INTERVAL <sup>b</sup>	EFFECTIVE INTERVAL (feet)	DIAMETER (inches)
	NORTH (feet)	EAST (feet)	GROUND SURFACE (feet above MSL)	TOP OF CASING (feet above MSL)				
DMA-22B	113,800	2,297,350	1629.19	1630.92	100.4	90.0 - 100.0	76.5 - 100.4	2
DMB-1	114,405	2,282,890	1627.30	1629.42	59.3	5.0 - 15.0	5 - 15	2
DMB-1A	114,405	2,282,900	1627.94	1629.70	79.4	69.0 - 79.0	24 - 79.4	2
DMB-2	114,995	2,285,800	1706.28	1708.13	100.3	90.2 - 100.2	45.2 - 100.3	2
DMB-3	116,895	2,287,465	1587.93	1589.48	61.5	55.0 - 60.0	40.0 - 61.5	2
DMB-4	118,405	2,283,785	1644.49	1646.03	80.3	69.5 - 79.5	59.5 - 80.3	2
DMB-5	112,135	2,285,540	1688.77	1690.37	98.5	88.4 - 98.4	55.0 - 98.5	2
DMB-5A	112,130	2,285,545	1689.33	1690.95	120.2	110.0 - 120.0	96.0 - 120.2	2
DMB-6	112,385	2,283,015	1666.47	1668.26	86.0	75.5 - 85.5	53.8 - 86	2
DMB-7	106,150	2,287,845	1653.67	1655.08	79.2	69.0 - 79.0	55.0 - 79.2	2
DMB-8	114,595	2,287,840	1622.74	1624.57	50.7	45.0 - 50.0	35.0 - 50.7	2
DMB-9A	110,555	2,287,235	1661.61	1663.23	260.5	217.0 - 227.0	215.0 - 243	1
DMB-9B	110,555	2,287,235	1661.61	1663.23	260.5	190.0 - 200.0	173.5 - 210	1
DMB-9C	110,555	2,287,235	1661.61	1663.23	260.5	152.0 - 162.0	130.0 - 168.0	1
DMB-10	117,720	2,271,170	1619.11	1620.81	99.5	89.5 - 99.5	59.0 - 99.5	2
DMB-11	109,960	2,273,820	1656.85	1659.06	100.0	89.5 - 99.5	84 - 100	2
DMB-12	107,390	2,275,205	1586.05	1587.72	81.9	70.0 - 80.0	60.0 - 81.4	2
DMB-13	107,110	2,269,980	1609.39	1611.15	60.0	50.0 - 60.0	46.0 - 60	2
DMB-14	110,075	2,270,985	1638.69	1639.99	100.9	90.0 - 100.0	82 - 100.9	2
DMB-15	113,660	2,272,025	1637.52	1639.59	79.5	69.5 - 79.5	55.0 - 79.5	2
DMB-16	111,880	2,273,475	1674.63	1676.27	99.2	88.5 - 98.5	59.0 - 99.5	2
DMB-17	108,960	2,268,755	1648.95	1650.56	80.5	70.0 - 80.0	65.0 - 80.5	2
DMB-18	110,560	2,268,060	1601.04	1602.59	80.9	70.0 - 80.0	40.0 - 80.9	2

TABLE A-1 (continued)

PIEZOMETER NUMBER <sup>a</sup>	HORIZONTAL CONTROL		VERTICAL CONTROL		DEPTH OF BORING <sup>b</sup>	SCREENED INTERVAL <sup>b</sup>	EFFECTIVE INTERVAL (feet)	DIAMETER (inches)
	NORTH (feet)	EAST (feet)	GROUND SURFACE (feet above MSL)	TOP OF CASING (feet above MSL)				
DMB-19	110,450	2,265,815	1554.64	1556.30	160.7	76.5 - 86.5	65 - 86.5	2
DMB-20	115,725	2,270,530	1605.80	1607.69	40.0	29.2 - 39.2	25.5 - 40.0	2
DMB-20A	115,720	2,270,545	1606.20	1607.91	84.8	79.5 - 84.5	65.0 - 84.8	2
DMB-21	112,820	2,265,775	1559.32	1561.36	49.5	38.9 - 48.9	26.5 - 49.5	2
DMB-22	113,240	2,269,090	1616.48	1618.32	79.0	68.6 - 78.6	64 - 79	2
DMB-23	115,900	2,268,205	1563.30	1565.05	99.2	89.0 - 99.0	83.0 - 99.2	2
DMB-24	102,060	2,271,375	1565.43	1567.00	49.0	43.2 - 48.2	39.5 - 49.0	2
DMB-25	105,725	2,268,525	1644.66	1646.10	129.5	124.5 - 129.5	113.0 - 129.5	2
DMB-26	105,520	2,282,250	1712.98	1714.49	134.1	124.0 - 134.0	117.0 - 134.1	2
DMB-27	108,675	2,283,695	1649.04	1650.83	83.9	73.8 - 83.8	71.0 - 83.9	2
DMB-28	106,840	2,285,425	1642.13	1643.88	70.0	64.5 - 69.5	61.0 - 70.0	2
DMB-29	104,385	2,288,110	1629.98	1631.48	69.3	64.3 - 69.3	61.0 - 69.3	2
DMC-1	115,120	2,292,330	1614.34	1615.99	47.5	37.2 - 47.2	34.0 - 47.5	2
DMC-2	126,510	2,288,740	1588.60	1590.17	51.5	39.0 - 49.0	34.5 - 51.5	2
DMC-3	106,940	2,291,715	1610.02	1611.97	46.5	35.0 - 45.0	26.5 - 46.5	2
DMP-1	116,675	2,278,480	1647.62	1649.55	70.7	63.7 - 70.7	60.0 - 70.7	2
DMP-2	115,135	2,278,685	1595.58	1597.20	36.5	30.6 - 35.6	28.5 - 36.5	2
DMP-3	113,665	2,275,625	1623.55	1625.36	65.6	57.5 - 65.5	53.2 - 65.6	2
G40-J15	113,810	2,270,150	1603.63	1605.62	51.5	37.0 - 47.0	32.0 - 51.5	2
G40-K13	115,130	2,270,885	1600.94	1603.81	50.2	34.0 - 44.0	25.0 - 44.0	2
G40-L23	108,920	2,271,065	1639.28	1641.20	90.9	77.0 - 87.0	74.0 - 90.9	2
G40-Q7	119,050	2,274,350	1608.07	1609.92	70.5	57.0 - 67.0	50.0 - 70.5	2
G40-R23	108,770	2,274,805	1620.30	1622.45	81.0	66.0 - 76.0	60.0 - 81.0	2

TABLE A-1 (continued)

PIEZOMETER NUMBER <sup>a</sup>	HORIZONTAL CONTROL		VERTICAL CONTROL		DEPTH OF BORING <sup>b</sup>	SCREENED INTERVAL <sup>b</sup>	EFFECTIVE INTERVAL (feet)	DIAMETER (inches)
	NORTH (feet)	EAST (feet)	GROUND SURFACE (feet above MSL)	TOP OF CASING (feet above MSL)				
G41-C15	113,135	2,282,080	1615.61	1617.30	217.3	195.0 - 205.0	190.0 - 217.3	2
G41-E13	114,395	2,282,890	1627.28	1629.45	250.5	227.0 - 237.0	250.0 - 250.5	2
G41-G14A	114,080	2,284,315	1706.91	1708.62	241.0	221.0 - 241.0	190.0 - 241.0	2
G41-G14B	114,055	2,284,315	1706.80	1708.87	360.1	272.0 - 292.0	263.0 - 360.1	2
G41-G14C	114,030	2,284,315	1706.33	1708.68	160.0	131.0 - 151.0	124.0 - 160.0	2
G41-G15A	113,480	2,284,390	1692.75	1695.71	113.0	101.5 - 111.5	92.0 - 113.0	2
G41-G15B	113,440	2,284,385	1692.09	1694.72	170.0	158.0 - 168.0	146.0 - 170.0	2
G41-P18B	111,390	2,288,820	1589.05	1591.27	44.5	35.0 - 40.0	33.0 - 44.5	2
G41-P24	107,550	2,288,660	1681.95	1684.37	345.0	103.0 - 113.0	95.0 - 345.0	2

APPENDIX 2.3B

TABLE B-1  
GROUND WATER ELEVATIONS  
FOR  
CONSTRUCTION OF THE GLACIAL DEPOSIT  
POTENTIOMETRIC MAP  
SEPTEMBER 10 AND 11, 1980

FIGURES B-1 THROUGH B-47  
PIEZOMETER HYDROGRAPHS

GROUND WATER ELEVATIONS\*  
FOR CONSTRUCTION OF THE GLACIAL DEPOSIT POTENTIOMETRIC MAP  
SEPTEMBER 10 AND 11, 1980

---

WELL NO.	WATER SURFACE ELEVATION (feet above MSL)	WELL NO.	WATER SURFACE ELEVATION (feet above MSL)
G41-C15	1591.38	G41-P18	1586.86
G41-C15B	1592.43	G41-P18B	1588.75
G41-E13	1592.87	G41-P24	1590.22
G41-E17	1591.26	G40-D24	1553.69
G41-F24	1587.25	G40-H16	1560.43
G41-G12	1663.82	G40-H27	1549.50
G41-G14A	1592.07	G40-J15	1563.24
G41-G14B	1592.00	G40-K13	1565.30
G41-G14C	1592.37	G40-L23	1562.30
G41-G14D	1591.97	G40-M15	1569.04
G41-G14E	1591.71	G40-P20	1571.45
G41-G14F	1592.03	G40-Q7	1565.17
G41-G15	1591.87	G40-R23	1569.46
G41-G15A	1591.53	DMI-1	1589.37
G41-G15B	1591.90	DMI-2U	1588.97
G41-G21	1590.29	DMI-2L	1586.91
G41-H17	DRY	DW-1A	1581.56
G41-H18	DRY	DW-1U	1581.11
G41-H18A	1679.03	DW-1L	1578.60
G41-J18	1649.82	DW-2U	1592.07
G41-K13	1591.80	DW-2L	1592.87
G41-K13A	1592.18	DW-3U	1577.18
G41-K13B	DRY	DW-3L	1577.16
G41-N21	1589.97	TW-1	1591.79

Piezometer designation G - Golder Associates  
D - Dames & Moore  
T - Dames & Moore  
W - Dames & Moore  
F - USGS  
L - USGS

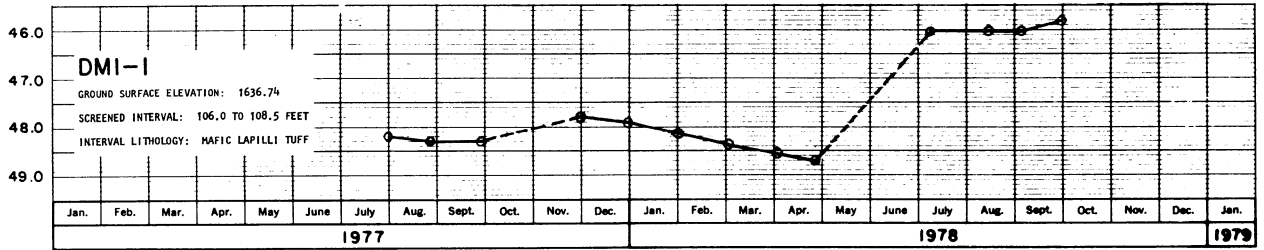
\*Golder Associates, 1981a.

<u>WELL NO.</u>	<u>WATER SURFACE ELEVATION (feet above MSL)</u>	<u>WELL NO.</u>	<u>WATER SURFACE ELEVATION (feet above MSL)</u>
WW-2	1579.77	DMB-5	DRY
DMS-1	1593.50	DMB-5A	1592.12
DMS-2	1590.26	DMB-6	1591.83
DMA-1N	DRY	DMB-7	1590.01
DMA-1S	DRY	DMB-8	1588.01
DMA-3	DRY	DMB-9A	1590.73
DMA-4	1587.74	DMB-9B	1590.73
DMA-10	1575.55	DMB-9C	1590.82
DMA-12	1592.02	DMB-10	1560.44
DMA-13	1553.80	DMB-11	1570.62
DMA-16	1553.58	DMB-12	1565.81
DMA-18	1562.62	DMB-13	1553.58
DMA-19	1590.14	DMB-16	DRY
DMA-20	1562.48	DMB-17	DRY
DMA-22B	1603.15	DMB-18	1557.20
DMA-29AU	1534.81	DMB-19	FLOWING
DMA-29AL	1534.88	DMB-20	1579.70
DMA-31	1585.64	DMB-20A	1562.70
DMA-32A	1583.98	DMB-21	1555.32
DMA-34	1534.89	DMB-22	1560.45
DMA-38	DRY	DMB-23	1554.72
DMA-43	1626.40	DMB-24	1539.79
DMA-47	1555.35	DMB-25	1548.92
DMA-48	1537.63	DMB-26	1585.00
DMB-1A	1592.77	DMB-27	1588.06
DMB-2	DRY	DMB-28	1588.57
DMB-3	1579.78	DMB-29	1588.94
DMB-4	1592.48		

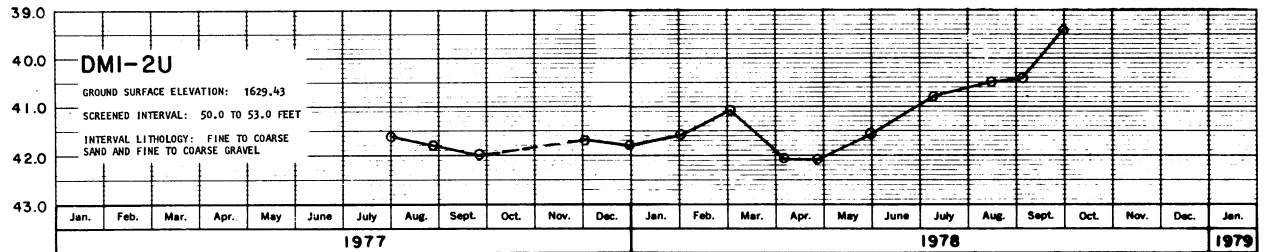
<u>WELL NO.</u>	<u>WATER SURFACE ELEVATION (feet above MSL)</u>	<u>WELL NO.</u>	<u>WATER SURFACE ELEVATION (feet above MSL)</u>
DMC-1	1585.98	DMP-1	1588.14
DMC-2	1579.60	DMP-2	1585.23
DMC-3	1591.81	DMP-3	1578.46
Fr 156	1549	Fr 171	1649
Fr 157	1554	Fr 172	1536
Fr 158	1556	Fr 173	1575
Fr 159	1594	Fr 174	1592
Fr 160	1591	Fr 175	1575
Fr 161	1599	Fr 179	1545
Fr 162	1604	Fr 180	1545
Fr 163	1603	Fr 189	1545
Fr 164	1611	Fr 190	1548
Fr 165	1618	Fr 191	1541
Fr 166	1580	Fr 223	1552
Fr 167	1602	Fr 232	1534
Fr 168	1592	Fr 239	1625
Fr 169	1640	Ln 478	1538
Fr 170	1660		



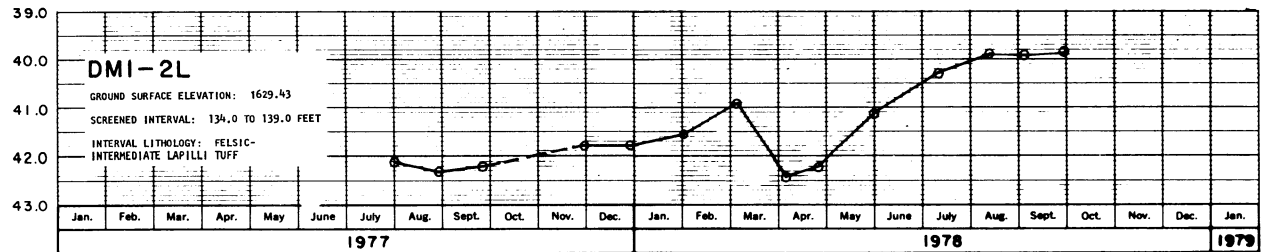
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



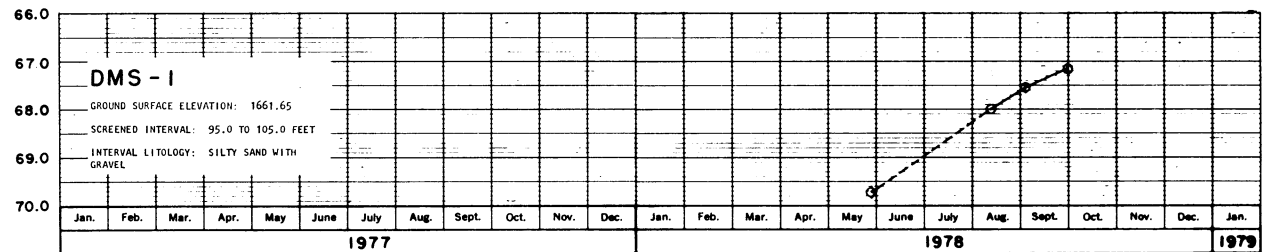
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:

○ GROUND WATER LEVEL MEASUREMENTS

--- INFERRED WHEN DATA MISSING

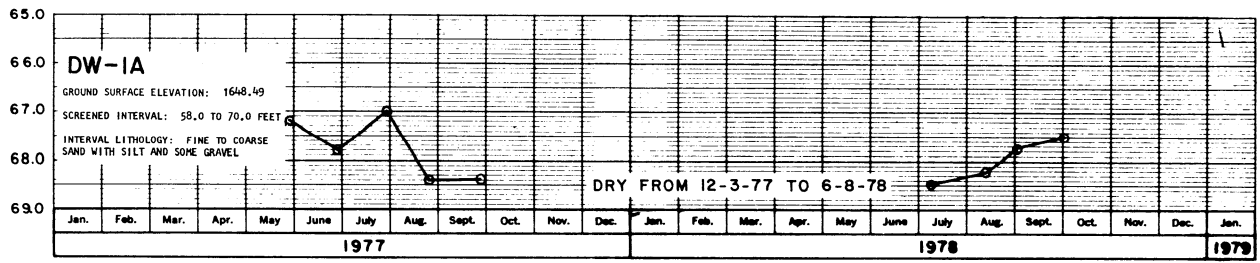
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

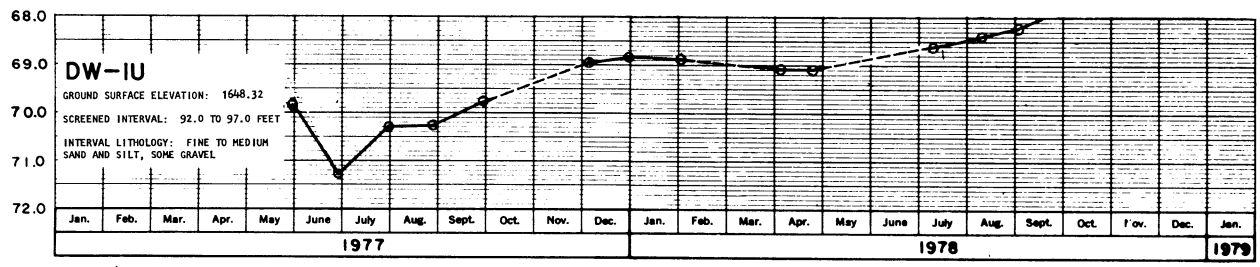
DAMES & MOORE

FIGURE B-1

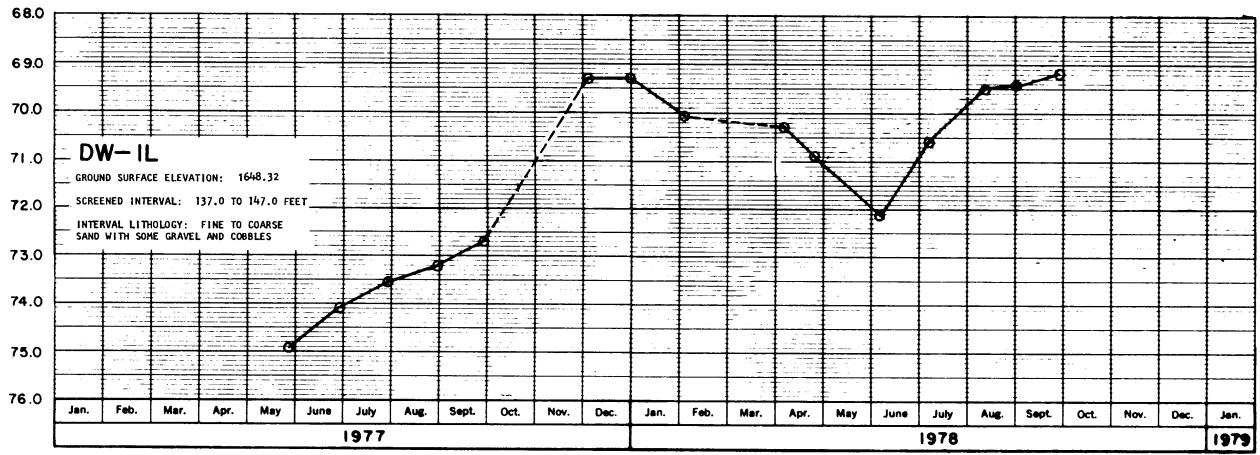
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



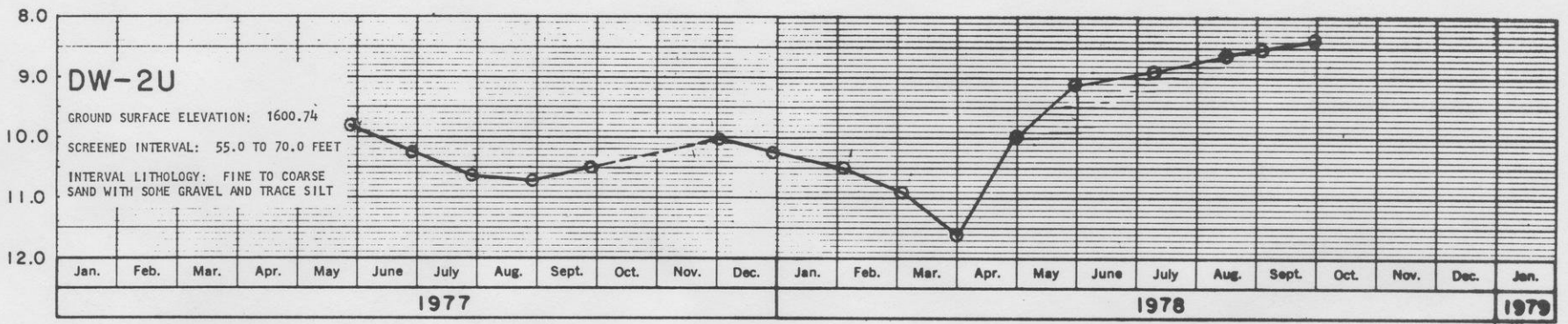
KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING

**EXXON MINERALS COMPANY**  
GRANDON PROJECT

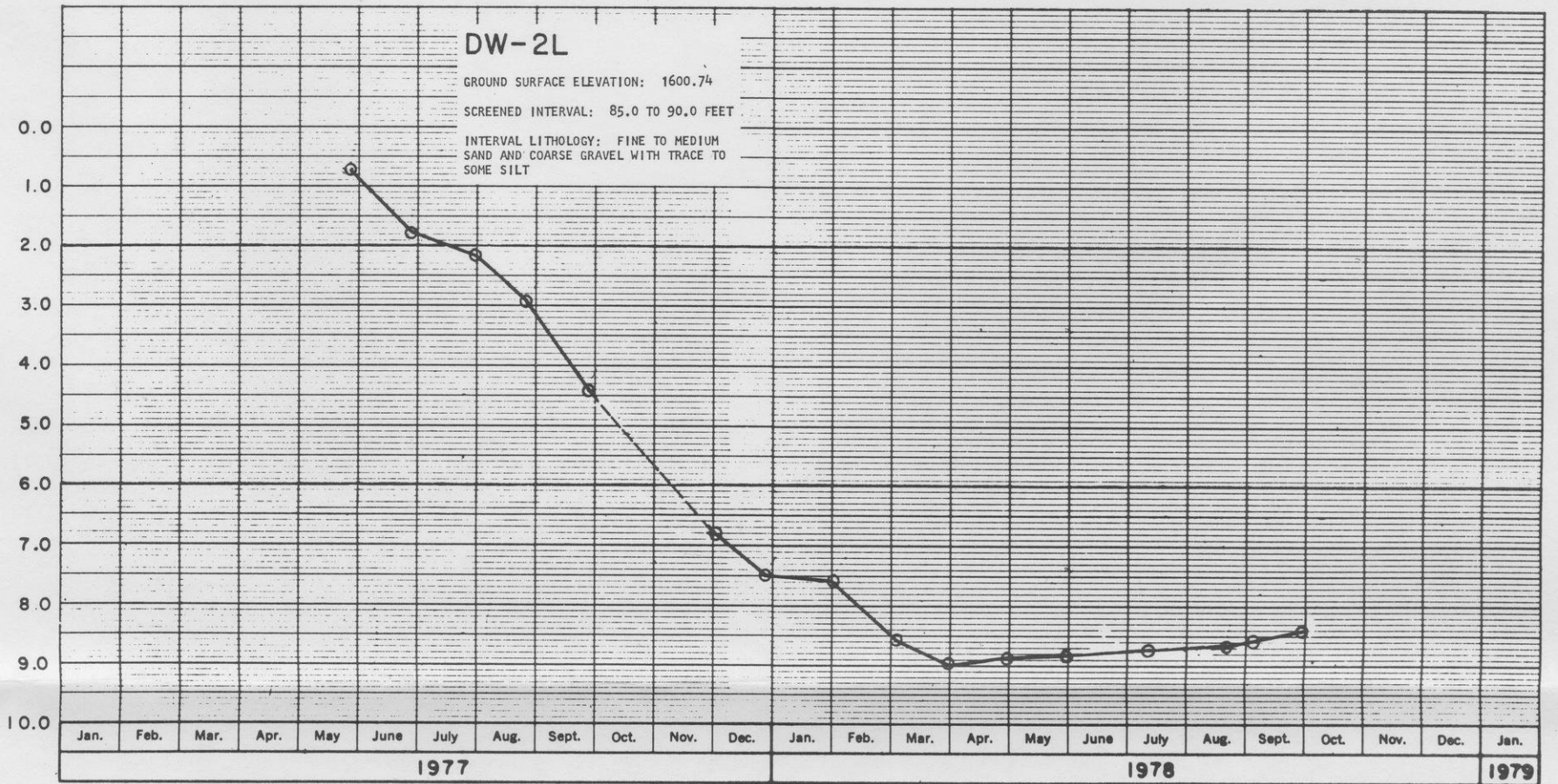
PIEZOMETER HYDROGRAPHS

**DAMES & MOORE**      **FIGURE B-2**

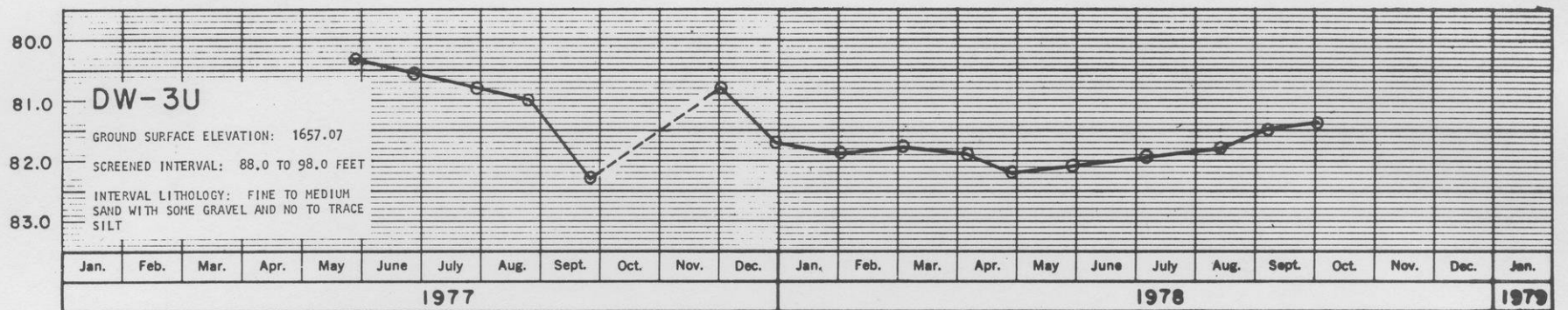
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



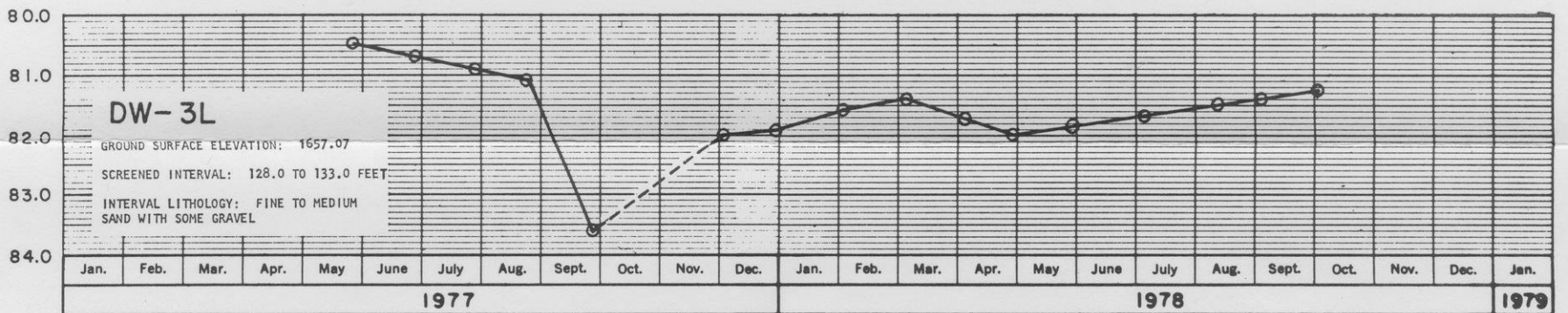
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:

- GROUND WATER LEVEL MEASUREMENTS
- INFERRED WHEN DATA MISSING

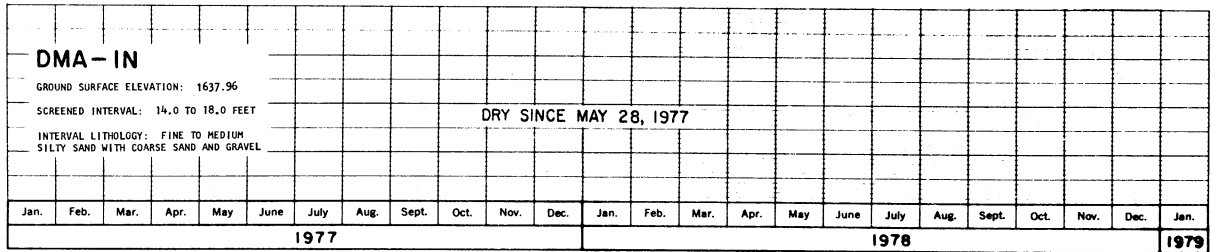
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

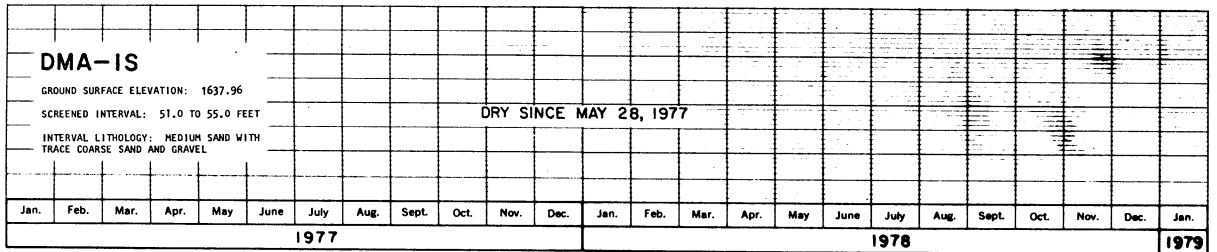
DAMES & MOORE

FIGURE B-3

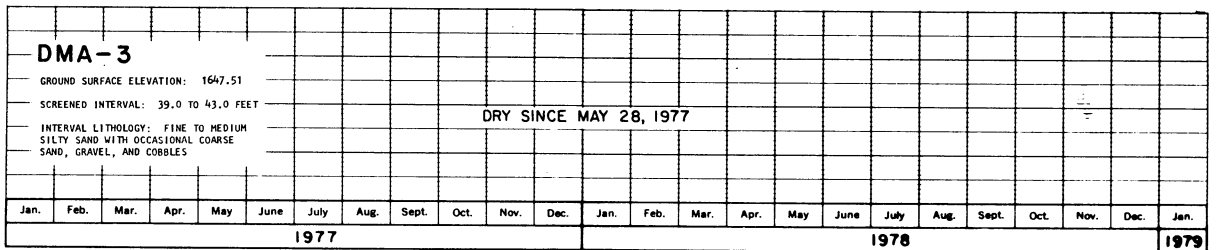
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



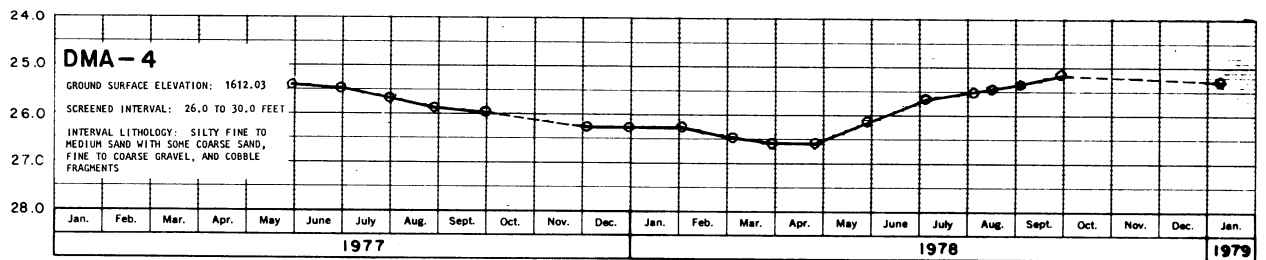
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



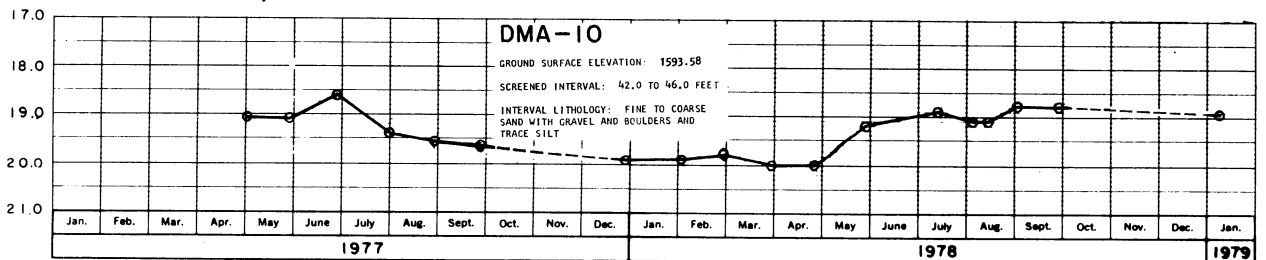
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING

**EXXON MINERALS COMPANY**  
CRANDON PROJECT

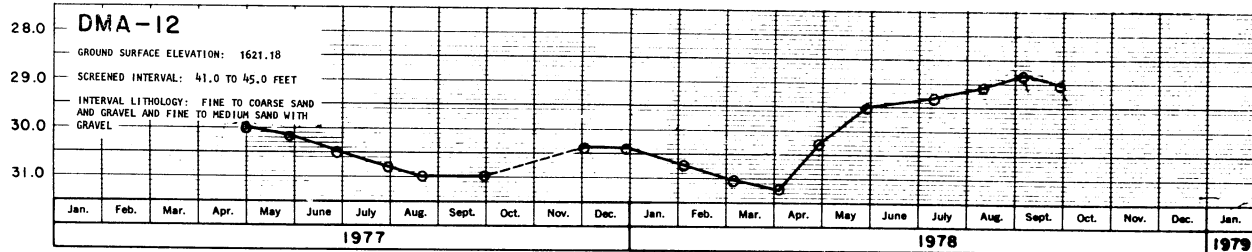
---

PIEZOMETER HYDROGRAPHS

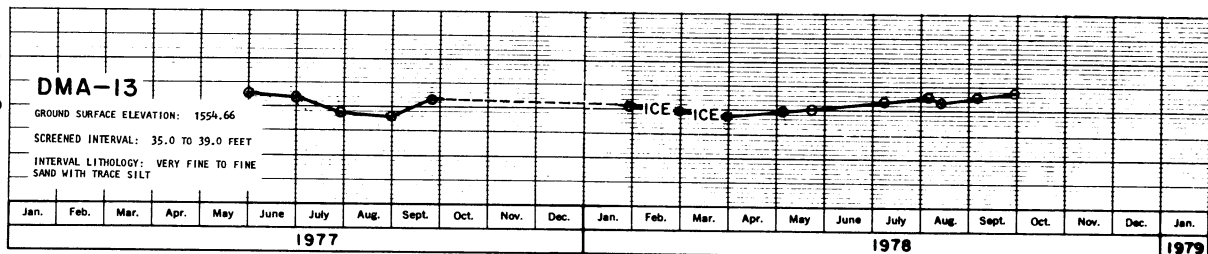
---

**DAMES & MOORE** FIGURE B-4

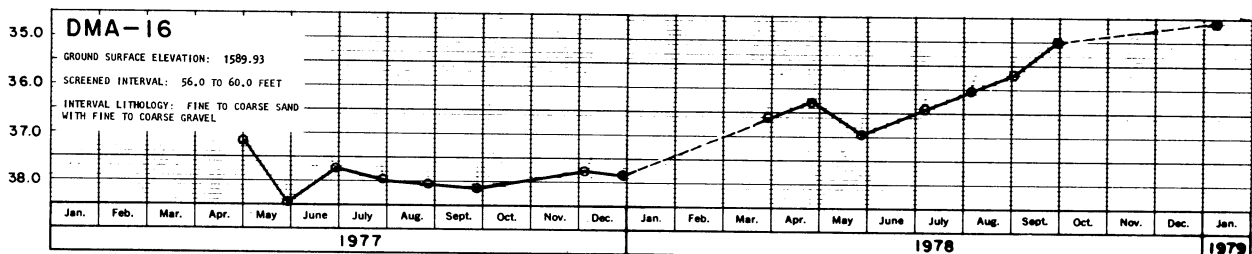
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



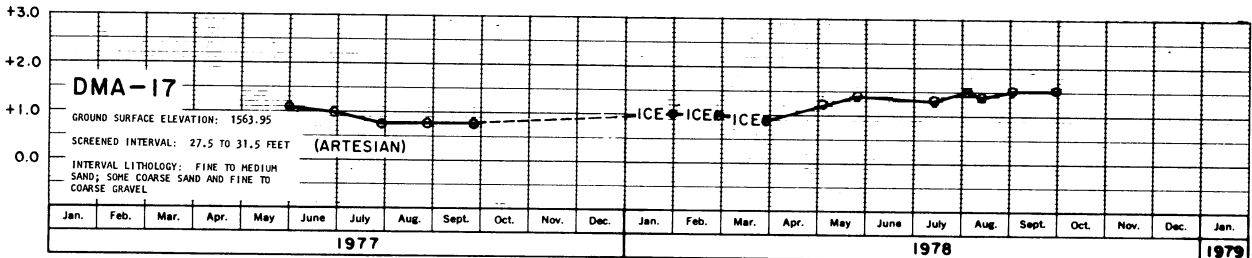
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



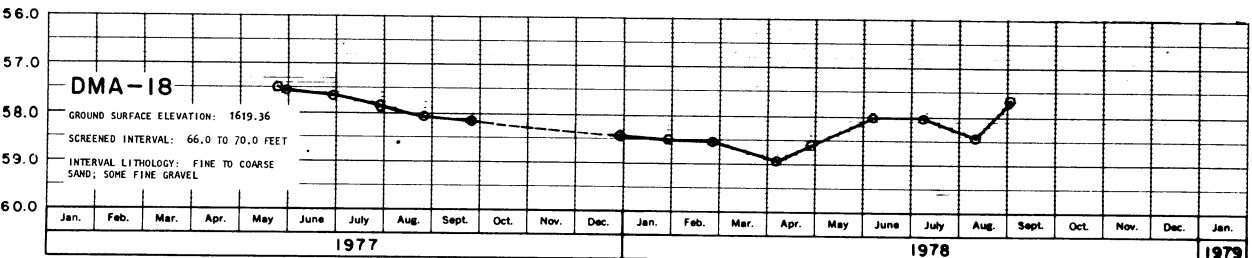
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
○ GROUND WATER LEVEL MEASUREMENTS  
--- INFERRED WHEN DATA MISSING

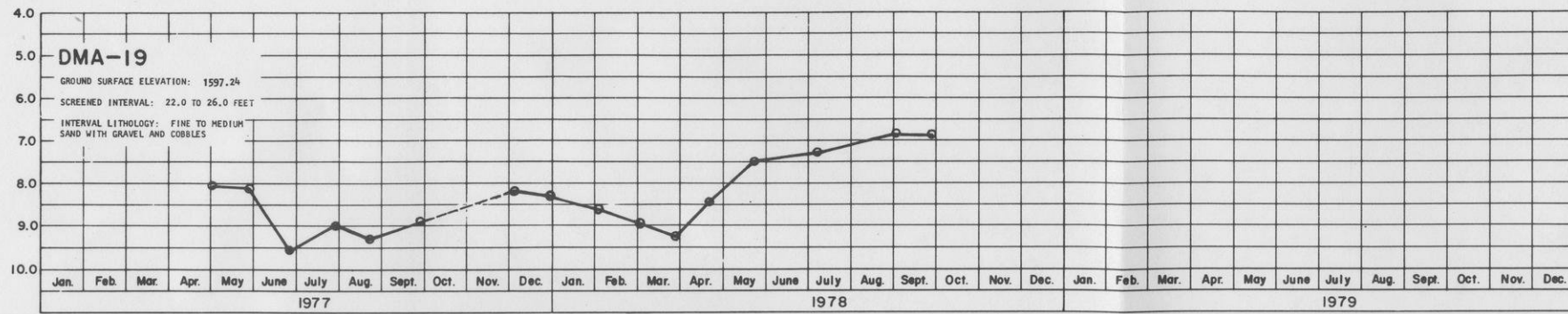
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

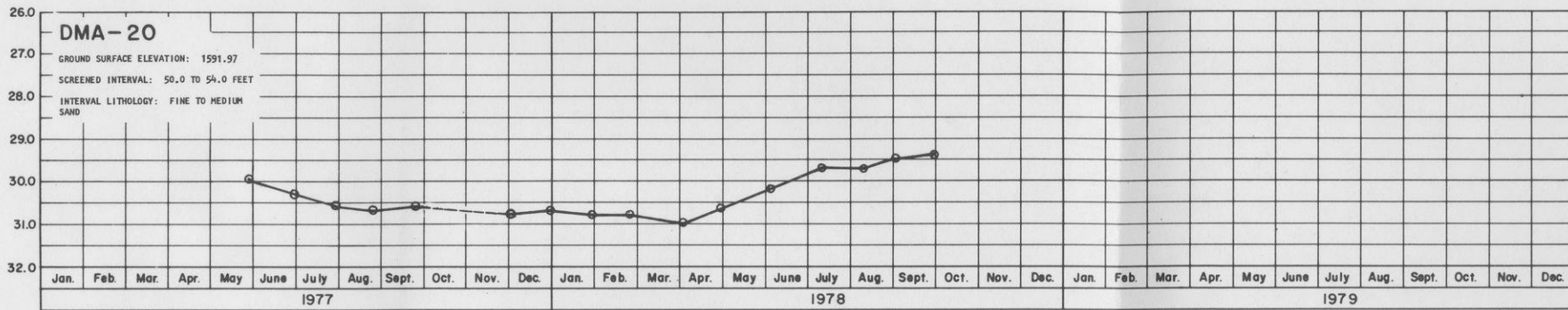
DAMES & MOORE

FIGURE B-5

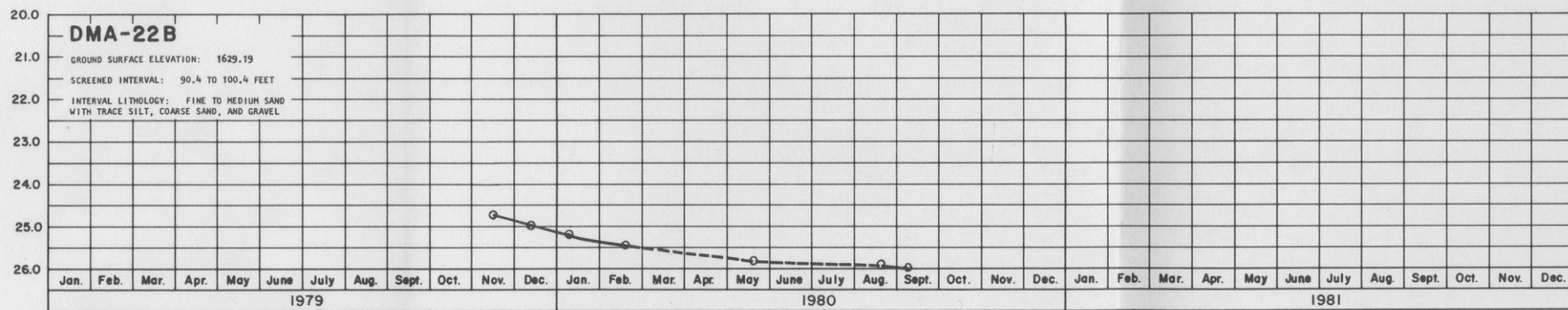
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:

- GROUND WATER LEVEL MEASUREMENTS
- INFERRED WHEN DATA MISSING

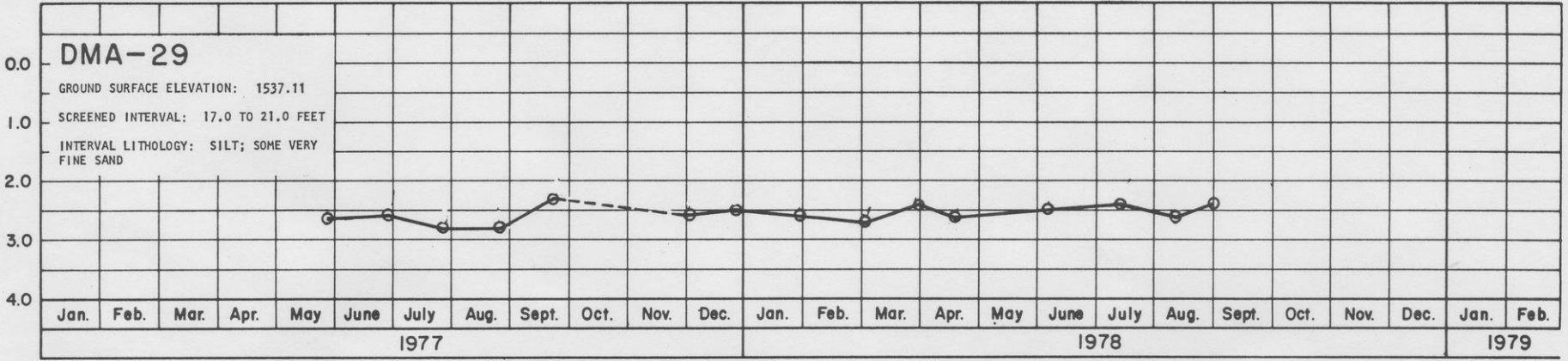
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

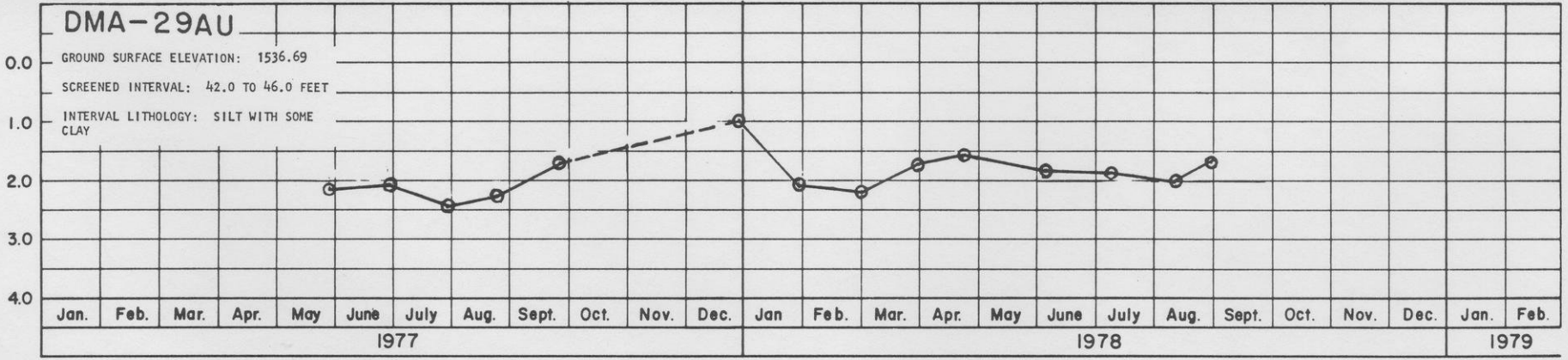
DAMES & MOORE

FIGURE B-6

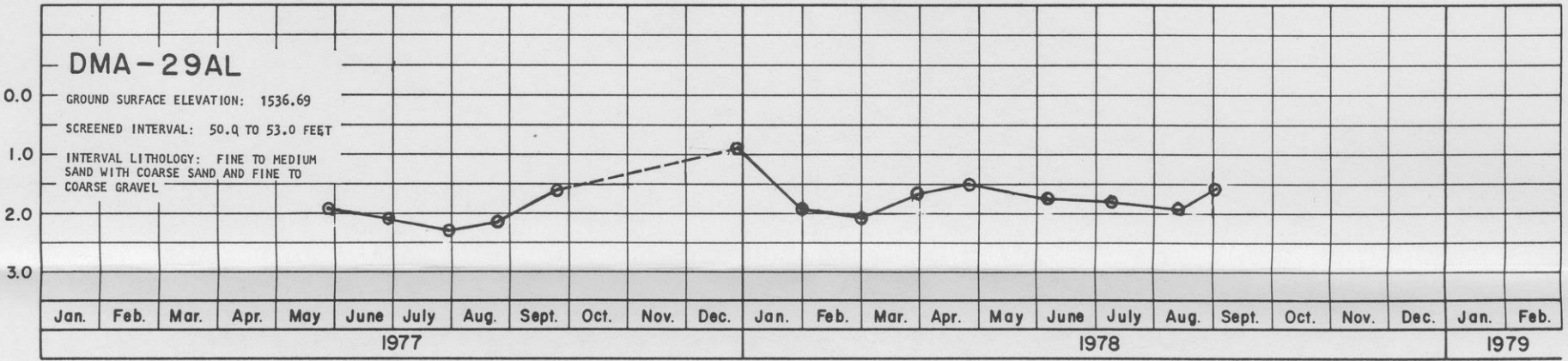
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:

○ GROUND WATER LEVEL MEASUREMENTS

--- INFERRED WHEN DATA MISSING

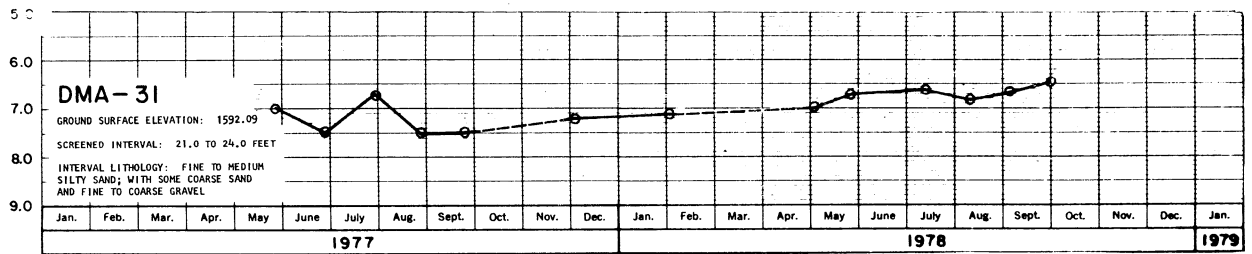
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

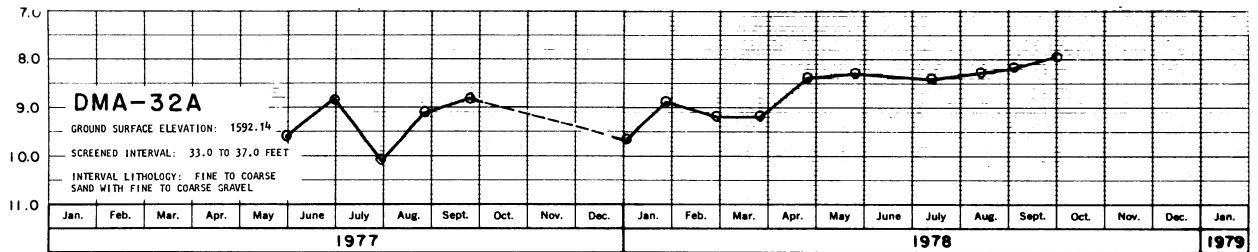
DAMES & MOORE

FIGURE B-7

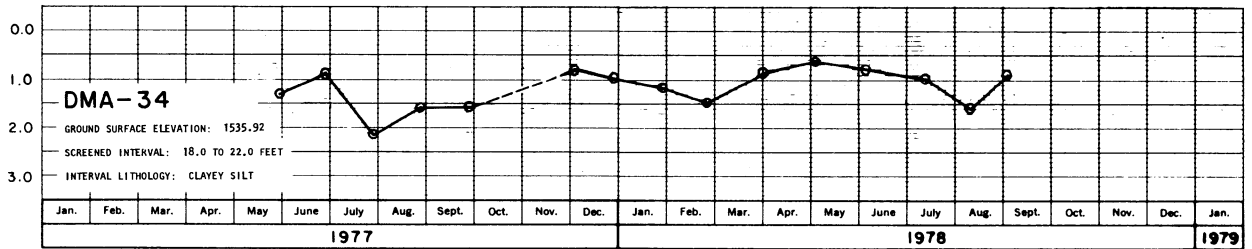
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



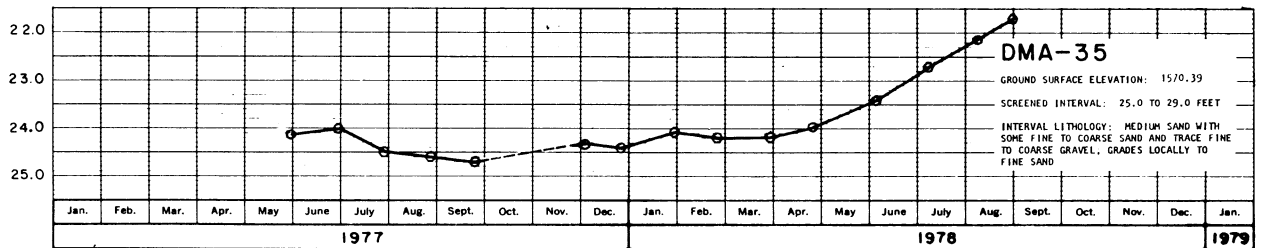
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



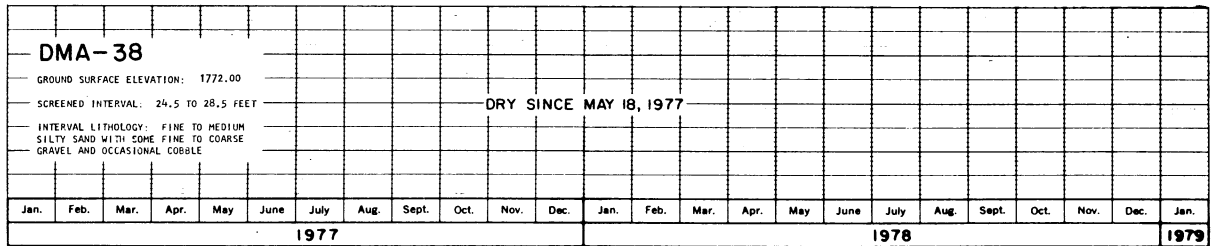
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
○ GROUND WATER LEVEL MEASUREMENTS  
--- INFERRED WHEN DATA MISSING

EXXON MINERALS COMPANY  
CRANDON PROJECT

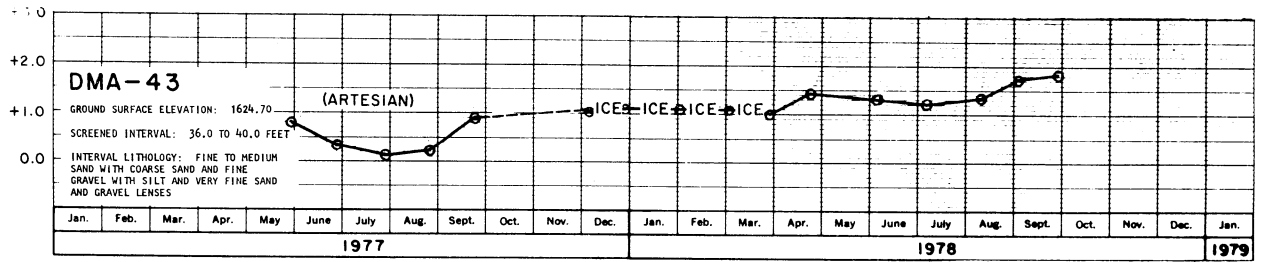
PIEZOMETER HYDROGRAPHS

DAMES & MOORE

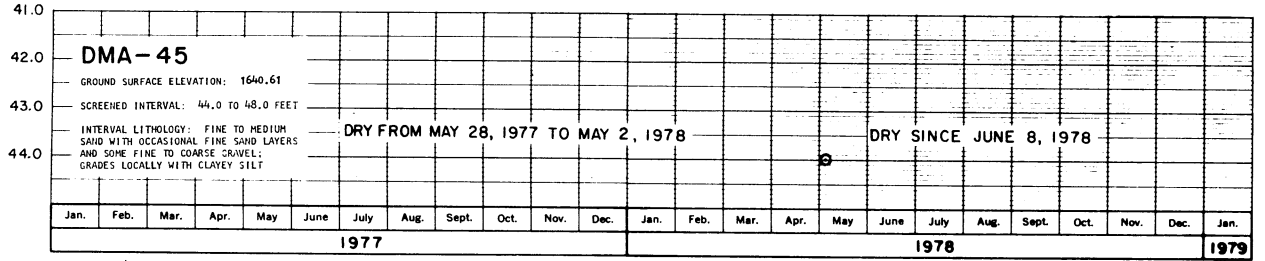
FIGURE B-8



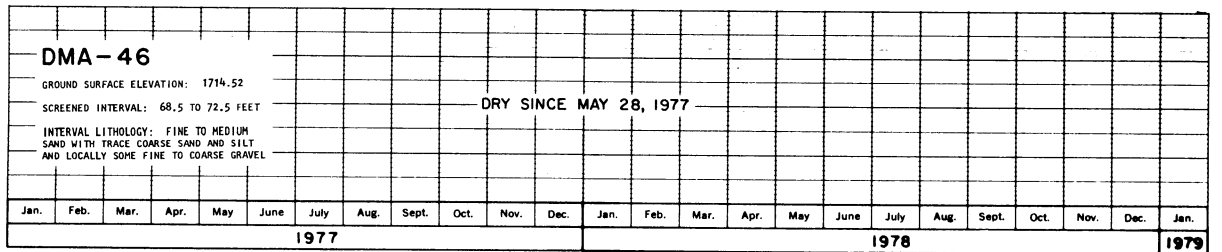
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



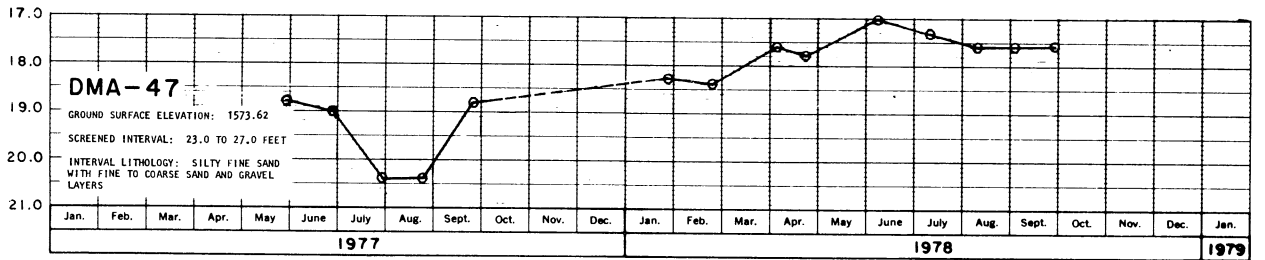
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



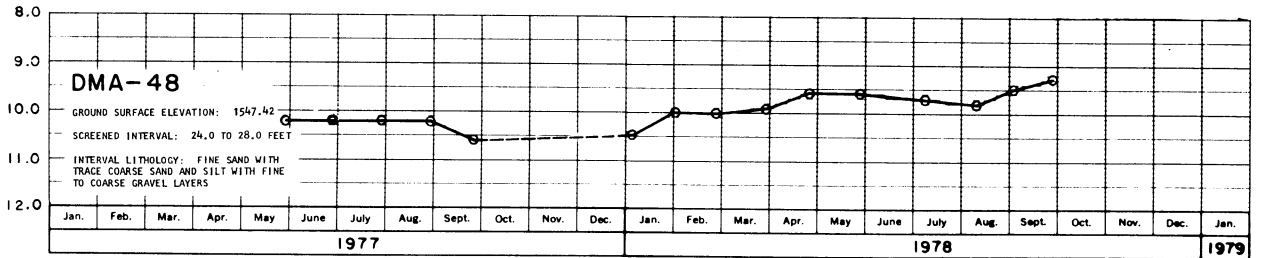
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
○ GROUND WATER LEVEL MEASUREMENTS  
--- INFERRED WHEN DATA MISSING

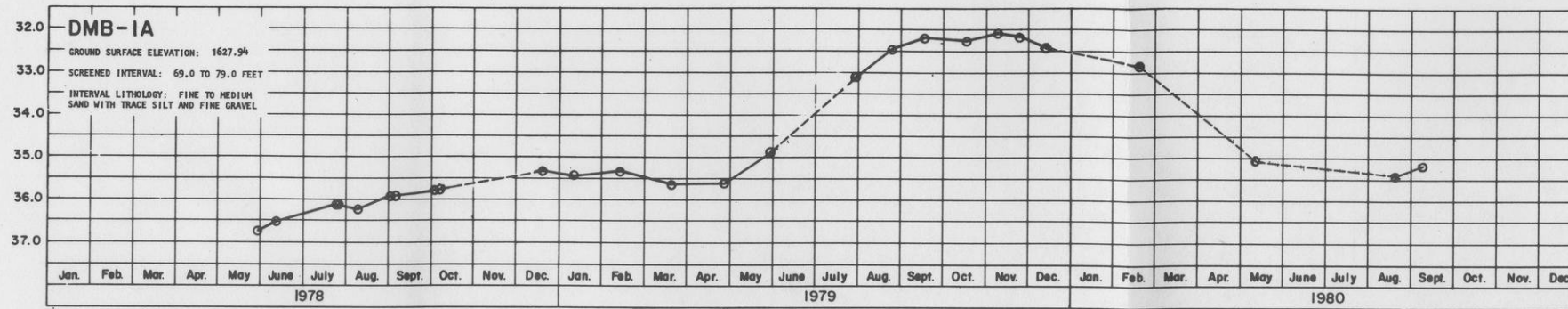
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

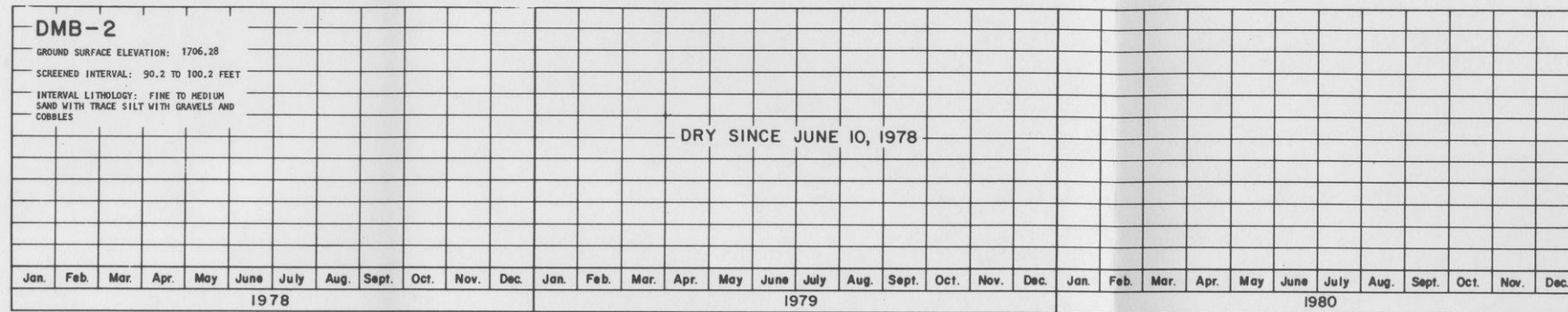
DAMES & MOORE

FIGURE B-9

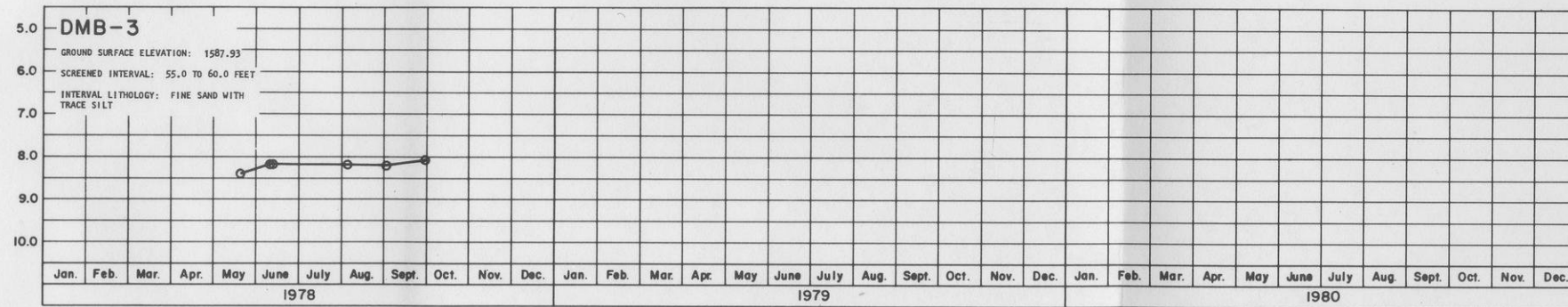
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



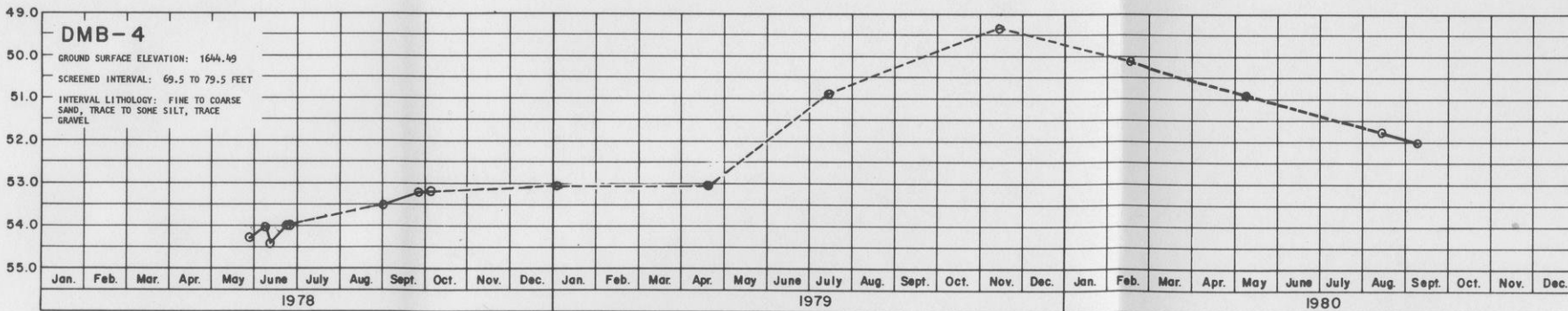
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



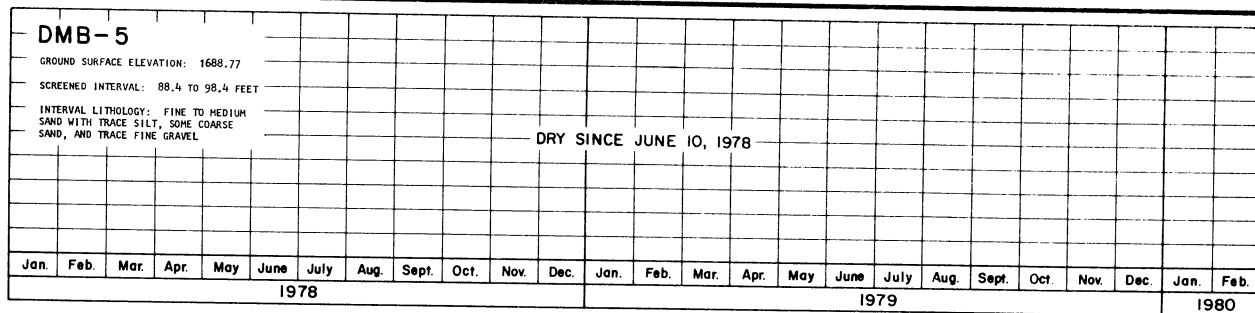
KEY:

- GROUND WATER LEVEL MEASUREMENTS
- INFERRED WHEN DATA MISSING

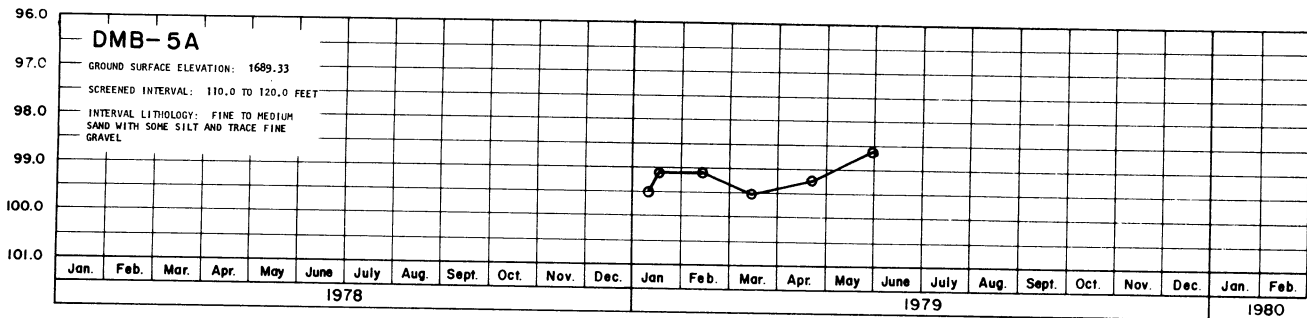
EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

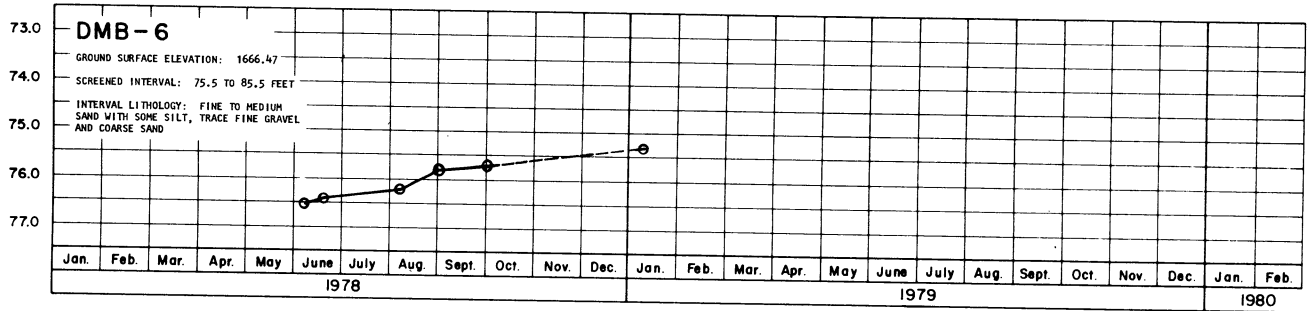
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



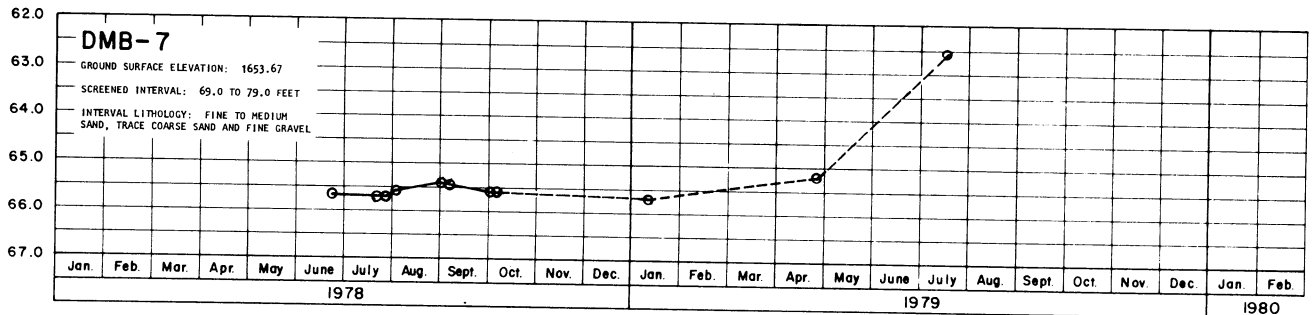
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:

○ GROUND WATER LEVEL MEASUREMENTS

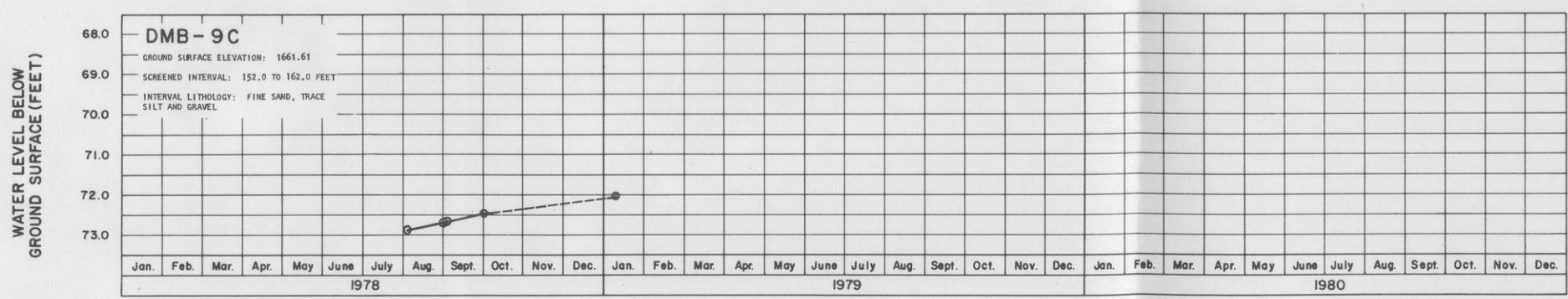
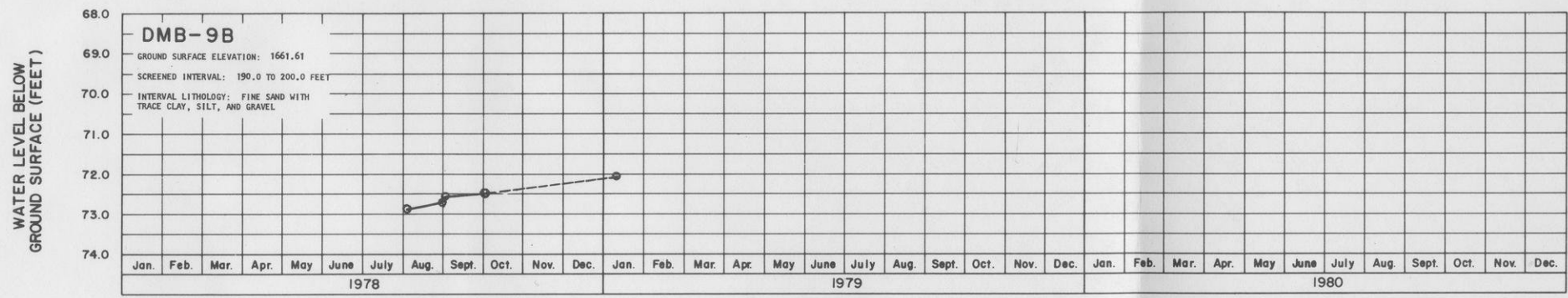
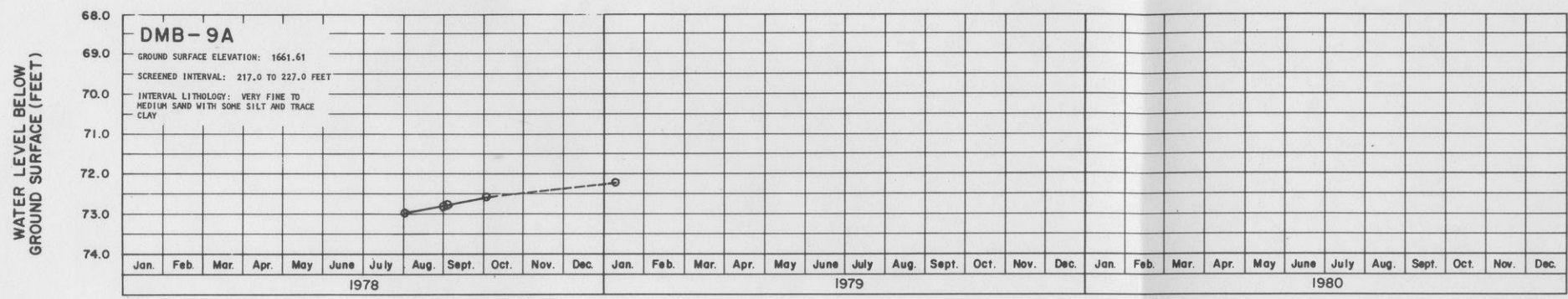
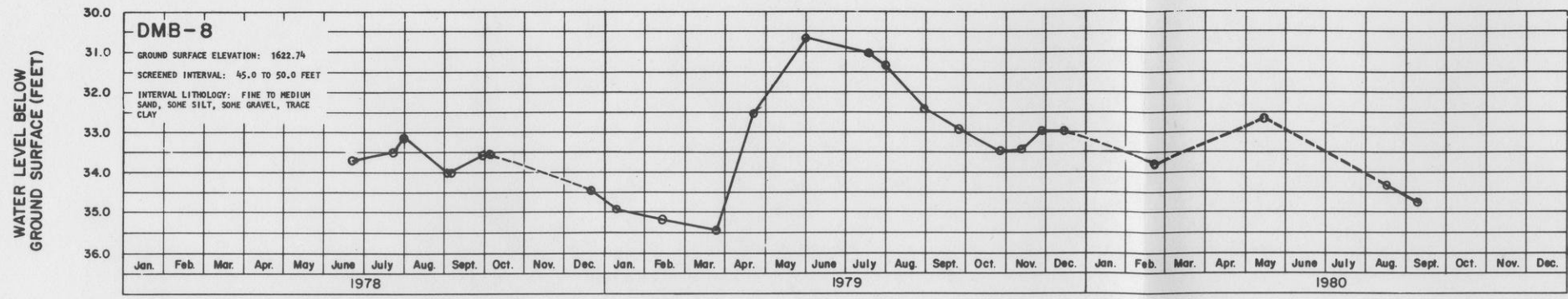
--- INFERRED WHEN DATA MISSING

EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

DAMES & MOORE

FIGURE B-11



KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 ---- INFERRED WHEN DATA MISSING

**EXXON MINERALS COMPANY**  
 CRANDON PROJECT

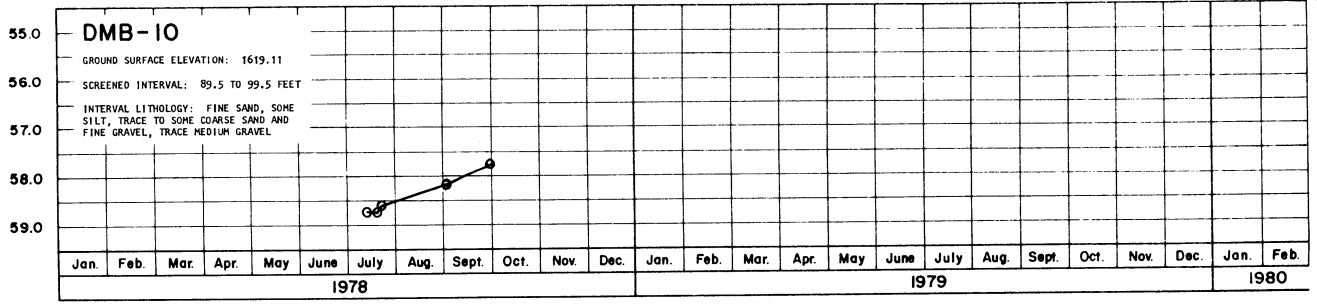
---

PIEZOMETER HYDROGRAPHS

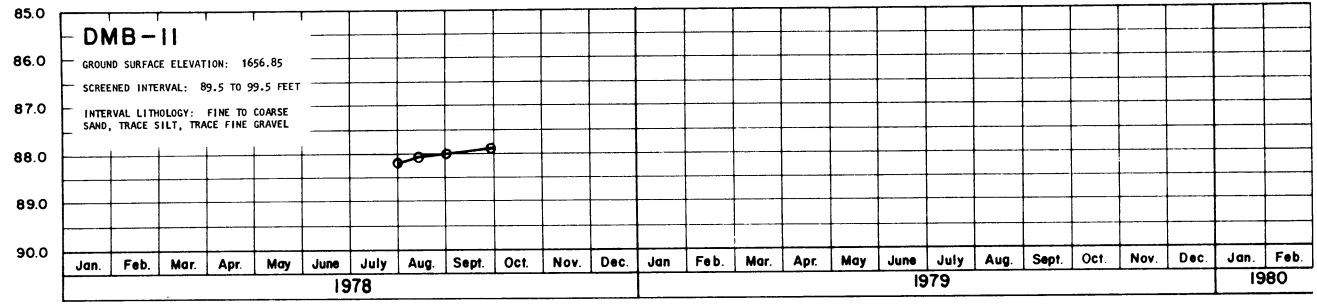
---

**DAMES & MOORE**      **FIGURE B-12**

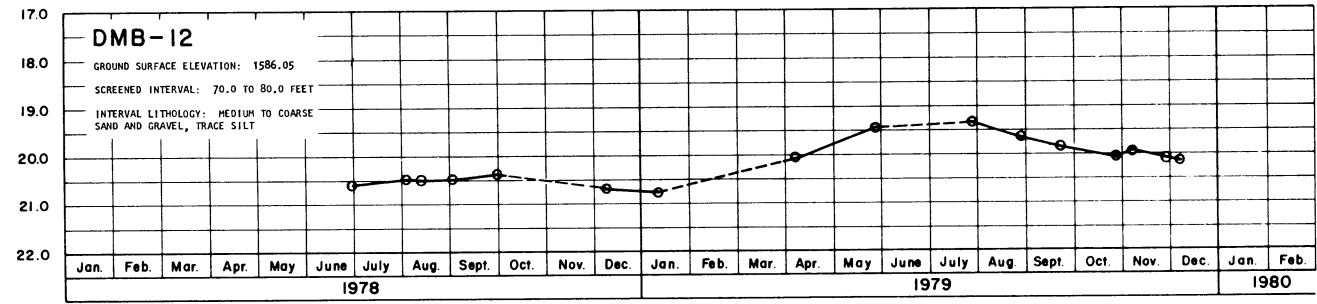
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING

**EXXON MINERALS COMPANY**  
CRANDON PROJECT

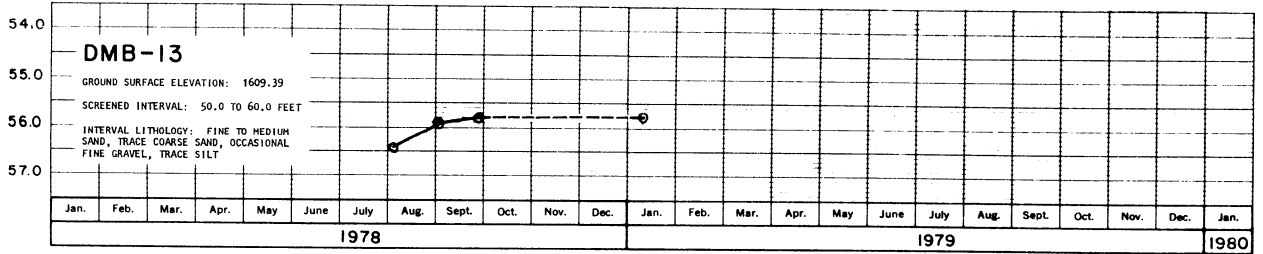
---

PIEZOMETER HYDROGRAPHS

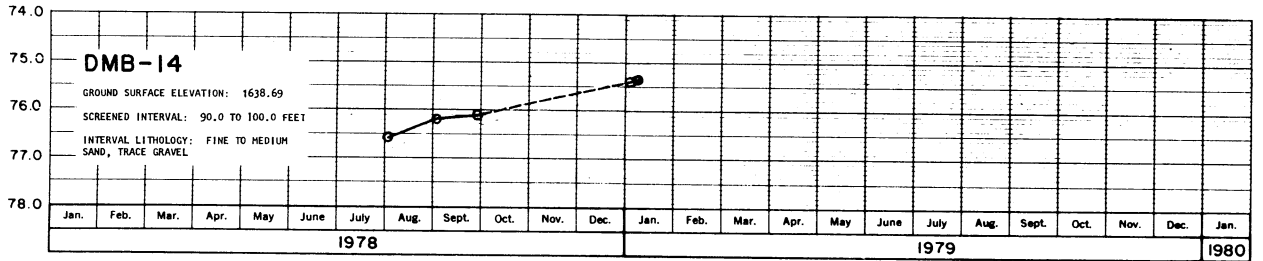
---

**DAMES & MOORE** FIGURE B-13

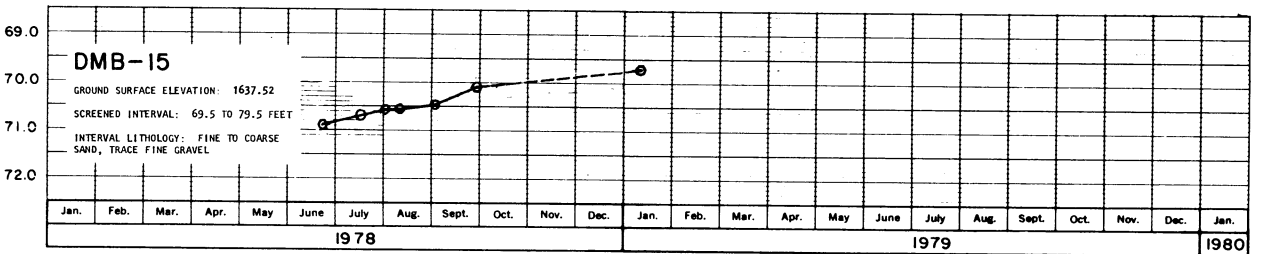
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



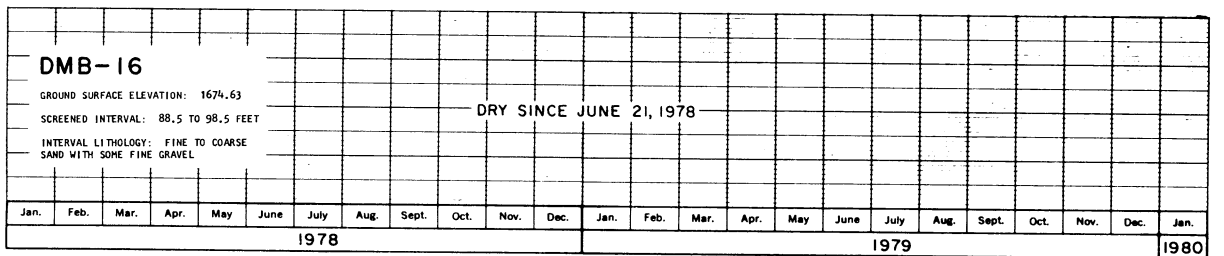
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



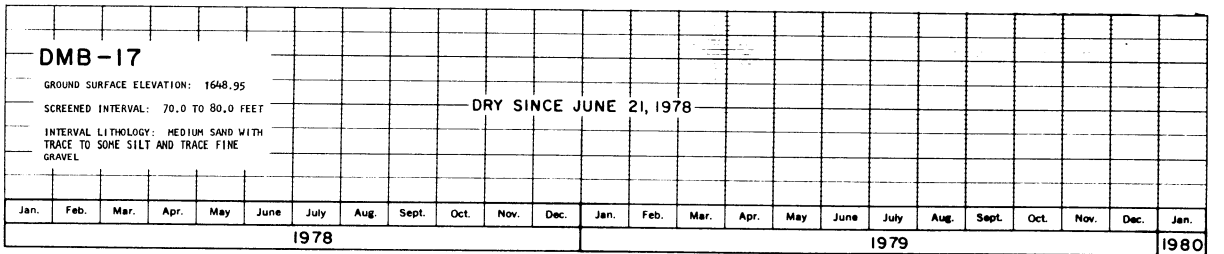
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
○ GROUND WATER LEVEL MEASUREMENTS  
--- INFERRED WHEN DATA MISSING

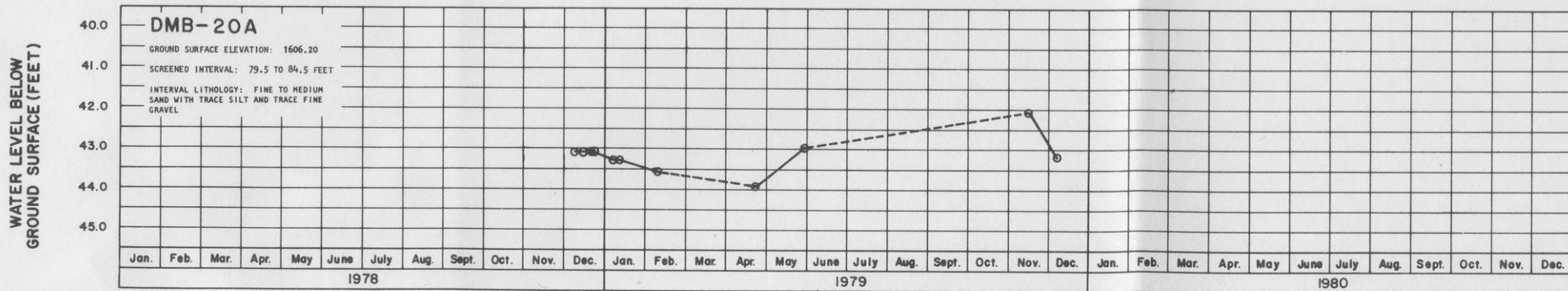
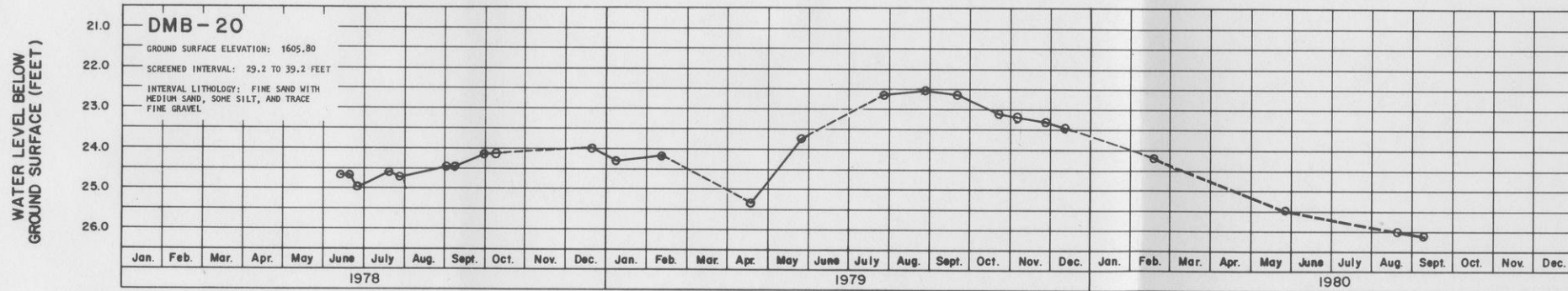
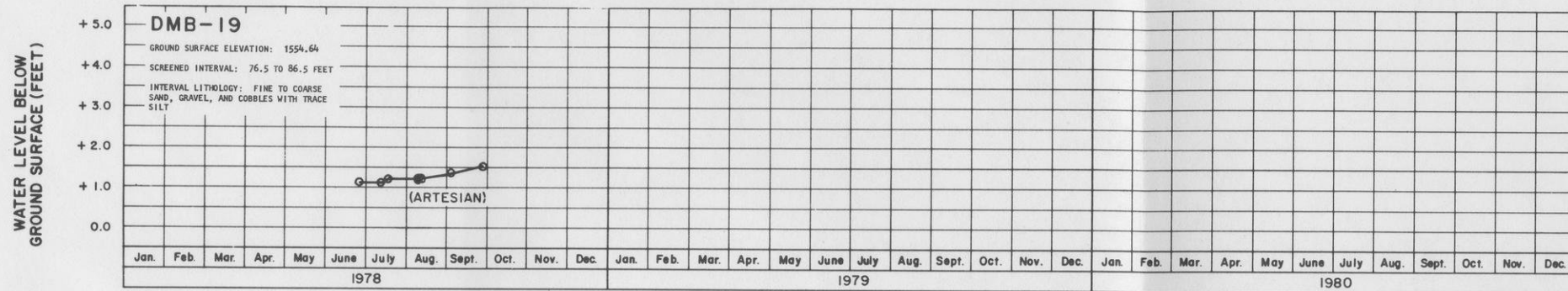
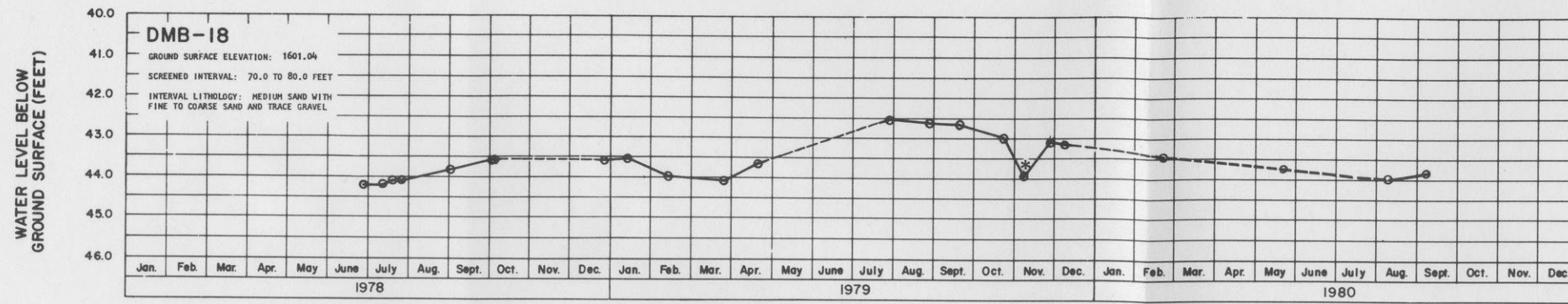
**EXXON MINERALS COMPANY**  
CRANDON PROJECT

---

PIEZOMETER HYDROGRAPHS

---

**DAMES & MOORE** FIGURE B-14

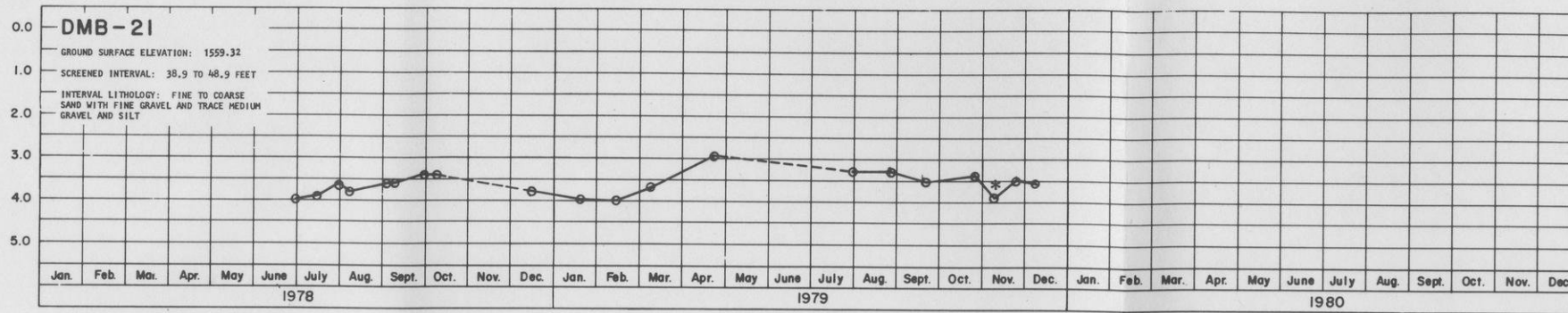


KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING  
 \* INDICATES FLUCUATION DUE TO POOR RECOVERY FROM SAMPLING

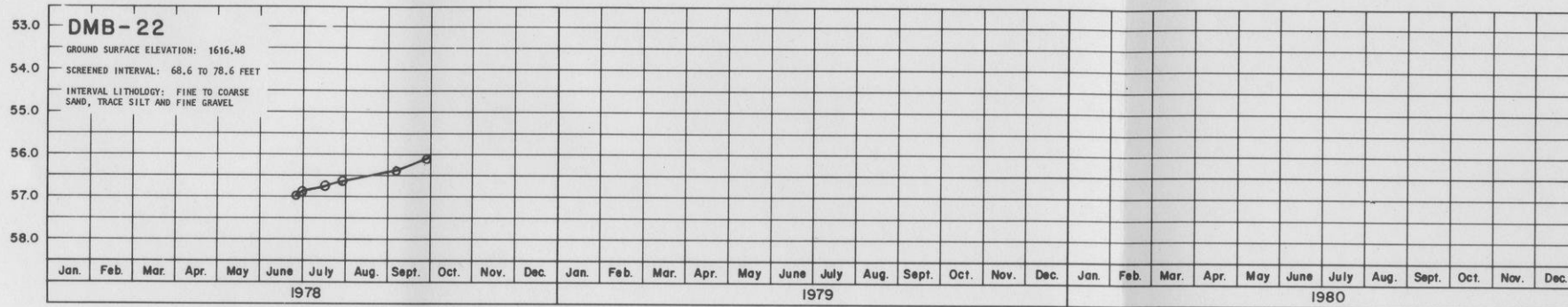
EXXON MINERALS COMPANY  
 CRANDON PROJECT

PIEZOMETER HYDROGRAPHS

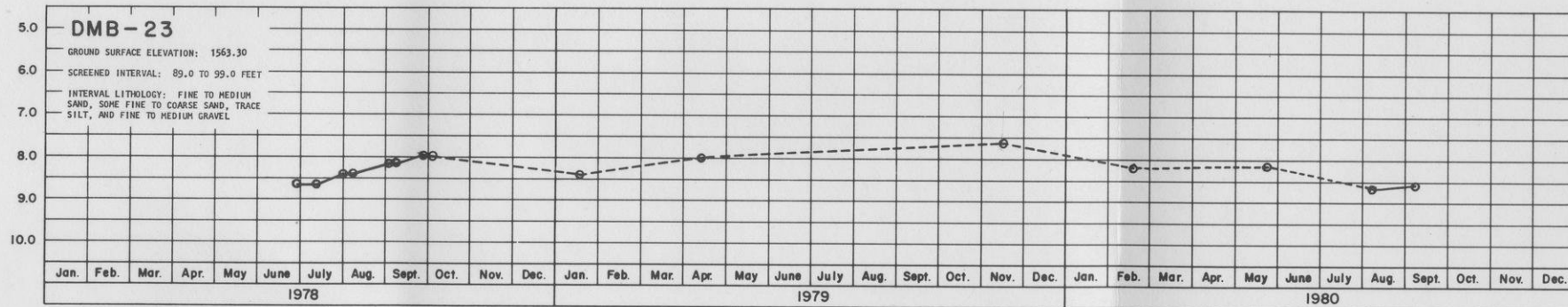
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



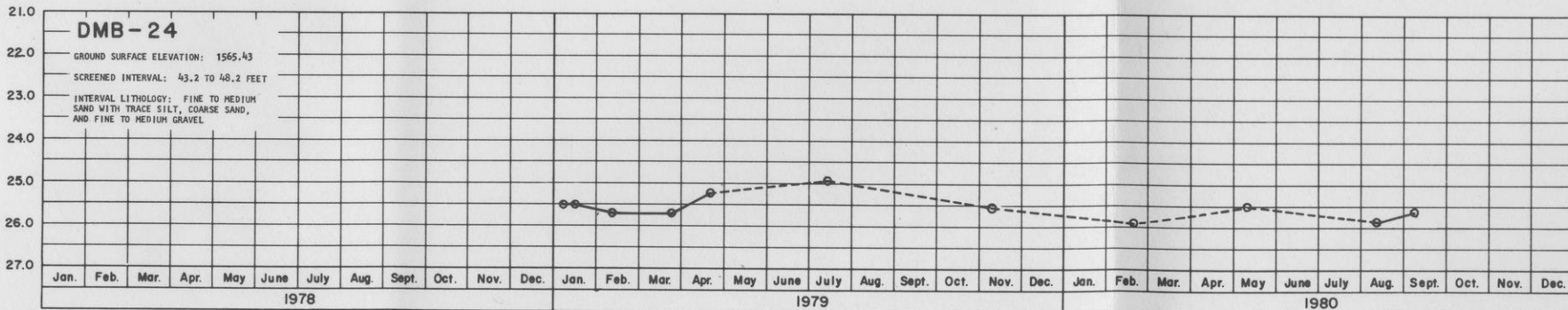
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)

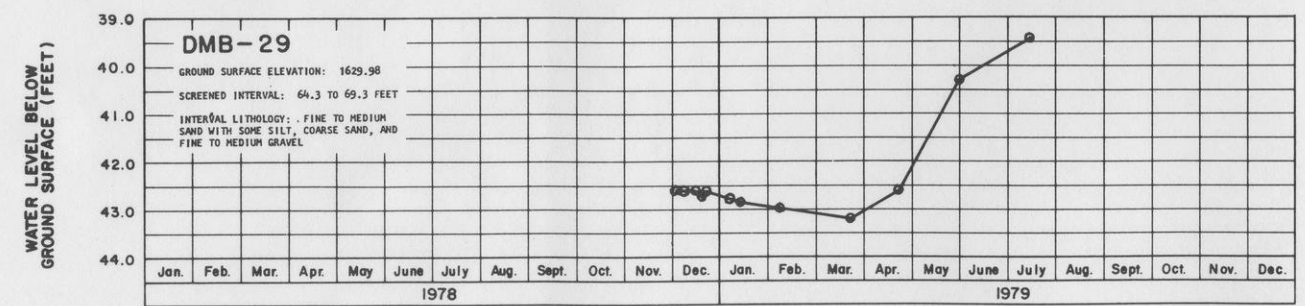
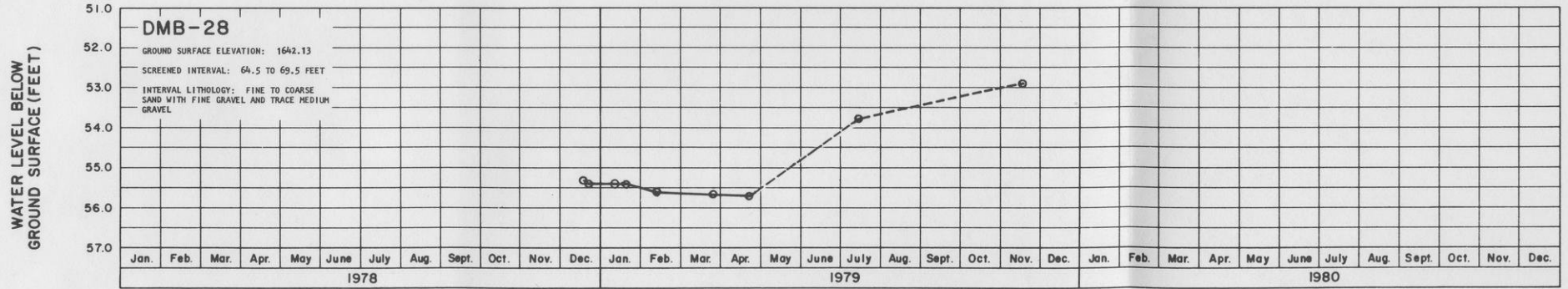
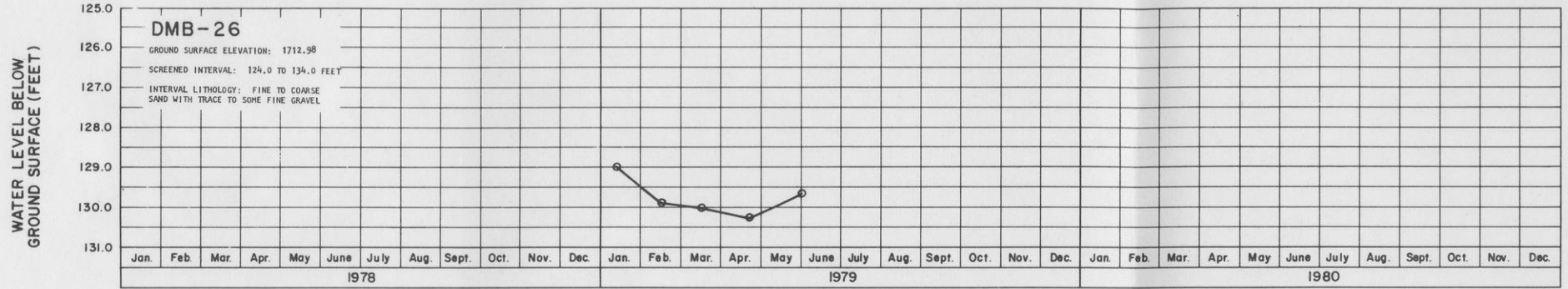
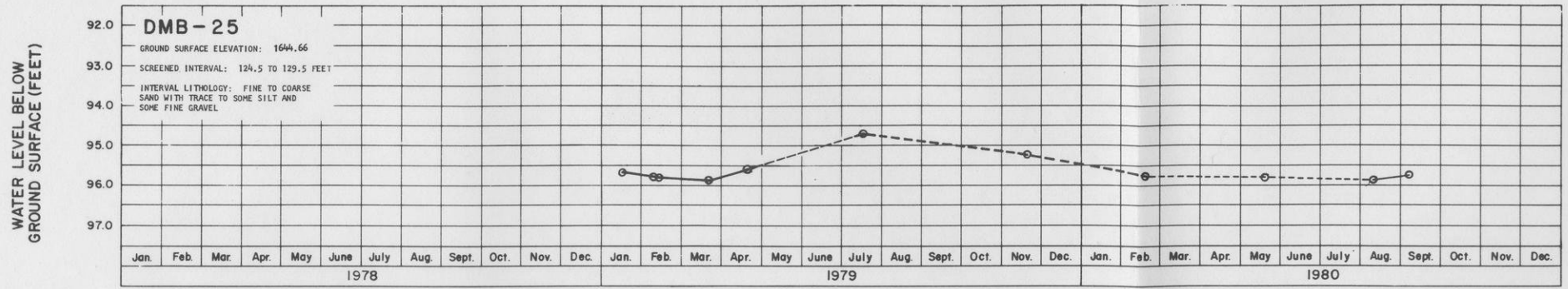


- KEY:
- GROUND WATER LEVEL MEASUREMENTS
  - INFERRED WHEN DATA MISSING
  - \* INDICATES FLUCUATION DUE TO POOR RECOVERY FROM SAMPLING

EXXON MINERALS COMPANY  
CRANDON PROJECT

PIEZOMETER HYDROGRAPHS





KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 ---- INFERRED WHEN DATA MISSING

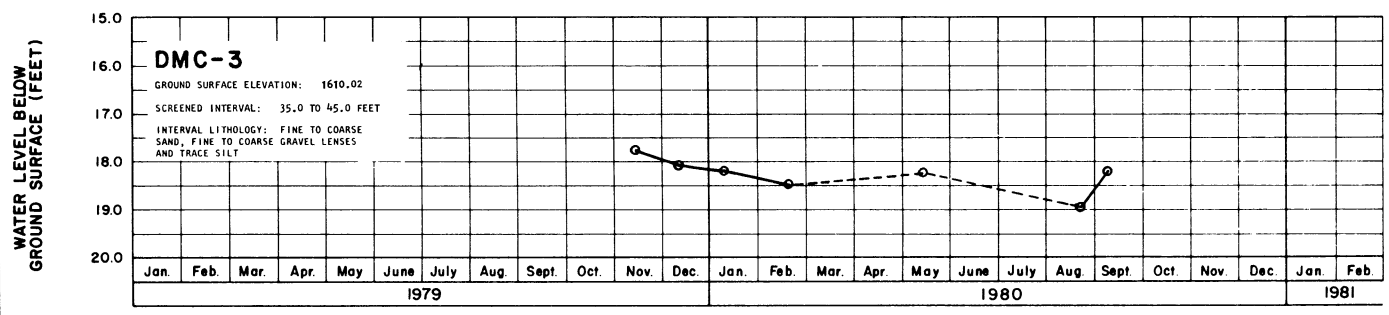
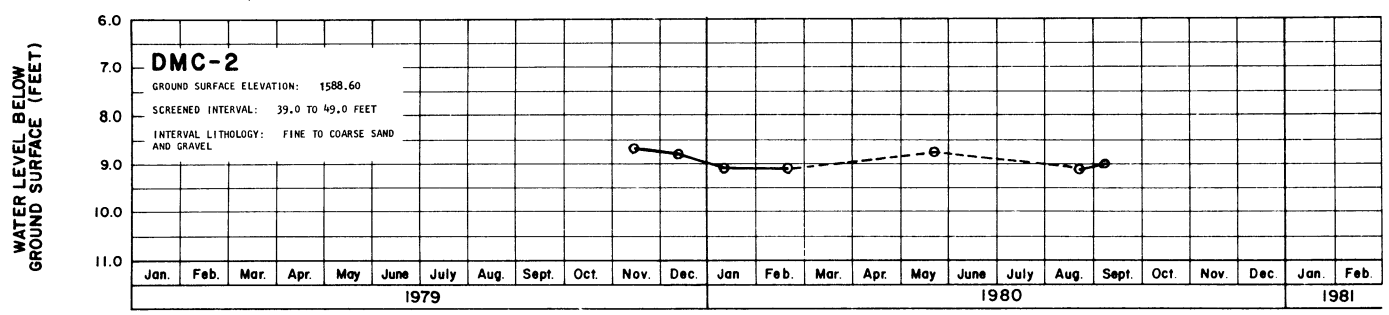
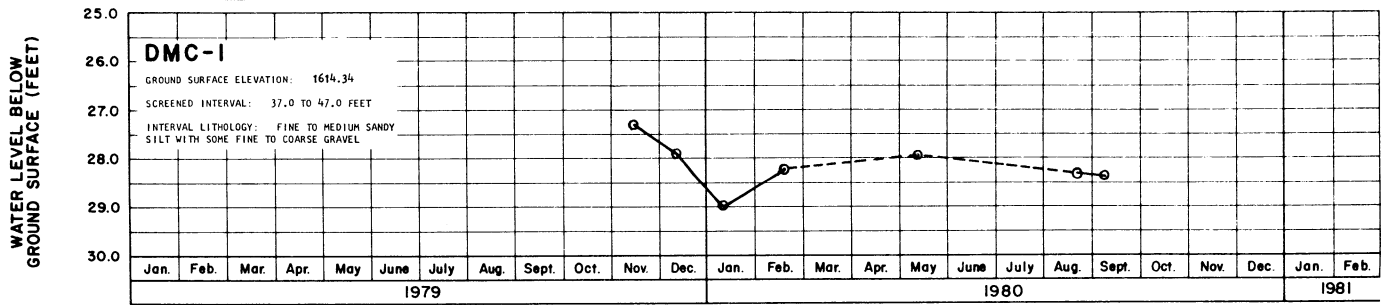
**EXXON MINERALS COMPANY**  
 CRANDON PROJECT

---

PIEZOMETER HYDROGRAPHS

---

**DAMES & MOORE**      **FIGURE B-17**



KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING

**EXXON MINERALS COMPANY**  
 CRANDON PROJECT

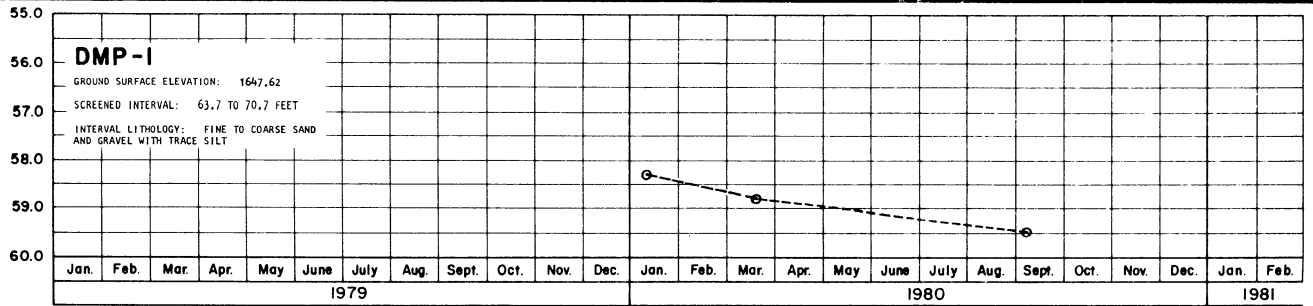
---

PIEZOMETER HYDROGRAPHS

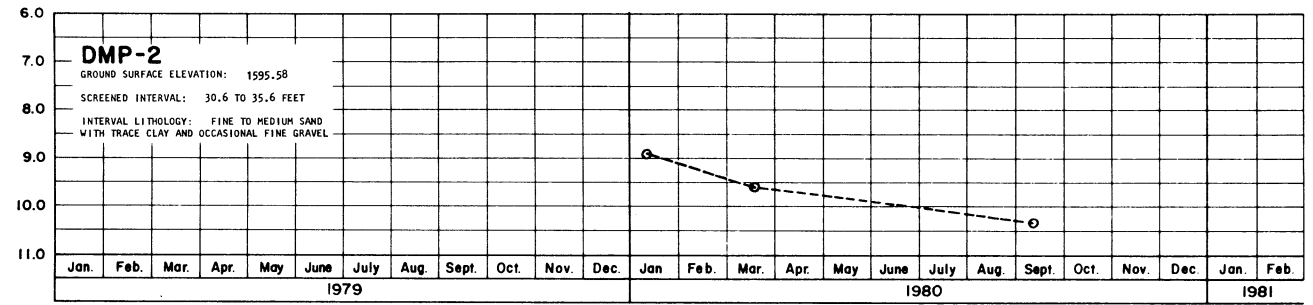
---

**DAMES & MOORE** FIGURE B-18

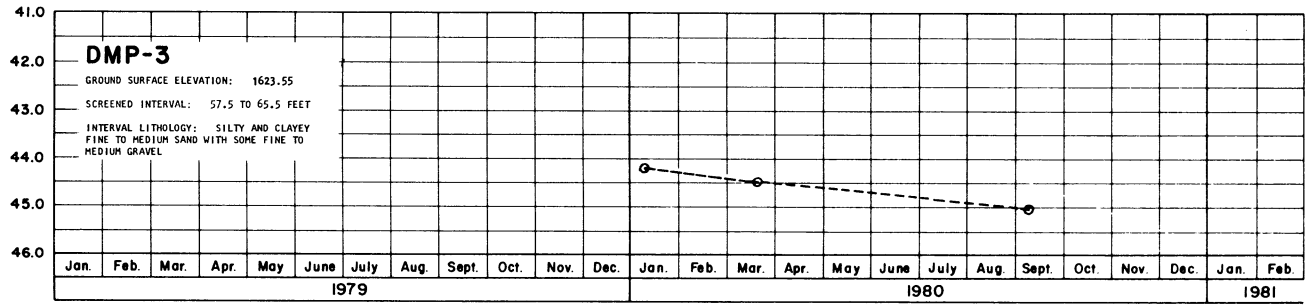
WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



WATER LEVEL BELOW  
GROUND SURFACE (FEET)



KEY:  
 ○ GROUND WATER LEVEL MEASUREMENTS  
 --- INFERRED WHEN DATA MISSING

<b>EXXON MINERALS COMPANY</b> CRANDON PROJECT	
PIEZOMETER HYDROGRAPHS	
<b>DAMES &amp; MOORE</b>	FIGURE B-19

APPENDIX 2.3B

TABLE B-2

GROUND WATER ELEVATIONS OF WELLS IN THE SITE AREA  
(SEPTEMBER 1980 THROUGH JULY 1984)

TABLE 2.3B

GROUND WATER ELEVATIONS OF WELLS IN THE SITE AREA  
(SEPTEMBER 1980 THROUGH JULY 1984)

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	80/09/10	SEP	480.23	G40-P20	80/09/10	SFF	478.98
DMA-12	80/09/10	SEP	485.25	G40-Q7	80/09/10	SFF	477.06
DMA-13	80/09/10	SEP	473.60	G40-R23	80/09/10	SFF	478.37
DMA-16	80/09/10	SEP	473.53	G41-C15	80/09/10	SEP	485.05
DMA-1P	80/09/10	SEP	476.29	G41-C15B	80/09/10	SEP	485.37
DMA-19	80/09/10	SEP	484.68	G41-F13	80/09/10	SFF	485.51
DMA-1S	80/09/10	SEP	00	G41-E17	80/09/10	SFF	485.02
DMA-20	80/09/10	SEP	476.24	G41-F24	80/09/10	SEP	483.79
DMA-22B	80/09/10	SEP	488.64	G41-G14A	80/09/10	SEP	485.26
DMA-3	80/09/10	SEP	00	G41-G14R	80/09/10	SFF	485.24
DMA-31	80/09/10	SFF	483.30	G41-G14C	80/09/10	SFF	485.35
DMA-32A	80/09/10	SEP	482.80	G41-G14D	80/09/10	SEP	485.23
DMA-34	80/09/10	SEP	467.83	G41-G14E	80/09/10	SFF	485.15
DMA-3B	80/09/10	SEP	00	G41-G14F	80/09/10	SFF	485.25
DMA-4	80/09/10	SFF	483.94	G41-G15	80/09/10	SFF	485.20
DMA-47	80/09/10	SEP	474.07	G41-G15A	80/09/10	SFF	485.10
DMA-4R	80/09/10	SEP	468.67	G41-G15B	80/09/10	SEP	485.21
DMB-10	80/09/10	SFF	475.62	G41-G21	80/09/10	SFF	484.72
DMB-11	80/09/10	SEP	478.77	G41-H17	80/09/10	SEP	00
DMB-12	80/09/10	SEP	477.26	G41-H1R	80/09/10	SEP	00
DMB-13	80/09/10	SEP	473.53	G41-K13	80/09/10	SFF	485.18
DMB-16	80/09/10	SEP	00	G41-K13A	80/09/10	SEP	485.30
DMB-17	80/09/10	SFF	00	G41-K13R	80/09/10	SEP	00
DMB-18	80/09/10	SEP	474.64	G41-M24	80/09/10	SFF	00
DMB-19	80/09/10	SEP	00	G41-N21	80/09/10	SFF	00
DMB-1A	80/09/10	SEP	485.48	G41-P1R	80/09/10	SEP	483.68
DMB-2	80/09/10	SFF	00	G41-P1RB	80/09/10	SFF	484.25
DMB-20A	80/09/10	SEP	476.31	G41-P24	80/09/10	SFF	484.70
DMB-21	80/09/10	SEP	474.06	TW-1	80/09/10	SFF	485.18
DMB-22	80/09/10	SEP	475.63	WW-2	80/09/10	SEP	481.51
DMB-23	80/09/10	SEP	473.88				
DMB-24	80/09/10	SEP	469.33				
DMB-25	80/09/10	SEP	472.11				
DMB-26	80/09/10	SEP	483.11				
DMB-27	80/09/10	SEP	484.04				
DMB-28	80/09/10	SEP	484.20				
DMB-29	80/09/10	SEP	484.31				
DMB-3	80/09/10	SEP	481.52				
DMB-4	80/09/10	SEP	485.39				
DMB-5	80/09/10	SEP	00				
DMB-5A	80/09/10	SEP	485.28				
DMB-6	80/09/10	SEP	485.19				
DMB-7	80/09/10	SEP	484.64				
DMB-8	80/09/10	SEP	484.03				
DMB-9A	80/09/10	SEP	484.86				
DMB-9R	80/09/10	SEP	484.86				
DMB-9C	80/09/10	SFF	484.88				
DMC-1	80/09/10	SEP	483.41				
DMC-2	80/09/10	SEP	481.46				
DMC-3	80/09/10	SEP	485.18				
DMI-1	80/09/10	SFF	484.44				
DMI-2L	80/09/10	SFF	484.69				
DMI-2U	80/09/10	SFF	484.32				
DMF-1	80/09/10	SFF	485.07				
DMF-2	80/09/10	SEP	483.18				
DMF-3	80/09/10	SEP	481.11				
DMS-1	80/09/10	SEP	485.70				
DMS-2	80/09/10	SEP	484.71				
DW-1A	80/09/10	SEP	482.06				
DW-1L	80/09/10	SEP	481.16				
DW-1U	80/09/10	SEP	481.92				
DW-2L	80/09/10	SFF	485.51				
DW-2U	80/09/10	SEP	485.26				
DW-3L	80/09/10	SEP	480.72				
DW-3U	80/09/10	SFF	480.72				
G40-D24	80/09/10	SEP	473.57				
G40-H16	80/09/10	SEP	475.62				
G40-H27	80/09/10	SEP	472.29				
G40-J15	80/09/10	SEP	476.48				
G40-K13	80/09/10	SFF	477.10				
G40-L23	80/09/10	SEP	476.19				
G40-M15	80/09/10	SEP	478.24				

TABLE 2.3B

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	81/11/11	NOV	480.01	G40-F10A	81/11/11	NOV	00
DMA-12	81/11/11	NOV	485.18	G40-F20	81/11/11	NOV	478.70
DMA-13	81/11/11	NOV	473.53	G40-Q7	81/11/11	NOV	00
DMA-16	81/11/11	NOV	473.75	G40-R23	81/11/11	NOV	478.29
DMA-18	81/11/11	NOV	476.09	G40-S17	81/11/11	NOV	00
DMA-19	81/11/11	NOV	484.57	G40-S17A	81/11/11	NOV	00
DMA-18S	81/11/11	NOV	00	G40-T30	81/11/11	NOV	00
DMA-20	81/11/11	NOV	476.42	G40-X1	81/11/11	NOV	00
DMA-22B	81/11/11	NOV	488.66	G40-X1A	81/11/11	NOV	00
DMA-3	81/11/11	NOV	00	G40-Y15	81/11/11	NOV	00
DMA-31	81/11/11	NOV	483.28	G40-Y15A	81/11/11	NOV	00
DMA-32A	81/11/11	NOV	482.81	G40-Y21	81/11/11	NOV	00
DMA-34	81/11/11	NOV	467.56	G40-Y22	81/11/11	NOV	00
DMA-38	81/11/11	NOV	00	G40-Y26	81/11/11	NOV	00
DMA-4	81/11/11	NOV	483.89	G41-A23	81/11/11	NOV	00
DMA-47	81/11/11	NOV	473.98	G41-B12	81/11/11	NOV	00
DMA-48	81/11/11	NOV	468.64	G41-C15	81/11/11	NOV	485.25
DMB-10	81/11/11	NOV	475.67	G41-C15B	81/11/11	NOV	485.60
DMB-11	81/11/11	NOV	478.01	G41-C15C	81/11/11	NOV	00
DMB-12	81/11/11	NOV	477.19	G41-C32	81/11/11	NOV	00
DMB-13	81/11/11	NOV	473.45	G41-E13	81/11/11	NOV	485.65
DMB-15	81/11/11	NOV	00	G41-E17	81/11/11	NOV	485.28
DMB-16	81/11/11	NOV	00	G41-E19A	81/11/11	NOV	484.49
DMB-17	81/11/11	NOV	00	G41-E22	81/11/11	NOV	00
DMB-18	81/11/11	NOV	474.49	G41-E22A	81/11/11	NOV	00
DMB-19	81/11/11	NOV	00	G41-F24	81/11/11	NOV	483.60
DMB-1A	81/11/11	NOV	485.67	G41-G13	81/11/11	NOV	485.61
DMB-2	81/11/11	NOV	00	G41-G14A	81/11/11	NOV	485.48
DMB-20A	81/11/11	NOV	476.21	G41-G14B	81/11/11	NOV	485.50
DMB-21	81/11/11	NOV	473.98	G41-G14C	81/11/11	NOV	485.64
DMB-22	81/11/11	NOV	475.51	G41-G14D	81/11/11	NOV	485.70
DMB-23	81/11/11	NOV	473.78	G41-G14E	81/11/11	NOV	485.32
DMB-24	81/11/11	NOV	469.29	G41-G14F	81/11/11	NOV	485.42
DMB-25	81/11/11	NOV	472.02	G41-G15	81/11/11	NOV	485.42
DMB-26	81/11/11	NOV	482.95	G41-G15A	81/11/11	NOV	485.42
DMB-27	81/11/11	NOV	483.90	G41-G15B	81/11/11	NOV	485.42
DMB-28	81/11/11	NOV	484.13	G41-G21	81/11/11	NOV	484.67
DMB-29	81/11/11	NOV	484.10	G41-H17	81/11/11	NOV	00
DMB-3	81/11/11	NOV	481.54	G41-H18	81/11/11	NOV	00
DMB-4	81/11/11	NOV	485.37	G41-H18R	81/11/11	NOV	485.10
DMB-5	81/11/11	NOV	00	G41-H9	81/11/11	NOV	485.43
DMB-5A	81/11/11	NOV	485.53	G41-K13	81/11/11	NOV	485.42
DMB-6	81/11/11	NOV	485.47	G41-K13A	81/11/11	NOV	485.52
DMB-7	81/11/11	NOV	484.45	G41-K13B	81/11/11	NOV	00
DMB-8	81/11/11	NOV	483.98	G41-K26	81/11/11	NOV	484.21
DMB-9A	81/11/11	NOV	484.79	G41-M11	81/11/11	NOV	481.48
DMB-9B	81/11/11	NOV	484.76	G41-N21	81/11/11	NOV	484.53
DMB-9C	81/11/11	NOV	484.81	G41-P16	81/11/11	NOV	482.35
DMC-1	81/11/11	NOV	483.50	G41-P18	81/11/11	NOV	483.66
DMC-2	81/11/11	NOV	481.41	G41-P18R	81/11/11	NOV	484.23
DMC-3	81/11/11	NOV	484.75	G41-P24	81/11/11	NOV	484.55
DMI-1	81/11/11	NOV	484.57	G41-Q22	81/11/11	NOV	484.61
DMI-2L	81/11/11	NOV	484.35	TW-1	81/11/11	NOV	484.60
DMI-2U	81/11/11	NOV	484.39	WW-2	81/11/11	NOV	431.50
DMF-1	81/11/11	NOV	484.14				
DMF-2	81/11/11	NOV	483.11				
DMF-3	81/11/11	NOV	480.89				
DMS-1	81/11/11	NOV	484.39				
DMS-2	81/11/11	NOV	485.14				
DW-1A	81/11/11	NOV	482.11				
DW-1L	81/11/11	NOV	481.52				
DW-1U	81/11/11	NOV	481.98				
DW-2L	81/11/11	NOV	485.13				
DW-2U	81/11/11	NOV	486.64				
DW-3L	81/11/11	NOV	480.53				
DW-3U	81/11/11	NOV	480.54				
G40-D24	81/11/11	NOV	473.49				
G40-H16	81/11/11	NOV	475.47				
G40-H27	81/11/11	NOV	472.21				
G40-J15	81/11/11	NOV	476.33				
G40-K13	81/11/11	NOV	476.98				
G40-L23	81/11/11	NOV	475.97				
G40-M15	81/11/11	NOV	478.06				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	82/02/22	FEB	479.91	G40-F10A	82/02/22	FEB	478.34
DMA-12	82/02/22	FEB	484.98	G40-F20	82/02/22	FEB	478.60
DMA-13	82/02/22	FEB	473.51	G40-Q7	82/02/22	FEB	476.78
DMA-16	82/02/22	FEB	473.63	G40-K23	82/02/22	FEB	478.12
DMA-18	82/02/22	FEB	476.00	G40-S17	82/02/22	FEB	480.40
DMA-19	82/02/22	FEB	484.19	G40-S17A	82/02/22	FEB	481.16
DMA-1S	82/02/22	FEB	00	G40-T30	82/02/22	FEB	480.98
DMA-20	82/02/22	FEB	475.91	G40-X1	82/02/22	FEB	482.58
DMA-22B	82/02/22	FEB	488.55	G40-X1A	82/02/22	FEB	479.66
DMA-3	82/02/22	FEB	00	G40-Y15	82/02/22	FEB	483.29
DMA-31	82/02/22	FEB	483.02	G40-Y15A	82/02/22	FEB	485.26
DMA-32A	82/02/22	FEB	482.66	G40-Y21	82/02/22	FEB	482.27
DMA-34	82/02/22	FEB	467.51	G40-Y22	82/02/22	FEB	480.34
DMA-38	82/02/22	FEB	00	G40-Y26	82/02/22	FEB	481.75
DMA-4	82/02/22	FEB	483.62	G41-A23	82/02/22	FEB	482.60
DMA-47	82/02/22	FEB	473.87	G41-R12	82/02/22	FEB	485.08
DMA-48	82/02/22	FEB	468.60	G41-C15	82/02/22	FEB	485.06
DMB-10	82/02/22	FEB	475.45	G41-C15R	82/02/22	FEB	485.43
DMB-11	82/02/22	FEB	478.33	G41-C15C	82/02/22	FEB	00
DMB-12	82/02/22	FEB	477.06	G41-C32	82/02/22	FEB	483.07
DMB-13	82/02/22	FEB	473.36	G41-E13	82/02/22	FEB	485.54
DMB-15	82/02/22	FEB	00	G41-E17	82/02/22	FEB	484.95
DMB-16	82/02/22	FEB	00	G41-E19A	82/02/22	FEB	484.31
DMB-17	82/02/22	FEB	00	G41-E22	82/02/22	FEB	484.20
DMB-18	82/02/22	FEB	474.37	G41-E22A	82/02/22	FEB	484.71
DMB-19	82/02/22	FEB	00	G41-F24	82/02/22	FEB	483.53
DMB-1A	82/02/22	FEB	485.47	G41-G13	82/02/22	FEB	485.45
DMB-2	82/02/22	FEB	00	G41-G14A	82/02/22	FEB	485.22
DMB-20A	82/02/22	FEB	476.08	G41-G14R	82/02/22	FEB	485.15
DMB-21	82/02/22	FEB	473.84	G41-G14C	82/02/22	FEB	485.48
DMB-22	82/02/22	FEB	475.37	G41-G14D	82/02/22	FEB	485.25
DMB-23	82/02/22	FEB	473.63	G41-G14E	82/02/22	FEB	485.28
DMB-24	82/02/22	FEB	00	G41-G14F	82/02/22	FEB	485.33
DMB-25	82/02/22	FEB	471.88	G41-G15	82/02/22	FEB	481.30
DMB-26	82/02/22	FEB	482.83	G41-G15A	82/02/22	FEB	485.24
DMB-27	82/02/22	FEB	483.73	G41-G15R	82/02/22	FEB	485.20
DMB-28	82/02/22	FEB	483.99	G41-G21	82/02/22	FEB	484.48
DMB-29	82/02/22	FEB	483.89	G41-H17	82/02/22	FEB	00
DMB-3	82/02/22	FEB	481.42	G41-H18	82/02/22	FEB	00
DMB-4	82/02/22	FEB	00	G41-H18R	82/02/22	FEB	484.91
DMB-5	82/02/22	FEB	00	G41-H9	82/02/22	FEB	485.19
DMB-5A	82/02/22	FEB	485.40	G41-K13	82/02/22	FEB	485.16
DMB-6	82/02/22	FEB	485.33	G41-K13A	82/02/22	FEB	486.33
DMB-7	82/02/22	FEB	484.35	G41-K13R	82/02/22	FEB	00
DMB-8	82/02/22	FEB	483.71	G41-K26	82/02/22	FEB	484.10
DMB-9A	82/02/22	FEB	484.78	G41-M11	82/02/22	FEB	481.42
DMB-9B	82/02/22	FEB	484.73	G41-N21	82/02/22	FEB	484.32
DMB-9C	82/02/22	FEB	484.78	G41-P16	82/02/22	FEB	482.32
DMC-1	82/02/22	FEB	00	G41-P18	82/02/22	FEB	483.24
DMC-2	82/02/22	FEB	481.37	G41-P18R	82/02/22	FEB	484.19
DMC-3	82/02/22	FEB	484.65	G41-P24	82/02/22	FEB	484.38
DMI-1	82/02/22	FEB	484.46	G41-Q22	82/02/22	FEB	484.42
DMI-2L	82/02/22	FEB	484.22	TW-1	82/02/22	FEB	484.50
DMI-2U	82/02/22	FEB	484.26	WW-2	82/02/22	FEB	00
DMP-1	82/02/22	FEB	483.96				
DMP-2	82/02/22	FEB	482.96				
DMP-3	82/02/22	FEB	480.77				
DMS-1	82/02/22	FEB	485.84				
DMS-2	82/02/22	FEB	484.78				
DW-1A	82/02/22	FEB	481.99				
DW-1L	82/02/22	FEB	481.30				
DW-1U	82/02/22	FEB	481.89				
DW-2L	82/02/22	FEB	485.10				
DW-2U	82/02/22	FEB	486.48				
DW-3L	82/02/22	FEB	480.36				
DW-3U	82/02/22	FEB	480.43				
G40-I24	82/02/22	FEB	473.42				
G40-H16	82/02/22	FEB	475.34				
G40-H27	82/02/22	FEB	472.17				
G40-J15	82/02/22	FEB	476.14				
G40-K13	82/02/22	FEB	476.89				
G40-L23	82/02/22	FEB	475.84				
G40-M15	82/02/22	FEB	477.99				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
STS-LSL-1	82/03/23	MAR	482.61				
STS-LSL-2	82/03/23	MAR	483.01				
STS-LSL-4	82/03/23	MAR	482.69				
STS-LSL-6	82/03/23	MAR	482.89				



WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	82/11/12	NOV	479.89	G40-P10A	82/11/12	NOV	478.02
DMA-12	82/11/12	NOV	484.94	G40-P20	82/11/12	NOV	478.43
DMA-13	82/11/12	NOV	473.57	G40-Q7	82/11/12	NOV	476.73
DMA-16	82/11/12	NOV	473.26	G40-R23	82/11/12	NOV	478.19
DMA-18	82/11/12	NOV	475.85	G40-S17	82/11/12	NOV	480.48
DMA-19	82/11/12	NOV	484.46	G40-S17A	82/11/12	NOV	481.05
DMA-20	82/11/12	NOV	475.98	G40-T30	82/11/12	NOV	480.73
DMA-22B	82/11/12	NOV	488.25	G40-X1	82/11/12	NOV	482.32
DMA-3	82/11/12	NOV	00	G40-X1A	82/11/12	NOV	479.54
DMA-31	82/11/12	NOV	482.83	G40-Y15	82/11/12	NOV	483.40
DMA-32A	82/11/12	NOV	482.41	G40-Y15A	82/11/12	NOV	485.46
DMA-34	82/11/12	NOV	00	G40-Y21	82/11/12	NOV	482.32
DMA-3R	82/11/12	NOV	00	G40-Y22	82/11/12	NOV	480.11
DMA-4	82/11/12	NOV	483.89	G40-Y26	82/11/12	NOV	481.43
DMA-47	82/11/12	NOV	474.28	G41-A23	82/11/12	NOV	00
DMA-4R	82/11/12	NOV	468.75	G41-R12	82/11/12	NOV	484.83
DMR-10	82/11/12	NOV	475.31	G41-C15	82/11/12	NOV	484.72
DMF-11	82/11/12	NOV	478.20	G41-C15B	82/11/12	NOV	485.11
DMF-12	82/11/12	NOV	477.21	G41-C15C	82/11/12	NOV	00
DMR-13	82/11/12	NOV	473.28	G41-C32	82/11/12	NOV	00
DMR-15	82/11/12	NOV	00	G41-E13	82/11/12	NOV	485.23
DMR-16	82/11/12	NOV	00	G41-E17	82/11/12	NOV	484.69
DMR-17	82/11/12	NOV	00	G41-E19A	82/11/12	NOV	484.11
DMR-1R	82/11/12	NOV	474.34	G41-E22	82/11/12	NOV	483.95
DMR-19	82/11/12	NOV	00	G41-E22A	82/11/12	NOV	484.51
DMR-1A	82/11/12	NOV	485.10	G41-F24	82/11/12	NOV	483.74
DMR-2	82/11/12	NOV	00	G41-G13	82/11/12	NOV	485.08
DMR-20A	82/11/12	NOV	475.90	G41-G14A	82/11/12	NOV	484.97
DMR-21	82/11/12	NOV	474.10	G41-G14B	82/11/12	NOV	484.96
DMR-22	82/11/12	NOV	475.30	G41-G14C	82/11/12	NOV	485.14
DMR-23	82/11/12	NOV	473.74	G41-G14D	82/11/12	NOV	484.94
DMR-24	82/11/12	NOV	469.41	G41-G14E	82/11/12	NOV	484.92
DMR-25	82/11/12	NOV	471.96	G41-G14F	82/11/12	NOV	485.00
DMR-26	82/11/12	NOV	482.62	G41-G15	82/11/12	NOV	485.04
DMR-27	82/11/12	NOV	483.46	G41-G15A	82/11/12	NOV	484.91
DMR-28	82/11/12	NOV	483.71	G41-G15R	82/11/12	NOV	484.85
DMR-29	82/11/12	NOV	483.75	G41-G21	82/11/12	NOV	484.22
DMR-3	82/11/12	NOV	481.52	G41-H17	82/11/12	NOV	00
DMR-4	82/11/12	NOV	484.84	G41-H18	82/11/12	NOV	00
DMR-5	82/11/12	NOV	00	G41-H18B	82/11/12	NOV	484.60
DMR-5A	82/11/12	NOV	484.57	G41-H9	82/11/12	NOV	484.91
DMR-6	82/11/12	NOV	485.03	G41-K13	82/11/12	NOV	484.88
DMR-7	82/11/12	NOV	484.08	G41-K13A	82/11/12	NOV	484.99
DMR-8	82/11/12	NOV	483.58	G41-K13R	82/11/12	NOV	00
DMR-9A	82/11/12	NOV	484.28	G41-K26	82/11/12	NOV	483.82
DMR-9B	82/11/12	NOV	484.27	G41-M11	82/11/12	NOV	481.55
DMR-9C	82/11/12	NOV	484.31	G41-N21	82/11/12	NOV	483.99
DMC-1	82/11/12	NOV	483.29	G41-F16	82/11/12	NOV	482.41
DMC-2	82/11/12	NOV	481.72	G41-P18	82/11/12	NOV	483.42
DMC-3	82/11/12	NOV	484.50	G41-P18B	82/11/12	NOV	484.14
DMI-1	82/11/12	NOV	484.28	G41-P24	82/11/12	NOV	484.05
DMI-2L	82/11/12	NOV	484.01	G41-Q22	82/11/12	NOV	484.21
DMI-2U	82/11/12	NOV	483.93	TW-1	82/11/12	NOV	484.38
DMF-1	82/11/12	NOV	484.05	WW-2	82/11/12	NOV	481.12
DMF-2	82/11/12	NOV	483.10				
DMF-3	82/11/12	NOV	480.64				
DMS-1	82/11/12	NOV	485.28				
DMS-2	82/11/12	NOV	483.94				
DW-1A	82/11/12	NOV	481.65				
DW-1L	82/11/12	NOV	481.17				
DW-1U	82/11/12	NOV	481.68				
DW-2L	82/11/12	NOV	484.98				
DW-2U	82/11/12	NOV	485.22				
DW-3L	82/11/12	NOV	480.16				
DW-3U	82/11/12	NOV	480.19				
G40-D24	82/11/12	NOV	473.37				
G40-H16	82/11/12	NOV	00				
G40-H27	82/11/12	NOV	472.16				
G40-J15	82/11/12	NOV	476.04				
G40-K13	82/11/12	NOV	476.63				
G40-L23	82/11/12	NOV	475.75				
G40-M15	82/11/12	NOV	00				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	83/03/15	MAR	480.02	G40-F10A	83/03/15	MAR	478.12
DMA-12	83/03/15	MAR	00	G40-F20	83/03/15	MAR	478.44
DMA-13	83/03/15	MAR	00	G40-Q7	83/03/15	MAR	476.67
DMA-16	83/03/15	MAR	473.45	G40-R23	83/03/15	MAR	478.34
DMA-18	83/03/15	MAR	475.91	G40-S17	83/03/15	MAR	480.64
DMA-19	83/03/15	MAR	484.58	G40-S17A	83/03/15	MAR	481.07
DMA-1S	83/03/15	MAR	00	G40-T30	83/03/15	MAR	480.98
DMA-20	83/03/15	MAR	476.02	G40-X1	83/03/15	MAR	482.52
DMA-22R	83/03/15	MAR	488.33	G40-X1A	83/03/15	MAR	479.94
DMA-3	83/03/15	MAR	00	G40-Y15	83/03/15	MAR	483.50
DMA-31	83/03/15	MAR	00	G40-Y15A	83/03/15	MAR	485.44
DMA-32A	83/03/15	MAR	482.54	G40-Y21	83/03/15	MAR	482.35
DMA-34	83/03/15	MAR	00	G40-Y22	83/03/15	MAR	480.18
DMA-38	83/03/15	MAR	00	G40-Y26	83/03/15	MAR	481.55
DMA-4	83/03/15	MAR	483.65	G41-A23	83/03/15	MAR	482.47
DMA-47	83/03/15	MAR	474.25	G41-B12	83/03/15	MAR	485.56
DMA-4R	83/03/15	MAR	468.78	G41-C15	83/03/15	MAR	484.75
DMB-10	83/03/15	MAR	475.52	G41-C15B	83/03/15	MAR	485.13
DMB-11	83/03/15	MAR	478.28	G41-C15C	83/03/15	MAR	00
DMB-12	83/03/15	MAR	477.29	G41-C32	83/03/15	MAR	482.57
DMB-13	83/03/15	MAR	473.40	G41-E13	83/03/15	MAR	485.14
DMB-15	83/03/15	MAR	00	G41-E17	83/03/15	MAR	484.63
DMB-16	83/03/15	MAR	00	G41-E19A	83/03/15	MAR	484.04
DMB-17	83/03/15	MAR	00	G41-E22	83/03/15	MAR	483.95
DMB-18	83/03/15	MAR	474.45	G41-E22A	83/03/15	MAR	484.54
DMB-19	83/03/15	MAR	00	G41-F24	83/03/15	MAR	483.23
DMB-1A	83/03/15	MAR	485.06	G41-G13	83/03/15	MAR	485.03
DMB-2	83/03/15	MAR	00	G41-G14A	83/03/15	MAR	484.94
DMB-20A	83/03/15	MAR	476.07	G41-G14R	83/03/15	MAR	484.93
DMB-21	83/03/15	MAR	474.13	G41-G14C	83/03/15	MAR	485.08
DMB-22	83/03/15	MAR	475.37	G41-G14D	83/03/15	MAR	484.91
DMB-23	83/03/15	MAR	473.83	G41-G14E	83/03/15	MAR	484.88
DMB-24	83/03/15	MAR	469.39	G41-G14F	83/03/15	MAR	484.94
DMB-25	83/03/15	MAR	471.98	G41-G15	83/03/15	MAR	484.58
DMB-26	83/03/15	MAR	482.34	G41-G15A	83/03/15	MAR	484.86
DMB-27	83/03/15	MAR	483.39	G41-G15B	83/03/15	MAR	485.10
DMB-28	83/03/15	MAR	00	G41-G21	83/03/15	MAR	484.09
DMB-29	83/03/15	MAR	483.74	G41-H17	83/03/15	MAR	00
DMB-3	83/03/15	MAR	00	G41-H16	83/03/15	MAR	00
DMB-4	83/03/15	MAR	484.92	G41-H16B	83/03/15	MAR	484.57
DMB-5	83/03/15	MAR	00	G41-H9	83/03/15	MAR	00
DMB-5A	83/03/15	MAR	484.92	G41-K13	83/03/15	MAR	484.85
DMB-6	83/03/15	MAR	484.89	G41-K13A	83/03/15	MAR	484.66
DMB-7	83/03/15	MAR	484.08	G41-K13B	83/03/15	MAR	00
DMB-8	83/03/15	MAR	484.04	G41-K26	83/03/15	MAR	483.82
DMB-9A	83/03/15	MAR	484.34	G41-M11	83/03/15	MAR	481.54
DMB-9R	83/03/15	MAR	484.34	G41-N21	83/03/15	MAR	484.11
DMB-9C	83/03/15	MAR	484.34	G41-P16	83/03/15	MAR	482.44
DMC-1	83/03/15	MAR	483.29	G41-P18	83/03/15	MAR	483.39
DMC-2	83/03/15	MAR	481.70	G41-P18R	83/03/15	MAR	484.01
DMC-3	83/03/15	MAR	00	G41-P24	83/03/15	MAR	484.17
DMI-1	83/03/15	MAR	484.51	G41-Q22	83/03/15	MAR	484.24
DMI-2L	83/03/15	MAR	484.23	TW-1	83/03/15	MAR	484.61
DMI-2U	83/03/15	MAR	484.17	WW-2	83/03/15	MAR	481.32
DMP-1	83/03/15	MAR	484.19				
DMP-2	83/03/15	MAR	483.20				
DMP-3	83/03/15	MAR	480.81				
DMS-1	83/03/15	MAR	485.54				
DMS-2	83/03/15	MAR	484.01				
DW-1A	83/03/15	MAR	481.90				
DW-1L	83/03/15	MAR	481.33				
DW-1U	83/03/15	MAR	481.73				
DW-2I	83/03/15	MAR	485.20				
DW-2U	83/03/15	MAR	485.20				
DW-3L	83/03/15	MAR	480.35				
DW-3U	83/03/15	MAR	480.35				
G40-D24	83/03/15	MAR	473.41				
G40-H16	83/03/15	MAR	475.34				
G40-H27	83/03/15	MAR	472.20				
G40-J15	83/03/15	MAR	00				
G40-K13	83/03/15	MAR	00				
G40-L23	83/03/15	MAR	475.67				
G40-M15	83/03/15	MAR	00				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	83/04/25	APR	480.21	G40-J15	83/04/25	APR	00
DMA-12	83/04/25	APR	485.53	G40-K13	83/04/25	APR	475.67
DMA-13	83/04/25	APR	00	G40-L23	83/04/25	APR	475.82
DMA-16	83/04/25	APR	473.67	G40-M15	83/04/25	APR	477.87
DMA-18	83/04/25	APR	476.00	G40-F10A	83/04/25	APR	478.21
DMA-19	83/04/25	APR	484.89	G40-F20	83/04/25	APR	478.57
DMA-1S	83/04/25	APR	00	G40-Q7	83/04/25	APR	476.71
DMA-20	83/04/25	APR	476.17	G40-R23	83/04/25	APR	478.52
DMA-22B	83/04/25	APR	488.45	G40-S17	83/04/25	APR	480.73
DMA-3	83/04/25	APR	00	G40-S17A	83/04/25	APR	481.31
DMA-31	83/04/25	APR	00	G40-T30	83/04/25	APR	481.09
DMA-32A	83/04/25	APR	482.69	G40-X1	83/04/25	APR	482.80
DMA-34	83/04/25	APR	467.45	G40-X1A	83/04/25	APR	480.06
DMA-38	83/04/25	APR	00	G40-Y15	83/04/25	APR	483.72
DMA-4	83/04/25	APR	483.80	G40-Y15A	83/04/25	APR	485.59
DMA-47	83/04/25	APR	474.40	G40-Y21	83/04/25	APR	482.59
DMA-48	83/04/25	APR	468.75	G40-Y22	83/04/25	APR	480.27
DMB-10	83/04/25	APR	475.64	G40-Y26	83/04/25	APR	481.92
DMB-11	83/04/25	APR	478.40	G41-A23	83/04/25	APR	482.53
DMB-12	83/04/25	APR	477.38	G41-B12	83/04/25	APR	485.53
DMB-13	83/04/25	APR	473.49	G41-C15	83/04/25	APR	484.91
DMB-15	83/04/25	APR	00	G41-C15B	83/04/25	APR	00
DMB-16	83/04/25	APR	00	G41-C15C	83/04/25	APR	00
DMB-17	83/04/25	APR	00	G41-C32	83/04/25	APR	482.63
DMB-18	83/04/25	APR	474.51	G41-E13	83/04/25	APR	485.29
DMB-19	83/04/25	APR	00	G41-E17	83/04/25	APR	484.81
DMB-1A	83/04/25	APR	485.03	G41-E19A	83/04/25	APR	484.22
DMB-2	83/04/25	APR	00	G41-E22	83/04/25	APR	484.13
DMB-20A	83/04/25	APR	476.16	G41-E22A	83/04/25	APR	484.75
DMB-21	83/04/25	APR	474.17	G41-F24	83/04/25	APR	483.32
DMB-22	83/04/25	APR	475.49	G41-G13	83/04/25	APR	485.25
DMB-23	83/04/25	APR	473.95	G41-G14A	83/04/25	APR	485.10
DMB-24	83/04/25	APR	469.45	G41-G14B	83/04/25	APR	485.11
DMB-25	83/04/25	APR	472.04	G41-G14C	83/04/25	APR	485.24
DMB-26	83/04/25	APR	482.46	G41-G14D	83/04/25	APR	485.06
DMB-27	83/04/25	APR	483.51	G41-G14E	83/04/25	APR	485.12
DMB-28	83/04/25	APR	483.50	G41-G14F	83/04/25	APR	485.10
DMB-29	83/04/25	APR	483.99	G41-G15	83/04/25	APR	485.07
DMB-3	83/04/25	APR	00	G41-G15A	83/04/25	APR	485.06
DMB-4	83/04/25	APR	485.07	G41-G15B	83/04/25	APR	485.02
DMB-5	83/04/25	APR	00	G41-G21	83/04/25	APR	484.27
DMB-5A	83/04/25	APR	485.20	G41-H17	83/04/25	APR	00
DMB-6	83/04/25	APR	485.08	G41-H18	83/04/25	APR	00
DMB-7	83/04/25	APR	484.26	G41-H18B	83/04/25	APR	484.71
DMB-8	83/04/25	APR	484.68	G41-H9	83/04/25	APR	485.10
DMB-9A	83/04/25	APR	484.46	G41-K13	83/04/25	APR	484.97
DMB-9B	83/04/25	APR	484.43	G41-K13A	83/04/25	APR	485.06
DMB-9C	83/04/25	APR	484.43	G41-K13B	83/04/25	APR	00
DMC-1	83/04/25	APR	483.44	G41-K26	83/04/25	APR	483.94
DMC-2	83/04/25	APR	481.85	G41-M11	83/04/25	APR	481.54
DMC-3	83/04/25	APR	484.71	G41-N21	83/04/25	APR	484.27
DMI-1	83/04/25	APR	484.84	G41-P16	83/04/25	APR	482.53
DMI-2L	83/04/25	APR	484.56	G41-P18	83/04/25	APR	483.51
DMI-2U	83/04/25	APR	484.38	G41-P18B	83/04/25	APR	484.14
DMF-1	83/04/25	APR	484.34	G41-P24	83/04/25	APR	484.35
DMF-2	83/04/25	APR	483.41	G41-Q22	83/04/25	APR	484.39
DMF-3	83/04/25	APR	480.90	TW-1	83/04/25	APR	484.85
DMS-1	83/04/25	APR	00	WW-2	83/04/25	APR	481.47
DMS-2	83/04/25	APR	484.22				
DW-1A	83/04/25	APR	482.05				
DW-1L	83/04/25	APR	481.49				
DW-1U	83/04/25	APR	481.85				
DW-2L	83/04/25	APR	485.26				
DW-2U	83/04/25	APR	485.53				
DW-3L	83/04/25	APR	480.47				
DW-3U	83/04/25	APR	480.47				
G40-D24	83/04/25	APR	473.47				
G40-H16	83/04/25	APR	475.46				
G40-H27	83/04/25	APR	472.26				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	83/07/19	JUL	480.63	G40-F10A	83/07/19	JUL	478.37
DMA-12	83/07/19	JUL	486.19	G40-P20	83/07/19	JUL	478.91
DMA-13	83/07/19	JUL	473.70	G40-Q7	83/07/19	JUL	477.16
DMA-14	83/07/19	JUL	474.45	G40-R23	83/07/19	JUL	478.96
DMA-18	83/07/19	JUL	476.28	G40-S17	83/07/19	JUL	481.08
DMA-19	83/07/19	JUL	485.50	G40-S17A	83/07/19	JUL	481.41
DMA-15	83/07/19	JUL	00	G40-T30	83/07/19	JUL	481.30
DMA-20	83/07/19	JUL	476.27	G40-X1	83/07/19	JUL	483.46
DMA-22B	83/07/19	JUL	489.06	G40-X1A	83/07/19	JUL	480.04
DMA-29	83/07/19	JUL	467.53	G40-Y15	83/07/19	JUL	484.01
DMA-3	83/07/19	JUL	00	G40-Y15A	83/07/19	JUL	485.39
DMA-31	83/07/19	JUL	483.73	G40-Y21	83/07/19	JUL	482.88
DMA-32A	83/07/19	JUL	483.06	G40-Y22	83/07/19	JUL	480.74
DMA-34	83/07/19	JUL	467.66	G40-Y26	83/07/19	JUL	482.06
DMA-38	83/07/19	JUL	00	G41-A23	83/07/19	JUL	482.76
DMA-4	83/07/19	JUL	484.43	G41-A24	83/07/19	JUL	482.78
DMA-47	83/07/19	JUL	474.42	G41-R12	83/07/19	JUL	486.84
DMA-48	83/07/19	JUL	468.75	G41-C15	83/07/19	JUL	485.61
DME-10	83/07/19	JUL	476.42	G41-C15B	83/07/19	JUL	00
				G41-C15C	83/07/19	JUL	00
DME-12	83/07/19	JUL	477.56	G41-C32	83/07/19	JUL	482.56
DME-13	83/07/19	JUL	473.85	G41-E13	83/07/19	JUL	486.11
DME-15	83/07/19	JUL	00	G41-E17	83/07/19	JUL	485.45
DME-16	83/07/19	JUL	00	G41-E19A	83/07/19	JUL	484.78
DME-17	83/07/19	JUL	00	G41-E22	83/07/19	JUL	484.43
DME-18	83/07/19	JUL	475.00	G41-E22A	83/07/19	JUL	484.70
DME-19	83/07/19	JUL	00	G41-F24	83/07/19	JUL	483.68
DME-1A	83/07/19	JUL	486.13	G41-G13	83/07/19	JUL	485.91
DME-2	83/07/19	JUL	00	G41-G14A	83/07/19	JUL	485.71
DME-20A	83/07/19	JUL	476.73	G41-G14B	83/07/19	JUL	485.73
DME-21	83/07/19	JUL	474.19	G41-G14C	83/07/19	JUL	485.85
DME-22	83/07/19	JUL	476.02	G41-G14D	83/07/19	JUL	485.67
DME-23	83/07/19	JUL	474.26	G41-G14E	83/07/19	JUL	485.64
DME-24	83/07/19	JUL	469.43	G41-G14F	83/07/19	JUL	485.43
DME-25	83/07/19	JUL	472.38	G41-G15	83/07/19	JUL	485.67
DME-26	83/07/19	JUL	482.95	G41-G15A	83/07/19	JUL	485.64
DME-27	83/07/19	JUL	484.07	G41-G15B	83/07/19	JUL	485.67
DME-28	83/07/19	JUL	484.24	G41-G21	83/07/19	JUL	484.43
DME-29	83/07/19	JUL	484.76	G41-H17	83/07/19	JUL	00
DME-3	83/07/19	JUL	481.62	G41-H18	83/07/19	JUL	00
DME-4	83/07/19	JUL	485.86	G41-H18B	83/07/19	JUL	485.39
DME-5	83/07/19	JUL	485.56	G41-H9	83/07/19	JUL	485.91
DME-5A	83/07/19	JUL	485.24	G41-K13	83/07/19	JUL	485.54
DME-6	83/07/19	JUL	485.67	G41-K13A	83/07/19	JUL	485.57
DME-7	83/07/19	JUL	484.93	G41-K13B	83/07/19	JUL	00
DME-8	83/07/19	JUL	484.35	G41-K26	83/07/19	JUL	484.52
DME-9A	83/07/19	JUL	485.03	G41-M11	83/07/19	JUL	481.50
DME-9B	83/07/19	JUL	485.00	G41-N21	83/07/19	JUL	484.88
DME-9C	83/07/19	JUL	485.03	G41-F16	83/07/19	JUL	482.51
DMC-1	83/07/19	JUL	483.68	G41-F18	83/07/19	JUL	483.96
DMC-2	83/07/19	JUL	481.53	G41-F18B	83/07/19	JUL	484.46
DMC-3	83/07/19	JUL	485.38	G41-F24	83/07/19	JUL	484.94
DMI-1	83/07/19	JUL	485.65	G41-Q22	83/07/19	JUL	485.02
DMI-2L	83/07/19	JUL	485.28	TW-1	83/07/19	JUL	486.18
DMI-2U	83/07/19	JUL	485.09	WW-2	83/07/19	JUL	00
DMP-1	83/07/19	JUL	485.13				
DMP-2	83/07/19	JUL	484.02				
DMP-3	83/07/19	JUL	481.46				
DMS-1	83/07/19	JUL	487.37				
DMS-2	83/07/19	JUL	484.92				
DW-1A	83/07/19	JUL	482.54				
DW-1L	83/07/19	JUL	481.99				
DW-1U	83/07/19	JUL	482.39				
DW-2L	83/07/19	JUL	485.67				
DW-2U	83/07/19	JUL	486.15				
DW-3L	83/07/19	JUL	480.64				
DW-3U	83/07/19	JUL	480.60				
G40-N24	83/07/19	JUL	473.80				
G40-H16	83/07/19	JUL	476.02				
G40-H27	83/07/19	JUL	472.56				
G40-J15	83/07/19	JUL	476.71				
G40-K13	83/07/19	JUL	00				
G40-L23	83/07/19	JUL	00				
G40-M15	83/07/19	JUL	478.28				

TABLE 2.3B

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	83/10/20	OCT	480.39	G40-P10A	83/10/20	OCT	478.55
DMA-12	83/10/20	OCT	485.77	G40-P20	83/10/20	OCT	479.15
DMA-13	83/10/20	OCT	473.73	G40-Q7	83/10/20	OCT	477.13
DMA-16	83/10/20	OCT	474.35	G40-R23	83/10/20	OCT	478.59
DMA-18	83/10/20	OCT	476.40	G40-S17	83/10/20	OCT	481.08
DMA-19	83/10/20	OCT	485.26	G40-S17A	83/10/20	OCT	481.38
DMA-18	83/10/20	OCT	00	G40-T30	83/10/20	OCT	481.33
DMA-20	83/10/20	OCT	476.40	G40-X1	83/10/20	OCT	483.15
DMA-22R	83/10/20	OCT	488.97	G40-X1A	83/10/20	OCT	479.88
DMA-29	83/10/20	OCT	467.74	G40-Y15	83/10/20	OCT	483.85
DMA-3	83/10/20	OCT	00	G40-Y15A	83/10/20	OCT	485.27
DMA-31	83/10/20	OCT	483.64	G40-Y21	83/10/20	OCT	482.64
DMA-32A	83/10/20	OCT	483.00	G40-Y22	83/10/20	OCT	480.80
DMA-34	83/10/20	OCT	467.85	G40-Y26	83/10/20	OCT	482.06
DMA-38	83/10/20	OCT	00	G41-A23	83/10/20	OCT	482.85
DMA-4	83/10/20	OCT	484.25	G41-A24	83/10/20	OCT	482.94
DMA-47	83/10/20	OCT	474.09	G41-B12	83/10/20	OCT	486.23
DMA-4R	83/10/20	OCT	468.75	G41-C15	83/10/20	OCT	485.80
DMB-10	83/10/20	OCT	476.18	G41-C15B	83/10/20	OCT	00
DMB-11	83/10/20	OCT	478.86	G41-C15C	83/10/20	OCT	00
DMB-12	83/10/20	OCT	477.74	G41-C32	83/10/20	OCT	482.98
DMB-13	83/10/20	OCT	473.73	G41-E13	83/10/20	OCT	486.32
DMB-15	83/10/20	OCT	00	G41-E17	83/10/20	OCT	485.66
DMB-16	83/10/20	OCT	00	G41-F19A	83/10/20	OCT	484.93
DMB-17	83/10/20	OCT	00	G41-E22	83/10/20	OCT	484.61
DMB-18	83/10/20	OCT	474.88	G41-E22A	83/10/20	OCT	484.79
DMB-19	83/10/20	OCT	00	G41-F24	83/10/20	OCT	483.86
DMB-1A	83/10/20	OCT	486.40	G41-G13	83/10/20	OCT	486.34
DMB-2	83/10/20	OCT	00	G41-G14A	83/10/20	OCT	486.04
DMB-20A	83/10/20	OCT	476.79	G41-G14B	83/10/20	OCT	486.04
DMB-21	83/10/20	OCT	474.28	G41-G14C	83/10/20	OCT	486.25
DMB-22	83/10/20	OCT	475.95	G41-G14D	83/10/20	OCT	486.01
DMB-23	83/10/20	OCT	474.17	G41-G14E	83/10/20	OCT	486.07
DMB-24	83/10/20	OCT	469.37	G41-G14F	83/10/20	OCT	486.01
DMB-25	83/10/20	OCT	472.23	G41-G15	83/10/20	OCT	486.00
DMB-26	83/10/20	OCT	483.14	G41-G15A	83/10/20	OCT	486.01
DMB-27	83/10/20	OCT	484.29	G41-G15B	83/10/20	OCT	485.98
DMB-28	83/10/20	OCT	484.36	G41-G21	83/10/20	OCT	484.59
DMB-29	83/10/20	OCT	484.58	G41-H17	83/10/20	OCT	00
DMB-3	83/10/20	OCT	481.63	G41-H18	83/10/20	OCT	00
DMB-4	83/10/20	OCT	486.13	G41-H18B	83/10/20	OCT	485.57
DMB-5	83/10/20	OCT	485.80	G41-H9	83/10/20	OCT	486.16
DMB-5A	83/10/20	OCT	485.51	G41-K13	83/10/20	OCT	485.97
DMB-6	83/10/20	OCT	485.98	G41-K13A	83/10/20	OCT	486.09
DMB-7	83/10/20	OCT	484.87	G41-K13B	83/10/20	OCT	00
DMB-8	83/10/20	OCT	484.47	G41-K26	83/10/20	OCT	484.64
DMB-9A	83/10/20	OCT	485.28	G41-M11	83/10/20	OCT	481.56
DMB-9B	83/10/20	OCT	485.21	G41-N21	83/10/20	OCT	484.91
DMB-9C	83/10/20	OCT	485.28	G41-P16	83/10/20	OCT	482.51
DMC-1	83/10/20	OCT	483.71	G41-P18	83/10/20	OCT	483.93
DMC-2	83/10/20	OCT	481.53	G41-P18B	83/10/20	OCT	484.40
DMC-3	83/10/20	OCT	485.44	G41-P24	83/10/20	OCT	484.91
DMI-1	83/10/20	OCT	485.25	G41-Q22	83/10/20	OCT	485.02
DMI-2L	83/10/20	OCT	484.91	TW-1	83/10/20	OCT	485.78
DMI-2U	83/10/20	OCT	485.03	WW-2	83/10/20	OCT	00
DMP-1	83/10/20	OCT	484.64				
DMP-2	83/10/20	OCT	483.83				
DMP-3	83/10/20	OCT	481.52				
DMS-1	83/10/20	OCT	487.00				
DMS-2	83/10/20	OCT	485.65				
DW-1A	83/10/20	OCT	482.66				
DW-1L	83/10/20	OCT	482.63				
DW-1U	83/10/20	OCT	482.17				
DW-2L	83/10/20	OCT	485.82				
DW-2U	83/10/20	OCT	485.79				
DW-3L	83/10/20	OCT	480.95				
DW-3U	83/10/20	OCT	480.91				
G40-D24	83/10/20	OCT	473.74				
G40-H16	83/10/20	OCT	475.98				
G40-H27	83/10/20	OCT	472.40				
G40-J15	83/10/20	OCT	476.87				
G40-K13	83/10/20	OCT	477.51				
G40-L23	83/10/20	OCT	476.24				
G40-M15	83/10/20	OCT	478.61				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
DMA-10	84/01/24	JAN	480.13	G40-F10A	84/01/24	JAN	478.46
DMA-12	84/01/24	JAN	485.68	G40-F20	84/01/24	JAN	479.07
DMA-13	84/01/24	JAN	473.61	G40-Q7	84/01/24	JAN	477.13
DMA-16	84/01/24	JAN	474.05	G40-R23	84/01/24	JAN	478.35
DMA-19	84/01/24	JAN	484.98	G40-S17	84/01/24	JAN	481.07
DMA-15	84/01/24	JAN	00	G40-S17A	84/01/24	JAN	481.35
DMA-20	84/01/24	JAN	476.36	G40-T30	84/01/24	JAN	481.29
DMA-22B	84/01/24	JAN	488.76	G40-X1	84/01/24	JAN	482.73
DMA-29	84/01/24	JAN	467.66	G40-X1A	84/01/24	JAN	479.67
DMA-3	84/01/24	JAN	00	G40-Y15	84/01/24	JAN	483.65
DMA-31	84/01/24	JAN	00	G40-Y15A	84/01/24	JAN	485.12
DMA-32A	84/01/24	JAN	482.85	G40-Y21	84/01/24	JAN	482.52
DMA-34	84/01/24	JAN	467.64	G40-Y22	84/01/24	JAN	480.40
DMA-38	84/01/24	JAN	00	G41-A23	84/01/24	JAN	482.67
DMA-4	84/01/24	JAN	484.04	G41-A24	84/01/24	JAN	482.90
DMA-47	84/01/24	JAN	474.02	G41-R12	84/01/24	JAN	485.87
DMA-48	84/01/24	JAN	468.61	G41-C15	84/01/24	JAN	485.68
DMB-10	84/01/24	JAN	475.84	G41-C15B	84/01/24	JAN	486.01
DMB-11	84/01/24	JAN	478.80	G41-C15C	84/01/24	JAN	00
DMB-12	84/01/24	JAN	477.29	G41-C32	84/01/24	JAN	483.01
DMB-13	84/01/24	JAN	473.51	G41-E13	84/01/24	JAN	486.20
DMB-16	84/01/24	JAN	00	G41-E17	84/01/24	JAN	485.60
DMB-17	84/01/24	JAN	00	G41-E19A	84/01/24	JAN	484.96
DMB-18	84/01/24	JAN	474.63	G41-E22	84/01/24	JAN	484.61
DMB-1A	84/01/24	JAN	486.21	G41-E22A	84/01/24	JAN	484.79
DMB-2	84/01/24	JAN	00	G41-F24	84/01/24	JAN	483.83
DMB-20A	84/01/24	JAN	476.58	G41-G13	84/01/24	JAN	486.16
DMB-21	84/01/24	JAN	474.04	G41-G14A	84/01/24	JAN	485.95
DMB-22	84/01/24	JAN	475.74	G41-G14B	84/01/24	JAN	485.98
DMB-23	84/01/24	JAN	473.98	G41-G14C	84/01/24	JAN	486.12
DMB-24	84/01/24	JAN	469.28	G41-G14D	84/01/24	JAN	485.92
DMB-25	84/01/24	JAN	472.01	G41-G14E	84/01/24	JAN	486.04
DMB-26	84/01/24	JAN	483.17	G41-G14F	84/01/24	JAN	485.92
DMB-27	84/01/24	JAN	484.28	G41-G15	84/01/24	JAN	486.00
DMB-28	84/01/24	JAN	484.36	G41-G15A	84/01/24	JAN	485.94
DMB-29	84/01/24	JAN	484.46	G41-G15B	84/01/24	JAN	485.86
DMB-3	84/01/24	JAN	481.59	G41-G21	84/01/24	JAN	484.80
DMB-4	84/01/24	JAN	485.98	G41-H17	84/01/24	JAN	00
DMB-5	84/01/24	JAN	485.74	G41-H18	84/01/24	JAN	00
DMB-5A	84/01/24	JAN	485.48	G41-H18B	84/01/24	JAN	485.52
DMB-6	84/01/24	JAN	485.88	G41-H9	84/01/24	JAN	486.18
DMB-7	84/01/24	JAN	484.78	G41-K13A	84/01/24	JAN	486.06
DMB-8	84/01/24	JAN	484.47	G41-K13B	84/01/24	JAN	00
DMB-9A	84/01/24	JAN	485.16	G41-K26	84/01/24	JAN	484.53
DMB-9B	84/01/24	JAN	485.18	G41-M11	84/01/24	JAN	481.52
DMB-9C	84/01/24	JAN	485.19	G41-N21	84/01/24	JAN	484.81
DMC-1	84/01/24	JAN	483.50	G41-F16	84/01/24	JAN	481.41
DMC-2	84/01/24	JAN	481.39	G41-F18	84/01/24	JAN	483.84
DMC-3	84/01/24	JAN	485.16	G41-F18B	84/01/24	JAN	484.34
DMI-1	84/01/24	JAN	485.11	G41-F24	84/01/24	JAN	484.85
DMI-21	84/01/24	JAN	484.76	G41-Q22	84/01/24	JAN	484.86
DMI-2U	84/01/24	JAN	484.85	TW-1	84/01/24	JAN	485.63
DMP-1	84/01/24	JAN	484.46	WW-2	84/01/24	JAN	00
DMP-2	84/01/24	JAN	483.65				
DMP-3	84/01/24	JAN	481.49				
DMS-1	84/01/24	JAN	486.67				
DMS-2	84/01/24	JAN	485.77				
DW-1A	84/01/24	JAN	482.69				
DW-1L	84/01/24	JAN	482.57				
DW-1U	84/01/24	JAN	482.14				
DW-2L	84/01/24	JAN	485.79				
DW-2U	84/01/24	JAN	485.61				
DW-3L	84/01/24	JAN	481.14				
DW-3U	84/01/24	JAN	481.10				
G40-D24	84/01/24	JAN	473.53				
G40-H16	84/01/24	JAN	475.71				
G40-H27	84/01/24	JAN	472.16				
G40-J15	84/01/24	JAN	476.71				
G40-K13	84/01/24	JAN	477.33				
G40-L23	84/01/24	JAN	476.21				
G40-M15	84/01/24	JAN	478.43				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
RE-211-1	84/01/28	JAN	482.32				
RE-211-2L	84/01/28	JAN	479.18				
RE-211-2U	84/01/28	JAN	479.38				
RE-211-3L	84/01/28	JAN	482.25				
RE-211-3U	84/01/28	JAN	482.22				
RE-213-1	84/01/28	JAN	483.92				
RE-213-2	84/01/28	JAN	484.09				
RE-213-3L	84/01/28	JAN	484.02				
RE-213-3U	84/01/28	JAN	484.00				
RE-216-1	84/01/28	JAN	484.10				
RE-216-2	84/01/28	JAN	484.49				
RE-216-3L	84/01/28	JAN	483.67				
RE-216-3U	84/01/28	JAN	483.79				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
STS-DHL-1	84/02/23	FEB	484.00				
STS-DL-1	84/02/23	FFB	486.08				
STS-OL-1	84/02/23	FFB	00				
STS-SL-1	84/02/23	FEB	485.91				



WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
	84/04/27	APR	484.30	DW-3U	84/04/27	APR	480.91
BE-211-1	84/04/27	APR	482.12	EX-10AL	84/04/27	APR	486.21
BE-211-2L	84/04/27	APR	478.61	EX-10AU	84/04/27	APR	486.19
BE-211-2U	84/04/27	APR	479.25	EX-10RI	84/04/27	APR	486.21
BE-211-3L	84/04/27	APR	482.12	EX-11AL	84/04/27	APR	485.76
BE-211-3U	84/04/27	APR	482.10	EX-11AU	84/04/27	APR	488.80
RE-213-1	84/04/27	APR	483.44	EX-11RI	84/04/27	APR	485.74
BE-213-2	84/04/27	APR	484.05	EX-11RU	84/04/27	APR	485.79
BE-213-3L	84/04/27	APR	483.93	EX-12AL	84/04/27	APR	485.79
RE-213-3U	84/04/27	APR	483.93	EX-12AU	84/04/27	APR	485.78
RE-216-1	84/04/27	APR	484.03	EX-12RI	84/04/27	APR	485.82
BE-216-2	84/04/27	APR	484.30	EX-12RU	84/04/27	APR	485.95
RE-216-3L	84/04/27	APR	483.82	EX-13AL	84/04/27	APR	485.31
RE-216-3U	84/04/27	APR	483.58	EX-13RL	84/04/27	APR	485.25
DMA-10	84/04/27	APR	480.41	EX-13RU	84/04/27	APR	485.37
DMA-12	84/04/27	APR	485.68	EX-13CL	84/04/27	APR	485.38
DMA-13	84/04/27	APR	473.70	EX-13DL	84/04/27	APR	485.46
DMA-16	84/04/27	APR	474.02	EX-14AL	84/04/27	APR	485.04
DMA-18	84/04/27	APR	476.28	EX-14AU	84/04/27	APR	485.04
DMA-19	84/04/27	APR	485.11	EX-14BL	84/04/27	APR	485.11
DMA-20	84/04/27	APR	476.28	EX-14RU	84/04/27	APR	485.06
DMA-22R	84/04/27	APR	488.73	EX-15AL	84/04/27	APR	484.05
DMA-29	84/04/27	APR	467.78	EX-15AU	84/04/27	APR	484.29
DMA-31	84/04/27	APR	483.46	EX-15RL	84/04/27	APR	484.30
DMA-32A	84/04/27	APR	482.85	EX-16AL	84/04/27	APR	485.76
DMA-34	84/04/27	APR	467.89	EX-16AU	84/04/27	APR	485.71
DMA-4	84/04/27	APR	484.22	EX-16BL	84/04/27	APR	485.86
DMA-47	84/04/27	APR	474.17	EX-1AL	84/04/27	APR	471.98
DMA-48	84/04/27	APR	468.61	EX-1AU	84/04/27	APR	471.92
DMB-10	84/04/27	APR	476.30	EX-1BU	84/04/27	APR	472.11
DMB-11	84/04/27	APR	478.83	EX-2AL	84/04/27	APR	474.39
DMB-12	84/04/27	APR	477.35	EX-2AU	84/04/27	APR	474.60
DMB-13	84/04/27	APR	473.57	EX-2CI	84/04/27	APR	474.79
DMB-18	84/04/27	APR	474.73	EX-3AL	84/04/27	APR	474.24
DMB-19	84/04/27	APR	473.34	EX-3AU	84/04/27	APR	474.27
DMB-1A	84/04/27	APR	486.15	EX-3BL	84/04/27	APR	474.27
DMB-20A	84/04/27	APR	476.52	EX-3BU	84/04/27	APR	474.27
DMB-21	84/04/27	APR	474.19	EX-3CL	84/04/27	APR	474.09
DMB-22	84/04/27	APR	00	EX-4AI	84/04/27	APR	474.84
DMB-23	84/04/27	APR	474.04	EX-4AU	84/04/27	APR	474.69
DMB-24	84/04/27	APR	469.31	EX-4BL	84/04/27	APR	474.81
DMB-25	84/04/27	APR	472.14	EX-4BU	84/04/27	APR	474.83
DMB-26	84/04/27	APR	483.11	EX-5AI	84/04/27	APR	478.34
DMB-27	84/04/27	APR	484.28	EX-5AU	84/04/27	APR	00
DMB-28	84/04/27	APR	484.30	EX-5RL	84/04/27	APR	478.89
DMB-29	84/04/27	APR	484.52	EX-5CL	84/04/27	APR	479.55
DMB-3	84/04/27	APR	481.65	EX-6AL	84/04/27	APR	483.03
DMB-4	84/04/27	APR	486.02	EX-6AU	84/04/27	APR	482.96
DMB-5	84/04/27	APR	485.70	EX-6BL	84/04/27	APR	483.56
DMB-5A	84/04/27	APR	485.39	EX-6BU	84/04/27	APR	483.28
DMB-6	84/04/27	APR	485.79	EX-7AI	84/04/27	APR	482.33
DMB-7	84/04/27	APR	484.78	EX-7BL	84/04/27	APR	482.11
DMB-8	84/04/27	APR	484.32	EX-7BU	84/04/27	APR	481.50
DMB-9A	84/04/27	APR	485.05	EX-7C	84/04/27	APR	481.15
DMB-9R	84/04/27	APR	485.06	EX-8AL	84/04/27	APR	483.10
DMB-9C	84/04/27	APR	485.06	EX-8AU	84/04/27	APR	482.59
DMC-1	84/04/27	APR	483.50	EX-8BL	84/04/27	APR	481.59
DMC-2	84/04/27	APR	481.59	EX-8BU	84/04/27	APR	481.59
DMC-3	84/04/27	APR	485.07	EX-9AL	84/04/27	APR	486.87
DHI-1	84/04/27	APR	485.14	EX-9AU	84/04/27	APR	486.06
DHI-2L	84/04/27	APR	484.77	EX-9BL	84/04/27	APR	486.10
DHI-2U	84/04/27	APR	484.59	EX-9BU	84/04/27	APR	486.10
DMF-1	84/04/27	APR	484.52	G40-I24	84/04/27	APR	473.62
DMF-2	84/04/27	APR	483.74	G40-H16	84/04/27	APR	475.77
DMF-3	84/04/27	APR	481.46	G40-H27	84/04/27	APR	472.31
DMS-1	84/04/27	APR	486.15	G40-J15	84/04/27	APR	476.56
DMS-2	84/04/27	APR	485.38	G40-K13	84/04/27	APR	477.18
DW-1A	84/04/27	APR	482.48	G40-L23	84/04/27	APR	476.30
DW-1L	84/04/27	APR	482.48	G40-M15	84/04/27	APR	478.61
DW-1U	84/04/27	APR	482.08	G40-F10A	84/04/27	APR	478.43
DW-2L	84/04/27	APR	485.76	G40-F20	84/04/27	APR	479.16
DW-2U	84/04/27	APR	485.70	G40-O7	84/04/27	APR	477.19
DW-3L	84/04/27	APR	480.98	G40-R23	84/04/27	APR	478.41
				G40-S17	84/04/27	APR	480.98
				G40-S17A	84/04/27	APR	481.29

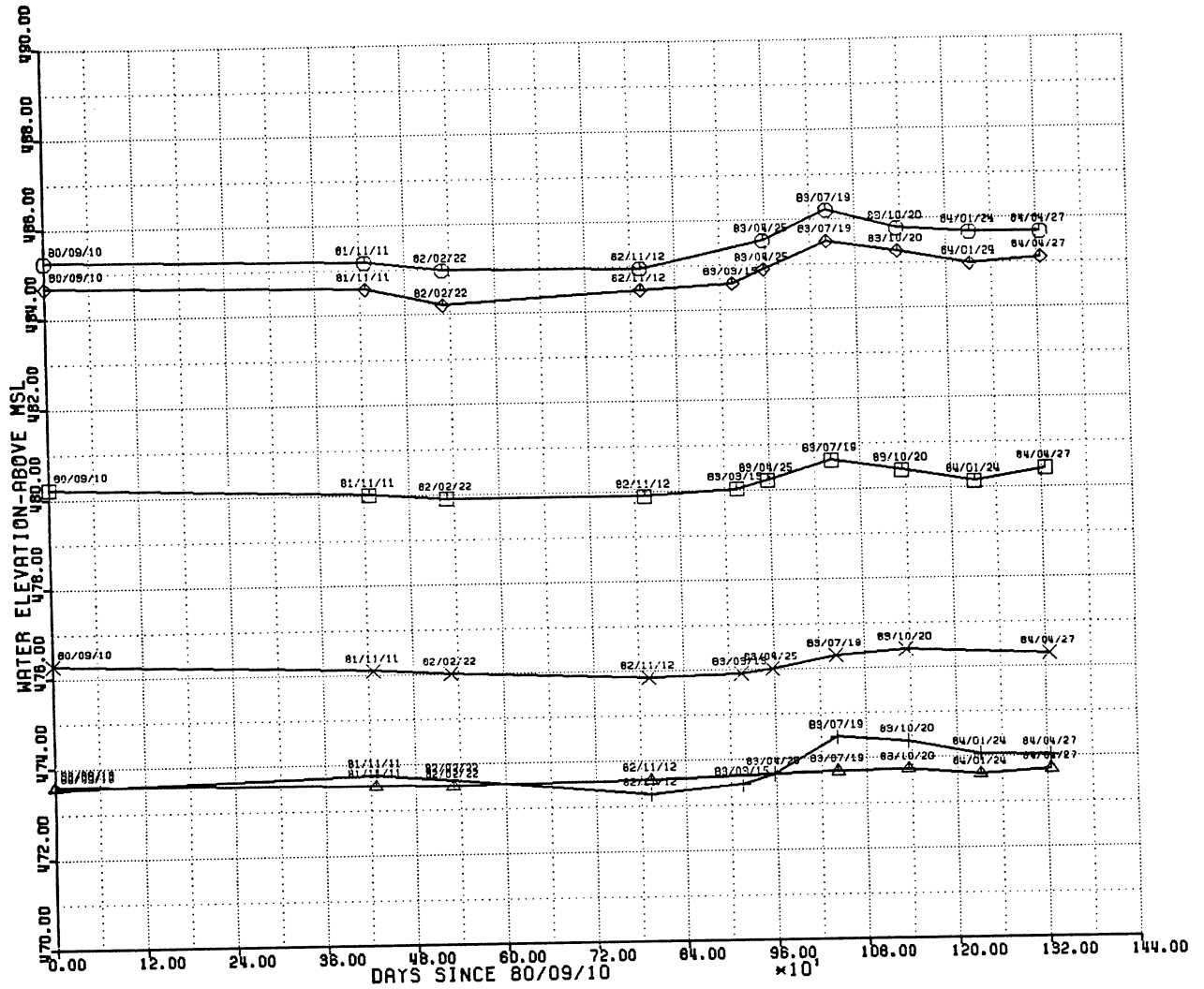
WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
G40-T30	84/04/27	APR	481.33				
G40-X1	84/04/27	APR	482.76				
G40-X1A	84/04/27	APR	479.95				
G40-Y15	84/04/27	APR	483.78				
G40-Y15A	84/04/27	APR	485.22				
G40-Y21	84/04/27	APR	482.55				
G40-Y22	84/04/27	APR	480.46				
G40-Y26	84/04/27	APR	482.01				
G41-A23	84/04/27	APR	482.67				
G41-A24	84/04/27	APR	482.87				
G41-B12	84/04/27	APR	485.96				
G41-C15	84/04/27	APR	485.65				
G41-C32	84/04/27	APR	482.89				
G41-E13	84/04/27	APR	486.01				
G41-E17	84/04/27	APR	485.51				
G41-E19A	84/04/27	APR	484.90				
G41-E22	84/04/27	APR	484.43				
G41-F22A	84/04/27	APR	464.67				
G41-F24	84/04/27	APR	483.89				
G41-G13	84/04/27	APR	486.22				
G41-G14A	84/04/27	APR	485.92				
G41-G14R	84/04/27	APR	485.86				
G41-G14C	84/04/27	APR	486.03				
G41-G14D	84/04/27	APR	485.95				
G41-G14E	84/04/27	APR	485.95				
G41-G14F	84/04/27	APR	485.86				
G41-G15	84/04/27	APR	485.88				
G41-G15A	84/04/27	APR	485.85				
G41-G15B	84/04/27	APR	485.89				
G41-G21	84/04/27	APR	484.77				
G41-H18R	84/04/27	APR	485.49				
G41-H9	84/04/27	APR	486.03				
G41-K13	84/04/27	APR	485.72				
G41-K13A	84/04/27	APR	485.97				
G41-K26	84/04/27	APR	484.50				
G41-M11	84/04/27	APR	481.52				
G41-N21	84/04/27	APR	484.76				
G41-P16	84/04/27	APR	481.51				
G41-P1R	84/04/27	APR	483.78				
G41-P18B	84/04/27	APR	484.31				
G41-P24	84/04/27	APR	484.73				
G41-Q22	84/04/27	APR	484.86				
TW-1	84/04/27	APR	485.59				
WF-1L	84/04/27	APR	473.33				
WF-1U	84/04/27	APR	473.55				
WF-2L	84/04/27	APR	468.20				
WF-2U	84/04/27	APR	468.05				
WF-3L	84/04/27	APR	468.29				
WF-3U	84/04/27	APR	468.24				
WF-4L	84/04/27	APR	469.70				
WF-4U	84/04/27	APR	469.42				
WF-5U	84/04/27	APR	472.11				
WF-6L	84/04/27	APR	481.52				
WF-6U	84/04/27	APR	481.52				
WF-7L	84/04/27	APR	481.59				
WF-7U	84/04/27	APR	481.51				
WW-2	84/04/27	APR	436.71				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
EX-10AL	84/05/24	MAY	486.20				
EX-10AU	84/05/24	MAY	486.27				
EX-10BL	84/05/24	MAY	486.11				
EX-10RU	84/05/24	MAY	486.54				
EX-11AL	84/05/24	MAY	485.78				
EX-11AU	84/05/24	MAY	485.78				
EX-11BL	84/05/24	MAY	485.76				
EX-11RU	84/05/24	MAY	485.80				
EX-11CL	84/05/24	MAY	485.83				
EX-12AL	84/05/24	MAY	485.85				
EX-12AU	84/05/24	MAY	485.87				
EX-12BL	84/05/24	MAY	485.80				
EX-12RU	84/05/24	MAY	485.91				
EX-13AL	84/05/24	MAY	485.22				
EX-13BL	84/05/24	MAY	.00				
EX-13RU	84/05/24	MAY	485.33				
EX-13CL	84/05/24	MAY	485.43				
EX-13DL	84/05/24	MAY	485.45				
EX-14AL	84/05/24	MAY	485.04				
EX-14AU	84/05/24	MAY	485.01				
EX-14BL	84/05/24	MAY	485.00				
EX-14RU	84/05/24	MAY	485.05				
EX-15AL	84/05/24	MAY	484.11				
EX-15AU	84/05/24	MAY	484.35				
EX-15BL	84/05/24	MAY	484.37				
EX-16AL	84/05/24	MAY	485.82				
EX-16AU	84/05/24	MAY	485.83				
EX-16BL	84/05/24	MAY	485.94				
EX-1AL	84/05/24	MAY	472.03				
EX-1AU	84/05/24	MAY	471.98				
EX-1BL	84/05/24	MAY	471.98				
EX-1RU	84/05/24	MAY	472.14				
EX-2AL	84/05/24	MAY	474.43				
EX-2AU	84/05/24	MAY	474.62				
EX-2CL	84/05/24	MAY	474.79				
EX-3AL	84/05/24	MAY	474.25				
EX-3AU	84/05/24	MAY	474.30				
EX-3BL	84/05/24	MAY	474.30				
EX-3RU	84/05/24	MAY	474.29				
EX-3CL	84/05/24	MAY	474.04				
EX-4AL	84/05/24	MAY	474.94				
EX-4AU	84/05/24	MAY	474.81				
EX-4BL	84/05/24	MAY	474.93				
EX-4RU	84/05/24	MAY	474.99				
EX-4CL	84/05/24	MAY	475.43				
EX-5AL	84/05/24	MAY	478.48				
EX-5AU	84/05/24	MAY	.00				
EX-5BL	84/05/24	MAY	478.93				
EX-5CL	84/05/24	MAY	479.46				
EX-6AL	84/05/24	MAY	482.98				
EX-6AU	84/05/24	MAY	482.98				
EX-6BL	84/05/24	MAY	483.59				
EX-6RU	84/05/24	MAY	483.33				
EX-7AL	84/05/24	MAY	482.32				
EX-7BL	84/05/24	MAY	482.07				
EX-7RU	84/05/24	MAY	482.60				
EX-7C	84/05/24	MAY	481.18				
EX-8AL	84/05/24	MAY	483.06				
EX-8AU	84/05/24	MAY	482.53				
EX-8BL	84/05/24	MAY	481.59				
EX-8RU	84/05/24	MAY	481.61				
EX-9AL	84/05/24	MAY	486.69				
EX-9AU	84/05/24	MAY	486.04				
EX-9BL	84/05/24	MAY	486.05				
EX-9RU	84/05/24	MAY	486.14				
WF-1L	84/05/24	MAY	473.23				
WF-1U	84/05/24	MAY	473.46				
WF-2L	84/05/24	MAY	468.64				
WF-2U	84/05/24	MAY	468.84				
WF-3L	84/05/24	MAY	468.23				
WF-3U	84/05/24	MAY	468.23				
WF-4L	84/05/24	MAY	469.67				
WF-4U	84/05/24	MAY	469.48				
WF-5L	84/05/24	MAY	.00				
WF-5U	84/05/24	MAY	472.01				
WF-6L	84/05/24	MAY	480.38				
WF-6U	84/05/24	MAY	481.52				
WF-7L	84/05/24	MAY	481.61				
WF-7U	84/05/24	MAY	481.55				

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
RE-211-1	84/07/31	JUL	482.11	DW-14	84/07/31	JUL	482.54
RE-211-2L	84/07/31	JUL	478.66	DW-1L	84/07/31	JUL	482.45
BE-211-2U	84/07/31	JUL	479.22	DW-1U	84/07/31	JUL	482.07
RE-211-3L	84/07/31	JUL	482.09	DW-2L	84/07/31	JUL	485.83
RE-211-3U	84/07/31	JUL	482.05	DW-2U	84/07/31	JUL	485.73
BE-213-1	84/07/31	JUL	484.01	DW-3L	84/07/31	JUL	484.10
RE-213-2	84/07/31	JUL	484.20	DW-3U	84/07/31	JUL	480.99
RE-213-3L	84/07/31	JUL	484.09	EX-10AL	84/07/31	JUL	486.14
BE-213-3U	84/07/31	JUL	484.09	EX-10AU	84/07/31	JUL	486.21
RE-216-1	84/07/31	JUL	484.11	EX-10BL	84/07/31	JUL	486.21
RE-216-2	84/07/31	JUL	484.52	EX-10BU	84/07/31	JUL	486.55
RE-216-3L	84/07/31	JUL	483.75	EX-11AL	84/07/31	JUL	485.82
RE-216-3U	84/07/31	JUL	483.76	EX-11AU	84/07/31	JUL	485.82
DMA-10	84/07/31	JUL	480.55	EX-11BL	84/07/31	JUL	485.84
DMA-12	84/07/31	JUL	486.22	EX-11BU	84/07/31	JUL	485.87
DMA-13	84/07/31	JUL	473.64	EX-11CL	84/07/31	JUL	485.91
DMA-14	84/07/31	JUL	473.84	EX-12AL	84/07/31	JUL	485.89
DMA-1R	84/07/31	JUL	476.28	EX-12AU	84/07/31	JUL	485.84
DMA-19	84/07/31	JUL	485.11	EX-12BL	84/07/31	JUL	485.87
DMA-1S	84/07/31	JUL	00	EX-12BU	84/07/31	JUL	485.95
DMA-20	84/07/31	JUL	476.44	EX-13AL	84/07/31	JUL	485.46
DMA-22R	84/07/31	JUL	488.83	EX-13BL	84/07/31	JUL	485.51
DMA-22H	84/07/31	JUL	488.82	EX-13BU	84/07/31	JUL	485.50
DMA-29	84/07/31	JUL	467.66	EX-13CL	84/07/31	JUL	485.50
DMA-3	84/07/31	JUL	00	EX-13DL	84/07/31	JUL	485.58
DMA-31	84/07/31	JUL	483.52	EX-14AL	84/07/31	JUL	485.12
DMA-32A	84/07/31	JUL	482.94	EX-14AU	84/07/31	JUL	485.15
DMA-34	84/07/31	JUL	467.49	EX-14BL	84/07/31	JUL	485.14
DMA-3R	84/07/31	JUL	00	EX-14BU	84/07/31	JUL	485.18
DMA-4	84/07/31	JUL	484.34	EX-15AL	84/07/31	JUL	484.13
DMA-47	84/07/31	JUL	474.17	EX-15AU	84/07/31	JUL	484.37
DMA-4R	84/07/31	JUL	468.64	EX-15BL	84/07/31	JUL	484.45
DMB-10	84/07/31	JUL	475.94	EX-15BU	84/07/31	JUL	485.88
DMB-11	84/07/31	JUL	478.92	EX-16AL	84/07/31	JUL	485.89
DMB-12	84/07/31	JUL	477.35	EX-16AU	84/07/31	JUL	485.95
DMB-13	84/07/31	JUL	473.64	EX-16BL	84/07/31	JUL	471.99
DMB-16	84/07/31	JUL	00	EX-16BU	84/07/31	JUL	471.93
DMB-17	84/07/31	JUL	00	EX-17AL	84/07/31	JUL	472.06
DMB-1R	84/07/31	JUL	474.79	EX-17AU	84/07/31	JUL	472.18
DMB-19	84/07/31	JUL	473.71	EX-17BU	84/07/31	JUL	474.38
DMB-1A	84/07/31	JUL	486.25	EX-2AL	84/07/31	JUL	474.62
DMB-2	84/07/31	JUL	00	EX-2AU	84/07/31	JUL	474.16
DMB-20A	84/07/31	JUL	476.57	EX-3AL	84/07/31	JUL	474.18
DMB-21	84/07/31	JUL	474.04	EX-3AU	84/07/31	JUL	474.18
DMB-22	84/07/31	JUL	475.82	EX-3BL	84/07/31	JUL	474.15
DMB-23	84/07/31	JUL	474.01	EX-3BU	84/07/31	JUL	473.82
DMB-24	84/07/31	JUL	469.25	EX-3CL	84/07/31	JUL	474.82
DMB-25	84/07/31	JUL	472.14	EX-4AL	84/07/31	JUL	474.68
DMB-26	84/07/31	JUL	483.20	EX-4AU	84/07/31	JUL	474.76
DMB-27	84/07/31	JUL	484.41	EX-4BL	84/07/31	JUL	474.79
DMB-2R	84/07/31	JUL	484.39	EX-4BU	84/07/31	JUL	00
DMB-29	84/07/31	JUL	484.64	EX-4CL	84/07/31	JUL	478.49
DMB-3	84/07/31	JUL	481.62	EX-5AL	84/07/31	JUL	472.53
DMB-4	84/07/31	JUL	485.89	EX-5AU	84/07/31	JUL	478.95
DMB-5	84/07/31	JUL	485.77	EX-5BL	84/07/31	JUL	00
DMB-5A	84/07/31	JUL	485.45	EX-5BU	84/07/31	JUL	479.52
DMB-6	84/07/31	JUL	485.89	EX-5CL	84/07/31	JUL	482.92
DMB-7	84/07/31	JUL	484.53	EX-6AL	84/07/31	JUL	482.93
DMB-8	84/07/31	JUL	484.26	EX-6AU	84/07/31	JUL	483.52
DMB-9A	84/07/31	JUL	485.15	EX-6BL	84/07/31	JUL	483.22
DMB-9R	84/07/31	JUL	485.16	EX-6BU	84/07/31	JUL	482.26
DMB-9C	84/07/31	JUL	485.18	EX-7AL	84/07/31	JUL	481.90
DMC-1	84/07/31	JUL	483.47	EX-7BU	84/07/31	JUL	481.74
DMC-2	84/07/31	JUL	481.44	EX-7C	84/07/31	JUL	481.07
DMC-3	84/07/31	JUL	485.13	EX-8AL	84/07/31	JUL	482.98
DMI-1	84/07/31	JUL	485.20	EX-8AU	84/07/31	JUL	482.44
DMI-2L	84/07/31	JUL	484.84	EX-8BU	84/07/31	JUL	481.48
DMI-2U	84/07/31	JUL	485.11	EX-9AL	84/07/31	JUL	481.48
DMP-1	84/07/31	JUL	484.58	EX-9AU	84/07/31	JUL	486.46
DMP-2	84/07/31	JUL	483.74	EX-9BL	84/07/31	JUL	486.13
DMP-3	84/07/31	JUL	481.55	EX-9BU	84/07/31	JUL	486.30
DMS-1	84/07/31	JUL	486.52	EX-9BU	84/07/31	JUL	486.17
DMS-2	84/07/31	JUL	485.29	G40-D24	84/07/31	JUL	473.65
				G40-H16	84/07/31	JUL	475.83
				G40-H27	84/07/31	JUL	472.28
				G40-J15	84/07/31	JUL	478.85
				G40-K13	84/07/31	JUL	477.30
				G40-L23	84/07/31	JUL	476.27

WELL NUMBER	DATE	MONTH	WELL ELEVATION	WELL NUMBER	DATE	MONTH	WELL ELEVATION
G40-M15	84/07/31	JUL	478.26				
G40-F10A	84/07/31	JUL	478.49				
G40-P20	84/07/31	JUL	479.14				
G40-Q7	84/07/31	JUL	477.28				
G40-R23	84/07/31	JUL	478.62				
G40-S17	84/07/31	JUL	481.09				
G40-S17A	84/07/31	JUL	481.09				
G40-T30	84/07/31	JUL	481.48				
G40-X1	84/07/31	JUL	482.82				
G40-X1A	84/07/31	JUL	479.73				
G40-Y15	84/07/31	JUL	483.86				
G40-Y15A	84/07/31	JUL	485.15				
G40-Y21	84/07/31	JUL	482.70				
G40-Y22	84/07/31	JUL	480.61				
G40-Y26	84/07/31	JUL	482.13				
G41-A23	84/07/31	JUL	482.79				
G41-A24	84/07/31	JUL	483.03				
G41-R12	84/07/31	JUL	486.16				
G41-C15	84/07/31	JUL	485.77				
G41-C15R	84/07/31	JUL	00				
G41-C15C	84/07/31	JUL	00				
G41-C32	84/07/31	JUL	483.07				
G41-E13	84/07/31	JUL	486.20				
G41-E17	84/07/31	JUL	485.63				
G41-E19A	84/07/31	JUL	484.96				
G41-E22	84/07/31	JUL	484.65				
G41-E22A	84/07/31	JUL	484.88				
G41-F24	84/07/31	JUL	484.04				
G41-G13	84/07/31	JUL	486.31				
G41-G14A	84/07/31	JUL	485.98				
G41-G14B	84/07/31	JUL	485.91				
G41-G14C	84/07/31	JUL	486.09				
G41-G14D	84/07/31	JUL	485.98				
G41-G14E	84/07/31	JUL	485.95				
G41-G14F	84/07/31	JUL	485.89				
G41-G15	84/07/31	JUL	485.91				
G41-G15A	84/07/31	JUL	485.85				
G41-G21	84/07/31	JUL	484.92				
G41-H17	84/07/31	JUL	00				
G41-H18	84/07/31	JUL	00				
G41-H18R	84/07/31	JUL	485.63				
G41-H9	84/07/31	JUL	486.06				
G41-K13	84/07/31	JUL	485.76				
G41-K13A	84/07/31	JUL	486.12				
G41-K13B	84/07/31	JUL	00				
G41-K26	84/07/31	JUL	484.62				
G41-K26	84/07/31	JUL	484.62				
G41-M11	84/07/31	JUL	481.49				
G41-N21	84/07/31	JUL	484.94				
G41-P16	84/07/31	JUL	481.32				
G41-P18	84/07/31	JUL	483.72				
G41-P18B	84/07/31	JUL	484.22				
G41-P24	84/07/31	JUL	484.85				
G41-Q22	84/07/31	JUL	484.95				
TW-1	84/07/31	JUL	485.64				
WP-1L	84/07/31	JUL	473.19				
WP-1U	84/07/31	JUL	473.42				
WP-2L	84/07/31	JUL	468.17				
WP-2U	84/07/31	JUL	467.99				
WP-3I	84/07/31	JUL	468.24				
WP-3U	84/07/31	JUL	468.20				
WP-4L	84/07/31	JUL	469.67				
WP-4U	84/07/31	JUL	469.44				
WP-5L	84/07/31	JUL	00				
WP-5U	84/07/31	JUL	472.05				
WP-6L	84/07/31	JUL	481.47				
WP-6U	84/07/31	JUL	481.48				
WP-7L	84/07/31	JUL	481.54				
WP-7U	84/07/31	JUL	481.17				
WW-2	84/07/31	JUL	481.96				

**WATER LEVEL PLOTS**  
WELEV VS DATE



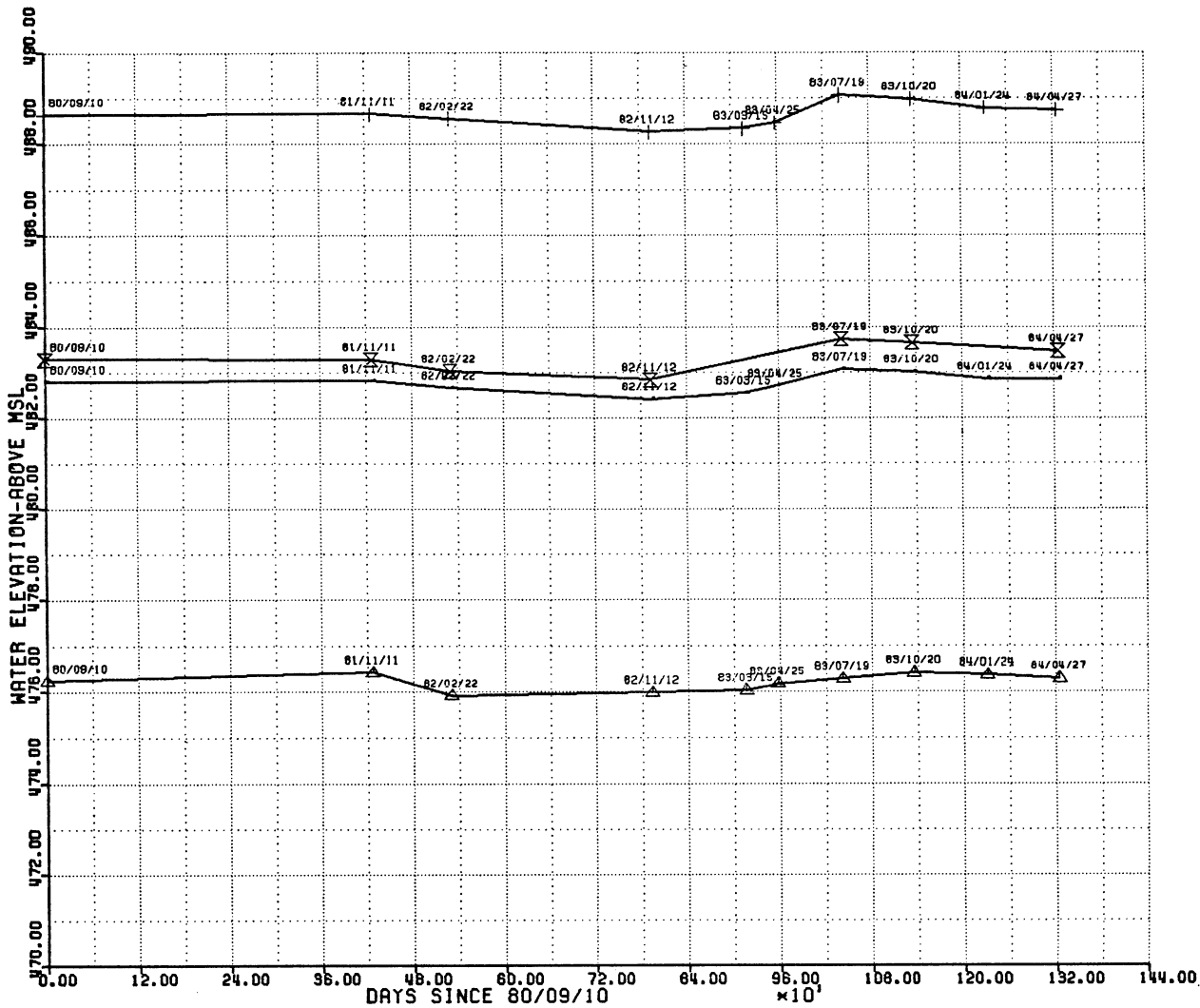
**LEGEND:**

- HOLE DMA-10
- HOLE DMA-12
- △ HOLE DMA-13
- × HOLE DMA-18
- ◇ HOLE DMA-19

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE WISCONSIN	COUNTY FOREST
DRAWN BY	DATE 07/84	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-20</b>		REVISION NO

# WATER LEVEL PLOTS

WELEV VS DATE



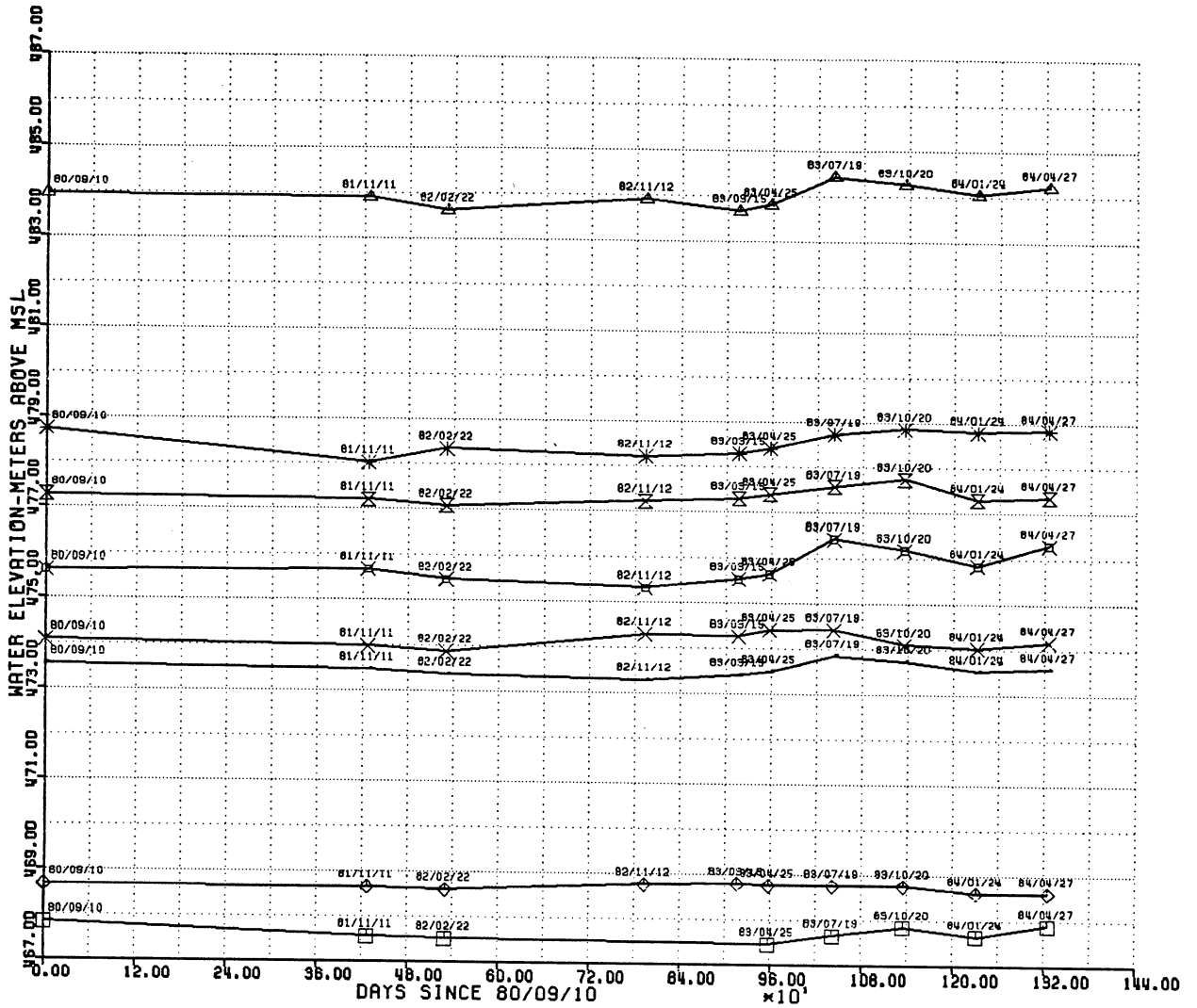
**LEGEND:**

▲	HOLE DMA-20
+	HOLE DMA-22B
X	HOLE DMA-29
⊗	HOLE DMA-31
—	HOLE DMA-32A

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
	10/84		
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SIGNATURE	DATE
DRAWING NO.	<b>FIGURE B-21</b>		REVISION NO.
	OF		

# WATER LEVEL PLOTS

WELEV VS DATE



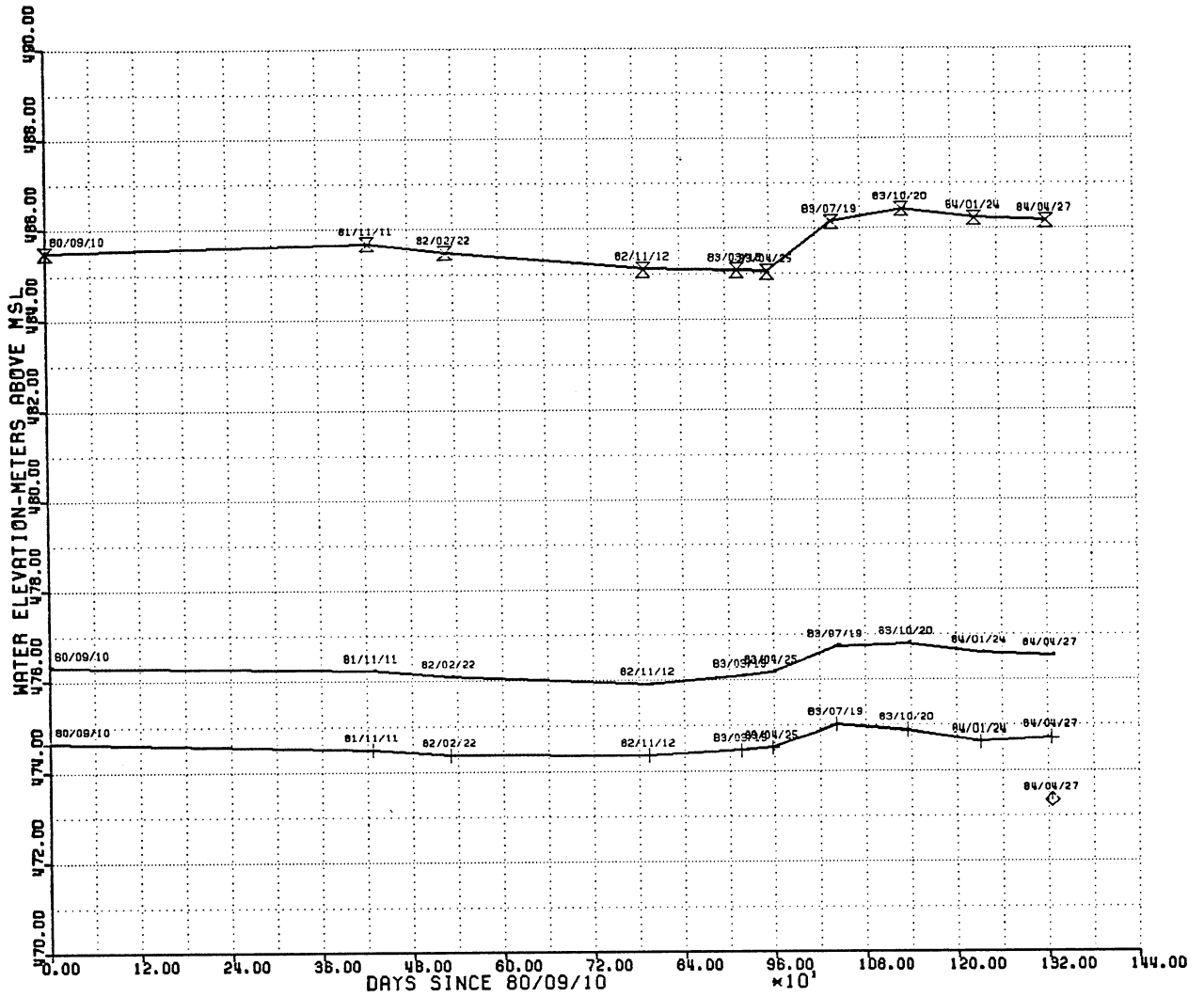
**LEGEND:**

□	HOLE DMB-34
△	HOLE DMB-4
+	HOLE DMB-43
×	HOLE DMB-47
◇	HOLE DMB-48
*	HOLE DMB-10
⊗	HOLE DMB-11
⊙	HOLE DMB-12
—	HOLE DMB-19

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE		CHECKED BY
	10/84		
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-22</b>		SHEET
			OF
			REVISION NO



**WATER LEVEL PLOTS**  
 MELEV VS DATE



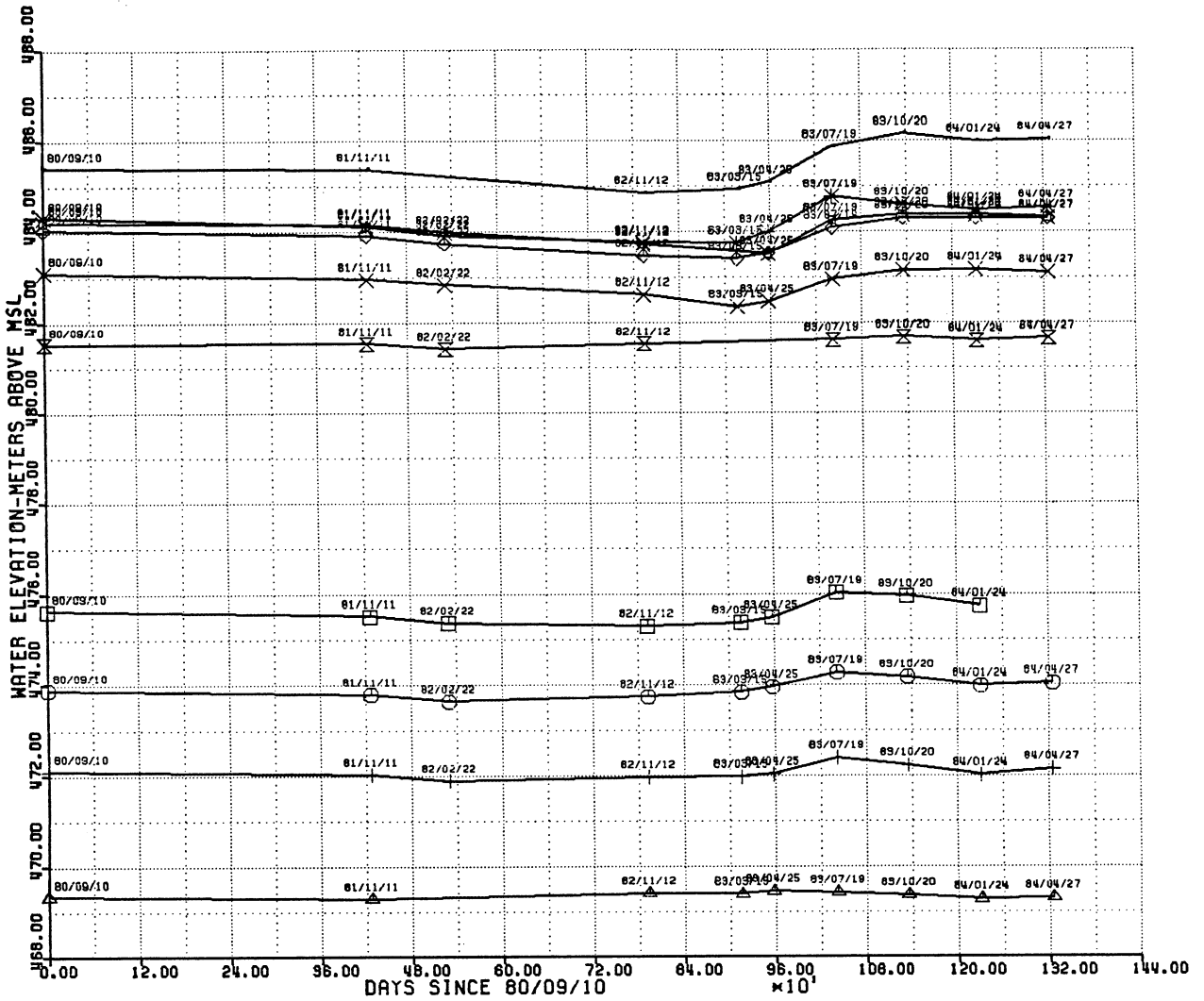
**LEGEND:**

- +— HOLE DMB-18
- X— HOLE DMB-1A
- ◇— HOLE DMB-20A
- HOLE DMB-21

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY		DATE	07/84
APPROVED BY		DATE	
APPROVED BY		DATE	
DRAWING NO.	<b>FIGURE B-23</b>		SHEET
		OF	
		REVISION NO.	

# WATER LEVEL PLOTS

MELEV VS DATE

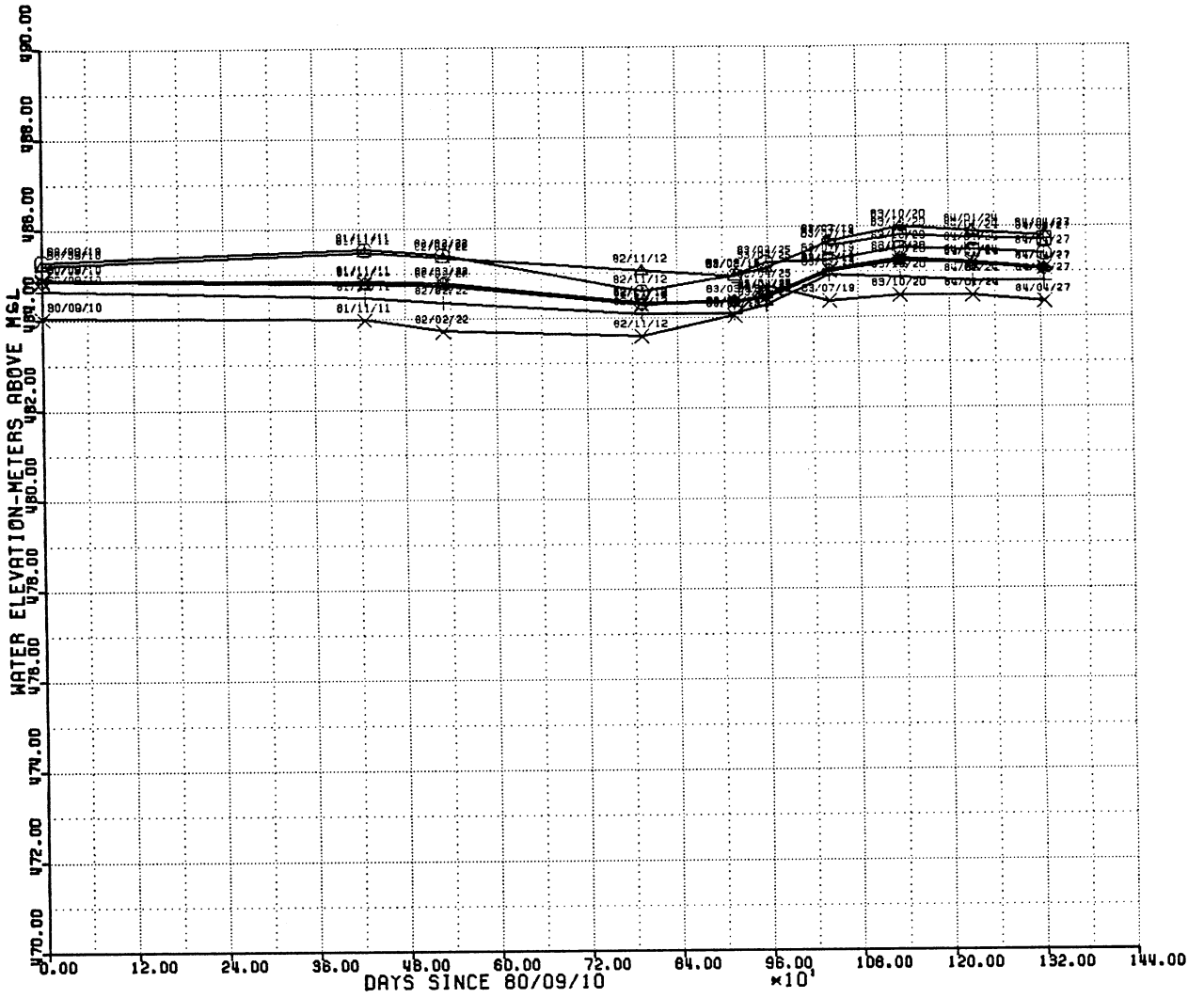


**LEGEND:**

□	HOLE DMB-22
○	HOLE DMB-23
△	HOLE DMB-24
+	HOLE DMB-25
×	HOLE DMB-26
◇	HOLE DMB-27
×	HOLE DMB-28
×	HOLE DMB-29
×	HOLE DMB-3
—	HOLE DMB-4

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
<b>TITLE</b>			
<b>PIEZOMETER HYDROGRAPHS</b>			
<b>SCALE</b>	NONE	<b>STATE</b>	WISCONSIN
		<b>COUNTY</b>	FOREST
<b>DRAWN BY</b>		<b>CHECKED BY</b>	
		8/84	
<b>APPROVED BY</b>		<b>APPROVED BY</b>	
<b>DRAWING NO</b>	<b>FIGURE B-24</b>		<b>REVISION NO</b>

**WATER LEVEL PLOTS**  
WELEV VS DATE



**LEGEND:**

□	HOLE DMB-5
△	HOLE DMB-5A
▽	HOLE DMB-6
+	HOLE DMB-7
x	HOLE DMB-8
⊗	HOLE DMB-9A
⊙	HOLE DMB-9B
*	HOLE DMB-9C

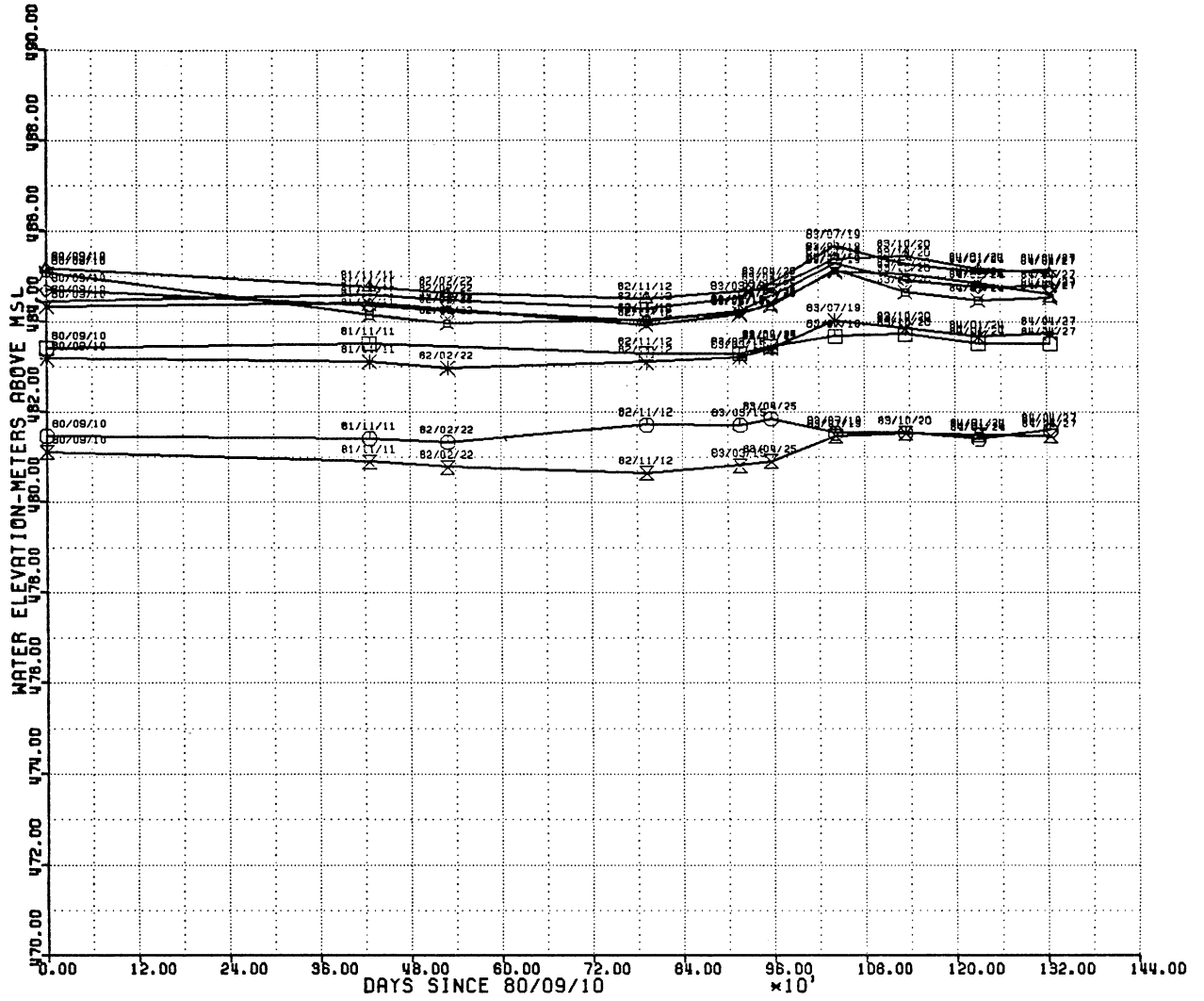
**EXXON MINERALS COMPANY**  
**CRANDON PROJECT**

TITLE  
**PIEZOMETER HYDROGRAPHS**

SCALE	NONE	STATE	WISCONSIN	COUNTY	FOREST
DRAWN BY	DATE		CHECKED BY	DATE	
APPROVED BY	DATE		APPROVED BY	DATE	
APPROVED BY	DATE		SCALE	DATE	
DRAWING NO	<b>FIGURE B-25</b>			SHEET	REVISION NO

# WATER LEVEL PLOTS

MELEV VS DATE

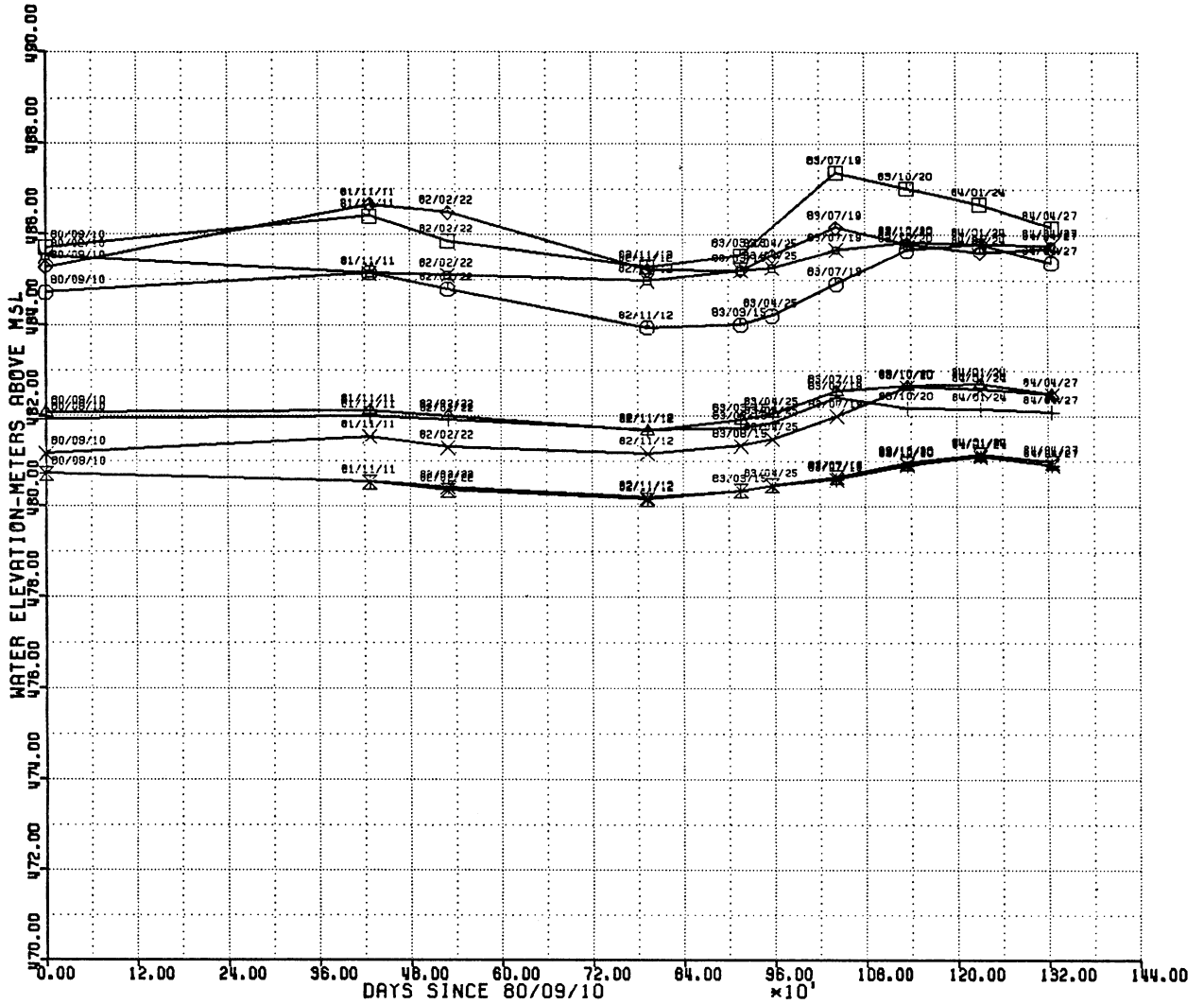


**LEGEND:**

□	HOLE DMC-1
○	HOLE DMC-2
△	HOLE DMC-3
+	HOLE DMI-1
×	HOLE DMI-2U
◇	HOLE DMI-2L
+	HOLE DMP-1
×	HOLE DMP-2
◇	HOLE DMP-3

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE <b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE WISCONSIN	COUNTY FOREST
DRAWN BY	DATE 07/84	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-26</b>		SHEET _____ OF _____

**WATER LEVEL PLOTS**  
MELEV VS DATE

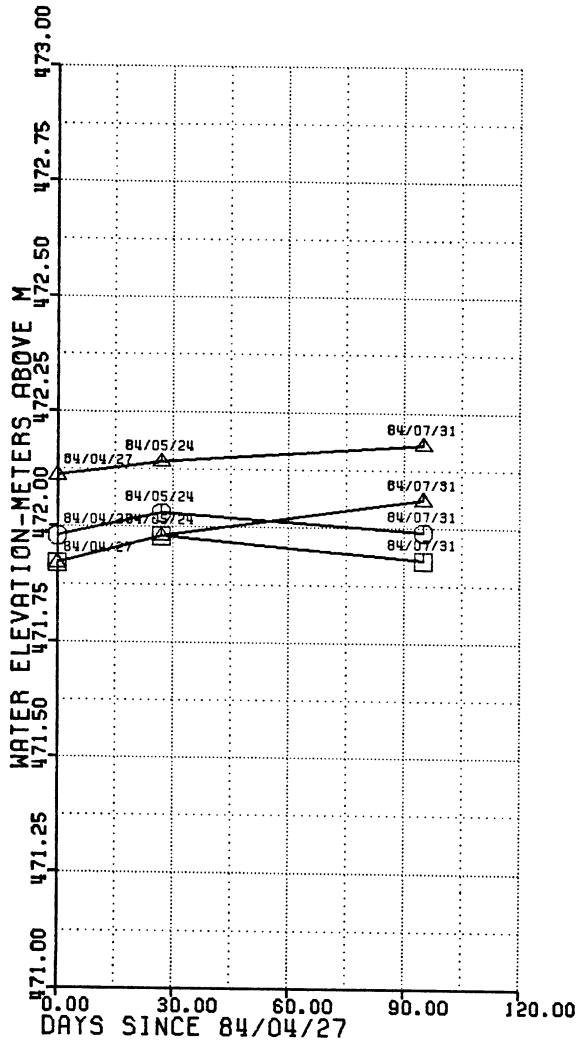


**LEGEND:**

□	HOLE DMS-1
○	HOLE DMS-2
△	HOLE DW-1A
+	HOLE DW-1U
×	HOLE DW-1L
◇	HOLE DW-2U
+	HOLE DW-2L
×	HOLE DW-3U
×	HOLE DW-3L

<b>EXXON MINERALS COMPANY</b>					
<b>CRANDON PROJECT</b>					
TITLE					
<b>PIEZOMETER HYDROGRAPHS</b>					
SCALE	NONE	STATE	WISCONSIN	COUNTY	FOREST
DRAWN BY	DATE		8/84	CHECKED BY	DATE
APPROVED BY	DATE			APPROVED BY	DATE
APPROVED BY	DATE			APPROVED BY	DATE
DRAWING NO	<b>FIGURE B-27</b>			SHEET	REVISION NO

**WATER LEVEL PLOTS**  
MELEV VS DATE

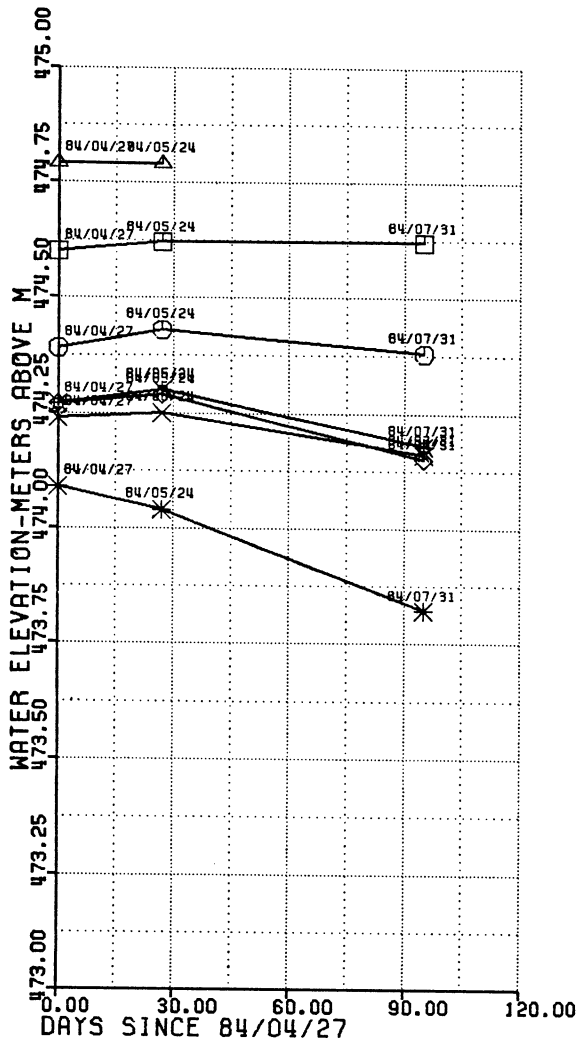


**LEGEND:**

- — HOLE EX-1RU
- — HOLE EX-1RL
- △ — HOLE EX-1BU
- ▲ — HOLE EX-1BL

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
<small>TITLE</small>			
<b>PIEZOMETER HYDROGRAPHS</b>			
<small>SCALE</small>	<b>NONE</b>	<small>STATE</small>	<b>WISCONSIN</b>
		<small>COUNTY</small>	<b>FOREST</b>
<small>DRAWN BY</small>		<small>CHECKED BY</small>	
	<b>10/84</b>		
<small>APPROVED BY</small>		<small>APPROVED BY</small>	
<small>APPROVED BY</small>		<small>CHECKED BY</small>	
<b>FIGURE B-28</b>			<small>REVISION NO</small>

**WATER LEVEL PLOTS**  
WELEV VS DATE



**LEGEND:**

- — HOLE EX-2AU
- — HOLE EX-2AL
- △ — HOLE EX-2CL
- ⊕ — HOLE EX-3AU
- × — HOLE EX-3AL
- ◇ — HOLE EX-3BU
- ⊗ — HOLE EX-3BL
- \* — HOLE EX-3CL

**EXXON MINERALS COMPANY**  
CRANDON PROJECT

TITLE  
**PIEZOMETER HYDROGRAPHS**

SCALE NONE STATE WISCONSIN COUNTY FOREST

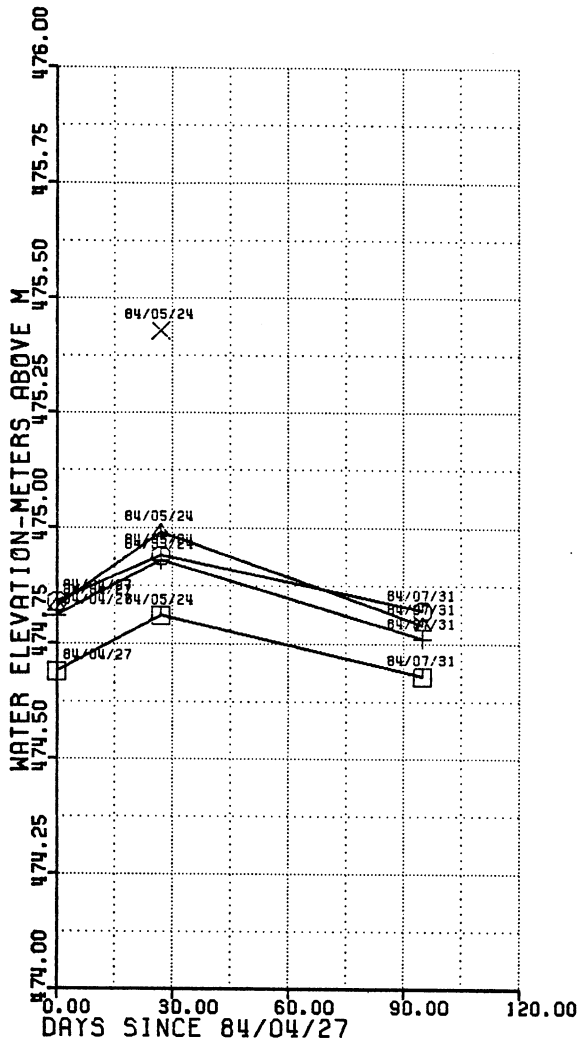
DRAWN BY DATE 8/84 CHECKED BY DATE

APPROVED BY DATE APPROVED BY DATE

APPROVED BY DATE SAISON DATE

DRAWING NO **FIGURE B-29** SHEET OF REVISION NO

**WATER LEVEL PLOTS**  
WELEV VS DATE



**LEGEND:**

- — HOLE EX-4AU
- — HOLE EX-4RL
- △ — HOLE EX-4BU
- ⊕ — HOLE EX-4BL
- × — HOLE EX-4CL

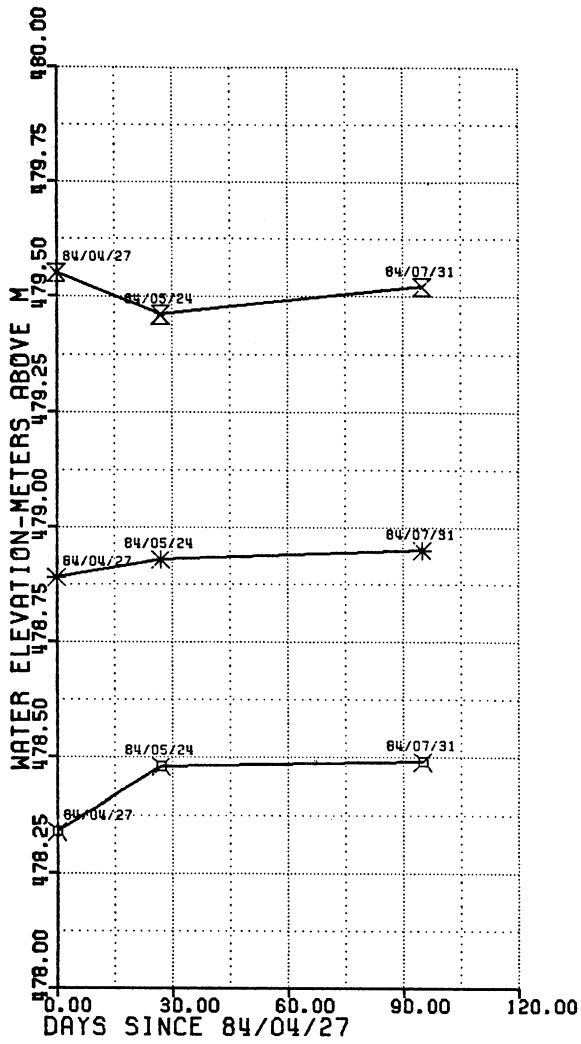
**EXXON MINERALS COMPANY**  
CRANDON PROJECT

**PIEZOMETER HYDROGRAPHS**

SCALE	NONE	STATE	WISCONSIN	COUNTY	FOREST
DRAWN BY	DATE		CHECKED BY	DATE	
APPROVED BY	DATE		APPROVED BY	DATE	
APPROVED BY	DATE		SCALE	DATE	
DRAWING NO	<b>FIGURE B-30</b>			SHEET	REVISION NO



**WATER LEVEL PLOTS**  
MELEV VS DATE



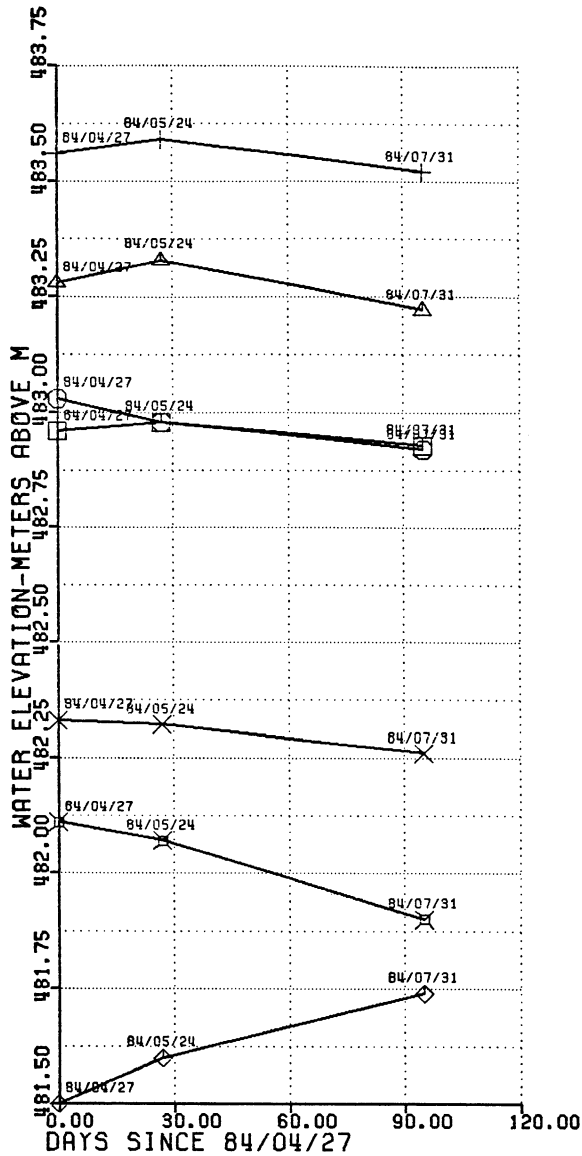
**LEGEND:**

- X— HOLE EX-5AL
- \*— HOLE EX-5BL
- X— HOLE EX-5CL

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SCALE	DATE
DRAWING NO	<b>FIGURE B-3 1</b>		SHEET _____ OF _____
			REVISION NO

# WATER LEVEL PLOTS

WELEV VS DATE

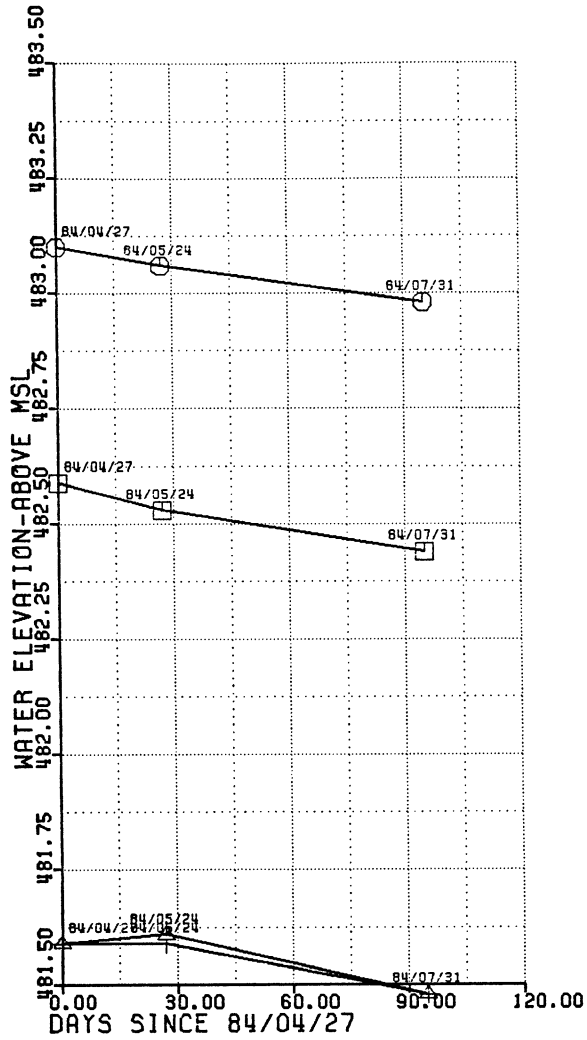


**LEGEND:**

□	HOLE EX-6AU
○	HOLE EX-6AL
△	HOLE EX-6BL
+	HOLE EX-6BL
×	HOLE EX-7AL
◇	HOLE EX-7BU
×	HOLE EX-7BL

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SCALE	DATE
DRAWING NO	<b>FIGURE B-32</b>		REVISION NO

**WATER LEVEL PLOTS**  
WELEV VS DATE



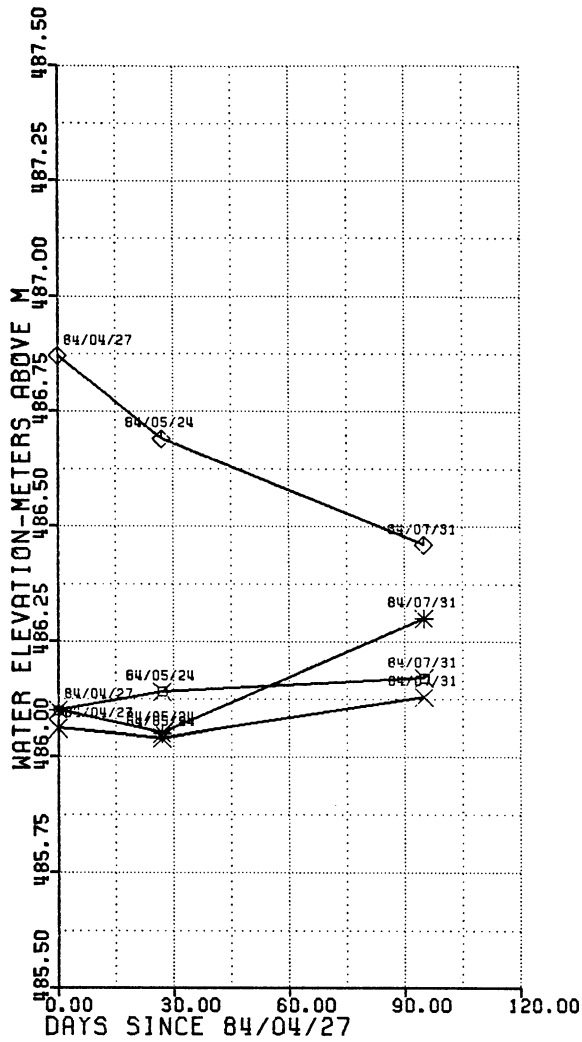
**LEGEND:**

- — HOLE EX-8AU
- — HOLE EX-8AL
- △ — HOLE EX-8BL
- +

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
<small>TITLE</small>			
<b>PIEZOMETER HYDROGRAPHS</b>			
<small>SCALE</small>	<b>NONE</b>	<small>STATE</small>	<b>WISCONSIN</b>
		<small>COUNTY</small>	<b>FOREST</b>
<small>DRAWN BY</small>		<small>CHECKED BY</small>	
<small>APPROVED BY</small>		<small>DATE</small>	<b>8/84</b>
<small>APPROVED BY</small>		<small>DATE</small>	
<small>APPROVED BY</small>		<small>DATE</small>	
<small>DRAWING NO</small>	<b>FIGURE B-33</b>		<small>SHEET</small>
		<small>OF</small>	<small>REVISION NO</small>

# WATER LEVEL PLOTS

WELEV VS DATE

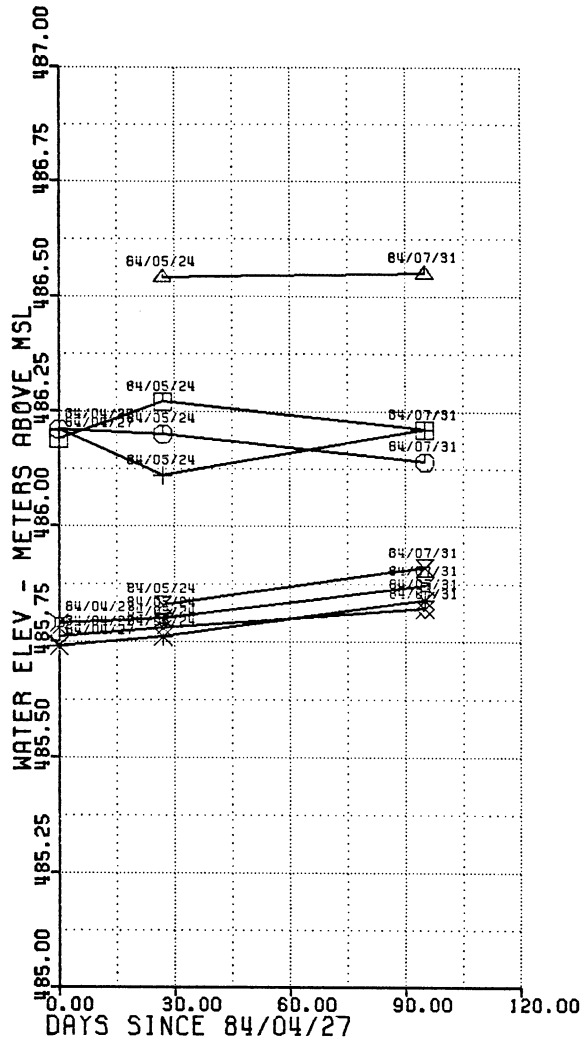


LEGEND:	
X	HOLE EX-9AU
◇	HOLE EX-9AL
*	HOLE EX-9BU
*	HOLE EX-9BL

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY		CHECKED BY	
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	ESLON	DATE
DRAWING NO	<b>FIGURE B-34</b>		SHEET
		OF	REVISION NO

# WATER LEVEL PLOTS

WELEV VS DATE



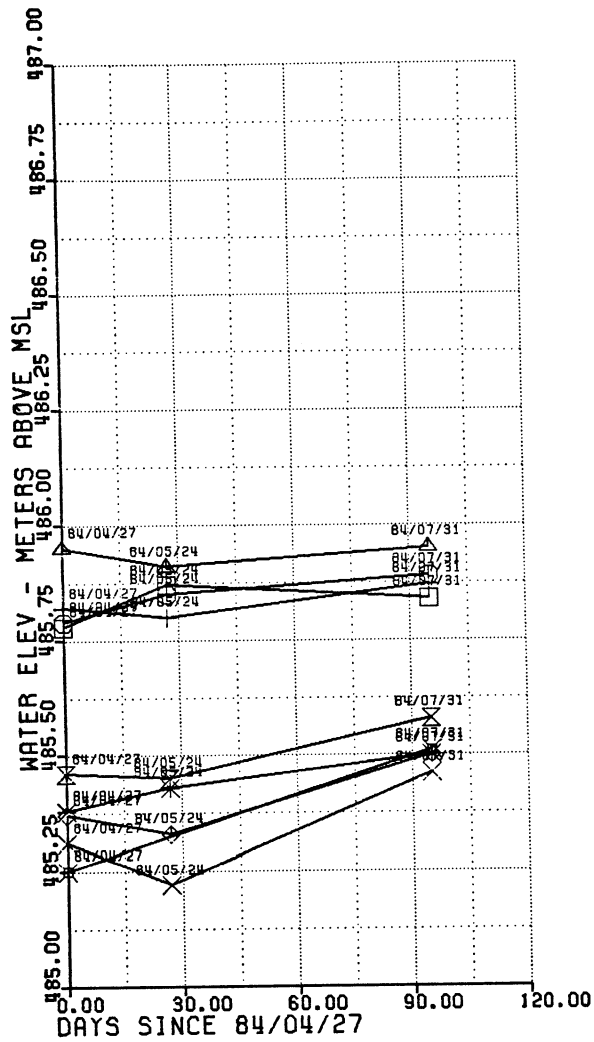
**LEGEND:**

□	HOLE EX-10AU
○	HOLE EX-10AL
△	HOLE EX-10BU
+	HOLE EX-10BL
×	HOLE EX-11AU
◇	HOLE EX-11AL
×	HOLE EX-11BU
×	HOLE EX-11BL
×	HOLE EX-11CL

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
	8/84		
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-35</b>		REVISION NO
	SHEET	OF	

# WATER LEVEL PLOTS

WELEV VS DATE

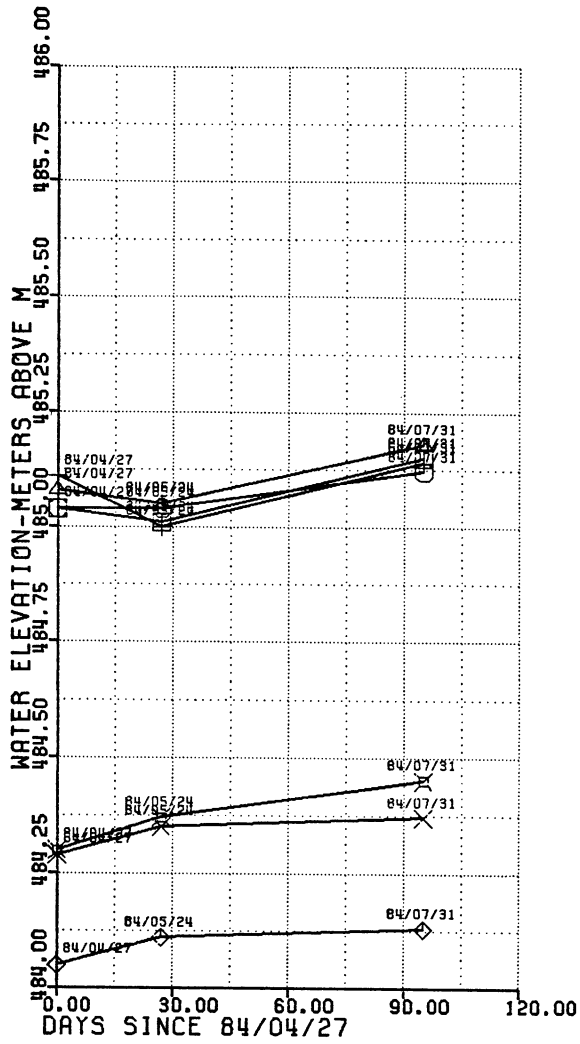


**LEGEND:**

□	—	HOLE EX-12AU
○	—	HOLE EX-12AL
△	—	HOLE EX-12BU
+	—	HOLE EX-12BL
×	—	HOLE EX-13AL
◇	—	HOLE EX-13BU
*	—	HOLE EX-13BL
⊗	—	HOLE EX-13DL

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DESIGNED BY	DATE	CHECKED BY	DATE
	07/84		
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SCALE	DATE
REVISION NO	<b>FIGURE B-36</b>		REVISION NO
	SHEET	OF	

**WATER LEVEL PLOTS**  
MELEV VS DATE



**LEGEND:**

- — HOLE EX-14RU
- — HOLE EX-14AL
- △ — HOLE EX-14BU
- + — HOLE EX-14BL
- X — HOLE EX-15AU
- ◇ — HOLE EX-15AL
- ⋈ — HOLE EX-15BL

**EXXON MINERALS COMPANY**  
**CRANDON PROJECT**

TITLE  
**PIEZOMETER HYDROGRAPHS**

SCALE NONE STATE WISCONSIN COUNTY FOREST

DRAWN BY DATE 8/84 CHECKED BY DATE

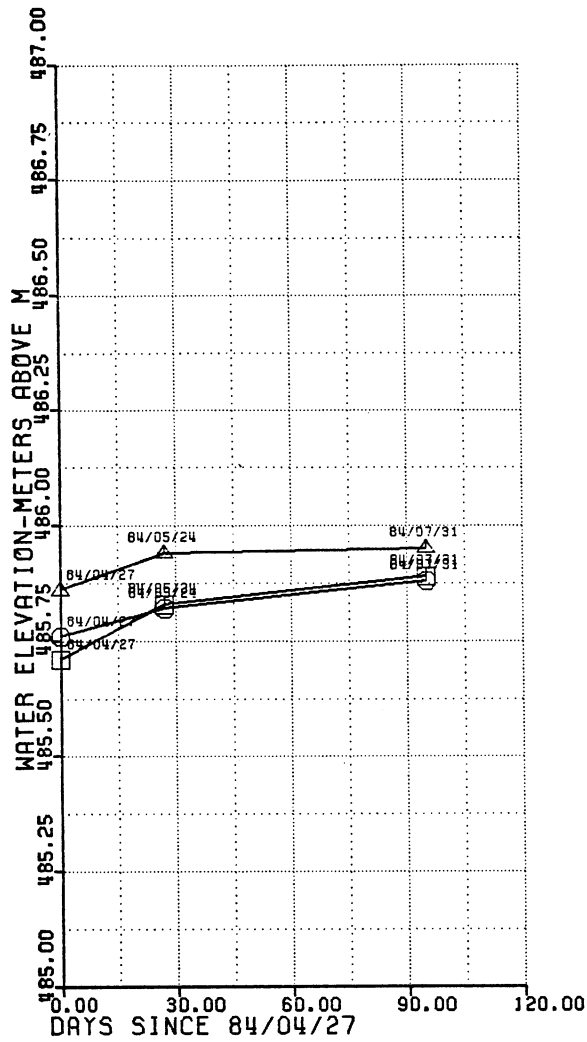
APPROVED BY DATE APPROVED BY DATE

APPROVED BY DATE SIGN DATE

DRAWING NO. **FIGURE B-37** SHEET OF REVISION NO.

# WATER LEVEL PLOTS

WELEV VS DATE



**LEGEND:**

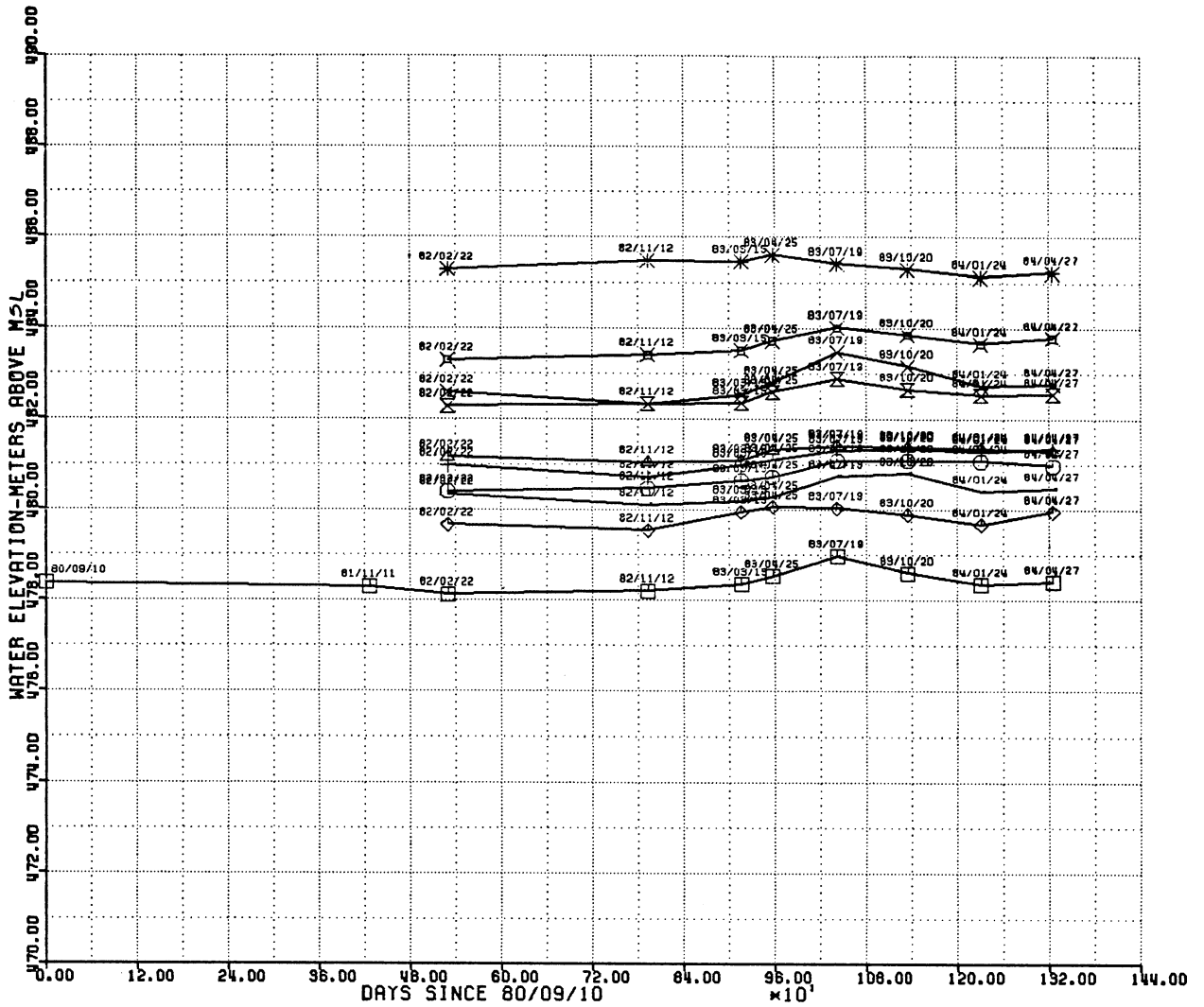
- — HOLE EX-16AU
- — HOLE EX-16AL
- △ — HOLE EX-16BL

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY		DATE	10/84
APPROVED BY		DATE	
APPROVED BY		DATE	
APPROVED BY		DATE	
DRAWING NO	<b>FIGURE B-38</b>		REVISION NO



# WATER LEVEL PLOTS

MELEV VS DATE



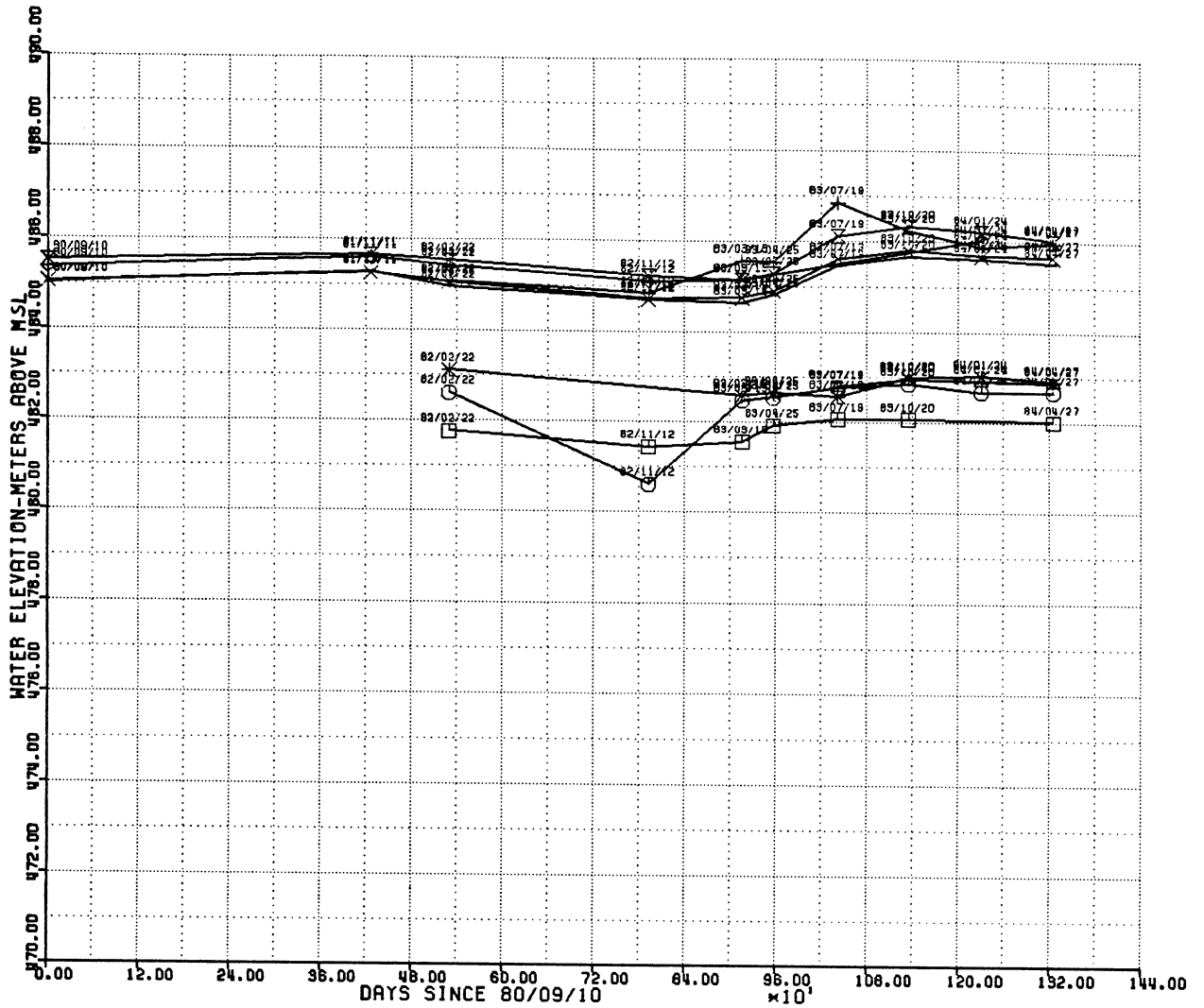
**LEGEND:**

□	HOLE G40-R23
○	HOLE G40-S17
△	HOLE G40-S17A
+	HOLE G40-T50
x	HOLE G40-X1
◇	HOLE G40-X1A
○	HOLE G40-Y15
△	HOLE G40-Y15A
◇	HOLE G40-Y21
□	HOLE G40-Y22

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
	10/84		
APPROVED BY	DATE	APPROVED BY	DATE
DRAWING NO	<b>FIGURE B-39</b>		REVISION NO

# WATER LEVEL PLOTS

WELEV VS DATE



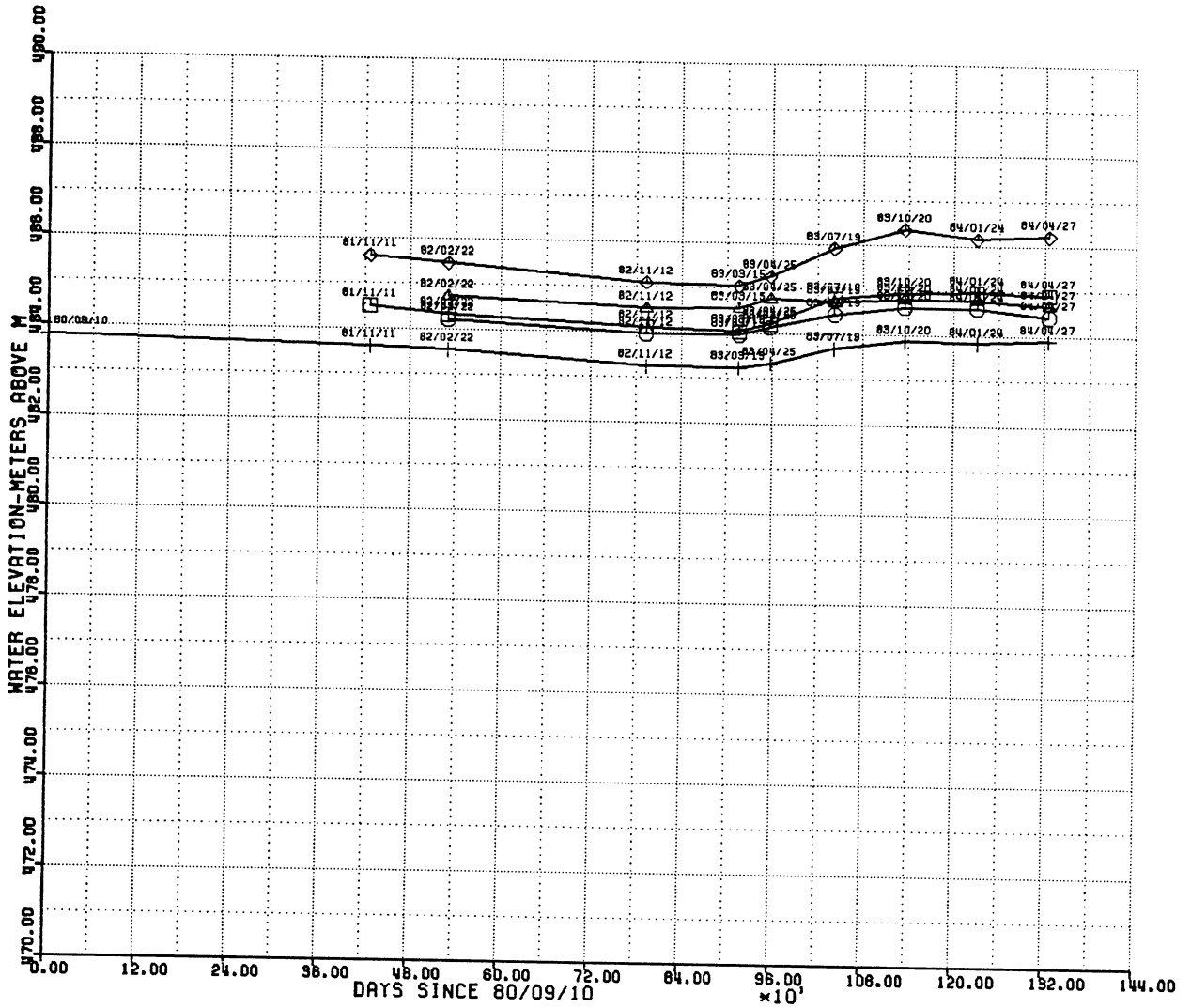
**LEGEND:**

□	HOLE G40-Y26
○	HOLE G41-A23
△	HOLE G41-A24
+	HOLE G41-B12
x	HOLE G41-C15
◇	HOLE G41-C15B
*	HOLE G41-C92
+	HOLE G41-E19
	HOLE G41-E17

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
			8/84
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-40</b>		REVISION NO
	SHEET	OF	

# WATER LEVEL PLOTS

WELEV VS DATE

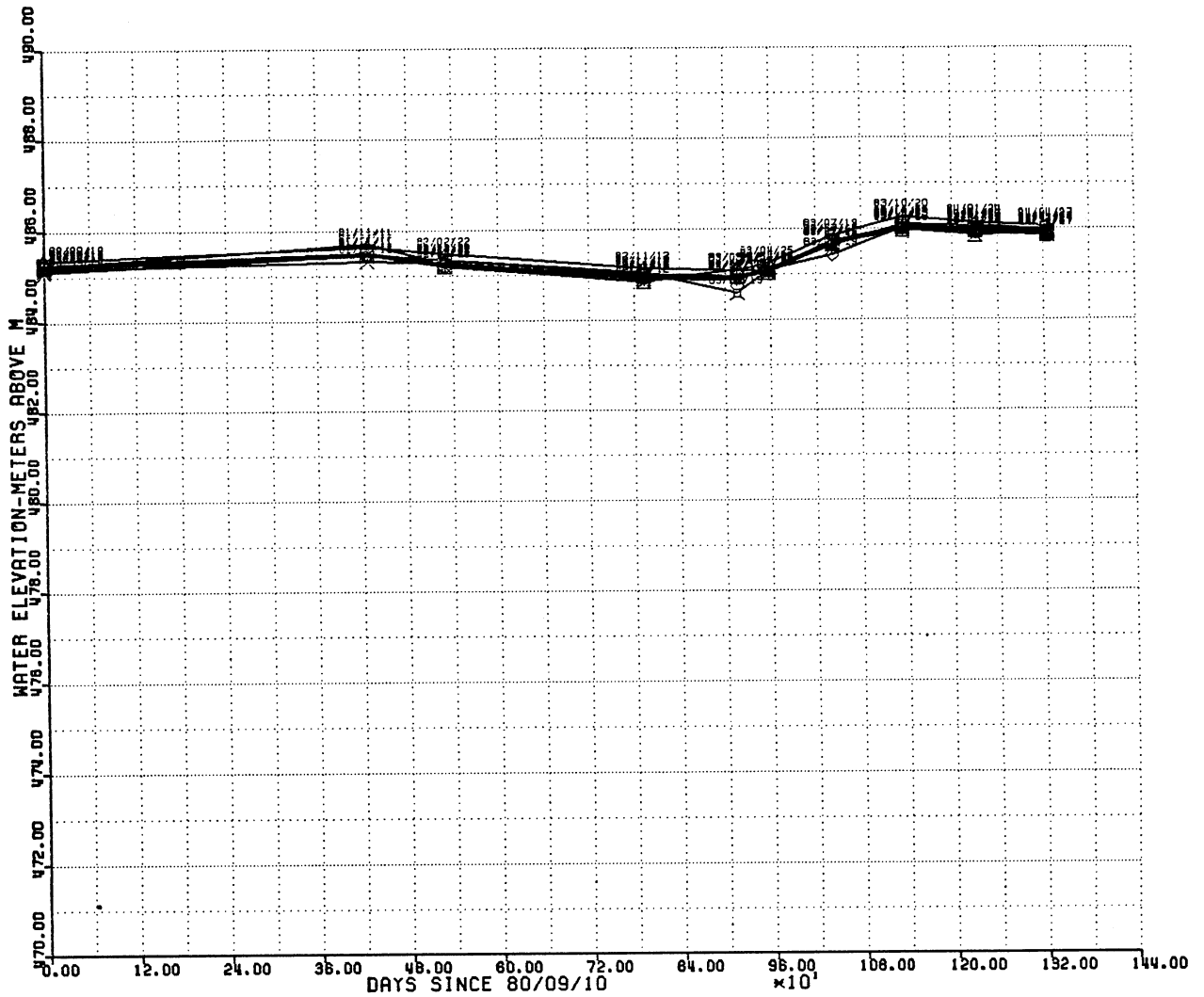


**LEGEND:**

□	HOLE G41-E19A
○	HOLE G41-E22
△	HOLE G41-E22A
+	HOLE G41-F24
X	HOLE G41-G12
◇	HOLE G41-G13

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY		CHECKED BY	8/84
APPROVED BY		APPROVED BY	
APPROVED BY		LEAD	
DRAWING NO			REVISION NO
<b>FIGURE B-4 1</b>			SHEET OF

**WATER LEVEL PLOTS**  
MELEV VS DATE

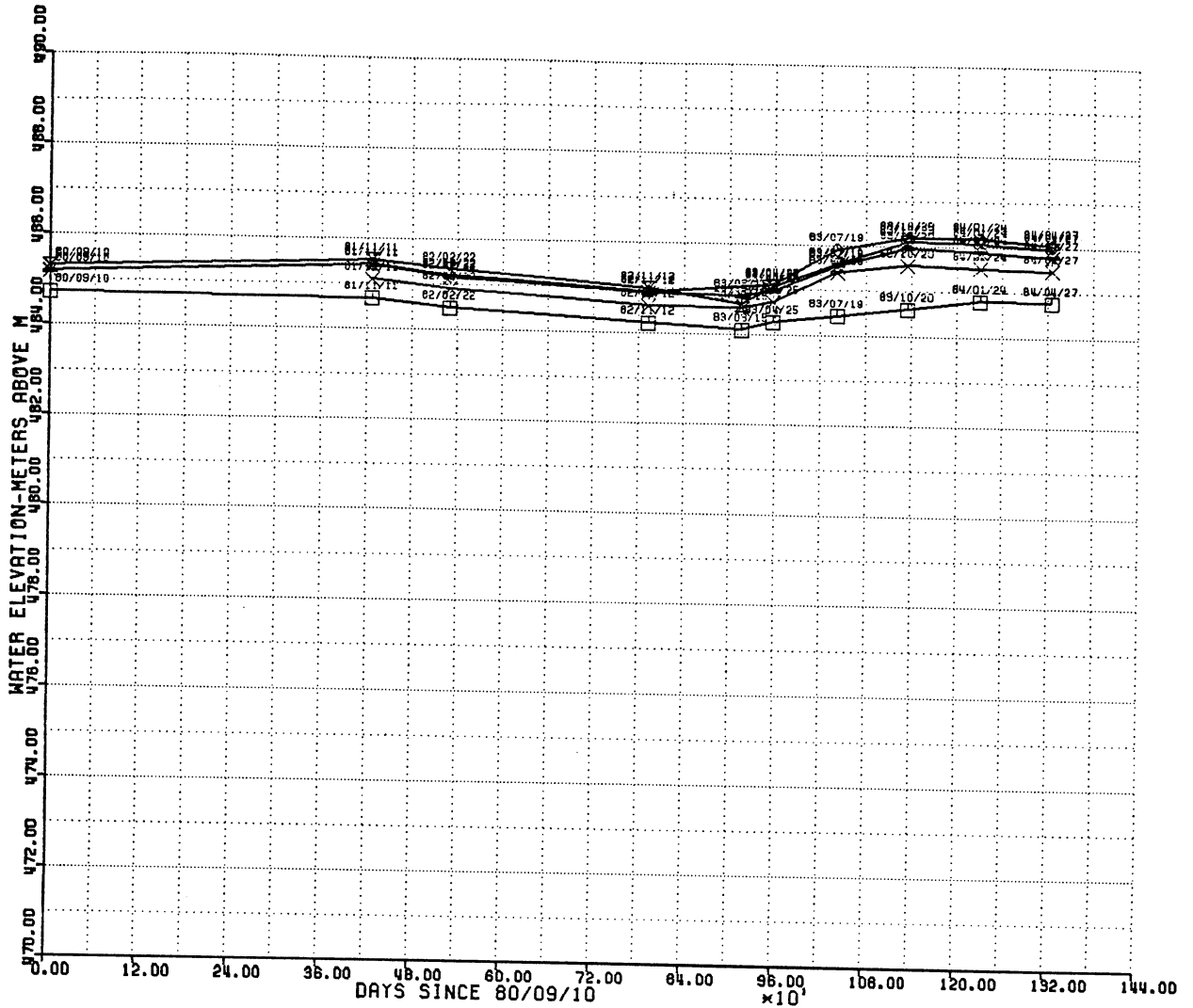


**LEGEND:**

□	HOLE G41-G14A
○	HOLE G41-G14B
△	HOLE G41-G14C
+	HOLE G41-G14D
x	HOLE G41-G14E
◇	HOLE G41-G14F
*	HOLE G41-G15
**	HOLE G41-G15A
***	HOLE G41-G15B

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	EXXON	DATE
DRAWING NO	<b>FIGURE B-42</b>		SHEET
		OF	REVISION NO

**WATER LEVEL PLOTS**  
 MELEY VS DATE

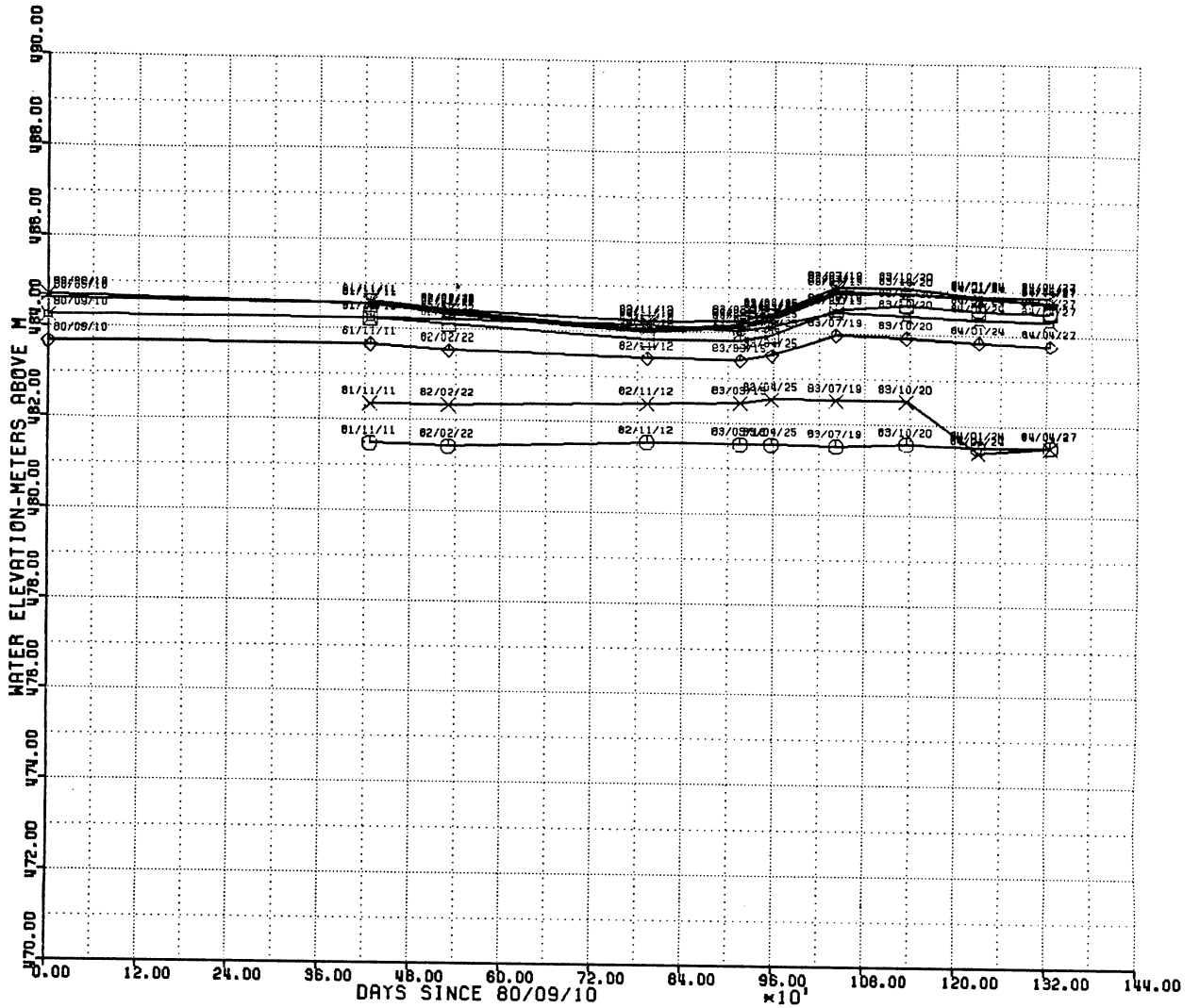


**LEGEND:**

□	HOLE G41-G21
X	HOLE G41-H18B
◇	HOLE G41-H9
*	HOLE G41-K13
⊗	HOLE G41-K13A

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	LEADER	DATE
DRAWING NO			REVISION NO
<b>FIGURE B-43</b>			OF

**WATER LEVEL PLOTS**  
MELEV VS DATE

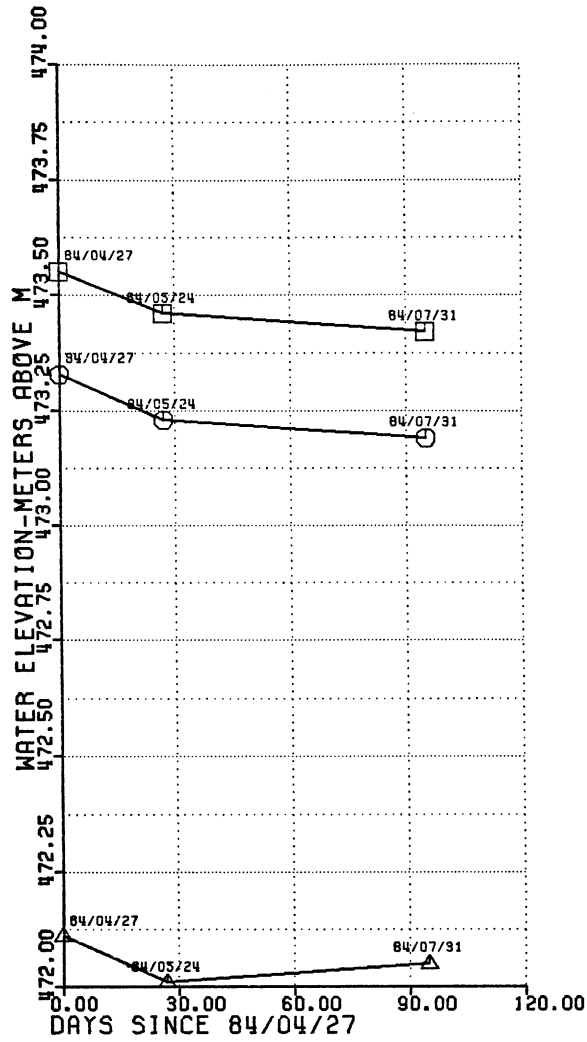


**LEGEND:**

□	HOLE G41-K26
○	HOLE G41-M11
△	HOLE G41-M24
+	HOLE G41-N21
X	HOLE G41-P16
⊙	HOLE G41-P18
⊗	HOLE G41-P18B
* * *	HOLE G41-P24
—	HOLE G41-Q22

<b>EXXON MINERALS COMPANY</b>			
CRANDON PROJECT			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY		CHECKED BY	DATE
APPROVED BY		DATE	APPROVED BY
APPROVED BY		DATE	DATE
DRAWING NO	<b>FIGURE B-44</b>		REVISION NO

**WATER LEVEL PLOTS**  
MELEV VS DATE



**LEGEND:**

- — HOLE WP-1U
- — HOLE WP-1L
- △ — HOLE WP-5U

**EXXON MINERALS COMPANY**  
CRANDON PROJECT

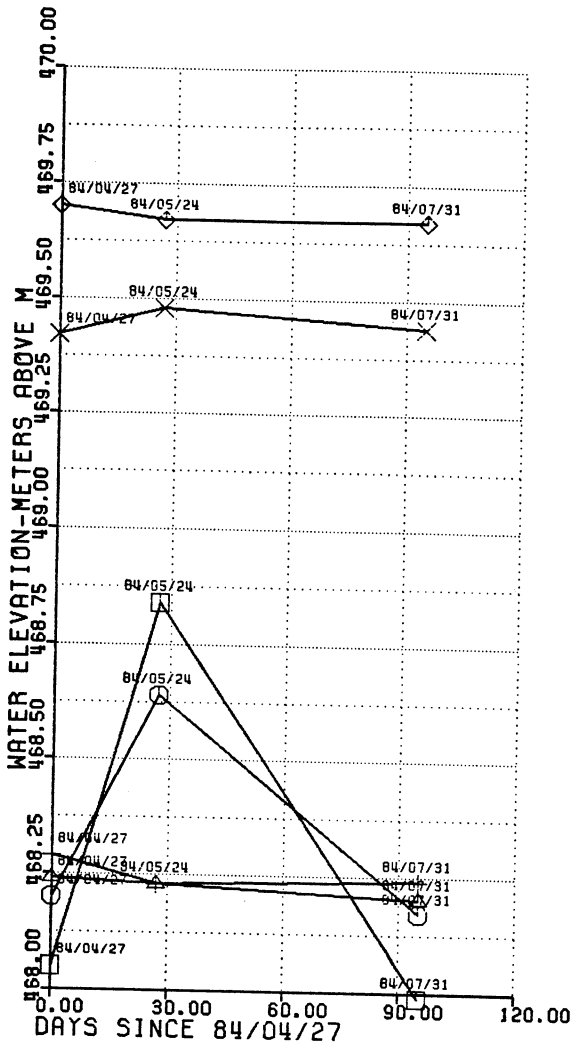
TITLE

**PIEZOMETER HYDROGRAPHS**

SCALE	NONE	STATE	WISCONSIN	COUNTY	FOREST
DRAWN BY	DATE		ENGINEER BY	DATE	
APPROVED BY	DATE		APPROVED BY	DATE	
APPROVED BY	DATE		EAJON	DATE	
DRAWING NO	<b>FIGURE B-45</b>			SHEET	REVISION NO

# WATER LEVEL PLOTS

WELEV VS DATE

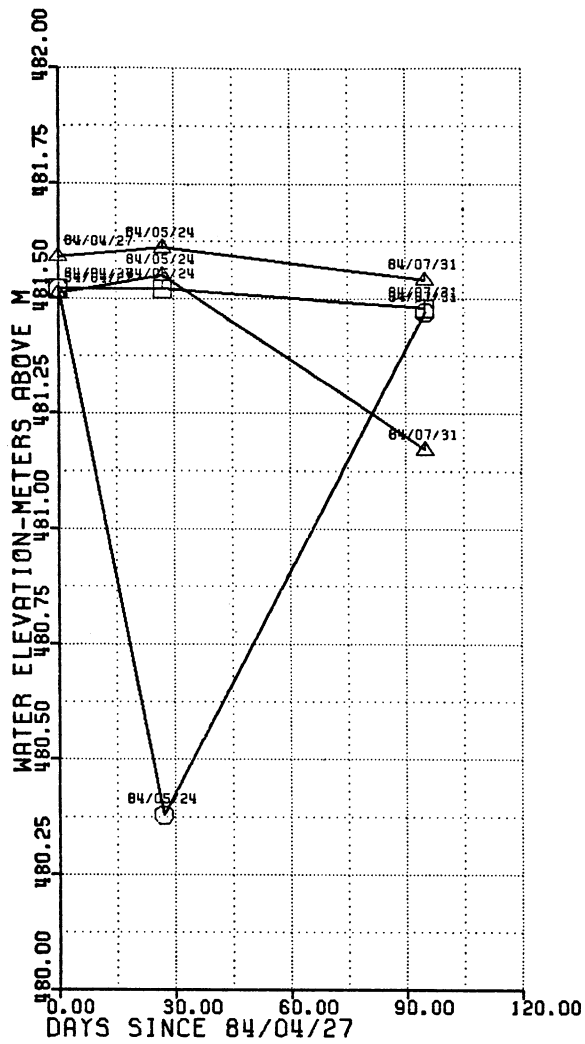


LEGEND:	
□	HOLE WP-2U
○	HOLE WP-2L
△	HOLE WP-3U
+	HOLE WP-3L
×	HOLE WP-4U
◇	HOLE WP-4L

<b>EXXON MINERALS COMPANY</b>			
<b>CRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
	8/84		
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SCALE	DATE
<b>FIGURE B-46</b>			SHEET OF
			REVISION NO



**WATER LEVEL PLOTS**  
WELEV VS DATE



**LEGEND:**

- — HOLE WP-6U
- — HOLE WP-6L
- △ — HOLE WP-7U
- △ — HOLE WP-7L

<b>EXXON MINERALS COMPANY</b>			
<b>GRANDON PROJECT</b>			
TITLE			
<b>PIEZOMETER HYDROGRAPHS</b>			
SCALE	NONE	STATE	WISCONSIN
		COUNTY	FOREST
DRAWN BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE
APPROVED BY	DATE	SCALE	DATE
DRAWING NO <b>FIGURE B-47</b>			SHEET OF
			REVISION NO

APPENDIX 2.3C  
RESULTS OF CHEMICAL ANALYSES  
OF WATER SAMPLES

TABLES C-1 THROUGH C-50

TABLE C-1

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-4

---

PARAMETER	SAMPLING DATE 03/21/79
Field temperature (°C)	5.0
Total laboratory alkalinity	196
Total field alkalinity	228
Specific conductance (µmhos/cm)	380
Field conductivity (µmhos/cm)	278
Laboratory pH (standard units)	7.65
Field pH (standard units)	7.4
Total hardness	236
Total dissolved solids	254
Chemical oxygen demand	—
Total phosphorus (P)	0.04
<u>Anions</u>	
Arsenic	<0.001
Chloride	<1
Cyanide, total	<0.001
Fluoride	—
Nitrate nitrogen (N)	<0.05
Phosphate (PO <sub>4</sub> )	—
Sulfate	15
<u>Cations</u>	
Aluminum	—
Barium	—
Cadmium	—
Calcium	35.4
Chromium, total	—
Cobalt	—
Copper	0.004
Iron	0.87
Lead	<0.01
Magnesium	—
Manganese	0.684
Mercury	—
Molybdenum	—
Nickel	—
Selenium	—
Silver	—
Zinc	0.013

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-2

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-10

PARAMETER	SAMPLING DATE							
	07/07/77	08/25/77	09/28/77	10/20/77	11/30/77 <sup>b</sup>	02/02/78	03/30/78	05/25/78
Field temperature (°C)	—	9.0	10.0	8.5	6.0	5.0	7.0	7.5
Total laboratory alkalinity	152	156	148	152	162	174	176	180
Total field alkalinity	—	156	158	167	168	176	172	182
Specific conductance (µmhos/cm)	201	250	261	270	238	285	302	319
Field conductivity (µmhos/cm)	—	200	195	200	190	210	220	240
Laboratory pH (standard units)	7.34	—	—	—	—	7.58	7.95	7.82
Field pH (standard units)	—	7.4	8.0	7.8	7.6	7.6	7.8	6.8
Total hardness	148	160	148	152	156	172	180	188
Total dissolved solids	129	150	170	170	137	142	214	219
Chemical oxygen demand	—	—	—	—	—	—	—	—
Total phosphorus (P)	0.05	0.03	0.02	0.02	0.02	0.02	0.06	0.03
<u>Anions</u>								
Arsenic	0.003	0.003	0.002	0.002	0.001	<0.001	<0.001	<0.001
Chloride	<1	6	<1	2	<1	<1	<1	2
Cyanide, total	0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	—	—	—	—	—	—
Nitrate nitrogen (N)	0.54	<0.01	0.15	<0.05	0.63	0.10	0.34	0.1
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	—	—	—
Sulfate <sup>a</sup>	2	8	3	3	11	6	8	12
<u>Cations</u>								
Aluminum	0.13	—	—	0.07	—	0.11	—	0.23
Barium	—	—	—	—	—	—	—	—
Cadmium	0.002	—	—	0.001	—	0.002	—	0.001
Calcium	—	—	—	—	—	43.5	35.0	38.6
Chromium, total	0.002	—	—	0.002	—	0.004	—	<0.001
Cobalt	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Copper	0.010	0.001	0.009	0.001	0.001	0.005	0.003	<0.001
Iron	1.23	1.15	0.68	0.49	0.22	0.40	0.21	0.64
Lead	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	17.3	—	—	18.2	—	19.6	—	21.4
Manganese	0.192	0.101	0.074	0.056	0.038	0.044	0.026	0.019
Mercury	0.0003	—	—	0.0001	—	<0.0001	—	<0.0001
Molybdenum	<0.01	—	—	<0.01	—	0.03	—	<0.01
Nickel	<0.01	—	—	<0.01	—	<0.01	—	0.01
Selenium	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—
Zinc	0.018	0.034	0.102	0.043	0.066	0.051	0.090	0.044

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

<sup>a</sup>Sulfide in 07/07/77 analysis.<sup>b</sup>Analyzed 48 hours after collection.

TABLE C-3

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-13

PARAMETER	SAMPLING DATE						
	07/05/77	08/26/77	09/29/77	10/20/77	11/30/77	02/01/78	05/24/78
Field temperature (°C)	—	9.0	7.0	8.0	FROZEN	FROZEN	6.5
Total laboratory alkalinity	138	134	132	138			134
Total field alkalinity	—	138	138	128			132
Specific conductance (µmhos/cm)	250	259	229	240			230
Field conductivity (µmhos/cm)	—	195	170	175			160
Laboratory pH (standard units)	7.51	—	—	—			7.65
Field pH (standard units)	—	7.8	7.0	7.4			7.6
Total hardness	132	128	128	128			132
Total dissolved solids	109	195	149	153			178
Chemical oxygen demand	—	—	—	—			—
Total phosphorus (P)	0.05	0.19	0.11	0.14			0.03
<u>Anions</u>							
Arsenic	0.001	0.002	<0.001	<0.001			<0.001
Chloride	<1	4	2	2			<1
Cyanide, total	0.004	0.004	<0.001	<0.001			<0.001
Fluoride	—	—	—	—			—
Nitrate nitrogen (N)	<0.01	0.10	0.05	<0.05			<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—			—
Sulfate*	7	<1	2	3			3
<u>Cations</u>							
Aluminum	0.57	—	—	0.07			<0.01
Barium	—	—	—	—			—
Cadmium	0.003	—	—	0.002			0.009
Calcium	—	—	—	—			26.8
Chromium, total	<0.001	—	—	0.004			<0.001
Cobalt	<0.01	—	—	<0.01			<0.01
Copper	0.010	0.081	0.023	<0.001			0.012
Iron	2.30	5.30	1.55	0.26			0.10
Lead	<0.01	0.03	0.02	<0.01			<0.01
Magnesium	15.7	—	—	15.3			14.2
Manganese	0.502	5.95	0.313	0.017			0.109
Mercury	<0.0001	—	—	0.0003			<0.0001
Molybdenum	<0.01	—	—	<0.01			<0.01
Nickel	<0.01	—	—	<0.01			<0.01
Selenium	—	—	—	—			—
Silver	—	—	—	—			—
Zinc	0.016	0.085	0.026	0.010			0.026

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

\*Sulfide in 07/05/77 analysis.

TABLE C-4

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-16

PARAMETER	SAMPLING DATE
	01/08/79
Field temperature (°C)	4.0
Total laboratory alkalinity	150
Total field alkalinity	145
Specific conductance (μmhos/cm)	270
Field conductivity (μmhos/cm)	200
Laboratory pH (standard units)	7.51
Field pH (standard units)	6.9
Total hardness	156
Total dissolved solids	197
Chemical oxygen demand	—
Total phosphorus (P)	0.01
<u>Anions</u>	
Arsenic	<0.001
Chloride	4
Cyanide, total	<0.001
Fluoride	—
Nitrate nitrogen (N)	0.29
Phosphate (PO <sub>4</sub> )	—
Sulfate	<1
<u>Cations</u>	
Aluminum	—
Barium	—
Cadmium	—
Calcium	41.4
Chromium, total	—
Cobalt	—
Copper	0.006
Iron	0.21
Lead	<0.01
Magnesium	—
Manganese	0.809
Mercury	—
Molybdenum	—
Nickel	—
Selenium	—
Silver	—
Zinc	0.025

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-5

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-17

PARAMETER	SAMPLING DATE						
	07/05/77	08/26/77	09/28/77	10/20/77	11/29/77	02/01/78	05/25/78
Field temperature (°C)	—	12.0	9.0	8.0	FROZEN	FROZEN	5.0
Total laboratory alkalinity	230	200	188	—			176
Total field alkalinity	—	206	204	212			187
Specific conductance ( mhos/cm)	300	360	328	—			310
Field conductivity ( mhos/cm)	—	290	250	250			220
Laboratory pH (standard units)	7.46	—	—	—			7.85
Field pH (standard units)	—	7.2	7.6	7.4			6.8
Total hardness	240	196	180	226			176
Total dissolved solids	209	260	213	—			199
Chemical oxygen demand	—	—	—	—			—
Total phosphorus (P)	0.10	0.07	0.16	0.09			0.07
<u>Anions</u>							
Arsenic	<0.001	0.003	0.002	0.003			<0.001
Chloride	2	2	2	<1			2
Cyanide, total	0.002	0.003	<0.001	0.001			<0.001
Fluoride	—	—	—	—			—
Nitrate nitrogen (N)	<0.01	<0.01	0.73	—			<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—			—
Sulfate*	<1	<1	<1	<1			8
<u>Cations</u>							
Aluminum	0.01	—	—	0.49			0.68
Barium	—	—	—	—			—
Cadmium	0.015	—	—	0.005			<0.001
Calcium	—	—	—	—			38.9
Chromium, total	0.005	—	—	0.003			<0.001
Cobalt	<0.01	—	—	<0.01			<0.01
Copper	0.015	0.004	0.008	0.005			0.003
Iron	6.1	5.8	4.14	4.1			1.18
Lead	<0.01	0.03	<0.01	0.01			<0.01
Magnesium	22.9	—	—	22.2			20.1
Manganese	2.44	1.62	1.20	1.10			0.57
Mercury	0.0001	—	—	0.0004			<0.0001
Molybdenum	<0.01	—	—	<0.01			<0.01
Nickel	<0.01	—	—	<0.01			0.02
Selenium	—	—	—	—			—
Silver	—	—	—	—			—
Zinc	0.083	0.017	0.016	0.034			0.013

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

\*Sulfide in 07/05/77 analysis.

TABLE C-6

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-19

PARAMETER	SAMPLING DATE							
	07/07/77	08/25/77	09/29/77	10/20/77	11/30/77 <sup>b</sup>	02/02/78	03/30/78	05/24/78
Field temperature (°C)	—	9.0	9.0	10.0	5.0	4.0	6.0	6.0
Total laboratory alkalinity	190	204	134	144	142	152	136	142
Total field alkalinity	—	205	142	144	149	166	137	—
Specific conductance (µmhos/cm)	340	290	220	261	231	255	258	265
Field conductivity (µmhos/cm)	—	240	195	205	170	180	180	190
Laboratory pH (standard units)	7.12	—	—	—	—	7.87	7.97	7.90
Field pH (standard units)	—	7.0	7.5	7.8	7.9	7.9	7.8	8.1
Total hardness	180	180	116	132	128	144	140	140
Total dissolved solids	191	263	143	168	127	172	150	198
Chemical oxygen demand	—	—	—	—	—	—	—	86
Total phosphorus (P)	0.84	0.21	0.58	0.05	0.13	0.12	0.12	0.06
<u>Anions</u>								
Arsenic	0.003	0.003	0.002	0.004	0.001	0.002	0.001	<0.001
Chloride	6	12	4	<1	<1	<1	2	2
Cyanide, total	0.002	0.004	0.002	0.002	<0.001	0.002	0.001	<0.001
Fluoride	—	—	—	—	—	—	—	—
Nitrate nitrogen (N)	<0.01	<0.01	<0.01	<0.05	0.34	<0.05	0.05	<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	—	—	—
Sulfate <sup>a</sup>	16	<1	8	8	12	15	13	12
<u>Cations</u>								
Aluminum	3.56	—	—	1.00	—	9.09	—	4.66
Barium	—	—	—	—	—	—	—	—
Cadmium	0.003	—	—	0.006	—	0.001	—	0.004
Calcium	—	—	—	—	—	49.8	26.8	33.5
Chromium, total	0.015	—	—	0.006	—	0.021	—	0.007
Cobalt	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Copper	0.064	0.043	0.012	0.011	0.042	0.040	—	0.024
Iron	12.6	12.1	34.4	2.1	0.54	18.1	0.79	6.0
Lead	<0.01	<0.01	0.10	0.02	<0.01	0.02	<0.01	<0.01
Magnesium	23.9	—	—	16.8	—	22.0	—	19.1
Manganese	3.11	3.63	5.47	1.02	0.384	0.776	0.377	0.408
Mercury	0.0001	—	—	<0.0001	—	<0.0001	—	<0.0001
Molybdenum	<0.01	—	—	<0.01	—	0.02	—	<0.01
Nickel	<0.01	—	—	<0.01	—	0.04	—	0.03
Selenium	—	—	—	—	—	—	—	—
Silver	—	—	—	—	—	—	—	—
Zinc	0.144	0.140	0.465	0.030	0.027	0.077	0.018	0.083

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

<sup>a</sup>Sulfide in 07/07/77 analysis.<sup>b</sup>Analyzed 48 hours after collection.



TABLE C-7

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-22B

PARAMETER	SAMPLING DATE					
	11/15/79	12/12/79	01/09/80	02/19/80	05/14/80	08/17/80
Field temperature (°C)	5.5	5.0	5.5	5.5	7.0	7.5
Total laboratory alkalinity	134	143	140	126	126	140
Total field alkalinity	137	135	136	135	144	134
Specific conductance (µmhos/cm)	225	220	205	205	230	235
Field conductivity (µmhos/cm)	160	150	150	188	90	180
Laboratory pH (standard units)	7.30	7.19	7.25	7.99	7.63	7.40
Field pH (standard units)	8.5	7.6	7.9	7.6	8.3	7.9
Total hardness	124	128	124	124	128	120
Total dissolved solids	184	175	176	164	165	195
Chemical oxygen demand	69	—	—	<1	38	31
Total phosphorus (P)	—	—	—	—	—	—
<b>Anions</b>						
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	4	1	2	<1	<1	9
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	<0.12	—	—	0.18	<0.12	0.13
Nitrate nitrogen (N)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phosphate (PO <sub>4</sub> )	0.09	<0.01	<0.01	<0.01	0.03	0.21
Sulfate	4	<1	<1	<1	5	<1
<b>Cations</b>						
Aluminum	0.24	—	—	<0.01	<0.01	<0.01
Barium	<0.01	—	—	<0.01	<0.01	0.02
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001
Calcium	—	—	—	—	—	—
Chromium, total	0.002	—	—	<0.001	<0.001	<0.001
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01
Copper	0.005	0.005	<0.001	<0.001	0.003	<0.001
Iron	0.17	0.20	0.06	0.23	0.17	0.20
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	10.2	—	—	12.9	12.7	13.0
Manganese	0.469	0.884	0.793	0.659	0.588	0.555
Mercury	<0.0001	—	—	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001
Zinc	0.005	0.007	<0.001	0.005	<0.001	0.007

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-8  
RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-32A

PARAMETER	SAMPLING DATE							
	07/05/77	08/26/77	09/29/77	10/20/77	11/30/77 <sup>b</sup>	01/31/78	03/30/78	05/27/78
Field temperature (°C)	—	10.0	7.0	7.0	6.0	4.0	6.0	5.8
Total laboratory alkalinity	116	114	122	122	118	122	116	112
Total field alkalinity	—	120	116	122	126	123	110	114
Specific conductance (µmhos/cm)	220	237	210	230	200	219	218	220
Field conductivity (µmhos/cm)	—	190	175	175	150	150	140	150
Laboratory pH (standard units)	7.37	—	—	—	—	7.63	7.81	7.5
Field pH (standard units)	—	7.4	7.6	7.6	8.0	7.6	7.6	7.0
Total hardness	128	120	116	124	116	124	128	120
Total dissolved solids	86	155	136	143	92	142	159	151
Chemical oxygen demand	—	—	—	—	—	—	—	<1
Total phosphorus (P)	0.07	0.11	0.04	0.04	0.02	0.14	0.04	0.0
<u>Anions</u>								
Arsenic	0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.0
Chloride	2	4	4	2	2	<1	2	<1
Cyanide, total	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.0
Fluoride	—	—	—	—	—	—	—	—
Nitrate nitrogen (N)	<0.01	<0.01	<0.01	0.19	0.39	0.05	0.54	0.0
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	—	—	—
Sulfate <sup>a</sup>	11	<1	10	8	7	12	9	11
<u>Cations</u>								
Aluminum	0.04	—	—	0.37	—	0.91	—	0.11
Barium	—	—	—	—	—	—	—	0.0
Cadmium	0.005	—	—	<0.001	—	0.009	—	0.0
Calcium	—	—	—	—	—	34.4	25.0	25.2
Chromium, total	0.008	—	—	0.002	—	0.003	—	<0.0
Cobalt	<0.01	—	—	<0.01	—	<0.01	—	<0.0
Copper	0.023	0.007	0.009	0.017	0.005	0.024	0.007	0.0
Iron	1.13	2.96	0.44	0.09	0.11	1.67	0.21	0.2
Lead	<0.01	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.0
Magnesium	14.7	—	—	15.6	—	14.3	—	14.2
Manganese	0.245	0.281	0.071	0.094	0.019	0.145	0.011	0.0
Mercury	0.0010	—	—	0.0001	—	<0.0001	—	<0.0
Molybdenum	<0.01	—	—	<0.01	—	0.01	—	<0.0
Nickel	<0.01	—	—	<0.01	—	<0.01	—	0.0
Selenium	—	—	—	—	—	—	—	<0.0
Silver	—	—	—	—	—	—	—	<0.0
Zinc	0.060	0.038	0.007	0.004	0.029	0.030	0.037	0.0

Note: All concentrations in mg/l unless otherwise noted.  
— Indicates no data.

<sup>a</sup>Sulfide in 07/05/77 analysis.

<sup>b</sup>Analyzed 48 hours after collection.

TABLE C-9

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMA-48

PARAMETER	SAMPLING DATE							
	07/05/77	08/25/77	09/28/77	10/20/77	11/29/77	02/01/78	03/30/78	05/24/78
Field temperature (°C)	—	9.0	10.0	9.0	5.0	5.0	6.0	6.5
Total laboratory alkalinity	118	120	112	110	112	110	108	110
Total field alkalinity	—	119	116	118	116	117	106	107
Specific conductance (µmhos/cm)	200	195	205	204	200	173	200	198
Field conductivity (µmhos/cm)	—	155	150	155	140	145	140	155
Laboratory pH (standard units)	7.47	—	—	—	—	7.52	8.15	7.66
Field pH (standard units)	—	7.2	7.0	7.2	7.2	7.0	7.1	7.4
Total hardness	116	132	108	116	104	112	120	112
Total dissolved solids	77	120	133	143	102	130	161	158
Chemical oxygen demand	—	—	—	—	—	—	—	93
Total phosphorus (P)	0.07	0.04	0.06	0.04	0.10	0.02	0.02	0.08
<u>Anions</u>								
Arsenic	0.002	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001
Chloride	2	8	2	2	2	<1	<1	2
Cyanide, total	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	—	—	—	—	—	<0.12
Nitrate nitrogen (N)	<0.01	<0.01	<0.01	<0.05	0.83	0.19	0.34	<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	—	—	—
Sulfate*	<1	86	<1	<1	6	<1	<1	6
<u>Cations</u>								
Aluminum	0.86	—	—	1.12	—	0.27	—	1.06
Barium	—	—	—	—	—	—	—	0.04
Cadmium	0.003	—	—	0.004	—	0.001	—	<0.001
Calcium	—	—	—	—	—	29.3	21.5	22.8
Chromium, total	0.004	—	—	0.005	—	0.003	—	0.005
Cobalt	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Copper	0.050	0.010	0.008	0.003	0.010	0.004	0.005	0.006
Iron	5.2	10.2	5.7	0.67	4.2	3.29	2.29	3.17
Lead	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	13.5	—	—	15.3	—	12.2	—	13.7
Manganese	0.724	1.26	0.757	0.736	0.482	0.402	0.412	0.408
Mercury	0.0001	—	—	0.0001	—	<0.0001	—	<0.0001
Molybdenum	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Nickel	<0.01	—	—	<0.01	—	<0.01	—	0.01
Selenium	—	—	—	—	—	—	—	<0.001
Silver	—	—	—	—	—	—	—	<0.001
Zinc	0.061	0.017	0.007	0.009	0.056	0.025	0.031	0.036

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

\*Sulfide in 07/05/77 analysis.

TABLE C-10

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-1A

PARAMETER	SAMPLING DATE								
	07/27/78	09/05/78	10/04/78	01/09/79	04/23/79	11/14/79	02/21/80	05/15/80	08/19/80
Field temperature (°C)	6.5	7.0	5.5	4.0	7.5	6.5	7.0	7.0	8.0
Total laboratory alkalinity	206	118	140	134	128	118	100	112	115
Total field alkalinity	200	120	132	127	128	127	124	118	119
Specific conductance (µmhos/cm)	362	222	265	230	240	220	210	185	220
Field conductivity (µmhos/cm)	266	270	177	147	173	180	147	—	140
Laboratory pH (standard units)	7.36	7.54	7.57	7.73	7.72	7.84	7.68	7.71	7.83
Field pH (standard units)	6.9	7.2	6.9	7.4	7.4	8.3	8.4	8.3	7.2
Total hardness	216	248	146	142	108	118	132	116	116
Total dissolved solids	272	146	157	184	186	180	132	103	116
Chemical oxygen demand	—	—	39	31	7	<1	<1	<1	23
Total phosphorus (P)	0.05	0.02	0.04	0.02	0.02	—	—	—	—
<b>Anions</b>									
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	<1	<1	<1	4	<1	<1	4
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.15	0.45	0.20	0.23	0.14	<0.12	<0.12
Nitrate nitrogen (N)	0.29	0.19	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	<0.01	0.06	0.02	0.02
Sulfate	<1	8	9	6	14	13	6	8	11
<b>Cations</b>									
Aluminum	—	—	0.25	0.09	0.21	0.22	0.35	0.34	0.05
Barium	—	—	<0.01	<0.01	<0.01	0.02	0.02	<0.01	<0.01
Cadmium	—	—	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	56.5	37.1	36.1	37.2	26.8	—	—	—	—
Chromium, total	—	—	<0.001	<0.001	<0.001	<0.001	0.004	0.002	<0.001
Cobalt	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.005	0.008	<0.001	0.003	0.005	0.009	<0.001	<0.001	<0.001
Iron	1.09	0.74	0.43	0.17	0.18	0.29	0.30	0.06	0.05
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	13.5	11.8	9.9	8.9	12.0	11.5	12.4
Manganese	1.36	0.238	0.323	0.269	0.169	0.114	0.130	0.097	0.07
Mercury	—	—	0.0001	0.0006	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.023	0.03	0.010	0.011	0.009	0.010	0.007	—	—

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-11

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-4

PARAMETER	SAMPLING DATE							
	10/05/78	01/10/79	04/22/79	07/16/79	11/13/79	02/21/80	05/13/80	08/13/80
Field temperature (°C)	5.5	3.0	6.5	8.0	6.0	6.5	7.0	9.0
Total laboratory alkalinity	166	144	156	159	145	158	194	148
Total field alkalinity	158	144	146	163	150	164	160	159
Specific conductance (μmhos/cm)	310	250	275	290	265	250	270	271
Field conductivity (μmhos/cm)	195	145	183	211	140	180	195	200
Laboratory pH (standard units)	7.43	7.48	7.79	7.42	7.33	7.56	7.34	7.53
Field pH (standard units)	7.0	7.5	7.6	7.6	7.8	8.0	8.1	7.6
Total hardness	161	155	119	154	140	156	152	136
Total dissolved solids	160	201	219	217	208	154	171	223
Chemical oxygen demand	31	31	<1	3	<1	10	10	12
Total phosphorus (P)	0.02	0.05	0.03	0.03	—	—	—	—
<u>Anions</u>								
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	<1	<1	<1	4	<1	<1	<1
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.16	0.35	0.25	0.49	0.22	0.20	0.20	0.41
Nitrate nitrogen (N)	0.20	0.15	0.14	0.09	<0.05	<0.05	<0.05	0.27
Phosphate (PO <sub>4</sub> )	—	—	—	—	<0.01	0.12	0.04	<0.01
Sulfate	4	5	15	9	11	7	11	10
<u>Cations</u>								
Aluminum	0.06	0.30	<0.01	<0.01	0.15	1.08	1.00	0.43
Barium	<0.01	<0.01	0.01	<0.01	0.02	0.04	0.04	0.05
Cadmium	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	41.1	39.6	27.4	37.0	—	—	—	—
Chromium, total	<0.001	<0.001	<0.001	0.002	0.001	<0.001	<0.001	0.001
Cobalt	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	<0.001	0.003	0.010	0.007	0.005	0.006	0.006	<0.001
Iron	0.13	0.31	0.07	0.09	0.37	0.70	0.38	0.45
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	14.0	13.7	12.3	15.1	10.9	15.8	15.7	16.2
Manganese	1.69	1.10	0.613	0.820	0.381	0.111	0.071	0.031
Mercury	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.015	0.010	0.007	<0.001	0.017	0.022	0.012	<0.001

Note: All concentrations in mg/ℓ unless otherwise noted.

— Indicates no data.

TABLE C-12

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-5A

PARAMETER	SAMPLING DATE
	01/17/79
Field temperature (°C)	4.0
Total laboratory alkalinity	268
Total field alkalinity	145
Specific conductance (µmhos/cm)	800
Field conductivity (µmhos/cm)	490
Laboratory pH (standard units)	6.34
Field pH (standard units)	6.5
Total hardness	332
Total dissolved solids	637
Chemical oxygen demand	—
Total phosphorus (P)	0.01
<u>Anions</u>	
Arsenic	<0.001
Chloride	<1
Cyanide, total	<0.001
Fluoride	—
Nitrate nitrogen (N)	<0.05
Phosphate (PO <sub>4</sub> )	—
Sulfate	9
<u>Cations</u>	
Aluminum	—
Barium	—
Cadmium	—
Calcium	92.4
Chromium, total	—
Cobalt	—
Copper	0.005
Iron	38.9
Lead	<0.01
Magnesium	—
Manganese	4.12
Mercury	—
Molybdenum	—
Nickel	—
Selenium	—
Silver	—
Zinc	0.150

Note: All concentrations in mg/l unless otherwise noted.  
— Indicates no data.

TABLE C-13

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-7

PARAMETER	SAMPLING DATE				
	07/27/78	09/05/78	10/05/78	01/09/79	04/22/79
Field temperature (°C)	7.0	6.0	5.0	3.0	6.5
Total laboratory alkalinity	136	146	148	158	120
Total field alkalinity	134	150	138	139	117
Specific conductance (μmhos/cm)	250	275	305	265	225
Field conductivity (μmhos/cm)	178	282	185	170	161
Laboratory pH (standard units)	8.01	7.85	7.79	7.84	8.11
Field pH (standard units)	6.9	7.0	7.4	6.9	7.8
Total hardness	148	160	158	167	101
Total dissolved solids	177	160	149	215	136
Chemical oxygen demand	—	—	65	3	<1
Total phosphorus (P)	0.14	0.03	0.06	0.07	0.04
<u>Anions</u>					
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	2	<1	<1
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.15	0.40	0.16
Nitrate nitrogen (N)	0.15	0.93	1.46	0.10	0.53
Phosphate (PO <sub>4</sub> )	—	—	—	—	—
Sulfate	11	10	11	3	12
<u>Cations</u>					
Aluminum	—	—	0.40	0.89	0.14
Barium	—	—	<0.01	<0.01	<0.01
Cadmium	—	—	0.001	<0.001	<0.001
Calcium	36.1	41.2	32.9	38.1	22.0
Chromium, total	—	—	<0.001	<0.001	<0.001
Cobalt	—	—	<0.01	<0.01	<0.01
Copper	0.036	0.012	0.007	0.010	0.012
Iron	8.2	1.86	0.92	1.18	0.17
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	18.5	17.5	11.2
Manganese	0.351	0.072	0.020	0.020	0.002
Mercury	—	—	0.0005	0.0002	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001
Zinc	0.060	0.019	0.015	0.009	0.008

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-14

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-8

PARAMETER	SAMPLING DATE								
	07/27/78	09/05/78	10/03/78	01/10/79	04/22/79	11/13/79	02/20/80	05/14/80	08/13/80
Field temperature (°C)	7.0	6.0	5.5	3.0	6.5	5.5	6.0	7.0	7.0
Total laboratory alkalinity	144	126	128	128	129	121	124	118	128
Total field alkalinity	143	126	120	122	138	126	135	128	130
Specific conductance (µmhos/cm)	275	290	260	230	250	225	210	235	236
Field conductivity (µmhos/cm)	191	275	180	135	163	160	170	160	165
Laboratory pH (standard units)	7.94	7.67	7.80	7.60	7.89	7.41	7.65	7.50	7.28
Field pH (standard units)	6.8	7.1	7.4	7.1	7.7	8.0	8.2	7.9	7.5
Total hardness	164	124	129	140	96	120	132	124	128
Total dissolved solids	201	142	144	173	163	194	158	168	189
Chemical oxygen demand	—	—	48	27	—	3	24	52	8
Total phosphorus (P)	0.03	0.04	0.02	0.01	0.01	—	—	—	—
<u>Anions</u>									
Arsenic	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	<1	<1	<1	2	<1	<1	4
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.19	0.29	—	0.18	0.20	0.13	0.20
Nitrate nitrogen (N)	0.34	0.24	0.34	0.29	0.58	0.68	<0.05	0.29	0.31
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	0.06	0.03	0.03	<0.01
Sulfate	12	11	11	7	14	13	7	2	11
<u>Cations</u>									
Aluminum	—	—	0.17	0.24	—	0.38	0.33	0.30	0.42
Barium	—	—	<0.01	<0.01	—	0.02	<0.01	0.01	0.01
Cadmium	—	—	0.003	<0.001	—	<0.001	<0.001	<0.001	<0.001
Calcium	38.5	36.1	29.2	32.8	23.8	—	—	—	—
Chromium, total	—	—	<0.001	<0.001	—	<0.001	0.002	<0.001	<0.001
Cobalt	—	—	<0.01	<0.01	—	<0.01	<0.01	<0.01	<0.01
Copper	0.018	0.010	0.010	0.009	0.011	0.004	0.005	0.003	<0.001
Iron	0.46	1.27	0.41	0.38	0.54	0.92	0.48	0.50	0.75
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	13.6	14.0	—	8.9	14.6	13.8	15.1
Manganese	0.864	0.265	0.195	0.065	0.207	0.020	0.124	0.135	0.010
Mercury	—	—	0.0004	0.0006	—	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	—	<0.01	<0.01	—	<0.01	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	—	<0.01	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	—	<0.001	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	—	<0.001	<0.001	<0.001	<0.001
Zinc	0.16	0.017	0.014	0.007	0.011	0.015	0.009	0.016	0.009

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.



TABLE C-15

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-18

PARAMETER	SAMPLING DATE								
	07/27/78	09/05/78	10/04/78	01/09/79	04/23/79	11/12/79	02/18/80	05/13/80	08/12/80
Field temperature (°C)	6.5	6.0	5.5	3.0	6.0	5.5	6.0	7.0	7.5
Total laboratory alkalinity	112	122	130	110	102	102	104	102	108
Total field alkalinity	111	122	118	98	99	105	103	116	*
Specific conductance (µmhos/cm)	225	288	220	190	200	195	180	210	225
Field conductivity (µmhos/cm)	151	242	177	122	132	140	128	150	220
Laboratory pH (standard units)	7.62	7.50	7.40	7.64	7.52	7.28	7.83	7.38	7.42
Field pH (standard units)	6.8	7.0	7.0	7.1	7.2	7.8	8.4	8.3	7.7
Total hardness	128	132	121	113	87	104	104	120	100
Total dissolved solids	160	177	148	147	108	180	126	128	183
Chemical oxygen demand	—	—	28	34	<1	<1	<1	10	47
Total phosphorus (P)	0.03	0.03	0.03	<0.01	0.01	—	—	—	—
<u>Anions</u>									
Arsenic	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	<1	<1	<1	4	2	<1	4
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.16	0.17	0.31	<0.12	0.17	0.17	0.24
Nitrate nitrogen (N)	0.15	0.24	0.24	0.15	0.10	0.10	0.05	0.15	0.15
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	<0.01	<0.01	0.02	0.09
Sulfate	12	12	6	5	16	12	5	7	10
<u>Cations</u>									
Aluminum	—	—	0.03	<0.01	0.08	0.06	<0.01	<0.01	<0.01
Barium	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	0.01
Cadmium	—	—	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	31.2	37.0	28.2	27.7	19.9	—	—	—	—
Chromium, total	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.004	0.006	<0.001	0.005	0.004	0.005	<0.001	<0.001	<0.001
Iron	0.42	0.37	0.67	1.25	0.11	0.18	0.05	0.13	0.06
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	12.4	10.8	9.0	9.1	13.1	12.8	12.7
Manganese	1.00	0.997	1.74	1.10	0.683	0.151	0.075	0.100	0.062
Mercury	—	—	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.045	0.038	0.017	0.013	0.012	0.019	0.005	0.014	<0.001

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

Titrations were inadvertently overlooked.

TABLE C-16

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-20

PARAMETER	SAMPLING DATE								
	07/31/78	09/06/78	10/03/78	01/08/79	04/19/79	11/14/79	02/20/80	05/18/80	08/18/80
Field temperature (°C)	6.5	7.0	6.0	3.0	7.5	5.5	6.0	8.0	8.0
Total laboratory alkalinity	20	16	14	124	30	18	18	16	20
Total field alkalinity	17	16	12	12	30	12	11	12	11
Specific conductance (µ mhos/cm)	60	50	60	220	160	75	50	55	52
Field conductivity (µmhos/cm)	42	210	35	32	50	48	29	40	44
Laboratory pH (standard units)	7.09	6.22	6.88	7.57	7.01	6.34	6.91	6.74	6.1E
Field pH (standard units)	6.3	5.7	5.8	6.0	6.6	6.6	6.1	6.2	7.5
Total hardness	28	24	16	25	22	60	24	18	16
Total dissolved solids	53	43	48	181	100	53	94	33	14
Chemical oxygen demand	—	—	34	21	28	3	31	52	23
Total phosphorus (P)	0.09	0.06	0.05	0.02	0.25	—	—	—	—
<b>Anions</b>									
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	2	2	2	2	<1	2	<1	<1	2
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	<0.12	0.29	0.17	0.24	0.13	<0.12	<0.12
Nitrate nitrogen (N)	<0.05	0.24	0.10	0.34	10.98	<0.05	<0.05	<0.05	0.05
Phosphate as (PO <sub>4</sub> )	—	—	—	—	—	0.12	0.18	0.04	0.04
Sulfate	15	12	21	2	16	29	12	10	10
<b>Cations</b>									
Aluminum	—	—	0.60	4.10	1.84	2.31	2.97	2.90	0.49
Barium	—	—	<0.01	<0.01	0.04	0.04	0.04	<0.01	0.01
Cadmium	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	11.2	7.2	4.9	6.68	6.64	—	—	—	—
Chromium, total	—	—	<0.001	<0.001	<0.001	0.009	<0.001	<0.001	0.001
Cobalt	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.016	0.012	0.019	0.008	0.030	0.019	0.009	0.002	<0.001
Iron	1.88	1.68	0.91	3.34	1.9	6.1	1.9	0.43	0.56
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	1.08	1.86	1.29	1.81	1.29	1.24	1.15
Manganese	0.230	0.141	0.073	0.082	0.320	0.121	0.029	0.011	0.011
Mercury	—	—	0.0004	0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.043	0.043	0.043	0.062	0.040	0.100	0.071	0.045	0.051

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

TABLE C-17

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-20A

PARAMETER	SAMPLING DATE 02/12/79
Field temperature (°C)	5.0
Total laboratory alkalinity	102
Total field alkalinity	108
Specific conductance (µmhos/cm)	215
Field conductivity (µmhos/cm)	180
Laboratory pH (standard units)	7.16
Field pH (standard units)	7.2
Total hardness	108
Total dissolved solids	157
Chemical oxygen demand	—
Total phosphorus (P)	0.05
<u>Anions</u>	
Arsenic	<0.001
Chloride	2
Cyanide, total	<0.001
Fluoride	—
Nitrate nitrogen (N)	0.93
Phosphate (PO <sub>4</sub> )	—
Sulfate	6
<u>Cations</u>	
Aluminum	—
Barium	—
Cadmium	—
Calcium	28.3
Chromium, total	—
Cobalt	—
Copper	0.004
Iron	1.02
Lead	<0.01
Magnesium	—
Manganese	0.600
Mercury	—
Molybdenum	—
Nickel	—
Selenium	—
Silver	—
Zinc	0.023

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-18

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-21

PARAMETER	SAMPLING DATE				
	07/31/78	09/06/78	10/03/78	01/17/79	04/19/79
Field temperature (°C)	6.5	7.0	6.0	3.0	6.5
Total laboratory alkalinity	124	120	120	120	122
Total field alkalinity	120	120	120	114	119
Specific conductance (µmhos/cm)	225	228	233	200	215
Field conductivity (µmhos/cm)	156	295	158	165	142
Laboratory pH (standard units)	7.82	7.61	7.80	7.86	7.96
Field pH (standard units)	7.0	7.1	7.9	7.6	8.0
Total hardness	124	128	123	130	102
Total dissolved solids	174	127	136	136	162
Chemical oxygen demand	—	—	41	<1	7
Total phosphorus (P)	0.07	0.05	0.07	0.03	0.04
<u>Anions</u>					
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	<1	2	<1	<1
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.16	0.12	0.18
Nitrate nitrogen (N)	0.10	0.19	0.54	0.49	0.53
Phosphate (PO <sub>4</sub> )	—	—	—	—	—
Sulfate	9	7	6	5	8
<u>Cations</u>					
Aluminum	—	—	0.07	0.36	0.31
Barium	—	—	<0.01	<0.01	0.01
Cadmium	—	—	<0.001	<0.001	<0.001
Calcium	31.0	34.6	27.6	31.4	23.3
Chromium, total	—	—	<0.001	<0.001	<0.001
Cobalt	—	—	<0.01	<0.01	<0.01
Copper	0.008	0.003	0.002	0.002	0.015
Iron	1.07	0.69	0.18	0.40	0.19
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	13.2	12.7	10.6
Manganese	0.192	0.093	0.038	0.009	0.004
Mercury	—	—	0.0002	0.0003	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001
Zinc	0.032	0.023	0.020	0.010	0.010

Note: All concentrations in mg/l unless otherwise noted.  
— Indicates no data.

TABLE C-19

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-23

PARAMETER	SAMPLING DATE								
	07/31/78	09/06/78	10/03/78	01/17/79	04/19/79	11/14/79	02/21/80	05/18/80	08/18/80
Field temperature (°C)	6.5	7.0	6.0	3.0	6.0	6.5	8.0	8.0	8.0
Total laboratory alkalinity	132	132	132	138	136	130	126	120	132
Total field alkalinity	132	134	126	128	129	132	130	134	133
Specific conductance (µmhos/cm)	230	215	258	230	240	225	215	230	245
Field conductivity (µmhos/cm)	164	270	170	205	153	160	155	160	160
Laboratory pH (standard units)	7.70	7.62	7.78	7.88	7.89	7.66	7.68	7.54	7.74
Field pH (standard units)	7.0	7.0	7.9	7.3	7.8	8.1	8.3	8.3	6.5
Total hardness	148	144	132	148	110	124	132	156	120
Total dissolved solids	212	164	150	149	151	204	126	116	171
Chemical oxygen demand	—	—	17	<1	10	3	<1	21	27
Total phosphorus (P)	0.02	0.01	0.08	0.03	0.03	—	—	—	—
<u>Anions</u>									
Arsenic	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	<1	<1	<1	4	<1	<1	9
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	—	0.19	0.31	0.22	0.18	0.13	<0.12	0.20
Nitrate nitrogen (N)	0.15	0.10	0.24	0.19	0.10	<0.05	<0.05	0.20	0.13
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	0.06	0.12	0.05	0.04
Sulfate	6	6	7	3	7	8	3	6	6
<u>Cations</u>									
Aluminum	—	—	0.05	<0.01	0.12	0.06	0.08	0.08	<0.01
Barium	—	—	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Cadmium	—	—	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	32.4	37.6	29.8	36.1	24.8	—	—	—	—
Chromium, total	—	—	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Cobalt	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.002	0.004	0.005	0.003	0.007	0.010	<0.001	0.002	<0.001
Iron	0.25	0.15	0.24	0.12	0.13	0.09	0.07	0.07	0.02
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	—	14.0	14.1	11.7	9.7	13.8	13.4	13.9
Manganese	0.280	0.208	0.189	0.005	0.007	0.004	0.009	0.006	0.005
Mercury	—	—	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.012	0.21	0.011	0.014	0.008	0.020	0.013	0.006	0.009

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

TABLE C-20

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-24

PARAMETER	SAMPLING DATE									
	01/08/79	02/13/79	03/20/79	04/18/79	07/15/79	11/12/79	02/18/80	05/12/80	08/13/80	08/13/80
Field temperature (°C)	3.0	—	5.5	6.5	9.0	5.5	6.0	7.0	7.5	7.5
Total laboratory alkalinity	158	100	104	106	81	84	88	80	82	82
Total field alkalinity	124	97	109	103	80	78	83	97	90	90
Specific conductance (µmhos/cm)	380	200	200	255	175	175	160	180	187	187
Field conductivity (µmhos/cm)	252	180	140	133	135	120	121	120	130	130
Laboratory pH (standard units)	7.36	7.58	7.70	7.83	7.31	7.22	7.87	7.39	7.45	7.45
Field pH (standard units)	7.2	7.5	7.4	7.4	7.3	6.8	8.2	8.3	5.6	5.6
Total hardness	180	96	112	94	95	88	92	116	108	108
Total dissolved solids	307	120	157	199	149	144	129	132	151	151
Chemical oxygen demand	347	—	—	38	3	<1	<1	24	28	28
Total phosphorus (P)	<0.01	0.07	<0.01	0.04	0.04	—	—	—	—	—
<u>Anions</u>										
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	2	2	<1	<1	<1	4	<1	<1	3	3
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.57	—	—	<0.12	0.32	0.16	0.29	0.18	0.32	0.32
Nitrate nitrogen (N)	0.10	0.47	0.44	0.29	1.86	0.98	1.12	1.40	0.3	0.3
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	0.12	0.06	0.03	0.03	0.03
Sulfate	13	10	19	14	15	15	7	8	13	13
<u>Cations</u>										
Aluminum	1.03	—	—	0.43	0.25	1.28	0.05	0.05	0.12	0.12
Barium	<0.01	—	—	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	46.1	25.8	16.0	21.8	23.8	—	—	—	—	—
Chromium, total	<0.001	—	—	<0.001	<0.001	0.005	0.003	<0.001	<0.001	<0.001
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.009	0.003	0.003	0.015	0.009	0.007	0.002	0.007	<0.001	<0.001
Iron	1.26	1.44	1.2	0.54	0.40	2.1	0.08	0.09	0.15	0.15
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	15.8	—	—	9.7	8.6	8.1	10.5	10.1	10.6	10.6
Manganese	1.001	0.472	0.214	0.052	0.003	0.049	0.006	0.009	0.018	0.018
Mercury	0.0004	—	—	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.026	0.010	0.027	0.013	<0.001	0.019	0.005	0.006	0.011	0.011

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-21

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-25

PARAMETER	SAMPLING DATE									
	01/18/79	02/13/79	03/21/79	04/18/79	07/15/79	11/12/79	02/20/80	05/13/80	08/11/80	08/11/80
Field temperature (°C)	—	—	5.0	6.5	7.5	5.5	6.0	7.0	8.5	8.5
Total laboratory alkalinity	126	124	104	102	101	96	94	88	96	96
Total field alkalinity	—	108	103	102	109	96	99	104	96	96
Specific conductance (µmhos/cm)	260	230	200	200	190	185	170	190	190	190
Field conductivity (µmhos/cm)	—	200	131	132	172	120	118	125	120	120
Laboratory pH (standard units)	7.49	7.66	7.55	7.60	7.57	7.17	7.75	7.44	7.40	7.40
Field pH (standard units)	—	7.5	7.6	7.8	7.8	6.6	7.8	8.5	8.2	8.2
Total hardness	127	120	140	91	106	92	96	116	100	100
Total dissolved solids	207	164	138	150	143	137	128	112	166	166
Chemical oxygen demand	93	—	—	7	3	<1	7	7	20	20
Total phosphorus (P)	0.01	0.02	0.43	0.09	0.07	—	—	—	—	—
<u>Anions</u>										
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	2	4	<1	<1	<1	2	<1	<1	2	2
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.30	—	—	0.15	0.45	0.23	0.24	0.14	0.26	0.26
Nitrate nitrogen (N)	1.12	0.05	<0.05	0.10	0.18	<0.05	<0.05	<0.05	0.30	0.30
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	0.09	0.12	0.03	0.21	0.21
Sulfate	22	40	13	15	11	17	7	11	13	13
<u>Cations</u>										
Aluminum	0.19	—	—	0.50	0.20	1.01	0.18	0.18	0.40	0.40
Barium	<0.01	—	—	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	30.5	30.1	16.4	21.5	25.9	—	—	—	—	—
Chromium, total	<0.001	—	—	<0.001	<0.001	0.001	0.003	0.001	<0.001	<0.001
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.003	0.002	<0.001	0.023	0.011	0.010	<0.001	<0.001	0.001	0.001
Iron	0.17	0.28	0.26	0.42	0.26	2.1	0.12	0.48	0.35	0.35
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	12.5	—	—	9.1	10.0	6.4	10.4	11.2	11.5	11.5
Manganese	0.210	0.299	0.159	0.054	0.040	0.025	0.014	0.008	0.011	0.011
Mercury	<0.0001	—	—	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.018	0.013	0.016	0.013	<0.001	0.018	0.005	0.004	0.001	0.001

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-22  
RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-27

PARAMETER	SAMPLING DATE				
	03/20/79	11/14/79	02/19/80	05/14/80	08/18/80
Field temperature (°C)	5.5	6.0	5.5	8.0	8.0
Total laboratory alkalinity	260	52	44	36	34
Total field alkalinity	250	98	123	95	117
Specific conductance (µmhos/cm)	500	110	110	170	90
Field conductivity (µmhos/cm)	325	158	225	112	220
Laboratory pH (standard units)	7.27	7.71	10.22	9.42	9.68
Field pH (standard units)	9.9	10.0	11.0	10.8	10.8
Total hardness	252	36	32	28	32
Total dissolved solids	487	67	64	58	74
Chemical oxygen demand	—	3	31	3	35
Total phosphorus (P)	0.03	—	—	—	—
<u>Anions</u>					
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	2	2	2	<1	4
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	0.20	0.16	<0.12	0.13
Nitrate nitrogen (N)	0.93	<0.05	0.24	<0.05	0.19
Phosphate (PO <sub>4</sub> )	—	0.03	0.06	0.02	0.03
Sulfate	16	8	2	4	7
<u>Cations</u>					
Aluminum	—	0.18	0.22	0.25	0.15
Barium	—	0.01	0.02	<0.01	0.02
Cadmium	—	<0.001	<0.001	<0.001	<0.001
Calcium	58.9	—	—	—	—
Chromium, total	—	<0.001	<0.001	<0.001	<0.001
Cobalt	—	<0.01	<0.01	<0.01	<0.01
Copper	0.004	<0.001	<0.001	0.002	<0.001
Iron	0.22	0.04	0.01	0.08	0.02
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	2.70	1.41	1.45	1.52
Manganese	0.247	0.010	0.006	0.004	0.002
Mercury	—	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	<0.01	<0.01	<0.01	<0.01
Nickel	—	<0.01	<0.01	<0.01	<0.01
Selenium	—	<0.001	<0.001	<0.001	<0.001
Silver	—	<0.001	<0.001	<0.001	<0.001
Zinc	0.014	0.003	0.004	<0.001	<0.001

Note: All concentrations in mg/l unless otherwise noted.  
— Indicates no data.



TABLE C-23

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-28

PARAMETER	SAMPLING DATE					
	01/18/79	02/12/79	03/20/79	04/18/79	07/15/79	11/13/79
Field temperature (°C)	—	6.0	5.5	7.0	9.5	5.5
Total laboratory alkalinity	160	148	156	140	148	139
Total field alkalinity	—	132	153	140	159	147
Specific conductance (µmhos/cm)	385	300	270	265	260	240
Field conductivity (µmhos/cm)	—	260	185	175	222	180
Laboratory pH (standard units)	7.19	7.48	7.64	7.82	7.52	7.62
Field pH (standard units)	—	7.2	7.0	7.6	7.5	8.0
Total hardness	203	176	160	122	147	140
Total dissolved solids	298	202	178	188	169	203
Chemical oxygen demand	296	—	—	10	3	<1
Total phosphorus (P)	<0.01	0.01	0.12	0.01	0.02	—
<u>Anions</u>						
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	2	<1	<1	<1	6
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.33	—	—	0.22	0.31	0.16
Nitrate nitrogen (N)	0.92	0.39	0.39	0.43	0.91	0.49
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	0.03
Sulfate	12	7	12	14	11	11
<u>Cations</u>						
Aluminum	0.06	—	—	0.22	0.14	0.21
Barium	<0.01	—	—	<0.01	<0.01	0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001
Calcium	52.3	42.2	24.6	28.3	34.3	—
Chromium, total	<0.001	—	—	<0.001	0.001	0.002
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01
Copper	<0.001	0.001	0.002	0.015	0.018	0.002
Iron	1.99	1.28	0.54	0.19	0.15	0.23
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	17.4	—	—	12.5	15.0	12.1
Manganese	1.55	1.281	0.612	0.220	0.114	0.051
Mercury	<0.0001	—	—	<0.0001	<0.001	<0.001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001
Zinc	0.022	0.013	0.008	0.005	<0.001	0.012

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-24

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMB-29

PARAMETER	SAMPLING DATE 02/12/79
Field temperature (°C)	5.5
Total laboratory alkalinity	172
Total field alkalinity	132
Specific conductance (μmhos/cm)	315
Field conductivity (μmhos/cm)	260
Laboratory pH (standard units)	7.05
Field pH (standard units)	6.8
Total hardness	180
Total dissolved solids	221
Chemical oxygen demand	—
Total phosphorus (P)	0.03
<u>Anions</u>	
Arsenic	<0.001
Chloride	2
Cyanide, total	<0.001
Fluoride	—
Nitrate nitrogen (N)	0.19
Phosphate (PO <sub>4</sub> )	—
Sulfate	4
<u>Cations</u>	
Aluminum	—
Barium	—
Cadmium	—
Calcium	43.0
Chromium, total	—
Cobalt	—
Copper	0.002
Iron	3.00
Lead	<0.01
Magnesium	—
Manganese	2.05
Mercury	—
Molybdenum	—
Nickel	—
Selenium	—
Silver	—
Zinc	0.052

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-25

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMC-1

PARAMETER	SAMPLING DATE					
	11/15/79	12/12/79	01/10/80	02/19/80	05/14/80	08/17/80
Field temperature (°C)	5.5	6.0	6.0	6.0	7.0	7.0
Total laboratory alkalinity	88	90	84	84	80	82
Total field alkalinity	94	95	98	87	93	87
Specific conductance (µmhos/cm)	170	165	140	150	150	219
Field conductivity (µmhos/cm)	140	95	110	100	116	120
Laboratory pH (standard units)	6.61	6.40	6.75	7.89	7.40	7.62
Field pH (standard units)	8.8	7.6	8.3	8.0	8.2	6.2
Total hardness	88	90	96	92	112	68
Total dissolved solids	151	147	137	134	133	172
Chemical oxygen demand	52	—	—	3	28	<1
Total phosphorus (P)	—	—	—	—	—	—
<u>Anions</u>						
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	6	2	<1	2	<1	16
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.20	—	—	0.22	<0.12	0.20
Nitrate nitrogen (N)	<0.05	<0.05	0.34	0.29	<0.05	0.17
Phosphate (PO <sub>4</sub> )	0.09	0.06	0.06	0.09	0.07	0.09
Sulfate	13	9	9	5	11	10
<u>Cations</u>						
Aluminum	0.04	—	—	0.33	0.26	0.12
Barium	0.01	—	—	<0.01	0.02	<0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001
Calcium	—	—	—	—	—	—
Chromium, total	<0.001	—	—	0.003	0.002	<0.001
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01
Copper	0.004	0.008	<0.001	0.004	0.001	<0.001
Iron	0.11	1.1	0.13	0.21	0.99	0.17
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	5.8	—	—	9.5	10.1	9.7
Manganese	0.013	0.554	0.362	0.103	0.028	0.008
Mercury	<0.0001	—	—	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001
Zinc	0.003	0.012	0.002	0.002	0.009	0.008

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-26

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMC-2

PARAMETER	SAMPLING DATE					
	11/15/79	12/12/79	01/09/80	02/20/80	05/19/80	08/17/80
Field temperature (°C)	5.5	6.0	5.5	6.5	6.5	7.5
Total laboratory alkalinity	202	220	206	220	220	192
Total field alkalinity	213	231	250	231	229	203
Specific conductance (µmhos/cm)	338	350	330	335	400	344
Field conductivity (µmhos/cm)	260	210	235	267	250	260
Laboratory pH (standard units)	7.33	7.09	7.41	7.62	7.38	7.41
Field pH (standard units)	8.1	7.8	7.7	7.9	7.4	8.8
Total hardness	194	212	224	212	224	200
Total dissolved solids	268	289	289	288	203	248
Chemical oxygen demand	158	—	—	28	<1	16
Total phosphorus (P)	—	—	—	—	—	—
<u>Anions</u>						
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	6	4	4	<1	<1	6
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.16	—	—	0.16	<0.12	0.18
Nitrate nitrogen (N)	<0.05	<0.05	<0.05	<0.05	0.20	0.05
Phosphate (PO <sub>4</sub> )	0.09	<0.01	<0.01	<0.01	0.01	0.06
Sulfate	11	8	5	4	6	9
<u>Cations</u>						
Aluminum	0.99	—	—	0.03	0.03	0.08
Barium	0.02	—	—	0.02	<0.01	0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001
Calcium	—	—	—	—	—	—
Chromium, total	<0.001	—	—	<0.001	<0.001	<0.001
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01
Copper	0.010	0.004	<0.001	<0.001	0.003	<0.001
Iron	0.86	0.04	0.25	0.22	0.03	0.05
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	16.3	—	—	24.5	24.0	22.0
Manganese	0.034	0.454	0.304	0.145	0.047	0.032
Mercury	<0.0001	—	—	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001
Zinc	0.003	0.011	<0.001	0.017	<0.001	0.036

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-27

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER DMC-3

PARAMETER	SAMPLING DATE					
	11/15/79	12/12/79	01/10/80	02/19/80	05/14/80	08/17/80
Field temperature (°C)	6.0	6.0	6.0	5.5	6.5	7.5
Total laboratory alkalinity	120	191	150	136	136	138
Total field alkalinity	132	158	156	147	149	146
Specific conductance (µmhos/cm)	250	380	225	230	250	279
Field conductivity (µmhos/cm)	180	290	180	210	170	200
Laboratory pH (standard units)	6.74	6.72	6.97	8.07	7.52	7.61
Field pH (standard units)	8.5	7.2	7.6	7.8	8.4	7.8
Total hardness	122	228	160	140	148	132
Total dissolved solids	198	301	142	192	184	208
Chemical oxygen demand	365	—	—	<1	21	12
Total phosphorus (P)	—	—	—	—	—	—
<u>Anions</u>						
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	4	1	2	<1	2	8
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	0.25	—	—	0.21	0.14	0.26
Nitrate nitrogen (N)	<0.05	<0.05	<0.05	0.10	<0.05	0.18
Phosphate (PO <sub>4</sub> )	0.31	<0.01	0.03	0.06	0.05	0.21
Sulfate	17	12	7	3	7	13
<u>Cations</u>						
Aluminum	0.02	—	—	<0.01	<0.01	<0.01
Barium	<0.01	—	—	0.04	0.03	0.01
Cadmium	<0.001	—	—	<0.001	<0.001	<0.001
Calcium	—	—	—	—	—	—
Chromium, total	0.003	—	—	<0.001	<0.001	0.004
Cobalt	<0.01	—	—	<0.01	<0.01	<0.01
Copper	0.014	0.007	<0.001	0.002	<0.001	<0.001
Iron	0.07	0.11	1.3	0.35	0.22	0.03
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	7.3	—	—	15.2	14.7	15.7
Manganese	0.013	1.87	1.39	0.654	0.251	0.103
Mercury	<0.0001	—	—	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	—	—	<0.01	<0.01	<0.01
Nickel	<0.01	—	—	<0.01	<0.01	<0.01
Selenium	<0.001	—	—	<0.001	<0.001	<0.001
Silver	<0.001	—	—	<0.001	<0.001	<0.001
Zinc	0.008	0.013	0.002	0.009	0.014	0.012

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-28

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM TEST WELL 1 (TW-1)

PARAMETER	SAMPLING DATE							
	07/07/77	08/25/77	09/28/77	10/20/77	11/29/77	02/01/78	03/30/78	05/24/78
Field temperature (°C)	—	7.0	8.0	7.0	5.0	4.0	6.0	5.0
Total laboratory alkalinity	116	122	120	124	90	98	100	120
Total field alkalinity	—	126	122	133	122	105	92	118
Specific conductance (µmhos/cm)	235	209	232	235	171	157	180	228
Field conductivity (µmhos/cm)	—	150	155	158	150	150	155	155
Laboratory pH (standard units)	7.85	—	—	—	—	8.25	8.13	7.91
Field pH (standard units)	—	7.0	7.2	7.4	7.4	7.9	8.0	7.6
Total hardness	124	152	124	124	92	100	108	128
Total dissolved solids	109	123	151	160	67	92	134	175
Chemical oxygen demand	—	—	—	—	—	—	—	7
Total phosphorus (P)	0.02	0.02	0.02	0.02	0.01	0.02	<0.01	0.02
<u>Anions</u>								
Arsenic	0.001	0.003	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	4	4	<1	4	2	2	<1
Cyanide, total	0.001	0.004	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Fluoride	—	—	—	—	—	—	—	<0.12
Nitrate nitrogen (N)	0.34	0.63	0.58	0.39	0.44	0.19	0.15	0.44
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	—	—	—
Sulfate*	11	8	7	8	10	8	8	8
<u>Cations</u>								
Aluminum	<0.01	—	—	<0.01	—	0.07	—	<0.01
Barium	—	—	—	—	—	—	—	0.02
Cadmium	0.004	—	—	<0.001	—	0.002	—	0.002
Calcium	—	—	—	—	—	21.8	16.9	26.2
Chromium, total	0.005	—	—	0.001	—	0.007	—	<0.001
Cobalt	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Copper	0.001	0.090	0.010	0.003	0.016	0.002	0.002	<0.001
Iron	0.87	0.68	1.04	0.20	1.90	0.39	0.06	0.06
Lead	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	15.0	—	—	15.2	—	12.6	—	15.0
Manganese	0.018	0.014	0.014	0.002	0.108	0.073	0.077	0.008
Mercury	0.0003	—	—	<0.0001	—	<0.0001	—	<0.0001
Molybdenum	<0.01	—	—	<0.01	—	0.03	—	<0.01
Nickel	<0.01	—	—	<0.01	—	<0.01	—	<0.01
Selenium	—	—	—	—	—	—	—	<0.001
Silver	—	—	—	—	—	—	—	<0.001
Zinc	0.030	0.016	0.007	0.004	0.015	0.010	0.007	0.005

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

\*Sulfide in 07/07/77 analysis.

TABLE C-29

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM WATER WELL 1 (WW-1)

PARAMETER	SAMPLING DATE
	07/05/77
Field temperature (°C)	—
Total laboratory alkalinity	84
Total field alkalinity	—
Specific conductance (µmhos/cm)	200
Field conductivity (µmhos/cm)	—
Laboratory pH (standard units)	6.60
Field pH (standard units)	—
Total hardness	96
Total dissolved solids	66
Chemical oxygen demand	—
Total phosphorus (P)	<0.01
<u>Anions</u>	
Arsenic	0.001
Chloride	4
Cyanide, total	0.002
Fluoride	—
Nitrate nitrogen (N)	<0.01
Phosphate (PO <sub>4</sub> )	—
Sulfate*	10
<u>Cations</u>	
Aluminum	0.01
Barium	—
Cadmium	0.001
Calcium	—
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.008
Iron	3.36
Lead	0.02
Magnesium	9.5
Manganese	0.023
Mercury	0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	—
Silver	—
Zinc	2.60

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

\*Sulfide in 07/05/77 analysis.

		11/25/77	02/01/78	03/30/78	03/24/78	11/14/79	02/18/80	05/14/80	08/20/80			
Field temperature (°C)	--	8.0	9.0	8.0	6.0	5.0	7.0	7.0	--	7.0	8.0	8.5
Total laboratory alkalinity	120	122	104	106	110	106	104	104	79	102	102	100
Total field alkalinity	--	101	124	110	106	120	100	101	106	111	111	105
Specific conductance (µmhos/cm)	200	185	204	207	202	180	203	202	218	185	205	200
Field conductivity (µmhos/cm)	--	145	150	145	140	140	145	140	115	141	150	--
Laboratory pH (standard units)	7.21	--	--	--	--	7.73	8.06	7.87	6.93	7.91	7.54	7.32
Field pH (standard units)	--	7.7	8.2	7.4	8.0	7.8	7.8	7.4	7.9	7.4	8.0	5.8
Total hardness	128	116	112	108	108	108	120	112	112	104	116	108
Total dissolved solids	83	117	133	135	117	110	177	149	189	150	124	165
Chemical oxygen demand	--	--	--	--	--	--	--	<1	<1	3	<1	20
Total phosphorus (P)	0.05	0.03	0.02	0.10	0.05	0.03	0.03	0.04	--	--	--	--
<u>Anions</u>												
Arsenic	0.001	0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	<1	6	4	<1	<1	<1	2	<1	4	<1	<1	<1
Cyanide, total	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.13	0.21	0.23	<0.12	0.21
Fluoride	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrate nitrogen (N)	0.63	0.83	0.88	0.44	0.83	0.73	0.68	0.54	11.0	0.95	0.63	0.52
Phosphate (PO <sub>4</sub> )	--	--	--	--	--	--	--	--	0.06	0.09	0.04	0.06
Sulfate*	9	7	5	6	8	6	7	6	10	3	6	9
<u>Cations</u>												
Aluminum	0.03	--	--	<0.01	--	<0.01	--	<0.01	0.01	<0.01	<0.01	0.07
Barium	--	--	--	--	--	--	--	<0.01	0.02	<0.01	<0.01	<0.01
Cadmium	0.002	--	--	<0.001	--	0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	--	--	--	--	--	29.4	22.3	21.9	--	--	--	--
Chromium, total	<0.001	--	--	0.004	--	0.008	--	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.01	--	--	<0.01	--	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	0.004	<0.001	0.010	0.003	0.002	0.005	<0.001	0.003	0.003	0.003	<0.001	<0.002
Iron	0.03	0.02	0.01	<0.01	0.02	0.05	<0.01	<0.01	0.05	0.01	0.02	<0.01
Lead	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	14.6	--	--	13.0	--	11.7	--	12.1	8.6	12.1	11.3	11.9
Manganese	0.002	0.008	0.002	<0.001	0.001	0.009	0.002	<0.001	0.005	0.005	0.008	0.003
Mercury	0.0001	--	--	<0.0001	--	<0.0001	--	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	--	--	<0.01	--	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	--	--	<0.01	--	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.049	0.051	0.031	0.033	0.016	0.036	0.037	0.025	0.033	0.025	0.053	0.036

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

\*Sulfide in 07/05/77 analysis.



TABLE C-31

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE FOX WELL

PARAMETER	SAMPLING DATE								
	09/13/78	10/03/78	01/18/79	04/23/79	07/16/79	11/14/79	02/20/80	05/20/80	08/20/80
Field temperature (°C)	8.0	6.0	—	9.0	10.0	8.0	8.0	7.5	10.0
Total laboratory alkalinity	62	58	62	50	55	44	40	46	58
Total field alkalinity	60	60	—	58	62	63	63	64	63
Specific conductance (µmhos/cm)	142	150	115	130	140	230	295	240	172
Field conductivity (µmhos/cm)	118	105	—	112	130	195	215	200	145
Laboratory pH (standard units)	6.59	6.67	6.50	7.46	6.46	6.66	6.54	6.09	6.84
Field pH (standard units)	6.7	6.8	—	6.6	6.9	6.6	6.9	6.3	6.7
Total hardness	56	47	46	47	59	84	120	76	54
Total dissolved solids	100	89	78	90	122	175	212	106	80
Chemical oxygen demand	—	21	7	3	3	31	24	7	35
Total phosphorus (P)	0.01	0.02	<0.01	0.02	0.02	—	—	—	—
<u>Anions</u>									
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride	16	16	16	12	12	56	78	38	24
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	—	<0.12	0.23	0.22	0.26	0.15	<0.12	<0.12	0.23
Nitrate nitrogen (N)	0.59	0.93	1.46	0.50	0.36	<0.05	<0.05	<0.05	<0.05
Phosphate (PO <sub>4</sub> )	—	—	—	—	—	<0.01	0.03	<0.01	0.04
Sulfate	3	3	8	<1	4	7	1	5	2
<u>Cations</u>									
Aluminum	—	0.02	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	0.03
Barium	—	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Cadmium	—	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium	14.8	10.8	10.4	11.3	14.8	—	—	—	—
Chromium, total	—	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.001	<0.001
Cobalt	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	<0.001	<0.001	0.011	0.003	0.004	0.002	0.001	<0.001	<0.001
Iron	4.60	4.33	4.41	4.1	5.3	8.8	11	7.0	5.1
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	—	4.91	4.74	4.46	5.36	6.9	12.2	7.3	5.0
Manganese	0.096	0.089	0.079	0.098	0.091	0.169	0.213	0.147	0.109
Mercury	—	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	—	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	—	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.003	<0.001	0.001	0.008	<0.001	0.009	0.012	0.010	0.005

All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-32

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE MC GESHICK WELL

PARAMETER	SAMPLING DATES				
	09/13/78	10/03/78	01/18/79	04/23/79	07/16/79
Field temperature (°C)	8.0	6.5	--	8.0	10.0
Total laboratory alkalinity	122	124	130	120	109
Total field alkalinity	120	118	--	118	109
Specific conductance (µmhos/cm)	393	418	285	240	200
Field conductivity (µmhos/cm)	285	282	--	170	158
Laboratory pH (standard units)	7.37	7.43	7.51	7.55	7.24
Field pH (standard units)	7.4	7.3	--	7.6	7.6
Total hardness	168	160	132	86	83
Total dissolved solids	248	239	174	142	116
Chemical oxygen demand	--	28	<1	3	3
Total phosphorus (P)	0.01	0.02	<0.01	0.02	0.02
<u>Anions</u>					
Arsenic	0.001	<0.001	<0.001	<0.001	<0.001
Chloride	66	62	64	6	4
Cyanide, total	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoride	--	<0.12	0.29	0.33	0.37
Nitrate nitrogen (N)	0.63	0.54	0.29	0.29	<0.05
Phosphate (PO <sub>4</sub> )	--	--	--	--	--
Sulfate	6	7	<1	3	<1
<u>Cations</u>					
Aluminum	--	0.02	<0.01	<0.01	<0.01
Barium	--	<0.01	<0.01	<0.01	<0.01
Cadmium	--	0.006	<0.001	<0.001	<0.001
Calcium	34.0	34.5	30.6	18.8	19.1
Chromium, total	--	<0.001	<0.001	<0.001	<0.001
Cobalt	--	<0.01	<0.01	<0.01	<0.01
Copper	<0.001	<0.001	0.004	0.001	<0.001
Iron	2.04	2.14	2.14	1.1	0.98
Lead	<0.01	<0.01	<0.01	<0.01	<0.01
Magnesium	--	18.1	13.6	9.5	8.5
Manganese	0.136	0.147	0.118	0.092	0.064
Mercury	--	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	--	<0.01	<0.01	<0.01	<0.01
Nickel	--	<0.01	<0.01	<0.01	<0.01
Selenium	--	<0.001	<0.001	<0.001	<0.001
Silver	--	<0.001	<0.001	<0.001	<0.001
Zinc	0.017	0.005	0.068	0.032	<0.001

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

TABLE C-33

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE REYNOLDS WELL

PARAMETER	SAMPLING DATE
	10/04/78
Field temperature (°C)	8.0
Total laboratory alkalinity	128
Total field alkalinity	120
Specific conductance (µmhos/cm)	230
Field conductivity (µmhos/cm)	152
Laboratory pH (standard units)	7.60
Field pH (standard units)	7.2
Total hardness	153
Total dissolved solids	136
Chemical oxygen demand	58
Total phosphorus (P)	0.01
<u>Anions</u>	
Arsenic	<0.001
Chloride	2
Cyanide, total	<0.001
Fluoride	<0.12
Nitrate nitrogen (N)	0.44
Phosphate (PO <sub>4</sub> )	—
Sulfate	9
<u>Cations</u>	
Aluminum	0.05
Barium	<0.01
Cadmium	0.007
Calcium	37.2
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.003
Iron	0.03
Lead	<0.01
Magnesium	14.6
Manganese	<0.001
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.147

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-34

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE SIMONSON WELL

PARAMETER	SAMPLING DATE 10/05/78
Field temperature (°C)	9.0
Total laboratory alkalinity	120
Total field alkalinity	108
Specific conductance ( $\mu$ mhos/cm)	238
Field conductivity ( $\mu$ mhos/cm)	191
Laboratory pH (standard units)	7.83
Field pH (standard units)	7.8
Total hardness	128
Total dissolved solids	113
Chemical oxygen demand	21
Total phosphorus (P)	0.03
<u>Anions</u>	
Arsenic	<0.001
Chloride	2
Cyanide, total	<0.001
Fluoride	0.15
Nitrate nitrogen (N)	0.63
Phosphate (PO <sub>4</sub> )	—
Sulfate	8
<u>Cations</u>	
Aluminum	<0.01
Barium	<0.01
Cadmium	0.002
Calcium	29.9
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.013
Iron	0.19
Lead	<0.01
Magnesium	12.9
Manganese	0.002
Mercury	0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.112

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-35

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE VOLLMAR WELL

PARAMETER	SAMPLING DATE 10/10/78
Field temperature (°C)	9.0
Total laboratory alkalinity	132
Total field alkalinity	124
Specific conductance (µmhos/cm)	264
Field conductivity (µmhos/cm)	155
Laboratory pH (standard units)	7.92
Field pH (standard units)	8.0
Total hardness	145
Total dissolved solids	129
Chemical oxygen demand	17
Total phosphorus (P)	0.03
<u>Anions</u>	
Arsenic	<0.001
Chloride	<1
Cyanide, total	<0.001
Fluoride	0.15
Nitrate nitrogen (N)	0.29
Phosphate (PO <sub>4</sub> )	—
Sulfate	14
<u>Cations</u>	
Aluminum	0.01
Barium	<0.01
Cadmium	0.003
Calcium	32.2
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.002
Iron	0.04
Lead	<0.01
Magnesium	15.9
Manganese	<0.001
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.151

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-36

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM THE WALENTOWSKI WELL

PARAMETER	SAMPLING DATE				
	08/26/77	09/28/77	11/20/77	02/01/78	06/05/78
Field temperature (°C)	9.0	10.0	FROZEN	FROZEN	7.0
Total laboratory alkalinity	42	—			38
Total field alkalinity	53	43			34
Specific conductance (umhos/cm)	132	124			92
Field conductivity (umhos/cm)	90	90			85
Laboratory pH (standard units)	—	—			7.54
Field pH (standard units)	6.2	—			5.5
Total hardness	40	56			48
Total dissolved solids	75	81			67
Chemical oxygen demand	—	—			<1
Total phosphorus (P)	<0.01	<0.01			<0.01
<u>Anions</u>					
Arsenic	<0.001	0.001			<0.001
Chloride	6	8			2
Cyanide, total	<0.001	<0.001			<0.001
Fluoride	—	—			<0.12
Nitrate nitrogen (N)	<0.01	0.98			<0.01
Phosphate (PO <sub>4</sub> )	—	—			—
Sulfate	9	8			8
<u>Cations</u>					
Aluminum	—	—			<0.01
Barium	—	—			0.07
Cadmium	—	—			<0.001
Calcium	—	—			10.8
Chromium, total	—	—			<0.001
Cobalt	—	—			<0.01
Copper	0.007	0.022			<0.001
Iron	1.75	1.26			2.06
Lead	<0.01	0.01			<0.01
Magnesium	—	—			4.74
Manganese	0.019	0.016			0.040
Mercury	—	—			<0.0001
Molybdenum	—	—			<0.01
Nickel	—	—			<0.01
Selenium	—	—			0.001
Silver	—	—			<0.001
Zinc	0.389	0.458			1.75

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-37

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G40-J15

PARAMETER	SAMPLING DATE
	03/21/79
Field temperature (°C)	5.5
Total laboratory alkalinity	131
Total field alkalinity	180
Specific conductance (μmhos/cm)	225
Field conductivity (μmhos/cm)	225
Laboratory pH (standard units)	7.07
Field pH (standard units)	6.9
Total hardness	112
Total dissolved solids	194
Chemical oxygen demand	86
Total phosphorus (P)	—
<u>Anions</u>	
Arsenic	<0.001
Chloride	6
Cyanide, total	<0.001
Fluoride	0.24
Nitrate nitrogen (N)	<0.05
Phosphate (PO <sub>4</sub> )	0.12
Sulfate	<1
<u>Cations</u>	
Aluminum	4.99
Barium	0.17
Cadmium	<0.001
Calcium	—
Chromium, total	0.007
Cobalt	<0.01
Copper	0.027
Iron	25
Lead	<0.01
Magnesium	6.7
Manganese	0.995
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.032

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-38

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G40-K13

PARAMETER	SAMPLING DATE 11/14/79
Field temperature (°C)	5.5
Total laboratory alkalinity	153
Total field alkalinity	154
Specific conductance (µmhos/cm)	260
Field conductivity (µmhos/cm)	205
Laboratory pH (standard units)	7.24
Field pH (standard units)	6.9
Total hardness	134
Total dissolved solids	221
Chemical oxygen demand	31
Total phosphorus (P)	—
<u>Anions</u>	
Arsenic	<0.001
Chloride	4
Cyanide, total	<0.001
Fluoride	0.17
Nitrate nitrogen (N)	<0.05
Phosphate (PO <sub>4</sub> )	0.09
Sulfate	1
<u>Cations</u>	
Aluminum	0.23
Barium	0.04
Cadmium	<0.001
Calcium	—
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.005
Iron	1.1
Lead	<0.01
Magnesium	4.63
Manganese	1.52
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.023

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.



TABLE C-39

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G40-L23

PARAMETER	SAMPLING DATE		
	02/12/80	05/20/80	08/11/80
Field temperature (°C)	5.0	7.5	8.5
Total laboratory alkalinity	146	146	142
Total field alkalinity	147	187	156
Specific conductance (µmhos/cm)	250	285	268
Field conductivity (µmhos/cm)	181	—	240
Laboratory pH (standard units)	7.53	7.54	7.21
Field pH (standard units)	7.8	7.9	7.0
Total hardness	152	152	140
Total dissolved solids	187	177	219
Chemical oxygen demand	38	3	12
Total phosphorus (P)	—	—	—
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	2	<1	1
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.26	0.14	0.29
Nitrate nitrogen (N)	<0.05	<0.05	0.10
Phosphate (PO <sub>4</sub> )	0.12	0.03	0.03
Sulfate	12	10	13
<u>Cations</u>			
Aluminum	2.12	2.22	0.50
Barium	0.05	0.12	<0.01
Cadmium	<0.001	<0.001	<0.001
Calcium	—	—	—
Chromium, total	<0.007	<0.001	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.003	<0.001	0.005
Iron	1.1	0.29	0.63
Lead	<0.01	<0.01	<0.01
Magnesium	15.8	16.2	16.4
Manganese	1.33	0.196	0.079
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.010	0.009	0.007

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-40

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G40-Q7

PARAMETER	SAMPLING DATE		
	02/12/80	05/19/80	08/12/80
Field temperature (°C)	5.5	6.0	8.0
Total laboratory alkalinity	88	62	48
Total field alkalinity	190	113	87
Specific conductance (µmhos/cm)	240	140	140
Field conductivity (µmhos/cm)	171	165	240
Laboratory pH (standard units)	10.45	9.46	9.71
Field pH (standard units)	12.2	10.5	10.7
Total hardness	40	44	48
Total dissolved solids	162	66	30
Chemical oxygen demand	72	<1	32
Total phosphorus (P)	--	--	--
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	<1	<1	1
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.26	0.14	0.41
Nitrate nitrogen (N)	<0.05	0.15	0.11
Phosphate (PO <sub>4</sub> )	<0.01	0.02	0.03
Sulfate	9	6	7
<u>Cations</u>			
Aluminum	0.05	0.04	0.11
Barium	0.04	<0.01	<0.01
Cadmium	<0.001	<0.001	<0.001
Calcium	--	--	--
Chromium, total	<0.001	<0.001	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.004	0.002	<0.001
Iron	0.03	<0.01	<0.01
Lead	<0.01	<0.01	<0.01
Magnesium	6.6	6.5	5.6
Manganese	0.012	0.002	0.007
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.005	0.003	<0.001

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

TABLE C-41

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G40-R23

PARAMETER	SAMPLING DATE		
	02/12/80	05/20/80	08/12/80
Field temperature (°C)	4.5	7.5	8.0
Total laboratory alkalinity	118	118	114
Total field alkalinity	118	119	119
Specific conductance (µmhos/cm)	200	235	229
Field conductivity (µmhos/cm)	145	185	180
Laboratory pH (standard units)	7.68	7.36	7.75
Field pH (standard units)	7.8	7.9	6.2
Total hardness	120	130	112
Total dissolved solids	180	142	176
Chemical oxygen demand	14	10	32
Total phosphorus (P)	--	--	--
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	<1	<1	2
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.15	<0.12	0.30
Nitrate nitrogen (N)	<0.05	0.24	0.59
Phosphate (PO <sub>4</sub> )	0.09	0.03	0.18
Sulfate	13	10	10
<u>Cations</u>			
Aluminum	1.49	1.37	0.65
Barium	0.02	0.03	0.02
Cadmium	<0.001	<0.001	<0.001
Calcium	--	--	--
Chromium, total	<0.001	<0.001	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.004	0.003	0.003
Iron	0.73	0.40	0.64
Lead	<0.01	<0.01	<0.01
Magnesium	13.0	13.1	13.6
Manganese	0.324	0.022	0.006
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.004	0.002	0.010

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.

TABLE C-42

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-C15

PARAMETER	SAMPLING DATE			
	11/08/79	02/14/80	05/20/80	08/20/80
Field temperature (°C)	6.5	6.5	7.5	8.0
Total laboratory alkalinity	143	141	142	161
Total field alkalinity	144	144	151	159
Specific conductance (µmhos/cm)	255	235	268	267
Field conductivity (µmhos/cm)	190	168	270	180
Laboratory pH (standard units)	7.71	7.92	7.69	8.01
Field pH (standard units)	8.4	8.5	8.2	8.2
Total hardness	132	144	144	152
Total dissolved solids	230	173	136	130
Chemical oxygen demand	<1	7	24	<1
Total phosphorus (P)	—	—	—	—
<u>Anions</u>				
Arsenic	<0.001	<0.001	<0.001	<0.001
Chloride	2	<1	<1	1
Cyanide, total	<0.001	<0.001	<0.001	<0.001
Fluoride	0.21	0.18	0.14	0.19
Nitrate nitrogen (N)	<0.05	0.54	<0.05	0.11
Phosphate (PO <sub>4</sub> )	0.03	0.03	0.04	0.05
Sulfate	8	3	4	1
<u>Cations</u>				
Aluminum	<0.01	0.09	0.10	0.02
Barium	0.01	0.02	<0.01	<0.01
Cadmium	<0.001	<0.001	<0.001	<0.001
Calcium	—	—	—	—
Chromium, total	0.002	0.007	0.005	<0.001
Cobalt	<0.01	<0.01	<0.01	<0.01
Copper	0.004	0.001	0.003	<0.001
Iron	<0.01	0.09	0.06	<0.01
Lead	<0.01	<0.01	<0.01	<0.01
Magnesium	9.3	15.3	14.4	16.4
Manganese	0.209	0.127	0.147	0.124
Mercury	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001	<0.001
Zinc	0.001	0.008	0.007	<0.001

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-43

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-E13

PARAMETER	SAMPLING DATE 11/08/79
Field temperature (°C)	6.0
Total laboratory alkalinity	98
Total field alkalinity	104
Specific conductance (µmhos/cm)	215
Field conductivity (µmhos/cm)	18
Laboratory pH (standard units)	7.53
Field pH (standard units)	8.2
Total hardness	108
Total dissolved solids	171
Chemical oxygen demand	<1
Total phosphorus (P)	—
<u>Anions</u>	
Arsenic	<0.001
Chloride	2
Cyanide, total	<0.001
Fluoride	0.14
Nitrate nitrogen (N)	1.02
Phosphate (PO <sub>4</sub> )	0.06
Sulfate	14
<u>Cations</u>	
Aluminum	0.06
Barium	0.01
Cadmium	<0.001
Calcium	—
Chromium, total	0.005
Cobalt	<0.01
Copper	0.003
Iron	0.02
Lead	<0.01
Magnesium	10.1
Manganese	0.026
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.008

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-44

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-G14A

PARAMETER	SAMPLING DATE		
	02/13/80	05/15/80	08/19/80
Field temperature (°C)	6.0	7.0	8.0
Total laboratory alkalinity	164	116	202
Total field alkalinity	158	176	227
Specific conductance (µmhos/cm)	275	225	410
Field conductivity (µmhos/cm)	168	100	170
Laboratory pH (standard units)	8.03	8.19	7.77
Field pH (standard units)	7.7	9.8	10.6
Total hardness	136	104	112
Total dissolved solids	232	235	332
Chemical oxygen demand	10	<1	51
Total phosphorus (P)	—	—	—
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	2	<1	3
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.17	0.18	0.38
Nitrate nitrogen (N)	<0.05	<0.05	0.36
Phosphate (PO <sub>4</sub> )	0.18	0.16	0.05
Sulfate	9	5	16
<u>Cations</u>			
Aluminum	1.35	1.24	4.23
Barium	0.03	0.02	0.05
Cadmium	<0.001	<0.001	<0.001
Calcium	—	—	—
Chromium, total	<0.001	0.004	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.003	<0.001	0.025
Iron	0.81	0.05	2.9
Lead	<0.01	<0.01	<0.01
Magnesium	14.0	6.4	10.6
Manganese	0.403	0.019	0.091
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.006	0.004	0.030

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-45

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-G14B

PARAMETER	SAMPLING DATE		
	02/13/80	05/15/80	08/19/80
Field temperature (°C)	6.5	7.0	8.0
Total laboratory alkalinity	95	50	58
Total field alkalinity	137	117	95
Specific conductance (µmhos/cm)	195	275	172
Field conductivity (µmhos/cm)	359	115	145
Laboratory pH (standard units)	10.53	10.06	9.57
Field pH (standard units)	11.8	11.4	10.6
Total hardness	60	48	52
Total dissolved solids	113	80	115
Chemical oxygen demand	14	7	8
Total phosphorus (P)	—	—	—
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	<1	<1	3
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.14	<0.12	0.16
Nitrate nitrogen	<0.05	<0.05	<0.05
Phosphate (PO <sub>4</sub> )	<0.01	0.01	0.07
Sulfate	<1	1	4
<u>Cations</u>			
Aluminum	.008	0.06	0.03
Barium	0.02	<0.01	0.02
Cadmium	<0.001	<0.001	<0.001
Calcium	—	—	—
Chromium, total	0.007	0.005	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	<0.001	<0.001	<0.001
Iron	0.03	<0.01	<0.01
Lead	<0.01	<0.01	<0.01
Magnesium	4.10	7.9	10.0
Manganese	0.003	0.002	0.004
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	<0.001	<0.001	<0.001

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-46

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-G14C

PARAMETER	SAMPLING DATE		
	02/13/80	05/15/80	08/19/80
Field temperature (°C)	5.5	7.0	8.0
Total laboratory alkalinity	158	110	132
Total field alkalinity	160	118	127
Specific conductance (µmhos/cm)	285	190	243
Field conductivity (µmhos/cm)	199	70	175
Laboratory pH (standard units)	7.64	7.31	7.53
Field pH (standard units)	8.6	7.6	7.9
Total hardness	164	132	136
Total dissolved solids	220	151	209
Chemical oxygen demand	55	<1	16
Total phosphorus (P)	--	--	--
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	2	<1	2
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.23	<0.12	<0.12
Nitrate nitrogen (N)	<0.05	<0.05	<0.05
Phosphate (PO <sub>4</sub> )	0.15	0.03	0.04
Sulfate	11	11	15
<u>Cations</u>			
Aluminum	3.31	2.97	1.10
Barium	0.01	0.03	<0.01
Cadmium	<0.001	<0.001	<0.001
Calcium	--	--	--
Chromium, total	0.004	0.002	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.003	0.005	0.006
Iron	1.1	2.2	0.74
Lead	<0.01	<0.01	<0.01
Magnesium	16.9	12.9	14.5
Manganese	1.24	0.380	0.238
Mercury	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.007	0.010	0.030

Note: All concentrations in mg/l unless otherwise noted.

-- Indicates no data.



TABLE C-47

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-G15A

PARAMETER	SAMPLING DATE 11/15/79
Field temperature (°C)	6.0
Total laboratory alkalinity	453
Total field alkalinity	487
Specific conductance (µmhos/cm)	700
Field conductivity (µmhos/cm)	580
Laboratory pH (standard units)	7.58
Field pH (standard units)	7.0
Total hardness	452
Total dissolved solids	515
Chemical oxygen demand	275
Total phosphorus (P)	—
<u>Anions</u>	
Arsenic	<0.001
Chloride	8
Cyanide, total	<0.001
Fluoride	0.22
Nitrate nitrogen (N)	<0.05
Phosphate (PO <sub>4</sub> )	<0.01
Sulfate	2
<u>Cations</u>	
Aluminum	0.23
Barium	0.15
Cadmium	<0.001
Calcium	—
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.009
Iron	12
Lead	<0.01
Magnesium	29.6
Manganese	10.2
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.017

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-48

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-G15B

PARAMETER	SAMPLING DATE 11/15/79
Field temperature (°C)	5.5
Total laboratory alkalinity	344
Total field alkalinity	432
Specific conductance (µmhos/cm)	1,300
Field conductivity (µmhos/cm)	1,150
Laboratory pH (standard units)	11.02
Field pH (standard units)	12.2
Total hardness	326
Total dissolved solids	836
Chemical oxygen demand	41
Total phosphorus (P)	—
<u>Anions</u>	
Arsenic	<0.001
Chloride	4
Cyanide, total	<0.001
Fluoride	0.19
Nitrate nitrogen (N)	2.15
Phosphate (PO <sub>4</sub> )	<0.01
Sulfate	5
<u>Cations</u>	
Aluminum	0.03
Barium	0.24
Cadmium	<0.001
Calcium	—
Chromium, total	<0.001
Cobalt	<0.01
Copper	0.006
Iron	0.05
Lead	<0.01
Magnesium	0.279
Manganese	0.007
Mercury	<0.0001
Molybdenum	<0.01
Nickel	<0.01
Selenium	<0.001
Silver	<0.001
Zinc	0.002

Note: All concentrations in mg/l unless otherwise noted.  
— Indicates no data.

TABLE C-49

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-P18B

PARAMETER	SAMPLING DATE		
	02/13/80	05/19/80	08/20/80
Field temperature (°C)	FROZEN	7.0	8.0
Total laboratory alkalinity		88	92
Total field alkalinity		92	95
Specific conductance (µmhos/cm)		192	186
Field conductivity (µmhos/cm)		122	135
Laboratory pH (standard units)		7.56	7.88
Field pH (standard units)		7.5	9.0
Total hardness		112	92
Total dissolved solids		122	88
Chemical oxygen demand		<1	<1
Total phosphorus (P)		—	—
<u>Anions</u>			
Arsenic		<0.001	<0.001
Chloride		<1	1
Cyanide, total		<0.001	<0.001
Fluoride		<0.12	<0.12
Nitrate nitrogen (N)		0.54	0.08
Phosphate (PO <sub>4</sub> )		0.02	0.06
Sulfate		7	11
<u>Cations</u>			
Aluminum		<0.01	0.53
Barium		<0.01	<0.01
Cadmium		<0.001	<0.001
Calcium		—	—
Chromium, total		<0.001	<0.001
Cobalt		<0.01	<0.01
Copper		0.004	<0.001
Iron		0.06	0.58
Lead		<0.01	<0.01
Magnesium		10.4	11.0
Manganese		0.008	0.008
Mercury		<0.0001	<0.0001
Molybdenum		<0.01	<0.01
Nickel		<0.01	<0.01
Selenium		<0.001	<0.001
Silver		<0.001	<0.001
Zinc		0.005	<0.001

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

TABLE C-50

RESULTS OF CHEMICAL ANALYSES OF WATER SAMPLES  
FROM PIEZOMETER G41-P24

PARAMETER	SAMPLING DATE		
	02/14/80	05/19/80	08/18/80
Field temperature (°C)	5.0	7.0	8.0
Total laboratory alkalinity	122	94	104
Total field alkalinity	121	102	100
Specific conductance (µmhos/cm)	245	205	189
Field conductivity (µmhos/cm)	169	140	155
Laboratory pH (standard units)	7.19	7.08	7.59
Field pH (standard units)	8.2	7.5	7.2
Total hardness	140	108	92
Total dissolved solids	438	119	157
Chemical oxygen demand	138	<1	12
Total phosphorus (P)	—	—	—
<u>Anions</u>			
Arsenic	<0.001	<0.001	<0.001
Chloride	2	<1	3
Cyanide, total	<0.001	<0.001	<0.001
Fluoride	0.22	0.14	0.15
Nitrate nitrogen (N)	<0.05	<0.05	0.31
Phosphate (PO <sub>4</sub> )	0.18	0.03	0.04
Sulfate	15	12	13
<u>Cations</u>			
Aluminum	0.69	0.65	0.20
Barium	<0.01	<0.01	0.02
Cadmium	<0.001	<0.001	<0.001
Calcium	—	—	—
Chromium, total	<0.001	<0.001	<0.001
Cobalt	<0.01	<0.01	<0.01
Copper	0.012	0.006	<0.001
Iron	0.35	0.43	0.21
Lead	<0.01	<0.01	<0.01
Magnesium	13.7	9.1	10.0
Manganese	0.218	0.630	0.317
Mercury	<0.001	<0.001	<0.001
Molybdenum	<0.01	<0.01	<0.01
Nickel	<0.01	<0.01	<0.01
Selenium	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001
Zinc	0.003	0.009	0.010

Note: All concentrations in mg/l unless otherwise noted.

— Indicates no data.

APPENDIX 2.3D

RESULTS OF CHEMICAL ANALYSES  
OF GROUND WATER SAMPLES  
TAKEN FROM EXXON BOREHOLES

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER SAMPLES  
TAKEN FROM EXXON BEDROCK BOREHOLES<sup>a</sup>

BOREHOLE NUMBER	66	70	70 <sup>b</sup>	70	77
ZONES (FEET)	402 - 1078	552 - 1334	552 - 1334	302 - 1334	602 - 1049
DATE/TIME COLLECTED	3/2/78 2413	3/4/78 2245	3/4/78 2245	3/5/78 0615	3/1/78 1940
Laboratory pH (standard units)	8.11	7.98	7.99	7.83	7.75
Total laboratory alkalinity	142	160	160	156	134
Total hardness	175	194	194	193	170
Total dissolved solids	198	170	178	188	170
Specific conductance (µmhos/cm)	289	312	310	295	298
Nitrate nitrogen (N)	0.34	0.15	0.15	0.24	<0.05
Total phosphorus (P)	0.01	0.08	0.08	0.01	0.01
Chloride	2	8	8	6	20
Sulfate	18	16	15	8	2
Iron	0.02	0.02	0.02	0.03	0.02
Manganese	0.121	0.019	0.120	0.090	0.102
Magnesium	19.3	23.4	23.4	22.8	20.5
Zinc	0.042	0.062	0.060	0.045	0.041
Cadmium	<0.001	0.009	0.008	0.003	0.004
Copper	0.015	0.006	0.005	0.001	0.003
Arsenic	0.017	0.008	0.009	0.004	<0.001
Aluminum	0.07	<0.01	<0.01	0.10	0.11
Chromium, total	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.03	<0.01	<0.01	0.03	0.04
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	0.01	0.01	0.01	0.01	<0.01
Selenium	0.016	0.009	0.009	0.007	<0.001
Calcium	38.6	39.1	39.2	39.5	34.6
Cyanide	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium	<0.25	<0.25	<0.25	<0.25	<0.25

<sup>a</sup>All units are mg/l unless otherwise indicated.

<sup>b</sup>Quality assurance check sample analyses (duplicate).

BOREHOLE NUMBER	91	155	155	165
ZONES (FEET)	852 - 1415	2202 - 2215	942 - 3050	2920 - 2971
DATE/TIME COLLECTED	3/6/78 0405	2/32/78 2035	2/27/78 1700	2/18/78 0128
Laboratory pH (standard units)	8.12	7.36	7.27	5.89
Total laboratory alkalinity	164	86	80	12
Total hardness	196	961	1,532	1,930
Total dissolved solids	164	3,524	6,112	5,194
Specific conductance ( $\mu$ hos/cm)	313	6,500	10,000	7,200
Nitrate nitrogen (N)	0.15	2.29	<0.05	<0.05
Total phosphorus (P)	0.05	0.06	0.01	0.02
Chloride	12	2,200	3,600	2,650
Sulfate	5	5	8	<1
Iron	0.03	2.36	1.15	77
Manganese	0.146	0.421	0.526	0.306
Magnesium	22.0	75.0	127	185
Zinc	0.048	0.051	0.144	1.46
Cadmium	<0.001	0.007	0.012	0.027
Copper	<0.001	0.004	0.006	0.269
Arsenic	0.012	<0.001	<0.001	0.004
Aluminum	0.02	0.48	0.14	5.86
Chromium, total	<0.001	0.010	0.003	0.018
Cobalt	<0.01	<0.01	0.02	0.04
Lead	0.03	0.10	0.03	0.39
Mercury	<0.0001	<0.0001	0.0042	0.0003
Molybdenum	<0.01	<0.01	<0.01	0.02
Nickel	0.01	0.05	0.05	0.34
Selenium	0.001	<0.001	<0.001	<0.001
Calcium	42.2	261	404	468
Cyanide	<0.001	<0.001	<0.001	0.003
Thallium	<0.25	<0.25	<0.25	<0.25

APPENDIX 2.3E

RESULTS OF FIELD PERMEABILITY TESTS



RESULTS OF FIELD PERMEABILITY TESTS

BORING SERIES	NUMBER	SCREENED INTERVAL (feet below ground surface)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST*
DW	1L	137.0 - 147.0	Fine to coarse sand, some gravel and trace of silt	2.9x10 <sup>-2</sup> to 5.4x10 <sup>-2</sup>	PT of WW-2
	2U	55.0 - 70.0	Brown fine to coarse sand with occasional gravel	3.7x10 <sup>-2</sup>	PT of TW-1
DMA	1-N	14.0 - 18.0	Red-brown sandy till	5.1x10 <sup>-6</sup>	FH
	1-S	52.0 - 55.0	Brown medium sand with a trace of coarse sand and gravel	2.1x10 <sup>-5</sup>	FH
	3	39.0 - 43.0	Orange-brown fine to medium silty sand	1.0x10 <sup>-5</sup>	FH
	4	26.0 - 30.0	Brown fine to medium silty sand with coarse gravel and cobble fragments	4.3x10 <sup>-5</sup>	FH
	19	22.0 - 26.0	Brown fine to medium sand with gravel	8.3x10 <sup>-5</sup>	FH
	43	36.0 - 40.0	Gray poorly sorted sand with some gravel and silt	6.6x10 <sup>-6</sup>	FH
DMB	1A	69.0 - 79.0	Red brown fine to medium sand, trace silt, coarse sand and fine gravel	6.1x10 <sup>-4</sup>	FH
	2	90.2 - 100.2	Fine-medium sand with trace silt	5.8x10 <sup>-6</sup>	FH
	3	55.0 - 60.0	Light brown fine sand with trace silt (till)	1.9x10 <sup>-4</sup>	RH
	3	55.0 - 60.0		5.9x10 <sup>-4</sup>	FH
	4	69.5 - 79.5	Brown to red-brown fine to coarse sand (outwash)	1.2x10 <sup>-4</sup>	FH
	5	88.4 - 98.4	Orange-brown fine to medium sand with trace silt, some coarse sand and trace fine gravel	1.1x10 <sup>-6</sup>	FH
	5A	110.0 - 120.0		2.0x10 <sup>-5</sup>	FH
	6	75.5 - 85.5	Red-brown fine to medium sand with trace fine gravel and coarse sand, also some silt	1.1x10 <sup>-6</sup>	FH

\*FH - Falling Head Test

PT - Pumping Test

RH - Rising Head Test

BORING SERIES	NUMBER	SCREENED INTERVAL (feet below ground surface)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST*
DMB	7	69.0 - 79.0	Light brown fine to medium sand, trace coarse sand and fine gravel (outwash)	$5.7 \times 10^{-4}$	FH
	8	45.0 - 50.0	Brown fine to medium sand, trace silt and fine gravel (till)	$2.6 \times 10^{-5}$	FH
	9A	217.0 - 227.0	Brown very fine sand, trace clay and some silt	$3.8 \times 10^{-4}$	FH
	9B	190.0 - 200.0	Light brown fine sand, trace silt and fine gravel	$2.1 \times 10^{-5}$	FH
	9C	152.0 - 162.0	Red-brown fine sand, trace silt and fine gravel (till)	$1.5 \times 10^{-4}$	FH
	10	89.5 - 99.5	Brown fine sand, trace silt, coarse sand and fine and medium gravel (till)	$1.6 \times 10^{-4}$	FH
	10	89.5 - 99.5		$3.7 \times 10^{-5}$	RH
	12	70.0 - 80.0	Light brown medium to coarse sand and gravel, trace silt (till)	$4.0 \times 10^{-4}$	RH
	13	50.0 - 60.0	Brown fine to medium sand, trace coarse sand and silt, occasional fine gravel	$1.6 \times 10^{-4}$	FH
	14	90.0 - 100.0	Light brown fine to medium sand, trace silt and quartz gravel	$1.1 \times 10^{-3}$	FH
	15	69.5 - 79.5	Brown fine to medium sand, trace coarse sand, fine gravel (outwash)	$1.4 \times 10^{-3}$	FH
	15	69.5 - 79.5		$1.1 \times 10^{-3}$	FH
	15	69.5 - 79.5		$1.3 \times 10^{-3}$	FH
	18	70.0 - 80.0	Light brown medium sand, trace fine gravel (outwash)	$1.8 \times 10^{-4}$	FH
	18	70.0 - 80.0		$4.2 \times 10^{-4}$	RH

BORING SERIES	NUMBER	SCREENED INTERVAL (feet below ground surface)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST*
DMB	19	76.5 - 86.5	Olive-brown medium coarse sand, trace silt, gravel, and cobbles (till)	$1.2 \times 10^{-3}$	FH
	19	76.5 - 86.5		$4.2 \times 10^{-5}$	RH
	20	29.2 - 39.2	Brown fine to medium sand, some silt (till)	$5.3 \times 10^{-4}$	FH
	20	29.2 - 39.2		$3.8 \times 10^{-5}$	RH
	20A	29.2 - 39.2	Brown fine to medium sand with some silt	$9.9 \times 10^{-4}$	FH
	21	38.9 - 48.9	Brown fine to medium sand, trace gravel and silt (till)	$3.0 \times 10^{-3}$	FH
	21	38.9 - 48.9		$2.6 \times 10^{-3}$	FH
	22	68.6 - 78.6	Brown fine to medium sand, trace coarse sand (outwash)	$2.1 \times 10^{-3}$	FH
	23	89.0 - 99.0	Brown fine to medium sand, trace fine to medium gravel (outwash)	$7.2 \times 10^{-4}$	RH
	23	89.0 - 99.0		$4.9 \times 10^{-4}$	FH
	23	89.0 - 99.0		$3.0 \times 10^{-4}$	FH
	24	43.2 - 48.2	Brown fine to medium sand with trace to some coarse sand and fine to medium gravel, trace silt and occasional coarse gravel	$8.7 \times 10^{-4}$	FH
	25	124.5 - 129.5	Fine to coarse sand, some fine to medium gravel with trace silt, brown fine to medium sand, coarse sand, fine gravel and silt	$6.6 \times 10^{-6}$	FH
	26	124.0 - 134.0	Brown fine to coarse sand, some fine gravel and trace silt	$1.1 \times 10^{-5}$	FH
	27	73.8 - 83.8	Grades red to brown with some gravel	$7.4 \times 10^{-6}$	FH

BORING SERIES	NUMBER	SCREENED INTERVAL (feet below ground surface)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST*
DMB	28	64.5 - 69.5	Brown medium sand, some coarse sand, trace fine gravel with some fine sand	$5.8 \times 10^{-3}$	FH
	29	64.3 - 69.3	Brown fine to medium sand, some coarse sand, trace silt, trace fine to medium gravel to orange brown fine to medium sand as above	$3.5 \times 10^{-5}$	FH

APPENDIX 2.3F

RESULTS OF LABORATORY PERMEABILITY TESTS  
AND HAZEN PERMEABILITY APPROXIMATIONS

RESULTS OF LABORATORY PERMEABILITY TESTS  
AND HAZEN PERMEABILITY APPROXIMATIONS

BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMI	1	14.0	Graded brown silty very fine sand with brown silt layer at 14 feet	$4.9 \times 10^{-3}$	Hazen
	1	33.5	Light brown fine sand with gravel	$2.3 \times 10^{-2}$	Hazen
	1	43.5	Light brown fine sand with coarse gravel and cobbles	$3.2 \times 10^{-2}$	Hazen
	1	54.0	Light brown fine sand with coarse gravel and cobbles	$4.9 \times 10^{-3}$	Hazen
	2U	42.0	Brown fine to coarse sand and fine to coarse gravel	$7.8 \times 10^{-2}$	Hazen
	4	34.0	Brown fine sand with trace shale fragments, silt and mica	$4.9 \times 10^{-3}$	Hazen
	4	48.5	Well graded sand with some coarse sand and fine gravel	$3.6 \times 10^{-2}$	Hazen
	4	58.5	Well graded sand and gravel	$9.0 \times 10^{-2}$	Hazen
	4	68.5	Reddish brown silty fine sand with some coarse sand and fine gravel	$4.9 \times 10^{-5}$	Hazen
	7	64.5	Brown fine to medium sand with a little coarse sand	$3.6 \times 10^{-2}$	Hazen
	7	83.5	Well graded sand to reddish brown silty sand with trace red clay and some fine gravel	$8.1 \times 10^{-3}$	Hazen
	8	29.0	Well graded sand with some fine to coarse sand and fine to coarse gravel	$2.9 \times 10^{-2}$	Hazen
	8	58.5	Orange brown and brown fine to coarse sand with some fine and coarse gravel	$5.6 \times 10^{-3}$	Hazen

BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMI	9	38.5	Brown fine to medium sand with trace coarse sand and fine gravel	$3.2 \times 10^{-2}$	Hazen
	9	43.5	Fine to coarse gravel with fine to coarse sand and cobbles	$6.7 \times 10^{-2}$	Hazen
DMA	1-S	9.1 - 9.6	Red-brown fine to medium sand with some silt and gravel (till)	$2.3 \times 10^{-4}$	Hazen
	4	4.0	Brown fine to medium sand with interbedded silt and fine to medium sand	$1.4 \times 10^{-4}$	Hazen
	5	6.5	Inorganic silt and very fine clayey sand	$4.4 \times 10^{-4}$	Hazen
	6	18.5	Silty sand	$2.6 \times 10^{-4}$	Hazen
	13	9.0	Dark gray fine to medium sand with coarse sand and a trace of fine gravel	$1.0 \times 10^{-2}$	Hazen
	14	5.5	Brown medium to coarse sand with trace of coarse gravel	$5.3 \times 10^{-2}$	Hazen
	16	5.5	Brown fine to medium sand with some gravel	$1.0 \times 10^{-2}$	Hazen
	16	20.5	Brown fine to medium sand with some gravel	$3.8 \times 10^{-3}$	Hazen
	17	8.5	Brown fine to medium sand with some coarse sand and fine gravel, occasional coarse gravel	$1.6 \times 10^{-3}$	Hazen
	17	21.0	Orange-brown to brown fine to medium sand, some coarse sand and fine to coarse gravel with silt	$2.5 \times 10^{-3}$	Hazen
	18	3.5	Orange brown silty fine to medium sand, trace fine to coarse gravel	$1.6 \times 10^{-3}$	Hazen

BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMA	18	14.0	Reddish brown silty fine to medium sand, trace coarse sand and fine gravel	1.4 x 10 <sup>-4</sup>	Hazen
				8.6 x 10 <sup>-5</sup>	Constant Head
	18	24.5	Tan fine sand with some medium to coarse sand	2.9 x 10 <sup>-2</sup>	Hazen
	22	9.0	Tan to brown medium to coarse sand, some fine sand and fine to coarse gravel	6.3 x 10 <sup>-2</sup>	Hazen
	29	29.0	Brown clayey silt interbedded with clay lenses and stringers every 2 to 4 inches	3.2 x 10 <sup>-6</sup>	Hazen
				2.6 x 10 <sup>-7</sup>	Constant Head
	30	9.0	Graded sand locally fine to coarse with fine gravel	2.0 x 10 <sup>-2</sup>	Hazen
	30	39.5	Graded brown sand with brown silt layers and lenses	3.5 x 10 <sup>-6</sup>	Constant Head
	34	29.5	Very dense sand	9.0 x 10 <sup>-5</sup>	Hazen
				6.4 x 10 <sup>-6</sup>	Constant Head
	39	9.0	Brown fine to coarse sand with some gravel	1.9 x 10 <sup>-2</sup>	Hazen
	44	6.5	Silty sand	3.2 x 10 <sup>-4</sup>	Hazen
	45	9.0	Brown poorly-sorted fine to medium sand	2.3 x 10 <sup>-2</sup>	Hazen
	48	8.5	Orange-brown fine sand with some gravel	7.2 x 10 <sup>-3</sup>	Hazen
48	18.5	Brown fine sand	1.9 x 10 <sup>-2</sup>	Hazen	
DMB	1	19.0	Brown fine sand with some silt	3.6 x 10 <sup>-2</sup>	Hazen



BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMB	2	10.5	Brown sand with some gravel	$1.0 \times 10^{-3}$	Hazen
	2	35.3	Brown fine to medium sand with gravel and cobbles	$2.3 \times 10^{-2}$	Hazen
	3	15.5	Light brown fine to medium sand, trace coarse sand and fine gravel	$4.0 \times 10^{-2}$	Hazen
	4	6.5	Brown fine to medium sand with trace silt and cobbles (till)	$2.2 \times 10^{-4}$	Hazen
	4	20.5	Light brown fine sand with trace fine gravel	$2.3 \times 10^{-2}$	Hazen
	4	55.0	Brown fine sand with silt trace clay, fine gravel, coarse sand (till)	$9.0 \times 10^{-6}$	Hazen
	6	5.5	Brown fine to medium sand, trace silt, coarse sand to fine gravel (till)	$2.5 \times 10^{-3}$	Hazen
	6	50.0	Red-brown fine to medium sand, trace coarse sand, fine to medium gravel and silt (till)	$1.6 \times 10^{-3}$	Hazen
	7	5.5	Brown fine sand, trace silt (till)	$2.0 \times 10^{-3}$	Hazen
	7	63.5	Light brown, fine to medium sand, trace coarse and fine gravel (outwash)	$4.0 \times 10^{-4}$	Hazen
	10	18.5	Light brown medium sand, trace coarse sand and fine gravel	$4.0 \times 10^{-4}$	Hazen
	12	20.5	Brown sand with some gravel	$9.0 \times 10^{-4}$	Hazen

BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMB	13	19.0	Brown fine to coarse sand with trace fine gravel and silt	$1.0 \times 10^{-2}$	Hazen
	15	53.5	Medium sand with trace coarse sand and multicolored sand and gravel particles	$6.2 \times 10^{-2}$	Hazen
	16	10.5	Brown fine to medium sand with trace coarse sand and fine gravel	$1.0 \times 10^{-4}$	Hazen
	16	43.8	Brown fine to coarse sand and some fine gravel (outwash)	$1.0 \times 10^{-4}$	Hazen
	17	6.5	Brown fine to medium sand, trace silt and gravel (till)	$4.3 \times 10^{-3}$	Hazen
	17	60.0	Light brown medium to coarse sand, some cobbles (outwash)	$2.0 \times 10^{-2}$	Hazen
	18	40.1	Light brown medium sand	$4.0 \times 10^{-2}$	Hazen
	19	75.5	Olive brown medium to coarse sand, trace silt with gravel and cobbles	$1.4 \times 10^{-2}$	Hazen
	20	5.5	Brown fine to medium sand (outwash)	$2.3 \times 10^{-2}$	Hazen
	20	24.0	Brown fine sand with some silt	$9.0 \times 10^{-6}$	Hazen
	20	34.0	Brown fine to medium sand, some silt (till)	$9.0 \times 10^{-4}$	Hazen
	21	5.5	Brown fine to medium sand, trace coarse sand (outwash)	$2.3 \times 10^{-2}$	Hazen
	21	44.0	Brown fine to medium sand, trace gravel and silt (till)	$1.7 \times 10^{-2}$	Hazen

BORING SERIES	NUMBER	DEPTH SAMPLED (in feet)	LITHOLOGY	PERMEABILITY (cm/s)	TYPE OF TEST
DMC	1	40.0	Brown fine to medium sandy silt with some fine to coarse gravel	$4.1 \times 10^{-3}$	Falling Head
	2	45.0	Brown fine to coarse sand with gravel	$4.0 \times 10^{-2}$	Hazen
	3	40.0	Brown fine to medium sand with some orange lenses of sand; well graded sand and gravel lenses and silt stringers	$6.8 \times 10^{-4}$	Falling Head
DMP	1	5.0	Reddish brown silty sand, trace gravel	$6.0 \times 10^{-4}$	Hazen
	1	23.0 - 23.5	Light brown sand with gravel	$4.0 \times 10^{-2}$	Hazen
	1	50.0	Red-brown salt and pepper gravel; trace silt	$4.8 \times 10^{-2}$	Hazen
	1	65.0	Reddish clay with sand and rock fragments	$1.6 \times 10^{-5}$	Hazen
	2	5.0	Moist brown silty sand	$7.9 \times 10^{-5}$	Hazen
	2	20.0	Brown silty sand with gravel	$3.2 \times 10^{-4}$	Hazen
	3	5.0	Red-brown sand with gravel and rock fragments	$4.0 \times 10^{-4}$	Hazen
	3	30.0	Red-brown sand with silt, gravel, and rock fragments	$2.9 \times 10^{-2}$	Hazen
	3	55.0	Coarse red-black sand with fine light brown sand	$3.6 \times 10^{-2}$	Hazen
	3	65.0	Red sand and silt with gravel and rock fragments	$1.0 \times 10^{-4}$	Hazen

APPENDIX 2.3G

INVENTORY OF WATER WELLS  
IN THE ENVIRONMENTAL STUDY AREA

INVENTORY OF WATER WELLS IN THE ENVIRONMENTAL STUDY AREA

WATER WELL NUMBER <sup>a</sup>	LOCATION <sup>b</sup>	USGS WELL NUMBER	OWNER	YEAR COMPLETED	INSTALLATION METHOD <sup>c</sup>	DEPTH (feet)	DIAMETER (inches)	DEPTH TO WATER (feet)	DATE OF MEASUREMENT	USE OF WATER <sup>d</sup>	SPECIFIC CAPACITY (gallons per minute/foot of drawdown)
1	35-12-28	132	Mole Lake School	1960	D	119	6	11	08/02/72	P	0.5
2	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
3	35-12-27	-	Torgerson Store	-	-	-	-	-	-	P	-
4	35-12-34	-	Sundown Club	-	-	-	-	-	-	P	-
5	35-12-34	-	Jacobson	-	DP	-	-	-	-	Dom	-
6	35-12-34	-	Kramer Cottage	-	DP	55	-	-	-	Dom	-
7	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
8	35-12-34	-	Gill	1974	DP	55	4	12	-	Dom	-
9	35-12-34	133	Kramer Grocery	-	DP	55	-	-	-	P	-
10	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
11	35-12-27	-	Bambas	-	DP	42	-	-	-	Dom	-
12	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
13	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
14	35-12-27	-	Retzlaf	-	DP	30	-	-	-	Dom	-
15	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
16	35-12-27	-	Schlock	-	-	-	-	-	-	Dom	-
17	35-12-27	-	Piotrowski	-	DP	17	-	-	-	Dom	-
18	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
19	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
20	35-12-27	-	Jaskie	-	-	-	-	-	-	Dom	-

Note: - Indicates no data.

<sup>a</sup>Locations of water wells are shown on Figure 2.3-12.

<sup>b</sup>Township, range, section.

<sup>c</sup>D = Drilled  
DP = Driven point

<sup>d</sup>Dom = Domestic  
P = Public Supply

<sup>e</sup>Estimated.

APPENDIX 2.3G (continued)

WATER WELL NUMBER <sup>a</sup>	LOCATION <sup>b</sup>	USGS WELL NUMBER	OWNER	YEAR COMPLETED	INSTALLATION METHOD <sup>c</sup>	DEPTH (feet)	DIAMETER (inches)	DEPTH TO WATER (feet)	DATE OF MEASUREMENT	USE OF WATER <sup>d</sup>	SPECIFIC CAPACITY (gallons per minute/foot of drawdown)
21	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
22	35-12-27	-	Clark	-	-	-	-	-	-	Dom	-
23	35-12-27	-	Ourada	-	-	-	-	-	-	Dom	-
24	35-12-27	-	Dulfer	-	-	-	-	-	-	Dom	-
25	35-12-27	-	Czarapata	-	-	-	-	-	-	Dom	-
26	35-12-27	-	Hartwig	-	-	-	-	-	-	Dom	-
27	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
28	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
29	35-12-27	-	Holste	-	-	-	-	-	-	Dom	-
30	35-12-27	-	Unknown	-	D	17	-	-	-	Dom	-
31	35-12-27	-	Yochum	-	DP	17	-	-	-	Dom	-
32	35-12-27	-	Dettman	-	-	-	-	-	-	Dom	-
33	35-12-27	-	Wondorf	-	-	-	-	-	-	Dom	-
34	35-12-27	-	Unknown	-	-	-	-	-	-	Dom	-
35	35-12-27	-	Davis	-	-	-	-	-	-	Dom	-
36	35-12-27	-	Toas	-	DP	20-30	-	-	-	Dom	-
37	35-12-27	-	Schultz	-	DP	20-30	-	-	-	Dom	-
38	35-12-34	-	Wadner	-	DP	20-30	-	-	-	Dom	-
39	35-12-34	-	Robbins	-	DP	25	-	-	-	Dom	-
40	35-12-34	-	Markee	-	DP	17	-	-	-	Dom	-
41	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
42	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
43	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
44	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
45	35-12-34	-	Willis	-	-	-	-	-	-	Dom	-
46	35-12-34	-	Unknown	-	DP	25	2	-	-	Dom	-
47	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
48	35-12-34	-	Hogue	-	-	-	-	-	-	Dom	-
49	35-12-34	-	Harte	-	-	-	-	-	-	Dom	-
50	35-12-34	-	Schmidt	-	DP	42	-	-	-	Dom	-



## APPENDIX 2.3G (continued)

Page 4 of 6

WATER WELL NUMBER <sup>a</sup>	LOCATION <sup>b</sup>	USGS WELL NUMBER	OWNER	YEAR COMPLETED	INSTALLATION METHOD <sup>c</sup>	DEPTH (feet)	DIAMETER (inches)	DEPTH TO WATER (feet)	DATE OF MEASUREMENT	USE OF WATER <sup>d</sup>	SPECIFIC CAPACITY (gallons per minute/foot of drawdown)
79	35-12-22	-	Unknown	-	-	-	-	-	-	Dom	-
80	35-12-23	36	Mole Lake Reservation Well #1	1971	D	51	6	12	08/71	P	2.8
80	35-12-23	96	Mole Lake Reservation Well #2	1971	-	59	6	11	08/71	P	-
81	35-12-23	-	T. Torgerson	-	-	-	-	-	-	Dom	-
82	35-12-23	172	R. Torgerson	1974	D	44	5	24	08/74	Dom	1.4
83	35-12-23	-	B. Torgerson	1972	D	63	5	35	07/72	Dom	1.5
84	35-12-26	-	J. Walentowski	-	DP	19	1-1/4	-	-	Dom	-
85	35-12-26	-	DeMars	-	DP	22	1-1/4	-	-	Dom	-
86	35-12-27	183	Unknown	-	-	35	-	-	-	Dom	-
87	35-12-26	-	Cychogz	-	DP	17	1-1/4	-	-	Dom	-
88	35-12-26	-	Mushall	-	DP	18	1-1/4	-	-	Dom	-
89	35-12-26	-	L. Hoffman	-	DP	30	1-1/4	-	-	Dom	-
					DP	30	1-1/4	-	-	& Live-stock	-
					DP	25	1-1/4	-	-		-
90	35-12-26	193	R. Hoffman	-	-	-	-	-	-	Dom	-
91	35-12-26	187	Unknown	-	-	12	-	-	-	Dom	-
92	35-12-26	135	C. Walentowski	-	D	63	5	14	07/77	Dom	-
93	35-12-34	139	Unknown	-	-	25	-	-	-	Dom	-
94	35-12-34	-	Unknown	-	-	-	-	-	-	Dom	-
95	35-12-35	-	Unknown	-	-	-	-	-	-	Dom	-
96	35-12-35	185	Unknown	-	-	21	-	-	-	Dom	-
97	35-12-35	-	Unknown	-	-	-	-	-	-	Dom	-
98	35-12-25	142	Chappy	1948	D	93	4	75	08/48	Dom	0.3
99	35-12-36	-	Unknown	-	-	-	-	-	-	-	-
100	35-12-36	-	Unknown	-	-	-	-	-	-	Dom	-
101	35-12-36	143	T. Vollmar	1970	D	146	5	90	08/70	Dom	0.2
101 <sub>a</sub>	35-12-36	-	A. Vollmar	1959	D	84	5	76	03/59	Dom	6.7
102	35-12-36	201	Webb	1959	D	55	4	25	05/59	Dom	0.8
103	35-12-36	-	McKelvey	-	DP	20	1-1/4	-	-	Dom	-
104	35-12-36	-	Olson	-	DP	22	1-1/4	-	-	Dom	-



## APPENDIX 2.3G (continued)

Page 5 of 6

WATER WELL NUMBER <sup>a</sup>	LOCATION <sup>b</sup>	USGS WELL NUMBER	OWNER	YEAR COMPLETED	INSTALLATION METHOD <sup>c</sup>	DEPTH (feet)	DIAMETER (inches)	DEPTH TO WATER (feet)	DATE OF MEASUREMENT	USE OF WATER <sup>d</sup>	SPECIFIC CAPACITY (gallons per minute/foot of drawdown)
105	35-12-36	-	Kelchmer	-	DP	29	1-1/4	-	-	Dom	-
					DP	21	1	-	-	Dom	-
106	35-12-36	-	Hafferman	-	DP	17	1-1/4	-	-	Dom	-
107	35-12-36	-	Unknown	-	-	-	-	-	-	Dom	-
108	35-12-36	-	Becker	-	DP	25	1-1/4	-	-	Dom	-
109	35-12-36	-	Becker	-	-	-	-	-	-	-	-
110	35-12-36	-	Yeager	-	DP	22	1-1/2	-	-	Dom	-
111	35-12-36	-	Jester/Hansen/ Walte	-	DP	24	1-1/2	-	-	Dom	-
112	35-12-36	-	Hopp	-	DP	30 <sup>e</sup>	2	-	-	Dom	-
113	35-12-36	-	Hopp	-	-	-	-	-	-	Dom	-
114	35-12-36	-	Unknown	-	-	-	-	-	-	Dom	-
115	35-12-36	-	Dietzler	-	DP	20-30 <sup>e</sup>	1-1/2 <sup>e</sup>	-	-	Dom	-
116	35-12-36	-	Pallen	-	DP	20-30 <sup>e</sup>	1-1/2 <sup>e</sup>	-	-	Dom	-
117	35-12-36	-	Karol	-	DP	20-30 <sup>e</sup>	1-1/2 <sup>e</sup>	-	-	Dom	-
118	35-12-36	-	Unknown	-	DP	20-30 <sup>e</sup>	1-1/2 <sup>e</sup>	-	-	Dom	-
119	35-12-36	-	Walentowski	-	D	20-30 <sup>e</sup>	3	-	-	Dom	-
120	35-12-36	146	Yeager	-	DP	30	1-1/2	25	07/77	Dom	-
121	35-12-31	-	Unknown	-	-	-	-	-	-	Dom	-
122	35-12-31	-	Pipkorn	-	-	-	-	-	-	Dom	-
123	35-12-31	-	Filters	-	-	-	-	-	-	Dom	-
124	35-12-31	-	Jensen	-	-	-	-	-	-	Dom	-
125	35-12-31	-	Lenke	-	DP	20	1-1/4	-	-	Dom	-
126	35-12-31	-	Sprenger	-	-	-	-	-	-	Dom	-
127	35-12-31	-	Mosse	-	DP	20	1-1/4	-	-	Dom	-
128	35-12-31	-	Unknown	-	-	-	-	-	-	Dom	-
129	35-12-31	-	McCarty	-	DP	25	1-1/4	-	-	Dom	-
130	35-13-31	-	Koenig	-	-	-	-	-	-	-	-
131	35-13-31	-	Koenig	1966	D	75	4	8	09/66	Dom	0.1
132	35-13-31	148	Unknown	-	-	-	-	-	-	Dom	-
133	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
134	35-13-31	-	Sosinski	1971	D	115	5	16	06/71	Dom	0.8

## APPENDIX 2.3G (continued)

Page 6 of 6

WATER WELL NUMBER <sup>a</sup>	LOCATION <sup>b</sup>	USGS WELL NUMBER	OWNER	YEAR COMPLETED	INSTALLATION METHOD <sup>c</sup>	DEPTH (feet)	DIAMETER (inches)	DEPTH TO WATER (feet)	DATE OF MEASUREMENT	USE OF WATER <sup>d</sup>	SPECIFIC CAPACITY (gallons per minute/foot of drawdown)
135	35-13-31	-	Salm	1973	D	40	5	18	07/73	Dom	0.5
136	35-13-31	149	Karge	1973	D	148	5	26	07/77	Dom	3.0
137	35-13-31	-	Mattick	1976	D	124	5	26	07/76	Dom	3.8
138	35-13-31	-	Beaster	1973	D	130	-	30	07/73	Dom	3.0
139	35-13-31	-	Brezina	1970	D	59	5	18	07/70	Dom	1.2
140	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
141	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
142	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
143	35-13-31	-	Parker	-	-	-	-	-	-	Dom	-
144	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
145	35-13-31	147	Unknown	-	-	-	-	-	-	Dom	-
146	35-13-31	-	Dyer	1974	D	46	5	20	02/74	Dom	0.4
147	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
148	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
149	35-13-31	-	Unknown	-	-	-	-	-	-	Dom	-
150	34-12-11	-	Reynolds Resort	-	DP	15-20 <sup>e</sup>	2	-	-	P	-
151	34-12-12	-	Simonson	-	D	32	4	2	09/78	Dom	-
152	34-12-12	-	Delopst	-	D	34	4	-	-	Dom	-
153	34-12-12	-	Urban	-	D	36	4	-	-	Dom	-
154	34-12-12	-	Leable	-	-	-	-	-	-	Dom	-
155	34-12-11	-	Gardner Resort	-	-	-	-	-	-	Dom	-
156	34-12-12	-	Keller	-	D	39	4	5	-	Dom	-
157	34-12-12	-	Schwietzer	-	DP	28	1-1/4	-	-	Dom	-
158	34-12-12	-	Jicha	1970	D	32	5	10	07/70	Dom	3.0
159	34-12-12	-	Stiller	-	D	-	5	-	-	Dom	-
160	34-12-12	-	Gotter	1969	D	26	5	8	09/69	Dom	0.6
161	34-12-12	-	Novak	-	D	35	5	15	-	Dom	-
162	34-12-12	-	Perry	1967	D	37	4	5	06/67	Dom	7.5
163	35-13-33	-	Welch	-	DP	-	-	20-30	-	-	-
164	35-13-34	-	Jacobs	-	D	120	5	24	-	-	-
165	35-13-33	-	Kruger	-	DP	-	-	-	-	-	1.1

APPENDIX 2.3H

CHARACTERISTICS OF INTERMITTENT STREAMS  
IN THE ENVIRONMENTAL STUDY AREA

CHARACTERISTICS OF INTERMITTENT STREAMS IN THE ENVIRONMENTAL STUDY AREA

SAMPLING <sup>a</sup> STATION	LOCATION	pH <sup>b</sup>	TEMPERATURE <sup>b</sup> (°C)	CONDUCTIVITY <sup>b</sup> (µmhos/cm)	WATER <sup>b</sup> COLOR	STREAM BOTTOM MATERIAL	ESTIMATED DISCHARGE (cfs)
S-1	Stream across road SE Section 34 (35N, 12E)	5.90	8.0	170	-	Sand, gravel	0.2
S-2	Stream across road NE Section 3 (34N, 12E)	-	-	-	-	Sand, gravel	0.25
S-3	Stream across road NW Section 1 (34N, 12E)	4.15	8.5	100	Yellow	Sand, gravel	0.1
S-4	Small stream along road SW Section 1 (35N, 12 E)	5.15	10.0	71	-	Sand, gravel, boulders	0.1
S-5	Widespread water pockets SW Section 1 (35N, 12E)	-	-	-	-	-	<0.01
S-6	Culvert across road NE Section 34 (35N, 12E)	4.80	9.0	35	-	Sand, gravel, organics	0.05
S-7	Culvert across road NE Section 34 (35N, 12E)	6.10	9.0	65	-	Silt, organics	0.3
S-8	Culvert across road; upstream of S-6 NE Section 34 (35N, 12E)	-	-	-	-	-	None
S-9	Boggy, moss-covered area; numerous water pockets NW Section 35 (35N, 12E)	-	-	-	-	Organics	<0.01
S-9A	Boggy, moss-covered area at base of steep hill NW Section 35 (35N, 12E)	-	-	-	-	Organics	None

Note: - Indicates no data.

<sup>a</sup>Locations of stations are shown on Figure 2.3-16.

<sup>b</sup>Values determined by field measurements.

<sup>c</sup>NR = Not recorded.

## APPENDIX 2.3H (continued)

Page 2 of 3

SAMPLING <sup>a</sup> STATION	LOCATION	pH <sup>b</sup>	TEMPERATURE <sup>b</sup> (°C)	CONDUCTIVITY <sup>b</sup> (µmhos/cm)	WATER <sup>b</sup> COLOR	STREAM BOTTOM MATERIAL	ESTIMATED DISCHARGE (cfs)
S-10	Hoffman's Creek NW Section 26 (35N, 12E)	7.50	8.0	170	Clear	Sand, gravel, cobble	0.90
S-11	Culvert across Sand Lake Road; upstream of S-10 SE Section 26 (35N, 12E)	-	-	-	-	Sand, gravel	None
S-12	Culvert across Sand Lake Road; E of gravel pit; upstream of S-11 SW Section 25 (35N, 12E)	5.40	9.5	30	Yellow	Sand, gravel, organics	<0.01
S-13	Channel NE of S-12, W of pond SW Section 25 (35N, 12E)	4.80	8.5	20	Yellow	Roots, organics	<0.01
S-14	Man-made channel N of pond; upstream of S-13 SW Section 25 (35N, 12E)	4.40	8.0	40	Yellow	Organics	NR
S-15	Channel NE of Oak Lake NE Section 36 (35N, 12E)	5.70	9.5	40	Yellow	Organics	None
S-16	Ditch along Sand Lake Road SE Section 25 (35N, 12E)	-	-	-	-	-	None
S-17	Culvert across Sand Lake Road NE Section 31 (35N, 13E)	4.00	9.0	45	Yellow	Sand, gravel, organics	0.05
S-18	2 culverts across gravel road; E of Little Sand Lake SE Section 31 (35N, 13E)	4.40	8.0	30	Yellow	Sand, gravel	0.42
S-19	Culvert across gravel road; N of Deep Hole Lake NE Section 6 (34N, 13E)	-	-	-	-	-	None
S-20	Deep Hole Lake W outlet flows over beaver dam NE Section 6 (34N, 13E)	5.35	11.0	30	Slight color	Organics, some sand	1 - 2
S-21	Culvert across road; NE of Deep Hole Lake NW Section 5 (34N, 13E)	5.65	10.0	42	None	Silty sand, boulders	<0.05

SAMPLING <sup>a</sup> STATION	LOCATION	pH <sup>b</sup>	TEMPERATURE <sup>b</sup> (°C)	CONDUCTIVITY <sup>b</sup> (µmhos/cm)	WATER <sup>b</sup> COLOR	STREAM BOTTOM MATERIAL	ESTIMATED DISCHARGE (cfs)
S-22	Culvert across road; E of Deep Hole Lake SW Section 5 (34N, 13E)	4.45	8.5	45	Yellow	Sand, gravel, some organics	0.2
S-23	Small stream S of Deep Hole Lake SE Section 6 (34N, 13E)	6.15	9.0	40	None	Sand, gravel, organics	<0.01
S-24	Upstream from S-23 SW Section 5 (34N, 13E)	4.40	9.0	45	Yellow	Silty sand, boulders, organics	<0.05
S-25	Culvert across road; W of Walsh Lake SE Section 5 (34N, 13E)	6.25	8.5	67	None	Sand, boulders	<0.05
S-26	Culvert across road; W of Walsh Lake NW Section 9 (34N, 13E)	5.05	8.0	62	Yellow	Sand, gravel	0.15
S-27	Culvert across road; E of Deep Hole Lake NE Section 5 (34N, 13E)	4.65	9.0	80	Yellow	Sand, boulders	<0.05
S-28	Culvert across road; SW of Ground Hemlock Lake SW Section 33 (35N, 13E)	4.25	9.0	48	Yellow	Silty sand, gravel, organics	0.05
S-29	Small stream NNE of Duck Lake NW Section 32 (35N, 13E)	5.95	9.0	55	Turbid	Silty sand, gravel, organics	<0.01
S-30	Overflow from small pond SE of Skunk Lake NW Section 32 (35N, 13E)	6.25	9.5	50	Turbid	Silty sand, organics	<0.01
S-31	Culvert across road; W of Ground Hemlock Lake NW Section 33 (35N, 13E)	6.35	9.5	65	None	Sand	<0.01
S-32	Culvert across road; N of Skunk Lake NE Section 30 (35N, 13E)	5.95	9.0	35	NR	Sand, gravel, boulders	<0.01
S-33	Duck Lake Outlet at road SE Section 31 (35N, 13E)	4.70	-	20	Yellow	Sand, gravel, boulders	-

APPENDIX 2.4A  
STREAM GAGE DATA

APPENDIX 2.4A  
STREAM GAGE DATA

<u>Table</u>	<u>Title</u>	<u>Page</u>
A-1	RECORD OF STREAM GAGE READINGS - SG 1 . . . . .	2.4A-1
A-2	RECORD OF STREAM GAGE READINGS - SG 2 . . . . .	2.4A-4
A-3	RECORD OF STREAM GAGE READINGS - SG 3 . . . . .	2.4A-7
A-4	RECORD OF STREAM GAGE READINGS - SG 4 . . . . .	2.4A-11
A-5	RECORD OF STREAM GAGE READINGS - SG 5A. . . . .	2.4A-16
A-6	RECORD OF STREAM GAGE READINGS - SG 5B. . . . .	2.4A-17
A-7	RECORD OF STREAM GAGE READINGS - SG 6 . . . . .	2.4A-21
A-8	RECORD OF STREAM GAGE READINGS - SG 8 . . . . .	2.4A-25
A-9	RECORD OF STREAM GAGE READINGS - SG 10. . . . .	2.4A-27
A-10	RECORD OF STREAM GAGE READINGS - SG 19. . . . .	2.4A-29
A-11	RECORD OF STREAM GAGE READINGS - SG 22. . . . .	2.4A-33
A-12	RECORD OF STREAM GAGE READINGS - SG 23. . . . .	2.4A-37
A-13	RECORD OF DISCHARGE MEASUREMENTS - SG A, SG C, SG D, AND SG F. . . . .	2.4A-40
A-14	RECORD OF STREAM GAGE READINGS - SG B . . . . .	2.4A-41
A-15	RECORD OF STREAM GAGE READINGS - SG E . . . . .	2.4A-43

<u>Figure</u>	<u>Title</u>	<u>Follows</u> <u>Page</u>
A-1	DISCHARGE RATING CURVES FOR STREAM GAGES. . . . .	2.4A-43



RECORD OF STREAM GAGE READINGS - SG 1

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
5-15-77	1.89	1,517.24	1,519.13	45.0		Q = (5.12Y) <sup>1.57</sup>	
5-28-77	1.69		1,518.93		36.5		
6-01-77	2.00		1,519.24		46.1		
6-04-77	1.86		1,519.10		41.6		
6-10-77	1.64		1,518.88		35.0		
6-18-77	1.58		1,518.82		33.3		
6-25-77	1.67		1,518.91		35.9		
6-28-77	1.70		1,518.94		36.8		
7-05-77	2.19		1,519.43		52.4		
7-05-77	2.15		1,519.39		48.1		51.0
7-10-77	2.02		1,519.26		46.7		
7-17-77	1.58		1,518.82		33.3		
7-24-77	1.37		1,518.61		27.4 <sup>c</sup>		
7-30-77	1.29		1,518.53		25.3 <sup>c</sup>		
8-03-77	1.48		1,518.72		30.4		
8-07-77	1.49		1,518.73		30.7		
8-14-77	1.41		1,518.65		28.5 <sup>c</sup>		
8-21-77	1.45		1,518.69		29.6 <sup>c</sup>		
8-26-77	1.58		1,518.82		33.3		
8-31-77	2.48		1,519.72		62.5		
9-05-77	3.03		1,520.27		83.4		
9-11-77	2.30		1,519.54		56.1		
9-19-77	2.94		1,520.18		79.9		
9-25-77	3.89		1,521.13		163.8		Q = (1.08Y) <sup>3.41</sup>
10-08-77	2.85		1,520.29		70.4		Q = (5.12Y) <sup>1.57</sup>
10-09-77	3.10		1,520.34		86.3		
10-09-77	3.17		1,520.41		89.1		
10-10-77	3.28		1,520.52		95.0		Q = (1.08Y) <sup>3.41</sup>
10-10-77	3.30		1,520.54		96.8		
10-11-77	3.48		1,520.72		114.7		
10-12-77	3.58		1,520.82		125.5		
10-13-77	3.57	1,520.81		124.4			
10-17-77	2.90	1,520.14		78.3	Q = (5.12Y) <sup>1.57</sup>		
10-23-77	2.38	1,519.62		58.9			
10-30-77	2.31	1,519.55		56.5			
11-02-77	2.23	1,519.47		53.7			

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharge estimated on basis of hydrographic comparisons with Swamp Creek at County Highway M.

<sup>c</sup>Value beyond range of defined rating curve.

<sup>d</sup>Because of high flow, this discharge measurement was taken at the outlet of the culverts under County Highway K.

TABLE A-1 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
11-06-77	2.80	1,517.24	1,520.04		74.4	$Q = (5.12Y)^{1.57}$	
11-08-77	3.00		1,520.24		82.2		
11-12-77	2.80		1,520.04		74.4		
11-20-77	2.31		1,519.55		56.5		
11-21-77 <sup>b</sup>	2.52 <sup>b</sup>		1,519.76 <sup>b</sup>		40.0 <sup>b</sup>	$Q = (3.76Y)^{1.57}$	
12-02-77 <sup>b</sup>	2.55 <sup>b</sup>		1,519.79 <sup>b</sup>		40.0 <sup>b</sup>		
12-13-77 <sup>b</sup>	2.60 <sup>b</sup>		1,519.84 <sup>b</sup>		40.0 <sup>b</sup>		
12-16-77 <sup>b</sup>	2.55 <sup>b</sup>		1,519.79 <sup>b</sup>		40.0 <sup>b</sup>		
12-18-77 <sup>b</sup>	2.90 <sup>b</sup>		1,520.14 <sup>b</sup>		40.0 <sup>b</sup>		
12-19-77 <sup>b</sup>	3.00 <sup>b</sup>		1,520.24 <sup>b</sup>		47.0 <sup>b</sup>		
12-20-77 <sup>b</sup>	3.08 <sup>b</sup>		1,520.32 <sup>b</sup>		47.0 <sup>b</sup>		
12-27-77 <sup>b</sup>	3.10 <sup>b</sup>		1,520.34 <sup>b</sup>		47.0 <sup>b</sup>		
1-04-78 <sup>b</sup>	2.78 <sup>b</sup>		1,520.02 <sup>b</sup>		42.0 <sup>b</sup>		
1-11-78 <sup>b</sup>	3.05 <sup>b</sup>		1,520.29 <sup>b</sup>		42.0 <sup>b</sup>		
1-19-78 <sup>b</sup>	2.65 <sup>b</sup>		1,519.89 <sup>b</sup>		42.0 <sup>b</sup>		
1-27-78 <sup>b</sup>	2.80 <sup>b</sup>		1,520.04 <sup>b</sup>		42.0 <sup>b</sup>		
2-08-78 <sup>b</sup>	2.80 <sup>b</sup>		1,520.04 <sup>b</sup>		40.0 <sup>b</sup>		
2-12-78 <sup>b</sup>	2.76 <sup>b</sup>		1,520.00 <sup>b</sup>		40.0 <sup>b</sup>		
2-22-78 <sup>b</sup>	2.74 <sup>b</sup>		1,519.98 <sup>b</sup>		40.0 <sup>b</sup>		
3-01-78 <sup>b</sup>	2.70 <sup>b</sup>		1,519.94 <sup>b</sup>		40.0 <sup>b</sup>		
3-06-78 <sup>b</sup>	2.72 <sup>b</sup>		1,519.96 <sup>b</sup>		40.0 <sup>b</sup>		
3-08-78 <sup>b</sup>	2.74 <sup>b</sup>		1,519.98 <sup>b</sup>		40.0 <sup>b</sup>		
3-15-78 <sup>b</sup>	2.86 <sup>b</sup>		1,520.10 <sup>b</sup>		40.0 <sup>b</sup>		
3-21-78 <sup>b</sup>	2.76 <sup>b</sup>		1,520.00 <sup>b</sup>		40.0 <sup>b</sup>		
3-25-78 <sup>b</sup>	2.62 <sup>b</sup>		1,519.86 <sup>b</sup>		40.0 <sup>b</sup>		
3-26-78 <sup>b</sup>	2.58 <sup>b</sup>		1,519.82 <sup>b</sup>		40.0 <sup>b</sup>		
3-27-78 <sup>b</sup>	2.58 <sup>b</sup>		1,519.82 <sup>b</sup>		40.0 <sup>b</sup>		
3-28-78 <sup>b</sup>	2.60 <sup>b</sup>	1,519.84 <sup>b</sup>		39.8			
3-31-78	2.41	1,517.12	1,519.65		60.0	$Q = (5.12Y)^{1.57}$	
4-04-78	2.51		1,519.63		59.3		
4-06-78	3.03		1,520.15		78.7		
4-07-78	3.26		1,520.38		87.9		
4-09-78	3.56		1,520.68		110.5		$Q = (1.08Y)^{3.41}$
4-11-78	3.97		1,521.09		158.4		
4-12-78	4.02		1,521.14		165.2		
4-13-78	4.02		1,521.14		171.9 <sup>d</sup>		
4-16-78	3.70		1,520.82		125.5		
4-19-78	3.52		1,520.64		106.5		
4-22-78	3.83	1,520.95		140.7			
4-25-78	3.70	1,520.82		125.5			

TABLE A-1 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-02-78	2.86	1,517.12	1,519.98		72.1	Q = (5.12Y) <sup>1.57</sup>
5-03-78	2.76		1,519.88		68.4	
5-05-78	2.63		1,519.75		63.6	
5-12-78	2.83		1,519.95		71.0	
5-15-78	3.40		1,520.52		95.0	Q = (1.08Y) <sup>3.41</sup>
5-23-78	2.50		1,519.62		58.9	Q = (5.12Y) <sup>1.57</sup>
5-30-78	4.68		1,521.80		27.4 <sup>c</sup>	Q = (1.08Y) <sup>3.41</sup>
6-09-78	2.54		1,519.66		60.3	Q = (5.12Y) <sup>1.57</sup>
6-19-78	2.21		1,519.33		49.0	
6-20-78	2.41		1,519.53		55.8	
6-30-78	3.27		1,519.01		38.9	
7-05-78	3.27		1,520.39		88.3	
7-07-78	3.27		1,520.39		88.3	
7-11-78	2.60		1,519.72		63.1	
7-17-78	1.95		1,519.07		40.7	
7-18-78	3.12		1,520.24		82.2	
7-24-78	4.15		1,521.27		184.3	Q = (1.08Y) <sup>3.41</sup>
8-01-78	3.22		1,520.34		86.3	Q = (5.12Y) <sup>1.57</sup>
8-01-78	3.19		1,520.31		85.0	
8-08-78	2.32		1,519.44		52.7	
8-10-78	2.16		1,519.28		47.4	
8-15-78	1.91		1,519.03		39.5	
8-15-78	1.94		1,519.06		40.4	
8-15-78	2.50		1,519.62		58.9	
8-15-78	3.20		1,520.32		85.5	
8-16-78	3.35		1,520.47		91.6	
8-16-78	3.48		1,520.60		102.6	Q = (1.08Y) <sup>3.41</sup>
8-16-78	3.71		1,520.83		126.7	
8-16-78	3.89		1,521.01		148.1	
8-17-78	3.94		1,521.06		154.4	
8-17-78	3.95		1,521.07		155.8	
8-18-78	3.83		1,520.95		140.7	
8-18-78	3.80		1,520.92		137.1	
8-23-78	3.46	1,520.58		100.6		
8-30-78	3.53	1,520.65		103.7		
9-03-78	2.99	1,520.11		77.1	Q = (5.12Y) <sup>1.57</sup>	
9-05-78	2.78	1,519.90		69.1		
9-12-78	2.47	1,519.59		57.9		
9-18-78	3.50	1,520.62		104.5	Q = (1.08Y) <sup>3.41</sup>	
9-19-78	3.45	1,520.57		99.7		
9-27-78	2.86	1,519.98		72.1	Q = (5.12Y) <sup>1.57</sup>	
10-02-78	3.01	1,520.13		77.9		

RECORD OF STREAM GAGE READINGS - SG 2

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-28-77	1.47	1,533.35	1,534.82		24.3	Q = (3.17Y) <sup>1.82</sup>
5-09-77	1.57		1,534.92		26.8	
5-17-77	1.53		1,534.88	26.5		
5-28-77	1.13		1,534.48		16.7 <sup>c</sup>	
6-01-77	1.48		1,534.83		24.5	
6-04-77	1.27		1,534.62		19.6	
6-10-77	1.07		1,534.42		15.5 <sup>c</sup>	
6-18-77	1.26		1,534.61		19.4	
6-25-77	1.35		1,534.70		21.4	
6-28-77	1.40		1,534.75		22.6	
7-05-77	1.96		1,535.31		37.5	
7-08-77	1.39		1,534.74	22.2		
7-10-77	1.33		1,534.68		21.0	
7-17-77	1.24		1,534.59		19.0 <sup>c</sup>	
7-24-77	1.38		1,534.73		22.1	
7-30-77	2.46		1,535.81		53.5 <sup>c</sup>	
8-03-77	1.65		1,535.00		28.8	
8-07-77	1.51		1,534.86		25.3	
8-14-77	1.59		1,534.94		27.3	
8-21-77	1.57		1,534.92		26.8	
8-27-77	1.98		1,535.33		38.1	
8-31-77	1.92		1,535.27		36.3	
9-05-77	2.04		1,535.39		39.9	
9-11-77	1.51		1,534.86		25.3	
9-19-77	2.48		1,535.83		54.2 <sup>c</sup>	
9-25-77	3.51		1,536.86		95.4 <sup>c</sup>	
10-09-77	2.71		1,536.06		62.5 <sup>c</sup>	
10-13-77	2.22		1,535.57		45.5	
11-02-77	1.56		1,534.91		26.5	
12-03-77	1.49		1,534.84		24.8	

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharge estimated by hydrographic comparison with records for Swamp Creek at Highway 55.

<sup>c</sup>Value beyond range of defined rating curve.

<sup>d</sup>Beaver dams were constructed immediately above and below this gage location in late 1978. This change in the stream gradient has severely modified the stage-discharge relationship, thereby making it inappropriate to calculate discharge values at this location during 1979 and 1980.

TABLE A-2 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
12-07-77 <sup>b</sup>	1.47 <sup>b</sup>	1,533.35	1,534.82 <sup>b</sup>		24.0 <sup>b</sup>	$Q = (3.17Y)^{1.82}$
12-14-77 <sup>b</sup>	1.52 <sup>b</sup>		1,534.87 <sup>b</sup>		25.0 <sup>b</sup>	
12-19-77 <sup>b</sup>	1.85 <sup>b</sup>		1,535.20 <sup>b</sup>		34.0 <sup>b</sup>	
12-28-77 <sup>b</sup>	1.66 <sup>b</sup>		1,535.01 <sup>b</sup>		23.0 <sup>b</sup>	
1-04-78 <sup>b</sup>	1.59 <sup>b</sup>		1,534.94 <sup>b</sup>		20.0 <sup>b</sup>	
1-17-78 <sup>b</sup>	1.65 <sup>b</sup>		1,535.00 <sup>b</sup>		20.0 <sup>b</sup>	
1-27-78 <sup>b</sup>	1.50 <sup>b</sup>		1,534.85 <sup>b</sup>		20.0 <sup>b</sup>	
2-12-78 <sup>b</sup>	1.63 <sup>b</sup>		1,534.98 <sup>b</sup>		17.0 <sup>b</sup>	
3-04-78 <sup>b</sup>	1.68 <sup>b</sup>		1,535.03 <sup>b</sup>		17.0 <sup>b</sup>	
3-08-78 <sup>b</sup>	1.55 <sup>b</sup>		1,534.90 <sup>b</sup>		17.0 <sup>b</sup>	
3-15-78 <sup>b</sup>	1.48 <sup>b</sup>		1,534.83 <sup>b</sup>		17.0 <sup>b</sup>	
3-21-78 <sup>b</sup>	1.46 <sup>b</sup>		1,534.81 <sup>b</sup>		18.0 <sup>b</sup>	
3-29-78 <sup>b</sup>	1.44 <sup>b</sup>		1,534.79 <sup>b</sup>		20.0 <sup>b</sup>	
4-04-78	1.22		1,533.50	1,534.72		
4-07-78	1.70	1,535.20			34.3	
4-09-78	1.61	1,535.11			31.8	
4-11-78	2.05	1,535.55			44.9	
4-19-78	1.93	1,535.43			41.1	
4-22-78	1.90	1,535.40			40.2	
5-03-78	1.88	1,535.38			39.6	
5-05-78	1.95	1,535.45			41.7	
5-12-78	1.97	1,535.47			42.3	
7-11-78	1.23			1,534.73		22.1
7-24-78	2.63		1,536.13		65.1 <sup>c</sup>	
8-01-78	2.50		1,536.00		60.3 <sup>c</sup>	
8-10-78	1.14		1,534.64		20.1	
8-15-78	2.15		1,535.65		48.1	
8-25-78	2.15		1,535.65	48.3	48.1	
8-31-78	1.95		1,535.45		41.7	
9-01-78	1.93		1,535.43		41.1	
9-04-78	1.81		1,535.31		37.5	
9-15-78	2.60		1,536.10		64.0 <sup>c</sup>	
9-18-78	2.32		1,535.82		53.9 <sup>c</sup>	
9-19-78	2.29		1,535.79		52.8	
10-02-78	2.33		1,535.83		59.0 <sup>c</sup>	
4-17-79	2.55	1,533.78	1,536.33		-d	-d
4-18-79	2.58		1,536.36			
4-19-79	2.56		1,536.34			
4-20-79	2.72		1,536.50			
4-21-79	2.78		1,536.48			
4-22-79	2.45		1,536.23			

TABLE A-2 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-11-80	2.48	1,533.79	1,536.27		-d	-d
4-12-80	2.44		1,536.23			
4-19-80	3.07		1,536.86			
4-26-80	2.29		1,536.08			
5-03-80	2.20		1,535.99			
5-10-80	2.14		1,535.93			
5-17-80	2.12		1,535.91			
5-17-80	2.16		1,535.95			
5-24-80	2.05		1,535.84			
5-31-80	2.30		1,536.09			
6-06-80	1.90		1,535.69			
6-14-80	1.83		1,535.62			
6-21-80	1.85		1,535.64			
6-28-80	1.82		1,535.61			
7-04-80	1.66		1,535.45			
7-12-80	1.76		1,535.55			
7-19-80	1.81		1,535.60			
7-26-80	1.84		1,535.63			
8-02-80	2.00		1,535.79			
8-09-80	2.18		1,535.97			
8-11-80	1.94		1,535.73			
8-16-80	1.73		1,535.52			
8-23-80	1.81		1,535.60			
8-30-80	2.10		1,535.89			
9-06-80	2.10		1,535.89			
9-13-80	1.94		1,535.73			
9-20-80	2.10		1,535.89			
9-27-80	2.19		1,535.98			
10-04-80	2.16		1,535.95			
10-11-80	2.22		1,536.01			
10-18-80	2.25		1,536.04			
10-25-80	2.23		1,536.02			
11-01-80	2.18		1,535.97			
11-08-80	2.20		1,535.99			

RECORD OF STREAM GAGE READINGS - SG 3

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-15-77	2.71	1,566.09	1,568.80	56.5		Q = (0.81Y) <sup>4.88</sup>
5-18-77	2.24		1,568.33	21.3		
5-28-77	2.18		1,568.27		19.5	
6-01-77	2.23		1,568.32		21.7	
6-04-77	2.10		1,568.19		16.4	
6-10-77	1.98		1,568.07		12.5 <sup>c</sup>	
6-18-77	2.12		1,568.21		17.1	
6-25-77	2.16		1,568.25		18.7	
6-28-77	2.25		1,568.34		22.7	
7-05-77	2.60		1,568.69		44.7	
7-06-77	2.39		1,568.48	30.4		
7-10-77	2.12		1,568.21		17.1	
7-17-77	2.03		1,568.12		14.0	
7-24-77	1.92		1,568.01		10.8 <sup>c</sup>	
7-30-77	1.90		1,567.99		10.3 <sup>c</sup>	
8-03-77	2.00		1,568.09		13.1 <sup>c</sup>	
8-07-77	1.94		1,568.03		11.3 <sup>c</sup>	
8-14-77	2.01		1,568.10		13.4	
8-21-77	1.94		1,568.03		11.3 <sup>c</sup>	
8-27-77	2.59		1,568.68		43.9	
8-31-77	2.52		1,568.61		38.6	
9-05-77	2.32		1,568.41		26.2	
9-11-77	2.12		1,568.21		17.1	
9-19-77	3.04		1,569.13		93.7	
9-25-77	2.78		1,568.87		61.4	
10-08-77	2.66		1,568.75		49.8	
10-09-77	2.62		1,568.71	44.0		
10-10-77	2.50		1,568.59		37.2	
10-17-77	2.29		1,568.38		24.6	
10-23-77	2.25		1,568.34		22.7	
10-30-77	2.81		1,568.90		64.6	
11-06-77	2.33		1,568.42		26.7	
11-12-77	2.31		1,568.40		25.6	
11-20-77	2.28		1,568.37		24.1	

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharge not determined.

<sup>c</sup>Value beyond range of defined rating curve.

TABLE A-3 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
12-02-77 <sup>b</sup>	2.32 <sup>b</sup>	1,566.09	1,568.41 <sup>b</sup>		26.2 <sup>b</sup>	$Q = (0.81Y)^{4.88}$
12-06-77 <sup>b</sup>	2.30 <sup>b</sup>		1,568.39 <sup>b</sup>		25.1 <sup>b</sup>	
12-14-77 <sup>b</sup>	2.45 <sup>b</sup>		1,568.54 <sup>b</sup>		33.8 <sup>b</sup>	
12-19-77 <sup>b</sup>	2.40 <sup>b</sup>		1,568.49 <sup>b</sup>		30.7 <sup>b</sup>	
12-28-77 <sup>b</sup>	2.80 <sup>b</sup>		1,568.89 <sup>b</sup>		63.5 <sup>b</sup>	
1-04-78 <sup>b</sup>	2.77 <sup>b</sup>		1,568.86 <sup>b</sup>		60.3 <sup>b</sup>	
1-12-78 <sup>b</sup>	2.43 <sup>b</sup>		1,568.52 <sup>b</sup>		32.5 <sup>b</sup>	
1-17-78 <sup>b</sup>	2.45 <sup>b</sup>		1,568.54 <sup>b</sup>		33.8 <sup>b</sup>	
1-27-78 <sup>b</sup>	2.45 <sup>b</sup>		1,568.54 <sup>b</sup>		33.8 <sup>b</sup>	
1-27-78 <sup>b</sup>	2.45 <sup>b</sup>		1,568.54 <sup>b</sup>		33.8 <sup>b</sup>	
2-12-78 <sup>b</sup>	2.43 <sup>b</sup>		1,568.52 <sup>b</sup>		32.5 <sup>b</sup>	
3-02-78 <sup>b</sup>	2.94 <sup>b</sup>		1,569.03 <sup>b</sup>		80.0 <sup>b</sup>	
3-08-78 <sup>b</sup>	2.38 <sup>b</sup>		1,568.47 <sup>b</sup>		29.5 <sup>b</sup>	
3-15-78 <sup>b</sup>	2.32 <sup>b</sup>		1,568.41 <sup>b</sup>		26.2 <sup>b</sup>	
3-20-78 <sup>b</sup>	2.33 <sup>b</sup>		1,568.42 <sup>b</sup>		26.7 <sup>b</sup>	
3-29-78	2.34		1,566.00	1,568.34		
4-05-78	2.52	1,568.52			32.5	
4-06-78	2.65	1,568.65			41.6	
4-07-78	2.74	1,568.74			48.9	
4-09-78	2.63	1,568.63			40.1	
4-11-78	2.93	1,568.93			67.9	
4-15-78	2.65	1,568.65		40.0		
4-16-78	2.60	1,568.60			37.9	
4-19-78	2.80	1,568.80			54.4	
4-22-78	2.70	1,568.70			45.6	
4-25-78	2.70	1,568.70		45.7		
5-03-78	2.42	1,568.42			26.7	
5-05-78	2.40	1,568.40			25.6	
5-12-78	2.45	1,568.45			28.4	
5-16-78	2.57	1,568.57			35.8	
5-23-78	2.36	1,568.36			23.6	
5-30-78	2.67	1,568.67			43.1	
6-09-78	2.40	1,568.40			25.6	
6-16-78	2.31	1,568.31			21.3	
6-20-78	2.30	1,568.30			20.8	
6-30-78	2.15	1,568.15			15.0	
7-11-78	2.89	1,568.89			63.5	
7-17-78	2.16	1,568.16			15.3	
7-18-78	3.11	1,569.11		80.7		
7-25-78	2.70	1,568.70			45.6	
8-01-78	2.38	1,568.38			24.6	
8-08-78	2.30	1,568.30			20.8	
8-10-78	2.17	1,568.17			15.7	



TABLE A-3 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
8-15-78	2.20	1,566.00	1,568.20		16.8	$Q = (0.81Y)^{4.88}$
8-15-78	2.27		1,568.27		19.5	
8-15-78	2.75		1,568.75		49.8	
8-16-78	2.93		1,568.93		67.9	
8-16-78	2.95		1,568.95		70.2	
8-16-78	2.90		1,568.90		64.6	
8-16-78	2.86		1,568.86		60.3	
8-17-78	2.69		1,568.69		44.7	
8-17-78	2.61		1,568.61		38.6	
8-18-78	2.53		1,568.53		33.2	
8-18-78	2.52		1,568.52		32.5	
8-23-78	2.65		1,568.65		41.6	
8-31-78	2.40		1,568.40		25.6	
9-03-78	2.39		1,568.39		25.1	
9-05-78	2.33		1,568.33		22.2	
9-12-78	2.38		1,568.38		24.6	
9-18-78	2.51		1,568.51		31.9	
9-19-78	2.49	1,568.49		30.7		
9-27-78	2.46	1,568.46		28.9		
10-02-78	2.45	1,568.45		28.4		
3-29-79	3.13	1,566.04	1,569.17		99.7	
4-14-79	2.85		1,568.89		63.5	
4-17-79	3.03		1,569.07		85.2	
4-18-79	3.12		1,569.16	100.8		
4-19-79	3.27		1,569.31		123.1	
4-20-79	3.32		1,569.36		132.4	
4-21-79	3.35		1,569.39		138.3	
4-22-79	3.19		1,569.23		109.2	
4-23-79	3.10		1,569.14		95.2	
4-24-79	3.01	1,569.05		82.6		
4-12-80	1.62	1,567.18	1,568.80		54.4	
4-19-80	1.42		1,568.60		37.9	
4-26-80	1.39		1,568.57		35.8	
5-03-80	1.28		1,568.46		28.9	
5-10-80	1.21		1,568.39		25.1	
5-16-80	1.21		1,568.39		25.1	
5-17-80	1.21		1,568.39		25.1	
5-24-80	0.99		1,568.17		15.7	
5-31-80	1.60		1,568.78		52.5	
6-06-80	1.60		1,568.78		52.5	
6-14-80	1.09		1,568.27		19.5	
6-21-80	1.15	1,568.33		22.2		
6-28-80	1.11	1,568.29		20.4		

TABLE A-3 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
7-04-80	1.50	1,567.18	1,568.68		43.9	Q = (0.81) <sup>4.88</sup>
7-12-80	1.51		1,568.69		44.7	
7-19-80	1.16		1,568.34		22.7	
7-26-80	1.10		1,568.28		20.0	
8-02-80	0.98		1,568.16		15.3	
8-09-80	1.39		1,568.57		35.8	
8-16-80	0.94		1,568.12		14.0	
8-23-80	0.97		1,568.15		15.0	
8-30-80	1.27		1,568.45		28.4	
9-06-80	1.30		1,568.48		30.1	
9-13-80	0.97		1,568.15		15.0	
9-20-80	1.10		1,568.28		20.0	
9-27-80	1.12		1,568.30		20.8	
10-04-80	1.16		1,568.34		22.7	
10-11-80	0.96		1,568.14		14.6	
10-18-80	0.94		1,568.12		14.0	
10-25-80	0.98		1,568.16		15.3	
11-01-80	0.94		1,568.12		14.0	
11-08-80	0.93		1,568.11		13.7	

RECORD OF STREAM GAGE READINGS - SG 4

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
5-13-77	1.20	1,581.29	1,582.49	10.8		Q = (12.10Y) <sup>1.25</sup>	
5-28-77	1.02		1,582.31		5.2		
6-01-77	1.05		1,582.34		5.9		
6-04-77	0.98		1,582.27		4.4		
6-10-77	0.88		1,582.17		2.5 <sup>c</sup>		
6-18-77	0.87		1,582.16		2.3 <sup>c</sup>		
6-25-77	0.94		1,582.23		3.6		
6-28-77	1.04		1,582.33		5.6		
7-02-77	0.93		1,582.22		3.4		
7-05-77	1.15		1,582.44				8.1
7-10-77	1.07		1,582.36		6.3		
7-17-77	0.97		1,582.26		4.2		
7-24-77	0.83		1,582.12		1.6 <sup>c</sup>		
7-30-77	0.68		1,581.97		<0.1 <sup>c</sup>		
8-03-77	0.83		1,582.12		1.6 <sup>c</sup>		
8-07-77	0.75		1,582.04		0.4 <sup>c</sup>		
8-14-77	0.72		1,582.01		0.1 <sup>c</sup>		
8-21-77	0.71		1,582.00		<0.1 <sup>c</sup>		
8-27-77	0.97		1,582.26		4.2		
8-31-77	1.15		1,582.44		8.1		
9-05-77	1.17		1,582.46		8.6		
9-11-77	1.09		1,582.38		6.7		
9-19-77	1.35		1,582.64		26.4		Q = (3.44Y) <sup>4.15</sup>
9-25-77	1.35		1,582.64		26.4		
10-07-77	1.20		1,582.49		9.2		Q = (12.10Y) <sup>1.25</sup>
10-08-77	1.29		1,582.58		21.9		Q = (3.44Y) <sup>4.15</sup>
10-09-77	1.29		1,582.58				
10-10-77	1.25	1,582.54		13.1			
10-17-77	1.20	1,582.49		9.2	Q = (12.10Y) <sup>1.25</sup>		
10-23-77	1.18	1,582.47		8.8			
10-30-77	1.08	1,582.37		6.5			
11-06-77	1.14	1,582.43		7.9			
11-12-77	1.14	1,582.43		7.9			
11-20-77	1.11	1,582.40		7.2			

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharge not determined.

<sup>c</sup>Value beyond range of defined rating curve.

TABLE A-4 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
12-02-77	1.22	1,581.29	1,582.51		10.3	$Q = (3.44Y)^{4.15}$	
12-06-77	1.16		1,582.45		8.3	$Q = (12.10Y)^{1.25}$	
12-14-77	1.17		1,582.46		8.6		
12-16-77	1.16		1,582.45		8.3		
12-18-77	1.22		1,582.51		10.3	$Q = (3.44Y)^{4.15}$	
12-19-77	1.22		1,582.51		10.3		
12-28-77 <sup>b</sup>	1.56 <sup>b</sup>			1,582.85 <sup>b</sup>		-b	
1-04-78 <sup>b</sup>	1.29 <sup>b</sup>			1,582.58 <sup>b</sup>		-b	
1-12-78 <sup>b</sup>	1.40 <sup>b</sup>			1,582.69 <sup>b</sup>		-b	
1-17-78 <sup>b</sup>	1.40 <sup>b</sup>			1,582.69 <sup>b</sup>		-b	
1-27-78 <sup>b</sup>	1.38 <sup>b</sup>		1,582.67 <sup>b</sup>		-b		
2-12-78 <sup>b</sup>	1.40 <sup>b</sup>		1,582.69 <sup>b</sup>		-b		
3-01-78 <sup>b</sup>	1.36 <sup>b</sup>		1,582.65 <sup>b</sup>		-b		
3-08-78 <sup>b</sup>	1.38 <sup>b</sup>		1,582.67 <sup>b</sup>		-b		
3-13-78	1.06	1,581.28	1,582.34		5.9	$Q = (12.10Y)^{1.25}$	
3-14-78	1.08		1,582.36		6.3		
3-15-78	1.08		1,582.36		6.3		
3-20-78	1.04		1,582.32		5.4		
3-22-78	1.05		1,582.33		3.5		
3-25-78	1.01		1,582.29		4.8		
3-26-78	1.04		1,582.32		5.4		
3-27-78	1.05		1,582.33		5.6		
3-29-78	1.05		1,582.33		5.6		
3-31-78	1.05		1,582.33		5.6		
4-06-78	1.22		1,582.50		9.5		
4-07-78	1.18		1,582.46		8.6		
4-09-78	1.20		1,582.48		9.0		
4-11-78	1.29		1,582.57		16.4	$Q = (3.44Y)^{4.15}$	
4-12-78	1.30		1,582.58		17.6		
4-15-78	1.28		1,582.56		13.0		
4-16-78	1.26		1,582.54		13.1		
4-19-78	1.30		1,582.58		17.6		
4-22-78	1.30		1,582.58		17.6		
4-25-78	1.28		1,582.56		15.2		
5-03-78	1.20	1,582.48		9.0	$Q = (12.10Y)^{1.25}$		
5-12-78	1.20	1,582.48		9.0			
5-16-78	1.20	1,582.48		9.0			
5-23-78	1.18	1,582.46		8.6			
5-30-78	1.32	1,582.60		20.2	$Q = (3.44Y)^{4.15}$		
6-09-78	1.21	1,582.49		9.2	$Q = (12.10Y)^{1.25}$		
6-16-78	1.15	1,582.43		7.9			
6-20-78	1.16	1,582.44		8.1			

TABLE A-4 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
6-30-78	1.01	1,581.28	1,582.29		4.8	Q = (12.10Y) <sup>4.15</sup>	
7-11-78	1.20		1,582.48		9.0		
7-17-78	1.08		1,582.36		6.3		
7-18-78	1.31		1,582.59		18.9		Q = (3.44Y) <sup>4.15</sup>
7-25-78	1.35		1,582.63	27.1			
8-01-78	1.27		1,582.55		14.1		
8-08-78	1.14		1,582.42		7.6		Q = (12.10Y) <sup>1.25</sup>
8-10-78	1.10		1,582.38		6.7		
8-15-78	1.09		1,582.37		6.5		
8-15-78	1.08		1,582.36		6.3		
8-15-78	1.40		1,582.68		34.0 <sup>c</sup>		Q = (3.44Y) <sup>4.15</sup>
8-16-78	1.37		1,582.65		28.2		
8-16-78	1.35		1,582.63		24.8		
8-16-78	1.35		1,582.63		24.8		
8-16-78	1.33		1,582.61		21.7		
8-17-78	1.32		1,582.60		20.2		
8-17-78	1.32		1,582.60		20.2		
8-18-78	1.32		1,582.60		20.2		
8-18-78	1.33		1,582.61		21.7		
8-23-78	1.30		1,582.58		17.6		
8-31-78	1.28		1,582.56		15.2		
9-03-78	1.30		1,582.58		17.6		
9-05-78	1.25		1,582.53		12.1		
9-12-78	1.25		1,582.53		12.1		
9-15-78	1.31		1,582.59		18.9		
9-18-78	1.31		1,582.59		18.9		
9-19-78	1.30		1,582.58		17.6		
9-22-78	1.27		1,582.55		14.1		
9-27-78	1.28		1,582.56		15.2		
10-02-78	1.28		1,582.56		15.2		
3-29-79	1.34	1,581.34	1,582.68		34.0 <sup>c</sup>	Q = (3.44Y) <sup>4.15</sup>	
3-30-79	1.33		1,582.67		32.0 <sup>c</sup>		
3-31-79	1.34		1,582.68		34.0 <sup>c</sup>		
4-02-79	1.29		1,582.63		24.8		
4-03-79	1.28		1,582.62		23.2		
4-04-79	1.28		1,582.62		23.2		
4-09-79	1.22		1,582.56		15.2		
4-12-79	1.24		1,582.58		17.6		
4-12-79	1.24		1,582.58		17.6		
4-13-79	1.26		1,582.60		20.2		
4-13-79	1.27		1,582.61		21.7		
4-13-79	1.27		1,582.61		21.7		

TABLE A-4 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-14-79	1.25	1,581.34	1,582.59		18.9	$Q = (3.44Y)^{4.15}$
4-16-79	1.26		1,582.60		20.2	
4-16-79	1.29		1,582.63		24.8	
4-17-79	1.27		1,582.61		21.7	
4-17-79	1.28		1,582.62		23.2	
4-17-79	1.30		1,582.64		26.4	
4-18-79	1.26		1,582.60		20.2	
4-18-79	1.29		1,582.63		24.8	
4-19-79	1.30		1,582.64		26.4	
4-19-79	1.31		1,582.65	19.0		
4-20-79	1.31		1,582.65		28.2	
4-21-79	1.32		1,582.66		30.0	
4-22-79	1.32		1,582.66		30.0	
4-23-79	1.31		1,582.65		28.2	
4-24-79	1.30		1,582.64		26.4	
4-11-80	1.35	1,581.25	1,582.60		20.2	$Q = (12.10Y)^{1.25}$
4-12-80	1.35		1,582.60		20.2	
4-19-80	1.20		1,582.45		8.3	
4-26-80	1.20		1,582.45		8.3	
5-03-80	1.20		1,582.45		8.3	
5-10-80	1.00		1,582.25		4.0	
5-16-80	1.09		1,582.34		5.9	
5-17-80	0.89		1,582.14		1.9 <sup>c</sup>	
5-24-80	1.03		1,582.28		4.6	
5-31-80	1.23		1,582.48		9.0	
6-07-80	1.20		1,582.45		8.3	
6-14-80	1.40		1,582.65		28.2	
6-21-80	1.22		1,582.47		8.8	
6-28-80	1.15		1,582.40		7.2	
7-04-80	1.17		1,582.42		7.6	
7-12-80	1.02	1,582.27		4.4		
7-19-80	1.80	1,583.05		20.6 <sup>c</sup>		
7-26-80	1.02	1,582.27		4.4		
8-02-80	1.06	1,582.31		5.2		
8-09-80	1.18	1,582.43		7.9		
8-16-80	0.98	1,582.23		3.6		
8-23-80	1.08	1,582.33		5.6		
8-30-80	1.22	1,582.47		8.8		
9-06-80	1.30	1,582.55		14.1		
9-10-80	1.24	1,582.49		9.2		
9-13-80	1.18	1,582.43		7.9		

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
9-20-80	1.21		1,582.46		8.6	$Q = (12.10Y)^{1.25}$
9-27-80	1.32		1,582.57		16.4	$Q = (3.44Y)^{4.15}$
10-04-80	1.16		1,582.41		7.4	$Q = (12.10Y)^{1.25}$
10-11-80	1.18		1,582.43		7.9	
10-18-80	1.00		1,582.25		4.0	
10-25-80	0.96		1,582.21		3.2	
11-01-80	0.98		1,582.23		3.6	
11-08-80	0.94		1,582.19		2.8 <sup>c</sup>	

TABLE A-5

RECORD OF STREAM GAGE READINGS - SG 5A

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-18-77	0.99	1,575.18	1,575.95		2.4 <sup>c</sup>	
5-28-77	0.88		1,576.06			
6-01-77	1.04		1,576.22			
6-04-77	0.96		1,576.14			
6-10-77	0.90		1,576.08			
6-18-77	0.99		1,576.17			
6-25-77	1.05		1,576.23			
6-28-77	1.12		1,576.30			
7-02-77	0.98		1,576.16	2.3		
7-05-77	1.69		1,576.87			
7-10-77	0.95		1,576.13			
7-17-77	0.90		1,576.08			

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Data insufficient to develop rating curve. Readings terminated July 1977; see SG 5B.

<sup>c</sup>This discharge measurement was taken at the outlet of the culverts underneath Keith Siding Road.



RECORD OF STREAM GAGE READINGS - SG 5B

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
7-07-77	4.05	1,570.71	1,574.80	3.0		Q = (2.60Y) <sup>1.51</sup>	
7-24-77	3.92		1,574.63		2.1 <sup>c</sup>		
7-30-77	3.91		1,574.62	2.1 <sup>c</sup>			
8-03-77	4.11		1,574.82	3.1			
8-07-77	3.92		1,574.63	2.1 <sup>c</sup>			
8-14-77	4.00		1,574.71	2.5 <sup>c</sup>			
8-21-77	4.08		1,574.79	3.0			
8-27-77	4.91		1,575.62	8.8			
8-31-77	4.80		1,575.51	7.9			
9-05-77	4.30		1,575.01	4.3			
9-11-77	4.10		1,574.81	3.1			
9-19-77	5.67		1,576.38	17.7	Q = (0.93Y) <sup>3.62</sup>		
9-25-77	5.19		1,575.90	11.2	Q = (2.60Y) <sup>1.51</sup>		
10-09-77	5.05		1,575.76	9.9			
10-09-77	5.04		1,575.75	11.3			
10-17-77	4.21		1,574.92		3.7		
10-23-77	4.16		1,574.87	3.4			
10-30-77	4.11		1,574.82	3.1			
11-06-77	4.21		1,574.92	3.7			
11-12-77	4.22		1,574.93	3.8			
11-20-77	4.23		1,574.94	3.9			
11-21-77	4.80		1,575.51	7.9			
12-02-77 <sup>b</sup>	4.38 <sup>b</sup>			1,575.09 <sup>b</sup>		3.5 <sup>b</sup>	
12-14-77 <sup>b</sup>	4.38 <sup>b</sup>			1,575.09 <sup>b</sup>		3.5 <sup>b</sup>	
12-16-77 <sup>b</sup>	4.43 <sup>b</sup>			1,575.14 <sup>b</sup>		3.5 <sup>b</sup>	
12-19-77 <sup>b</sup>	4.38 <sup>b</sup>			1,575.09 <sup>b</sup>		3.5 <sup>b</sup>	
12-28-77 <sup>b</sup>	4.45 <sup>b</sup>			1,575.16 <sup>b</sup>		3.5 <sup>b</sup>	
1-12-78 <sup>b</sup>	4.32 <sup>b</sup>		1,575.03 <sup>b</sup>		2.9 <sup>b</sup>		
1-17-78 <sup>b</sup>	4.52 <sup>b</sup>		1,575.23 <sup>b</sup>		2.9 <sup>b</sup>		
1-27-78 <sup>b</sup>	4.53 <sup>b</sup>		1,575.24 <sup>b</sup>		2.9 <sup>b</sup>		
2-12-78 <sup>b</sup>	4.51 <sup>b</sup>		1,575.22 <sup>b</sup>		2.4 <sup>b</sup>		
3-03-78 <sup>b</sup>	4.50 <sup>b</sup>		1,575.21 <sup>b</sup>		2.2 <sup>b</sup>		
3-08-78 <sup>b</sup>	4.50 <sup>b</sup>		1,575.21 <sup>b</sup>		2.2 <sup>b</sup>		
3-15-78 <sup>b</sup>	3.92 <sup>b</sup>		1,574.63 <sup>b</sup>		2.2 <sup>b</sup>		
3-20-78 <sup>b</sup>	3.92 <sup>b</sup>		1,574.63 <sup>b</sup>		2.4 <sup>b</sup>		

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharges estimated on basis of hydrographic comparison with records for Swamp Creek at Highway 55.

<sup>c</sup>Value beyond range of defined rating curve.

TABLE A-6 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
3-29-78	4.10	1,570.75	1,574.81		3.1	$Q = (2.60Y)^{1.51}$	
4-03-78	4.12		1,574.87		3.4		
4-09-78	4.60		1,575.35		6.6		
4-10-78	5.00		1,575.75		9.9		
4-11-78	5.19		1,575.94		11.5		
4-15-78	4.46		1,575.21		5.6		
4-16-78	4.29		1,575.04		4.5		
4-19-78	4.74		1,575.49		7.7		
4-22-78	4.51		1,575.26		6.0		
5-03-78	4.12		1,574.87		3.4		
5-06-78	4.10		1,574.85		3.3		
5-12-78	4.19		1,574.94		3.9		
5-16-78	4.37		1,575.12		5.0		
5-23-78	4.06		1,574.81		3.1		
5-30-78	4.45		1,575.20		5.6		
6-09-78	4.28		1,575.03		4.4		
6-16-78	4.51		1,575.26		6.0		
6-20-78	4.65		1,575.40		7.0		
6-30-78	4.94		1,575.69		7.5		$Q = (1.47Y)^{2.21}$
7-11-78	4.95		1,575.70		7.6		
7-17-78	5.04		1,575.79		8.5		
7-18-78	5.43		1,576.18	11.7			
7-25-78	5.67		1,576.42		18.8	$Q = (0.93Y)^{3.62}$	
8-01-78	4.74		1,575.49		5.7	$Q = (1.47Y)^{2.21}$	
8-08-78	4.88		1,575.63		6.9		
8-15-78	5.24		1,575.99		10.7		
8-15-78	5.16		1,575.91		9.8		
8-15-78	5.24		1,575.99		10.7		
8-16-78	5.41		1,576.16		12.9		
8-16-78	5.45		1,576.20		13.4		
8-16-78	5.47		1,576.22		13.8	$Q = (0.93Y)^{3.62}$	
8-16-78	5.39		1,576.14		12.6	$Q = (1.47Y)^{2.21}$	
8-17-78	5.14		1,575.89		9.6		
8-17-78	5.22		1,575.97		10.5		
8-18-78	5.11		1,575.86		9.2		
8-18-78	5.09		1,575.84		9.0		
8-23-78	5.35		1,576.10		12.1		
8-31-78	4.90		1,575.65		7.1		
9-05-78	4.80		1,575.55		6.2		
9-11-78	4.50		1,575.25		3.8		
9-14-78	5.39		1,576.14	12.6			
9-15-78	5.16		1,575.91	10.0			

TABLE A-6 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
9-18-78	4.64	1,570.75	1,575.39		4.9	Q = (1.47Y) <sup>2.21</sup>	
9-19-78	4.64		1,575.39		4.9		
9-20-78	4.61		1,575.36	4.2			
9-22-78	4.36		1,575.11	3.0			
9-27-78	4.64		1,575.39		4.9		
10-02-78	4.50		1,575.25		3.8		
3-21-79	5.33	1,570.76	1,576.09		12.0	Q = (0.93Y) <sup>3.62</sup>	
3-22-79	5.05		1,575.81		8.7		
3-28-79	5.00		1,575.76		8.2		
3-29-79	4.88		1,575.64		7.0		
3-30-79	4.95		1,575.71		7.7		
4-02-79	4.70		1,575.46		5.4		
4-03-79	4.67		1,575.43		5.2		
4-04-79	4.74		1,575.50		5.7		
4-09-79	4.50		1,575.26		3.9		
4-12-79	4.59		1,575.35		4.6		
4-12-79	4.67		1,575.43		5.2		
4-13-79	4.98		1,575.74		8.0		
4-13-79	5.00		1,575.76		8.2		
4-13-79	5.01		1,575.77		8.3		
4-14-79	5.16		1,575.92		9.9		
4-15-79	5.11		1,575.87		9.3		
4-16-79	5.19		1,575.95		10.2		
4-17-79	5.60		1,576.36		17.2		
4-18-79	5.94		1,576.70	28.1			
4-19-79	6.01		1,576.77		30.7		
4-20-79	6.00	1,576.76		30.3			
4-21-79	5.86	1,576.62		25.1			
4-22-79	5.69	1,576.45		19.7			
4-23-79	5.51	1,576.27		15.0			
4-11-80	5.09	1,570.76	1,575.85		9.1	Q = (1.47Y) <sup>2.21</sup>	
4-12-80	4.97		1,575.73		7.9		
4-19-80	4.40		1,575.16		3.2		
4-26-80	4.50		1,575.26		3.9		
5-03-80	4.68	1,573.70	1,575.44		5.2		
5-10-80	4.40		1,575.16		3.2		
5-16-80	1.60		1,575.30		4.2		
5-17-80	1.59		1,575.29		4.1		
5-24-80	1.48		1,575.18		3.4		
5-31-80	2.20			1,575.90			9.7

TABLE A-6 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
6-07-80	2.20	1,573.70	1,575.90		9.7	Q = (1.47Y) <sup>2.21</sup>
6-14-80	1.55		1,575.25		3.8	
6-21-80	1.98		1,575.68		7.4	
6-28-80	1.59		1,575.29		4.1	
7-04-80	1.61		1,575.31		4.3	
7-12-80	1.50		1,575.20		3.5	
7-19-80	1.66		1,575.36		4.6	
7-26-80	1.61		1,575.31		4.3	
8-02-80	1.60		1,575.30		4.2	
8-09-80	2.05		1,575.75		8.1	
8-16-80	1.61		1,575.31		4.3	
8-23-80	1.57		1,575.27		4.0	
8-30-80	1.80		1,575.50		5.7	
9-06-80	1.90		1,575.60		6.6	
9-13-80	1.50		1,575.20		3.5	
9-20-80	1.55		1,575.25		3.8	
9-27-80	1.51		1,575.21		3.6	
10-04-80	1.55		1,575.25		3.8	
10-11-80	1.50		1,575.20		3.5	
10-18-80	1.55		1,575.25		3.8	
10-25-80	1.55		1,575.25		3.8	
11-01-80	1.53		1,575.23		3.7	
11-08-80	1.49		1,575.19		3.4	

RECORD OF STREAM GAGE READINGS - SG 6

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-28-77	1.60	1,575.14	1,576.74		-d	Q = (1.21Y) <sup>5.05</sup>
6-01-77	1.63		1,576.77		-d	
6-04-77	1.55		1,576.69		-d	
6-10-77	1.43		1,576.57		-d	
6-18-77	1.61		1,576.75		-d	
6-25-77	1.45		1,576.59		-d	
6-28-77	1.42		1,576.56		-d	
7-05-77	1.36		1,576.50		-d	
7-06-77	1.11		1,576.25 <sup>e</sup>	5.6	5.5	
7-10-77	0.88		1,576.02 <sup>e</sup>		1.9	
7-17-77	0.75		1,575.89 <sup>e</sup>		1.0	
7-24-77	0.72		1,575.86 <sup>e</sup>		0.8	
7-30-77	0.70		1,575.84 <sup>e</sup>		0.8	
8-03-77	0.82		1,575.96 <sup>e</sup>		1.8	
8-07-77	0.73		1,575.87 <sup>e</sup>		1.2	
8-14-77	0.78		1,575.92 <sup>e</sup>		1.6	
8-21-77	0.81		1,575.95 <sup>e</sup>		2.1	
8-27-77	1.36		1,576.50 <sup>e</sup>		21.7 <sup>c</sup>	
8-31-77	1.46		1,576.60 <sup>e</sup>		30.9 <sup>c</sup>	
9-05-77	0.86		1,576.00 <sup>e</sup>		3.2	
9-11-77	0.83		1,575.97 <sup>e</sup>		2.9	
9-19-77	1.39		1,576.53 <sup>e</sup>		28.1 <sup>c</sup>	
9-25-77	1.01		1,576.15 <sup>e</sup>		7.4	
10-07-77	0.85		1,576.00 <sup>e</sup>		4.2	
10-09-77	0.90		1,576.04 <sup>e</sup>	5.3	5.3	
10-10-77	0.82		1,575.96 <sup>e</sup>		3.7	
10-11-77	0.89		1,576.03 <sup>e</sup>		5.1	
10-17-77	0.79		1,575.93 <sup>e</sup>		3.1	
10-23-77	0.73		1,575.87 <sup>e</sup>		2.4	
10-30-77	0.68		1,575.82 <sup>e</sup>		1.8	
11-02-77	0.68		1,575.82 <sup>e</sup>		1.0	
11-06-77	0.80		1,575.94 <sup>e</sup>		3.4	

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharge estimated on basis of hydrographic comparison with records for Swamp Creek at Highway 55.

<sup>c</sup>Value beyond range of defined rating curve.

<sup>d</sup>Stage-discharge rating not applicable during this period.

<sup>e</sup>Shifting control method used.

TABLE A-7 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
11-12-77	0.74	1,575.14	1,575.88 <sup>e</sup>		2.5	$Q = (1.21Y)^{5.05}$	
11-20-77	0.75		1,575.89 <sup>e</sup>		2.6		
11-21-77	0.87		1,576.01 <sup>e</sup>		4.6		
12-02-77 <sup>b</sup>	0.83 <sup>b</sup>	1,575.22	1,575.97 <sup>b</sup>		3.0 <sup>b</sup>		
12-06-77 <sup>b</sup>	0.90 <sup>b</sup>		1,576.04 <sup>b</sup>		3.0 <sup>b</sup>		
12-14-77 <sup>b</sup>	0.97 <sup>b</sup>		1,576.11 <sup>b</sup>		3.0 <sup>b</sup>		
12-16-77 <sup>b</sup>	0.90 <sup>b</sup>		1,576.04 <sup>b</sup>		3.0 <sup>b</sup>		
12-19-77 <sup>b</sup>	0.90 <sup>b</sup>		1,576.04 <sup>b</sup>		3.0 <sup>b</sup>		
12-28-77 <sup>b</sup>	1.05 <sup>b</sup>		1,576.19 <sup>b</sup>		3.0 <sup>b</sup>		
1-04-78 <sup>b</sup>	1.12 <sup>b</sup>		1,576.26 <sup>b</sup>		2.2 <sup>b</sup>		
1-12-78 <sup>b</sup>	1.12 <sup>b</sup>		1,576.26 <sup>b</sup>		2.2 <sup>b</sup>		
1-17-78 <sup>b</sup>	1.15 <sup>b</sup>		1,576.29 <sup>b</sup>		2.2 <sup>b</sup>		
1-27-78 <sup>b</sup>	1.07 <sup>b</sup>		1,576.21 <sup>b</sup>		2.2 <sup>b</sup>		
2-02-78 <sup>b</sup>	1.09 <sup>b</sup>		1,576.23 <sup>b</sup>		1.8 <sup>b</sup>		
2-12-78 <sup>b</sup>	1.15 <sup>b</sup>		1,576.29 <sup>b</sup>		1.8 <sup>b</sup>		
2-24-78 <sup>b</sup>	1.05 <sup>b</sup>		1,576.19 <sup>b</sup>		1.8 <sup>b</sup>		
3-03-78 <sup>b</sup>	1.10 <sup>b</sup>		1,576.24 <sup>b</sup>		2.0 <sup>b</sup>		
3-06-78 <sup>b</sup>	1.01 <sup>b</sup>		1,576.15 <sup>b</sup>		2.0 <sup>b</sup>		
3-08-78 <sup>b</sup>	1.01 <sup>b</sup>		1,576.15 <sup>b</sup>		2.0 <sup>b</sup>		
3-13-78 <sup>b</sup>	0.90 <sup>b</sup>		1,576.04 <sup>b</sup>		2.0 <sup>b</sup>		
3-15-78 <sup>b</sup>	0.86 <sup>b</sup>		1,576.00 <sup>b</sup>		2.0 <sup>b</sup>		
3-20-78	0.84		1,575.22	1,576.06			3.5
3-22-78	0.81			1,576.03	2.8		
3-29-78	0.62			1,575.84			1.1 <sup>c</sup>
4-04-78	0.70			1,575.92			1.7
4-05-78	0.69			1,575.91			1.6
4-07-78	0.79			1,576.01			2.8
4-09-78	0.84			1,576.06			3.5
4-11-78	1.01			1,576.23			7.4
4-15-78	1.02		1,576.24	7.0	7.8		
4-16-78	0.94		1,576.16		5.5		
4-19-78	1.17		1,576.39		13.8 <sup>c</sup>		
4-22-78	1.10		1,576.32		10.6 <sup>c</sup>		
4-26-78	1.10		1,576.32		10.6 <sup>c</sup>		
5-02-78	0.76		1,575.98		2.4		
5-03-78	0.73		1,575.95		2.0		
5-05-78	0.69		1,575.91		1.6		
5-12-78	0.98		1,576.20		6.6		
5-16-78	1.14		1,576.36		24.7 <sup>c</sup>		
5-23-78	0.83		1,576.05		3.4		
5-30-78	1.00		1,576.22		7.2		
5-30-78	1.06		1,576.28		9.1		

TABLE A-7 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
6-09-78	1.05	1,575.22	1,576.27		8.3	Q = (1.21Y) <sup>5.05</sup>
6-16-78	1.03		1,576.25		8.1	
6-20-78	1.01		1,576.23		7.4	
6-30-78	1.20		1,576.42		15.4	Q = (0.60Y) <sup>10.31</sup>
7-11-78	1.31		1,576.53 <sup>e</sup>		0.8	
7-17-78	1.32		1,576.54 <sup>e</sup>		0.9	
7-18-78	1.78		1,577.00 <sup>e</sup>	11.6	10.8	
7-25-78	1.38		1,576.60 <sup>e</sup>		1.1	
8-01-78	1.43		1,576.65 <sup>e</sup>		1.3	
8-05-78	1.42		1,576.64 <sup>e</sup>		1.2	
8-08-78	1.41		1,576.63 <sup>e</sup>		1.0	
8-10-78	1.77		1,576.99 <sup>e</sup>		7.3	
8-15-78	1.58		1,576.80 <sup>e</sup>		2.3	
8-15-78	1.56		1,576.78 <sup>e</sup>		2.1	
8-15-78	1.72		1,576.94 <sup>e</sup>		5.0	
8-15-78	1.74		1,576.96 <sup>e</sup>		5.6	
8-16-78	1.70		1,576.92 <sup>e</sup>		4.5	
8-16-78	1.67		1,576.89 <sup>e</sup>		3.9	
8-16-78	1.64		1,576.86 <sup>e</sup>		3.3	
8-17-78	1.59		1,576.81 <sup>e</sup>		2.5	
8-17-78	1.56		1,576.78 <sup>e</sup>		2.1	
8-18-78	1.54		1,576.76		1.8	
8-18-78	1.55		1,576.77		1.9	
8-23-78	1.62		1,576.84 <sup>e</sup>		2.6	
8-30-78	1.57		1,576.79 <sup>e</sup>		1.7	
8-31-78	1.61		1,576.83 <sup>e</sup>	2.1	2.1	
9-03-78	1.59		1,576.81 <sup>e</sup>		2.1	
9-05-78	1.77		1,576.99 <sup>e</sup>		6.2	
9-11-78	1.61		1,576.83 <sup>e</sup>		3.1	
9-12-78	1.67		1,576.89 <sup>e</sup>		4.3	
9-14-78	1.81	1,577.03 <sup>e</sup>		9.3		
9-15-78	1.70	1,576.92 <sup>e</sup>	5.9	5.6		
9-18-78	1.80	1,577.02 <sup>e</sup>		9.3		
9-19-78	1.70	1,576.92 <sup>e</sup>		5.6		
9-22-78	1.78	1,577.00 <sup>e</sup>		8.5		
9-27-78	1.77	1,576.99 <sup>e</sup>		8.0		
10-02-78	1.81	1,577.03 <sup>e</sup>		9.8		
3-22-79	1.64	1,575.55	1,577.19 <sup>e</sup>		2.3	
3-28-79	1.58		1,577.13 <sup>e</sup>		2.9	
3-29-79	1.59		1,577.14 <sup>e</sup>		3.1	
4-13-79	1.67		1,577.22 <sup>e</sup>		4.8	
4-14-79	1.69		1,577.24 <sup>e</sup>		5.3	
4-16-79	1.73		1,577.28 <sup>e</sup>		6.6	

TABLE A-7 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-17-79	1.76	1,575.55	1,577.31 <sup>e</sup>		7.6	Q = (0.60Y) <sup>10.31</sup>
4-18-79	1.76		1,577.31 <sup>e</sup>		7.6	
4-19-79	1.90		1,577.45 <sup>e</sup>	14.8	15.2 <sup>c</sup>	
4-20-79	1.86		1,577.41 <sup>e</sup>		12.5 <sup>c</sup>	
4-20-79	1.88		1,577.43 <sup>e</sup>		13.8 <sup>c</sup>	
4-21-79	1.90		1,577.45 <sup>e</sup>		15.2 <sup>c</sup>	
4-22-79	1.82		1,577.37 <sup>e</sup>		10.3 <sup>c</sup>	
4-23-79	1.81		1,577.36 <sup>e</sup>		9.8	
4-11-80	1.80	1,575.28	1,577.08		-d	-d
4-12-80	1.75		1,577.03			
4-19-80	2.30		1,577.58			
4-26-80	2.15		1,577.43			
5-03-80	2.21		1,577.49			
5-10-80	2.03		1,577.31			
5-16-80	2.34		1,577.62			
5-17-80	2.35		1,577.63			
5-24-80	2.20		1,577.48			
5-31-80	2.30		1,577.58			
6-07-80	2.33		1,577.61			
6-14-80	2.30		1,577.58			
6-21-80	2.36		1,577.64			
6-28-80	2.30		1,577.58			
7-04-80	2.36		1,577.64			
7-12-80	2.47		1,577.75			
7-19-80	2.31		1,577.59			
7-26-80	2.36		1,577.64			
8-02-80	2.36		1,577.64			
8-09-80	2.44		1,577.72			
8-11-80	2.43		1,577.71			
8-16-80	2.47		1,577.75			
8-23-80	2.58		1,577.86			
8-30-80	2.62		1,577.90			
9-06-80	2.68		1,577.96			
9-10-80	2.74		1,578.02			
9-13-80	2.71		1,577.99			
9-20-80	2.76		1,578.04			
9-27-80	2.79		1,578.07			
10-04-80	2.80		1,578.08			
10-11-80	2.81		1,578.09			
10-18-80	2.35		1,577.63			
10-25-80	2.65		1,577.93			
11-01-80	2.67		1,577.95			
11-08-80	2.71		1,577.99			



RECORD OF STREAM GAGE READINGS - SG 8

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-10-78	0.95	1,590.82	1,591.77		1.1	Q = (0.58Y) <sup>4.76</sup>
4-12-78	0.80		1,591.62		0.7	
4-14-78	0.90		1,591.72	1.3		
4-16-78	0.95		1,591.77		1.1	
4-19-78	1.10		1,591.92		1.7	
4-22-78	1.17		1,591.99		2.0	
5-16-78	1.09		1,591.91		1.6	
5-23-78	0.96		1,591.78		1.2	
6-01-78	0.93		1,591.75		1.1	
6-10-78	0.72		1,591.54		0.6	
6-16-78	0.70		1,591.52		0.6	
6-20-78	0.71		1,591.53		0.6	
6-30-78	0.59		1,591.41		0.4 <sup>b</sup>	
7-11-78	0.70		1,591.52		0.6	
7-17-78	0.59		1,591.41		0.4 <sup>b</sup>	
7-25-78	1.03		1,591.85		1.4	
8-01-78	0.92		1,591.74		1.0	
8-08-78	0.78		1,591.60		0.7	
8-15-78	0.74		1,591.56		0.6	
8-15-78	0.72		1,591.54		0.6	
8-15-78	0.87		1,591.69		0.9	
8-15-78	0.94		1,591.76		1.1	
8-16-78	0.92		1,591.74		1.0	
8-16-78	0.90		1,591.72		1.0	
8-17-78	0.89		1,591.71		1.0	
8-17-78	0.88		1,591.70		0.9	
8-18-78	0.87		1,591.69		0.9	
8-18-78	0.89		1,591.70		0.9	
8-23-78	0.95		1,591.77		1.1	
8-30-78	0.91		1,591.73		1.0	
9-05-78	0.82		1,591.64		0.8	
9-12-78	0.80		1,591.62		0.7	
9-14-78	0.94		1,591.76	0.9		
9-19-78	0.80		1,591.62		0.7	
9-22-78	0.73		1,591.55		0.6	
9-27-78	0.73		1,591.55		0.6	
10-02-78	0.81		1,591.63		0.8	

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Value beyond range of defined rating curve.

TABLE A-8 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-13-79	1.67	1,590.80	1,592.47		5.5	Q = (0.58Y) <sup>4.76</sup>
4-13-79	1.66		1,592.46		5.4	
4-14-79	1.65		1,592.45	4.2	5.3	
4-17-79	1.70		1,592.50		5.9	
4-18-79	1.76		1,592.56		6.6	
4-19-79	1.89		1,592.69	8.9	8.3	
4-20-79	2.00		1,592.80		10.1	
4-21-79	1.96		1,592.76		9.4	
4-22-79	1.96		1,592.76		9.4	
4-23-79	1.94		1,592.74		9.1	

RECORD OF STREAM GAGE READINGS - SG 10

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-14-77	0.70	1,632.20	1,632.90	No Flow	-b	-b
4-30-77	0.59		1,632.79	No Flow		
5-05-77	0.35		1,632.55	No Flow		
5-28-77	Dry		Dry	No Flow		
6-01-77	Dry		Dry	No Flow		
6-04-77	Dry		Dry	No Flow		
6-10-77	Dry		Dry	No Flow		
6-18-77	Dry		Dry	No Flow		
6-25-77	Dry		Dry	No Flow		
6-28-77	Dry		Dry	No Flow		
7-05-77	Dry		Dry	No Flow		
7-10-77	Dry		Dry	No Flow		
7-17-77	Dry		Dry	No Flow		
7-24-77	Dry		Dry	No Flow		
7-30-77	Dry		Dry	No Flow		
8-03-77	Dry		Dry	No Flow		
8-07-77	Dry		Dry	No Flow		
8-14-77	Dry		Dry	No Flow		
8-21-77	Dry		Dry	No Flow		
8-26-77	Dry		Dry	No Flow		
8-31-77	Dry		Dry	No Flow		
9-05-77	Dry		Dry	No Flow		
9-11-77	Dry		Dry	No Flow		
9-19-77	Dry		Dry	No Flow		
9-25-77	Dry		Dry	No Flow		
10-09-77	Dry		Dry	No Flow		
10-17-77	Dry		Dry	No Flow		
10-23-77	Dry		Dry	No Flow		
10-30-77	Dry		Dry	No Flow		
11-06-77	Dry		Dry	No Flow		
11-12-77	Dry		Dry	No Flow		
11-20-77	Dry		Dry	No Flow		
4-12-78	0.93	1,632.19	1,633.12	No Flow		
4-16-78	0.82		1,633.01	No Flow		
4-19-78	0.94		1,633.13	No Flow		
4-22-78	0.90		1,633.09	No Flow		

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Data for 1977 and 1978 insufficient to develop a rating curve and calculate discharges. A rating curve was developed for 1979 and discharges calculated.

<sup>c</sup>This discharge measurement was taken at the outlet of a culvert immediately upstream of the normal cross section.

TABLE A-9 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-16-78	0.86	1,632.19	1,633.05	No Flow	-b	-b
5-23-78	0.78		1,632.97	No Flow		
5-30-78	0.89		1,633.08	No Flow		
6-10-78	0.71		1,632.90	No Flow		
6-16-78	0.63		1,632.82	No Flow		
6-20-78	0.65		1,632.84	No Flow		
6-30-78	Dry		Dry	No Flow		
7-11-78	Dry		Dry	No Flow		
7-17-78	Dry		Dry	No Flow		
7-25-78	1.25		1,633.44	No Flow		
8-01-78	1.03		1,633.22	No Flow		
8-08-78	0.82		1,633.01	No Flow		
8-15-78	0.25		1,632.44	No Flow		
8-15-78	0.19		1,632.38	No Flow		
8-15-78	0.80		1,632.99	No Flow		
8-15-78	1.03		1,633.22	No Flow		
8-16-78	1.00		1,633.19	No Flow		
8-16-78	1.00		1,633.19	No Flow		
8-16-78	1.00		1,633.19	No Flow		
8-17-78	0.96		1,633.15	No Flow		
8-17-78	0.96		1,633.15	No Flow		
8-18-78	0.94		1,633.13	No Flow		
8-18-78	0.99		1,633.18	No Flow		
9-19-78	0.97		1,633.16	No Flow		
9-22-78	0.94		1,633.13	No Flow		
9-27-78	0.91		1,633.10	No Flow		
10-02-78	0.94		1,633.13	No Flow		
4-13-79	1.28		1,633.47		0.7	Q = (0.65Y) <sup>8.47</sup>
4-14-79	1.30	1,633.49	0.9 <sup>c</sup>			
4-18-79	1.44	1,633.63		1.6		
4-19-79	1.38	1,633.57	1.4			
4-20-79	1.42	1,633.61	1.6			
4-21-79	1.45	1,633.64	1.2			
4-22-79	1.40	1,633.59		1.3		
4-23-79	1.37	1,633.56		1.1		

RECORD OF STREAM GAGE READINGS - SG 19

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
10-12-77	1.65	1,533.74	1,535.39 <sup>d</sup>	5.5		$Q = (4.49Y)^{2.01}$
10-17-77	1.53		1,535.27 <sup>d</sup>		2.8	
10-23-77	1.45		1,535.19 <sup>d</sup>		1.7	
10-30-77	1.43		1,535.17 <sup>d</sup>		1.5	
11-06-77	1.51		1,535.25 <sup>d</sup>		2.5	
11-12-77	1.58		1,535.32 <sup>d</sup>		2.1	
11-20-77	1.70		1,535.44 <sup>d</sup>		3.9	
12-02-77 <sup>b</sup>	1.84 <sup>b</sup>		1,535.58 <sup>b</sup>		3.0 <sup>b</sup>	
12-07-77 <sup>b</sup>	1.84 <sup>b</sup>		1,535.58 <sup>b</sup>		3.0 <sup>b</sup>	
12-13-77 <sup>b</sup>	1.86 <sup>b</sup>		1,535.60 <sup>b</sup>		3.0 <sup>b</sup>	
12-19-77 <sup>b</sup>	1.86 <sup>b</sup>		1,535.60 <sup>b</sup>		3.0 <sup>b</sup>	
12-27-77 <sup>b</sup>	1.96 <sup>b</sup>	1,535.70 <sup>b</sup>	3.0 <sup>b</sup>			
1-04-78 <sup>b</sup>	1.88 <sup>b</sup>	1,535.62 <sup>b</sup>	2.0 <sup>b</sup>			
1-11-78 <sup>b</sup>	1.85 <sup>b</sup>	1,535.59 <sup>b</sup>	2.0 <sup>b</sup>			
1-19-78 <sup>b</sup>	1.85 <sup>b</sup>	1,535.59 <sup>b</sup>	2.0 <sup>b</sup>			
1-27-78 <sup>b</sup>	1.85 <sup>b</sup>	1,535.59 <sup>b</sup>	2.0 <sup>b</sup>			
2-07-78 <sup>b</sup>	1.91 <sup>b</sup>	1,535.65 <sup>b</sup>	2.0 <sup>b</sup>			
2-12-78 <sup>b</sup>	1.93 <sup>b</sup>	1,535.67 <sup>b</sup>	2.0 <sup>b</sup>			
2-22-78 <sup>b</sup>	1.90 <sup>b</sup>	1,535.64 <sup>b</sup>	2.0 <sup>b</sup>			
2-27-78 <sup>b</sup>	1.90 <sup>b</sup>	1,535.64 <sup>b</sup>	2.0 <sup>b</sup>			
3-04-78 <sup>b</sup>	1.92 <sup>b</sup>	1,535.66 <sup>b</sup>	2.0 <sup>b</sup>			
3-08-78 <sup>b</sup>	1.90 <sup>b</sup>	1,535.64 <sup>b</sup>	2.0 <sup>b</sup>			
3-15-78 <sup>b</sup>	1.91 <sup>b</sup>	1,535.65 <sup>b</sup>	2.0 <sup>b</sup>			
3-21-78 <sup>b</sup>	1.91 <sup>b</sup>	1,535.65 <sup>b</sup>	2.0 <sup>b</sup>			
3-28-78	1.90	1,533.45	1,535.35 <sup>d</sup>	5.0	1.3	
4-04-78	1.97		1,535.42 <sup>d</sup>		2.1	
4-06-78	2.01		1,535.46 <sup>d</sup>		2.6	
4-07-78	2.02		1,535.47 <sup>d</sup>		2.8	
4-09-78	2.05		1,535.50 <sup>d</sup>		3.2	
4-11-78	2.16		1,535.61 <sup>d</sup>		5.3	
4-13-78	2.13		1,535.58 <sup>d</sup>			
4-16-78	2.05		1,535.50 <sup>d</sup>		3.2	
4-19-78	2.08		1,535.53 <sup>d</sup>		3.8	
4-22-78	2.08		1,535.53 <sup>d</sup>		3.6	

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharges estimated by hydrographic comparison with records for Swamp Creek at Highway 55.

<sup>c</sup>Value beyond range of defined rating curve.

<sup>d</sup>Shifting control method used.

TABLE A-10 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-02-78	1.88	1,533.45	1,535.33 <sup>d</sup>		0.9	Q = (4.49Y) <sup>2.01</sup>
5-03-78	1.87		1,535.32 <sup>d</sup>		0.8	
5-05-78	1.82		1,535.27 <sup>d</sup>		0.4	
5-10-78	1.86		1,535.31 <sup>d</sup>		0.6	
5-12-78	1.85		1,535.30 <sup>d</sup>		0.6	
5-15-78	1.97		1,535.42 <sup>d</sup>		1.7	
5-23-78	1.80		1,535.25 <sup>d</sup>		0.2	
5-30-78	2.18		1,535.63 <sup>d</sup>		4.9	
6-09-78	1.79		1,535.24 <sup>d</sup>		0.2	
6-16-78	1.74		1,535.19 <sup>d</sup>		<0.1	
6-20-78	1.79		1,535.24 <sup>d</sup>		0.1	
6-30-78	1.75		1,535.20 <sup>d</sup>		<0.1	
7-06-78	2.06		1,535.51 <sup>d</sup>		2.2	
7-11-78	1.89		1,535.34 <sup>d</sup>		0.4	
7-17-78	1.80		1,535.25 <sup>d</sup>		0.1	
7-18-78	2.40		1,535.85 <sup>d</sup>		8.9	
7-24-78	2.42		1,535.87 <sup>d</sup>		9.2	
7-25-78	2.37		1,535.82 <sup>d</sup>	8.1		
7-31-78	2.04		1,535.49		4.9	
8-01-78	1.98		1,535.43		3.8	
8-08-78	1.82		1,535.27		1.5 <sup>c</sup>	
8-10-78	1.82		1,535.27		1.5 <sup>c</sup>	
8-15-78	1.75		1,535.20		0.8 <sup>c</sup>	
8-15-78	1.81		1,535.26		1.4 <sup>c</sup>	
8-15-78	1.88		1,535.33		2.2	
8-15-78	2.01		1,535.46		4.3	
8-16-78	2.11		1,535.56		6.4	
8-16-78	2.17		1,535.62		7.8	
8-16-78	2.20		1,535.65		8.6	
8-16-78	2.22		1,535.67		9.2	
8-16-78	2.22		1,535.67		9.2	
8-17-78	2.17		1,535.62		7.8	
8-17-78	2.14		1,535.59		7.1	
8-18-78	2.06		1,535.51		5.3	
8-18-78	2.06		1,535.51		5.3	
8-23-78	1.98		1,535.43		3.8	
8-30-78	1.93		1,535.38	2.8		
9-03-78	1.82		1,535.27		1.5 <sup>c</sup>	
9-05-78	1.79		1,535.24		1.2 <sup>c</sup>	
9-06-78	1.97		1,535.42		3.6	
9-12-78	1.81		1,535.26		1.4 <sup>c</sup>	
9-14-78	2.29		1,535.74		11.2	

TABLE A-10 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
9-15-78	2.22	1,533.45	1,535.67	13.9		Q = (4.49Y) <sup>2.01</sup>
9-19-78	2.09		1,535.54		5.9	
9-27-78	1.91		1,535.36		2.6	
10-02-78	1.92		1,535.37		2.8	
3-22-79	1.96	1,533.28	1,535.24		1.2 <sup>c</sup>	
4-04-79	2.14		1,535.42		3.6	
4-12-79	2.14		1,535.42		3.6	
4-12-79	2.15		1,535.43		3.8	
4-12-79	2.18		1,535.46		4.3	
4-13-79	2.19		1,535.47		4.5	
4-13-79	2.19		1,535.47		4.5	
4-14-79	2.20		1,535.48	5.1		
4-15-79	2.23		1,535.51		5.3	
4-16-79	2.25		1,535.53		5.7	
4-16-79	2.29		1,535.57		6.6	
4-17-79	2.38		1,535.66		8.9	
4-18-79	2.42		1,535.70		10.0	
4-18-79	2.49		1,535.77		12.1	
4-19-79	2.53		1,535.81	15.2		
4-20-79	2.63		1,535.91		16.9	
4-20-79	2.65		1,535.93		17.7	
4-20-79	2.67		1,535.95	18.2		
4-21-79	2.75		1,536.03		21.7	
4-21-79	2.79		1,536.07		23.4	
4-22-79	2.78		1,536.06	16.5		
4-23-79	2.78		1,536.06		23.0	
4-24-79	2.77		1,536.05		22.6	
4-12-80	2.25	1,533.32	1,535.57		6.6	
4-19-80	2.02		1,535.34		2.3	
4-26-80	2.00		1,535.32		2.1	
5-03-80	1.96		1,535.28		1.6 <sup>c</sup>	
5-10-80	1.90		1,535.22		1.0 <sup>c</sup>	
5-12-80	2.12		1,535.44		3.9	
5-17-80	1.99		1,535.31		1.9	
5-17-80	2.00		1,535.32		2.1	
5-24-80	1.91		1,535.23		1.1 <sup>c</sup>	
5-31-80	2.10		1,535.42		3.6	
6-07-80	1.92		1,535.24		1.2 <sup>c</sup>	
6-14-80	1.92		1,535.24		1.2 <sup>c</sup>	
6-21-80	2.00		1,535.32		2.1	
6-28-80	2.17		1,535.49		4.9	

TABLE A-10 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
7-04-80	2.10	1,533.32	1,535.42		3.6	Q = (4.49Y) <sup>2.01</sup>
7-12-80	2.27		1,535.59		7.1	
7-19-80	2.29		1,535.61		7.6	
7-26-80	2.27		1,535.59		7.1	
8-02-80	2.16		1,535.48		4.7	
8-09-80	2.40		1,535.72		10.6	
8-11-80	2.24		1,535.56		6.4	
8-16-80	2.13		1,535.45		4.1	
8-23-80	2.10		1,535.42		3.6	
8-30-80	2.36		1,535.68		9.4	
9-06-80	2.26		1,535.58		6.8	
9-10-80	1.88		1,535.20		0.8 <sup>c</sup>	
9-13-80	1.92		1,535.24		1.2 <sup>c</sup>	
9-20-80	2.00		1,535.32		2.1	
9-27-80	2.54		1,535.86		15.1	
10-04-80	2.40		1,535.72		10.6	
10-11-80	1.93		1,535.25		1.3 <sup>c</sup>	
10-18-80	1.97		1,535.29		1.7 <sup>c</sup>	
10-25-80	2.10		1,535.42		3.6	
11-01-80	1.96		1,535.28		1.6 <sup>c</sup>	
11-08-80	1.86		1,535.18		0.6 <sup>c</sup>	



RECORD OF STREAM GAGE READINGS - SG 22

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA	
10-13-77	1.34	1,533.51	1,534.85	18.3	21.9	graphical	
10-17-77	1.16		1,534.67		15.0		
10-23-77	1.01		1,534.52	10.2			
10-30-77	0.90		1,534.41	7.3			
11-02-77	0.94		1,534.45	8.3			
11-06-77	1.11		1,534.62	13.4			
11-08-77	1.22		1,534.73	17.1	17.1		
11-12-77	0.78		1,534.29		4.3		
11-20-77	0.84		1,534.35	5.8			
11-21-77	0.97		1,534.48	9.1			
12-02-77	1.14		1,534.65	14.4			
12-13-77	1.10		1,534.61	13.0			
12-19-77	1.08		1,534.59	12.4			
12-20-77	1.08		1,534.59	13.4	12.4		
12-27-77	1.15		1,534.66		14.7		
1-05-78	1.02		1,534.53	10.5			
1-11-78	1.03		1,534.54	10.8			
1-19-78	1.00		1,534.51	9.9			
1-27-78 <sup>b</sup>	1.00 <sup>b</sup>			1,534.51 <sup>b</sup>			9.9 <sup>b</sup>
2-12-78 <sup>b</sup>	1.01 <sup>b</sup>			1,534.52 <sup>b</sup>			10.2 <sup>b</sup>
2-22-78	1.01	1,533.53	1,534.54		10.8		
3-01-78	1.00		1,534.53	10.5			
3-08-78	1.03		1,534.56	11.5			
3-15-78	0.86		1,534.39	6.8			
3-21-78	0.85		1,534.38	6.5			
3-28-78	0.86		1,534.39	6.5	6.8		
4-04-78	1.14		1,534.67		15.0		
4-06-78	1.26		1,534.79	19.4			
4-07-78	1.27		1,534.80	19.8			
4-09-78	1.32		1,534.85	21.9			
4-11-78	1.54		1,535.07	32.9			
4-13-78	1.54		1,535.07	35.6	32.9		

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Discharges estimated on basis of hydrographic comparison with records for Swamp Creek at Highway 55.

<sup>c</sup>Shifting control method used.

<sup>d</sup>Stage-discharge relation not applicable. Discharges estimated on basis of hydrographic comparisons with records from Swamp Creek at Highway 55.

TABLE A-11 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-16-78	1.40	1,533.53	1,534.93		25.5	graphical
4-19-78	1.51		1,535.04		31.2	
4-22-78	1.51		1,535.04		31.2	
4-25-78	1.48		1,535.01		29.5	
5-02-78	1.25		1,534.78		19.1	
5-06-78	1.09		1,534.60		12.7	
5-12-78	1.16		1,534.69		15.7	
5-15-78	1.32		1,534.85		21.9	
5-15-78	1.32		1,534.85		21.9	
5-23-78	1.08		1,534.61		13.0	
5-30-78	1.32		1,534.85		21.9	
6-09-78	1.00		1,534.53		10.5	
6-16-78	0.38		1,533.91		24.5	
6-20-78	0.98		1,534.51		9.9	
6-30-78	0.70		1,534.23 <sup>d</sup>		8.0	
7-11-78	1.03		1,534.56		11.5	
7-17-78	0.91		1,534.44		8.0	
7-18-78	1.34		1,534.87	25.6		
7-24-78	2.02		1,535.55 <sup>e</sup>		39.3	
7-25-78	2.00		1,535.53 <sup>e</sup>	38.9		
8-01-78	1.64		1,535.17 <sup>e</sup>		19.8	
8-08-78	0.95		1,534.48 <sup>d</sup>		7.9 <sup>d</sup>	
8-10-78	0.96		1,534.49 <sup>d</sup>		8.1 <sup>d</sup>	
8-15-78	1.34		1,534.87 <sup>e</sup>		9.6	
8-15-78	1.39		1,534.92 <sup>e</sup>		11.0	
8-15-78	1.40		1,534.93 <sup>e</sup>		11.5	
8-15-78	1.49		1,535.02 <sup>e</sup>		14.4	
8-15-78	1.50		1,535.03 <sup>e</sup>		14.7	
8-15-78	1.64		1,535.17 <sup>e</sup>		19.8	
8-15-78	1.64		1,535.17 <sup>e</sup>		19.8	
8-16-78	1.64		1,535.17 <sup>e</sup>		19.8	
8-16-78	1.67		1,535.20 <sup>e</sup>		21.3	
8-16-78	1.71		1,535.24 <sup>e</sup>		22.8	
8-16-78	1.72		1,535.25 <sup>e</sup>		23.2	
8-17-78	1.73		1,535.26 <sup>e</sup>		23.6	
8-17-78	1.71		1,535.24 <sup>e</sup>		22.8	
8-18-78	1.71		1,535.24 <sup>e</sup>		22.8	
8-18-78	1.73		1,535.26 <sup>e</sup>		23.6	
8-23-78	1.63		1,535.16 <sup>e</sup>		19.4	
8-29-78	1.67		1,535.20 <sup>e</sup>	22.4		
8-30-78	1.62		1,535.15 <sup>e</sup>		19.1	
9-03-78	1.49		1,535.02 <sup>e</sup>		14.4	

TABLE A-11 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
9-05-78	1.45	1,533.53	1,534.98 <sup>e</sup>		13.4	graphical
9-06-78	1.97		1,535.50 <sup>e</sup>		36.3	
9-12-78	1.47		1,535.00 <sup>e</sup>		13.7	
9-13-78	1.60		1,535.13 <sup>e</sup>		18.3	
9-18-78	1.80		1,535.33 <sup>e</sup>	25.4		
9-19-78	1.78		1,535.31 <sup>e</sup>		26.0	
9-21-78	1.76		1,535.29 <sup>e</sup>		25.0	
9-22-78	1.72		1,535.25 <sup>e</sup>		23.2	
9-27-78	1.64		1,535.17 <sup>e</sup>		19.8	
10-02-78	1.60		1,535.13 <sup>e</sup>		18.7	
3-28-79	1.62	1,533.52	1,535.14		36.9	
3-29-79	1.59		1,535.11		35.1	
4-04-79	1.54		1,535.06		32.3	
4-12-79	1.53		1,535.05		31.8	
4-13-79	1.57		1,535.09		34.0	
4-13-79	1.59		1,535.11		35.1	
4-14-79	1.60		1,535.12		33.7	
4-14-79	1.62		1,535.14		36.9	
4-15-79	1.62		1,535.14		36.9	
4-16-79	1.63		1,535.15		37.5	
4-16-79	1.66		1,535.18		39.3	
4-17-79	1.72		1,535.24		43.7	
4-18-79	1.75		1,535.27		46.1	
4-18-79	1.80		1,535.32		50.2	
4-19-79	1.84		1,535.36		53.9	
4-19-79	1.89		1,535.41		58.4	
4-20-79	1.92		1,535.44	58.0		
4-20-79	1.95		1,535.47		64.1	
4-20-79	1.97		1,535.49		66.0	
4-21-79	2.00		1,535.52		69.0	
4-22-79	2.05		1,535.57	74.0		
4-23-79	2.07		1,535.59		76.0	
4-24-79	2.08		1,535.60		77.0	
5-12-79	1.66		1,535.18		39.3	
4-11-80	1.59	1,533.49	1,535.08		33.4	
4-12-80	1.56		1,535.05		31.8	
4-19-80	1.00		1,534.49		9.3	
4-26-80	1.31		1,534.80		19.8	
5-03-80	1.15		1,534.64		14.0	
5-10-80	0.90		1,534.39		6.8	
5-16-80	1.12		1,534.61		13.0	
5-17-80	1.12		1,534.61		13.0	

TABLE A-11 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-24-80	0.94	1,533.49	1,534.43		7.8	graphical
5-31-80	1.04		1,534.53		9.9	
6-07-80	1.20		1,534.69		15.7	
6-14-80	1.10		1,534.59		12.4	
6-21-80	1.05		1,534.54		10.8	
6-28-80	0.94		1,534.43		7.8	
7-04-80	0.97		1,534.46		8.6	
7-12-80	0.85		1,534.34		5.5	
7-19-80	0.85		1,534.34		5.5	
7-26-80	0.90		1,534.39		6.8	
8-02-80	0.91		1,534.40		7.0	
8-09-80	1.20		1,534.69 <sup>d</sup>		13.0 <sup>d</sup>	
8-16-80	1.29		1,534.78 <sup>d</sup>		6.0 <sup>d</sup>	
8-23-80	1.31		1,534.80 <sup>d</sup>		7.0 <sup>d</sup>	
8-30-80	1.52		1,535.01 <sup>d</sup>		12.0 <sup>d</sup>	
9-06-80	1.35		1,534.84 <sup>d</sup>		11.0 <sup>d</sup>	
9-10-80	1.22		1,534.71 <sup>d</sup>		7.0 <sup>d</sup>	
9-13-80	1.19		1,534.68 <sup>d</sup>		9.0 <sup>d</sup>	
9-20-80	0.84		1,534.33		5.2	
9-27-80	0.95		1,534.44		8.0	
10-04-80	1.85		1,535.34 <sup>d</sup>		-d	
10-11-80	1.30		1,534.79 <sup>d</sup>		-d	
10-18-80	0.91		1,534.40 <sup>d</sup>		-d	
10-25-80	0.90		1,534.39 <sup>d</sup>		-d	
11-01-80	1.35		1,534.84 <sup>d</sup>		-d	
11-08-80	1.33		1,534.82 <sup>d</sup>		-d	

RECORD OF STREAM GAGE READINGS - SG 23

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>ab</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>ab</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-15-78	1.01	--	--	6.7		Q = (1.31Y) <sup>2.56</sup>
4-16-78	0.97 <sup>b</sup>	--	--		5.4	
4-25-78	1.21 <sup>b</sup>	--	--		7.9	
5-05-78	0.79 <sup>b</sup>	--	--		3.8	
5-15-78	0.97 <sup>b</sup>	--	--		5.4	
5-23-78	0.70 <sup>b</sup>	--	--		3.2	
5-30-78	0.90 <sup>b</sup>	--	--		4.7	
6-09-78	0.60 <sup>b</sup>	--	--		2.5	
6-16-78	0.57 <sup>b</sup>	--	--		2.4	
6-20-78	0.55 <sup>b</sup>	--	--		2.3	
6-30-78	0.48 <sup>b</sup>	--	--		1.9 <sup>c</sup>	
7-07-78	0.45 <sup>b</sup>	--	--		1.8 <sup>c</sup>	
7-11-78	0.50 <sup>b</sup>	--	--		2.0 <sup>c</sup>	
7-13-78	0.56	--	--	2.4		
7-17-78	0.45 <sup>b</sup>	--	--		1.8 <sup>c</sup>	
7-24-78	1.09	--	--	7.3		
8-01-78	0.67 <sup>b</sup>	--	--		3.0	
8-08-78	0.56 <sup>b</sup>	--	--		2.3	
8-10-78	0.54 <sup>b</sup>	--	--		2.2	
8-15-78	0.63 <sup>b</sup>	--	--		2.7	
8-15-78	0.84 <sup>b</sup>	--	--		4.2	
8-15-78	1.13 <sup>b</sup>	--	--		7.0	
8-15-78	1.95 <sup>b</sup>	--	--		19.8	
8-16-78	1.96 <sup>b</sup>	--	--		20.0	
8-16-78	1.61 <sup>b</sup>	--	--		13.5	
8-16-78	1.66 <sup>b</sup>	--	--		14.3	
8-16-78	1.10 <sup>b</sup>	--	--		6.6	
8-17-78	0.87 <sup>b</sup>	--	--		4.5	
8-17-78	0.77 <sup>b</sup>	--	--		3.7	

Note: -- Indicates no data.

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>This gage was not surveyed during 1978; therefore, water surface elevations are not available. To calculate discharges for 1978 the stream gage reading should be corrected by the addition of 0.50 prior to using the rating formula to obtain an estimate of discharge.

<sup>c</sup>Beyond range of defined rating curve.

<sup>d</sup>Stream gage location affected by beaver dam constructed downstream during early September 1980. This change in the stream gradient has severely modified the stage-discharge relationship, thereby making it inappropriate to calculate discharge values at this location after September 1, 1980.

TABLE A-12 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>ab</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>ab</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
8-18-78	0.73 <sup>b</sup>	--	--		3.4	Q = (1.31Y) <sup>2.56</sup>
8-18-78	0.77 <sup>b</sup>	--	--		3.7	
8-23-78	1.24 <sup>b</sup>	--	--		8.2	
8-24-78	0.98	--	--	5.9		
8-30-78	0.67 <sup>b</sup>	--	--		3.0	
9-03-78	0.77 <sup>b</sup>	--	--		3.7	
9-05-78	0.66 <sup>b</sup>	--	--		2.9	
9-12-78	1.19	--	--	7.4		
9-13-78	1.70	--	--	14.4		
9-18-78	1.04 <sup>b</sup>	--	--		6.0	
9-19-78	0.91 <sup>b</sup>	--	--		1.6	
9-21-78	0.86 <sup>b</sup>	--	--		1.4	
9-22-78	0.79	--	--	3.0		
9-27-78	1.01 <sup>b</sup>	--	--		2.0	
10-02-78	0.82 <sup>b</sup>	--	--		1.2	
3-28-79	0.88	1,533.50	1,534.38		4.6	
4-13-79	1.63		1,535.13		13.8	
4-13-79	1.74		1,535.24		15.7	
4-14-79	1.67		1,535.17		14.5	
4-14-79	1.69		1,535.19		14.8	
4-16-79	1.64		1,535.14		14.0	
4-17-79	2.27		1,535.77		27.1	
4-17-79	2.29		1,535.79	24.7		
4-18-79	2.36		1,535.86		29.4	
4-18-79	2.60		1,536.10		36.1	
4-19-79	2.55		1,536.05	32.1		
4-19-79	2.74		1,536.24		40.5	
4-20-79	2.70		1,536.20		39.2	
4-20-79	2.70		1,536.20	42.2		
4-21-79	2.78		1,536.28		41.8	
4-22-79	2.60		1,536.10		36.1	
4-23-79	2.42		1,535.92		31.0	
4-11-80	1.22	1,533.72	1,534.94		10.9	
4-12-80	1.12		1,534.84		9.5	
4-19-80	1.02		1,534.74		8.2	
4-26-80	0.81		1,534.53		5.9	
5-03-80	0.80		1,534.52		5.8	
5-10-80	0.72		1,534.44		5.1	
5-17-80	0.70		1,534.42		4.9	
5-17-80	0.73		1,534.45		5.2	

TABLE A-12 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>ab</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>ab</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
5-24-80	0.65	1,533.72	1,534.37		4.5	Q = (1.31Y) <sup>2.56</sup>
5-31-80	0.87		1,534.59		6.8	
6-07-80	0.89		1,534.61		6.8	
6-14-80	0.60		1,534.32		4.1	
6-21-80	0.70		1,534.42		4.9	
6-28-80	0.67		1,534.39		4.6	
7-04-80	0.52		1,534.24		3.5	
7-12-80	0.50		1,534.22		3.3 <sup>c</sup>	
7-19-80	0.65		1,534.37		4.5	
7-26-80	0.60		1,534.32		4.1	
8-02-80	0.52		1,534.24		3.5	
8-09-80	0.98		1,534.70		7.8	
8-16-80	0.50		1,534.22		3.3 <sup>c</sup>	
8-23-80	0.55		1,534.27		3.7	
8-30-80	0.74		1,534.46		5.3	
9-06-80	1.96		1,534.68		-d	-d
9-10-80	2.57		1,534.29			
9-13-80	2.58		1,536.30			
9-20-80	2.92		1,536.64			
9-27-80	>3.33		>1,537.05			
10-04-80	>3.33		>1,537.05			
10-11-80	>3.33		>1,537.05			
10-18-80	>3.33		>1,537.05			
10-25-80	>3.33		>1,537.05			
11-01-80	>3.33		>1,537.05			
11-08-80	>3.33		>1,537.05			

TABLE A-13

RECORD OF DISCHARGE MEASUREMENTS  
SG A, SG C, SG D, AND SG F

STREAM GAGE	DATE	MEASURED DISCHARGE (cfs)
A	4-14-78	5.4
	4-17-79	26.5
	4-18-79	29.6
C	4-14-78	0.7*
D	4-14-78	1.9*
	4-19-79	7.3
F	9-28-78	0.4
	4-18-79	7.9

\*These discharge measurements were taken at the downstream end of nearby culverts.



RECORD OF STREAM GAGE READINGS - SG B

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-14-78	--	--	--	1.3 <sup>c</sup>		Q = (0.46Y) <sup>1.340</sup>
7-24-78	4.67	1,605.46	1,610.13		0.8	
7-25-78	4.67		1,610.13	1.1 <sup>c</sup>		
8-01-78	4.53		1,609.99		0.3	
8-08-78	4.43		1,609.89		0.2 <sup>b</sup>	
8-10-78	4.39		1,609.85		0.1 <sup>b</sup>	
8-15-78	4.47		1,609.93		0.2	
8-15-78	4.40		1,609.86		0.1 <sup>b</sup>	
8-15-78	4.82		1,610.28		1.9	
8-15-78	4.60		1,610.06		0.5	
8-16-78	4.57		1,610.03		0.4	
8-16-78	4.56		1,610.02		0.4	
8-16-78	4.54		1,610.00		0.3	
8-17-78	4.50		1,609.96		0.2	
8-17-78	4.50		1,609.96		0.2	
8-18-78	4.49		1,609.95		0.2	
8-18-78	4.50		1,609.96		0.2	
8-23-78	4.54		1,610.00		0.3	
8-25-78	4.52		1,609.98	0.3 <sup>c</sup>		
8-30-78	4.49		1,609.95		0.2	
9-03-78	4.49		1,609.95		0.2	
9-05-78	4.44		1,609.90		0.2	
9-11-78	4.47		1,609.93		0.2	
9-12-78	4.46		1,609.92		0.2	
9-14-78	4.62		1,610.08	0.7		
9-15-78	4.60		1,610.06		0.5	
9-18-78	4.57		1,610.03	0.5		
9-19-78	4.59		1,610.05		0.5	
9-22-78	4.55		1,610.01		0.4	
9-27-78	4.55		1,610.01		0.4	
10-02-78	4.59		1,610.05		0.5	
4-13-79	4.88		1,610.34		2.7	
4-14-79	4.77		1,610.23		1.4	

Note: -- Indicates no data.

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Value beyond range of defined rating curve.

<sup>c</sup>These discharge measurements were taken at the downstream end of the culvert underneath Sand Lake Road.

TABLE A-14 (continued)

DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE <sup>b</sup> (cfs)	COMPUTED DISCHARGE (cfs)	RATING FORMULA
4-16-79	4.86	1,605.46	1,610.32		2.4	Q = (0.46Y) <sup>13.40</sup>
4-17-79	4.99		1,610.45	2.0 <sup>c</sup>		
4-18-79	5.01		1,610.47		5.5	
4-18-79	5.05		1,610.51	10.3		
4-19-79	5.09		1,610.55		8.5	
4-19-79	5.09		1,610.55		8.5	
4-20-79	5.02		1,610.48		5.8	
4-21-79	4.99		1,610.45		5.0	
4-22-79	4.97		1,610.43		4.4	

TABLE A-15

RECORD OF STREAM GAGE READINGS - SG E

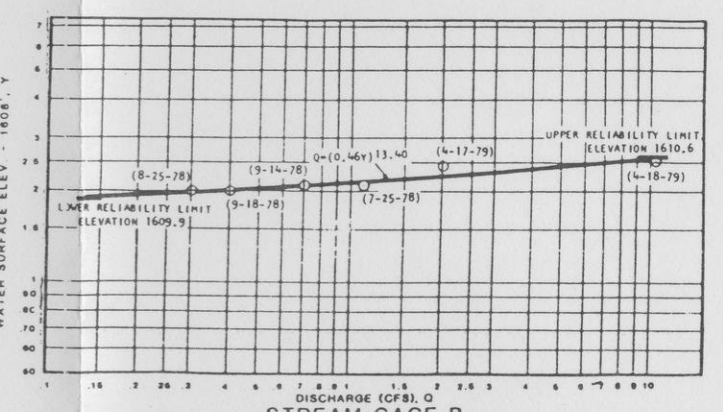
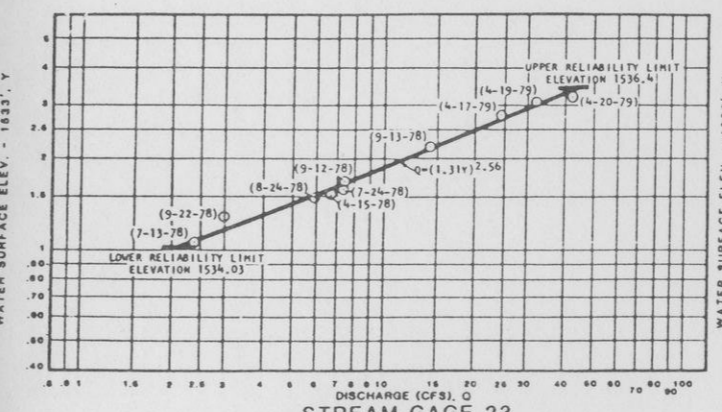
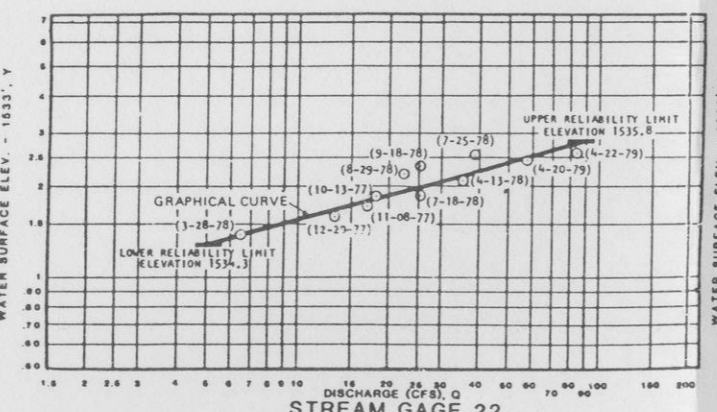
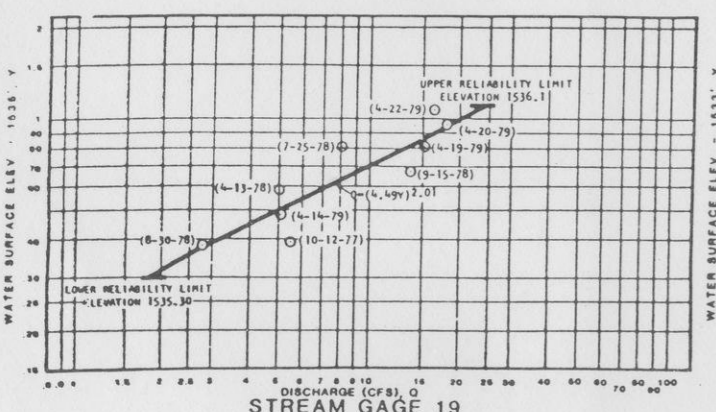
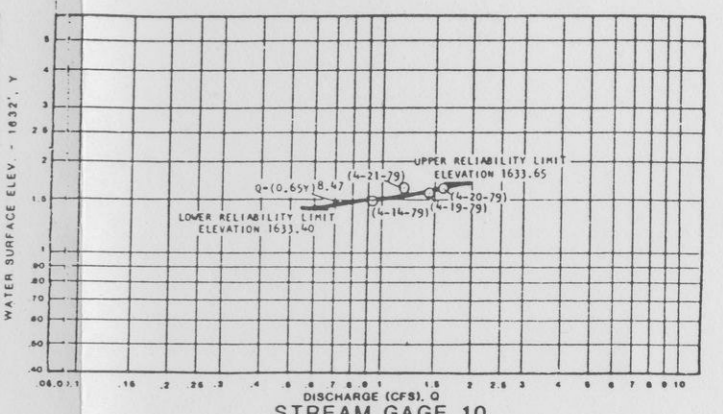
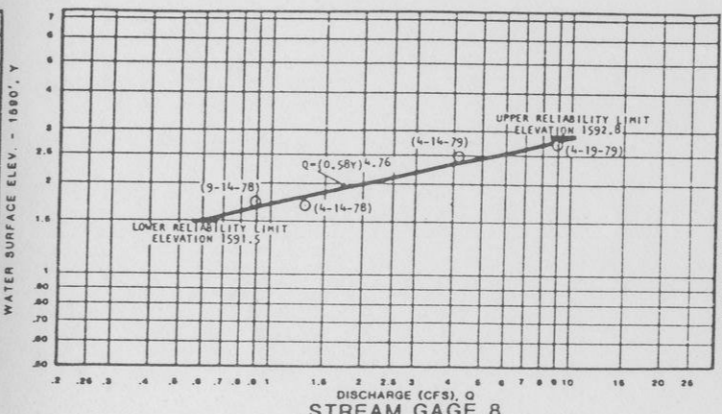
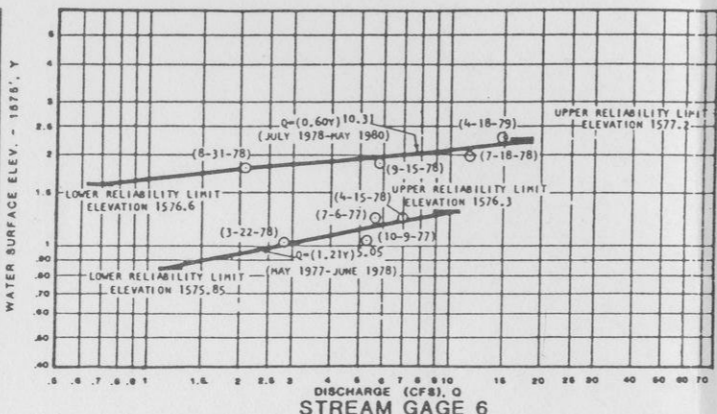
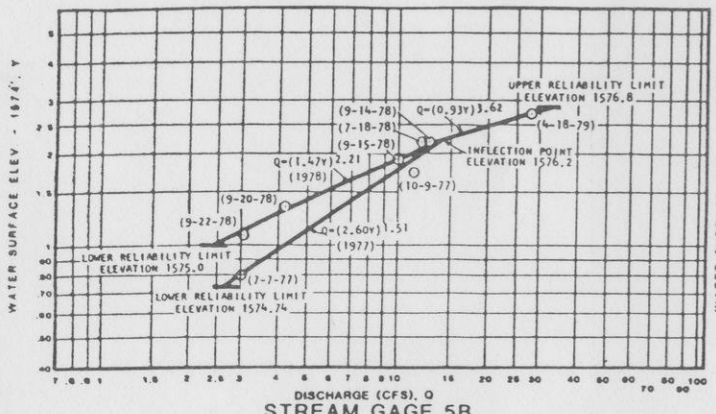
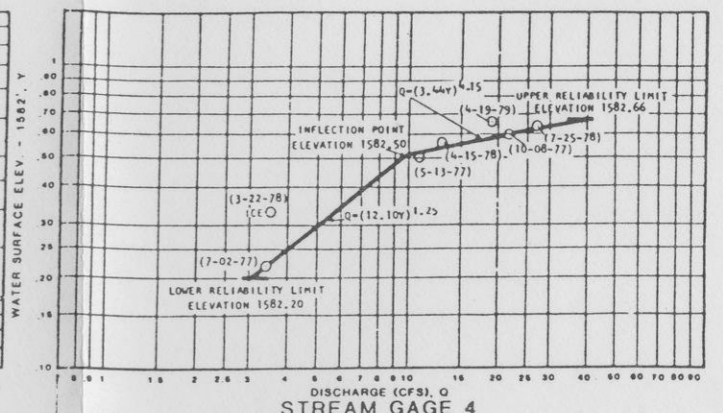
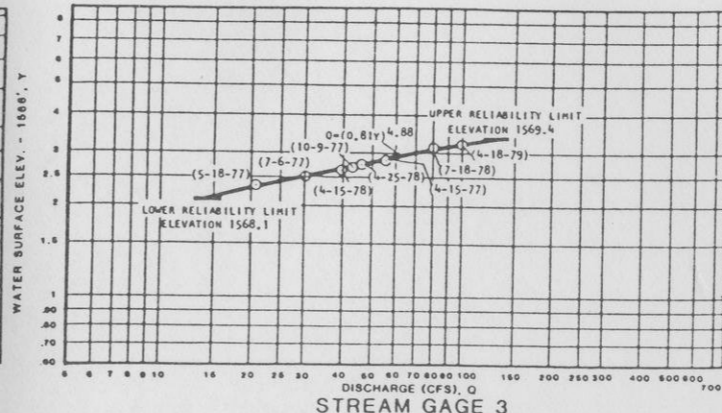
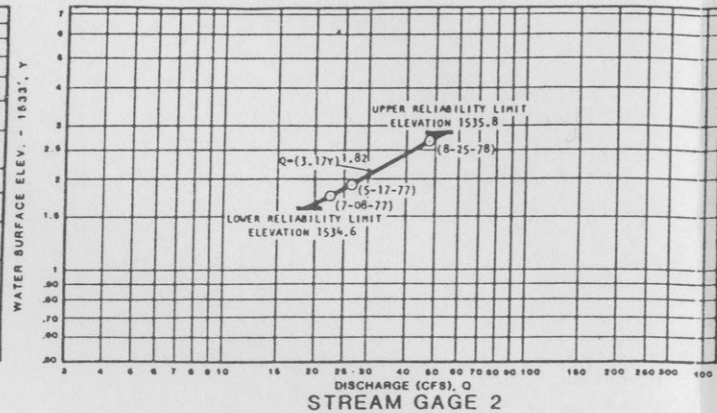
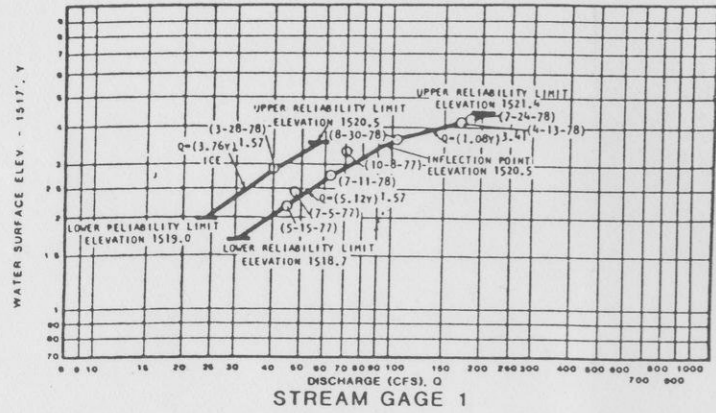
DATE	STREAM GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>	MEASURED DISCHARGE (cfs)	COMPUTED DISCHARGE <sup>b</sup> (cfs)	RATING FORMULA
9-28-78	--	--	--	0.80 <sup>c</sup>	--	 -b
10-02-78	1.30	--	--		--	
4-18-79	1.50	--	--	11.9	--	
4-20-79	1.47	--	--		--	
4-21-79	1.35	--	--		--	

Note: -- Indicates no data.

<sup>a</sup>Feet above mean sea level; datum elevation was never surveyed.

<sup>b</sup>Data insufficient to develop rating curve; thus, no computed discharges are available.

<sup>c</sup>This discharge measurement was taken at the downstream end of the culvert underneath an adjacent farm road.



EXXON MINERALS COMPANY  
CRANDON PROJECT

DISCHARGE RATING CURVES  
FOR STREAM GAGES

DAMES & MOORE

FIGURE A-1

APPENDIX 2.4B

LAKE GAGE DATA

APPENDIX 2.4B  
LAKE GAGE DATA

<u>Table</u>	<u>Title</u>	<u>Page</u>
B-1	RECORD OF LAKE GAGE READINGS - LG 7 - LITTLE SAND LAKE. . .	2.4B-1
B-2	RECORD OF LAKE GAGE READINGS - LG 9 - ROLLING STONE LAKE. .	2.4B-2
B-3	RECORD OF LAKE GAGE READINGS - LG 11 - OAK LAKE . . . . .	2.4B-4
B-4	RECORD OF LAKE GAGE READINGS - LG 12 - DUCK LAKE. . . . .	2.4B-6
B-5	RECORD OF LAKE GAGE READINGS - LG 13 - DEEP HOLE LAKE . . .	2.4B-8
B-6	RECORD OF LAKE GAGE READINGS - LG 14 - RICE LAKE. . . . .	2.4B-10
B-7	RECORD OF LAKE GAGE READINGS - LG 15 - SKUNK LAKE . . . . .	2.4B-12
B-8	RECORD OF LAKE GAGE READINGS - LG 24 - GROUND HEMLOCK LAKE.	2.4B-13
B-9	RECORD OF LAKE GAGE READINGS - LG 25 - WALSH LAKE . . . . .	2.4B-14
B-10	RECORD OF LAKE GAGE READINGS - LG 26 - ST. JOHNS LAKE . . .	2.4B-15
---	REFERENCES. . . . .	2.4B-16

TABLE B-1

RECORD OF LAKE GAGE READINGS - LG 7  
LITTLE SAND LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl)*	WATER SURFACE ELEVATION (ft amsl)*
4-14-77	1.40	1,589.87	1,591.27
5-05-77	1.55		1,591.42
5-28-77	1.34		1,591.21
6-01-77	1.31		1,591.18
6-25-77	1.15		1,591.02
6-28-77	1.19		1,591.06
7-05-77	1.26		1,591.13
7-30-77	0.95		1,590.82
8-03-77	1.01		1,590.88
8-26-77	1.00		1,590.87
8-31-77	1.09		1,590.96
9-19-77	1.32		1,591.19
9-25-77	1.52		1,591.39
10-09-77	1.51		1,591.38
10-10-77	1.45		1,591.32
10-30-77	1.49		1,591.36
8-11-78	1.80	1,590.15	1,591.95
8-30-78	1.96		1,592.11
9-19-78	1.99		1,592.14
9-22-78	1.98		1,592.13
9-27-78	1.98		1,592.13
10-02-78	2.00		1,592.15
4-18-79	1.59	1,591.21	1,592.80
4-20-79	1.75		1,592.96
4-21-79	1.75		1,592.96
4-22-79	1.71		1,592.92
5-17-80	1.72	1,590.28	1,592.00
6-14-80	1.59		1,591.87
6-16-80	1.56		1,591.84
7-12-80	1.50		1,591.78
7-15-80	1.50		1,591.78
8-16-80	1.48		1,591.76
9-10-80	1.52		1,591.80
9-13-80	1.48		1,591.76
10-11-80	1.52		1,591.80

\*Feet above mean sea level.

RECORD OF LAKE GAGE READINGS - LG 9  
ROLLING STONE LAKE

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
5-17-77	1.36	1,533.76	1,535.12
5-24-77	1.37		1,535.13
5-28-77	1.33		1,535.09
6-01-77	1.32		1,535.08
6-25-77	1.60		1,535.36
6-28-77	1.65		1,535.41
7-05-77	1.77		1,535.53
7-30-77	1.30		1,535.06
8-03-77	1.35		1,535.11
8-26-77	1.42		1,535.18
8-31-77	1.69		1,535.45
9-19-77	1.65		1,535.41
9-25-77	1.72		1,535.48
10-09-77	1.53		1,535.29
10-12-77	1.55		1,535.31
10-30-77	1.37		1,535.13
12-19-77 <sup>b</sup>	1.95 <sup>b</sup>		1,535.71 <sup>b</sup>
1-05-78 <sup>b</sup>	1.98 <sup>b</sup>		1,535.74 <sup>b</sup>
2-08-78 <sup>b</sup>	2.15 <sup>b</sup>		1,535.91 <sup>b</sup>
7-25-78	2.33	1,533.34	1,535.67
8-01-78	1.99		1,535.33
8-08-78	1.82		1,535.16
8-11-78	1.84		1,535.18
8-15-78	1.76		1,535.10
8-15-78	1.80		1,535.14
8-15-78	1.81		1,535.15
8-16-78	1.98		1,535.32
8-16-78	2.01		1,535.35
8-17-78	2.03		1,535.37
8-17-78	2.02		1,535.36
8-18-78	2.00		1,535.34
8-18-78	1.99		1,535.33
8-23-78	1.93		1,535.27
8-30-78	1.92		1,535.26

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Lake gage reading should be considered an estimate.



TABLE B-2 (continued)

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
9-03-78	1.81	1,533.34	1,535.15
9-05-78	1.78		1,535.12
9-12-78	1.80		1,535.14
9-15-78	2.10		1,535.44
9-19-78	2.06		1,535.40
9-22-78	1.98		1,535.32
9-27-78	1.90		1,535.24
10-02-78	1.90		1,535.24
4-20-79	2.54	1,533.14	1,535.68
4-21-79	2.64		1,535.78
4-22-79	2.70		1,535.84
4-12-80	1.83	1,533.61	1,535.44
5-10-80	1.40		1,535.01
5-17-80	1.48		1,535.09
6-14-80	1.50		1,535.11
7-12-80	1.34		1,534.95
8-11-80	1.35		1,534.96
8-16-80	1.39		1,535.00
9-10-80	1.44		1,535.05
9-13-80	1.40		1,535.01
10-11-80	1.51		1,535.12

RECORD OF LAKE GAGE READINGS - LG 11  
OAK LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
4-14-77	1.49	1,631.10	1,632.59
4-29-77	1.70		1,632.80
5-05-77	1.58		1,632.68
5-07-77	1.61		1,632.71
5-28-77	1.42		1,632.52
6-01-77	1.39		1,632.49
6-25-77	1.27		1,632.37
6-28-77	1.29		1,632.39
7-05-77	1.35		1,632.45
7-28-77	1.05		1,632.15
7-30-77	1.02		1,632.12
8-03-77	1.01		1,632.11
8-26-77	1.05		1,632.15
8-31-77	1.15		1,632.25
9-19-77	1.36		1,632.46
9-25-77	1.42		1,632.52
10-09-77	1.52		1,632.62
10-12-77	1.59		1,632.69
10-30-77	1.55		1,632.65
12-07-77 <sup>b</sup>	1.66 <sup>b</sup>		1,632.76 <sup>b</sup>
2-07-78 <sup>b</sup>	1.45 <sup>b</sup>		1,632.55 <sup>b</sup>
3-01-78 <sup>b</sup>	1.22 <sup>b</sup>		1,632.32 <sup>b</sup>
4-04-78 <sup>b</sup>	1.02 <sup>b</sup>		1,632.12 <sup>b</sup>
8-11-78	1.91	1,631.67	1,633.58
8-15-78	1.87		1,633.54
8-31-78	1.96		1,633.63
9-19-78	2.00		1,633.67
9-27-78	1.97		1,633.64
10-02-78	1.99		1,633.66
4-13-79	2.06	1,631.86	1,633.92
4-20-79	2.30		1,634.16
4-21-79	2.35		1,634.21
4-22-79	2.35		1,634.21

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Lake gage reading should be considered an estimate.

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
5-15-80	2.00	1,631.09	1,633.09
6-14-80	1.93		1,633.02
7-12-80	1.75		1,632.84
8-11-80	1.68		1,632.77
8-16-80	1.58		1,632.67
9-11-80	1.60		1,632.69
9-13-80	1.58		1,632.67
10-11-80	1.06		1,632.15

RECORD OF LAKE GAGE READINGS - LG 12  
DUCK LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
4-27-77	1.54	1,609.63	1,611.17
5-01-77	1.49		1,611.12
5-07-77	1.41		1,611.04
5-28-77	1.20		1,610.83
6-01-77	1.17		1,610.80
6-25-77	1.04		1,610.67
6-28-77	1.50		1,611.13
7-05-77	1.14		1,610.77
7-29-77	0.60		1,610.23
7-30-77	0.83		1,610.46
8-01-77	0.86		1,610.49
8-03-77	0.91		1,610.54
8-27-77	0.94		1,610.57
8-31-77	1.05		1,610.68
9-19-77	1.31		1,610.94
9-25-77	1.51		1,611.14
10-05-77	1.50		1,611.13
10-09-77	1.60		1,611.23
10-12-77	1.67		1,611.30
10-30-77	1.59		1,611.22
12-06-77 <sup>b</sup>	2.00 <sup>b</sup>		1,611.63 <sup>b</sup>
1-05-78 <sup>b</sup>	2.18 <sup>b</sup>		1,611.81 <sup>b</sup>
2-08-78 <sup>b</sup>	2.35 <sup>b</sup>		1,611.98 <sup>b</sup>
4-04-78 <sup>b</sup>	2.29 <sup>b</sup>		1,611.92 <sup>b</sup>
5-07-78	2.63	1,608.83	1,611.46
6-06-78	2.55		1,611.38
7-25-78	2.92		1,611.75
7-28-78	2.89		1,611.72
8-30-78	2.79		1,611.62

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Lake gage reading should be considered an estimate.

<sup>c</sup>Lake gage submerged approximately 7 cm (3 inches).

<sup>d</sup>Elevations were recorded from a second lake gage installed to record the effects of the main ground water aquifer pump test (Golder, 1981). The datum elevation was extrapolated from LG 12.

TABLE B-4 (continued)

Page 2 of 2

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
9-06-78	2.72	1,608.83	1,611.55
9-19-78	2.82		1,611.65
9-27-78	2.77		1,611.60
10-02-78	2.78		1,611.61
4-21-79 <sup>c</sup>	>3.33 <sup>c</sup>		>1,612.25 <sup>c</sup>
4-12-80	3.33	1,608.40	>1,611.73
5-13-80	2.99		1,611.39
5-16-80	2.95		1,611.35
6-14-80	2.90		1,611.30
6-17-80	2.87		1,611.27
6-27-80	2.84		1,611.24
6-28-80	3.16		1,611.56
6-29-80	3.28		1,611.68
7-02-80 <sup>d</sup>	1.40 <sup>d</sup>	1,610.51 <sup>d</sup>	1,611.91 <sup>d</sup>
7-05-80 <sup>d</sup>	1.51 <sup>d</sup>		1,612.02 <sup>d</sup>
7-08-80 <sup>d</sup>	1.57 <sup>d</sup>		1,612.08 <sup>d</sup>
7-11-80 <sup>d</sup>	1.63 <sup>d</sup>		1,612.14 <sup>d</sup>
7-15-80 <sup>d</sup>	1.70 <sup>d</sup>		1,612.21 <sup>d</sup>
7-18-80 <sup>d</sup>	1.75 <sup>d</sup>		1,612.26 <sup>d</sup>
7-20-80 <sup>d</sup>	1.81 <sup>d</sup>		1,612.32 <sup>d</sup>
7-22-80 <sup>d</sup>	1.65 <sup>d</sup>		1,612.16 <sup>d</sup>
8-13-80	3.19	1,608.40	1,611.59
8-16-80	3.12		1,611.52
9-11-80	3.16		1,611.56
9-13-80	3.15		1,611.55
10-11-80	3.18		1,611.58
10-16-80	3.17		1,611.57

RECORD OF LAKE GAGE READINGS - LG 13  
DEEP HOLE LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
6-09-77	1.74	1,603.59	1,605.33
6-25-77	1.65		1,605.24
6-28-77	1.67		1,605.25
7-05-77	1.74		1,605.32
7-29-77	1.40		1,604.99
7-30-77	1.37		1,604.96
8-01-77	1.40		1,604.99
8-03-77	1.44		1,605.03
8-27-77	1.39		1,604.98
8-31-77	1.54		1,605.13
9-19-77	1.69		1,605.27
9-25-77	1.84		1,605.43
10-05-77	1.82		1,605.41
10-08-77	1.87		1,605.46
10-09-77	1.90		1,605.49
10-12-77	1.98		1,605.57
10-30-77	1.92		1,605.51
12-06-77 <sup>b</sup>	2.00 <sup>b</sup>		1,605.59 <sup>b</sup>
12-07-77 <sup>b</sup>	2.00 <sup>b</sup>		1,605.59 <sup>b</sup>
1-05-78 <sup>b</sup>	2.12 <sup>b</sup>		1,605.71 <sup>b</sup>
2-08-78 <sup>b</sup>	2.15 <sup>b</sup>		1,605.74 <sup>b</sup>
4-04-78 <sup>b</sup>	2.17 <sup>b</sup>		1,605.76 <sup>b</sup>
5-04-78	2.77	1,603.73	1,606.50
6-06-78	2.66		1,606.39
7-05-78	2.58		1,606.31
7-29-78	2.86		1,606.59
8-11-78	2.61		1,606.34
8-30-78	2.76		1,606.49
9-06-78	2.71		1,606.44
9-19-78	2.82		1,606.55
9-27-78	2.77		1,606.50
10-02-78	2.76		1,606.49

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Lake gage reading should be considered an estimate.

<sup>c</sup>Lake gage submerged approximately 2 cm (1 inch).

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
4-21-79 <sup>c</sup>	>3.33 <sup>c</sup>	1,603.73	>1,607.10 <sup>c</sup>
5-17-80	1.78	1,604.32	1,606.10
6-14-80	1.70		1,606.02
7-12-80	1.57		1,605.89
7-15-80	1.51		1,605.83
8-11-80	1.48		1,605.80
8-16-80	1.39		1,605.71
9-10-80	1.47		1,605.79
9-13-80	1.45		1,605.77
10-11-80	1.56		1,605.88

RECORD OF LAKE GAGE READINGS - LG 14  
RICE LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
5-26-77	1.11	1,532.33	1,533.44
5-28-77	1.11		1,533.44
6-01-77	1.15		1,533.48
6-25-77	1.10		1,533.43
6-28-77	1.15		1,533.48
7-05-77	1.41		1,533.74
7-28-77	1.04		1,533.37
7-30-77	1.09		1,533.42
7-31-77	1.30		1,533.63
8-01-77	1.35		1,533.68
8-02-77	1.37		1,533.70
8-03-77	1.49		1,533.82
8-27-77	1.66		1,533.99
8-31-77	1.91		1,534.24
9-25-77	1.82		1,534.15
10-09-77	2.74		1,535.07
10-12-77	2.83		1,535.16
10-30-77	1.32		1,533.65
11-03-77	1.43		1,533.76
4-05-78	2.27	1,531.43	1,533.70
5-03-78	1.99		1,533.42
8-03-78	2.60		1,533.03
8-11-78	2.30		1,533.73
8-31-78	2.83		1,534.26
9-19-78	2.96		1,534.39
9-27-78	2.71		1,534.14
10-02-78	2.72		1,534.15
4-21-79 <sup>b</sup>	>3.33 <sup>b</sup>		>1,535.00 <sup>b</sup>
4-12-80 <sup>b</sup>	>3.33 <sup>b</sup>	1,530.41	>1,533.74 <sup>b</sup>
5-10-80	2.90		1,533.31
5-15-80	3.05		1,533.46

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Lake gage submerged.



TABLE B-6 (continued)

Page 2 of 2

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
6-14-80	2.84	1,530.41	1,533.25
6-16-80	3.07		1,533.48
7-12-80	2.57		1,532.98
7-15-80	2.92		1,533.33
8-16-80	3.31		1,533.72
9-10-80 <sup>b</sup>	>3.33 <sup>b</sup>		>1,533.74 <sup>b</sup>
9-13-80 <sup>b</sup>	>3.33 <sup>b</sup>		>1,533.74 <sup>b</sup>
10-11-80	3.20		1,533.61

TABLE B-7

RECORD OF LAKE GAGE READINGS - LG 15  
SKUNK LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl) <sup>a</sup>	WATER SURFACE ELEVATION (ft amsl) <sup>a</sup>
5-09-77	2.52	1,595.21	1,597.73
5-28-77	2.16		1,597.37
6-01-77	2.13		1,597.34
6-25-77	1.88		1,597.09
6-28-77	1.78		1,596.99
7-05-77	1.92		1,597.13
7-29-77	1.39		1,596.60
7-30-77	1.38		1,596.59
8-01-77	1.42		1,596.63
8-03-77	1.49		1,596.70
8-26-77	1.39		1,596.60
8-31-77	1.76		1,596.97
9-19-77	2.04		1,597.25
9-25-77	2.25		1,597.46
10-05-77	2.16		1,597.37
10-09-77	1.61		1,596.82
10-30-77	1.27		1,596.48
12-06-77 <sup>b</sup>	2.12 <sup>b</sup>		1,597.33 <sup>b</sup>
2-08-78 <sup>b</sup>	1.98 <sup>b</sup>		1,597.19 <sup>b</sup>
8-11-78	2.65	1,594.84	1,597.49
8-30-78	2.84		1,597.68
9-19-78	2.87		1,597.71
9-27-78	2.81		1,597.65
10-02-78	2.81		1,597.65
5-16-80	2.12	1,596.14	1,598.26
6-14-80	1.20		1,597.34
7-12-80	1.75		1,597.89
7-15-80	1.66		1,597.80
8-16-80	1.38		1,597.52
9-11-80	1.35		1,597.49
9-13-80	1.35		1,597.49
10-11-80	1.38		1,597.52

<sup>a</sup>Feet above mean sea level.

<sup>b</sup>Period of ice cover. Lake gage reading should be considered an estimate.

TABLE B-8

RECORD OF LAKE GAGE READINGS - LG 24  
GROUND HEMLOCK LAKE

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl)*	WATER SURFACE ELEVATION (ft amsl)*
4-12-80	0.91	1,577.67	1,578.58
4-13-80	0.91		1,578.58
5-10-80	1.40		1,579.07
5-13-80	1.43		1,579.10
6-14-80	1.08		1,578.75
7-12-80	0.98		1,578.65
7-16-80	0.85		1,578.52
8-13-80	0.93		1,578.60
8-16-80	0.96		1,578.63
9-10-80	1.10		1,578.77
9-13-80	1.00		1,578.67
10-11-80	0.95		1,578.62
10-16-80	0.94		1,578.61

\*Feet above mean sea level.

TABLE B-9

RECORD OF LAKE GAGE READINGS - LG 25  
 WALSH LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl)*	WATER SURFACE ELEVATION (ft amsl)*
4-12-80	1.78	1,598.22	1,600.00
5-10-80	1.04		1,599.26
6-14-80	1.29		1,599.51
6-16-80	1.28		1,599.50
7-12-80	1.20		1,599.42
7-16-80	1.18		1,599.40
8-12-80	1.10		1,599.32
8-16-80	1.06		1,599.28
9-10-80	1.11		1,599.33
9-13-80	0.99		1,599.21
10-11-80	1.05		1,599.27
10-16-80	1.13		1,599.35

---

\*Feet above mean sea level.

TABLE B-10

RECORD OF LAKE GAGE READINGS - LG 26  
ST. JOHNS LAKE

---

DATE	LAKE GAGE READING (ft)	DATUM ELEVATION (ft amsl)*	WATER SURFACE ELEVATION (ft amsl)*
4-12-80	1.30	1,589.40	1,590.70
5-10-80	1.01		1,590.41
6-14-80	0.97		1,590.37
7-12-80	0.87		1,590.27
7-16-80	0.84		1,590.24
8-16-80	0.70		1,590.10
9-10-80	0.75		1,590.15
9-13-80	0.72		1,590.12
10-11-80	0.76		1,590.16

---

\*Feet above mean sea level.

APPENDIX B - REFERENCES

Golder Associates, 1981, Pump test and analysis, Crandon Project waste disposal system: Golder Associates, Inc., Atlanta, Georgia.

APPENDIX 2.4C

USGS DAILY STREAM DISCHARGE RECORD  
FOR SWAMP CREEK

APPENDIX 2.4C

USGS DAILY STREAM DISCHARGE RECORD  
FOR SWAMP CREEK

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
C-1	USGS Daily Stream Discharge Record For Swamp Creek Above Rice Lake at Highway 55 Near Mole Lake, Wisconsin August 1977 to September 1980	2.4C-1
C-2	USGS Daily Stream Discharge Record For Swamp Creek Below Rice Lake at County Road M Near Mole Lake, Wisconsin August 1977 to September 1979	2.4C-4



TABLE C-1

USGS DAILY STREAM DISCHARGE RECORD  
FOR SWAMP CREEK ABOVE RICE LAKE AT HIGHWAY 55 NEAR MOLE LAKE, WISCONSIN  
AUGUST 1977 TO SEPTEMBER 1980  
USGS STATION NUMBER 04074538

DAY	DAILY DISCHARGE (cfs)													
	1977					1978								
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1	--	43	40	28	26	27	17	16	25	37	57	27	37	36
2	--	44	38	29	26	25	17	16	29	32	53	46	37	33
3	12	43	36	37	26	24	17	16	27	34	46	68	35	34
4	--	40	33	46	25	24	17	16	34	31	41	61	32	32
5	--	37	34	42	25	24	17	16	41	30	38	49	30	29
6	--	36	34	38	25	24	17	17	49	30	36	50	28	29
7	--	36	32	38	25	23	17	17	57	29	35	49	26	29
8	--	34	41	43	25	22	17	17	56	31	39	41	25	28
9	12	31	51	42	25	22	18	17	54	40	37	37	23	27
10	16	28	50	41	25	22	18	17	66	42	34	34	22	26
11	14	25	48	39	26	21	18	17	74	37	32	31	24	24
12	13	25	49	37	26	21	18	17	69	36	32	28	22	27
13	13	27	47	33	26	21	18	17	66	36	31	28	21	39
14	13	25	45	31	26	21	18	17	58	53	31	27	20	59
15	11	23	45	30	26	21	18	17	58	60	43	25	25	64
16	17	27	38	28	26	21	18	17	47	51	40	24	64	54
17	19	31	38	27	27	21	18	17	44	42	37	22	72	45
18	16	32	35	26	30	21	18	18	45	37	35	41	61	42
19	12	54	33	24	31	21	17	18	58	35	32	72	54	44
20	11	63	31	26	31	21	17	18	64	34	30	64	49	43
21	12	58	29	36	29	21	17	19	62	34	31	50	43	40
22	13	50	29	33	29	20	17	19	56	31	31	51	39	36
23	11	45	29	30	28	20	16	19	54	30	29	90	43	33
24	10	48	28	33	28	20	16	19	58	29	28	98	59	30
25	8	55	28	30	29	20	16	20	56	28	27	81	60	28
26	14	55	28	28	29	20	16	21	52	29	26	68	52	26
27	31	55	25	27	29	20	16	21	48	35	26	61	50	32
28	43	50	26	26	29	19	16	21	44	53	24	53	54	33
29	35	46	27	26	29	19	--	22	43	56	24	48	52	35
30	27	43	29	26	28	19	--	23	40	60	22	43	45	40
31	33	--	28	--	28	18	--	24	--	55	--	39	39	--
Total (cfs)	--	1,209	1,104	980	843	663	480	566	1,527	1,194	1,027	1,506	1,243	1,077
Mean (cfs)	--	40.3	35.6	32.7	27.2	21.4	17.1	18.3	50.9	38.5	34.2	48.6	40.1	35.9
	MONTHLY STREAM DISCHARGE													
Acre-feet	--	2,398	2,189	1,946	1,672	1,316	950	1,125	3,029	2,367	2,035	2,988	2,466	2,136
Inches of														
Runoff	--	0.97	0.89	0.79	0.68	0.53	0.39	0.46	1.23	0.96	0.83	1.21	1.00	0.87

Notes: 1978 Water year = October 1, 1977 to September 30, 1978.  
 Total stream discharge, 1978 water year = 24,219 acre-feet (9.83 inches of runoff).  
 Mean daily stream discharge, 1978 water year = 33.5 cfs.  
 Location: See Figure 2.4-1.  
 Drainage Area: 119.7 km<sup>2</sup> (46.2 square miles).  
 Period of Record: August 1977 to current year.  
 To convert to m<sup>3</sup>/s, multiply cfs by 0.02832.  
 Source: USGS, 1979.

TABLE C-1 (continued)

DAY	DAILY DISCHARGE (cfs)											
	1978			1979								
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1	37	19	17	21	21	26	67	55	43	40	38	31
2	35	18	17	21	21	26	62	55	41	37	32	43
3	35	18	17	21	21	27	57	57	40	38	29	43
4	35	18	18	20	21	27	56	53	36	42	27	39
5	35	18	18	20	21	27	57	50	35	39	26	35
6	38	18	18	19	21	28	62	53	34	35	25	32
7	34	17	17	19	22	28	54	62	36	33	23	31
8	30	17	17	19	22	28	53	69	41	32	22	26
9	27	18	17	19	22	28	51	82	39	35	21	22
10	26	18	18	19	22	27	48	91	61	34	24	21
11	26	18	18	19	22	26	46	81	78	34	25	20
12	26	18	19	19	22	27	47	74	60	79	24	23
13	26	19	19	19	22	27	59	65	47	87	25	30
14	24	23	19	19	22	27	67	64	41	94	25	29
15	22	23	19	18	21	26	69	62	39	83	22	25
16	22	20	18	18	21	28	5	53	43	66	18	21
17	22	22	18	19	21	29	3	47	117	57	20	19
18	21	31	18	19	21	30	25	44	128	44	22	17
19	21	26	19	19	22	33	137	58	90	38	25	16
20	21	24	20	20	23	42	151	82	70	36	24	15
21	21	21	21	21	23	47	149	75	80	35	22	15
22	20	19	21	21	23	54	131	63	78	33	24	15
23	21	18	21	21	25	68	113	55	66	31	38	13
24	21	18	21	21	25	92	102	52	54	30	41	17
25	21	18	21	21	24	90	96	47	48	38	36	19
26	21	18	21	21	23	80	91	43	46	42	29	17
27	20	18	20	21	24	76	80	43	45	38	29	17
28	20	18	20	21	25	72	68	42	42	37	30	14
29	18	19	21	21	--	68	61	40	43	34	29	14
30	18	18	21	21	--	65	58	39	41	32	27	15
31	19	--	21	21	--	65	--	41	--	40	25	--
Total (cfs)	783	588	590	618	623	1,344	2,395	1,797	1,662	1,373	827	694
Mean (cfs)	25.3	19.6	19.0	19.9	22.3	43.4	79.8	58.0	55.4	44.3	26.7	23.1
Acre-feet Inches of Runoff	MONTHLY STREAM DISCHARGE											
	1978	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979	1979
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1,556	1,166	1,168	1,224	1,238	2,669	4,748	3,566	3,297	2,724	1,642	1,375	
0.63	0.47	0.47	0.50	0.50	1.08	1.93	1.45	1.34	1.11	0.67	0.56	

Notes: 1979 Water year = October 1, 1978 to September 30, 1979.  
 Total stream discharge, 1979 water year = 26,373 acre-feet (10.70 inches of runoff).  
 Mean daily stream discharge, 1979 water year = 36.4 cfs.  
 Source: USGS, 1980.

[2.4C-2]

TABLE C-1 (continued)

DAY	DAILY DISCHARGE (cfs)											
	1979			1980								
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1	15	57	20	23	19	17	32	33	49	31	24	47
2	17	45	20	22	18	17	33	32	42	29	24	47
3	17	36	22	21	18	17	35	32	37	26	25	40
4	16	34	24	19	18	17	32	30	27	24	26	41
5	16	32	26	19	18	17	36	30	35	23	32	39
6	15	39	27	19	19	17	46	29	61	33	30	34
7	18	37	28	18	18	17	59	29	62	29	29	29
8	20	33	27	18	18	17	78	28	64	23	36	26
9	19	29	28	18	18	17	107	26	52	23	40	25
10	17	27	28	18	18	18	91	25	42	23	34	24
11	17	22	28	20	19	17	70	32	35	23	30	22
12	17	27	25	20	19	17	61	32	30	24	27	21
13	18	26	24	20	19	17	53	35	28	23	24	26
14	16	25	23	21	18	17	46	35	28	21	22	31
15	15	25	23	23	18	17	42	34	35	20	21	28
16	15	22	22	27	18	17	40	31	32	21	19	28
17	15	25	21	30	18	18	40	28	28	25	18	27
18	14	26	21	32	18	19	43	28	31	25	17	24
19	15	28	21	30	19	20	46	28	45	27	16	22
20	19	32	22	28	20	22	47	27	50	31	17	25
21	23	33	24	27	21	22	46	25	41	35	21	68
22	48	36	24	26	22	20	47	26	34	31	22	95
23	86	36	25	25	21	20	44	25	31	26	21	77
24	74	35	26	24	20	21	40	23	29	21	23	56
25	49	33	25	23	19	20	37	22	27	21	31	45
26	38	35	25	22	19	22	34	20	26	20	36	41
27	33	40	23	21	20	23	32	22	27	19	49	34
28	37	35	22	21	19	22	33	39	48	18	47	31
29	37	32	23	19	18	24	34	42	45	25	39	28
30	34	22	22	19	--	27	34	54	37	25	37	28
31	33	--	22	19	--	31	--	60	--	24	37	--
Total (cfs)	823	964	741	692	547	604	1,418	962	1,158	769	874	1,109
Mean (cfs)	26.5	32.1	23.9	22.3	18.9	19.5	47.3	31.0	38.6	24.8	28.2	37.0
MONTHLY STREAM DISCHARGE												
Acre-feet	1,629	1,912	1,470	1,373	1,085	1,198	2,813	1,908	2,297	1,525	1,734	2,200
Inches of Runoff	0.66	0.78	0.60	0.56	0.44	0.49	1.14	0.77	0.93	0.62	0.70	0.89

Notes: 1980 Water year = October 1, 1979 to September 30, 1980.  
 Total stream discharge, 1980 water year = 21,144 acre-feet (8.58 inches of runoff).  
 Mean daily stream discharge, 1980 water year = 29.2 cfs.  
 Source: USGS, 1981 (provisional).

USGS DAILY STREAM DISCHARGE RECORD  
FOR SWAMP CREEK BELOW RICE LAKE AT COUNTY ROAD M NEAR MOLE LAKE, WISCONSIN  
AUGUST 1977 TO SEPTEMBER 1979  
USGS STATION NUMBER 04074548

## DAILY DISCHARGE (cfs)

DAY	1977					1978								
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1	--	62	55	34	41	45	30	27	40	55	83	30	55	49
2	17	67	51	36	41	44	29	27	47	51	77	48	51	42
3	--	65	47	41	42	43	28	27	41	47	70	69	48	39
4	--	54	44	56	42	42	28	27	45	47	61	81	43	36
5	--	52	43	60	43	40	28	27	52	45	54	78	39	34
6	--	51	43	58	42	39	28	27	62	42	48	75	36	32
7	--	51	43	57	42	38	29	27	73	41	46	72	35	30
8	--	50	50	60	41	37	29	27	77	41	46	66	38	30
9	--	47	57	62	41	36	29	27	78	50	45	59	37	29
10	--	46	61	61	41	36	29	27	92	57	42	50	36	28
11	20	44	64	60	40	35	29	27	103	55	41	44	38	26
12	19	41	65	52	39	35	29	27	104	55	41	41	40	30
13	20	40	63	47	38	35	29	28	99	53	38	40	43	42
14	21	42	59	43	38	35	29	28	89	64	37	39	45	64
15	21	38	54	41	38	35	29	28	78	79	46	37	56	71
16	24	39	51	38	38	35	29	28	69	77	50	33	100	77
17	25	40	48	37	38	35	29	28	62	68	50	32	115	75
18	25	43	44	37	39	34	29	28	64	56	47	47	116	71
19	24	62	41	35	41	33	28	28	75	49	43	69	90	66
20	24	75	38	37	44	33	28	28	88	48	39	82	79	64
21	25	81	39	50	44	33	28	29	89	44	37	80	70	60
22	27	81	36	58	45	33	28	29	83	42	33	80	62	54
23	32	79	34	54	42	32	27	30	78	38	31	100	62	45
24	37	78	33	50	44	32	27	30	79	36	31	121	70	39
25	40	80	33	54	48	32	27	31	79	34	31	125	73	34
26	44	81	32	48	46	32	27	32	75	34	31	119	73	30
27	53	79	42	43	46	32	27	33	71	40	30	106	70	34
28	61	76	49	42	46	31	27	35	68	60	29	92	69	38
29	66	70	42	41	46	31	--	37	65	73	27	82	67	44
30	64	63	37	41	46	31	--	39	59	81	27	73	62	54
31	63	--	33	--	46	31	--	40	--	82	--	63	56	--
Total (cfs)	--	1,777	1,431	1,433	1,308	1,095	793	913	2,184	1,644	1,311	2,133	1,874	1,367
Mean (cfs)	--	59.2	46.2	47.8	42.2	35.3	28.3	29.5	72.8	53.0	43.7	68.8	60.5	45.6

## MONTHLY STREAM DISCHARGE

Acre-feet	--	3,523	2,841	2,844	2,595	2,171	1,572	1,814	4,332	3,259	2,600	4,230	3,720	2,713
Inches of Runoff	--	1.17	0.94	0.94	0.86	0.72	0.52	0.60	1.43	1.08	0.86	1.40	1.23	0.90

Notes: 1978 Water year = October 1, 1977 to September 30, 1978.  
 Total stream discharge, 1978 water year = 34,691 acre-feet (11.47 inches of runoff).  
 Mean daily stream discharge, 1978 water year = 47.9 cfs.  
 Location: See Figure 2.4-1.  
 Drainage Area: 146.9 km<sup>2</sup> (56.7 square miles).  
 Period of Record: August 1977 to September 1979, discontinued after September 1979.  
 To convert to m<sup>3</sup>/s multiply cfs by 0.02832.  
 Source: USGS, 1979.

[2.4C-4]

TABLE C-2 (continued)

DAY	DAILY DISCHARGE (cfs)											
	1978						1979					
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP
1	58	32	30	34	36	41	110	86	65	59	56	54
2	57	32	29	33	36	41	100	81	67	56	54	61
3	61	27	29	33	36	43	92	79	64	61	50	63
4	66	28	29	33	36	43	86	76	61	62	47	63
5	67	28	29	33	36	46	80	74	58	58	43	61
6	56	28	29	32	36	46	76	76	50	53	40	60
7	55	28	30	31	36	46	80	79	52	47	39	56
8	52	28	30	31	36	46	74	92	56	43	37	52
9	34	31	30	31	36	45	72	115	57	40	34	48
10	38	32	30	31	36	43	70	131	78	41	35	45
11	44	32	31	31	36	41	65	134	98	42	36	39
12	47	30	32	31	36	44	65	127	102	58	36	39
13	54	32	32	31	36	44	72	115	89	84	38	43
14	51	36	32	31	36	43	86	106	76	101	40	45
15	37	39	32	31	35	42	90	97	68	105	39	46
16	35	39	32	31	34	45	94	84	73	99	37	45
17	34	44	33	32	32	46	100	72	117	89	37	43
18	34	49	33	32	32	49	136	68	159	76	38	40
19	35	46	33	32	33	54	170	79	155	65	43	35
20	28	43	33	33	34	66	199	98	138	57	44	33
21	37	37	33	33	34	74	207	110	129	51	43	34
22	38	33	34	33	34	92	209	105	124	48	45	34
23	33	30	34	33	36	130	200	97	111	45	51	33
24	33	28	34	34	37	120	190	86	94	42	58	32
25	37	27	34	35	37	120	181	77	80	50	60	35
26	45	28	34	36	35	110	171	68	70	54	59	37
27	43	27	33	36	37	100	160	68	67	56	59	35
28	31	28	33	36	39	96	141	65	63	55	57	35
29	29	31	34	36	--	94	119	66	61	54	56	31
30	32	30	35	36	--	100	101	62	60	53	54	27
31	33	--	35	36	--	110	--	61	--	55	51	--
Total (cfs)	1,334	983	991	1,021	993	2,060	3,596	2,734	2,542	1,859	1,416	1,304
Mean (cfs)	43.0	32.8	32.0	32.9	35.5	66.5	120	88.2	84.7	60.0	45.7	43.5
MONTHLY STREAM DISCHARGE												
Acre-feet	2,644	1,952	1,968	2,023	1,972	4,089	7,140	5,423	5,040	3,689	2,810	2,588
Inches of Runoff	0.87	0.65	0.65	0.67	0.65	1.35	2.36	1.79	1.67	1.22	0.93	0.86

Notes: 1979 Water year = October 1, 1978 to September 30, 1979.  
 Total stream discharge, 1979 water year = 41,338 acre-feet (13.67 inches of runoff).  
 Mean daily stream discharge, 1979 water year = 57.1 cfs.  
 Source: USGS, 1980.

APPENDIX C - REFERENCES

U.S. Geological Survey, 1979, Water resources data for Wisconsin, Water year 1978, U.S. Geological Survey Water Data Report WI-78-1: USGS, Madison, Wisconsin, 488 p.

\_\_\_\_\_, 1980, Water resources data for Wisconsin, water year 1979, U.S. Geological Survey Water Data Report WI-79-1: USGS, Madison, Wisconsin.

\_\_\_\_\_, 1981, unpublished, Water resources data for Wisconsin, water year 1979, U.S. Geological Survey Water Data Report WI-80-1: USGS, Madison, Wisconsin.

APPENDIX 2.4D

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSES

APPENDIX 2.4D  
RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSES

<u>Table</u>	<u>Title</u>	<u>Page</u>
D-1	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 1 . . . . .	2.4D-1
D-2	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 2 . . . . .	2.4D-2
D-3	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 3 . . . . .	2.4D-3
D-4	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 4 . . . . .	2.4D-4
D-5	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 5B. . . . .	2.4D-5
D-6	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 6 . . . . .	2.4D-6
D-7	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGES 8 AND 10 . . . . .	2.4D-7
D-8	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 19. . . . .	2.4D-8
D-9	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 22. . . . .	2.4D-9
D-10	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE 23. . . . .	2.4D-10
D-11	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGES A, D, E, AND F . . . . .	2.4D-11
D-12	RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS STREAM GAGE B . . . . .	2.4D-12

<u>Figure</u>	<u>Title</u>	<u>Follows Page</u>
D-1	. . . . .	2.4D-12



TABLE D-1

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGE 1\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-08-77	70.4	4	--	3.9
11-02-77	53.7	2	<1	1.5
11-21-77	39.4	4	2	2.2
3-28-78	39.8	2	1	1.1
4-07-78	87.9	4	2	4.9
4-11-78	158.4	1	<1	2.2
4-13-78	171.9	2	<1	4.8
5-05-78	63.6	2	<1	1.8
5-30-78	--	3	1	--
6-09-78	60.3	6	3	5.1
6-20-78	55.8	7	3	5.5
7-11-78	63.1	3	2	2.6
7-18-78	82.2	5	2	5.7
7-24-78	184.3	2	1	5.1
8-10-78	47.4	3	2	2.0
8-16-78	91.6	4	3	5.1
8-17-78	155.8	3	2	6.5
9-03-78	77.1	5	3	5.4
9-18-78	104.5	1	1	1.5
10-02-78	77.9	2	1	2.2

---

Note: -- Indicates no data.

\*Location: Swamp Creek at County K; drainage area = 70.5  
square miles

TABLE D-2

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGE 2\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
11-02-77	26.5	3	<1	1.9
5-05-78	41.7	1	<1	1.0
7-11-78	22.1	5	2	2.7
7-24-78	--	1	<1	--
8-10-78	20.1	4	2	2.0
9-04-78	37.5	1	1	0.9
9-18-78	--	2	1	--
10-02-78	--	4	3	--

---

Note: -- Indicates no data.

\*Location: Swamp Creek above Highway 55; drainage area = 40.3 square miles.

TABLE D-3

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGE 3\*

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-09-77	49.8	2	--	2.7
11-02-77	--	3	<1	--
11-21-77	--	5	4	--
12-06-77	25.1	4	1	2.7
12-19-77	30.7	2	1	1.7
3-29-78	22.7	2	<1	1.2
4-11-78	67.9	1	<1	1.8
4-15-78	40.0	3	2	3.2
5-05-78	25.6	2	1	1.4
5-30-78	43.1	5	2	5.8
6-09-78	25.6	5	3	3.5
6-20-78	20.8	9	5	5.0
7-11-78	63.5	5	3	8.6
7-18-78	80.7	21	12	45.7
7-25-78	45.6	6	3	7.4
8-10-78	15.7	5	3	2.1
8-15-78	16.8	8	5	3.6
8-16-78	67.9	22	15	40.3
8-18-78	33.2	6	4	5.4
9-03-78	25.1	5	3	3.4
9-18-78	31.9	3	3	2.6
10-02-78	28.4	6	4	4.6
4-18-79	100.8	7	5	19.0

Note: -- Indicates no data.

\*Location: Swamp Creek at Swampy Lane; drainage area = 36.5 square miles.

TABLE D-4

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE 4\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/ℓ)	VOLATILE SUSPENDED SOLIDS (mg/ℓ)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-08-77	21.9	8	--	15.4
12-06-77	8.3	6	3	4.4
3-29-78	5.6	1	<1	0.5
4-11-78	16.4	2	<1	2.9
4-15-78	13.0	4	2	4.6
5-30-78	20.2	3	1	5.3
6-09-78	9.2	7	2	5.7
7-11-78	9.0	4	2	3.2
8-10-78	6.7	4	4	2.4
8-15-78	6.5	7	4	4.0
8-16-78	24.8	20	6	43.6
8-17-78	20.2	4	2	7.1
9-03-78	17.6	10	5	15.5
10-02-78	15.2	4	3	5.3
4-14-79	8.9	1	1	0.8
4-19-79	19.0	4	3	6.7

Note: -- Indicates no data.

\*Location: Outlet Creek at Keith Siding Road; drainage area =  
11.2 square miles.

TABLE D-5

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGE 5B\*

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-09-77	11.3	6	--	4.7
11-21-77	7.9	5	3	2.7
12-19-77	4.8	4	2	1.3
3-29-78	--	3	2	--
4-11-78	10.1	3	1	2.1
5-06-78	--	1	1	--
5-30-78	3.5	6	1	1.4
7-25-78	18.8	4	2	5.2
8-16-78	13.4	15	11	13.8
9-11-78	3.8	2	2	0.5
9-18-78	4.9	1	1	0.3
4-14-79	9.9	9	6	6.1

Note: -- Indicates no data.

\*Location: Swamp Creek at railroad bridge; drainage area =  
 14.3 square miles.

TABLE D-6

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE 6\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-09-77	5.3	10	--	14.9
11-02-77	--	61	30	--
11-21-77	2.8	15	11	11.8
12-19-77	3.2	4	3	3.6
3-29-78	1.8	2	1	1.0
4-11-78	7.4	3	1	6.2
4-15-78	7.0	1	<1	2.0
5-05-78	1.6	2	1	0.9
5-30-78	9.1	4	1	10.2
6-09-78	8.3	1	1	2.3
6-20-78	7.4	2	1	4.2
7-11-78	--	1	<1	--
7-25-78	0.7	1	<1	0.2
8-10-78	6.2	4	3	7.0
8-15-78	4.8	3	2	4.0
8-16-78	4.3	3	1	3.6
8-17-78	2.0	1	1	0.6
8-18-78	1.9	2	2	1.1
9-03-78	2.3	2	2	1.3
9-11-78	2.6	2	2	1.5
9-18-78	7.3	1	1	2.0
10-02-78	7.6	3	3	6.4
4-14-79	21.1	2	2	11.9
4-19-79	--	4	3	--

---

Note: -- Indicates no data.

\*Location: Hemlock Creek; drainage area = 3.5 square miles.

TABLE D-7

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGES 8 AND 10\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
<u>SG 8</u>				
4-14-79	4.2	3	3	3.2
4-19-79	8.9	2	2	4.5
<u>SG 10</u>				
4-14-79	0.9	2	2	3.0
4-20-79	1.6	2	0	5.2

---

\*Location: SG-8; Little Sand Lake outflow (Creek 12-9),  
 drainage area = 3.9 square miles.

SG-10; Oak Lake outflow, drainage area =  
 0.6 square miles.

TABLE D-8

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE 19\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-22-77	5.5	2	--	4.3
4-11-78	7.6	2	1	6.0
4-13-78	5.0	2	1	3.9
5-05-78	--	1	<1	--
6-09-78	--	1	1	--
7-11-78	2.3	2	<1	1.8
7-18-78	14.8	13	10	75.7
8-10-78	--	2	2	--
8-15-78	--	3	2	--
8-16-78	6.4	30	23	75.6
8-17-78	7.1	3	2	8.4
9-03-78	--	4	3	--
10-02-78	2.8	2	1	2.2
4-18-79	10.0	4	3	15.7
4-19-79	15.2	10	8	59.8
4-22-79	16.5	4	3	26.0

---

Note: -- Indicates no data.

\*Location: Pickerel Creek northwest of Rolling Stone Lake;  
drainage area = 2.5 square miles.



TABLE D-9

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE 22\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/ℓ)	VOLATILE SUSPENDED SOLIDS (mg/ℓ)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
10-13-77	18.3	2	--	2.6
11-02-77	7.3	1	<1	0.5
11-21-77	7.9	1	<1	0.6
12-19-77	10.3	1	<1	0.7
3-28-78	6.5	2	1	0.9
4-07-78	20.5	3	1	4.3
4-11-78	27.5	1	<1	1.9
4-13-78	35.6	5	3	12.4
5-30-78	18.1	1	<1	1.3
6-20-78	8.5	4	2	2.4
7-24-78	59.6	2	1	8.3
8-16-78	32.7	1	1	2.3
9-18-78	25.4	2	1	3.5
4-14-79	30.0	5	3	10.5
4-19-79	44.7	4	2	12.5
4-22-79	74.0	11	4	56.8

---

Note: -- Indicates no data.

\*Location: Pickerel Creek below Rolling Stone Lake; drainage area = 14.1 square miles.

TABLE D-10

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE 23\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
4-15-78	6.7	5	3	5.5
5-05-78	3.8	3	1	1.9
5-30-78	4.7	5	1	3.8
6-09-78	2.5	2	1	0.8
6-20-78	2.3	6	3	2.3
7-11-78	--	2	<1	--
7-24-78	7.3	1	<1	1.2
8-10-78	2.2	2	2	0.7
8-15-78	4.2	21	14	14.5
8-16-78	20.0	13	9	42.6
8-18-78	3.7	17	10	10.3
9-03-78	3.7	5	4	3.0
9-12-78	7.4	5	4	6.1
9-18-78	6.0	2	1	2.0
10-02-78	1.2	5	3	1.0
4-14-79	7.4	18	10	21.8
4-19-79	32.1	39	21	205.4
4-22-79	23.0	6	2	22.6

---

Note: -- Indicates no data.

\*Location: Northeast tributary of Rolling Stone Lake  
(Creek 12-9); drainage area = 6.0 square miles.

TABLE D-11

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
 STREAM GAGES A, D, E, AND F\*

---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/l)	VOLATILE SUSPENDED SOLIDS (mg/l)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
<u>SG A</u>				
4-14-78	5.4	2	1	4.8
4-14-79	--	1	1	--
<u>SG D</u>				
4-14-78	1.9	1	<1	2.3
4-19-79	7.3	4	1	35.9
<u>SG E</u>				
10-02-78	--	2	1	--
4-18-79	11.9	10	5	68.9
<u>SG F</u>				
4-18-79	7.9	5	3	27.8

---

Note: -- Indicates no data.

\*Locations: SG A Tributary to Little Sand Lake; drainage area = 2.2 square miles.

SG D Tributary to Deep Hole Lake; drainage area = 0.8 square miles.

SG E Hoffman's Creek; drainage area = 1.7 square miles.

SG F Oak Lake outflow at Sand Lake Road; drainage area = 1.4 square miles.

TABLE D-12

RESULTS OF SUSPENDED SEDIMENT LABORATORY ANALYSIS  
STREAM GAGE B\*

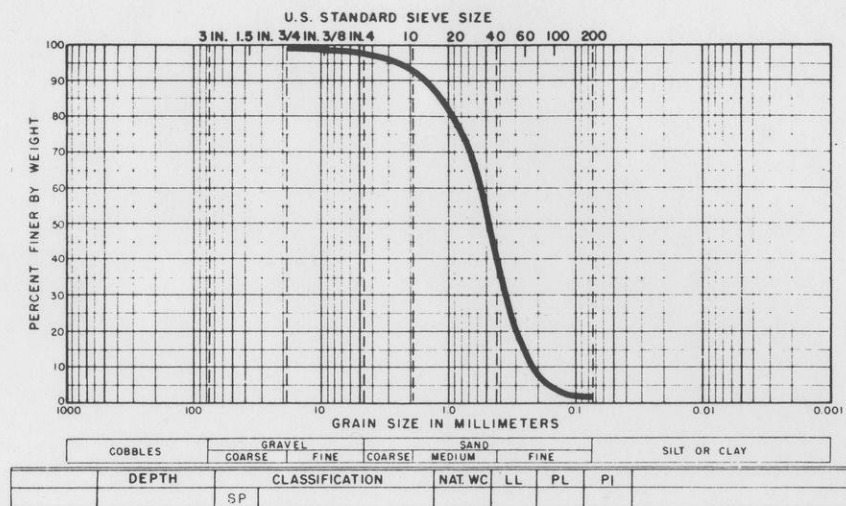
---

DATE	DISCHARGE (cfs)	SUSPENDED SOLIDS (mg/ℓ)	VOLATILE SUSPENDED SOLIDS (mg/ℓ)	TOTAL SUSPENDED SOLIDS TRANSPORT RATE (tons/year/mile <sup>2</sup> )
4-14-78	1.3	2	1	4.3
7-24-78	0.8	<1	<1	<1.3
8-10-78	--	2	2	--
8-15-78	0.5	5	3	4.1
8-16-78	0.4	4	3	2.6
9-03-78	0.2	2	2	0.7
9-11-78	0.2	4	4	1.3
9-18-78	0.5	7	2	5.7
10-02-78	0.5	6	1	4.9

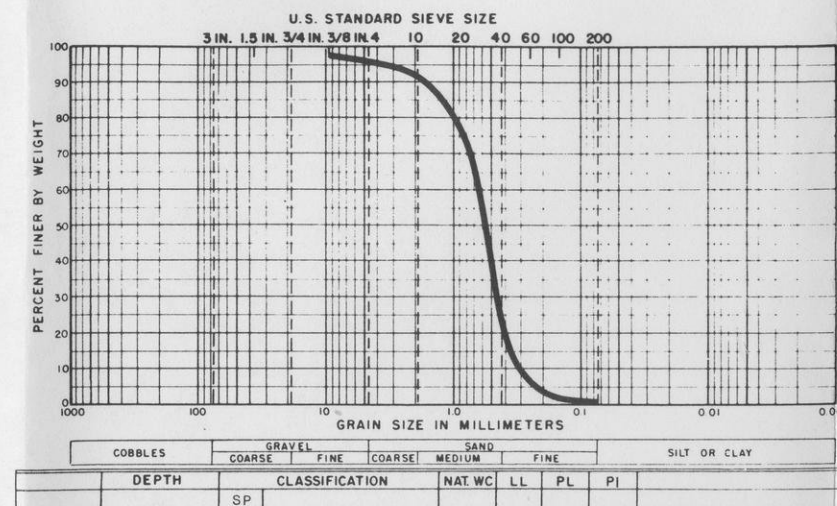
---

Note: -- Indicates no data.

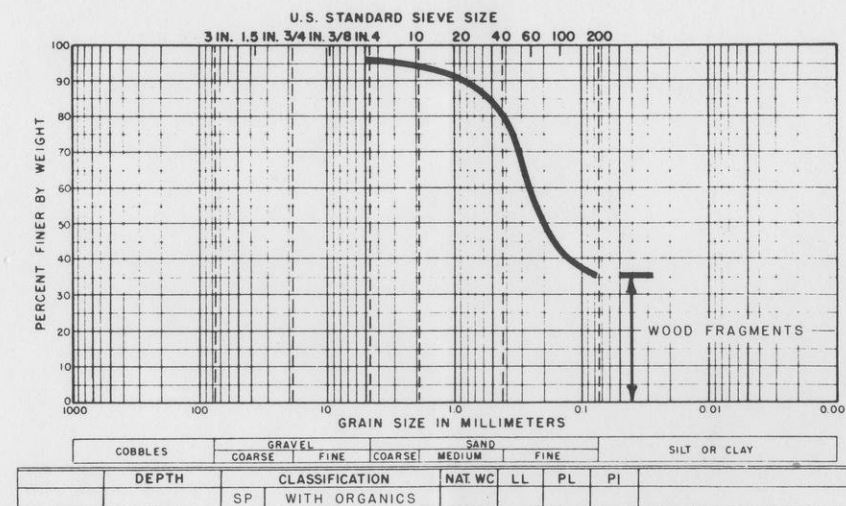
\*Location: Duck Lake outflow upstream of SG A; drainage  
area = 0.6 square miles.



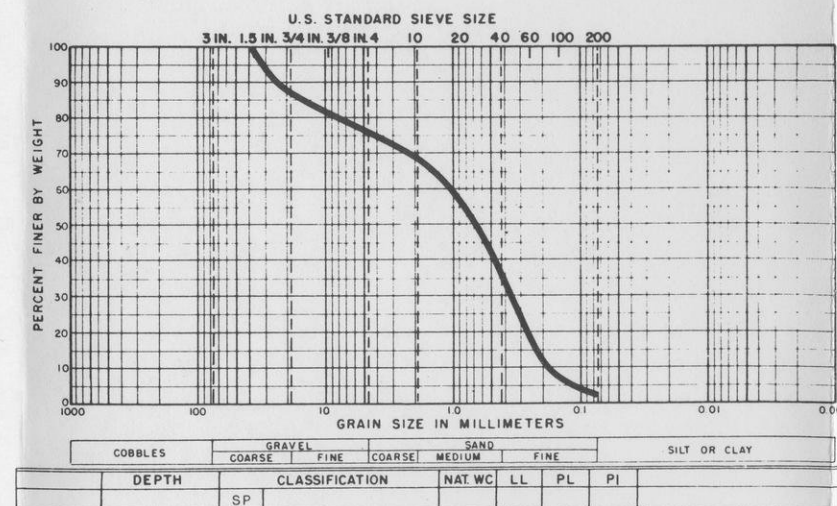
STREAM GAGE 3



STREAM GAGE 4



STREAM GAGE 6



STREAM GAGE 22

EXXON MINERALS COMPANY  
CRANDON PROJECT

BOTTOM SEDIMENT SAMPLE RESULTS  
FOR GRAIN-SIZE ANALYSIS

APPENDIX 2.4E

CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS  
IN BOTTOM SEDIMENT SAMPLES

APPENDIX 2.4E  
CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS  
IN BOTTOM SEDIMENT SAMPLES

---

<u>Table</u>	<u>Title</u>	<u>Page</u>
E-1	CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES FROM THE SWAMP CREEK DRAINAGE BASIN, MARCH 1978. . . . .	2.4E-1
E-2	CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES FROM THE PICKEREL CREEK DRAINAGE BASIN, MARCH 1978. . . . .	2.4E-2
E-3	CONCENTRATIONS OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES FROM THE WOLF RIVER, MARCH 1978. . . . .	2.4E-3
E-4	COMPARISON OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES FROM THE ENVIRONMENTAL STUDY AREA WITH REPORTED CONCENTRATIONS FOR BACKGROUND LEVELS OR NONINDUSTRIAL USE AREAS. . . . .	2.4E-4

TABLE E-1

CONCENTRATIONS<sup>a</sup> OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES  
FROM THE SWAMP CREEK DRAINAGE BASIN, MARCH 1978

PARAMETER	SWAMP CREEK		HEMLOCK CREEK	RICE LAKE		OAK LAKE	MEAN CONCENTRATION <sup>b</sup>
	Station D	Station E	Station A-1	Station F	Station N	Station G	
Percent Solids	1.02	16.13	18.29	4.84	5.12	6.53	8.66
Arsenic	2.0	6.3	1.3	0.2	5.3	1.5	2.8
Cadmium	4.4	1.1	1.0	1.2	0.8	2.9	1.9
Chromium, Total	180.8	57.9	66.2	32.0	25.1	16.8	63.1
Copper	51.7	13.3	6.7	15.7	9.9	11.0	18.0
Iron	19,894	8,815	4,026	4,318	4,324	4,388	7,628
Lead	<1	12	7	10	18	60	<18
Manganese	3,696	1,084	179	362	274	91	948
Mercury	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	66	74	46	87	65	205	90
Freon Extractables	4,412	477	1,181	3,492	1,973	3,951	2,581
Phenol	42.45	4.29	0.55	4.50	2.23	6.77	10.13
Sulfate	8,655	252	1,791	2,967	2,193	551	2,735
Sulfide	<0.1	<0.1	0.4	0.8	11	0.6	<2.2
Total Sulfur	2,856	1,885	2,735	4,521	5,039	4,514	3,592

<sup>a</sup>Concentrations (ppm) presented as dry weight.

<sup>b</sup>Swamp Creek drainage basin.



TABLE E-2

CONCENTRATIONS<sup>a</sup> OF SELECTED CHEMICAL PARAMETERS IN BOTTOM SEDIMENT SAMPLES  
FROM THE PICKEREL CREEK DRAINAGE BASIN, MARCH 1978

PARAMETER	CREEK 12-9	CREEK 11-4	PICKEREL CREEK	ROLLING STONE LAKE		DEEP HOLE	DUCK LAKE	LITTLE SAND LAKE		MEAN CONCENTRATION <sup>b</sup>
	Station M-1	Station M-3	Station M-5	Station M-2	Station M-4	LAKE Station L	Station K	Station H	Station I	
Percent Solids	17.81	7.31	11.28	4.48	4.20	6.47	4.96	7.34	4.23	7.56
Arsenic	3.0	0.1	2.3	2.9	2.6	4	<0.1	0.3	5.0	<2.3
Cadmium	1.7	0.7	0.8	0.7	0.9	1.4	1.5	2.3	4.1	1.6
Chromium, Total	92.1	15.8	33	6.6	21.9	14.7	8.8	18.4	22.3	26.0
Copper	8.3	6.6	6.6	4.8	7.2	15.0	12.0	10.5	20.9	10.2
Iron	11,243	4,715	7,079	605	4,377	2,507	2,152	6,014	9,265	5,329
Lead	12	3	8	11	33	12	4	38	156	31
Manganese	1,796	558	635	112	138	92	83	119	1,079	512
Mercury	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	152	80	62	79	76	83	64	150	218	107
Freon Extractables	1,275	1,560	1,445	3,304	2,381	3,818	5,504	2,548	3,972	2,867
Phenol	0.82	21.97	5.91	3.80	25.33	3.80	14.23	5.23	11.35	10.27
Sulfate	977	483	688	1,239	2,178	291	<10	1,191	1,151	<912
Sulfide	<0.1	1.8	1.1	3.1	1.0	0.6	0.8	0.5	1.9	<1.2
Total Sulfur	1,885	2,803	2,115	5,095	5,377	1,648	2,169	2,863	4,725	3,187

<sup>a</sup>Concentrations (ppm) presented as dry weight.

<sup>b</sup>Pickerel Creek drainage basin.

[2.4E-2]

TABLE E-3

CONCENTRATIONS<sup>a</sup> OF SELECTED CHEMICAL PARAMETERS IN  
BOTTOM SEDIMENT SAMPLES FROM THE WOLF RIVER, MARCH 1978

PARAMETER	STATION Y	STATION Z	MEAN CONCENTRATION <sup>b</sup>
Percent Solids	45.78	67.66	56.72
Arsenic	0.3	0.4	0.4
Cadmium	0.1	0.1	0.1
Chromium, Total	14.5	33.1	23.8
Copper	2.8	2.8	2.8
Iron	2,571	2,601	2,586
Lead	4	1	2
Manganese	102	144	123
Mercury	<0.01	<0.01	<0.01
Zinc	11	11	11
Freon Extractables	229	74	152
Phenol	0.59	0.05	0.32
Sulfate	298	<10	<154
Sulfide	0.5	<0.1	<0.3
Total Sulfur	325	30	178

<sup>a</sup>Concentrations (ppm) presented as dry weight.

<sup>b</sup>Wolf River data.

COMPARISON OF SELECTED METAL CONCENTRATIONS<sup>a</sup>  
 IN BOTTOM SEDIMENTS FROM THE ENVIRONMENTAL STUDY AREA  
 WITH REPORTED CONCENTRATIONS FOR BACKGROUND LEVELS  
 OR NONINDUSTRIAL USE AREAS

METAL	MEAN	RANGE	MEANS OR RANGES OF BACKGROUND LEVELS OR NONINDUSTRIAL USE AREAS	REFERENCE
Arsenic	<2.2	<0.1 - 6.3	<8	b
			0.4; 0 - 2	c
			3.6 - 5.0	d
Cadmium	1.5	0.1 - 4.4	0.4; 0.3 - 0.5	e
			1.0 - 3.0	f
			0.3 - 3.7	g
			0.54	h
			0.7; <0.05 - 2.0	i
Chromium	38.8	6.6 - 180.8	4.2	c
			20 - 40	b
			6; 3 - 7	e
			1.0 - 38	f

<sup>a</sup>Presented in ppm - dry weight.

<sup>b</sup>Leland and others, 1973.

<sup>c</sup>Hesse and Evans, 1972.

<sup>d</sup>Cowgill, 1974.

<sup>e</sup>Mathis and Cummings, 1973.

<sup>f</sup>Iskander and Keeney, 1974.

<sup>g</sup>Mathis and Kevern, 1975.

<sup>h</sup>Anderson and Brower, 1978.

<sup>i</sup>Fitchko and Hutchinson, 1975.

<sup>j</sup>Hutchinson and others, 1975.

<sup>k</sup>Oliver, 1973.

<sup>l</sup>Bortleson and Lee, 1972.

<sup>m</sup>Mathis and Cummings, 1970.

<sup>n</sup>Tsai and Buchanan, 1978.

<sup>o</sup>McNurney and others, 1977.

<sup>p</sup>D'Itri and others, 1971.

TABLE E-4 (continued)

METAL	MEAN	RANGE	MEANS OR RANGES OF BACKGROUND LEVELS OR NONINDUSTRIAL USE AREAS	REFERENCE
Copper	12.1	2.8 - 51.7	15 -30	b
			7.7; 3.5 - 13	e
			10.16	h
			7 - 11	j
			9.1; 0.6-19.6	i
			12 - 64	f
			24 - 28	k
Iron	5,817	605 - 19,894	9,200 - 12,700	k
			5,000 - 17,000	l
			8,400 - 20,400	m
			30,000; 9,800 - 60,000	n
Lead	<23	<1 - 156	11.7; <1.0 - 30.8	i
			26 - 42	k
			<0.1 - 33	f
			17; 13 - 27	e
			31.9; 7.4 - 53.8	g
			19.22	h
Manganese	620	83 - 3,696	464; 100 - 700	l
			118 - 241	k
			167; 18 - 535	i
			5,609; 1,400 - 33,000	n
Mercury	<0.01	<0.01 - <0.01	0.04; <0.01 - 0.15	i
			0.19; 0.12 - 15.0	c
			0.05 - 0.10	b
			0.08 - 0.52	p
			0.056 - 0.158	g
Zinc	90	11 - 218	57 - 66	j
			84 - 86	k
			12 - 136	f
			30; 18 - 41	e
			40; 3 - 162	i
			50 - 100	b
			43.44	h

APPENDIX 2.4F

WATER QUALITY DATA BY STATION

APPENDIX 2.4F

WATER QUALITY DATA BY STATION

<u>Table</u>	<u>1977-1978</u>	<u>Page</u>
F-1	Water Quality Data, Station L (Deep Hole Lake) March 1977 through October 1978	F-1
F-2	Water Quality Data, Station K (Duck Lake) March 1977 through October 1978	F-13
F-3	Water Quality Data, Stations H and I (Little Sand Lake) March 1977 through March 1978; May and August 1978	F-25
F-4	Water Quality Data, Station O (Mole Lake) May 1977 through April 1978	F-41
F-5	Water Quality Data, Stations G-1 and G-2 (Oak Lake) March 1977 through March 1978; May and August 1978	F-49
F-6	Water Quality Data, Stations F and N (Rice Lake) March 1977 through March 1978; May, August and October 1978	F-65
F-7	Water Quality Data, Stations M-2 and M-4 (Rolling Stone Lake) October 1977 through September 1978	F-81
F-8	Water Quality Data, Station J (Skunk Lake) March 1977 through March 1978	F-97
F-9	Water Quality Data, Station M-3 (Creek 11-4) October 1977 through September 1978	F-105
F-10	Water Quality Data, Station M-1 (Creek 12-9) March 1977 through September 1978	F-113
F-11	Water Quality Data, Station A-1 (Hemlock Creek) March 1977 through March 1978; May, August and October 1978	F-125
F-12	Water Quality Data, Station C (Metonga [Outlet] Creek) March 1977 through March 1978	F-133
F-13	Water Quality Data, Station M-5 (Pickerel Creek) October 1977 through September 1978	F-141

APPENDIX 2.4F (continued)

<u>Table</u>	<u>1977-1978</u>	<u>Page</u>
F-14	Water Quality Data, Stations B, D, E, and V (Swamp Creek) March 1977 through October 1978	F-149
F-15	Water Quality Data, Stations Y and Z (Wolf River) October 1977 through October 1978	F-181
<u>1979-1980</u>		
F-16	Water Quality Data, Station L (Deep Hole Lake) November 1979; February, May and August 1980	F-197
F-17	Water Quality Data, Station K (Duck Lake) November 1979; February, May and August 1980	F-201
F-18	Water Quality Data, Stations GH-1 and GH-2 (Ground Hemlock Lake) November 1979 through October 1980	F-205
F-19	Water Quality Data, Station H (Little Sand Lake) November 1979; February, May and August 1980	F-217
F-20	Water Quality Data, Station G-1 (Oak Lake) November 1979; February, May and August 1980	F-221
F-21	Water Quality Data, Station N (Rice Lake) November 1979; February, May and August 1980	F-225
F-22	Water Quality Data, Station JL (St. Johns Lake) November 1979 through October 1980	F-229
F-23	Water Quality Data, Station J (Skunk Lake) November 1979; February, May and August 1980	F-237
F-24	Water Quality Data, Station WL (Walsh Lake) November 1979 through October 1980	F-241
F-25	Water Quality Data, Station M-3 (Creek 11-4) November 1979; February, May and August 1980	F-249
F-26	Water Quality Data, Station M-1 (Creek 12-9) November 1979; February, May and August 1980	F-253
F-27	Water Quality Data, Station A-1 (Hemlock Creek) November 1979; February, May and August 1980	F-257

APPENDIX 2.4F (continued)

<u>Table</u>	<u>1979-1980</u>	<u>Page</u>
F-28	Water Quality Data, Station M-5 (Pickerel Creek) November 1979; February, May and August 1980	F-261
F-29	Water Quality Data, Stations D and E (Swamp Creek) November 1979; February, May and August 1980	F-265



TABLE F-1  
 WATER QUALITY DATA, STATION L  
 SUMMARY TABLE  
 MARCH 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.28.04.

STATION: L	-----								
PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-06-77	08-01-77	09-08-77	10-05-77	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.003	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.003	.009	.004	<0.001	.001	.004	.005	.006	
IRON, TOTAL MG/L	.13	.28	.13	.14	.15	.20	.12	.05	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.036	.041	.027	.02	.029	.026	.024	.015	
MERCURY, TOTAL MG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-1

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.28.04.

STATION: L	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
PERIOD								
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.006	.002	.007	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
COPPER, TOTAL MG/L	.011	.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.08	.09	.08	.08	.14	.42	.19	.12
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.014	.014	.020	.021	.054	.086	.035	.021
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*

F-2

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.28.04.

STATION: L  
 PERIOD

07-06-78 08-02-78 09-06-78 10-03-78

METALS

ALUMINUM, TOTAL MG/L	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	<0.001	*	<0.001
COBALT, TOTAL MG/L	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.12	.07	.09	.11
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.030	.022	.021	.017
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	*	<0.01	*	<0.01

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-06-77	08-01-77	09-08-77	10-05-77
ZINC, TOTAL MG/L	.008	.008	.006	.008	.013	.012	.008	.007
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.12	*	.04	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.12	*	.04	*	*	.07	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.44	*	.33	*	*	.41	*	.41
NITROGEN, NITRATE MG/L	.06	*	.05	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	<0.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.34	*	1.41	*	*	18.97	*	1.99
SULFUR								
SULFATE MG/L	6	5	6	4	12	11	9	10
SULFIDE MG/L	*	*	.01	.01	.05	.05	.03	<0.01
SULFUR, TOTAL MG/L	2.06	1.69	1.99	1.33	4.01	3.68	3.00	3.33
SOLIDS								
SOLIDS, DISSOLVED MG/L	196	60	141	8	9	61	32	46
SOLIDS, SUSPENDED MG/L	4	8	6	17	1	4	3	7

F-4

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
ZINC, TOTAL MG/L	.012	.007	.013	.006	.020	.019	.016	.013
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	*	<0.01	*
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	*	.02	*
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	.77	*	.49	*
NITROGEN, NITRATE MG/L	*	*	*	*	.39	*	.15	*
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	*	*	.11	*	.55	*
SULFUR								
SULFATE MG/L	10	12	12	12	13	10	9	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.30	3.96	3.96	4.00	4.33	3.30	2.97	2.31
SOLIDS								
SOLIDS, DISSOLVED MG/L	54	14	62	34	64	40	25	58
SOLIDS, SUSPENDED MG/L	3	1	1	2	8	4	1	4

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
ZINC, TOTAL MG/L	.015	.008	.017	.015
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	.01	*	.01
NITROGEN				
NITROGEN, AMMONIA MG/L	*	.52	*	.44
NITROGEN, NITRATE MG/L	*	.05	*	<0.01
NITROGEN, NITRITE MG/L	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	*	.67	*	.88
SULFUR				
SULFATE MG/L	8	8	7	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.64	2.64	2.31	2.31
SOLIDS				
SOLIDS, DISSOLVED MG/L	49	24	46	44
SOLIDS, SUSPENDED MG/L	6	4	2	5

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-06-77	08-01-77	09-08-77	10-05-77
SOLIDS, SUSPENDED VOLATILE MG/L	2	*	4	*	*	3	*	1
SOLIDS, TOTAL MG/L	200	68	147	25	10	65	35	53
SOLIDS, VOLATILE MG/L	30	*	35	*	*	5	*	42
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	31	*	2	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	120	*	*	0	*	28
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	8	11	4	2	4	2	2	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	9	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	1	2	2	<1	<1	<1	<1	2
COLOR, TRUE COLOR UNITS	<1	*	16	*	*	19	*	10
CONDUCTIVITY UMHDS/CM	28	18	25	35	85	28	*	28
CYANIDE MG/L	*	<0.001	.004	.001	.002	.001	.002	<0.001
DISSOLVED OXYGEN MG/L	2.2	*	6.4	9.2	9.4	10.2	7.8	10.4
FREON EXTRACTABLE SUBSTANCES PPM	2	7	5	1	<1	<1	1	1

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	6	*	<1	*
SOLIDS, TOTAL MG/L	57	15	63	36	72	44	26	62
SOLIDS, VOLATILE MG/L	*	*	*	*	64	*	7	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	2	*	6	*
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	10	28	2	4	4	4	2	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1	*	2	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	2	<1	2	<1	2	<1	2
COLOR, TRUE COLOR UNITS	*	*	*	*	35	*	30	*
CONDUCTIVITY UMHOS/CM	*	20	21	28	20	29	25	30
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.4	14.8	8.3	7.1	1.3	5.8	11.2	8.8
FREON EXTRACTABLE SUBSTANCES PPM	1	1	<1	<1	<1	1	<1	<1

11-1



TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	2	*	5
SOLIDS, TOTAL MG/L	55	28	48	49
SOLIDS, VOLATILE MG/L	*	21	*	41
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	3	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	4	*	2
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	4	<1	<1	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	2	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	21	*	3
CHLORIDE MG/L	<1	<1	2	4
COLOR, TRUE COLOR UNITS	*	40	*	30
CONDUCTIVITY UMHDS/CM	40	28	30	21
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.4	8.2	8.3	11.8
FREELY EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-06-77	08-01-77	09-08-77	10-05-77
HARDNESS MG/L	22	20	12	8	16	8	8	24
PH STANDARD UNITS	5.4	5.8	6.0	6.4	6.6	6.0	6.2	6.2
PHENOL UG/L	14	8	9	5	2	4	6	5
SURFACTANTS (MBAS) TOTAL UG/L	<10	*	<10	*	*	<10	*	10
TEMPERATURE DEGREES C	.5	2.0	16.0	18.0	24.0	21.3	18.5	9.5
TRANSPARENCY (SECCHI DISC) METER	*	*	.5	1.6	1.8	1.8	1.4	1.8
TURBIDITY FTU	1.8	.8	1.8	1.6	1.4	1.2	1.0	.8

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
HARDNESS MG/L	36	12	12	16	16	20	16	20
PH STANDARD UNITS	6.0	6.6	6.0	5.6	5.8	6.2	6.4	5.9
PHENOL UG/L	3	3	7	5	5	10	28	4
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	*	*	<10	*	<10	*
TEMPERATURE DEGREES C	7.0	2.0	3.5	4.5	3.2	4.0	10.0	19.0
TRANSPARENCY (SECCHI DISC) METER	1.8	*	*	*	*	*	2.1	2.0
TURBIDITY FTU	.8	1.9	1.3	2.7	2.5	2.1	1.7	1.5

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
HARDNESS MG/L	12	8	16	20
PH STANDARD UNITS	6.1	5.6	5.9	6.0
PHENOL UG/L	13	6	18	5
SURFACTANTS (MBAS) • TOTAL UG/L	*	<10	*	<10
TEMPERATURE DEGREES C	21.5	21.0	21.2	11.5
TRANSPARENCY (SECCHI DISC) METER	1.8	2.3	2.1	2.3
TURBIDITY FTU	1.4	.6	.6	1.5

TABLE F-2  
 WATER QUALITY DATA, STATION K  
 SUMMARY TABLE  
 MARCH 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/01/78. 20.15.34.

STATION: K	-----								
PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-07-77	08-01-77	09-08-77	10-05-77	-----
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	.01	
COPPER, TOTAL MG/L	.001	.016	.006	.002	.001	.003	.005	.011	
IRON, TOTAL MG/L	1.01	.18	.04	.04	.06	.02	.05	.04	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.082	.047	.054	.060	.059	.052	.056	.053	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-13

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/01/78. 20.15.34.

STATION: K	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
PERIOD								
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.006	.001	.006	<0.001	.002	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
COPPER, TOTAL MG/L	.008	.002	.038	.002	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.06	.09	.09	.87	.66	.69	.20	.16
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.055	.059	.078	.057	.065	.068	.50	.040
MERCURY, TOTAL UG/L	.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*

F-14

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/01/78. 20.15.34.

STATION: K				
PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
METALS				
ALUMINUM, TOTAL MG/L	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	<0.001	*	<0.001
COBALT, TOTAL MG/L	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	.002	<0.001
IRON, TOTAL MG/L	.26	.26	.23	.17
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.051	.039	.036	.037
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	*	<0.01	*	<0.01

515

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-07-77	08-01-77	09-08-77	10-05-77
ZINC, TOTAL MG/L	.006	.009	.023	.011	.015	.010	.012	.025
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.02	*	.01	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.04	*	.05	*	*	.04	*	.02
NITROGEN								
NITROGEN, AMMONIA MG/L	1.66	*	2.44	*	*	.47	*	.66
NITROGEN, NITRATE MG/L	1.27	*	<0.01	*	*	.05	*	<0.01
NITROGEN, NITRITE MG/L	*	*	<0.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.74	*	1.81	*	*	4.75	*	5.44
SULFUR								
SULFATE MG/L	<1	4	6	7	12	10	11	12
SULFIDE MG/L	*	*	.01	<0.01	.01	.04	.01	<0.01
SULFUR, TOTAL MG/L	.38	1.34	1.99	2.31	3.97	3.34	3.64	4.00
SOLIDS								
SOLIDS, DISSOLVED MG/L	84	62	26	8	12	85	1	24
SOLIDS, SUSPENDED MG/L	16	6	14	12	2	5	9	8

116



TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
ZINC, TOTAL MG/L	.022	.018	.063	.023	.017	.012	.021	.019
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	*	<0.01	*
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	*	.02	*
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	1.48	*	1.20	*
NITROGEN, NITRATE MG/L	*	*	*	*	.44	*	.15	*
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	*	*	.36	*	.82	*
SULFUR								
SULFATE MG/L	12	14	12	11	14	9	9	8
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.96	4.62	3.96	3.67	4.67	2.97	2.97	2.64
SOLIDS								
SOLIDS, DISSOLVED MG/L	64	25	61	36	54	43	38	63
SOLIDS, SUSPENDED MG/L	3	5	4	4	8	17	1	4

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
ZINC, TOTAL MG/L	.026	.007	.015	.018
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	.02	*	.02
NITROGEN				
NITROGEN, AMMONIA MG/L	*	1.17	*	1.20
NITROGEN, NITRATE MG/L	*	<0.01	*	<0.01
NITROGEN, NITRITE MG/L	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	*	1.23	*	.20
SULFUR				
SULFATE MG/L	8	8	13	9
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.64	2.64	4.29	2.97
SOLIDS				
SOLIDS, DISSOLVED MG/L	58	48	68	60
SOLIDS, SUSPENDED MG/L	2	5	2	4

X11-3

TABLE 1.2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-07-77	08-01-77	09-08-77	10-05-77
SOLIDS,SUSPENDED VOLATILE MG/L	10	*	6	*	*	<1	*	3
SOLIDS,TOTAL MG/L	100	68	40	20	14	90	10	32
SOLIDS,VOLATILE MG/L	40	*	13	*	*	4	*	15
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	24	*	2	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	4	*	22	*	*	0	*	0
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	18	2	<1	<1	<1	2	<1	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	10	*	9	*	*	1	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	6	3	<1	2	<1	<1	4
COLOR,TRUE COLOR UNITS	55	*	17	*	*	12	*	15
CONDUCTIVITY UMHOS/CM	29	25	30	35	40	34	*	31
CYANIDE MG/L	*	.002	.002	.001	.001	.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	1.1	*	6.4	8.8	8.5	9.2	8.0	11.0
FREON EXTRACTABLE SUBSTANCES PPM	2	7	3	4	<1	<1	<1	<1

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	*	*	2	*	<1	*
SOLIDS,TOTAL MG/L	67	30	65	40	62	60	39	67
SOLIDS,VOLATILE MG/L	*	*	*	*	48	*	5	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0	*	2	*
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	4	6	4	2	4	4	2	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	2	*	2	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	4	<1	<1	2	<1	2	<1	<1
COLOR,TRUE COLOR UNITS	*	*	*	*	100	*	80	*
CONDUCTIVITY UMHOS/CM	32	*	28	22	25	28	28	31
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.0	12.6	13.9	3.3	1.3	.5	10.6	8.7
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	<1	<1	<1	1	<1	<1

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	2	*	2
SOLIDS,TOTAL MG/L	60	53	70	64
SOLIDS,VOLATILE . MG/L	*	35	*	54
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	4	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	3	*	0
GENERAL PARAMETERS				
ALKALINITY,TOTAL MG/L	<1	<1	<1	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	2	*	3
CHEMICAL OXYGEN DEMAND MG/L	*	34	*	7
CHLORIDE MG/L	2	<1	2	2
COLOR,TRUE COLOR UNITS	*	100	*	90
CONDUCTIVITY UMHOS/CM	30	28	31	25
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	7.8	8.0	7.5	9.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	03-02-77	04-02-77	05-10-77	06-08-77	07-07-77	08-01-77	09-08-77	10-05-77
HARDNESS MG/L	26	6	20	8	12	12	4	16
PH STANDARD UNITS	5.4	5.6	5.2	4.8	5.5	4.7	4.6	4.8
PHENOL UG/L	19	6	7	7	<1	3	4	9
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	<10	*	*	<10	*	10
TEMPERATURE DEGREES C	.5	2.0	15.5	18.0	27.5	21.1	18.0	9.0
TRANSPARENCY (SECCHI DISC) METER	*	*	1.5	1.5	1.5	1.8	1.6	1.6
TURBIDITY FTU	1.5	1.3	1.6	1.1	1.5	1.3	1.5	1.5

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-02-78	04-05-78	05-04-78	06-06-78
HARDNESS MG/L	24	12	16	16	16	16	16	16
PH STANDARD UNITS	4.7	5.8	4.8	5.0	5.4	6.0	4.8	4.5
PHENOL UG/L	4	2	10	9	4	10	4	10
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	*	<10	*
TEMPERATURE DEGREES C	7.0	1.5	3.0	1.0	3.0	3.8	10.2	19.0
TRANSPARENCY (SECCHI DISC) METER	1.7	*	*	*	*	*	2.1	1.5
TURBIDITY FTU	1.4	2.0	1.7	3.2	2.9	4.7	1.4	1.2

TABLE F-2 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	07-06-78	08-02-78	09-06-78	10-03-78
HARDNESS MG/L	12	12	16	16
PH STANDARD UNITS	4.7	4.6	4.8	5.2
PHENOL UG/L	14	5	15	5
SURFACTANTS (MBAS), TOTAL UG/L	*	<10	*	<10
TEMPERATURE DEGREES C	22.0	20.0	21.0	11.0
TRANSPARENCY (SECCHI DISC) METER	.9	1.1	1.0	1.6
TURBIDITY FTU	1.8	5.6	1.1	.9



TABLE F-3  
 WATER QUALITY DATA, STATION H  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.19.44.

STATION: H	PERIOD								
	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.008	.043	.022	.005	.004	<0.001	.005	<0.001	
IRON, TOTAL MG/L	.06	.13	.01	.01	.02	.05	.04	.04	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	.03	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.071	.075	.018	.043	.035	.042	.043	.039	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-25

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.19.44.

STATION: H PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
METALS							
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.003	<0.001	<0.001	.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.002	.006	.005	.002	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.03	.02	.02	.04	.03	.06	.04
LEAD, TOTAL MG/L	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.038	.043	.048	.043	.063	.108	.043
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01

92-1-

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
ZINC, TOTAL MG/L	.013	.035	.015	.015	.015	.016	.007	.023
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.04	*	.03	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.04	*	.17	*	*	.01	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.28	*	.10	*	*	.08	*	.25
NITROGEN, NITRATE MG/L	.18	*	.10	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.02	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	.93	*	2.27	*	*	11.12	*	1.35
SULFUR								
SULFATE MG/L	3	5	4	5	8	9	9	10
SULFIDE MG/L	*	*	<0.01	<0.01	.03	.05	.03	<0.01
SULFUR, TOTAL MG/L	1.04	1.68	1.32	1.65	2.67	3.02	3.00	3.33
SOLIDS								
SOLIDS, DISSOLVED MG/L	173	16	8	21	2	104	30	43
SOLIDS, SUSPENDED MG/L	7	8	12	3	2	11	<1	<1

F-21

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
ZINC, TOTAL MG/L	.015	.012	.021	.018	.021	.013	.017
PHOSPHORUS							
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.01	.01
NITROGEN							
NITROGEN, AMMONIA MG/L	*	*	*	*	.35	.27	.30
NITROGEN, NITRATE MG/L	*	*	*	*	.34	.10	<0.01
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.73	.54	1.27
SULFUR							
SULFATE MG/L	10	11	12	13	14	9	9
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.30	3.63	3.96	4.33	4.67	2.97	2.97
SOLIDS							
SOLIDS, DISSOLVED MG/L	28	19	19	44	26	40	26
SOLIDS, SUSPENDED MG/L	2	1	1	1	6	1	2

F-3

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
SOLIDS,SUSPENDED VOLATILE MG/L	2	*	6	*	*	9	*	<1
SOLIDS,TOTAL MG/L	180	24	20	24	4	115	30	43
SOLIDS,VOLATILE MG/L	20	*	7	*	*	40	*	25
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	184	*	4	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	69	*	129	*	*	0	*	2
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	6	1	2	<1	<1	2	1	<1
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	7	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	<1	4	<1	2	<1	2	6
COLOR,TRUE COLOR UNITS	<1	*	<1	*	*	8	*	<1
CONDUCTIVITY UMHOS/CM	35	28	25	28	59	27	28	24
CYANIDE MG/L	*	<0.001	.002	.004	.001	.002	.001	<0.001
DISSOLVED OXYGEN MG/L	2.8	*	8.5	9.2	8.5	9.4	8.8	9.0
FREON EXTRACTABLE SUBSTANCES PPM	2	8	2	4	<1	<1	<1	1

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	4	<1	2
SOLIDS, TOTAL MG/L	30	20	20	45	32	41	28
SOLIDS, VOLATILE MG/L	*	*	*	*	16	20	13
BACTERIA							
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	0	19
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0	4	1
GENERAL PARAMETERS							
ALKALINITY, TOTAL MG/L	4	4	<1	2	6	2	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1	2	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	7
CHLORIDE MG/L	2	<1	<1	2	<1	2	<1
COLOR, TRUE COLOR UNITS	*	*	*	*	10	10	5
CONDUCTIVITY UMHOS/CM	45	*	11	20	22	22	27
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.6	*	11.8	10.8	7.5	10.5	10.8
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	<1	<1	<1	<1	<1

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
HARDNESS MG/L	14	6	24	6	8	12	8	12
PH STANDARD UNITS	4.9	6.1	5.8	5.8	5.2	5.4	5.1	5.2
PHENOL UG/L	3	8	5	<1	2	5	9	6
SURFACTANTS (MBAS), TOTAL UG/L	30	*	<10	*	*	<10	*	10
TEMPERATURE DEGREES C	2.0	4.8	13.0	13.0	24.9	21.2	20.0	12.0
TRANSPARENCY (SECCHI DISC) METER	*	*	4.6	3.3	3.0	3.0	3.0	3.0
TURBIDITY FTU	1.2	1.1	1.0	.8	1.0	.8	.7	.9

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
HARDNESS MG/L	20	8	12	12	16	12	8
PH STANDARD UNITS	5.2	5.9	5.4	5.0	4.8	5.6	5.2
PHENOL UG/L	5	6	8	2	16	13	9
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	*	*	<10	<10	<10
TEMPERATURE DEGREES C	8.5	1.5	3.0	4.6	4.0	9.5	21.0
TRANSPARENCY (SECCHI DISC) METER	2.8	*	*	*	*	3.7	3.0
TURBIDITY FTU	1.1	1.0	1.4	.9	.9	1.4	.8



TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA, STATION I  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.14.56.

STATION: I									
PERIOD		03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	.001	<0.001	.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.005	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	<0.001	.016	.004	.003	.004	<0.001	.002	.002	
IRON, TOTAL MG/L	.05	.03	<0.01	.02	.03	.04	.02	.03	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	.02	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.067	.053	.004	.044	.035	.047	.046	.042	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-33

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.14.56.

STATION: I							
PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
METALS							
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.004	.003	<0.001	<0.001	.002	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.010	.002	<0.001	<0.001	.003	<0.001	<0.001
IRON, TOTAL MG/L	.16	.02	.03	.03	.03	.07	.04
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.045	.041	.054	.050	.047	.114	.044
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
ZINC, TOTAL MG/L	.009	.019	.014	.020	.034	.009	.010	.025
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.05	*	.06	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.05	*	.08	*	*	.01	*	.04
NITROGEN								
NITROGEN, AMMONIA MG/L	.27	*	.13	*	*	.14	*	.24
NITROGEN, NITRATE MG/L	.48	*	.05	*	*	.52	*	.31
NITROGEN, NITRITE MG/L	*	*	.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.83	*	1.93	*	*	7.81	*	1.56
SULFUR								
SULFATE MG/L	3	7	5	5	8	9	8	9
SULFIDE MG/L	*	*	.01	<0.01	<0.01	.03	.02	<0.01
SULFUR, TOTAL MG/L	1.04	2.34	1.66	1.65	2.64	3.00	2.66	3.00
SOLIDS								
SOLIDS, DISSOLVED MG/L	155	20	8	8	8	82	24	42
SOLIDS, SUSPENDED MG/L	5	12	12	4	1	3	1	1

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
ZINC, TOTAL MG/L	.020	.018	.031	.015	.022	.015	.033
PHOSPHORUS							
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.01	.01
NITROGEN							
NITROGEN, AMMONIA MG/L	*	*	*	*	.36	.24	.34
NITROGEN, NITRATE MG/L	*	*	*	*	<0.01	.15	<0.01
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.89	.83	1.15
SULFUR							
SULFATE MG/L	11	12	12	13	15	9	9
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.63	3.96	3.96	4.33	5.00	2.97	2.97
SOLIDS							
SOLIDS, DISSOLVED MG/L	23	16	29	23	22	46	27
SOLIDS, SUSPENDED MG/L	2	1	1	2	4	7	4

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	1	*	4	*	*	3	*	1
SOLIDS, TOTAL MG/L	160	32	20	12	9	85	25	43
SOLIDS, VOLATILE MG/L	10	*	7	*	*	<1	*	23
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	36	*	6	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	12	*	57	*	*	0	*	4
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	4	1	<1	<1	<1	2	1	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	4	*	*	1	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	2	1	<1	<1	<1	<1	2
COLOR, TRUE COLOR UNITS	<1	*	<1	*	*	<1	*	5
CONDUCTIVITY UMHOS/CM	35	28	25	28	35	27	28	22
CYANIDE MG/L	*	<0.001	.002	.002	.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	2.5	*	8.8	9.4	8.5	8.9	8.9	9.6
FREON EXTRACTABLE SUBSTANCES PPM	3	7	2	3	<1	1	<1	1

F-37

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	<1	4	2
SOLIDS, TOTAL MG/L	25	17	30	25	26	53	31
SOLIDS, VOLATILE MG/L	*	*	*	*	22	38	23
BACTERIA							
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	0	1
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	2	4	1
GENERAL PARAMETERS							
ALKALINITY, TOTAL MG/L	4	4	<1	2	<1	2	<1
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	3	1	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	10
CHLORIDE MG/L	2	<1	<1	2	<1	2	2
COLOR, TRUE COLOR UNITS	*	*	*	*	10	5	5
CONDUCTIVITY UMHOS/CM	48	20	20	22	21	22	27
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.3	15.5	11.4	7.0	4.8	10.2	11.0
FREON EXTRACTABLE SUBSTANCES PPM	1	2	<1	1	<1	1	<1

F-34

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
HARDNESS MG/L	14	6	16	4	4	4	4	16
PH STANDARD UNITS	5.0	5.4	5.9	6.0	5.4	5.4	5.2	5.2
PHENOL UG/L	8	8	5	<1	1	6	6	3
SURFACTANTS (MBAS), TOTAL UG/L	10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	1.9	4.8	14.0	13.0	25.1	21.2	20.0	12.0
TRANSPARENCY (SECCHI DISC) METER	*	*	4.6	3.4	3.0	3.0	3.0	3.0
TURBIDITY FTU	2.8	.9	1.0	.8	.9	1.0	.7	.9

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: I PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
HARDNESS MG/L	12	8	12	12	10	12	8
PH STANDARD UNITS	5.2	6.3	5.6	5.2	5.2	5.6	5.0
PHENOL UG/L	5	6	8	<1	3	15	13
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	<10	<10
TEMPERATURE DEGREES C	9.0	1.5	5.0	4.9	3.5	9.5	21.0
TRANSPARENCY (SECCHI DISC) METER	3.1	*	*	*	*	3.4	3.0
TURBIDITY FTU	1.6	2.1	1.7	.6	1.4	1.3	.8



TABLE F-4  
 WATER QUALITY DATA, STATION 0  
 SUMMARY TABLE  
 MAY 1977-APRIL 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78. 20.06.42.

STATION: 0	-----							
PERIOD	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	11-01-77	12-07-77
-----	-----	-----	-----	-----	-----	-----	-----	-----
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	*	<0.01	*	<0.01	*	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	.002	<0.001	.004	.004
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	<0.01	*	<0.01	*	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	.003	*	<0.001	*	*
COBALT, TOTAL MG/L	<0.01	*	*	<0.01	*	<0.01	*	*
COPPER, TOTAL MG/L	.006	<0.001	.005	.002	.001	.019	.008	.001
IRON, TOTAL MG/L	.17	.13	.15	.21	.27	.30	.44	.19
LEAD, TOTAL MG/L	<0.01	<0.01	.02	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.013	.020	.019	.029	.024	.024	.020	.008
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	.2	.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	<0.01	*	<0.01	*	*
NICKEL, TOTAL MG/L	<0.01	*	*	<0.01	*	<0.01	*	*

F-41

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78. 20.06.42.

STATION: 0  
 PERIOD

01-05-78 02-07-78 03-02-78 04-04-78

METALS

	01-05-78	02-07-78	03-02-78	04-04-78
ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	.007	<0.001	.001	<0.001
IRON, TOTAL MG/L	.09	.10	.25	.36
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.016	.012	.041	.056
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

F-42

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	11-01-77	12-07-77
ZINC, TOTAL MG/L	.002	.002	.019	.005	.003	.020	.021	.007
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.03	*	*	<0.01	*	<0.01	*	*
PHOSPHORUS, TOTAL MG/L	.04	*	*	.04	*	.02	*	*
NITROGEN								
NITROGEN, AMMONIA MG/L	.21	*	*	.34	*	.65	*	*
NITROGEN, NITRATE MG/L	<0.01	*	*	.26	*	<0.01	*	*
NITROGEN, NITRITE MG/L	.01	*	*	<0.01	*	<0.01	*	*
NITROGEN, ORGANIC MG/L	1.44	*	*	5.72	*	1.56	*	*
SULFUR								
SULFATE MG/L	3	2	2	<1	<1	<1	3	6
SULFIDE MG/L	<0.01	.01	.03	.04	.02	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	.99	.67	.69	.04	.02	<0.01	.99	1.98
SOLIDS								
SOLIDS, DISSOLVED MG/L	165	43	12	50	167	70	59	29
SOLIDS, SUSPENDED MG/L	8	13	1	5	3	3	6	1

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	01-05-78	02-07-78	03-02-78	04-04-78
ZINC, TOTAL MG/L	.024	<0.001	.004	.011
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	<0.01	*
PHOSPHORUS, TOTAL MG/L	*	*	<0.01	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	.68	*
NITROGEN, NITRATE MG/L	*	*	.29	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	.54	*
SULFUR				
SULFATE MG/L	6	5	5	4
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.98	1.67	1.67	1.32
SOLIDS				
SOLIDS, DISSOLVED MG/L	58	38	39	39
SOLIDS, SUSPENDED MG/L	2	1	6	10

F-44

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	11-01-77	12-07-77
SOLIDS,SUSPENDED VOLATILE MG/L	2	*	*	3	*	3	*	*
SOLIDS,TOTAL MG/L	173	56	13	55	170	73	65	30
SOLIDS,VOLATILE MG/L	30	*	*	15	*	55	*	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	32	*	*	5	*	0	*	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	5	*	*	32	*	2	*	*
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	26	22	24	24	24	22	32	28
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	9	*	*	1	*	3	*	*
CHLORIDE MG/L	4	<1	<1	<1	<1	2	2	2
COLOR,TRUE COLOR UNITS	25	*	*	10	*	20	*	*
CONDUCTIVITY UMHOS/CM	145	55	60	52	*	41	35	35
CYANIDE MG/L	.001	.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	11.2	9.5	9.4	10.1	7.3	7.6	10.8	13.6
FREON EXTRACTABLE SUBSTANCES PPM	8	2	<1	<1	<1	<1	<1	<1
HARDNESS MG/L	36	32	28	20	28	32	40	28

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	01-05-78	02-07-78	03-02-78	04-04-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	2	*
SOLIDS,TOTAL MG/L	60	39	45	49
SOLIDS,VOLATILE MG/L	*	*	33	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	0	*
GENERAL PARAMETERS				
ALKALINITY,TOTAL MG/L	28	26	26	28
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	1	*
CHLORIDE MG/L	2	4	<1	2
COLOR,TRUE COLOR UNITS	*	*	25	*
CONDUCTIVITY UMHDS/CM	35	35	40	40
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	7.6	7.8	4.9	2.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	1
HARDNESS MG/L	32	36	32	32

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	11-01-77	12-07-77
PH STANDARD UNITS	7.2	8.4	7.7	8.4	7.4	6.8	7.4	7.6
PHENOL UG/L	7	13	<1	6	1	7	10	9
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	<10	*	<10	*	*
TEMPERATURE DEGREES C	14.0	18.5	24.0	21.8	19.0	11.0	7.0	1.0
TRANSPARENCY (SECCHI DISC) METER	2.0	1.6	2.0	1.8	1.5	2.0	1.8	*
TURBIDITY FTU	1.7	1.6	1.9	1.7	2.4	2.3	1.6	1.4

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0 PERIOD	01-05-78	02-07-78	03-02-78	04-04-78
PH STANDARD UNITS	6.8	5.6	6.6	6.6
PHENOL UG/L	6	17	3	3
SURFACTANTS (MBAS), TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	2.5	5.0	2.0	4.0
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*
TURBIDITY FTU	1.3	.9	.9	1.5



TABLE F-5  
 WATER QUALITY DATA, STATION G-1  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.18.53.

STATION: G-1									
PERIOD		03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	.005	*	<0.001	*	*	.005	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.007	.019	.008	.005	.005	.003	.005	.002	
IRON, TOTAL MG/L	.15	.02	.01	.02	.02	.03	.03	.08	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.061	.024	.025	.016	.013	.013	.014	.030	
MERCURY, TOTAL UG/L	.2	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-49

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78, 20.18.53.

STATION: G-1	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
PERIOD							
METALS							
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.002	.004	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.005	.005	.002	<0.001	.001	<0.001	<0.001
IRON, TOTAL MG/L	.06	.05	.02	.04	.04	.06	.05
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.031	.029	.020	.017	.023	.029	.007
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01

F-511

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
ZINC, TOTAL MG/L	.013	.004	.036	.006	.026	.001	.003	.014
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.03	*	.02	*	*	<0.01	*	.02
PHOSPHORUS, TOTAL MG/L	.03	*	.02	*	*	.02	*	.02
NITROGEN								
NITROGEN, AMMONIA MG/L	.17	*	.11	*	*	.11	*	.22
NITROGEN, NITRATE MG/L	.06	*	.10	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.28	*	1.90	*	*	3.44	*	2.18
SULFUR								
SULFATE MG/L	2	3	5	3	7	7	7	7
SULFIDE MG/L	*	*	<0.01	<0.01	.01	.06	.02	<0.01
SULFUR, TOTAL MG/L	.71	1.01	1.65	.99	2.32	2.37	2.33	2.33
SOLIDS								
SOLIDS, DISSOLVED MG/L	216	2	157	62	7	47	34	36
SOLIDS, SUSPENDED MG/L	4	2	10	10	1	3	1	4

F-51

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
ZINC, TOTAL MG/L	.005	.006	.022	.005	.014	.010	.006
PHOSPHORUS							
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.02	<0.01
NITROGEN							
NITROGEN, AMMONIA MG/L	*	*	*	*	.20	.15	.17
NITROGEN, NITRATE MG/L	*	*	*	*	.10	.05	<0.01
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.98	.21	.84
SULFUR							
SULFATE MG/L	8	8	9	8	8	7	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.64	2.64	2.97	2.67	2.67	2.31	1.98
SOLIDS							
SOLIDS, DISSOLVED MG/L	17	73	17	32	36	18	41
SOLIDS, SUSPENDED MG/L	5	2	1	1	2	1	3

20-3

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
SOLIDS, SUSPENDED VOLATILE MG/L	1	*	8	*	*	1	*	1
SOLIDS, TOTAL MG/L	220	4	167	72	8	50	35	40
SOLIDS, VOLATILE MG/L	40	*	14	*	*	15	*	15
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	20	*	10	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	3	*	*	0	*	0
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	8	5	2	1	6	8	1	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	6	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	3	2	<1	<1	<1	<1	6
COLOR, TRUE COLOR UNITS	<1	*	5	*	*	<1	*	5
CONDUCTIVITY UMHOS/CM	32	20	20	27	30	31	22	20
CYANIDE MG/L	*	.001	<0.001	.001	.001	.002	<0.001	<0.001
DISSOLVED OXYGEN MG/L	5.6	*	8.6	9.8	8.6	9.2	9.4	9.0
FREON EXTRACTABLE SUBSTANCES PPM	3	7	2	1	<1	<1	1	<1

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	*	*	<1	<1	2
SOLIDS,TOTAL MG/L	22	75	18	33	38	19	44
SOLIDS,VOLATILE MG/L	*	*	*	*	16	16	20
BACTERIA							
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0	0	0
GENERAL PARAMETERS							
ALKALINITY,TOTAL MG/L	6	4	<1	2	<1	2	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1	1	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	7
CHLORIDE MG/L	2	<1	<1	2	<1	<1	<1
COLOR,TRUE COLOR UNITS	*	*	*	*	5	10	<1
CONDUCTIVITY UMHOS/CM	32	15	11	20	18	20	25
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.2	13.8	10.0	11.9	11.2	9.8	10.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	1	<1	1	<1

F-34

TABLE F-1 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
HARDNESS MG/L	10	8	24	6	1	24	4	16
PH STANDARD UNITS	7.5	6.1	6.4	6.6	5.8	6.0	6.1	5.9
PHENOL UG/L	8	8	6	4	2	<1	<1	6
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	10	*	*	52	*	<10
TEMPERATURE DEGREES C	2.2	4.5	12.5	12.8	25.1	22.1	20.0	13.0
TRANSPARENCY (SECCHI DISC) METER	*	*	5.3	3.3	4.0	4.3	3.2	3.6
TURBIDITY FTU	2.0	1.0	1.3	.8	.8	.9	1.2	1.2

TABLE F-3 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	05-03-78	08-01-78
HARDNESS MG/L	24	8	8	8	12	8	8
PH STANDARD UNITS	6.0	6.3	6.0	6.0	5.8	5.8	6.2
PHENOL UG/L	8	12	4	6	7	9	14
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	<10	<10
TEMPERATURE DEGREES C	9.0	1.0	2.5	3.0	2.1	9.0	21.0
TRANSPARENCY (SECCHI DISC) METER	5.0	*	*	*	*	3.4	3.6
TURBIDITY FTU	2.5	1.5	.8	.8	2.4	1.5	.7



TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA, STATION G-2  
 SUMMARY TABLE  
 JUNE 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.16.04.

STATION: G-2									
PERIOD		06-07-77	07-07-77	08-01-77	09-07-77	10-05-77	11-02-77	12-07-77	01-05-78
METALS									
ALUMINUM, TOTAL MG/L	*	*	<0.01	*	<0.01	*	*	*	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	.002	<0.001	.002	.002	.002	.001
CHROMIUM, HEXAVALENT MG/L	*	*	<0.01	*	<0.01	*	*	*	*
CHROMIUM, TRIVALENT MG/L	*	*	.003	*	<0.001	*	*	*	*
COBALT, TOTAL MG/L	*	*	<0.01	*	<0.01	*	*	*	*
COPPER, TOTAL MG/L	.002	.003	<0.001	.004	.002	.003	.003	.003	.006
IRON, TOTAL MG/L	.08	.02	.12	.06	.08	.07	.05	.03	
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.050	.011	.091	.031	.024	.031	.026	.029	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*	<0.01	*	*	*	
NICKEL, TOTAL MG/L	*	*	<0.01	*	<0.01	*	*	*	

F-57

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.16.04.

STATION: G-2  
 PERIOD

02-08-78 03-01-78 05-03-78 08-01-78

METALS

ALUMINUM, TOTAL MG/L	*	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.004	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	.001	<0.001	<0.001
IRON, TOTAL MG/L	.04	.02	.05	.03
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.023	.023	.027	.038
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	<0.01	<0.01	<0.01

U-3

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 6-2 PERIOD	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77	11-02-77	12-07-77	01-05-78
ZINC • TOTAL MG/L	.004	.003	.007	<0.001	.012	.008	.008	.014
PHOSPHORUS								
ORTHOPHOSPHATE • DISSOLVED MG/L	*	*	<0.01	*	<0.01	*	*	*
PHOSPHORUS • TOTAL MG/L	*	*	.03	*	.01	*	*	*
NITROGEN								
NITROGEN • AMMONIA MG/L	*	*	.13	*	.24	*	*	*
NITROGEN • NITRATE MG/L	*	*	.16	*	<0.01	*	*	*
NITROGEN • NITRITE MG/L	*	*	<0.01	*	<0.01	*	*	*
NITROGEN • ORGANIC MG/L	*	*	7.97	*	1.76	*	*	*
SULFUR								
SULFATE MG/L	4	7	7	6	7	8	7	7
SULFIDE MG/L	<0.01	.03	.05	.02	<0.01	<0.01	<0.01	<0.01
SULFUR • TOTAL MG/L	1.32	2.34	2.36	2.00	2.33	2.64	2.31	2.31
SOLIDS								
SOLIDS • DISSOLVED MG/L	74	11	66	28	33	20	34	27
SOLIDS • SUSPENDED MG/L	2	1	4	2	7	5	1	1

F-59

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-2 PERIOD	02-08-78	03-01-78	05-03-78	08-01-78
ZINC, TOTAL MG/L	.003	.019	.007	.016
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	.04	.01	.01
NITROGEN				
NITROGEN, AMMONIA MG/L	*	.18	.12	.12
NITROGEN, NITRATE MG/L	*	.15	.05	<0.01
NITROGEN, NITRITE MG/L	*	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	1.12	.63	1.17
SULFUR				
SULFATE MG/L	8	7	6	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.67	2.33	1.98	1.98
SOLIDS				
SOLIDS, DISSOLVED MG/L	40	46	19	22
SOLIDS, SUSPENDED MG/L	1	2	3	5

F-50

TABLE F-5 (CONTINUED)  
WATER QUALITY DATA  
SUMMARY TABLE

STATION: G-2									
PERIOD		06-07-77	07-07-77	08-01-77	09-07-77	10-05-77	11-02-77	12-07-77	01-05-78
SOLIDS, SUSPENDED VOLATILE	MG/L	*	*	3	*	4	*	*	*
SOLIDS, TOTAL	MG/L	76	12	70	30	40	25	35	28
SOLIDS, VOLATILE	MG/L	*	*	10	*	15	*	*	*
BACTERIA									
FECAL COLIFORM BACTERIA	ORG/100 ML	*	*	0	*	0	*	*	*
FECAL STREPTOCOCCUS BACTERIA	ORG/100 ML	*	*	0	*	130	*	*	*
GENERAL PARAMETERS									
ALKALINITY, TOTAL	MG/L	2	8	8	3	6	4	4	<1
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C)	MG/L	*	*	2	*	2	*	*	*
CHEMICAL OXYGEN DEMAND	MG/L	*	*	*	*	*	*	*	*
CHLORIDE	MG/L	<1	2	<1	<1	4	2	<1	<1
COLOR, TRUE	COLOR UNITS	*	*	<1	*	<1	*	*	*
CONDUCTIVITY	UMHOS/CM	20	31	26	27	21	38	19	19
CYANIDE	MG/L	.002	.001	.002	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN	MG/L	3.0	11.6	10.5	7.6	7.9	10.2	12.2	8.4
FREELY EXTRACTABLE SUBSTANCES	PPM	3	<1	<1	<1	<1	1	<1	<1

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-2 PERIOD		02-08-78	03-01-78	05-03-78	08-01-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	<1	1	3	
SOLIDS, TOTAL MG/L	41	48	22	27	
SOLIDS, VOLATILE MG/L	*	24	11	19	
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	0	0	0	
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	0	0	0	
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L	2	2	4	<1	
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	2	1	2	
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	7	
CHLORIDE MG/L	<1	<1	<1	2	
COLOR, TRUE COLOR UNITS	*	<1	<1	<1	
CONDUCTIVITY UMHOS/CM	21	18	20	27	
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	
DISSOLVED OXYGEN MG/L	6.9	6.7	8.1	6.0	
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	1	<1	

F-62

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-2 PERIOD	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77	11-02-77	12-07-77	01-05-78
HARDNESS MG/L	6	8	20	8	24	16	4	12
PH STANDARD UNITS	6.6	6.0	6.0	5.8	6.0	6.0	6.1	5.9
PHENOL UG/L	4	3	<1	4	5	9	12	7
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	39	*	<10	*	*	*
TEMPERATURE DEGREES C	12.8	13.5	15.3	20.5	13.0	9.0	3.5	4.0
TRANSPARENCY (SECCHI DISC) METER	3.3	4.0	4.3	3.2	3.6	5.0	*	*
TURBIDITY FTU	1.4	1.1	2.1	1.6	1.2	1.9	1.1	.8

F-63

TABLE F-5 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 6-2 PERIOD	02-08-78	03-01-78	05-03-78	08-01-78
HARDNESS MG/L	12	8	12	8
PH STANDARD UNITS	6.0	5.3	5.4	5.4
PHENOL UG/L	8	8	2	13
SURFACTANTS (MBAS) • TOTAL UG/L	*	<10	<10	<10
TEMPERATURE DEGREES C	5.1	4.6	6.0	16.0
TRANSPARENCY (SECCHI DISC) METER	*	*	3.4	3.6
TURBIDITY FTU	.8	1.3	1.4	1.3



TABLE F-6  
 WATER QUALITY DATA, STATION F  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/02/78, 20.07.51.

STATION: F	-----								
PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77	-----
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	*	<0.001	<0.001	.001	.001	.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	*	<0.001	<0.001	<0.001	<0.001	.003	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.004	*	.014	.002	<0.001	.005	.001	.009	
IRON, TOTAL MG/L	.13	*	.22	.37	.60	.31	.41	.24	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.016	*	.103	.041	.139	.083	.126	.027	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-10

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/02/78. 20.07.51.

STATION: F	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78
PERIOD					
METALS					
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.001	.007	<0.001	.002	.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01
COPPER, TOTAL MG/L	.006	.002	<0.001	.005	<0.001
IRON, TOTAL MG/L	.22	.15	4.34	.16	.12
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.026	.018	.204	.017	.021
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01

45-3

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
ZINC, TOTAL MG/L	.003	*	.002	.010	<0.001	.004	<0.001	.011
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.05	*	.03	*	*	.03	*	<0.01
PHOSPHORUS, TOTAL MG/L	.05	*	.03	*	*	.11	*	.05
NITROGEN								
NITROGEN, AMMONIA MG/L	.15	*	.21	*	*	.24	*	.85
NITROGEN, NITRATE MG/L	.18	*	<0.01	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	<0.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.70	*	1.41	*	*	4.03	*	1.65
SULFUR								
SULFATE MG/L	2	*	5	2	<1	3	<1	<1
SULFIDE MG/L	*	*	<0.01	<0.01	<0.01	.07	.03	<0.01
SULFUR, TOTAL MG/L	.71	*	1.65	.66	<0.01	1.06	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	425	*	299	236	67	178	129	163
SOLIDS, SUSPENDED MG/L	5	*	14	4	1	2	1	<1

F-57

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78
ZINC, TOTAL MG/L	.005	.008	.032	.061	.004
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	.03
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	*	*	.20
NITROGEN, NITRATE MG/L	*	*	*	*	.15
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	1.56
SULFUR					
SULFATE MG/L	8	8	4	8	8
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	.01
SULFUR, TOTAL MG/L	2.64	2.64	1.32	2.67	2.67
SOLIDS					
SOLIDS, DISSOLVED MG/L	255	142	122	112	120
SOLIDS, SUSPENDED MG/L	?	3	28	4	12

F-6-1

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
SOLIDS,SUSPENDED VOLATILE MG/L	0	*	10	*	*	1	*	<1
SOLIDS,TOTAL MG/L	430	*	313	240	68	180	130	163
SOLIDS,VOLATILE MG/L	50	*	55	*	*	55	*	103
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	28	*	28	*	*	17	*	20
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	4	*	334	*	*	88	*	24
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	118	*	94	94	78	100	79	88
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	10	*	*	1	*	1
CHLORIDE MG/L	<1	*	4	<1	4	<1	2	6
COLOR,TRUE COLOR UNITS	<1	*	17	*	*	15	*	75
CONDUCTIVITY UMHDS/CM	130	*	150	163	173	175	140	130
CYANIDE MG/L	*	*	.002	.001	.002	.002	.002	<0.001
DISSOLVED OXYGEN MG/L	12.6	*	7.8	5.6	3.6	4.1	2.5	8.7
FREON EXTRACTABLE SUBSTANCES PPM	4	*	2	2	<1	<1	<1	1
HARDNESS MG/L	126	*	104	120	88	108	124	104

10-77

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	4
SOLIDS, TOTAL MG/L	257	145	150	116	132
SOLIDS, VOLATILE MG/L	*	*	*	*	112
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	8
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	2
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L	98	110	106	110	106
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	2
CHLORIDE MG/L	4	2	4	2	2
COLOR, TRUE COLOR UNITS	*	*	*	*	10
CONDUCTIVITY UMHOS/CM	140	135	157	115	45
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.2	9.2	2.8	8.7	9.0
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	<1	<1	<1
HARDNESS MG/L	96	108	108	102	112

F-70

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
PH STANDARD UNITS	7.3	*	7.6	7.6	7.3	6.6	7.2	7.2
PHENOL UG/L	8	*	7	6	<1	4	3	10
SURFACTANTS (MBAS), TOTAL UG/L	30	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	.5	*	10.5	16.5	25.0	18.9	17.0	6.8
TRANSPARENCY (SECCHI DISC) METER	*	*	1.5	.8	1.5	1.2	1.0	1.2
TURBIDITY FTU	1.2	*	2.2	1.5	1.3	1.3	1.0	1.8

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78
PH STANDARD UNITS	7.4	7.5	7.1	5.6	7.1
PHENOL UG/L	7	7	9	4	6
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10
TEMPERATURE DEGREES C	8.5	1.0	1.0	1.0	.5
TRANSPARENCY (SECCHI DISC) METER	1.0	*	*	*	*
TURBIDITY FTU	2.4	2.5	10.0	1.9	4.1



TABLE F-6  
 WATER QUALITY DATA, STATION N  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.19.30.

STATION: N	PERIOD								
	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	*	.001	<0.001	.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.009	*	.004	.001	.002	.005	.001	.005	
IRON, TOTAL MG/L	.12	*	.19	.26	.35	.12	.32	.24	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	.03	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.065	*	.071	.039	.057	.048	.088	.015	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.19.30.

F-74

STATION: N PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78	05-03-78	08-01-78	10-03-78
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	*	*	<0.001	<0.001	<0.001	<0.001	<0.001
CAESIUM, TOTAL MG/L	.002	*	*	<0.001	.006	<0.001	<0.001	.004
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.002	*	*	<0.001	.001	<0.001	<0.001	.002
IRON, TOTAL MG/L	.15	*	*	.11	.10	.11	.20	.31
LEAD, TOTAL MG/L	<0.01	*	*	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.027	*	*	.031	.039	.034	.024	.044
MERCURY, TOTAL UG/L	.1	*	*	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL	*	*	*	*	<0.01	<0.01	<0.01	<0.01

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
ZINC, TOTAL MG/L	.006	*	.001	.005	.004	.009	.003	.020
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.04	*	.03	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.04	*	.03	*	*	.04	*	.05
NITROGEN								
NITROGEN, AMMONIA MG/L	.21	*	.17	*	*	.30	*	1.24
NITROGEN, NITRATE MG/L	.24	*	.15	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.02	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.53	*	1.36	*	*	11.26	*	1.21
SULFUR								
SULFATE MG/L	3	*	6	2	<1	<1	<1	<1
SULFIDE MG/L	*	*	.01	<0.01	<0.01	.04	.03	.01
SULFUR, TOTAL MG/L	1.04	*	1.99	.66	<0.01	.04	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	656	*	258	262	67	142	119	134
SOLIDS, SUSPENDED MG/L	4	*	22	2	1	3	1	1

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78	05-03-78	08-01-78	10-03-78
ZINC, TOTAL MG/L	.019	*	*	.011	.013	.007	<0.001	.006
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	.01	.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.03	.02	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	.11	.35	.96	.88
NITROGEN, NITRATE MG/L	*	*	*	*	.29	.05	.19	.10
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.82	.57	.23	.31
SULFUR								
SULFATE MG/L	7	*	*	8	8	8	6	6
SULFIDE MG/L	<0.01	*	*	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.31	*	*	2.67	2.67	2.64	1.98	1.98
SOLIDS								
SOLIDS, DISSOLVED MG/L	188	*	*	107	162	88	125	130
SOLIDS, SUSPENDED MG/L	2	*	*	3	4	3	6	2

F-75

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	0	*	20	*	*	2	*	1
SOLIDS, TOTAL MG/L	660	*	280	264	68	145	120	135
SOLIDS, VOLATILE MG/L	130	*	60	*	*	30	*	113
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	42	*	5	*	*	25	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	354	*	*	138	*	8
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	118	*	96	91	<1	100	7	86
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	15	*	7	*	*	2	*	3
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	1	*	4	<1	2	<1	<1	6
COLOR, TRUE COLOR UNITS	<1	*	15	*	*	12	*	115
CONDUCTIVITY UMH/CM	205	*	150	175	182	175	150	122
CYANIDE MG/L	*	*	.001	.002	.004	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	2.8	*	7.8	7.6	4.7	5.7	4.2	8.3
HEAVY METAL EXTRACTABLE SUBSTANCES PPM	4	*	<1	7	<1	1	<1	<1

F-77

TABLF F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78	05-03-78	08-01-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	<1	2	4	2
SOLIDS, TOTAL MG/L	190	*	*	110	166	91	131	132
SOLIDS, VOLATILE MG/L	*	*	*	*	98	25	49	86
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	2	4	1	14
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	2	4	3	40
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	96	*	*	112	104	78	82	82
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	2	4	2	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	34	3
CHLORIDE MG/L	2	*	*	2	2	2	2	4
COLOR, TRUE COLOR UNITS	*	*	*	*	5	30	75	70
CONDUCTIVITY UMHOS/CM	140	*	*	40	172	110	146	123
CYANIDE MG/L	<0.001	*	*	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.8	*	*	8.4	8.2	9.5	6.4	5.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	*	*	<1	<1	<1	<1	<1

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	03-02-77	04-02-77	05-10-77	06-07-77	07-07-77	08-01-77	09-07-77	10-04-77
HARDNESS MG/L	142	*	100	104	84	102	96	100
PH STANDARD UNITS	6.8	*	7.6	8.2	8.2	7.4	7.2	7.2
PHENOL UG/L	21	*	10	3	1	4	8	10
SURFACTANTS (MBAS) TOTAL UG/L	<10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	.5	*	12.0	16.5	26.0	18.0	17.0	7.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.8	.6	.5	.9	.9	.8
TURBIDITY FTU	1.5	*	2.0	1.7	1.2	1.4	1.2	1.0

TABLE F-6 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-03-77	12-07-77	01-05-78	02-07-78	03-01-78	05-03-78	08-01-78	10-03-78
HARDNESS MG/L	96	*	*	108	120	88	88	92
PH STANDARD UNITS	7.6	*	*	5.8	7.4	7.1	7.6	6.7
PHENOL UG/L	10	*	*	10	15	9	7	7
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	*	*	<10	<10	<10	<10
TEMPERATURE DEGREES C	9.0	*	*	1.0	1.0	8.5	17.0	11.0
TRANSPARENCY (SECCHI DISC) METER	.9	*	*	*	*	.9	1.2	.8
TURBIDITY FTU	2.3	*	*	1.4	1.8	1.6	.9	2.2



TABLE F-7  
 WATER QUALITY DATA, STATION M-2  
 SUMMARY TABLE  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.18.41.

STATION: M-2	PERIOD								
	10-05-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	.005	.003	.002	.001	.003	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	<0.001	.003	.002	<0.001	<0.001	.001	<0.001	<0.001	
IRON, TOTAL MG/L	.04	.07	.20	.12	.40	.41	.38	.07	
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.014	.036	.038	.018	.224	.204	.182	.016	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

F-21

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.18.41.

STATION: M-2  
 PERIOD

06-07-78 07-06-78 08-02-78 09-07-78

METALS

ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	.002
IRON, TOTAL MG/L	.10	.05	.05	.12
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.020	.013	.013	.031
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

F-42

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	10-05-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
ZINC, TOTAL MG/L	.004	.012	.015	.009	.004	.005	.005	.008
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.06	*	*	*	*	.01	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.49	*	*	*	*	.95	*	.30
NITROGEN, NITRATE MG/L	<0.01	*	*	*	*	.24	*	.05
NITROGEN, NITRITE MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	6.31	*	*	*	*	.85	*	1.12
SULFUR								
SULFATE MG/L	<1	7	7	7	8	6	6	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	2.31	2.31	2.31	2.68	2.00	1.98	2.31
SOLIDS								
SOLIDS, DISSOLVED MG/L	118	101	111	142	94	156	156	103
SOLIDS, SUSPENDED MG/L	7	4	1	6	3	4	13	1

F-13

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
ZINC, TOTAL MG/L	.004	.001	.008	.007
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	<0.01	*
PHOSPHORUS, TOTAL MG/L	*	*	.04	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	.48	*
NITROGEN, NITRATE MG/L	*	*	<0.01	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	1.68	*
SULFUR				
SULFATE MG/L	6	7	3	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.98	2.31	.99	1.98
SOLIDS				
SOLIDS, DISSOLVED MG/L	102	106	202	112
SOLIDS, SUSPENDED MG/L	4	4	5	6

F-34

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	10-05-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
SOLIDS,SUSPENDED VOLATILE MG/L	5	*	*	*	*	4	*	1
SOLIDS,TOTAL MG/L	125	105	112	148	97	160	169	104
SOLIDS,VOLATILE MG/L	83	*	*	*	*	84	*	51
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	0	*	*	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	*	*	*	0	*	0
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	72	82	72	88	102	108	110	72
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	*	*	*	3	*	3
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	2	<1	<1	2	<1	2	<1
COLOR,TRUE COLOR UNITS	25	*	*	*	*	50	*	40
CONDUCTIVITY UMHOS/CM	108	110	*	95	118	50	138	112
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.1	10.0	13.2	10.2	1.6	2.4	1.6	12.5
FREON EXTRACTABLE SUBSTANCES PPM	1	1	1	<1	<1	1	1	<1

F-145

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	3	*
SOLIDS, TOTAL MG/L	106	110	207	118
SOLIDS, VOLATILE MG/L	*	*	139	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	0	*
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	72	74	68	72
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	3	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	31	*
CHLORIDE MG/L	2	<1	2	2
COLOR, TRUE COLOR UNITS	*	*	40	*
CONDUCTIVITY UMHOS/CM	140	45	130	140
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.3	7.5	7.9	9.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	10-05-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
HARDNESS MG/L	84	96	92	92	96	116	116	84
PH STANDARD UNITS	8.7	8.0	7.6	7.4	6.0	6.7	7.0	7.8
PHENOL UG/L	7	6	8	6	13	7	7	7
SURFACTANTS (MBAS) TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	11.5	7.5	3.5	2.5	1.8	1.5	4.1	10.0
TRANSPARENCY (SECCHI DISC) METER	1.2	*	*	*	*	*	*	1.9
TURBIDITY FTU	2.4	2.6	1.4	3.5	1.6	3.1	2.0	1.9

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-2 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
HARDNESS MG/L	76	80	80	80
PH STANDARD UNITS	7.5	8.4	8.8	8.0
PHENOL UG/L	9	8	3	2
SURFACTANTS (MBAS), TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	19.0	23.0	20.0	22.0
TRANSPARENCY (SECCHI DISC) METER	2.0	1.5	*	1.3
TURBIDITY FTU	2.1	2.4	1.2	1.7

F-84



TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA, STATION M-4  
 SUMMARY TABLE  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.25.35.

STATION: M-4	PERIOD								
	10-10-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.002	.002	.001	<0.001	.003	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	<0.001	<0.001	.001	<0.001	.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.06	.05	.09	.11	.16	.38	.46	.05	
LEAD, TOTAL MG/L	<0.01	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.009	.009	.004	.044	.108	.199	.135	.011	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

F-113

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.25.35.

---

STATION: M-4	06-07-78	07-06-78	08-02-78	09-07-78
PERIOD				

---

METALS

ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.002	<0.001	.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.07	.15	.03	.11
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.010	.039	.017	.035
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

10-10

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	10-10-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
ZINC, TOTAL MG/L	.013	.006	.003	.009	.009	.009	.018	.013
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.05	*	*	*	*	.02	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.34	*	*	*	*	1.09	*	.37
NITROGEN, NITRATE MG/L	.15	*	*	*	*	.34	*	.24
NITROGEN, NITRITE MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.79	*	*	*	*	1.09	*	.90
SULFUR								
SULFATE MG/L	7	6	8	7	8	7	5	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.33	1.98	2.64	2.31	2.67	2.33	1.65	2.31
SOLIDS								
SOLIDS, DISSOLVED MG/L	153	113	83	154	97	148	157	106
SOLIDS, SUSPENDED MG/L	2	2	2	4	2	12	12	2

F-31

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
ZINC, TOTAL MG/L	.006	.003	.005	.006
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	<0.01	*
PHOSPHORUS, TOTAL MG/L	*	*	.04	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	.42	*
NITROGEN, NITRATE MG/L	*	*	<0.01	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	1.54	*
SULFUR				
SULFATE MG/L	6	6	5	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.98	1.98	1.65	1.98
SOLIDS				
SOLIDS, DISSOLVED MG/L	90	87	94	110
SOLIDS, SUSPENDED MG/L	6	4	8	7

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	10-10-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
SOLIDS, SUSPENDED VOLATILE MG/L	1	*	*	*	*	8	*	.1
SOLIDS, TOTAL MG/L	155	115	85	158	99	160	169	108
SOLIDS, VOLATILE MG/L	75	*	*	*	*	102	*	67
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	0	*	*	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	24	*	*	*	*	0	*	0
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	80	78	88	94	106	114	114	82
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	*	*	*	3	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	4	4	<1	<1	2	2	2	2
COLOR, TRUE COLOR UNITS	30	*	*	*	*	40	*	40
CONDUCTIVITY UMHOS/CM	108	110	105	105	115	25	148	125
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.0	10.4	10.0	6.4	3.4	4.2	1.1	12.8
FREON EXTRACTABLE SUBSTANCES PPM	2	1	1	<1	<1	<1	1	<1

F-93

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	6	*
SOLIDS, TOTAL MG/L	96	91	102	117
SOLIDS, VOLATILE MG/L	*	*	38	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	1	*
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	70	74	70	74
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	5	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	31	*
CHLORIDE MG/L	<1	<1	2	2
COLOR, TRUE COLOR UNITS	*	*	50	*
CONDUCTIVITY UMHOS/CM	137	165	133	140
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.9	4.6	9.0	8.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	1	<1	<1

F-34

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	10-10-77	11-02-77	12-07-77	01-05-78	02-08-78	03-01-78	04-04-78	05-04-78
HARDNESS MG/L	84	84	92	100	102	124	120	88
PH STANDARD UNITS	8.7	8.2	7.8	7.3	5.7	6.8	7.1	7.8
PHENOL UG/L	6	8	11	2	4	1	5	11
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	6.5	8.0	1.0	2.0	1.8	1.0	4.8	12.0
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*	*	*	*	1.9
TURBIDITY FTU	1.9	2.4	1.0	2.6	.9	4.5	1.5	2.1

TABLE F-7 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-4 PERIOD	06-07-78	07-06-78	08-02-78	09-07-78
HARDNESS MG/L	80	88	72	80
PH STANDARD UNITS	7.8	8.0	9.0	8.2
PHENOL UG/L	9	4	5	2
SURFACTANTS (MBAS), TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	20.0	20.0	20.0	22.0
TRANSPARENCY (SECCHI DISC) METER	1.8	1.5	*	1.5
TURBIDITY FTU	2.2	3.0	1.3	1.6

11  
10  
9



TABLE F-8  
 WATER QUALITY DATA  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78. 20.09.13.

STATION: J	03-02-77	04-02-77	05-09-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
PERIOD								
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	.030	*	<0.001
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	92	.004	.005	.002	.001	.009	.003	.012
IRON, TOTAL MG/L	.38	.08	.11	.16	.28	.73	.25	.14
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.280	.057	.066	.106	.093	.081	.078	.027
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01

F-47

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78. 20.09.13.

STATION: J					
PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-01-78
METALS					
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.005	.003	.003	.002	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01
COPPER, TOTAL MG/L	.007	.001	<0.001	<0.001	.002
IRON, TOTAL MG/L	.25	.15	.79	1.30	1.20
LEAD, TOTAL MG/L	.02	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.034	.018	.714	.724	.600
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01
NICKEL, TOTAL L	*	*	*	*	<0.01

16-7

TABLE F-4 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
ZINC, TOTAL MG/L	.006	.004	.010	.007	.004	.013	.004	.011
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.53	*	.02	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.54	*	.10	*	*	.07	*	.07
NITROGEN								
NITROGEN, AMMONIA MG/L	1.96	*	.94	*	*	.61	*	1.27
NITROGEN, NITRATE MG/L	<0.01	*	<0.01	*	*	.21	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.02	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.53	*	1.79	*	*	6.86	*	2.33
SULFUR								
SULFATE MG/L	<1	<1	<1	<1	<1	<1	<1	<1
SULFIDE MG/L	*	*	.01	<0.01	<0.01	.04	.03	<0.01
SULFUR, TOTAL MG/L	.38	.12	<0.01	.33	<0.01	.04	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	310	16	35	12	5	81	53	72
SOLIDS, SUSPENDED MG/L	20	12	12	2	1	4	2	8

F-37

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-01-78
ZINC, TOTAL MG/L	.007	.010	.025	.007	.014
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	.23
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	*	*	3.06
NITROGEN, NITRATE MG/L	*	*	*	*	.63
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	5.00
SULFUR					
SULFATE MG/L	<1	1	1	<1	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	.33	.33	<0.01	<0.01
SOLIDS					
SOLIDS, DISSOLVED MG/L	60	32	64	39	90
SOLIDS, SUSPENDED MG/L	2	8	11	56	24

F-10)

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
SOLIDS,SUSPENDED VOLATILE MG/L	14	*	2	*	*	3	*	4
SOLIDS,TOTAL MG/L	330	28	47	14	6	85	55	80
SOLIDS,VOLATILE MG/L	90	*	7	*	*	20	*	55
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	48	*	28	*	*	52	*	2
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	16	*	67	*	*	9	*	0
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	20	4	6	4	6	6	9	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	11	*	10	*	*	2	*	2
CHLORIDE MG/L	1	<1	2	<1	2	<1	<1	2
COLOR,TRUE COLOR UNITS	100	*	110	*	*	84	*	110
CONDUCTIVITY UMHOS/CM	38	20	20	16	38	20	25	20
CYANIDE MG/L	*	.001	.003	.006	.002	.003	.004	<0.001
DISSOLVED OXYGEN MG/L	*	*	8.6	5.5	4.4	3.4	3.0	9.8
FREON EXTRACTABLE SUBSTANCES PPM	2	7	7	3	<1	<1	3	<1
HARDNESS MG/L	26	4	32	4	12	8	8	4

101-3

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-01-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	*	*	22
SOLIDS,TOTAL MG/L	62	40	75	95	114
SOLIDS,VOLATILE MG/L	*	*	*	*	54
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	2
GENERAL PARAMETERS					
ALKALINITY,TOTAL MG/L	10	4	12	20	30
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	13
CHLORIDE MG/L	2	2	2	2	2
COLOR,TRUE COLOR UNITS	*	*	*	*	190
CONDUCTIVITY UMHOS/CM	19	20	30	40	45
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.5	7.3	.7	2.7	.4
FREON EXTRACTABLE SUBSTANCES PPM	2	1	1	<1	<1
HARDNESS MG/L	24	4	20	20	24

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-07-77	08-01-77	09-07-77	10-05-77
PH STANDARD UNITS	*	6.6	6.0	5.4	5.8	5.2	5.8	6.0
PHENOL UG/L	13	9	8	<1	1	10	12	14
SURFACTANTS (MBAS) * TOTAL UG/L	10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	.8	2.0	10.0	15.5	26.0	19.5	17.0	9.0
TRANSPARENCY (SECCHI DISC) METER	*	*	1.1	.9	1.0	.9	.9	1.0
TURBIDITY FTU	*	3.4	1.5	1.3	1.5	1.6	1.4	.9

TABLE F-8 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-01-77	12-07-77	01-05-78	02-08-78	03-01-78
PH STANDARD UNITS	6.0	6.3	5.8	5.4	5.8
PHENOL UG/L	11	9	14	11	57
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10
TEMPERATURE DEGREES C	8.0	1.0	2.5	1.0	1.0
TRANSPARENCY (SECCHI DISC) METER	.8	*	*	*	*
TURBIDITY FTU	1.2	3.5	3.7	8.7	5.7



TABLE F-9  
 WATER QUALITY DATA, STATION M-3  
 SUMMARY TABLE  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.26.14.

STATION: M-3	-----								
PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.003	<0.001	<0.001	<0.001	.004	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	*	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.010	.002	<0.001	.006	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.28	.22	.37	.30	.26	.12	.21	.11	
LEAD, TOTAL MG/L	<0.01	.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.045	.047	.057	.201	.098	.064	.042	.020	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.26.14.

STATION: M-3  
 PERIOD

06-06-78 07-06-78 08-01-78 09-06-78

METALS

ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	.004
IRON, TOTAL MG/L	.28	.24	.40	.38
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.006	.053	.056	.141
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
ZINC, TOTAL MG/L	.010	.004	.005	.007	<0.001	.004	.007	.007
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	*	*	.06	*	.02
PHOSPHORUS, TOTAL MG/L	.07	*	*	*	*	.09	*	.02
NITROGEN								
NITROGEN, AMMONIA MG/L	1.35	*	*	*	*	.84	*	.82
NITROGEN, NITRATE MG/L	<0.01	*	*	*	*	.10	*	.10
NITROGEN, NITRITE MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.20	*	*	*	*	1.86	*	.96
SULFUR								
SULFATE MG/L	<1	2	<1	7	6	7	9	9
SULFIDE MG/L	<0.01	.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	.68	<0.01	2.31	2.00	2.33	2.97	2.97
SOLIDS								
SOLIDS, DISSOLVED MG/L	143	140	162	144	172	210	102	106
SOLIDS, SUSPENDED MG/L	2	5	3	11	1	6	13	4

101-4

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
ZINC, TOTAL MG/L	.006	.006	.006	.002
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	.02	*
PHOSPHORUS, TOTAL MG/L	*	*	.06	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	.60	*
NITROGEN, NITRATE MG/L	*	*	.19	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	2.87	*
SULFUR				
SULFATE MG/L	1	<1	1	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	.33	<0.01	.33	<0.01
SOLIDS				
SOLIDS, DISSOLVED MG/L	84	105	153	166
SOLIDS, SUSPENDED MG/L	3	6	5	3

F-108

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	2	*	*	*	*	6	*	3
SOLIDS, TOTAL MG/L	145	145	165	155	173	216	115	110
SOLIDS, VOLATILE MG/L	85	*	*	*	*	84	*	48
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	34	*	*	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	20	*	*	*	*	0	*	6
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	80	88	100	104	138	130	58	46
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	*	*	*	*	4	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	2	<1	2	2	<1	2	2
COLOR, TRUE COLOR UNITS	110	*	*	*	*	5	*	65
CONDUCTIVITY UMHOS/CM	113	119	150	92	142	185	80	82
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	4.5	8.6	6.5	6.2	5.9	6.2	9.0	6.8
PHEON EXTRACTABLE SUBSTANCES PPM	1	1	<1	1	<1	1	1	<1

F-109

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	3	*
SOLIDS,TOTAL MG/L	87	111	158	169
SOLIDS,VOLATILE MG/L	*	*	110	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	49	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	17	*
GENERAL PARAMETERS				
ALKALINITY,TOTAL MG/L	54	70	54	90
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	2	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	69	*
CHLORIDE MG/L	<1	<1	2	2
COLOR,TRUE COLOR UNITS	*	*	170	*
CONDUCTIVITY UMHOS/CM	110	140	98	165
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	6.4	3.9	4.3	3.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-110

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
HARDNESS MG/L	88	108	96	112	138	132	64	60
PH STANDARD UNITS	7.1	7.2	7.2	7.2	5.8	7.1	7.3	6.8
PHENOL UG/L	15	12	4	9	9	4	4	12
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	7.0	6.5	0.	2.9	.9	2.0	3.0	11.5
TRANSPARENCY (SECCHI DISC) METER	.3	.2	*	*	*	*	*	.2
TURBIDITY FTU	1.1	1.7	1.9	5.7	1.4	1.5	3.1	1.6

TABLE F-9 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
HARDNESS MG/L	76	76	64	104
PH STANDARD UNITS	6.3	6.9	6.8	6.6
PHENOL UG/L	2	3	15	3
SURFACTANTS (MBAS), TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	20.0	23.0	23.0	20.2
TRANSPARENCY (SECCHI DISC) METER	.3	.8	.5	.3
TURBIDITY FTU	1.0	1.4	.8	.8

F-112



TARLE F-10  
 WATER QUALITY DATA, STATION M-1  
 SUMMARY TABLE  
 MARCH 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/19/78. 20.11.06.

STATION: M-1	PERIOD								
	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	.001	<0.001	.001	<0.001	<0.001	.001	.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	.002	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.003	.032	.004	.001	.002	.005	.004	.007	
IRON, TOTAL MG/L	.08	.05	.05	.04	.05	.06	.06	.07	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.016	.010	.008	.021	.021	.018	.018	.027	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-1113

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/19/78. 20.11.06.

STATION: M-1 PERIOD	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78	06-07-78
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.003	<0.001	.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
COPPER, TOTAL MG/L	.011	<0.001	.023	.002	.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.06	.07	.32	.12	.03	.23	.08	.17
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.019	.023	.124	.013	.003	.079	.013	.077
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	*	<0.01	*

\* 11-1

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/19/78. 20.11.06.

STATION: M-1  
 PERIOD

07-06-78 08-01-78 09-07-78

METALS

	07-06-78	08-01-78	09-07-78
ALUMINUM, TOTAL MG/L	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.002	<0.001	.001
CHROMIUM, HEXAVALENT MG/L	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	*	<0.001	*
COBALT, TOTAL MG/L	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.19	.19	.14
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.033	.024	.017
MERCURY, TOTAL MG/L	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	<0.01	*
NICKEL, TOTAL MG/L	*	<0.01	*

F-1113

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.065	.005	.003	.001	.002	.004	.004	.001
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.05	*	.04	*	*	.02	*	<0.01
PHOSPHORUS, TOTAL MG/L	.05	*	.04	*	*	.04	*	.07
NITROGEN								
NITROGEN, AMMONIA MG/L	.10	*	<0.05	*	*	.18	*	.47
NITROGEN, NITRATE MG/L	.55	*	.15	*	*	.05	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.21	*	1.52	*	*	5.76	*	1.23
SULFUR								
SULFATE MG/L	3	14	10	7	2	<1	<1	<1
SULFIDE MG/L	*	*	<0.01	.01	.03	.04	.03	.01
SULFUR, TOTAL MG/L	1.05	4.69	3.30	2.32	.69	.04	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	453	170	316	130	66	178	133	159
SOLIDS, SUSPENDED MG/L	7	6	4	14	1	2	2	1

F-115

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD		11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78	06-07-78
ZINC, TOTAL MG/L		.008	.009	.012	.007	.007	.006	.007	.008
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED MG/L		*	*	*	*	.02	*	<0.01	*
PHOSPHORUS, TOTAL MG/L		*	*	*	*	.02	*	.02	*
NITROGEN									
NITROGEN, AMMONIA MG/L		*	*	*	*	.05	*	.54	*
NITROGEN, NITRATE MG/L		*	*	*	*	.15	*	.15	*
NITROGEN, NITRITE MG/L		*	*	*	*	<0.01	*	<0.01	*
NITROGEN, ORGANIC MG/L		*	*	*	*	.47	*	.13	*
SULFUR									
SULFATE MG/L		8	7	8	9	8	12	9	6
SULFIDE MG/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L		2.64	2.31	2.64	3.00	2.67	3.96	2.97	1.98
SOLIDS									
SOLIDS, DISSOLVED MG/L		170	145	124	155	168	145	125	117
SOLIDS, SUSPENDED MG/L		2	5	36	3	2	21	2	5

F-1117

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	07-06-78	08-01-78	09-07-78
ZINC, TOTAL MG/L	.003	.009	.004
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	*	.02	*
PHOSPHORUS, TOTAL MG/L	*	.03	*
NITROGEN			
NITROGEN, AMMONIA MG/L	*	1.01	*
NITROGEN, NITRATE MG/L	*	.10	*
NITROGEN, NITRITE MG/L	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	.35	*
SULFUR			
SULFATE MG/L	7	7	6
SULFIDE MG/L	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.31	2.31	1.98
SOLIDS			
SOLIDS, DISSOLVED MG/L	140	145	145
SOLIDS, SUSPENDED MG/L	4	6	4

F-1111

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	0	*	2	*	*	1	*	1
SOLIDS, TOTAL MG/L	460	176	320	144	67	180	135	160
SOLIDS, VOLATILE MG/L	80	*	53	*	*	35	*	93
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	33	*	0	*	*	38	*	40
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	108	*	*	117	*	14
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	108	91	110	102	110	120	114	104
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	9	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	<1	1	<1	<1	<1	2	<1
COLOR, TRUE COLOR UNITS	<1	*	20	*	*	10	*	25
CONDUCTIVITY UMHOS/CM	135	120	135	130	185	165	*	142
CYANIDE MG/L	*	.001	.002	.003	.001	.002	<0.001	<0.001
DISSOLVED OXYGEN MG/L	5.2	12.6	12.4	12.8	9.0	12.8	8.1	9.1
FREON EXTRACTABLE SUBSTANCES PPM	2	7	4	6	<1	<1	2	<1

6111

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78	06-07-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	<1	*	1	*
SOLIDS, TOTAL MG/L	172	150	160	158	170	166	127	122
SOLIDS, VOLATILE MG/L	*	*	*	*	156	*	42	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0	*	2	*
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	114	114	108	114	118	84	58	80
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1	*	1	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	<1	<1	2	2	2	2	<1
COLOR, TRUE COLOR UNITS	*	*	*	*	5	*	40	*
CONDUCTIVITY UMHOS/CM	147	152	62	128	173	100	82	120
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	11.7	9.8	8.0	13.7	7.8	12.6	11.4	9.6
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	1	2	<1	<1	1	<1

F-10



TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	07-06-78	08-01-78	09-07-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	4	*
SOLIDS, TOTAL MG/L	144	151	149
SOLIDS, VOLATILE MG/L	*	81	*
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	*	1	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	21	*
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	86	72	94
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	1	*
CHEMICAL OXYGEN DEMAND MG/L	*	31	*
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	*	95	*
CONDUCTIVITY UMHOS/CM	140	113	150
CYANIDE MG/L	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.7	7.6	9.3
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

F-101

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
HARDNESS MG/L	126	102	124	100	120	122	116	124
PH STANDARD UNITS	7.5	7.5	7.8	7.8	7.7	8.0	7.8	7.6
PHENOL UG/L	7	7	3	1	3	5	3	5
SURFACTANTS (MBAS) • TOTAL UG/L	10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	1.6	1.0	5.0	6.0	23.9	12.0	11.0	5.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.5	.5	1.0	.5	.5	.9
TURBIDITY FTU	1.5	.9	.3	1.1	1.0	.9	.6	.8

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE.

STATION: M-1 PERIOD	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78	06-07-78
HARDNESS MG/L	136	112	116	108	120	92	64	88
PH STANDARD UNITS	7.8	7.8	6.8	5.8	7.7	7.4	6.9	6.6
PHENOL UG/L	<1	7	5	8	3	5	8	3
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	*	<10	*
TEMPERATURE DEGREES C	5.5	.5	3.0	0.	1.3	1.6	7.0	12.0
TRANSPARENCY (SECCHI DISC) METER	.3	*	*	*	*	*	.3	.3
TURBIDITY FTU	.8	1.3	5.0	.4	.6	2.5	.9	1.9

TABLE F-10 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	07-06-78	08-01-78	09-07-78
HARDNESS MG/L	92	80	104
PH STANDARD UNITS	7.4	7.4	7.6
PHENOL UG/L	12	14	2
SURFACTANTS (MBAS) TOTAL UG/L	*	<10	*
TEMPERATURE DEGREES C	14.5	14.0	13.5
TRANSPARENCY (SECCHI DISC) METER	.5	.6	.4
TURBIDITY FTU	1.1	.6	.4

F-1124

TABLE F-11  
 WATER QUALITY DATA, STATION A-1  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.25.33.

STATION: A-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	.001	<0.001	.001	<0.001	.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	.004	*	<0.001
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	.01	*	<0.01
COPPER, TOTAL MG/L	.009	.017	.007	<0.001	.004	.003	.011	.009
IRON, TOTAL MG/L	.02	.34	.04	.37	.27	.22	.11	.05
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.012	.005	.023	.196	.049	.026	.014	.012
MERCURY, TOTAL UG/L	.2	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.25.33.

STATION: A-1 PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.001	.001	.002	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.002	<0.001	.003	.002	.003	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.04	.06	.02	.05	.02	.06	.12	.04
LEAD, TOTAL MG/L	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.019	.011	.006	.009	.009	.016	.032	.013
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
POLYBROMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.002	.005	.002	.011	.008	.007	<0.001	.014
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.02	*	<0.01	*	*	.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.03	*	.04	*	*	.03	*	.01
NITROGEN								
NITROGEN, AMMONIA MG/L	.09	*	<0.05	*	*	.22	*	.31
NITROGEN, NITRATE MG/L	.48	*	<0.01	*	*	.21	*	.31
NITROGEN, NITRITE MG/L	*	*	.02	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.36	*	1.42	*	*	4.81	*	2.62
SULFUR								
SULFATE MG/L	2	2	6	<1	<1	8	<1	<1
SULFIDE MG/L	*	*	<0.01	.02	.04	.04	.03	<0.01
SULFUR, TOTAL MG/L	.71	.68	1.98	.35	.04	2.68	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	384	100	271	95	58	174	114	144
SOLIDS, SUSPENDED MG/L	6	4	16	50	2	6	1	4

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
ZINC, TOTAL MG/L	.007	.005	.006	.001	.001	.005	.002	.008
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	.03	.02	.01	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	.06	.19	.45	.94
NITROGEN, NITRATE MG/L	*	*	*	*	.19	.05	<0.01	.15
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	1.25	.89	.33	.46
SULFUR								
SULFATE MG/L	5	3	6	5	8	9	6	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.65	.99	1.98	1.67	2.67	2.97	1.98	1.98
SOLIDS								
SOLIDS, DISSOLVED MG/L	152	135	106	142	164	120	144	138
SOLIDS, SUSPENDED MG/L	8	5	1	3	14	4	9	3

F-124



TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	2	*	14	*	*	2	*	4
SOLIDS, TOTAL MG/L	390	104	287	145	60	180	115	148
SOLIDS, VOLATILE MG/L	70	*	64	*	*	70	*	90
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	22	*	39	*	*	74	*	52
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	2	*	530	*	*	155	*	36
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	130	55	112	90	90	96	92	98
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	5	*	*	2	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	2	2	<1	<1	<1	<1	2
COLOR, TRUE COLOR UNITS	<1	*	25	*	*	10	*	40
CONDUCTIVITY UMHOS/CM	90	85	150	140	161	160	*	125
CYANIDE MG/L	*	.005	.002	.001	.001	.001	.001	<0.001
DISSOLVED OXYGEN MG/L	*	8.8	9.7	3.2	5.0	6.7	14.4	12.2
FREON EXTRACTABLE SUBSTANCES PPM	2	5	14	3	<1	<1	<1	<1

F-1122

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	8	2	7	2
SOLIDS, TOTAL MG/L	160	140	107	145	178	124	153	141
SOLIDS, VOLATILE MG/L	*	*	*	*	48	9	49	79
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0	8	26	30
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0	10	10	20
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	110	120	112	118	120	94	94	86
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	3	1	2	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	14	3
CHLORIDE MG/L	2	2	<1	2	<1	2	<1	2
COLOR, TRUE COLOR UNITS	*	*	*	*	10	20	20	60
CONDUCTIVITY UMHOS/CM	*	160	112	150	155	128	145	150
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.5	11.9	12.2	12.1	9.4	10.2	5.2	9.4
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	1	<1	<1	<1	<1	<1

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
HARDNESS MG/L	138	74	120	94	88	108	96	96
PH STANDARD UNITS	7.9	7.7	8.1	6.8	7.4	7.3	7.8	7.5
PHENOL UG/L	7	10	5	5	4	5	4	13
SURFACTANTS (MBAS) • TOTAL UG/L	<10	*	<10	*	*	25	*	20
TEMPERATURE DEGREES C	0.	2.0	7.0	13.5	22.0	19.0	15.0	8.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.8	1.4	.5	.9	.6	.5
TURBIDITY FTU	3.5	1.6	2.3	2.5	2.4	1.3	1.3	2.4

TABLE F-11 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
HARDNESS MG/L	132	116	120	120	128	100	92	92
PH STANDARD UNITS	7.6	7.8	7.8	5.8	7.8	7.1	7.4	6.9
PHENOL UG/L	10	3	5	2	4	14	5	3
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	<10	<10	<10
TEMPERATURE DEGREES C	7.0	.5	1.0	1.5	.5	8.5	15.0	12
TRANSPARENCY (SECCHI DISC) METER	.5	*	*	*	*	.6	.5	1.0
TURBIDITY FTU	5.7	4.4	4.8	2.8	3.6	1.6	.6	3.7

TABLE F-12  
 WATER QUALITY DATA, STATION C  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/29/78. 20.13.48.

STATION: C	PERIOD								
	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.002	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	.002	*	<0.001	*	*	.004	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.005	.016	.001	.006	.004	.007	.001	.003	
IRON, TOTAL MG/L	.26	.08	.05	.10	.15	.17	.10	.08	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.110	.006	.024	.026	.026	.031	.027	.025	
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/29/78. 20.13.48.

---

STATION: C					
PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78

---

METALS

F-12A

ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.001	.004	<0.001	<0.001	.003
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01
COPPER, TOTAL MG/L	.003	.009	<0.001	.006	<0.001
IRON, TOTAL MG/L	.34	.15	.05	.05	.04
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.013	.018	.007	.007	.011
MERCURY, TOTAL UG/L	.2	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: C PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.001	.009	<0.001	.006	<0.001	.003	.003	.011
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.06	*	<0.01	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.06	*	.02	*	*	.02	*	.01
NITROGEN								
NITROGEN, AMMONIA MG/L	.20	*	<0.05	*	*	.19	*	.15
NITROGEN, NITRATE MG/L	.84	*	<0.01	*	*	.53	*	.25
NITROGEN, NITRITE MG/L	*	*	<0.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.34	*	2.17	*	*	2.97	*	1.75
SULFUR								
SULFATE MG/L	1	4	5	2	8	7	4	7
SULFIDE MG/L	*	*	<0.01	.01	.03	.05	.01	<0.01
SULFUR, TOTAL MG/L	.37	1.34	1.65	.67	2.67	2.36	1.33	2.33
SOLIDS								
SOLIDS, DISSOLVED MG/L	388	58	325	232	29	158	123	137
SOLIDS, SUSPENDED MG/L	12	10	2	16	4	2	2	3

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: C PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78
ZINC, TOTAL MG/L	.003	.009	.005	.004	.004
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	*	*	.10
NITROGEN, NITRATE MG/L	*	*	*	*	.05
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.74
SULFUR					
SULFATE MG/L	6	7	7	8	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.98	2.31	2.31	2.67	2.33
SOLIDS					
SOLIDS, DISSOLVED MG/L	176	125	136	113	122
SOLIDS, SUSPENDED MG/L	4	2	1	1	4

F-134



TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: C PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS,SUSPENDED VOLATILE MG/L	5	*	4	*	*	1	*	3
SOLIDS,TOTAL MG/L	400	68	327	248	33	160	125	140
SOLIDS,VOLATILE MG/L	90	*	50	*	*	55	*	73
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	30	*	4	*	*	64	*	8
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	6	*	46	*	*	165	*	10
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	110	65	82	83	88	88	90	88
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	*	6	*	*	1	*	1
CHLORIDE MG/L	<1	2	5	2	4	4	2	2
COLOR,TRUE COLOR UNITS	<1	*	20	*	*	<1	*	5
CONDUCTIVITY UMHOS/CM	122	90	130	125	165	165	*	140
CYANIDE MG/L	*	.002	.002	.002	.001	.001	.001	<0.001
DISSOLVED OXYGEN MG/L	*	14.2	12.4	9.2	9.8	9.4	9.1	14.0
FREON EXTRACTABLE SUBSTANCES PPM	2	6	7	4	<1	<1	<1	<1
HARDNESS MG/L	118	69	108	88	88	92	92	100

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: C PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	*	*	2
SOLIDS,TOTAL MG/L	180	127	137	114	126
SOLIDS,VOLATILE MG/L	*	*	*	*	68
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0
GENERAL PARAMETERS					
ALKALINITY,TOTAL MG/L	84	96	88	94	94
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1
CHLORIDE MG/L	4	2	2	4	2
COLOR,TRUE COLOR UNITS	*	*	*	*	10
CONDUCTIVITY UMHOS/CM	130	151	110	105	150
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.4	11.8	15.8	16.0	13.0
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	2	<1	<1
HARDNESS MG/L	80	92	92	90	104

E-138

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: C PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
PH STANDARD UNITS	7.4	7.8	7.9	7.8	7.8	8.0	8.0	7.8
PHENOL UG/L	10	6	10	12	3	7	6	6
SURFACTANTS (MBAS), TOTAL UG/L	30	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	0.	1.5	9.5	14.0	21.0	19.9	17.0	11.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.4	.4	.3	.2	.3	.4
TURBIDITY FTU	6.0	.9	.8	1.3	1.7	1.0	1.4	1.2

TABLE F-12 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE.

STATION: C PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78
PH STANDARD UNITS	7.6	8.0	7.2	5.8	7.8
PHENOL UG/L	5	7	5	8	4
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10
TEMPERATURE DEGREES C	9.0	1.0	.5	2.0	0.
TRANSPARENCY (SECCHI DISC) METER	.3	*	*	*	*
TURBIDITY FTU	3.3	1.1	1.5	.5	1.4

TABLE F-13  
 WATER QUALITY DATA. STATION M-5  
 SUMMARY TABLE  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.20.43.

STATION: M-5									
PERIOD		10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	.002	.002	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.028	.001	.004	.003	.004	<0.001	<0.001	<0.001	
IRON, TOTAL MG/L	.47	.46	.43	.16	.10	.09	.17	.14	
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.061	.070	.045	.035	.008	.026	.052	.016	
MERCURY, TOTAL UG/L	<0.1	.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.20.43.

STATION: M-5  
 PERIOD

06-06-78 07-06-78 08-01-78 09-06-78

METALS

	06-06-78	07-06-78	08-01-78	09-06-78
ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.004	<0.001	.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.24	.28	.59	.55
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.006	.016	.073	.046
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

F-142

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
ZINC, TOTAL MG/L	.012	.007	.008	.006	.001	.006	.006	.008
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	*	*	<0.01	*	.01
PHOSPHORUS, TOTAL MG/L	.12	*	*	*	*	.02	*	.04
NITROGEN								
NITROGEN, AMMONIA MG/L	1.47	*	*	*	*	.05	*	.74
NITROGEN, NITRATE MG/L	<0.01	*	*	*	*	.24	*	.29
NITROGEN, NITRITE MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	.92	*	*	*	*	.51	*	.13
SULFUR								
SULFATE MG/L	<1	3	4	6	8	8	9	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	.99	1.32	1.98	2.67	2.67	2.97	2.31
SOLIDS								
SOLIDS, DISSOLVED MG/L	144	135	134	104	112	150	103	86
SOLIDS, SUSPENDED MG/L	1	2	3	1	2	4	11	2

F-13

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
ZINC, TOTAL MG/L	.004	.002	.010	.006
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	.02	*
PHOSPHORUS, TOTAL MG/L	*	*	.05	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	.53	*
NITROGEN, NITRATE MG/L	*	*	.34	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	1.16	*
SULFUR				
SULFATE MG/L	<1	6	6	1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	1.98	1.98	.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	87	124	128	152
SOLIDS, SUSPENDED MG/L	4	8	11	<1

F-144



TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	1	*	*	*	*	2	*	1
SOLIDS, TOTAL MG/L	145	137	137	105	114	154	114	88
SOLIDS, VOLATILE MG/L	113	*	*	*	*	72	*	28
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	30	*	*	*	*	0	*	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	4	*	*	*	*	0	*	4
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	64	72	92	90	108	110	68	52
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	*	*	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	2	4	<1	<1	<1	<1	2	2
COLOR, TRUE COLOR UNITS	175	*	*	*	*	5	*	70
CONDUCTIVITY UMHOS/CM	90	119	105	80	115	20	95	75
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	5.5	8.4	8.6	10.4	11.2	12.2	11.1	10.5
FREON EXTRACTABLE SUBSTANCES PPM	2	1	<1	1	<1	<1	2	<1

F-145

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	8	*
SOLIDS, TOTAL MG/L	91	132	139	152
SOLIDS, VOLATILE MG/L	*	*	81	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	25	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	26	*
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	50	42	54	74
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	4	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	69	*
CHLORIDE MG/L	<1	<1	2	4
COLOR, TRUE COLOR UNITS	*	*	175	*
CONDUCTIVITY UMHDS/CM	82	90	105	125
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.2	5.7	7.3	8.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-145

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	10-04-77	11-01-77	12-06-77	01-04-78	02-07-78	03-01-78	04-04-78	05-03-78
HARDNESS MG/L	88	84	96	96	90	116	76	64
PH STANDARD UNITS	7.0	7.0	7.4	6.8	5.8	7.5	7.1	6.8
PHENOL UG/L	10	11	6	4	2	1	4	2
SURFACTANTS (MBAS) TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	5.0	5.5	0.	2.0	1.0	1.0	3.1	5.0
TRANSPARENCY (SECCHI DISC) METER	.9	1.0	*	*	*	*	*	.5
TURBIDITY FTU	1.0	1.1	2.6	2.8	.9	1.8	1.3	1.1

F-1147

TABLE F-13 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	06-06-78	07-06-78	08-01-78	09-06-78
HARDNESS MG/L	64	60	72	92
PH STANDARD UNITS	6.4	6.6	6.8	7.4
PHENOL UG/L	3	11	9	13
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	11.9	16.0	18.0	15.0
TRANSPARENCY (SECCHI DISC) METER	1.1	1.2	.7	.8
TURBIDITY FTU	.8	1.6	1.6	.9

14/1/78

TABLE F-14  
 WATER QUALITY DATA, STATION B  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/27/78. 13.29.06.

STATION: B PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	.001	<0.001	.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	*	<0.001	*	<0.001
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	.008	.005	.027	.004	.001	.003	.003	.010
IRON, TOTAL MG/L	.16	.21	.20	.19	.38	.21	.40	.41
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.050	.034	.090	.068	.100	.051	.070	.087
MERCURY, TOTAL UG/L	.1	*	<0.1	<0.1	.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01

44113

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/27/78. 13.29.06.

STATION: B  
 PERIOD

11-02-77 12-06-77 01-04-78 02-07-78 03-02-78

METALS

	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.001	<0.001	.001	<0.001	.006
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01
COPPER, TOTAL MG/L	.004	<0.001	.003	.003	<0.001
IRON, TOTAL MG/L	.29	.22	.14	.17	.10
LEAD, TOTAL MG/L	.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.075	.077	.054	.041	.036
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01

1311

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: B PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.003	.008	.023	.012	<0.001	.003	.010	.014
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.04	*	.01	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.04	*	.01	*	*	.03	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.26	*	.13	*	*	.29	*	.70
NITROGEN, NITRATE MG/L	.18	*	<0.01	*	*	.21	*	.12
NITROGEN, NITRITE MG/L	*	*	.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.99	*	1.50	*	*	4.09	*	1.80
SULFUR								
SULFATE MG/L	2	14	6	<1	<1	<1	<1	<1
SULFIDE MG/L	*	*	<0.01	.01	.05	.04	.03	<0.01
SULFUR, TOTAL MG/L	.70	4.79	1.98	.34	.05	.04	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	438	88	339	197	77	177	133	160
SOLIDS, SUSPENDED MG/L	12	8	14	15	4	3	7	5

13117

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78
ZINC, TOTAL MG/L	.003	.006	.003	.001	<0.001
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	.02
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	*	*	.06
NITROGEN, NITRATE MG/L	*	*	*	*	.15
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.75
SULFUR					
SULFATE MG/L	5	4	6	6	8
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.65	1.32	1.98	2.00	2.67
SOLIDS					
SOLIDS, DISSOLVED MG/L	135	136	144	134	110
SOLIDS, SUSPENDED MG/L	5	4	1	7	10

F-152



TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: B PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	4	*	12	*	*	1	*	5
SOLIDS, TOTAL MG/L	450	96	353	212	80	180	140	165
SOLIDS, VOLATILE MG/L	100	*	69	*	*	55	*	103
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	56	*	8	*	*	54	*	22
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	25	*	418	*	*	94	*	32
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	128	55	102	105	90	104	90	96
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	5	*	*	1	*	1
CHLORIDE MG/L	2	2	4	<1	<1	<1	<1	2
COLOR, TRUE COLOR UNITS	<1	*	30	*	*	20	*	80
CONDUCTIVITY UMHDS/CM	138	90	140	162	159	170	*	128
CYANIDE MG/L	*	.001	.002	.001	.001	.002	<0.001	<0.001
DISSOLVED OXYGEN MG/L	4.5	11.0	11.7	10.0	5.5	10.5	7.2	7.9
FREON EXTRACTABLE SUBSTANCES PPM	4	7	7	1	<1	<1	<1	<1
HARDNESS MG/L	126	74	108	108	96	120	96	108

10111

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	6
SOLIDS, TOTAL MG/L	140	140	145	141	120
SOLIDS, VOLATILE MG/L	*	*	*	*	28
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	4
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	0
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L	112	112	110	120	120
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1
CHLORIDE MG/L	2	<1	<1	2	<1
COLOR, TRUE COLOR UNITS	*	*	*	*	15
CONDUCTIVITY UMHOS/CM	*	155	125	125	150
CYANIDE MG/L	.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	9.2	7.6	10.2	8.0	8.4
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	1	2	1
HARDNESS MG/L	116	112	116	120	128

F-14

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: B PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
PH STANDARD UNITS	7.6	7.3	8.0	7.8	7.3	7.8	7.4	7.4
PHENOL UG/L	8	15	4	10	2	9	7	14
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	1.0	1.0	7.0	12.0	20.0	18.0	14.5	7.5
TRANSPARENCY (SECCHI DISC) METER	*	*	.6	.8	1.0	.6	.8	.6
TURBIDITY FTU	2.0	1.6	1.8	1.1	1.5	1.5	1.4	2.0

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-02-77	12-06-77	01-04-78	02-07-78	03-02-78
PH STANDARD UNITS	7.6	7.4	6.8	7.1	7.3
PHENOL UG/L	9	5	5	4	4
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10
TEMPERATURE DEGREES C	8.0	1.5	0.	1.0	0.
TRANSPARENCY (SECCHI DISC) METER	.6	*	*	*	*
TURBIDITY FTU	3.4	3.1	2.8	2.4	2.1

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA, STATION D  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.24.08.

STATION: D									
PERIOD		03-02-77	04-02-77	05-09-77	05-08-77	07-06-77	08-01-77	09-08-77	10-04-77
METALS									
ALUMINIUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	.001	<0.001	.001	<0.001	.001	.001	.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	.004	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
CHROMIUM, TRIVALENT MG/L	.005	*	<0.001	*	*	<0.001	*	<0.001	
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.006	.014	.005	<0.001	.002	.002	.001	.008	
IRON, TOTAL MG/L	.19	.29	.16	.19	.40	.27	.31	.36	
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.057	.091	.044	.086	.082	.062	.040	.044	
MERCURY, TOTAL UG/L	.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01	

F-157

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.24.08.

STATION: D	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
PERIOD								
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.001	<0.001	<0.001	<0.001	.002	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.009	.002	.007	.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.40	.17	.11	.15	.12	.15	.32	.41
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.020	.053	.027	.034	.035	.029	.046	.054
MERCURY, TOTAL UG/L	<0.1	.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01

F-154

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D, PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.002	.006	.006	.003	<0.001	.004	.008	.020
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.03	*	.01	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.03	*	.02	*	*	.03	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	.17	*	<0.05	*	*	.35	*	.49
NITROGEN, NITRATE MG/L	.18	*	<0.01	*	*	.11	*	.19
NITROGEN, NITRITE MG/L	*	*	<0.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.63	*	2.09	*	*	4.23	*	1.61
SULFUR								
SULFATE MG/L	2	12	4	2	<1	<1	<1	<1
SULFIDE MG/L	*	*	<0.01	.01	.04	.04	.02	.01
SULFUR, TOTAL MG/L	.71	4.11	1.32	.67	.04	.04	.02	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	434	70	299	216	65	181	126	143
SOLIDS, SUSPENDED MG/L	6	14	8	16	2	4	4	2

6-15-3

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE.

STATION: 6 PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
ZINC, TOTAL MG/L	.008	.002	.006	<0.001	<0.001	.001	.005	.005
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.02	.04	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	.12	.17	.48	.91
NITROGEN, NITRATE MG/L	*	*	*	*	.24	.05	.05	.24
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.72	.66	.43	.40
SULFUR								
SULFATE MG/L	7	3	7	7	7	6	6	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.31	.99	2.31	2.33	2.33	1.98	1.98	1.98
SOLIDS								
SOLIDS, DISSOLVED MG/L	173	132	119	164	158	106	174	140
SOLIDS, SUSPENDED MG/L	2	5	3	6	4	4	5	6

041-3



TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS, SUSPENDED VOLATILE MG/L	1	*	4	*	*	1	*	2
SOLIDS, TOTAL MG/L	440	84	307	232	67	185	130	145
SOLIDS, VOLATILE MG/L	80	*	77	*	*	75	*	60
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	34	*	6	*	*	82	*	18
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	10	*	287	*	*	151	*	26
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	128	61	94	97	84	100	88	94
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	8	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	1	1	3	<1	2	<1	2	6
COLOR, TRUE COLOR UNITS	<1	*	20	*	*	25	*	40
CONDUCTIVITY UMHNS/CM	165	90	135	160	151	163	*	125
CYANIDE MG/L	*	.002	.001	.006	.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	*	12.2	12.2	11.0	6.7	9.3	8.7	9.6
FREELY EXTRACTABLE SUBSTANCES PPM	3	4	8	4	<1	<1	<1	1

1711-3

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	*	*	<1	2	2	5
SOLIDS, TOTAL MG/L	175	137	122	170	162	110	179	146
SOLIDS, VOLATILE MG/L	*	*	*	*	66	7	83	76
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	2	0	45	14
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	8	4	5	17
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	92	104	102	106	112	86	88	88
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	4	1	1	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	24	3
CHLORIDE MG/L	2	2	2	2	2	2	2	2
COLOR, TRUE (COLOR UNITS)	*	*	*	*	10	20	35	70
CONDUCTIVITY UMHOS/CM	135	158	107	117	150	115	147	145
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.6	9.4	15.0	11.7	12.0	10.2	8.4	8.5
FREELY EXTRACTABLE SUBSTANCES PPM	1	<1	<1	<1	<1	<1	<1	<1

291-3

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	03-02-77	04-02-77	05-09-77	06-08-77	07-06-77	08-01-77	09-08-77	10-04-77
HARDNESS MG/L	130	72	108	100	84	112	92	108
PH STANDARD UNITS	7.4	7.6	7.7	7.8	7.2	7.7	7.6	7.4
PHENOL UG/L	8	12	3	7	2	4	4	6
SURFACTANTS (MBAS), TOTAL UG/L	10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	0.	.5	8.5	12.5	21.0	17.0	15.0	8.5
TRANSPARENCY (SECCHI DISC) METER	*	*	.6	.5	.3	.5	.8	.6
TURBIDITY FTU	2.5	1.7	1.2	1.2	1.6	1.6	1.5	1.8

101-1

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	11-03-77	12-06-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
HARDNESS MG/L	96	104	108	102	116	92	96	96
PH STANDARD UNITS	7.6	7.6	6.8	5.9	7.2	7.2	7.6	6.5
PHENOL UG/L	5	10	5	2	2	17	5	9
SURFACTANTS (MBAS) * TOTAL UG/L	*	*	*	*	<10	<10	<10	<10
TEMPERATURE DEGREES C	8.5	.5	1.0	1.5	1.0	6.0	15.0	11.0
TRANSPARENCY (SECCHI DISC) AFTER	.5	*	*	*	*	.6	.4	1.3
TURBIDITY FTU	2.6	2.4	1.9	1.7	1.5	1.5	1.7	2.2

F-14

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA, STATION E  
 SUMMARY TABLE  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/31/78. 20.10.47.

STATION: E	PERIOD							
	03-02-77	04-02-77	05-09-77	06-07-77	07-06-77	08-01-77	09-08-77	10-04-77
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	.001	<0.001	.001	.001	.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	.004	*	<0.001	*	*	.004	*	<0.001
COBALT, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	.009	.006	.002	<0.001	.001	.010	.003	.006
IRON, TOTAL MG/L	.24	.18	.16	.19	.36	.33	.35	.28
LEAD, TOTAL MG/L	<0.01	*	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.031	.023	.048	.063	.085	.069	.052	.042
MERCURY, TOTAL UG/L	<0.1	*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	<0.01	*	<0.01	*	*	<0.01	*	<0.01

F-175

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/31/78. 20.10.47.

STATION: E PERIOD	11-03-77	12-07-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
METALS								
ALUMINUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.004	.002	.004	<0.001	.001	<0.001	<0.001	.003
CHROMIUM, HEXAVALENT MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	*	*	*	*	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	.009	.004	.003	.004	.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.29	.15	.11	.14	.12	.13	.36	.36
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.043	.027	.024	.026	.027	.024	.057	.040
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01

E-155

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE.

STATION: E PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-06-77	08-01-77	09-08-77	10-04-77
ZINC, TOTAL MG/L	.002	.005	.003	.006	.001	.005	.003	.017
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	.03	*	.01	*	*	.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.03	*	.02	*	*	.06	*	.04
NITROGEN								
NITROGEN, AMMONIA MG/L	.17	*	.06	*	*	.32	*	.70
NITROGEN, NITRATE MG/L	.48	*	<0.01	*	*	.16	*	<0.01
NITROGEN, NITRITE MG/L	*	*	.01	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	1.52	*	1.54	*	*	3.69	*	1.90
SULFUR								
SULFATE MG/L	2	12	7	4	<1	<1	<1	<1
SULFIDE MG/L	*	*	<0.01	<0.01	.02	.06	.03	<0.01
SULFUR, TOTAL MG/L	.71	4.11	2.31	1.32	.02	.06	.03	<0.01
SOLIDS								
SOLIDS, DISSOLVED MG/L	372	78	281	222	81	177	159	145
SOLIDS, SUSPENDED MG/L	8	10	12	2	3	3	1	<1

101-3

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	11-03-77	12-07-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
ZINC, TOTAL MG/L	.007	.006	.004	<0.001	.004	.004	.002	.003
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	*	*	<0.01	<0.01	.02	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	*	*	<0.01	.02	.03	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	*	*	*	*	.11	.24	.52	1
NITROGEN, NITRATE MG/L	*	*	*	*	.24	.15	.19	.29
NITROGEN, NITRITE MG/L	*	*	*	*	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	*	*	*	*	.87	.68	.72	.31
SULFUR								
SULFATE MG/L	6	7	7	8	8	7	6	6
SULFIDE MG/L	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.99	2.31	2.31	2.67	2.67	2.31	1.98	1.98
SOLIDS								
SOLIDS, DISSOLVED MG/L	193	128	133	154	146	115	142	145
SOLIDS, SUSPENDED MG/L	2	2	2	5	8	1	4	2



TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-06-77	08-01-77	09-08-77	10-04-77
SOLIDS,SUSPENDED VOLATILE MG/L	2	*	6	*	*	1	*	<1
SOLIDS,TOTAL MG/L	380	88	293	224	84	180	160	145
SOLIDS,VOLATILE MG/L	50	*	60	*	*	75	*	90
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	52	*	53	*	*	145	*	30
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	12	*	332	*	*	165	*	62
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	132	55	96	92	80	96	88	98
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	9	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	1	<1	5	<1	4	<1	2	2
COLOR,TRUE COLOR UNITS	<1	*	25	*	*	25	*	50
CONDUCTIVITY UMHOS/CM	130	90	140	159	150	165	*	128
CYANIDE MG/L	*	.001	.001	.002	.002	.003	.002	<0.001
DISSOLVED OXYGEN MG/L	*	12.4	10.8	9.0	6.8	8.2	6.2	8.0
FREON EXTRACTABLE SUBSTANCES PPM	2	6	4	4	<1	1	<1	1

60113

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	11-03-77	12-07-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
SOLIDS,SUSPENDED VOLATILE MG/L	*	*	*	*	2	<1	2	1
SOLIDS,TOTAL MG/L	195	130	135	159	154	116	146	147
SOLIDS,VOLATILE MG/L	*	*	*	*	60	20	68	81
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	*	*	2	2	35	63
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	*	*	12	4	39	49
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	92	106	100	110	108	84	90	80
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	*	*	1	1	1	3
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	17	3
CHLORIDE MG/L	2	<1	2	4	<1	2	2	4
COLOR,TRUE COLOR UNITS	*	*	*	*	10	25	30	80
CONDUCTIVITY UMHOS/CM	142	120	110	115	118	110	155	145
CYANIDE MG/L	<0.001	<0.001	<0.001	.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.8	10.2	10.2	11.7	9.5	9.2	6.6	6.3
FREON EXTRACTABLE SUBSTANCES PPM	1	<1	<1	<1	<1	<1	<1	<1

F-173

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	03-02-77	04-02-77	05-09-77	06-07-77	07-06-77	08-01-77	09-08-77	10-04-77
HARDNESS MG/L	130	66	88	78	92	104	96	120
PH STANDARD UNITS	7.4	7.6	7.8	8.1	7.2	7.5	7.6	7.4
PHENOL UG/L	6	9	2	15	3	6	5	9
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	<10	*	*	<10	*	<10
TEMPERATURE DEGREES C	.5	.5	7.0	12.0	21.0	18.0	14.5	8.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.6	1.0	1.2	.9	1.0	.9
TURBIDITY FTU	2.7	1.8	1.4	1.7	1.8	2.4	1.9	2.0

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: F PERIOD	11-03-77	12-07-77	01-04-78	02-07-78	03-02-78	05-03-78	08-01-78	10-03-78
HARDNESS MG/L	92	104	104	114	120	88	96	92
PH STANDARD UNITS	7.8	7.4	7.1	5.8	7.2	7.0	7.2	6.7
PHENOL UG/L	10	9	2	4	2	11	10	4
SURFACTANTS (MBAS), TOTAL UG/L	*	*	*	*	<10	<10	<10	<10
TEMPERATURE DEGREES C	9.0	0.	.8	1.5	0.	8.5	15.5	11.0
TRANSPARENCY (SECCHI DISC) METER	1.2	*	*	*	*	.9	.5	1.5
TURBIDITY FTU	2.5	4.5	3.0	1.9	1.5	1.8	1.6	2.3

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA, STATION V  
 SUMMARY TABLE  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.25.15.

STATION: V PERIOD	10-10-77	11-01-77	12-07-77	01-04-78	02-07-78	03-03-78	04-04-78	05-03-78
METALS								
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.003	.003	<0.001	.003	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	.008	.015	.004	.002	.001	.002	<0.001	<0.001
IRON, TOTAL MG/L	.56	.48	.31	.26	.36	.33	.38	.31
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.016	.026	.034	.035	.067	.079	.044	.034
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	.01	*	*	*	*	<0.01	*	<0.01

F-173

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.25.15.

STATION: V	PERIOD			
	06-06-78	07-07-78	08-01-78	09-06-78
METALS				
ALUMINUM, TOTAL MG/L	*	*	<0.01	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*
COBALT, TOTAL MG/L	*	*	<0.01	*
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.97	.95	2.14	2.54
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.043	.066	.145	.156
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*
NICKEL, TOTAL MG/L	*	*	<0.01	*

F-17a

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	10-10-77	11-01-77	12-07-77	01-04-78	02-07-78	03-03-78	04-04-78	05-03-78
ZINC, TOTAL MG/L	.010	.013	.005	.003	<0.001	.001	.006	.007
PHOSPHORUS								
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	.03	*	*	*	*	<0.01	*	.03
NITROGEN								
NITROGEN, AMMONIA MG/L	1.31	*	*	*	*	.32	*	.57
NITROGEN, NITRATE MG/L	<0.01	*	*	*	*	.54	*	.15
NITROGEN, NITRITE MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	2.39	*	*	*	*	.76	*	.72
SULFUR								
SULFATE MG/L	<1	8	7	8	7	7	6	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.01	2.64	2.31	2.64	2.34	2.33	1.98	2.31
SOLIDS								
SOLIDS, DISSOLVED MG/L	137	116	106	136	131	122	100	85
SOLIDS, SUSPENDED MG/L	3	4	1	1	1	16	14	7

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	06-06-78	07-07-78	08-01-78	09-06-78
ZINC, TOTAL MG/L	.002	.004	.002	.003
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	.02	*
PHOSPHORUS, TOTAL MG/L	*	*	.04	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	*	1.60	*
NITROGEN, NITRATE MG/L	*	*	.15	*
NITROGEN, NITRITE MG/L	*	*	<0.01	*
NITROGEN, ORGANIC MG/L	*	*	.26	*
SULFUR				
SULFATE MG/L	3	3	4	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	.99	.99	1.32	<0.01
SOLIDS				
SOLIDS, DISSOLVED MG/L	107	157	161	154
SOLIDS, SUSPENDED MG/L	5	2	8	2

4/1/78



TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	10-10-77	11-01-77	12-07-77	01-04-78	02-07-78	03-03-78	04-04-78	05-03-78
SOLIDS,SUSPENDED VOLATILE MG/L	<1	*	*	*	*	6	*	5
SOLIDS,TOTAL MG/L	140	120	107	137	132	138	114	92
SOLIDS,VOLATILE MG/L	57	*	*	*	*	62	*	44
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	34	*	*	*	*	2	*	4
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	106	*	*	*	*	4	*	10
GENERAL PARAMETERS								
ALKALINITY,TOTAL MG/L	64	80	98	84	112	112	74	64
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	*	*	*	*	1	*	1
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	<1	4	2	2	4	2	2	2
COLOR,TRUE COLOR UNITS	100	*	*	*	*	15	*	25
CONDUCTIVITY UMHOS/CM	90	123	118	75	60	131	82	98
CYANIDE MG/L	<0.001	.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	7.3	11.2	8.4	5.2	3.8	4.0	11.6	8.4
FREON EXTRACTABLE SUBSTANCES PPM	<1	1	1	<1	1	1	1	<1

F-177

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	06-06-78	07-07-78	08-01-78	09-06-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	5	*
SOLIDS, TOTAL MG/L	112	159	169	156
SOLIDS, VOLATILE MG/L	*	*	81	*
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	28	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	14	*
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	68	74	68	76
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	1	*
CHEMICAL OXYGEN DEMAND MG/L	*	*	69	*
CHLORIDE MG/L	2	2	4	4
COLOR, TRUE COLOR UNITS	*	*	200	*
CONDUCTIVITY UMHOS/CM	123	145	125	145
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	6.3	4.5	4.5	5.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

4/7

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	10-10-77	11-01-77	12-07-77	01-04-78	02-07-78	03-03-78	04-04-78	05-03-78
HARDNESS MG/L	80	112	100	100	120	124	80	76
PH STANDARD UNITS	7.2	7.4	7.0	6.5	5.8	7.0	7.0	6.8
PHENOL UG/L	13	15	9	3	11	1	10	4
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	6.5	8.0	.5	2.2	.5	.2	0.	10.0
TRANSPARENCY (SECCHI DISC) METER	1.4	.9	*	*	*	*	*	1.2
TURBIDITY FTU	1.4	2.0	1.7	1.8	1.7	2.2	2.9	2.0

TABLE F-14 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: V PERIOD	06-06-78	07-07-78	08-01-78	09-06-78
HARDNESS MG/L	84	84	80	96
PH STANDARD UNITS	6.6	6.3	7.6	6.8
PHENOL UG/L	7	<1	9	4
SURFACTANTS (MBAS), TOTAL UG/L	*	*	<10	*
TEMPERATURE DEGREES C	16.2	22.0	16.5	19.1
TRANSPARENCY (SECCHI DISC) METER	.9	1.0	*	*
TURBIDITY FTU	2.8	2.7	2.3	2.0

041-5

TABLE F-15  
 WATER QUALITY DATA, STATION Y  
 SUMMARY TABLE  
 OCTOBER 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: FAXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.15.54.

STATION: Y	-----								
PERIOD	10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78	-----
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	.004	.004	<0.001	<0.001	.003	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.002	.003	.003	.005	<0.001	<0.001	<0.001	<0.001	
IRON, TOTAL MG/L	.37	.43	.38	.43	.56	.60	.53	.34	
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.019	.023	.014	.055	.091	.172	.179	.039	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.15.54.

STATION: Y  
 PERIOD

06-06-78 07-07-78 08-01-78 09-06-78 10-03-78

METALS

	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
ALUMINUM, TOTAL MG/L	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.003	<0.001	.001	.005
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	<0.001
COBALT, TOTAL MG/L	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	.001	.001
IRON, TOTAL MG/L	.36	.44	.44	.71	.57
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.024	.077	.068	.100	.039
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	*	*	<0.01	*	<0.01

F-142

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y									
PERIOD		10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
ZINC, TOTAL	MG/L	.021	.008	.010	.001	<0.001	.003	.020	.007
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED	MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL	MG/L	.12	*	*	*	*	<0.01	*	.02
NITROGEN									
NITROGEN, AMMONIA	MG/L	1.35	*	*	*	*	.71	*	.39
NITROGEN, NITRATE	MG/L	<0.01	*	*	*	*	<0.01	*	.15
NITROGEN, NITRITE	MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC	MG/L	1.75	*	*	*	*	.69	*	.17
SULFUR									
SULFATE	MG/L	<1	7	4	8	7	8	6	6
SULFIDE	MG/L	<0.01	<0.01	<0.01	<0.01	.01	<0.01	<0.01	<0.01
SULFUR, TOTAL	MG/L	<0.01	2.31	1.32	2.64	2.34	2.67	1.98	1.98
SOLIDS									
SOLIDS, DISSOLVED	MG/L	124	129	84	151	166	102	126	57
SOLIDS, SUSPENDED	MG/L	3	3	1	1	11	2	13	1

L-11-77

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y PERIOD	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
ZINC, TOTAL MG/L	.007	.021	.005	.003	.008
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	.03	*	.03
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	1.36	*	1.24
NITROGEN, NITRATE MG/L	*	*	<0.01	*	.59
NITROGEN, NITRITE MG/L	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	.75	*	.16
SULFUR					
SULFATE MG/L	5	6	4	2	9
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.65	1.98	1.32	.66	2.97
SOLIDS					
SOLIDS, DISSOLVED MG/L	96	106	103	95	95
SOLIDS, SUSPENDED MG/L	7	4	6	3	2

F-184



TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y		10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
PERIOD									
SOLIDS, SUSPENDED VOLATILE MG/L		<1	*	*	*	*	<1	*	1
SOLIDS, TOTAL MG/L		127	132	85	152	177	104	139	58
SOLIDS, VOLATILE MG/L		60	*	*	*	*	59	*	33
BACTERIA									
FECAL COLIFORM BACTERIA ORG/100 ML		24	*	*	*	*	0	*	4
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		8	*	*	*	*	0	*	4
GENERAL PARAMETERS									
ALKALINITY, TOTAL MG/L		56	48	52	52	66	72	80	40
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		1	*	*	*	*	1	*	2
CHEMICAL OXYGEN DEMAND MG/L		*	*	*	*	*	*	*	*
CHLORIDE MG/L		<1	2	2	2	2	<1	4	2
COLOR, TRUE COLOR UNITS		115	*	*	*	*	55	*	40
CONDUCTIVITY UMHOS/CM		80	70	60	50	80	105	103	70
CYANIDE MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L		8.9	10.4	16.1	12.0	9.4	6.4	8.4	10.2
FREED EXTRACTABLE SUBSTANCES PPM		1	1	<1	2	<1	1	1	<1

F-15

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y PERIOD	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	4	*	2
SOLIDS, TOTAL MG/L	103	110	109	98	97
SOLIDS, VOLATILE MG/L	*	*	66	*	66
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	21	*	8
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	7	*	13
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L	38	42	40	36	58
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	3	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	52	*	10
CHLORIDE MG/L	2	<1	2	4	4
COLOR, TRUE COLOR UNITS	*	*	125	*	120
CONDUCTIVITY UMHOS/CM	85	100	80	95	120
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.5	7.2	6.9	6.1	9.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1	<1

931-1-7

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y PERIOD	10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
HARDNESS MG/L	60	68	52	60	42	84	92	56
PH STANDARD UNITS	7.6	7.5	7.4	6.4	5.8	6.6	6.8	7.0
PHENOL UG/L	10	10	3	3	3	7	15	8
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	9.5	7.0	1.0	3.0	2.0	1.0	3.4	11.0
TRANSPARENCY (SECCHI DISC) METER	*	1.0	*	*	*	*	*	1.2
TURBIDITY FTU	1.5	1.7	2.0	2.2	2.3	1.7	2.3	2.6

E-1147

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Y PERIOD	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
HARDNESS MG/L	56	48	48	52	56
PH STANDARD UNITS	6.6	6.9	7.0	6.8	6.7
PHENOL UG/L	12	3	10	2	3
SURFACTANTS (MBAS) TOTAL UG/L	*	*	<10	*	<10
TEMPERATURE DEGREES C	19.0	22.0	20.0	20.5	13.0
TRANSPARENCY (SECCHI DISC) METER	1.3	*	*	*	1.4
TURBIDITY FTU	2.3	3.0	1.8	1.1	2.3

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA, STATION 7  
 SUMMARY TABLE  
 OCTOBER 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/27/78. 20.13.16.

STATION: 2	PERIOD								
	10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78	
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.001	.002	.002	.003	.003	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	*	*	<0.01	<0.01	<0.01	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	*	*	<0.001	<0.001	<0.001	
COBALT, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
COPPER, TOTAL MG/L	.003	.004	.002	.001	.001	.001	<0.001	<0.001	
IRON, TOTAL MG/L	.43	.43	.39	.49	.54	.48	.51	.31	
LEAD, TOTAL MG/L	<0.01	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.020	.037	.027	.062	.056	.160	.112	.030	
MERCURY, TOTAL UG/L	.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	
NICKEL, TOTAL MG/L	<0.01	*	*	*	*	<0.01	*	<0.01	

F-124

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/27/78, 20.13.16.

STATION: Z  
 PERIOD

06-06-78 07-07-78 08-01-78 09-06-78 10-03-78

METALS

ALUMINUM, TOTAL MG/L	*	*	<0.01	*	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	.001	<0.001	.002	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	<0.01	*	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	*	<0.001	*	<0.001
COBALT, TOTAL MG/L	*	*	<0.01	*	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.62	.78	.93	1.45	.63
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.016	.087	.093	.131	.052
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	*	<0.01	*	<0.01
NICKEL, TOTAL MG/L	*	*	<0.01	*	<0.01

F-170

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Z									
PERIOD		10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
ZINC, TOTAL	MG/L	.023	.012	.009	.006	.008	.003	.012	.010
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED	MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
PHOSPHORUS, TOTAL	MG/L	.03	*	*	*	*	<0.01	*	.03
NITROGEN									
NITROGEN, AMMONIA	MG/L	1.41	*	*	*	*	.60	*	.51
NITROGEN, NITRATE	MG/L	<0.01	*	*	*	*	.54	*	.15
NITROGEN, NITRITE	MG/L	<0.01	*	*	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC	MG/L	.99	*	*	*	*	.42	*	.60
SULFUR									
SULFATE	MG/L	<1	8	6	8	7	8	6	7
SULFIDE	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL	MG/L	<0.01	2.64	1.98	2.64	2.33	2.67	1.98	2.31
SOLIDS									
SOLIDS, DISSOLVED	MG/L	135	126	93	174	104	126	121	72
SOLIDS, SUSPENDED	MG/L	2	6	2	1	3	6	11	3

161-3

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: Z	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
PERIOD					
ZINC, TOTAL MG/L	.013	.007	<0.001	.014	.002
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L	*	*	.01	*	<0.01
PHOSPHORUS, TOTAL MG/L	*	*	.04	*	.03
NITROGEN					
NITROGEN, AMMONIA MG/L	*	*	1.51	*	.97
NITROGEN, NITRATE MG/L	*	*	.24	*	.39
NITROGEN, NITRITE MG/L	*	*	<0.01	*	<0.01
NITROGEN, ORGANIC MG/L	*	*	.72	*	.44
SULFUR					
SULFATE MG/L	4	3	1	<1	5
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.32	.99	.33	<0.01	1.65
SOLIDS					
SOLIDS, DISSOLVED MG/L	111	155	113	133	120
SOLIDS, SUSPENDED MG/L	1	4	6	1	5

F-112



TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 2 PERIOD	10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	<1	*	*	*	*	2	*	2
SOLIDS, TOTAL MG/L	137	132	95	175	107	132	132	75
SOLIDS, VOLATILE MG/L	50	*	*	*	*	63	*	30
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	26	*	*	*	*	6	*	50
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	140	*	*	*	*	0	*	20
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	50	66	66	68	82	90	76	46
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	*	*	*	*	1	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	*	*	*	*	*	*
CHLORIDE MG/L	4	2	<1	4	2	2	2	2
COLOR, TRUE COLOR UNITS	100	*	*	*	*	40	*	30
CONDUCTIVITY UMHOS/CM	90	90	85	92	100	135	92	75
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	7.6	9.8	12.2	7.5	6.0	5.4	12.6	8.1
FREON EXTRACTABLE SUBSTANCES PPM	1	1	<1	<1	<1	1	1	<1

F-15-3

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 7 PERIOD	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
SOLIDS, SUSPENDED VOLATILE MG/L	*	*	3	*	2
SOLIDS, TOTAL MG/L	112	159	119	134	125
SOLIDS, VOLATILE MG/L	*	*	45	*	78
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML	*	*	20	*	30
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	*	*	9	*	18
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L	56	54	50	52	62
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	*	*	2	*	2
CHEMICAL OXYGEN DEMAND MG/L	*	*	55	*	7
CHLORIDE MG/L	2	2	2	4	4
COLOR, TRUE COLOR UNITS	*	*	145	*	100
CONDUCTIVITY UMHOS/CM	110	121	97	108	90
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	5.6	2.7	1.4	2.4	6.7
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1	<1

40111

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 2 PERIOD	10-10-77	11-01-77	12-06-77	01-04-78	02-08-78	03-03-78	04-04-78	05-03-78
HARDNESS MG/L	68	84	68	76	72	104	84	56
PH STANDARD UNITS	7.4	7.5	7.2	6.4	7.0	6.8	7.2	6.8
PHENOL UG/L	15	15	4	4	6	2	6	11
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	*	*	<10	*	<10
TEMPERATURE DEGREES C	8.0	7.0	0.	1.6	.8	.5	2.0	11.0
TRANSPARENCY (SECCHI DISC) METER	*	1.5	*	*	*	*	*	1.1
TURBIDITY FTU	1.3	1.9	1.7	1.8	2.6	2.1	3.3	2.2

TABLE F-15 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: / PERIOD	06-06-78	07-07-78	08-01-78	09-06-78	10-03-78
HARDNESS MG/L	64	68	60	68	72
PH STANDARD UNITS	6.5	6.7	7.4	6.9	6.6
PHENOL UG/L	8	2	4	<1	4
SURFACTANTS (MBAS) • TOTAL UG/L	*	*	<10	*	<10
TEMPERATURE DEGREES C	17.9	22.0	19.0	19.5	12.0
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*	*
TURBIDITY FTU	1.9	2.0	1.3	1.2	2.3

TABLE F-16  
 WATER QUALITY DATA, STATION L  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 03. 59.

STATION: L				
PERIOD	11-12-79	02-19-80	05-12-80	08-11-80

METALS

ALUMINUM, TOTAL MG/L	.08	.07	.07	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.09	.15	.10	.10
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.013	.061	.022	.027
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-16 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	11-12-79	02-19-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.013	.019	.003	.006
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.02	.03	.02	.02
NITROGEN				
NITROGEN, AMMONIA MG/L	.35	.43	.42	.19
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	.20	.15	.08	.03
SULFUR				
SULFATE MG/L	8	6	10	9
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.64	1.98	3.30	2.97
SOLIDS				
SOLIDS, DISSOLVED MG/L	24	19	20	23
SOLIDS, SUSPENDED MG/L	2	<1	6	4

F-198

TABLE F-16 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: L PERIOD	11-12-79	02-19-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	<1	3	3
SOLIDS, TOTAL MG/L	26	19	26	27
SOLIDS, VOLATILE MG/L	15	13	18	17
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	21	0	2	4
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	4	2	6	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	3	1	1
CHEMICAL OXYGEN DEMAND MG/L	45	28	24	107
CHLORIDE MG/L	2	<1	<1	2
COLOR, TRUE COLOR UNITS	35	30	30	30
CONDUCTIVITY UMHOS/CM	18	29	17	22
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	12.2	4.7	13.3	7.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-1199

TABLE F-16 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION. L PERIOD	11-12-79	02-19-80	05-12-80	08-11-80
HARDNESS MG/L	8	16	20	16
PH STANDARD UNITS	5.5	6.6	6.4	6.2
PHENOL UG/L	<1	3	10	5
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	2.0	1.5	11.0	23.5
TRANSPARENCY (SECCHI DISC) METER	*	*	2.4	2.5
TURBIDITY FTU	1.3	.9	.6	.8



TABLE F-17  
 WATER QUALITY DATA, STATION K  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20.04.02.

STATION: K PERIOD	11-12-79	02-19-80	05-13-80	08-13-80 *
METALS				
ALUMINUM, TOTAL MG/L	.10	.25	.15	.10
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.12	.26	.16	.03
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.040	.063	.043	.006
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

F-201

TABLE F-17 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-12-79	02-19-80	05-13-80	08-13-80 *
ZINC, TOTAL MG/L	.012	.022	.009	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	.02	<0.01
PHOSPHORUS, TOTAL MG/L	.03	.04	.03	.03
NITROGEN				
NITROGEN, AMMONIA MG/L	.98	1.48	<0.01	.16
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	.23	.77	.02
SULFUR				
SULFATE MG/L	8	8	12	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	2.64	2.64	3.96	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	29	20	22	108
SOLIDS, SUSPENDED MG/L	1	1	3	3

TABLE F-17 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-12-79	02-19-80	05-13-80	08-13-80 *
SOLIDS, SUSPENDED VOLATILE MG/L	1	1	1	2
SOLIDS, TOTAL MG/L	30	21	25	111
SOLIDS, VOLATILE MG/L	18	12	17	80
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0	3
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	1	0	0	37
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	2	2	4	68
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	48	48	55	43
CHLORIDE MG/L	4	2	<1	<1
COLOR, TRUE COLOR UNITS	100	100	60	90
CONDUCTIVITY UMHOS/CM	15	20	25	140
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.3	.7	10.2	7.3
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-17 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: K PERIOD	11-12-79	02-19-80	05-13-80	08-13-80 *
HARDNESS MG/L	12	16	20	84
PH STANDARD UNITS	4.8	6.4	5.3	8.0
PHENOL UG/L	3	6	5	2
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	1.0	3.5	12.0	22.5
TRANSPARENCY (SECCHI DISC) METER	*	*	.9	1.9
TURBIDITY FTU	.8	.6	.5	.9

\*Water chemistry may have been influenced by the addition of approximately 0.090 to 0.091 m<sup>3</sup>/s (1,420 to 1,440 gallons/minute) of ground water from a pumping test discharge to Duck Lake during a period of 24 days from June 27, 1980 through July 21, 1980 (Golder Associates, 1981).

TABLE F-18  
 WATER QUALITY DATA, STATION GH-1  
 SUMMARY TABLE  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.22.

STATION: PERIOD	GH-1	11-14-79	12-11-79	01-08-80	02-18-80	03-18-80	04-13-80	05-13-80	06-16-80
METALS									
ALUMINUM, TOTAL MG/L	<0.01	*	*	.02	*	*	<0.01	*	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CADMIUM, TOTAL MG/L	<0.001	.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	<0.001	*	*	<0.001	*	
COBALT, TOTAL MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
COPPER, TOTAL MG/L	<0.001	.004	<0.001	<0.001	.003	<0.001	<0.001	<0.001	
IRON, TOTAL MG/L	.03	<0.01	.02	.04	.01	.02	<0.01	<0.01	
LEAD, TOTAL MG/L	<0.01	.02	<0.01	<0.01	<0.01	.03	<0.01	<0.01	
MANGANESE, TOTAL MG/L	.020	.008	.007	.010	.013	.012	.013	.007	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
NICKEL, TOTAL MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA, STATION GH-1  
 SUMMARY TABLE

SITE: GRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.22.

STATION: PERIOD	GH-1	07-16-80	08-13-80	09-14-80	10-16-80
METALS					
ALUMINUM, TOTAL MG/L	*	<0.01	*	*	*
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	*	<0.01	*	*	*
CHROMIUM, TRIVALENT MG/L	*	<0.001	*	*	*
COBALT, TOTAL MG/L	*	<0.01	*	*	*
COPPER, TOTAL MG/L	.002	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.005	.005	.009	.025	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	*	<0.01	*	*	*
NICKEL, TOTAL MG/L	*	<0.01	*	*	*

9-20-F

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-1								
	11-14-79	12-11-79	01-08-80	02-18-80	03-18-80	04-13-80	05-13-80	06-16-80	
ZINC, TOTAL MG/L	.008	.011	<0.001	.010	.007	.005	<0.001	<0.001	
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	<0.01	*	*	.01	*	
PHOSPHORUS, TOTAL MG/L	.05	*	*	.05	*	*	.06	*	
NITROGEN									
NITROGEN, AMMONIA MG/L	.30	*	*	.28	*	*	.08	*	
NITROGEN, NITRATE MG/L	<0.05	*	*	<0.05	*	*	<0.05	*	
NITROGEN, NITRITE MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
NITROGEN, ORGANIC MG/L	.41	*	*	<0.01	*	*	.19	*	
SULFUR									
SULFATE MG/L	5	5	6	5	6	5	7	5	
SULFIDE MG/L	<0.01	<0.01	<0.01	.01	.03	.09	<0.01	<0.01	
SULFUR, TOTAL MG/L	1.65	1.65	1.98	1.65	2.01	1.74	2.31	1.65	
SOLIDS									
SOLIDS, DISSOLVED MG/L	121	*	130	119	167	133	131	136	
SOLIDS, SUSPENDED MG/L	4	*	9	3	7	<1	4	1	

F-207

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-1	07-16-80	08-13-80	09-14-80	10-16-80
ZINC, TOTAL MG/L		<0.001	<0.001	.003	<0.001
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L		*	<0.01	*	*
PHOSPHORUS, TOTAL MG/L		*	.02	*	*
NITROGEN					
NITROGEN, AMMONIA MG/L		*	<0.01	*	*
NITROGEN, NITRATE MG/L		*	<0.05	*	*
NITROGEN, NITRITE MG/L		*	<0.01	*	*
NITROGEN, ORGANIC MG/L		*	.09	*	*
SULFUR					
SULFATE MG/L		2	6	6	5
SULFIDE MG/L		.02	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L		.68	1.98	1.98	1.65
SOLIDS					
SOLIDS, DISSOLVED MG/L		119	132	139	99
SOLIDS, SUSPENDED MG/L		2	2	3	6



TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-1	11-14-79	12-11-79	01-08-80	02-18-80	03-18-80	04-13-80	05-13-80	06-16-80
SOLIDS, SUSPENDED VOLATILE MG/L		2	*	*	3	*		3	*
SOLIDS, TOTAL MG/L		125	132	139	122	174	133	135	137
SOLIDS, VOLATILE MG/L		68	*	*	65	*	*	90	*
BACTERIA									
FECAL COLIFORM BACTERIA ORG/100 ML		0	*	*	0	*	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		0	*	*	8	*	*	3	*
GENERAL PARAMETERS									
ALKALINITY, TOTAL MG/L		116	121	84	118	122	112	116	112
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		2	*	*	12	*	*	3	*
CHEMICAL OXYGEN DEMAND MG/L		62	*	*	10	*	*	10	*
CHLORIDE MG/L		2	1	<1	<1	<1	<1	<1	2
COLOR, TRUE COLOR UNITS		<1	*	*	8	*	*	<1	*
CONDUCTIVITY UMHOS/CM		135	132	140	134	140	140	160	188
CYANIDE MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L		12.0	12.5	8.2	2.9	1.1	*	*	10.6
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1	<1	<1	<1	<1	<1

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-1	07-16-80	08-13-80	09-14-80	10-16-80
SOLIDS, SUSPENDED VOLATILE MG/L		*	1	*	*
SOLIDS, TOTAL MG/L		121	134	142	105
SOLIDS, VOLATILE MG/L		*	82	*	*
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML		*	0	*	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		*	2	*	*
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L		110	98	98	108
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		*	1	*	*
CHEMICAL OXYGEN DEMAND MG/L		*	23	*	*
CHLORIDE MG/L		1	2	2	4
COLOR, TRUE COLOR UNITS		*	40	*	*
CONDUCTIVITY UMHOS/CM		200	185	159	150
CYANIDE MG/L		<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L		9.4	10.5	9.8	9.3
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1	<1

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: GH-1 PERIOD	11-14-79	12-11-79	01-08-80	02-18-80	03-18-80	04-13-80	05-13-80	06-16-80
HARDNESS MG/L	116	116	124	120	122	120	120	100
PH STANDARD UNITS	7.6	8.4	8.4	7.3	6.7	*	8.9	8.8
PHENOL UG/L	2	<1	<1	4	<1	<1	11	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	<10	*	*	<10	*
TEMPERATURE DEGREES C	3.0	3.5	3.5	2.5	3.0	6.0	11.0	18.0
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*	*	*	1.2	3.8
TURBIDITY FTU	4.5	3.4	2.3	1.2	.7	1.4	4.3	1.2

TABLE F-1B (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-1	07-16-80	08-13-80	09-14-80	10-16-80
HARDNESS MG/L		108	92	100	110
PH STANDARD UNITS		8.8	8.8	8.4	8.2
PHENOL UG/L		<1	<1	<1	<1
SURFACTANTS (MBAS), TOTAL UG/L		*	<10	*	*
TEMPERATURE DEGREES C		24.5	23.0	17.0	8.5
TRANSPARENCY (SECCHI DISC) METER		1.7	2.2	2.0	1.1
TURBIDITY FTU		2.6	2.2	3.4	2.8

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA, STATION GH-2  
 SUMMARY TABLE  
 MAY 1980-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/25/80. 20. 03. 06.

STATION: PERIOD	GH-2	05-13-80	06-16-80	07-16-80	08-13-80	09-14-80	10-16-80
METALS							
ALUMINUM, TOTAL MG/L	<0.01	*	*	<0.01	*	*	
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	*	*	<0.01	*	*	
CHROMIUM, TRIVALENT MG/L	<0.001	*	*	<0.001	*	*	
COBALT, TOTAL MG/L	<0.01	*	*	<0.01	*	*	
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	<0.01	.02	<0.01	.09	.08	<0.01	
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.017	.127	.010	.163	.278	.024	
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	*	*	<0.01	*	*	
NICKEL, TOTAL MG/L	<0.01	*	*	<0.01	*	*	

F-213

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	GH-2	05-13-80	06-16-80	07-16-80	08-13-80	09-14-80	10-16-80	11-11-80	12-12-80
ZINC, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	.004	<0.001		
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED MG/L		<0.01	*	*	<0.01	*	*		
PHOSPHORUS, TOTAL MG/L		.05	*	*	.17	*	*		
NITROGEN									
NITROGEN, AMMONIA MG/L		.10	*	*	<0.01	*	*		
NITROGEN, NITRATE MG/L		<0.05	*	*	<0.05	*	*		
NITROGEN, NITRITE MG/L		<0.01	*	*	<0.01	*	*		
NITROGEN, ORGANIC MG/L		.39	*	*	.17	*	*		
SULFUR									
SULFATE MG/L		11	2	3	1	2	6		
SULFIDE MG/L		<0.01	.38	.01	<0.01	.22	.76		
SULFUR, TOTAL MG/L		3.63	1.04	1.00	.33	.88	2.74		
SOLIDS									
SOLIDS, DISSOLVED MG/L		138	148	118	175	199	142		
SOLIDS, SUSPENDED MG/L		7	26	19	16	34	2		

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	05-13-80	06-16-80	07-16-80	08-13-80	09-14-80	10-16-80
SOLIDS, SUSPENDED VOLATILE MG/L	5	*	*	11	*	*
SOLIDS, TOTAL MG/L	145	174	137	191	233	144
SOLIDS, VOLATILE MG/L	96	*	*	91	*	*
BACTERIA						
FECAL COLIFORM BACTERIA ORG/100 ML	0	*	*	0	*	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	4	*	*	0	*	*
GENERAL PARAMETERS						
ALKALINITY, TOTAL MG/L	128	124	98	146	137	144
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	*	*	12	*	*
CHEMICAL OXYGEN DEMAND MG/L	14	*	*	27	*	*
CHLORIDE MG/L	<1	2	2	<1	1	2
COLOR, TRUE COLOR UNITS	<1	*	*	30	*	*
CONDUCTIVITY UMHOS/CM	153	162	180	200	210	175
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	*	.8	5.2	.2	.4	.5
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1	<1	<1

TABLE F-18 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	05-13-80	06-16-80	07-16-80	08-13-80	09-14-80	10-16-80
HARDNESS MG/L	120	124	88	148	144	144
PH STANDARD UNITS	7.9	7.4	8.9	7.7	7.2	7.4
PHENOL UG/L	6	<1	<1	3	<1	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	<10	*	*
TEMPERATURE DEGREES C	7.5	7.5	8.0	9.0	12	8.0
TRANSPARENCY (SECCHI DISC) METER	1.2	3.8	1.7	2.2	2.0	1.1
TURBIDITY FTU	4.4	28	14.0	18.0	27	7.3



TABLE F-19  
 WATER QUALITY DATA, STATION H  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/03/80. 20. 02. 49.

F-217

STATION: H				
PERIOD	11-12-79	02-19-80	05-14-80	08-11-80
METALS				
ALUMINUM, TOTAL MG/L	.06	.09	.05	.06
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.07	.06	.03	.05
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.024	.055	.026	.028
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-19 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-12-79	02-19-80	05-14-80	08-11-80
ZINC, TOTAL MG/L	.015	.021	.010	.020
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	.01	<0.01
PHOSPHORUS, TOTAL MG/L	.01	.02	.02	<0.01
NITROGEN				
NITROGEN, AMMONIA MG/L	.28	.30	.19	.14
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	.25	.22	.37	.22
SULFUR				
SULFATE MG/L	11	5	8	7
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.63	1.65	2.64	2.31
SOLIDS				
SOLIDS, DISSOLVED MG/L	23	19	21	20
SOLIDS, SUSPENDED MG/L	1	1	1	4

F-218

TABLE F-19 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-12-79	02-19-80	05-14-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	1	<1	3
SOLIDS, TOTAL MG/L	24	20	22	24
SOLIDS, VOLATILE MG/L	13	11	17	10
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	0	5	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	2	8	3
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	2	6	6	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	2	2	1
CHEMICAL OXYGEN DEMAND MG/L	41	17	24	24
CHLORIDE MG/L	2	<1	<1	2
COLOR, TRUE COLOR UNITS	20	20	<1	20
CONDUCTIVITY UMHDS/CM	20	20	15	21
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.2	5.6	10.2	8.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-219

TABLE F-19 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: H PERIOD	11-12-79	02-19-80	05-14-80	08-11-80
HARDNESS MG/L	8	16	8	8
PH STANDARD UNITS	6.1	6.4	5.8	5.6
PHENOL UG/L	5	2	9	4
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	1.5	2.0	11.5	24.0
TRANSPARENCY (SECCHI DISC) METER	*	*	3.6	3.4
TURBIDITY FTU	1.0	.5	.5	.7

TABLE F-20  
 WATER QUALITY DATA, STATION G-1  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/03/80. 20.02.00.

STATION: G-1  
 PERIOD

11-13-79 02-19-80 05-14-80 08-11-80

METALS

ALUMINUM, TOTAL MG/L	<0.01	.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.03	.03	<0.01	<0.01
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.021	.021	.018	.013
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-20 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	11-13-79	02-19-80	05-14-80	08-11-80
ZINC, TOTAL MG/L	.007	.008	.006	.003
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.01	.02	.02	.01
NITROGEN				
NITROGEN, AMMONIA MG/L	.37	.14	.11	.12
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	.12	.26	.42	.16
SULFUR				
SULFATE MG/L	6	3	7	6
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.98	.99	2.31	1.98
SOLIDS				
SOLIDS, DISSOLVED MG/L	32	31	18	37
SOLIDS, SUSPENDED MG/L	1	<1	1	2

F-20

TABLE F-20 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: G-1 PERIOD	11-13-79	02-19-80	05-14-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	<1	<1	1
SOLIDS, TOTAL MG/L	33	31	19	39
SOLIDS, VOLATILE MG/L	1	18	11	23
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	20	3	8
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	3	4	8	10
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	2	2	1
CHEMICAL OXYGEN DEMAND MG/L	41	17	10	16
CHLORIDE MG/L	4	<1	<1	2
COLOR, TRUE COLOR UNITS	15	18	<1	20
CONDUCTIVITY UMHDS/CM	10	20	16	20
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	11.1	8.6	10.8	8.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-2023

TABLE F-20 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: 0-1 PERIOD	11-13-79	02-19-80	05-14-80	08-11-80
HARDNESS MG/L	12	8	16	20
PH STANDARD UNITS	6.1	7.6	6.2	6.3
PHENDL UG/L	<1	2	11	6
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	3.5	0.	11.0	23.0
TRANSPARENCY (SECCHI DISC) METER	*	*	5.2	5.6
TURBIDITY FTU	.8	.9	.5	.6



TABLE F-21  
 WATER QUALITY DATA, STATION N  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 03. 36.

STATION: N				
PERIOD	11-13-79	02-19-80	05-13-80	08-12-80
METALS				
ALUMINUM, TOTAL MG/L	<0.01	.02	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	3.3	.49	.11	.34
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.421	.100	.027	.054
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

F-225

TABLE F-21 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-13-79	02-19-80	05-13-80	08-12-80
ZINC, TOTAL MG/L	.005	.012	.010	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	.02	<0.01
PHOSPHORUS, TOTAL MG/L	.01	.05	.03	.07
NITROGEN				
NITROGEN, AMMONIA MG/L	.95	.44	.34	.43
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	.08	.05	.05
SULFUR				
SULFATE MG/L	<1	4	8	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	1.32	2.64	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	116	147	105	99
SOLIDS, SUSPENDED MG/L	8	18	1	4

F-226

TABLE F-21 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-13-79	02-19-80	05-13-80	08-12-80
SOLIDS, SUSPENDED VOLATILE MG/L	3	13	1	2
SOLIDS, TOTAL MG/L	124	165	106	103
SOLIDS, VOLATILE MG/L	52	90	96	43
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	2	1	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	1	0	48	19
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	108	4	86	80
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	3	2	1
CHEMICAL OXYGEN DEMAND MG/L	28	21	38	71
CHLORIDE MG/L	8	<1	2	2
COLOR, TRUE COLOR UNITS	80	20	15	50
CONDUCTIVITY UMHOS/CM	135	137	125	152
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	4.3	1.0	10.2	3.5
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-227

TABLE F-21 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: N PERIOD	11-13-79	02-19-80	05-13-80	08-12-80
HARDNESS MG/L	116	132	92	84
PH STANDARD UNITS	7.0	7.0	8.8	7.2
PHENOL UG/L	7	1	4	14
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	1.5	1.0	12.0	20.0
TRANSPARENCY (SECCHI DISC) METER	*	*	.5	1.0
TURBIDITY FTU	9.1	2.6	1.1	.9

F-228

TABLE F-22  
 WATER QUALITY DATA, STATION JL  
 SUMMARY TABLE  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.02.

STATION:	JL								
PERIOD		11-14-79	12-11-79	01-09-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
METALS									
ALUMINUM, TOTAL MG/L		.03	*	*	.01	*	*	.03	*
ARSENIC, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
CHROMIUM, TRIVALENT MG/L		<0.001	*	*	<0.001	*	*	<0.001	*
COBALT, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
COPPER, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	.013	<0.001	<0.001	<0.001
IRON, TOTAL MG/L		.04	.04	.05	.05	.08	.15	.05	.08
LEAD, TOTAL MG/L		<0.01	.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L		.012	.013	.016	.023	.031	.036	.020	.014
MERCURY, TOTAL UG/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
NICKEL, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*

F-22-20

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA, STATION JL  
 SUMMARY TABLE  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.02.

STATION:	JL				
PERIOD		07-16-80	08-12-80	09-14-80	10-16-80
METALS					
ALUMINUM, TOTAL MG/L		*	.03	*	*
ARSENIC, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L		*	<0.01	*	*
CHROMIUM, TRIVALENT MG/L		*	<0.001	*	*
COBALT, TOTAL MG/L		*	<0.01	*	*
COPPER, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L		<0.01	.09	.05	.02
LEAD, TOTAL MG/L		<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L		.012	.013	.012	.017
MERCURY, TOTAL UG/L		<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L		*	<0.01	*	*
NICKEL, TOTAL MG/L		*	<0.01	*	*

F-230

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: JL	-----								
PERIOD	11-14-79	12-11-79	01-09-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80	
ZINC, TOTAL MG/L	.005	.022	.005	.011	.008	.006	.004	<0.001	
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
PHOSPHORUS, TOTAL MG/L	.03	*	*	.02	*	*	.04	*	
NITROGEN									
NITROGEN, AMMONIA MG/L	.35	*	*	.33	*	*	.23	*	
NITROGEN, NITRATE MG/L	<0.05	*	*	.10	*	*	<0.05	*	
NITROGEN, NITRITE MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
NITROGEN, ORGANIC MG/L	.17	*	*	.42	*	*	.40	*	
SULFUR									
SULFATE MG/L	4	5	6	3	5	5	7	3	
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	.02	.02	<0.01	<0.01	
SULFUR, TOTAL MG/L	1.32	1.65	1.98	.99	1.67	1.67	2.31	.99	
SOLIDS									
SOLIDS, DISSOLVED MG/L	22	*	15	17	6	11	28	36	
SOLIDS, SUSPENDED MG/L	3	*	1	1	4	2	2	3	

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: JL	07-16-80	08-12-80	09-14-80	10-16-80
PERIOD				
ZINC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	*	<0.01	*	*
PHOSPHORUS, TOTAL MG/L	*	.02	*	*
NITROGEN				
NITROGEN, AMMONIA MG/L	*	.07	*	*
NITROGEN, NITRATE MG/L	*	<0.05	*	*
NITROGEN, NITRITE MG/L	*	<0.01	*	*
NITROGEN, ORGANIC MG/L	*	.10	*	*
SULFUR				
SULFATE MG/L	3	5	3	6
SULFIDE MG/L	.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	1.00	1.65	.99	1.98
SOLIDS				
SOLIDS, DISSOLVED MG/L	3	22	41	8
SOLIDS, SUSPENDED MG/L	2	4	2	2

F-232



TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: JL	11-14-79	12-11-79	01-09-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
SOLIDS, SUSPENDED VOLATILE MG/L	2	*	*	1	*	*	<1	*
SOLIDS, TOTAL MG/L	25	18	16	18	10	13	30	39
SOLIDS, VOLATILE MG/L	15	*	*	13	*	*	30	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	0	*	*	0	*	*	0	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	*	11	*	*	0	*
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	2	5	2	4	2	1	4	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	*	*	2	*	*	3	*
CHEMICAL OXYGEN DEMAND MG/L	41	*	*	24	*	*	7	*
CHLORIDE MG/L	2	1	2	<1	<1	2	<1	1
COLOR, TRUE COLOR UNITS	10	*	*	10	*	*	5	*
CONDUCTIVITY UMHOS/CM	10	12	12	15	12	15	15	19
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.8	11.2	8.3	6.2	7.0	8.5	*	9.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1	<1	<1	<1	<1

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	JL	07-16-80	08-12-80	09-14-80	10-16-80
SOLIDS, SUSPENDED VOLATILE MG/L		*	3	*	*
SOLIDS, TOTAL MG/L		5	26	43	10
SOLIDS, VOLATILE MG/L		*	19	*	*
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML		*	5	*	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		*	2	*	*
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L		10	10	4	2
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		*	1	*	*
CHEMICAL OXYGEN DEMAND MG/L		*	39	*	*
CHLORIDE MG/L		1	2	1	1
COLOR, TRUE COLOR UNITS		*	30	*	*
CONDUCTIVITY UMHOS/CM		20	20	11	10
CYANIDE MG/L		<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L		8.6	8.8	8.3	11.2
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1	<1

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: JL	11-14-79	12-11-79	01-09-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
HARDNESS MG/L	16	8	12	8	6	12	16	12
PH STANDARD UNITS	6.6	6.0	5.8	5.6	5.3	6.0	6.1	6.6
PHENOL UG/L	<1	<1	<1	2	<1	<1	5	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	<10	*	*	<10	*
TEMPERATURE DEGREES C	1.5	3.5	3.5	2.5	2.0	4.0	11.5	18.7
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*	*	*	3.7	2.9
TURBIDITY FTU	1.4	1.4	.6	.9	.7	1.5	.8	1.6

TABLE F-22 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: JL	07-16-80	08-12-80	09-14-80	10-16-80
PERIOD				
HARDNESS MG/L	12	16	12	8
PH STANDARD UNITS	6.6	6.7	5.5	6.2
PHENOL UG/L	<1	7	<1	<1
SURFACTANTS (MBAS), TOTAL UG/L	*	<10	*	*
TEMPERATURE DEGREES C	25.5	23.0	18.0	8.5
TRANSPARENCY (SECCHI DISC) METER	3.0	3.6	4.0	2.2
TURBIDITY FTU	1.0	.7	1.3	1.2

TABLE F-23  
 WATER QUALITY DATA, STATION J  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 03. 59.

STATION: J				
PERIOD	11-12-79	02-19-80	05-13-80	08-12-80
METALS				
ALUMINUM, TOTAL MG/L	.02	.10	.04	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.20	.71	.05	.13
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.123	.346	.034	.060
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

F-237

TABLE F-23 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-12-79	02-19-80	05-13-80	08-12-80
ZINC, TOTAL MG/L	.006	.008	.007	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	.01	<0.01
PHOSPHORUS, TOTAL MG/L	.03	.12	.03	.04
NITROGEN				
NITROGEN, AMMONIA MG/L	.91	1.55	.73	.40
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	2.30	.32	.04	.17
SULFUR				
SULFATE MG/L	<1	<1	6	<1
SULFIDE MG/L	<0.01	1.17	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	1.17	1.98	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	12	20	24	24
SOLIDS, SUSPENDED MG/L	4	16	2	4

F-33B

TABLE F-23 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-12-79	02-19-80	05-13-80	08-12-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	14	2	2
SOLIDS, TOTAL MG/L	16	36	26	28
SOLIDS, VOLATILE MG/L	12	10	26	18
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	6	10	5	43
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	5	9	36	2
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	6	16	2	8
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	17	3	3
CHEMICAL OXYGEN DEMAND MG/L	76	96	34	154
CHLORIDE MG/L	2	<1	<1	<1
COLOR, TRUE COLOR UNITS	80	100	35	40
CONDUCTIVITY UMHOS/CM	11	28	25	18
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	7.4	.7	8.4	5.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-23 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: J PERIOD	11-12-79	02-19-80	05-13-80	08-12-80
HARDNESS MG/L	12	20	12	8
PH STANDARD UNITS	5.0	6.5	5.9	5.6
PHENOL UG/L	6	45	9	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	4.0	1.5	11.0	20.0
TRANSPARENCY (SECCHI DISC) METER	*	*	1.2	1.3
TURBIDITY FTU	1.1	5.0	.9	1.0



TABLE F-24  
 WATER QUALITY DATA, STATION WL  
 SUMMARY TABLE  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.04.54.

STATION: PERIOD	WL	11-13-79	12-11-79	01-08-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
METALS									
ALUMINUM, TOTAL MG/L		.01	*	*	<0.01	*	*	<0.01	*
ARSENIC, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
CHROMIUM, TRIVALENT MG/L		<0.001	*	*	<0.001	*	*	<0.001	*
COBALT, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
COPPER, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L		.07	.01	.03	.06	.05	.19	.04	.05
LEAD, TOTAL MG/L		<0.01	<0.01	<0.01	<0.01	<0.01	.02	<0.01	<0.01
MANGANESE, TOTAL MG/L		.016	.015	.034	.050	.071	.096	.041	.026
MERCURY, TOTAL UG/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*
NICKEL, TOTAL MG/L		<0.01	*	*	<0.01	*	*	<0.01	*

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA, STATION WL  
 SUMMARY TABLE  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.04.54.

STATION: PERIOD	WL	07-16-80	08-12-80	09-14-80	10-16-80	11-11-80	12-12-80	01-01-81	02-02-81
METALS									
ALUMINUM, TOTAL MG/L		*	<0.01	*	*				
ARSENIC, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001				
CADMIUM, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001				
CHROMIUM, HEXAVALENT MG/L		*	<0.01	*	*				
CHROMIUM, TRIVALENT MG/L		*	<0.001	*	*				
COBALT, TOTAL MG/L		*	<0.01	*	*				
COPPER, TOTAL MG/L		<0.001	<0.001	<0.001	<0.001				
IRON, TOTAL MG/L		<0.01	.06	.04	<0.01				
LEAD, TOTAL MG/L		<0.01	<0.01	<0.01	<0.01				
MANGANESE, TOTAL MG/L		.022	.057	.029	.020				
MERCURY, TOTAL UG/L		<0.1	<0.1	<0.1	<0.1				
MOLYBDENUM, TOTAL MG/L		*	<0.01	*	*				
NICKEL, TOTAL MG/L		*	<0.01	*	*				

F-242

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: WL	-----								
PERIOD	11-13-79	12-11-79	01-08-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80	-----
ZINC, TOTAL MG/L	.009	.014	<0.001	.011	.006	.010	<0.001	.004	
PHOSPHORUS									
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
PHOSPHORUS, TOTAL MG/L	.04	*	*	.01	*	*	.02	*	
NITROGEN									
NITROGEN, AMMONIA MG/L	.42	*	*	.39	*	*	.33	*	
NITROGEN, NITRATE MG/L	<0.05	*	*	.20	*	*	<0.05	*	
NITROGEN, NITRITE MG/L	<0.01	*	*	<0.01	*	*	<0.01	*	
NITROGEN, ORGANIC MG/L	.25	*	*	<0.01	*	*	.30	*	
SULFUR									
SULFATE MG/L	7	7	7	3	6	4	8	4	
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	.02	<0.01	<0.01	
SULFUR, TOTAL MG/L	2.31	2.31	2.31	.99	1.98	1.34	2.64	1.32	
SOLIDS									
SOLIDS, DISSOLVED MG/L	21	*	12	21	18	23	20	25	
SOLIDS, SUSPENDED MG/L	6	*	2	1	1	<1	2	5	

F-243

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	WL	07-16-80	08-12-80	09-14-80	10-16-80
ZINC, TOTAL MG/L		<0.001	<0.001	<0.001	.004
PHOSPHORUS					
ORTHOPHOSPHATE, DISSOLVED MG/L		*	<0.01	*	*
PHOSPHORUS, TOTAL MG/L		*	.05	*	*
NITROGEN					
NITROGEN, AMMONIA MG/L		*	.11	*	*
NITROGEN, NITRATE MG/L		*	<0.05	*	*
NITROGEN, NITRITE MG/L		*	<0.01	*	*
NITROGEN, ORGANIC MG/L		*	.07	*	*
SULFUR					
SULFATE MG/L		5	5	4	7
SULFIDE MG/L		<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L		1.65	1.65	1.32	2.31
SOLIDS					
SOLIDS, DISSOLVED MG/L		8	33	48	11
SOLIDS, SUSPENDED MG/L		1	2	4	1

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: WL	-----							
PERIOD	11-13-79	12-11-79	01-08-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
SOLIDS, SUSPENDED VOLATILE MG/L	4	*	*	1	*	*	<1	*
SOLIDS, TOTAL MG/L	27	25	14	22	19	23	22	30
SOLIDS, VOLATILE MG/L	10	*	*	15	*	*	15	*
BACTERIA								
FECAL COLIFORM BACTERIA ORG/100 ML	0	*	*	0	*	*	1	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	*	*	0	*	*	6	*
GENERAL PARAMETERS								
ALKALINITY, TOTAL MG/L	4	6	6	4	4	3	6	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	6	*	*	2	*	*	1	*
CHEMICAL OXYGEN DEMAND MG/L	65	*	*	21	*	*	38	*
CHLORIDE MG/L	2	1	<1	2	1	<1	<1	2
COLOR, TRUE COLOR UNITS	25	*	*	18	*	*	10	*
CONDUCTIVITY UMHDS/CM	17	19	15	19	18	15	40	25
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.3	10.6	8.5	6.6	7.6	8.9	*	9.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1	<1	<1	<1	<1

F-245

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: PERIOD	WL	07-16-80	08-12-80	09-14-80	10-16-80
SOLIDS, SUSPENDED VOLATILE MG/L		*	1	*	*
SOLIDS, TOTAL MG/L		9	35	52	12
SOLIDS, VOLATILE MG/L		*	29	*	*
BACTERIA					
FECAL COLIFORM BACTERIA ORG/100 ML		*	8	*	*
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		*	6	*	*
GENERAL PARAMETERS					
ALKALINITY, TOTAL MG/L		8	6	6	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		*	1	*	*
CHEMICAL OXYGEN DEMAND MG/L		*	47	*	*
CHLORIDE MG/L		2	1	<1	1
COLOR, TRUE COLOR UNITS		*	20	*	*
CONDUCTIVITY UMHOS/CM		29	28	20	15
CYANIDE MG/L		<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L		8.3	8.0	8.3	10.3
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1	<1

F-246

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: WL	11-13-79	12-11-79	01-08-80	02-20-80	03-18-80	04-13-80	05-12-80	06-16-80
HARDNESS MG/L	12	8	12	20	8	16	16	20
PH STANDARD UNITS	6.8	6.1	6.1	6.1	5.6	6.3	6.6	6.7
PHENOL UG/L	1	<1	<1	3	<1	<1	5	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	*	*	<10	*	*	<10	*
TEMPERATURE DEGREES C	2.0	3.5	3.5	1.0	1.0	4.0	12.0	18.9
TRANSPARENCY (SECCHI DISC) METER	*	*	*	*	*	*	2.0	2.9
TURBIDITY FTU	1.2	.7	.9	.2	.6	.8	.4	.6

TABLE F-24 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: WL	07-16-80	08-12-80	09-14-80	10-16-80
HARDNESS MG/L	16	8	10	16
PH STANDARD UNITS	6.6	6.2	6.1	5.8
PHENOL UG/L	<1	<1	<1	<1
SURFACTANTS (MBAS), TOTAL UG/L	*	<10	*	*
TEMPERATURE DEGREES C	25	23.0	18.0	8.5
TRANSPARENCY (SECCHI DISC) METER	3.0	3.4	2.7	2.9
TURBIDITY FTU	.9	1.2	1.3	.8

F-24B



TABLE F-25  
 WATER QUALITY DATA, STATION M-3  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 03. 42.

STATION: M-3  
 PERIOD

11-12-79 02-18-80 05-12-80 08-11-80

METALS

ALUMINUM, TOTAL MG/L	<0. 01	. 02	<0. 01	<0. 01
ARSENIC, TOTAL MG/L	<0. 001	<0. 001	<0. 001	<0. 001
CADMIUM, TOTAL MG/L	<0. 001	<0. 001	<0. 001	<0. 001
CHROMIUM, HEXAVALENT MG/L	<0. 01	<0. 01	<0. 01	<0. 01
CHROMIUM, TRIVALENT MG/L	<0. 001	<0. 001	<0. 001	<0. 001
COBALT, TOTAL MG/L	<0. 01	<0. 01	<0. 01	<0. 01
COPPER, TOTAL MG/L	<0. 001	<0. 001	<0. 001	<0. 001
IRON, TOTAL MG/L	. 25	. 26	. 12	. 12
LEAD, TOTAL MG/L	<0. 01	<0. 01	<0. 01	<0. 01
MANGANESE, TOTAL MG/L	. 021	. 156	. 043	. 072
MERCURY, TOTAL UG/L	<0. 1	<0. 1	<0. 1	<0. 1
MOLYBDENUM, TOTAL MG/L	<0. 01	<0. 01	<0. 01	<0. 01
NICKEL, TOTAL MG/L	<0. 01	<0. 01	<0. 01	<0. 01

TABLE F-25 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.007	.004	.003	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.02	.04	.04	.09
NITROGEN				
NITROGEN, AMMONIA MG/L	.63	.87	.68	.27
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	1.88	.02	.12
SULFUR				
SULFATE MG/L	<1	3	5	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	.99	1.65	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	81	136	92	95
SOLIDS, SUSPENDED MG/L	1	3	8	4

F-250

TABLE F-25 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	3	5	2
SOLIDS, TOTAL MG/L	82	139	100	99
SOLIDS, VOLATILE MG/L	52	93	92	58
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	5	11	5	51
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	350	4	19	58
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	61	138	72	114
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	3	2	1
CHEMICAL OXYGEN DEMAND MG/L	103	10	69	47
CHLORIDE MG/L	2	<1	<1	2
COLOR, TRUE COLOR UNITS	100	10	40	40
CONDUCTIVITY UMHOS/CM	98	110	110	250
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	8.8	6.8	11.8	4.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-25 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-3 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
HARDNESS MG/L	72	136	88	112
PH STANDARD UNITS	7.3	7.2	7.4	7.4
PHENOL UG/L	4	4	11	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	.5	1.0	4.0	18.0
TRANSPARENCY (SECCHI DISC) METER	.5	*	.2	.3
TURBIDITY FTU	2.0	1.2	1.0	1.0

TABLE F-26  
 WATER QUALITY DATA, STATION M-1  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20.04.19.

STATION: M-1	11-12-79	02-18-80	05-12-80	08-11-80
PERIOD				
METALS				
ALUMINUM, TOTAL MG/L	.05	.03	.05	.02
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.09	.08	.08	.12
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.019	.017	.023	.030
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

F-263

TABLE F-26 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.006	.007	.006	.005
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.03	.03	.02	.04
NITROGEN				
NITROGEN, AMMONIA MG/L	.18	.13	.51	.16
NITROGEN, NITRATE MG/L	.10	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	.26	.30	.01	.23
SULFUR				
SULFATE MG/L	10	7	3	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	3.30	2.31	.99	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	106	111	115	110
SOLIDS, SUSPENDED MG/L	3	5	<1	4

F-254

TABLE F-26 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	4	<1	2
SOLIDS, TOTAL MG/L	109	116	115	114
SOLIDS, VOLATILE MG/L	83	87	104	66
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	2	0	22	89
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	300	16	14	66
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	102	98	73	104
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	3	<1	1
CHEMICAL OXYGEN DEMAND MG/L	21	7	65	24
CHLORIDE MG/L	2	<1	<1	1
COLOR, TRUE COLOR UNITS	35	10	30	35
CONDUCTIVITY UMHOS/CM	110	110	95	155
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	13.4	12.3	12.7	9.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-255

TABLE F-26 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-1 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
HARDNESS MG/L	108	100	84	84
PH STANDARD UNITS	7.8	7.4	7.7	7.6
PHENOL UG/L	8	1	5	5
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	0.	1.0	5.0	13.0
TRANSPARENCY (SECCHI DISC) METER	.8	*	.8	.9
TURBIDITY FTU	.8	1.1	.4	.7

E-556



TABLE F-27  
 WATER QUALITY DATA, STATION A-1  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20. 03. 31.

STATION: A-1	PERIOD			
	11-13-79	02-18-80	05-12-80	08-12-80
METALS				
ALUMINUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.07	.02	.08	.17
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.011	.015	.027	.047
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-27 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-13-79	02-18-80	05-12-80	08-12-80
ZINC, TOTAL MG/L	.003	.005	.006	.007
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.04	.03	.05	<0.01
NITROGEN				
NITROGEN, AMMONIA MG/L	.55	.40	.47	.22
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	.13	.23	<0.01
SULFUR				
SULFATE MG/L	1	4	6	<1
SULFIDE MG/L	<0.01	.01	<0.01	<0.01
SULFUR, TOTAL MG/L	.33	1.33	1.98	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	156	129	97	123
SOLIDS, SUSPENDED MG/L	4	1	3	4

F-258

TABLE F-27 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-13-79	02-18-80	05-12-80	08-12-80
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	3	3
SOLIDS, TOTAL MG/L	160	130	100	127
SOLIDS, VOLATILE MG/L	95	88	43	56
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	19	0	43	10
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	2	92	47	31
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	113	124	100	96
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	1	2	2
CHEMICAL OXYGEN DEMAND MG/L	34	<1	65	47
CHLORIDE MG/L	4	<1	<1	2
COLOR, TRUE COLOR UNITS	30	10	30	35
CONDUCTIVITY UMHOS/CM	113	130	120	168
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	11.8	5.5	8.9	5.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-159

TABLE F-27 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: A-1 PERIOD	11-13-79	02-18-80	05-12-80	08-12-80
HARDNESS MG/L	112	120	124	96
PH STANDARD UNITS	7.6	7.8	7.7	7.6
PHENOL UG/L	<1	<1	3	<1
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	1.0	1.0	10.0	18.0
TRANSPARENCY (SECCHI DISC) METER	1.0	*	1.0	.9
TURBIDITY FTU	4.0	.6	1.6	.7

TABLE F-28  
 WATER QUALITY DATA, STATION M-5  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20.04.01.

STATION: M-5 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
METALS				
ALUMINUM, TOTAL MG/L	.04	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.30	.09	.27	.44
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.108	.031	.031	.061
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

F-261

TABLE F-28 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.008	.006	.005	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	.01	<0.01
PHOSPHORUS, TOTAL MG/L	.03	.04	.03	.03
NITROGEN				
NITROGEN, AMMONIA MG/L	.53	.07	.89	.84
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	.14	<0.01	.36
SULFUR				
SULFATE MG/L	<1	4	6	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	1.32	1.98	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	105	118	94	96
SOLIDS, SUSPENDED MG/L	1	1	6	4

F-262

TABLE F-28 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	1	5	2
SOLIDS, TOTAL MG/L	106	119	100	100
SOLIDS, VOLATILE MG/L	80	80	82	60
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	1	0	3	41
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	400	0	17	72
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	94	104	48	76
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	1	1
CHEMICAL OXYGEN DEMAND MG/L	45	7	41	55
CHLORIDE MG/L	2	<1	<1	<1
COLOR, TRUE COLOR UNITS	70	15	65	140
CONDUCTIVITY UMHOS/CM	71	110	55	120
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.2	9.6	12.6	7.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-263

TABLE F-28 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: M-5 PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
HARDNESS MG/L	96	100	52	80
PH STANDARD UNITS	7.3	7.3	7.1	7.2
PHENOL UG/L	3	2	4	3
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	0.	2.0	3.0	14.0
TRANSPARENCY (SECCHI DISC) METER	.8	*	.8	.9
TURBIDITY FTU	1.0	1.2	.8	1.4



TABLE F-29  
 WATER QUALITY DATA, STATION D  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20.03.50.

STATION: D				
PERIOD	11-13-79	02-19-80	05-12-80	08-11-80
METALS				
ALUMINUM, TOTAL MG/L	.02	<0.01	<0.01	<0.01
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.23	.14	.19	.30
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.043	.069	.059	.070
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	11-13-79	02-19-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.007	.003	<0.001	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.03	.01	.02	.05
NITROGEN				
NITROGEN, AMMONIA MG/L	.29	.21	.39	.19
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	.11	.23	.12	.19
SULFUR				
SULFATE MG/L	<1	9	4	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	2.97	1.32	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	117	96	99	99
SOLIDS, SUSPENDED MG/L	4	3	4	4

F-266

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	11-13-79	02-19-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	2	2	3	2
SOLIDS, TOTAL MG/L	121	99	103	103
SOLIDS, VOLATILE MG/L	69	57	70	48
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	9	0	33	17
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	17	27	78
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	96	106	84	100
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	2	2	1
CHEMICAL OXYGEN DEMAND MG/L	24	10	76	39
CHLORIDE MG/L	4	2	<1	3
COLOR, TRUE COLOR UNITS	35	8	30	70
CONDUCTIVITY UMHQS/CM	108	115	110	165
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	11.9	8.9	12.8	8.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

F-267

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: D PERIOD	11-13-79	02-19-80	05-12-80	08-11-80
HARDNESS MG/L	100	112	92	84
PH STANDARD UNITS	7.3	7.1	7.8	7.6
PHENOL UG/L	<1	2	5	4
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	0.	1.5	9.0	19.0
TRANSPARENCY (SECCHI DISC) METER	.4	*	.5	.5
TURBIDITY FTU	1.8	.8	.9	1.5

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA, STATION E  
 SUMMARY TABLE  
 NOVEMBER 1979; FEBRUARY, MAY, AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/03/80. 20.02.39.

STATION: E				
PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
METALS				
ALUMINUM, TOTAL MG/L	.03	<0.01	.08	.08
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT MG/L	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT MG/L	<0.001	<0.001	<0.001	<0.001
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001
IRON, TOTAL MG/L	.19	.14	.22	.53
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
MANGANESE, TOTAL MG/L	.044	.052	.062	.156
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
ZINC, TOTAL MG/L	.003	.006	.006	<0.001
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01
PHOSPHORUS, TOTAL MG/L	.05	.02	.05	.06
NITROGEN				
NITROGEN, AMMONIA MG/L	.38	.10	.44	.28
NITROGEN, NITRATE MG/L	<0.05	<0.05	<0.05	<0.05
NITROGEN, NITRITE MG/L	<0.01	<0.01	<0.01	<0.01
NITROGEN, ORGANIC MG/L	<0.01	.18	.03	.11
SULFUR				
SULFATE MG/L	<1	4	4	<1
SULFIDE MG/L	<0.01	<0.01	<0.01	<0.01
SULFUR, TOTAL MG/L	<0.33	1.32	1.32	<0.33
SOLIDS				
SOLIDS, DISSOLVED MG/L	119	107	101	112
SOLIDS, SUSPENDED MG/L	1	2	2	5

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
SOLIDS, SUSPENDED VOLATILE MG/L	1	1	1	3
SOLIDS, TOTAL MG/L	120	109	103	117
SOLIDS, VOLATILE MG/L	73	69	65	69
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML	28	6	27	>250
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	175	0	19	47
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L	92	104	94	86
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	2	2	1
CHEMICAL OXYGEN DEMAND MG/L	31	7	48	55
CHLORIDE MG/L	6	2	2	4
COLOR, TRUE COLOR UNITS	45	10	40	50
CONDUCTIVITY UMHOS/CM	97	120	110	165
CYANIDE MG/L	<0.001	<0.001	<0.001	<0.001
DISSOLVED OXYGEN MG/L	10.0	9.4	10.9	5.1
FREDN EXTRACTABLE SUBSTANCES PPM	<1	<1	<1	<1

TABLE F-29 (CONTINUED)  
 WATER QUALITY DATA  
 SUMMARY TABLE

STATION: E PERIOD	11-12-79	02-18-80	05-12-80	08-11-80
HARDNESS MG/L	100	108	84	88
PH STANDARD UNITS	7.1	7.6	7.5	7.4
PHENOL UG/L	5	<1	9	5
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10	<10
TEMPERATURE DEGREES C	0.	1.0	9.0	19.0
TRANSPARENCY (SECCHI DISC) METER	1.0	*	*	.9
TURBIDITY FTU	1.7	1.4	1.1	2.0



APPENDIX 2.4G

WATER QUALITY DATA BY STATION  
SUMMARY OF MONTHLY MEANS AND RANGES

APPENDIX 2.4G

WATER QUALITY DATA BY STATION  
SUMMARY OF MONTHLY MEANS AND RANGE

<u>Table</u>	<u>1977-1978</u>	<u>Page</u>
G-1	Water Quality Data, Station L (Deep Hole Lake) March 1977 through October 1978	G-1
G-2	Water Quality Data, Station K (Duck Lake) March 1977 through October 1978	G-5
G-3	Water Quality Data, Stations H and I (Little Sand Lake) March 1977 through March 1978; May and August 1978	G-9
G-4	Water Quality Data, Station O (Mole Lake) May 1977 through April 1978	G-17
G-5	Water Quality Data, Stations G-1 and G-2 (Oak Lake) March 1977 through March 1978; May and August 1978	G-21
G-6	Water Quality Data, Stations F and N (Rice Lake) March 1977 through March 1978; May, August and October 1978	G-29
G-7	Water Quality Data, Stations M-2 and M-4 (Rolling Stone Lake) October 1977 through September 1978	G-37
G-8	Water Quality Data, Station J (Skunk Lake) March 1977 through March 1978	G-45
G-9	Water Quality Data, Station M-3 (Creek 11-4) October 1977 through September 1978	G-49
G-10	Water Quality Data, Station M-1 (Creek 12-9) March 1977 through September 1978	G-53
G-11	Water Quality Data, Station A-1 (Hemlock Creek) March 1977 through March 1978; May, August and October 1978	G-57
G-12	Water Quality Data, Station C (Metonga [Outlet] Creek) March 1977 through March 1978	G-61
G-13	Water Quality Data, Station M-5 (Pickereel Creek) October 1977 through September 1978	G-65

APPENDIX 2.4G (continued)

<u>Table</u>	<u>1977-1978</u>	<u>Page</u>
G-14	Water Quality Data, Stations B, D, E, and V (Swamp Creek) March 1977 through October 1978	G-69
G-15	Water Quality Data, Stations Y and Z (Wolf River) October 1977 through October 1978	G-85
<u>1979-1980</u>		
G-16	Water Quality Data, Station L (Deep Hole Lake) November 1979; February, May and August 1980	G-93
G-17	Water Quality Data, Station K (Duck Lake) November 1979; February, May and August 1980	G-97
G-18	Water Quality Data, Stations GH-1 and GH-2 (Ground Hemlock Lake) November 1979 through October 1980	G-101
G-19	Water Quality Data, Station H (Little Sand Lake) November 1979; February, May and August 1980	G-109
G-20	Water Quality Data, Station G-1 (Oak Lake) November 1979; February, May and August 1980	G-113
G-21	Water Quality Data, Station N (Rice Lake) November 1979; February, May and August 1980	G-117
G-22	Water Quality Data, Station JL (St. Johns Lake) November 1979 through October 1980	G-121
G-23	Water Quality Data, Station J (Skunk Lake) November 1979; February, May and August 1980	G-125
G-24	Water Quality Data, Station WL (Walsh Lake) November 1979 through October 1980	G-129
G-25	Water Quality Data, Station M-3 (Creek 11-4) November 1979; February, May and August 1980	G-133
G-26	Water Quality Data, Station M-1 (Creek 12-9) November 1979; February, May and August 1980	G-137
G-27	Water Quality Data, Station A-1 (Hemlock Creek) November 1979; February, May and August 1980	G-141

APPENDIX 2.4G (continued)

<u>Table</u>	<u>1979-1980</u>	<u>Page</u>
G-28	Water Quality Data, Station M-5 (Pickere1 Creek) November 1979; February, May and August 1980	G-145
G-29	Water Quality Data, Stations D and E (Swamp Creek) November 1979; February, May and August 1980	G-149

TABLE G-1

WATER QUALITY DATA, STATION L  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.28.04.

STATION: L PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.007
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.003	<.001	.011
IRON, TOTAL MG/L	.14	.05	.42
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.029	.014	.086
MERCURY, TOTAL UG/L	<.1	<.1	.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-1 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

STATION: 1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.012	.006	.020
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.03	<.01	.12
PHOSPHORUS, TOTAL MG/L	<.04	<.01	.12
NITROGEN			
NITROGEN, AMMONIA MG/L	.48	.33	.77
NITROGEN, NITRATE MG/L	<.11	<.01	.39
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	3.24	.11	18.97
SULFUR			
SULFATE MG/L	9	4	13
SULFIDE MG/L	<.02	<.01	.05
SULFUR, TOTAL MG/L	2.96	1.33	4.33
SOLIDS			
SOLIDS, DISSOLVED MG/L	53	8	196
SOLIDS, SUSPENDED MG/L	5	1	17

2-5

TABLE G-1 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

STATION: L PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<3	<1	6
SOLIDS, TOTAL MG/L	58	10	200
SOLIDS, VOLATILE MG/L	31	5	64
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	5	0	31
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	20	0	120
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	<5	<1	28
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	1	9
CHEMICAL OXYGEN DEMAND MG/L	12	3	21
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	<23	<1	40
CONDUCTIVITY UMHDS/CM	30	18	85
CYANIDE MG/L	<.001	<.001	.004
DISSOLVED OXYGEN MG/L	8.4	1.3	14.8
FREELY EXTRACTABLE SUBSTANCES PPM	<2	<1	7

5-3

TABLE G-1 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

STATION: L PERIOD	MEAN	RANGE	
HARDNESS MG/L	16	8	36
PH STANDARD UNITS	6.0	5.4	6.6
PHENOL UG/L	8	2	28
SURFACTANTS (MBAS) • TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	11.9	.6	24.0
TRANSPARENCY (SECCHI DISC) METER	1.8	.5	2.3
TURBIDITY FTU	1.4	.6	2.7



TABLE G-2

WATER QUALITY DATA, STATION K  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/01/78. 20.15.34.

STATION: K PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.006
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	.01
COPPER, TOTAL MG/L	<.005	<.001	.038
IRON, TOTAL MG/L	.26	.02	1.01
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.077	.036	.500
MERCURY, TOTAL UG/L	<.1	<.1	.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-2 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-OCTOBER 1978

STATION: K PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.019	.006	.063
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.02
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.05
NITROGEN			
NITROGEN, AMMONIA MG/L	1.28	.47	2.44
NITROGEN, NITRATE MG/L	<.24	<.01	1.27
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	2.17	.20	5.44
SULFUR			
SULFATE MG/L	<10	<1	14
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	3.15	.38	4.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	46	1	85
SOLIDS, SUSPENDED MG/L	7	1	17

TABLE G-2 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-OCTOBER 1978

STATION: K PERIOD	MEAN	RANGE	
SOLIDS,SUSPENDED VOLATILE MG/L	<3	<1	10
SOLIDS,TOTAL MG/L	53	10	100
SOLIDS,VOLATILE MG/L	27	4	54
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	4	0	24
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	4	0	22
GENERAL PARAMETERS			
ALKALINITY,TOTAL MG/L	<3	<1	18
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	4	1	10
CHEMICAL OXYGEN DEMAND MG/L	20	7	34
CHLORIDE MG/L	<2	<1	6
COLOR,TRUE COLOR UNITS	59	12	100
CONDUCTIVITY UMHOS/CM	30	22	40
CYANIDE MG/L	<.001	<.001	.002
DISSOLVED OXYGEN MG/L	7.7	.5	13.9
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	7

TABLE G-2 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-OCTOBER 1978

STATION: K PERIOD	MEAN	RANGE	
HARDNESS MG/L	15	4	26
PH STANDARD UNITS	5.0	4.5	6.0
PHENOL UG/L	<7	<1	19
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	11.7	.5	27.5
TRANSPARENCY (SECCHI DISC) METER	1.5	.9	2.1
TURBIDITY FTU	2.0	.9	5.6

TABLE G-3

WATER QUALITY DATA, STATION H  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.19.44.

STATION: H PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.001	<.001	.003
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.007	<.001	.043
IRON, TOTAL MG/L	.04	.01	.13
LEAD, TOTAL MG/L	<.01	<.01	.03
MANGANESE, TOTAL MG/L	.050	.018	.108
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: H PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.017	.007	.035
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.04
PHOSPHORUS, TOTAL MG/L	<.04	<.01	.17
NITROGEN			
NITROGEN, AMMONIA MG/L	.23	.08	.35
NITROGEN, NITRATE MG/L	<.13	<.01	.34
NITROGEN, NITRITE MG/L	<.01	<.01	.02
NITROGEN, ORGANIC MG/L	2.60	.54	11.12
SULFUR			
SULFATE MG/L	9	3	14
SULFIDE MG/L	<.02	<.01	.05
SULFUR, TOTAL MG/L	2.90	1.04	4.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	40	2	173
SOLIDS, SUSPENDED MG/L	<4	<1	12

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: H PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<4	<1	9
SOLIDS, TOTAL MG/L	44	4	180
SOLIDS, VOLATILE MG/L	20	7	40
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	30	0	184
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	29	0	129
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	<2	<1	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	7
CHEMICAL OXYGEN DEMAND MG/L	7	*	*
CHLORIDE MG/L	<2	<1	6
COLOR, TRUE COLOR UNITS	<5	<1	10
CONDUCTIVITY UMHOS/CM	29	11	59
CYANIDE MG/L	<.001	<.001	.004
DISSOLVED OXYGEN MG/L	9.1	2.8	11.8
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	8

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: H PERIOD	MEAN	RANGE	
HARDNESS MG/L	12	6	24
PH STANDARD UNITS	5.4	4.8	6.1
PHENOL UG/L	<7	<1	16
SURFACTANTS (MBAS), TOTAL UG/L	<13	<10	30
TEMPERATURE DEGREES C	10.9	1.5	24.9
TRANSPARENCY (SECCHI DISC) METER	3.3	2.8	4.6
TURBIDITY FTU	1.0	.7	1.4



TABLE G-3 (CONTINUED)

WATER QUALITY DATA, STATION I  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.14.56.

STATION: I PERIOD	MEAN	RANGE	
METALS			
ALUMINIUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.005
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.003	<.001	.016
IRON, TOTAL MG/L	<.04	<.01	.16
LEAD, TOTAL MG/L	<.01	<.01	.02
MANGANESE, TOTAL MG/L	.049	.004	.114
MERCURY, TOTAL UG/L	<.1	<.1	.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL	<.01	<.01	<.01

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: I PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.020	.009	.034
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.06
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.08
NITROGEN			
NITROGEN, AMMONIA MG/L	.25	.13	.36
NITROGEN, NITRATE MG/L	<.22	<.01	.52
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	2.29	.83	7.81
SULFUR			
SULFATE MG/L	9	3	15
SULFIDE MG/L	<.01	<.01	.03
SULFUR, TOTAL MG/L	2.99	1.04	5.00
SOLIDS			
SOLIDS, DISSOLVED MG/L	36	8	155
SOLIDS, SUSPENDED MG/L	4	1	12

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: I PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	4
SOLIDS, TOTAL MG/L	40	9	160
SOLIDS, VOLATILE MG/L	<18	<1	38
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	6	0	36
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	11	0	57
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	<2	<1	4
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	4
CHEMICAL OXYGEN DEMAND MG/L	10	*	*
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	<4	<1	10
CONDUCTIVITY UMHOS/CM	27	20	48
CYANIDE MG/L	<.001	<.001	.002
DISSOLVED OXYGEN MG/L	9.1	2.5	15.5
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	7

TABLE G-3 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: 1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	10	4	16
PH STANDARD UNITS	5.4	5.0	6.3
PHENOL UG/L	<6	<1	15
SURFACTANTS (MBAS) • TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	11.1	1.5	25.1
TRANSPARENCY (SECCHI DISC) METER	3.3	3.0	4.6
TURBIDITY FTU	1.2	.6	2.8

TABLE G-4

WATER QUALITY DATA, STATION 0  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1977-APRIL 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78, 20.06.42.

STATION: 0 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.002	<.001	.004
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	.003
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.004	<.001	.019
IRON, TOTAL MG/L	.22	.09	.44
LEAD, TOTAL MG/L	<.01	<.01	.02
MANGANESE, TOTAL MG/L	.023	.008	.056
MERCURY, TOTAL UG/L	<.1	<.1	.2
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-4 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1977-APRIL 1978

STATION: 0 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.010	<.001	.024
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.03
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.47	.21	.68
NITROGEN, NITRATE MG/L	<.14	<.01	.29
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	2.31	.54	5.72
SULFUR			
SULFATE MG/L	<3	<1	6
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	<1.00	<.01	1.98
SOLIDS			
SOLIDS, DISSOLVED MG/L	64	12	167
SOLIDS, SUSPENDED MG/L	5	1	13

TABLE G-4 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1977-APRIL 1978

STATION: 0 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	2	3
SOLIDS, TOTAL MG/L	69	13	173
SOLIDS, VOLATILE MG/L	33	15	55
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	9	0	32
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	10	0	32
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	26	22	32
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	4	1	9
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	20	10	25
CONDUCTIVITY UMHOS/CM	52	35	145
CYANIDE MG/L	<.001	<.001	.003
DISSOLVED OXYGEN MG/L	8.5	2.1	13.6
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	8
HARDNESS MG/L	31	20	40

10-12

TABLE G-4 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1977-APRIL 1978

STATION: 0 PERIOD	MFAN	RANGE	
PH STANDARD UNITS	7.2	5.6	8.4
PHENOL UG/L	<7	<1	17
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	10.8	1.0	24.0
TRANSPARENCY (SECCHI DISC) METER	1.8	1.5	2.0
TURBIDITY FTU	1.6	.9	2.4



TABLE G-5

WATER QUALITY DATA, STATION G-1  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.18.53.

STATION: G-1 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	.004
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .002	< .001	.005
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .005	< .001	.019
IRON, TOTAL MG/L	.05	.01	.15
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.023	.007	.061
MERCURY, TOTAL UG/L	< .1	< .1	.2
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.011	.001	.036
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	< .02	< .01	.03
PHOSPHORUS, TOTAL MG/L	< .02	< .01	.03
NITROGEN			
NITROGEN, AMMONIA MG/L	.16	.11	.22
NITROGEN, NITRATE MG/L	< .07	< .01	.16
NITROGEN, NITRITE MG/L	< .01	< .01	.01
NITROGEN, ORGANIC MG/L	1.69	.21	3.44
SULFUR			
SULFATE MG/L	6	2	9
SULFIDE MG/L	< .01	< .01	.06
SULFUR, TOTAL MG/L	2.11	.71	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	53	2	216
SOLIDS, SUSPENDED MG/L	3	1	10

22-5

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	< 2	< 1	8
SOLIDS, TOTAL MG/L	56	4	220
SOLIDS, VOLATILE MG/L	19	14	40
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	4	0	20
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	0	3
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	< 4	< 1	8
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	6
CHEMICAL OXYGEN DEMAND MG/L	7	*	*
CHLORIDE MG/L	< 2	< 1	6
COLOR, TRUE COLOR UNITS	< 4	< 1	10
CONDUCTIVITY UMHOS/CM	23	11	32
CYANIDE MG/L	< .001	< .001	.002
DISSOLVED OXYGEN MG/L	9.8	5.6	13.8
FREON EXTRACTABLE SUBSTANCES PPM	< 2	< 1	7

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	11	1	24
PH STANDARD UNITS	6.2	5.8	7.5
PHENOL UG/L	<6	<1	14
SURFACTANTS (MBAS), TOTAL UG/L	<16	<10	52
TEMPERATURE DEGREES C	10.7	1.0	25.1
TRANSPARENCY (SECCHI DISC) METER	4.0	3.2	5.3
TURBIDITY FTU	1.3	.7	2.5

42-4

TABLE G-5 (CONTINUED)

WATER QUALITY DATA, STATION G-2  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 JUNE 1977-MARCH 1978; MAY, AUGUST 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/04/78. 20.16.04.

STATION: G-2 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	.004
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	.003
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.002	<.001	.006
IRON, TOTAL MG/L	.05	.02	.12
LEAD, TOTAL MG/L	<.01	<.01	.01
MANGANESE, TOTAL MG/L	.034	.011	.091
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 JUNE 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-2 PERIOD	MFAN	RANGE	
ZINC, TOTAL MG/L	<.008	<.001	.019
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.02	.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.16	.12	.24
NITROGEN, NITRATE MG/L	<.08	<.01	.16
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	2.53	.63	7.97
SULFUR			
SULFATE MG/L	7	4	8
SULFIDE MG/L	<.02	<.01	.05
SULFUR, TOTAL MG/L	2.21	1.32	2.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	35	11	74
SOLIDS, SUSPENDED MG/L	3	1	7

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 JUNE 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-2 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	< 2	< 1	4
SOLIDS, TOTAL MG/L	38	12	76
SOLIDS, VOLATILE MG/L	16	10	24
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	26	0	130
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	< 4	< 1	8
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	7	*	*
CHLORIDE MG/L	< 2	< 1	4
COLOR, TRUE COLOR UNITS	< 1	0	< 1
CONDUCTIVITY UMHOS/CM	24	18	38
CYANIDE MG/L	< .001	< .001	.002
DISSOLVED OXYGEN MG/L	8.3	3.0	12.2
FREON EXTRACTABLE SUBSTANCES PPM	< 1	< 1	3

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 JUNE 1977-MARCH 1978; MAY, AUGUST 1978

STATION: G-2 PERIOD	MEAN	RANGE	
HARDNESS MG/L	11	4	24
PH STANDARD UNITS	5.9	5.3	6.6
PHENOL UG/L	<6	<1	13
SURFACTANTS (MBAS), TOTAL UG/L	<16	<10	39
TEMPERATURE DEGREES C	10.3	3.5	20.5
TRANSPARENCY (SECCHI DISC) METER	3.8	3.2	5.0
TURBIDITY FTU	1.3	.8	2.1



TABLE G-6

WATER QUALITY DATA, STATION F  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/02/78. 20.07.51.

STATION: F PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.007
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.004	<.001	.014
IRON, TOTAL MG/L	.61	.12	4.34
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.068	.016	.204
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-6 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: F PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.012	<.001	.061
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.03	<.01	.05
PHOSPHORUS, TOTAL MG/L	.05	.03	.11
NITROGEN			
NITROGEN, AMMONIA MG/L	.33	.15	.85
NITROGEN, NITRATE MG/L	<.10	<.01	.18
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	2.07	1.41	4.03
SULFUR			
SULFATE MG/L	<4	<1	8
SULFIDE MG/L	<.02	<.01	.07
SULFUR, TOTAL MG/L	<1.34	<.01	2.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	187	67	425
SOLIDS, SUSPENDED MG/L	<6	<1	28

TABLE G-5 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: F PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<3	0	10
SOLIDS, TOTAL MG/L	194	68	430
SOLIDS, VOLATILE MG/L	75	50	112
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	20	8	28
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	90	2	334
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	98	78	118
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	1	10
CHLORIDE MG/L	<3	<1	6
COLOR, TRUE COLOR UNITS	<24	<1	75
CONDUCTIVITY UMHDS/CM	138	45	175
CYANIDE MG/L	<.001	<.001	.002
DISSOLVED OXYGEN MG/L	6.9	2.5	12.6
FREQU EXTRACTABLE SUBSTANCES PPM	<1	<1	4
HARDNESS MG/L	108	88	126

TABLE G-6 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

STATION: F PERIOD	MEAN	RANGE	
PH STANDARD UNITS	7.1	5.6	7.6
PHENOL UG/L	<6	<1	10
SURFACTANTS (MBAS), TOTAL UG/L	<14	<10	30
TEMPERATURE DEGREES C	8.9	.5	25.0
TRANSPARENCY (SECCHI DISC) METER	1.2	.8	1.5
TURBIDITY FTU	2.6	1.0	10.0

TABLE G-6 (CONTINUED)

WATER QUALITY DATA, STATION N  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.19.30.

STATION: N	MEAN	RANGE	
PERIOD			
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.006
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.003	<.001	.009
IRON, TOTAL MG/L	.20	.10	.35
LEAD, TOTAL MG/L	<.01	<.01	.03
MANGANESE, TOTAL MG/L	.045	.015	.088
MERCURY, TOTAL UG/L	<.1	<.1	.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

111

TABLE G-6 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: N PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.008	<.001	.020
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.04
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.05
NITROGEN			
NITROGEN, AMMONIA MG/L	.53	.11	1.24
NITROGEN, NITRATE MG/L	<.15	<.01	.29
NITROGEN, NITRITE MG/L	<.01	<.01	.02
NITROGEN, ORGANIC MG/L	2.29	.23	11.26
SULFUR			
SULFATE MG/L	<4	<1	8
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	<1.39	<.01	2.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	188	67	656
SOLIDS, SUSPENDED MG/L	4	1	22

TABLE G-6 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: N PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<4	0	20
SOLIDS, TOTAL MG/L	192	68	660
SOLIDS, VOLATILE MG/L	74	25	130
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	12	0	42
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	69	0	354
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	<81	<1	118
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	5	2	15
CHEMICAL OXYGEN DEMAND MG/L	18	3	34
CHLORIDE MG/L	<2	<1	6
COLOR, TRUE COLOR UNITS	<40	<1	115
CONDUCTIVITY UMHOS/CM	145	40	205
CYANIDE MG/L	<.001	<.001	.004
DISSOLVED OXYGEN MG/L	6.8	2.8	9.5
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	7

1-35

TABLE G-6 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: N PERIOD	MEAN	RANGE	
HARDNESS MG/L	102	84	142
PH STANDARD UNITS	7.3	5.8	8.2
PHENOL UG/L	9	1	21
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	11.1	.5	26.0
TRANSPARENCY (SECCHI DISC) METER	.8	.5	1.2
TURBIDITY FTU	1.6	.9	2.3

112



TABLE G-7

WATER QUALITY DATA, STATION M-2  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.18.41.

STATION: M-2 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.002	<.001	.005
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	.003
IRON, TOTAL MG/L	.17	.04	.41
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.067	.013	.224
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-2 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.007	.001	.015
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.03	.01	.06
NITROGEN			
NITROGEN, AMMONIA MG/L	.55	.30	.95
NITROGEN, NITRATE MG/L	<.08	<.01	.24
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	2.49	.85	6.31
SULFUR			
SULFATE MG/L	<6	<1	8
SULFIDE MG/L	<.01	<.01	.01
SULFUR, TOTAL MG/L	<1.93	<.01	2.68
SOLIDS			
SOLIDS, DISSOLVED MG/L	125	94	202
SOLIDS, SUSPENDED MG/L	5	1	13

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-2 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	5
SOLIDS, TOTAL MG/L	130	97	207
SOLIDS, VOLATILE MG/L	89	51	139
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	0	0	0
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	83	68	110
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	3	3
CHEMICAL OXYGEN DEMAND MG/L	31	*	*
CHLORIDE MG/L	< 2	< 1	2
COLOR, TRUE COLOR UNITS	39	25	50
CONDUCTIVITY UMHOS/CM	117	50	145
CYANIDE MG/L	< .001	< .001	< .001
DISSOLVED OXYGEN MG/L	8.0	1.6	13.2
FREON EXTRACTABLE SUBSTANCES PPM	< 1	< 1	1

1-13

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-2 PERIOD	MEAN	RANGE	
HARDNESS MG/L	91	76	116
PH STANDARD UNITS	7.7	6.0	8.9
PHENOL UG/L	7	2	13
SURFACTANTS (MBAS) • TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	10.5	1.5	23.0
TRANSPARENCY (SECCHI DISC) METER	1.6	1.2	2.0
TURBIDITY FTU	2.2	1.2	3.5

10-10-78

TABLE G-7 (CONTINUED)  
 WATER QUALITY DATA, STATION M-4  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.25.35.

STATION: M-4 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	.003
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	.001
IRON, TOTAL MG/L	.14	.03	.46
LEAD, TOTAL MG/L	<.01	<.01	.01
MANGANESE, TOTAL MG/L	.052	.004	.199
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-4 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.008	.003	.018
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.03	.02	.05
NITROGEN			
NITROGEN, AMMONIA MG/L	.55	.34	1.09
NITROGEN, NITRATE MG/L	<.18	<.01	.34
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	1.58	.90	2.79
SULFUR			
SULFATE MG/L	7	5	8
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	2.15	1.65	2.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	116	83	157
SOLIDS, SUSPENDED MG/L	5	2	12

241-3

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-4 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	4	1	8
SOLIDS, TOTAL MG/L	121	85	169
SOLIDS, VOLATILE MG/L	70	38	102
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	7	0	28
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	87	70	114
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	2	5
CHEMICAL OXYGEN DEMAND MG/L	31	*	*
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	40	30	50
CONDUCTIVITY UMHOS/CM	118	25	165
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	7.8	1.1	13.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	2

G-7

TABLE G-7 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-4 PERIOD	MEAN	RANGE	
HARDNESS MG/L	93	72	124
PH STANDARD UNITS	7.7	5.7	9.0
PHENOL UG/L	6	1	11
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.9	1.0	22.0
TRANSPARENCY (SECCHI DISC) METER	1.7	1.5	1.9
TURBIDITY FTU	2.1	.9	4.5



TABLE G-8

WATER QUALITY DATA, STATION J  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/28/78. 20.09.13.

STATION: J PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .002	< .001	.005
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .007	< .001	.030
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .011	< .001	.092
IRON, TOTAL MG/L	.45	.08	1.30
LEAD, TOTAL MG/L	< .01	< .01	.02
MANGANESE, TOTAL MG/L	.221	.018	.724
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-8 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

STATION: J PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.009	.004	.025
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.12	<.01	.53
PHOSPHORUS, TOTAL MG/L	.20	.07	.54
NITROGEN			
NITROGEN, AMMONIA MG/L	1.57	.61	3.06
NITROGEN, NITRATE MG/L	<.17	<.01	.63
NITROGEN, NITRITE MG/L	<.01	<.01	.02
NITROGEN, ORGANIC MG/L	3.70	1.79	6.86
SULFUR			
SULFATE MG/L	<1	<1	1
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	<.12	<.01	.38
SOLIDS			
SOLIDS, DISSOLVED MG/L	67	5	310
SOLIDS, SUSPENDED MG/L	12	1	56

TABLE G-8 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

STATION: J PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	9	2	22
SOLIDS, TOTAL MG/L	79	6	330
SOLIDS, VOLATILE MG/L	45	7	90
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	26	0	52
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	19	0	67
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	10	4	30
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	8	2	13
CHLORIDE MG/L	< 2	< 1	2
COLOR, TRUE COLOR UNITS	119	84	190
CONDUCTIVITY UMHOS/CM	27	16	45
CYANIDE MG/L	<.002	<.001	.006
DISSOLVED OXYGEN MG/L	5.1	.4	10.5
FREON EXTRACTABLE SUBSTANCES PPM	< 2	< 1	7
HARDNESS MG/L	15	4	32

TABLE G-8 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: J PERIOD	MEAN	RANGE	
PH STANDARD UNITS	5.8	5.2	6.6
PHENOL UG/L	<13	<1	57
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	8.7	.8	26.0
TRANSPARENCY (SECCHI DISC) METER	.9	.8	1.1
TURBIDITY FTU	2.9	.9	8.7

1  
2  
3

TABLE G-9

WATER QUALITY DATA, STATION M-3  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/17/78. 20.26.14.

STATION: M-3 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	.004
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .002	< .001	.010
IRON, TOTAL MG/L	.26	.11	.40
LEAD, TOTAL MG/L	< .01	< .01	.02
MANGANESE, TOTAL MG/L	.069	.006	.201
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-9 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-3 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.005	.001	.010
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.03	<.01	.06
PHOSPHORUS, TOTAL MG/L	.06	.02	.09
NITROGEN			
NITROGEN, AMMONIA MG/L	.90	.60	1.35
NITROGEN, NITRATE MG/L	<.10	<.01	.19
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	1.72	.96	2.87
SULFUR			
SULFATE MG/L	<4	<1	9
SULFIDE MG/L	<.01	<.01	.02
SULFUR, TOTAL MG/L	<1.16	<.01	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	141	84	210
SOLIDS, SUSPENDED MG/L	5	1	13

05-9

TABLE G-4 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-3 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	4	2	6
SOLIDS, TOTAL MG/L	146	87	216
SOLIDS, VOLATILE MG/L	82	48	110
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	21	0	49
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	11	0	20
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	84	46	138
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	4
CHEMICAL OXYGEN DEMAND MG/L	69	*	*
CHLORIDE MG/L	<2	<1	2
COLOR, TRUE COLOR UNITS	87	5	170
CONDUCTIVITY UMHOS/CM	123	80	185
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	5.9	3.0	9.0
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	1

151

TABLE G-9 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-3 PERIOD	MEAN	RANGE	
HARDNESS MG/L	93	60	138
PH STANDARD UNITS	6.9	5.8	7.3
PHENOL UG/L	8	2	15
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	10.0	0.	23.0
TRANSPARENCY (SECCHI DISC) METER	.4	.2	.8
TURBIDITY FTU	1.8	.8	5.7



TABLE G-10

WATER QUALITY DATA, STATION M-1  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-SEPTEMBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/19/78. 20.11.06.

STATION: M-1	PERIOD	MEAN	RANGE
METALS			
ALUMINUM, TOTAL MG/L		<.01	<.01
ARSENIC, TOTAL MG/L		<.001	<.001
CADMIUM, TOTAL MG/L		<.001	.003
CHROMIUM, HEXAVALENT MG/L		<.01	<.01
CHROMIUM, TRIVALENT MG/L		<.001	.002
COBALT, TOTAL MG/L		<.01	<.01
COPPER, TOTAL MG/L		<.005	<.001
IRON, TOTAL MG/L		.11	.03
LEAD, TOTAL MG/L		<.01	<.01
MANGANESE, TOTAL MG/L		.030	.003
MERCURY, TOTAL UG/L		<.1	<.1
MOLYBDENUM, TOTAL MG/L		<.01	<.01
NICKEL, TOTAL MG/L		<.01	<.01

15133

TABLE G-10 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-SEPTEMBER 1978

STATION: P-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.009	.001	.065
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.05
PHOSPHORUS, TOTAL MG/L	.04	.02	.07
NITROGEN			
NITROGEN, AMMONIA MG/L	<.34	<.05	1.01
NITROGEN, NITRATE MG/L	<.17	<.01	.55
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	1.52	.13	5.76
SULFUR			
SULFATE MG/L	<7	<1	14
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	<2.15	<.01	4.69
SOLIDS			
SOLIDS, DISSOLVED MG/L	168	66	453
SOLIDS, SUSPENDED MG/L	7	1	36

TABLE G-10 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-SEPTEMBER 1978

STATION: M-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<1	0	4
SOLIDS, TOTAL MG/L	174	67	460
SOLIDS, VOLATILE MG/L	77	35	156
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	16	0	40
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	37	0	117
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	100	58	120
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	9
CHEMICAL OXYGEN DEMAND MG/L	31	*	*
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	<28	<1	95
CONDUCTIVITY UMHOS/CM	132	62	185
CYANIDE MG/L	<.001	<.001	.003
DISSOLVED OXYGEN MG/L	10.1	5.2	13.7
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	7

TABLE G-10 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-SEPTEMBER 1978

STATION: (M-1) PERIOD	MEAN	RANGE	
HARDNESS MG/L	108	64	136
PH STANDARD UNITS	7.4	5.8	8.0
PHENOL UG/L	<5	<1	14
SURFACTANTS (MBAS) TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	7.3	0.	23.9
TRANSPARENCY (SECCHI DISC) METER	.5	.3	1.0
TURBIDITY FTU	1.2	.3	5.0

TABLE G-11

WATER QUALITY DATA, STATION A-1  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.25.33.

STATION: A-1 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.001	<.001	.002
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	.004
COBALT, TOTAL MG/L	<.01	<.01	.01
COPPER, TOTAL MG/L	<.005	<.001	.017
IRON, TOTAL MG/L	.11	.02	.37
LEAD, TOTAL MG/L	<.01	<.01	.01
MANGANESE, TOTAL MG/L	.028	.005	.196
MERCURY, TOTAL UG/L	<.1	<.1	.2
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-11 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: A-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.014
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.02
PHOSPHORUS, TOTAL MG/L	.02	.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	<.29	<.05	.94
NITROGEN, NITRATE MG/L	<.18	<.01	.48
NITROGEN, NITRITE MG/L	<.01	<.01	.02
NITROGEN, ORGANIC MG/L	1.77	.33	4.81
SULFUR			
SULFATE MG/L	<4	<1	9
SULFIDE MG/L	<.02	<.01	.04
SULFUR, TOTAL MG/L	<1.40	<.01	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	153	58	384
SOLIDS, SUSPENDED MG/L	9	1	50

TABLE G-11 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: A-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	5	2	14
SOLIDS, TOTAL MG/L	161	60	390
SOLIDS, VOLATILE MG/L	60	9	90
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	31	0	74
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	95	0	530
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	101	55	130
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	5
CHEMICAL OXYGEN DEMAND MG/L	9	3	14
CHLORIDE MG/L	<2	<1	2
COLOR, TRUE COLOR UNITS	<23	<1	60
CONDUCTIVITY UMHDS/CM	136	85	161
CYANIDE MG/L	<.001	<.001	.005
DISSOLVED OXYGEN MG/L	9.3	3.2	14.4
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	14

TABLE G-11 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: A-1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	107	74	138
PH STANDARD UNITS	7.4	5.8	8.1
PHENOL UG/L	6	2	14
SURFACTANTS (MBAS), TOTAL UG/L	<13	<10	25
TEMPERATURE DEGREES C	8.3	0.	22.0
TRANSPARENCY (SECCHI DISC) METER	.7	.5	1.4
TURBIDITY FTU	2.8	.6	5.7



TABLE G-12

WATER QUALITY DATA, STATION C  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U.S.A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 09/29/78. 20.13.48.

STATION: PERIOD	C	MEAN	RANGE
METALS			
ALUMINUM, TOTAL MG/L		<.01	<.01 <.01
ARSENIC, TOTAL MG/L		<.001	<.001 .001
CADMIUM, TOTAL MG/L		<.001	<.001 .004
CHROMIUM, HEXAVALENT MG/L		<.01	<.01 <.01
CHROMIUM, TRIVALENT MG/L		<.002	<.001 .004
COBALT, TOTAL MG/L		<.01	<.01 <.01
COPPER, TOTAL MG/L		<.005	<.001 .016
IRON, TOTAL MG/L		.12	.04 .34
LEAD, TOTAL MG/L		<.01	<.01 <.01
MANGANESE, TOTAL MG/L		.025	.006 .110
MERCURY, TOTAL UG/L		<.1	<.1 .2
MOLYBDENUM, TOTAL MG/L		<.01	<.01 <.01
NICKEL, TOTAL MG/L		<.01	<.01 <.01

TABLE G-12 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: C PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.011
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.06
PHOSPHORUS, TOTAL MG/L	<.02	<.01	.06
NITROGEN			
NITROGEN, AMMONIA MG/L	<.14	<.05	.20
NITROGEN, NITRATE MG/L	<.34	<.01	.84
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	1.79	.74	2.97
SULFUR			
SULFATE MG/L	6	1	8
SULFIDE MG/L	<.02	<.01	.05
SULFUR, TOTAL MG/L	1.87	.37	2.67
SOLIDS			
SOLIDS, DISSOLVED MG/L	163	29	388
SOLIDS, SUSPENDED MG/L	5	1	16

2000

TABLE G-12 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

STATION: C PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	5
SOLIDS, TOTAL MG/L	168	33	400
SOLIDS, VOLATILE MG/L	67	50	90
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	21	0	64
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	45	0	165
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	88	65	110
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	6
CHLORIDE MG/L	< 3	< 1	5
COLOR, TRUE COLOR UNITS	< 7	< 1	20
CONDUCTIVITY UMHOS/CM	132	90	165
CYANIDE MG/L	< .001	< .001	.002
DISSOLVED OXYGEN MG/L	12.1	9.1	16.0
FREON EXTRACTABLE SUBSTANCES PPM	< 2	< 1	7
HARDNESS MG/L	93	69	118

TABLE G-12 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: C PERIOD	MEAN	RANGE	
PH STANDARD UNITS	7.6	5.8	8.0
PHENOL UG/L	7	3	12
SURFACTANTS (MBAS), TOTAL UG/L	<14	<10	30
TEMPERATURE DEGREES C	8.2	0.	21.0
TRANSPARENCY (SECCHI DISC) METER	.3	.2	.4
TURBIDITY FTU	1.7	.5	6.0

6-5

TABLE G-13

WATER QUALITY DATA, STATION M-5  
SUMMARY OF MONTHLY MEANS AND RANGES  
OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U.S.A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 10/17/78. 20.20.43.

STATION: M-5 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	.004
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.004	<.001	.028
IRON, TOTAL MG/L	.31	.09	.59
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.038	.006	.073
MERCURY, TOTAL UG/L	<.1	<.1	.2
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-13 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-5 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.006	.001	.012
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.02
PHOSPHORUS, TOTAL MG/L	.06	.02	.12
NITROGEN			
NITROGEN, AMMONIA MG/L	.70	.05	1.47
NITROGEN, NITRATE MG/L	<.22	<.01	.34
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.68	.13	1.16
SULFUR			
SULFATE MG/L	<5	<1	9
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	<1.60	<.01	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	122	86	152
SOLIDS, SUSPENDED MG/L	<4	<1	11

TABLE G-13 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-5 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	8
SOLIDS, TOTAL MG/L	126	88	154
SOLIDS, VOLATILE MG/L	73	28	113
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	14	0	30
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	9	0	26
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	73	42	110
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	4
CHEMICAL OXYGEN DEMAND MG/L	69	*	*
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	106	5	175
CONDUCTIVITY UMHOS/CM	92	20	125
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	9.0	5.5	12.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	2

157

TABLE G-13 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: M-5 PERIOD	MEAN	RANGE	
HARDNESS MG/L	83	60	116
PH STANDARD UNITS	6.9	5.8	7.5
PHENOL UG/L	6	1	13
SURFACTANTS (MBAS) • TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	7.0	0.	18.0
TRANSPARENCY (SECCHI DISC) METER	.9	.5	1.2
TURBIDITY FTU	1.5	.8	2.8

3  
1  
9  
x



TABLE G-14

WATER QUALITY DATA, STATION B  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 09/27/78. 13.29.06.

STATION: B	MEAN	RANGE	
PERIOD			
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	.001
CADMIUM, TOTAL MG/L	< .001	< .001	.006
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .006	< .001	.027
IRON, TOTAL MG/L	.24	.10	.41
LEAD, TOTAL MG/L	< .01	< .01	.01
MANGANESE, TOTAL MG/L	.064	.034	.100
MERCURY, TOTAL UG/L	< .1	< .1	.1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: B PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.007	<.001	.023
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.02	<.01	.04
PHOSPHORUS, TOTAL MG/L	.03	.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.29	.06	.70
NITROGEN, NITRATE MG/L	<.13	<.01	.21
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	2.03	.75	4.09
SULFUR			
SULFATE MG/L	<4	<1	14
SULFIDE MG/L	<.02	<.01	.05
SULFUR, TOTAL MG/L	< 1.35	<.01	4.79
SOLIDS			
SOLIDS, DISSOLVED MG/L	174	77	438
SOLIDS, SUSPENDED MG/L	7	1	15

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978

STATION: B PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	6	1	12
SOLIDS, TOTAL MG/L	182	80	450
SOLIDS, VOLATILE MG/L	71	28	103
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	29	4	56
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	114	0	418
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	103	55	128
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	5
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	<29	<1	80
CONDUCTIVITY UMHOS/CM	140	90	170
CYANIDE MG/L	<.001	<.001	.002
DISSOLVED OXYGEN MG/L	8.6	4.5	11.7
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	7
HARDNESS MG/L	110	74	128

TABLE G-14 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978

STATION: B		MEAN	RANGE	
PERIOD				
PH	STANDARD UNITS	7.4	6.8	8.0
PHENOL	UG/L	7	2	15
SURFACTANTS (MBAS), TOTAL	UG/L	<10	<10	<10
TEMPERATURE	DEGREES C	7.0	0.	20.0
TRANSPARENCY (SECCHI DISC)	METER	.7	.6	1.0
TURBIDITY	FTU	2.1	1.1	3.4

TABLE G-14 (CONTINUED)

WATER QUALITY DATA, STATION D  
SUMMARY OF MONTHLY MEANS AND RANGES  
MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U.S.A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 10/30/78. 20.24.08.

STATION: D PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.001	<.001	.004
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	.005
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.004	<.001	.014
IRON, TOTAL MG/L	.25	.11	.41
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.050	.020	.091
MERCURY, TOTAL UG/L	<.1	<.1	.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: D PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.020
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.03
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	<.34	<.05	.91
NITROGEN, NITRATE MG/L	<.13	<.01	.24
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	1.47	.40	4.23
SULFUR			
SULFATE MG/L	<5	<1	12
SULFIDE MG/L	<.01	<.01	.04
SULFUR, TOTAL MG/L	<1.45	<.01	4.11
SOLIDS			
SOLIDS, DISSOLVED MG/L	169	65	434
SOLIDS, SUSPENDED MG/L	6	2	16

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: D PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	5
SOLIDS, TOTAL MG/L	174	67	440
SOLIDS, VOLATILE MG/L	65	7	83
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	25	0	82
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	63	4	287
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	95	61	128
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	3	1	8
CHEMICAL OXYGEN DEMAND MG/L	13	3	24
CHLORIDE MG/L	<2	<1	6
COLOR, TRUE COLOR UNITS	<28	<1	70
CONDUCTIVITY CMHOS/CM	138	90	165
CYANIDE MG/L	<.001	<.001	.006
DISSOLVED OXYGEN MG/L	10.4	6.7	15.0
FREELY EXTRACTABLE SUBSTANCES PPM	<2	<1	8

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: D PERIOD	MEAN	RANGE	
HARDNESS MG/L	101	72	130
PH STANDARD UNITS	7.3	5.9	7.8
PHENOL UG/L	6	2	17
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	10
TEMPERATURE DEGREES C	8.0	0.	21.0
TRANSPARENCY (SECCHI DISC) METER	.6	.3	1.3
TURBIDITY FTU	1.8	1.2	2.6



TABLE G-14 (CONTINUED)  
 WATER QUALITY DATA, STATION E  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/31/78. 20.10.47.

STATION: E PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	.001
CADMIUM, TOTAL MG/L	<.002	<.001	.004
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.002	<.001	.004
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.004	<.001	.010
IRON, TOTAL MG/L	.23	.11	.36
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.043	.023	.085
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

G-177

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: F PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.017
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.03
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.06
NITROGEN			
NITROGEN, AMMONIA MG/L	.39	.06	1.00
NITROGEN, NITRATE MG/L	<.19	<.01	.48
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	1.40	.31	3.69
SULFUR			
SULFATE MG/L	<5	<1	12
SULFIDE MG/L	<.02	<.01	.06
SULFUR, TOTAL MG/L	<1.67	<.01	4.11
SOLIDS			
SOLIDS, DISSOLVED MG/L	167	78	372
SOLIDS, SUSPENDED MG/L	<4	<1	12

5-74

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: E PERIOD	MEAN	RANGE	
SOLIDS,SUSPENDED VOLATILE MG/L	<2	<1	6
SOLIDS,TOTAL MG/L	171	84	380
SOLIDS,VOLATILE MG/L	63	20	90
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	48	2	145
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	84	4	332
GENERAL PARAMETERS			
ALKALINITY,TOTAL MG/L	94	55	132
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	9
CHEMICAL OXYGEN DEMAND MG/L	10	3	17
CHLORIDE MG/L	<2	<1	5
COLOR,TRUE COLOR UNITS	<31	<1	80
CONDUCTIVITY UMHOS/CM	132	90	165
CYANIDE MG/L	<.001	<.001	.003
DISSOLVED OXYGEN MG/L	8.9	6.2	12.4
FREON EXTRACTABLE SUBSTANCES PPM	<2	<1	6

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MARCH 1977-MARCH 1978; MAY, AUGUST, OCTOBER 1978

STATION: E PERIOD	MEAN	RANGE	
HARDNESS MG/L	99	66	130
PH STANDARD UNITS	7.3	5.8	8.1
PHENOL UG/L	7	2	15
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	8.0	0.	21.0
TRANSPARENCY (SECCHI DISC) METER	1.0	.5	1.5
TURBIDITY FTU	2.2	1.4	4.5

TABLE G-14 (CONTINUED)

WATER QUALITY DATA, STATION V  
SUMMARY OF MONTHLY MEANS AND RANGES  
OCTOBER 1977-SEPTEMBER 1978

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U.S.A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 10/17/78. 20.25.15.

STATION: V PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	.003
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .003	< .001	.015
IRON, TOTAL MG/L	.80	.26	2.54
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.062	.016	.156
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	.01

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: V PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.013
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.02
PHOSPHORUS, TOTAL MG/L	<.03	<.01	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.95	.32	1.60
NITROGEN, NITRATE MG/L	<.21	<.01	.54
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	1.03	.26	2.39
SULFUR			
SULFATE MG/L	<5	<1	8
SULFIDE MG/L	<.01	<.01	.01
SULFUR, TOTAL MG/L	<1.66	<.01	2.64
SOLIDS			
SOLIDS, DISSOLVED MG/L	126	85	161
SOLIDS, SUSPENDED MG/L	5	1	16

24-4

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: V PERIOD	MFAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	< 4	< 1	6
SOLIDS, TOTAL MG/L	131	92	169
SOLIDS, VOLATILE MG/L	61	44	81
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	17	2	34
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	33	4	106
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	81	64	112
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	3
CHEMICAL OXYGEN DEMAND MG/L	69	*	*
CHLORIDE MG/L	< 3	< 1	4
COLOR, TRUE COLOR UNITS	85	15	200
CONDUCTIVITY UMHOS/CM	110	60	145
CYANIDE MG/L	< .001	< .001	.001
DISSOLVED OXYGEN MG/L	6.7	3.8	11.6
FREON EXTRACTABLE SUBSTANCES PPM	< 1	< 1	1

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-SEPTEMBER 1978

STATION: V PERIOD	MEAN	RANGE	
HARDNESS MG/L	95	76	124
PH STANDARD UNITS	6.8	5.8	7.6
PHENOL UG/L	<7	<1	15
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	8.5	0.	22.0
TRANSPARENCY (SECCHI DISC) METER	1.1	.9	1.4
TURBIDITY FTU	2.1	1.4	2.9



TABLE G-15

WATER QUALITY DATA, STATION Y  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/30/78. 20.15.54.

STATION: Y PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.002	<.001	.005
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.002	<.001	.005
IRON, TOTAL MG/L	.47	.34	.71
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.069	.014	.179
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

511

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: Y PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.009	<.001	.021
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	<.04	<.01	.12
NITROGEN			
NITROGEN, AMMONIA MG/L	1.01	.39	1.36
NITROGEN, NITRATE MG/L	<.15	<.01	.59
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.70	.16	1.75
SULFUR			
SULFATE MG/L	<6	<1	9
SULFIDE MG/L	<.01	<.01	.01
SULFUR, TOTAL MG/L	<1.83	<.01	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	110	57	166
SOLIDS, SUSPENDED MG/L	4	1	13

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: Y PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	4
SOLIDS, TOTAL MG/L	115	58	177
SOLIDS, VOLATILE MG/L	57	33	66
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	11	0	24
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	6	0	13
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	52	36	80
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	3
CHEMICAL OXYGEN DEMAND MG/L	31	10	52
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	91	40	125
CONDUCTIVITY UMHOS/CM	84	50	120
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	9.2	6.1	16.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	2

10-27

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: Y PERIOD	MEAN	RANGE	
HARDNESS MG/L	60	42	92
PH STANDARD UNITS	6.9	5.8	7.6
PHENOL UG/L	7	2	15
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	10.2	1.0	22.0
TRANSPARENCY (SECCHI DISC) METER	1.2	1.0	1.4
TURBIDITY FTU	2.1	1.1	3.0

TABLE G-15 (CONTINUED)  
 WATER QUALITY DATA, STATION 7  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, J.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/27/78. 20.13.16.

STATION: Z PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<.01	<.01	<.01
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.002	<.001	.003
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	.004
IRON, TOTAL MG/L	.61	.31	1.45
LEAD, TOTAL MG/L	<.01	<.01	.01
MANGANESE, TOTAL MG/L	.068	.016	.160
MERCURY, TOTAL UG/L	<.2	<.1	.9
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

634-1

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: 7		MEAN	RANGE	
PERIOD				
ZINC, TOTAL	MG/L	<.009	<.001	.023
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED	MG/L	<.01	<.01	.01
PHOSPHORUS, TOTAL	MG/L	<.03	<.01	.04
NITROGEN				
NITROGEN, AMMONIA	MG/L	1.00	.51	1.51
NITROGEN, NITRATE	MG/L	<.27	<.01	.54
NITROGEN, NITRITE	MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC	MG/L	.63	.42	.99
SULFUR				
SULFATE	MG/L	<5	<1	8
SULFIDE	MG/L	<.01	<.01	<.01
SULFUR, TOTAL	MG/L	<1.60	<.01	2.67
SOLIDS				
SOLIDS, DISSOLVED	MG/L	122	72	174
SOLIDS, SUSPENDED	MG/L	4	1	11

G-15

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: Z PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	3
SOLIDS, TOTAL MG/L	126	75	175
SOLIDS, VOLATILE MG/L	53	30	78
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	26	6	50
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	37	0	140
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	63	46	90
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	31	7	55
CHLORIDE MG/L	<3	<1	4
COLOR, TRUE COLOR UNITS	83	30	145
CONDUCTIVITY UMHDS/CM	99	75	135
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	6.8	1.4	12.6
FREQUENTLY EXTRACTABLE SUBSTANCES PPM	<1	<1	1

16-5

TABLE G-15 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 OCTOBER 1977-OCTOBER 1978

STATION: Z PERIOD	MEAN	RANGE	
HARDNESS MG/L	73	56	104
PH STANDARD UNITS	7.0	6.4	7.5
PHENOL UG/L	<6	<1	15
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.3	0.	22.0
TRANSPARENCY (SECCHI DISC) METER	1.3	1.1	1.5
TURBIDITY FTU	2.0	1.2	3.3

26-6



TABLE G-16

WATER QUALITY DATA, STATION L  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979, FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 03. 59.

STATION: L PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .06	< .01	.08
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.11	.09	.15
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.031	.013	.061
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-16 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: L PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.010	.003	.019
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.02	.02	.03
NITROGEN			
NITROGEN, AMMONIA MG/L	.35	.19	.43
NITROGEN, NITRATE MG/L	<.05	<.05	<.05
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.11	.03	.20
SULFUR			
SULFATE MG/L	8	6	10
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	2.72	1.98	3.30
SOLIDS			
SOLIDS, DISSOLVED MG/L	21	19	24
SOLIDS, SUSPENDED MG/L	<3	<1	6

TABLE G-14 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: L PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	3
SOLIDS, TOTAL MG/L	24	19	27
SOLIDS, VOLATILE MG/L	16	13	18
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	7	0	21
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	5	2	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	3
CHEMICAL OXYGEN DEMAND MG/L	51	24	107
CHLORIDE MG/L	<2	<1	2
COLOR, TRUE COLOR UNITS	31	30	35
CONDUCTIVITY UMHOS/CM	21	17	29
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	9.5	4.7	13.3
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

G-95

TABLE G-16 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: L PERIOD	MEAN	RANGE	
HARDNESS MG/L	15	8	20
PH STANDARD UNITS	6.2	5.5	6.6
PHENOL UG/L	<5	<1	10
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.5	1.5	23.5
TRANSPARENCY (SECCHI DISC) METER	2.4	2.4	2.5
TURBIDITY FTU	.9	.6	1.3

TABLE G-17

WATER QUALITY DATA, STATION K  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/02/80. 20.04.02.

STATION: K PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	.15	.10	.25
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	<.001
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	<.001
IRON, TOTAL MG/L	.14	.03	.26
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.038	.006	.063
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-17 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: K PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.011	.001	.022
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.02
PHOSPHORUS, TOTAL MG/L	.03	.03	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	<.66	<.01	1.48
NITROGEN, NITRATE MG/L	<.05	<.05	<.05
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	<.26	<.01	.77
SULFUR			
SULFATE MG/L	<7	<1	12
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	2.39	.33	3.96
SOLIDS			
SOLIDS, DISSOLVED MG/L	45	20	108
SOLIDS, SUSPENDED MG/L	2	1	3

G-18

TABLE G-17 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: K PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	1	1	2
SOLIDS, TOTAL MG/L	47	21	111
SOLIDS, VOLATILE MG/L	32	12	80
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	1	0	3
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	10	0	37
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	19	2	68
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	48	43	55
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	87	60	100
CONDUCTIVITY UMHOS/CM	50	15	140
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	7.9	.7	13.3
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-17 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: K PERIOD	MEAN	RANGE	
HARDNESS MG/L	33	12	84
PH STANDARD UNITS	6.1	4.8	8.0
PHENOL UG/L	4	2	6
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.8	1.0	22.5
TRANSPARENCY (SECCHI DISC) METER	1.4	.9	1.9
TURBIDITY FTU	.7	.5	.9



TABLE G-1B

WATER QUALITY DATA, STATION GH-1  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.22.

STATION:	GH-1			
PERIOD		MEAN	RANGE	
METALS				
ALUMINUM, TOTAL MG/L		< .01	< .01	.02
ARSENIC, TOTAL MG/L		< .001	< .001	< .001
CADMIUM, TOTAL MG/L		< .001	< .001	.003
CHROMIUM, HEXAVALENT MG/L		< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L		< .001	< .001	< .001
COBALT, TOTAL MG/L		< .01	< .01	< .01
COPPER, TOTAL MG/L		< .001	< .001	.004
IRON, TOTAL MG/L		< .02	< .01	.04
LEAD, TOTAL MG/L		< .01	< .01	.03
MANGANESE, TOTAL MG/L		.011	.005	.025
MERCURY, TOTAL UG/L		< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L		< .01	< .01	< .01
NICKEL, TOTAL MG/L		< .01	< .01	< .01

G-1101

TABLE G-18 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	GH-1	MEAN	RANGE	
ZINC, TOTAL MG/L		< .004	< .001	.011
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L		< .01	< .01	.01
PHOSPHORUS, TOTAL MG/L		.04	.02	.06
NITROGEN				
NITROGEN, AMMONIA MG/L		< .17	< .01	.30
NITROGEN, NITRATE MG/L		< .05	< .05	< .05
NITROGEN, NITRITE MG/L		< .01	< .01	< .01
NITROGEN, ORGANIC MG/L		< .17	< .01	.41
SULFUR				
SULFATE MG/L		5	2	7
SULFIDE MG/L		< .02	< .01	.09
SULFUR, TOTAL MG/L		1.74	.68	2.31
SOLIDS				
SOLIDS, DISSOLVED MG/L		130	99	167
SOLIDS, SUSPENDED MG/L		<4	<1	9

G-108

TABLE G-18 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	GH-1	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L		2	1	3
SOLIDS, TOTAL MG/L		133	105	174
SOLIDS, VOLATILE MG/L		76	65	90
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML		0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		3	0	8
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L		110	84	122
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		5	1	12
CHEMICAL OXYGEN DEMAND MG/L		26	10	62
CHLORIDE MG/L		<2	<1	4
COLOR, TRUE COLOR UNITS		<12	<1	40
CONDUCTIVITY UMHOS/CM		155	132	200
CYANIDE MG/L		<.001	<.001	<.001
DISSOLVED OXYGEN MG/L		8.6	1.1	12.5
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1

TABLE G-18 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	GH-1	MEAN	RANGE	
HARDNESS MG/L		112	92	124
PH STANDARD UNITS		8.2	6.7	8.9
PHENOL UG/L		<2	<1	11
SURFACTANTS (MBAS), TOTAL UG/L		<10	<10	<10
TEMPERATURE DEGREES C		10.3	2.5	24.5
TRANSPARENCY (SECCHI DISC) METER		2.0	1.1	3.8
TURBIDITY FTU		2.5	.7	4.5

TABLE G-18 (CONTINUED)

WATER QUALITY DATA, STATION GH-2  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1980-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 11/25/80. 20. 03. 06.

STATION: PERIOD	GH-2	MEAN	RANGE	
METALS				
ALUMINUM, TOTAL MG/L		< .01	< .01	< .01
ARSENIC, TOTAL MG/L		< .001	< .001	< .001
CADMIUM, TOTAL MG/L		< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L		< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L		< .001	< .001	< .001
COBALT, TOTAL MG/L		< .01	< .01	< .01
COPPER, TOTAL MG/L		< .001	< .001	< .001
IRON, TOTAL MG/L		< .04	< .01	.09
LEAD, TOTAL MG/L		< .01	< .01	< .01
MANGANESE, TOTAL MG/L		.103	.010	.278
MERCURY, TOTAL UG/L		< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L		< .01	< .01	< .01
NICKEL, TOTAL MG/L		< .01	< .01	< .01

TABLE G-1B (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1980-OCTOBER 1980

STATION: PERIOD	GH-2	MEAN	RANGE	
ZINC, TOTAL MG/L		< .001	< .001	.004
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L		< .01	< .01	< .01
PHOSPHORUS, TOTAL MG/L		.11	.05	.17
NITROGEN				
NITROGEN, AMMONIA MG/L		< .05	< .01	.10
NITROGEN, NITRATE MG/L		< .05	< .05	< .05
NITROGEN, NITRITE MG/L		< .01	< .01	< .01
NITROGEN, ORGANIC MG/L		.28	.17	.39
SULFUR				
SULFATE MG/L		4	1	11
SULFIDE MG/L		< .23	< .01	.76
SULFUR, TOTAL MG/L		1.60	.33	3.63
SOLIDS				
SOLIDS, DISSOLVED MG/L		153	118	199
SOLIDS, SUSPENDED MG/L		17	2	34

G-106

TABLE G-18 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1980-OCTOBER 1980

STATION: PERIOD	GH-2	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L		8	5	11
SOLIDS, TOTAL MG/L		171	137	233
SOLIDS, VOLATILE MG/L		93	91	96
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML		0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		2	0	4
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L		129	98	146
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		7	1	12
CHEMICAL OXYGEN DEMAND MG/L		20	14	27
CHLORIDE MG/L		<2	<1	2
COLOR, TRUE COLOR UNITS		<15	<1	30
CONDUCTIVITY UMHOS/CM		180	153	210
CYANIDE MG/L		<.001	<.001	<.001
DISSOLVED OXYGEN MG/L		1.4	.2	5.2
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1

TABLE G-18 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 MAY 1980-OCTOBER 1980

STATION: PERIOD	GH-2	MEAN	RANGE	
HARDNESS MG/L		128	88	148
PH STANDARD UNITS		7.7	7.2	8.9
PHENOL UG/L		<2	<1	6
SURFACTANTS (MBAS), TOTAL UG/L		<10	<10	<10
TEMPERATURE DEGREES C		8.7	7.5	12.0
TRANSPARENCY (SECCHI DISC) METER		2.0	1.1	3.8
TURBIDITY FTU		16.4	4.4	28.0



TABLE G-19

WATER QUALITY DATA, STATION H  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/03/80. 20. 02. 49.

STATION: H PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	.06	.05	.09
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	<.001
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	<.001
IRON, TOTAL MG/L	.05	.03	.07
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.033	.024	.055
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-19 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: H PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.016	.010	.021
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.01
PHOSPHORUS, TOTAL MG/L	<.01	<.01	.02
NITROGEN			
NITROGEN, AMMONIA MG/L	.23	.14	.30
NITROGEN, NITRATE MG/L	<.05	<.05	<.05
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.26	.22	.37
SULFUR			
SULFATE MG/L	8	5	11
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	2.56	1.65	3.63
SOLIDS			
SOLIDS, DISSOLVED MG/L	21	19	23
SOLIDS, SUSPENDED MG/L	2	1	4

G-110

TABLE G-19 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: H PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	3
SOLIDS, TOTAL MG/L	22	20	24
SOLIDS, VOLATILE MG/L	13	10	17
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	1	0	5
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	3	0	8
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	5	2	6
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	26	17	41
CHLORIDE MG/L	<2	<1	2
COLOR, TRUE COLOR UNITS	<15	<1	20
CONDUCTIVITY UMHOS/CM	19	15	21
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	9.3	5.6	13.2
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-19 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: H PERIOD	MEAN	RANGE	
HARDNESS MG/L	10	8	16
PH STANDARD UNITS	6.0	5.6	6.4
PHENOL UG/L	5	2	9
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.8	1.5	24.0
TRANSPARENCY (SECCHI DISC) METER	3.5	3.4	3.6
TURBIDITY FTU	.7	.5	1.0

G-112

TABLE G-20

WATER QUALITY DATA, STATION G-1  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/03/80. 20.02.00.

STATION: G-1 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	.01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.02	< .01	.03
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.018	.013	.021
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-20 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: G-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.006	.003	.008
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.01	.01	.02
NITROGEN			
NITROGEN, AMMONIA MG/L	.18	.11	.37
NITROGEN, NITRATE MG/L	<.05	<.05	<.05
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.24	.12	.42
SULFUR			
SULFATE MG/L	6	3	7
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	1.81	.99	2.31
SOLIDS			
SOLIDS, DISSOLVED MG/L	29	18	37
SOLIDS, SUSPENDED MG/L	<1	<1	2

G-114

TABLE G-20 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: G-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<1	<1	1
SOLIDS, TOTAL MG/L	30	19	39
SOLIDS, VOLATILE MG/L	13	1	23
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	0	0	0
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	8	0	20
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	6	3	10
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	21	10	41
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	13	<1	20
CONDUCTIVITY UMHDS/CM	16	10	20
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	9.6	8.0	11.1
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-20 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: G-1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	14	8	20
PH STANDARD UNITS	6.5	6.1	7.6
PHENOL UG/L	<5	<1	11
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.4	0.	23.0
TRANSPARENCY (SECCHI DISC) METER	5.4	5.2	5.6
TURBIDITY FTU	.7	.5	.9



TABLE G-21

WATER QUALITY DATA, STATION N  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/02/80. 20. 03. 36.

STATION: N PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	.02
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	1.06	.11	3.30
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.150	.027	.421
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-21 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: N PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<. 007	<. 001	. 012
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<. 01	<. 01	. 02
PHOSPHORUS, TOTAL MG/L	. 04	. 01	. 07
NITROGEN			
NITROGEN, AMMONIA MG/L	. 54	. 34	. 95
NITROGEN, NITRATE MG/L	<. 05	<. 05	<. 05
NITROGEN, NITRITE MG/L	<. 01	<. 01	<. 01
NITROGEN, ORGANIC MG/L	<. 05	<. 01	. 08
SULFUR			
SULFATE MG/L	<4	<1	8
SULFIDE MG/L	<. 01	<. 01	<. 01
SULFUR, TOTAL MG/L	<1. 15	<. 33	2. 64
SOLIDS			
SOLIDS, DISSOLVED MG/L	117	99	147
SOLIDS, SUSPENDED MG/L	8	1	18

6-11B

TABLE G-21 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: N PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	5	1	13
SOLIDS, TOTAL MG/L	124	103	165
SOLIDS, VOLATILE MG/L	70	43	96
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	1	0	2
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	17	0	48
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	69	4	108
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	3
CHEMICAL OXYGEN DEMAND MG/L	39	21	71
CHLORIDE MG/L	<3	<1	8
COLOR, TRUE COLOR UNITS	41	15	80
CONDUCTIVITY UMHOS/CM	137	125	152
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	4.7	1.0	10.2
FREDN EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-21 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: N PERIOD	MEAN	RANGE	
HARDNESS MG/L	106	84	132
PH STANDARD UNITS	7.5	7.0	8.8
PHENOL UG/L	7	1	14
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	8.6	1.0	20.0
TRANSPARENCY (SECCHI DISC) METER	.8	.5	1.0
TURBIDITY FTU	3.4	.9	9.1

TABLE G-22

WATER QUALITY DATA, STATION JL  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20.05.02.

STATION: PERIOD	JL	MEAN	RANGE	
METALS				
ALUMINUM, TOTAL MG/L		.02	.01	.03
ARSENIC, TOTAL MG/L		<.001	<.001	<.001
CADMIUM, TOTAL MG/L		<.001	<.001	<.001
CHROMIUM, HEXAVALENT MG/L		<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L		<.001	<.001	<.001
COBALT, TOTAL MG/L		<.01	<.01	<.01
COPPER, TOTAL MG/L		<.002	<.001	.013
IRON, TOTAL MG/L		<.06	<.01	.15
LEAD, TOTAL MG/L		<.01	<.01	<.01
MANGANESE, TOTAL MG/L		.018	.012	.036
MERCURY, TOTAL UG/L		<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L		<.01	<.01	<.01
NICKEL, TOTAL MG/L		<.01	<.01	<.01

TABLE G-22 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	JL	MEAN	RANGE	
ZINC, TOTAL MG/L		< .005	< .001	.022
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L		< .01	< .01	< .01
PHOSPHORUS, TOTAL MG/L		.03	.02	.04
NITROGEN				
NITROGEN, AMMONIA MG/L		.24	.07	.35
NITROGEN, NITRATE MG/L		< .06	< .05	.10
NITROGEN, NITRITE MG/L		< .01	< .01	< .01
NITROGEN, ORGANIC MG/L		.27	.10	.42
SULFUR				
SULFATE MG/L		5	3	7
SULFIDE MG/L		< .01	< .01	.02
SULFUR, TOTAL MG/L		1.52	.99	2.31
SOLIDS				
SOLIDS, DISSOLVED MG/L		19	3	41
SOLIDS, SUSPENDED MG/L		2	1	4

G-122

TABLE G-22 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	JL	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L		< 2	< 1	3
SOLIDS, TOTAL MG/L		21	5	43
SOLIDS, VOLATILE MG/L		19	13	30
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML		1	0	5
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		3	0	11
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L		4	1	10
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		2	1	3
CHEMICAL OXYGEN DEMAND MG/L		28	7	41
CHLORIDE MG/L		<1	<1	2
COLOR, TRUE COLOR UNITS		14	5	30
CONDUCTIVITY UMHOS/CM		14	10	20
CYANIDE MG/L		<.001	<.001	<.001
DISSOLVED OXYGEN MG/L		9.2	6.2	13.8
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1

TABLE G-22 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	JL	MEAN	RANGE	
HARDNESS MG/L		11	6	16
PH STANDARD UNITS		6.1	5.3	6.7
PHENOL UG/L		<2	<1	7
SURFACTANTS (MBAS), TOTAL UG/L		<10	<10	<10
TEMPERATURE DEGREES C		10.2	1.5	25.5
TRANSPARENCY (SECCHI DISC) METER		3.2	2.2	4.0
TURBIDITY FTU		1.1	.6	1.6



TABLE G-23

WATER QUALITY DATA, STATION J  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/02/80. 20. 03. 59.

STATION: J PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .04	< .01	.10
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.27	.05	.71
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.141	.034	.346
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-23 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: J PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	<.005	<.001	.008
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.01
PHOSPHORUS, TOTAL MG/L	.05	.03	.12
NITROGEN			
NITROGEN, AMMONIA MG/L	.90	.40	1.55
NITROGEN, NITRATE MG/L	<.05	<.05	<.05
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.71	.04	2.30
SULFUR			
SULFATE MG/L	<2	<1	6
SULFIDE MG/L	<.30	<.01	1.17
SULFUR, TOTAL MG/L	<.95	<.33	1.98
SOLIDS			
SOLIDS, DISSOLVED MG/L	20	12	24
SOLIDS, SUSPENDED MG/L	7	2	16

G-124

TABLE G-23 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: J PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	5	1	14
SOLIDS, TOTAL MG/L	26	16	36
SOLIDS, VOLATILE MG/L	16	10	26
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	16	5	43
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	13	2	36
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	8	2	16
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	7	3	17
CHEMICAL OXYGEN DEMAND MG/L	90	34	154
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	64	35	100
CONDUCTIVITY UMHOS/CM	20	11	28
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	5.4	.7	8.4
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

G-1127

TABLE G-23 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: J PERIOD	MEAN	RANGE	
HARDNESS MG/L	13	8	20
PH STANDARD UNITS	5.7	5.0	6.5
PHENOL UG/L	15	1	45
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	9.1	1.5	20.0
TRANSPARENCY (SECCHI DISC) METER	1.2	1.2	1.3
TURBIDITY FTU	2.0	.9	5.0

G-128

TABLE G-24

WATER QUALITY DATA, STATION WL  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20. 04. 54.

STATION: PERIOD	WL	MEAN	RANGE	
METALS				
ALUMINUM, TOTAL MG/L		< .01	< .01	.01
ARSENIC, TOTAL MG/L		< .001	< .001	< .001
CADMIUM, TOTAL MG/L		< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L		< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L		< .001	< .001	< .001
COBALT, TOTAL MG/L		< .01	< .01	< .01
COPPER, TOTAL MG/L		< .001	< .001	< .001
IRON, TOTAL MG/L		< .05	< .01	.19
LEAD, TOTAL MG/L		< .01	< .01	.02
MANGANESE, TOTAL MG/L		.040	.015	.096
MERCURY, TOTAL UG/L		< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L		< .01	< .01	< .01
NICKEL, TOTAL MG/L		< .01	< .01	< .01

TABLE G-24 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	WL	MEAN	RANGE	
ZINC, TOTAL MG/L		<.005	<.001	.014
PHOSPHORUS				
ORTHOPHOSPHATE, DISSOLVED MG/L		<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L		.03	.01	.05
NITROGEN				
NITROGEN, AMMONIA MG/L		.31	.11	.42
NITROGEN, NITRATE MG/L		<.09	<.05	.20
NITROGEN, NITRITE MG/L		<.01	<.01	<.01
NITROGEN, ORGANIC MG/L		<.16	<.01	.30
SULFUR				
SULFATE MG/L		6	3	8
SULFIDE MG/L		<.01	<.01	.02
SULFUR, TOTAL MG/L		1.84	.99	2.64
SOLIDS				
SOLIDS, DISSOLVED MG/L		22	8	48
SOLIDS, SUSPENDED MG/L		<2	<1	6

TABLE G-24 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	WL	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L		<2	<1	4
SOLIDS, TOTAL MG/L		24	9	52
SOLIDS, VOLATILE MG/L		17	10	29
BACTERIA				
FECAL COLIFORM BACTERIA ORG/100 ML		2	0	8
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML		3	0	6
GENERAL PARAMETERS				
ALKALINITY, TOTAL MG/L		5	3	8
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L		3	1	6
CHEMICAL OXYGEN DEMAND MG/L		43	21	65
CHLORIDE MG/L		<1	<1	2
COLOR, TRUE COLOR UNITS		18	10	25
CONDUCTIVITY UMHOS/CM		22	15	40
CYANIDE MG/L		<.001	<.001	<.001
DISSOLVED OXYGEN MG/L		9.1	6.6	13.3
FREON EXTRACTABLE SUBSTANCES PPM		<1	<1	<1

TABLE G-24 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979-OCTOBER 1980

STATION: PERIOD	WL	MEAN	RANGE	
HARDNESS MG/L		13	8	20
PH STANDARD UNITS		6.2	5.6	6.8
PHENOL UG/L		<2	<1	5
SURFACTANTS (MBAS), TOTAL UG/L		<10	<10	<10
TEMPERATURE DEGREES C		10.0	1.0	25.0
TRANSPARENCY (SECCHI DISC) METER		2.8	2.0	3.4
TURBIDITY FTU		.8	.2	1.3



TABLE G-25

WATER QUALITY DATA, STATION M-3  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20.03.42.

STATION: M-3 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	.02
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.19	.12	.26
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.073	.021	.156
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-25 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-3 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	< .004	< .001	.007
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	< .01	< .01	< .01
PHOSPHORUS, TOTAL MG/L	.05	.02	.09
NITROGEN			
NITROGEN, AMMONIA MG/L	.61	.27	.87
NITROGEN, NITRATE MG/L	< .05	< .05	< .05
NITROGEN, NITRITE MG/L	< .01	< .01	< .01
NITROGEN, ORGANIC MG/L	.51	.01	1.88
SULFUR			
SULFATE MG/L	< 3	< 1	5
SULFIDE MG/L	< .01	< .01	< .01
SULFUR, TOTAL MG/L	< .82	< .33	1.65
SOLIDS			
SOLIDS, DISSOLVED MG/L	101	81	136
SOLIDS, SUSPENDED MG/L	4	1	8

TABLE G-25 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-3 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	5
SOLIDS, TOTAL MG/L	105	82	139
SOLIDS, VOLATILE MG/L	74	52	93
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	18	5	51
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	108	4	350
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	96	61	138
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	3
CHEMICAL OXYGEN DEMAND MG/L	57	10	103
CHLORIDE MG/L	<2	<1	2
COLOR, TRUE COLOR UNITS	47	10	100
CONDUCTIVITY UMHOS/CM	142	98	250
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	8.0	4.6	11.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-25 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-3 PERIOD	MEAN	RANGE	
HARDNESS MG/L	102	72	136
PH STANDARD UNITS	7.3	7.2	7.4
PHENOL UG/L	5	1	11
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	5.9	.5	18.0
TRANSPARENCY (SECCHI DISC) METER	.3	.2	.5
TURBIDITY FTU	1.3	1.0	2.0

TABLE G-26

WATER QUALITY DATA, STATION M-1  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/02/80. 20. 04. 19.

STATION: M-1 PERIOD	MEAN                  RANGE		
METALS			
ALUMINUM, TOTAL MG/L	.04	.02	.05
ARSENIC, TOTAL MG/L	<.001	<.001	<.001
CADMIUM, TOTAL MG/L	<.001	<.001	<.001
CHROMIUM, HEXAVALENT MG/L	<.01	<.01	<.01
CHROMIUM, TRIVALENT MG/L	<.001	<.001	<.001
COBALT, TOTAL MG/L	<.01	<.01	<.01
COPPER, TOTAL MG/L	<.001	<.001	<.001
IRON, TOTAL MG/L	.09	.08	.12
LEAD, TOTAL MG/L	<.01	<.01	<.01
MANGANESE, TOTAL MG/L	.022	.017	.030
MERCURY, TOTAL UG/L	<.1	<.1	<.1
MOLYBDENUM, TOTAL MG/L	<.01	<.01	<.01
NICKEL, TOTAL MG/L	<.01	<.01	<.01

TABLE G-26 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.006	.005	.007
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	<.01
PHOSPHORUS, TOTAL MG/L	.03	.02	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.24	.13	.51
NITROGEN, NITRATE MG/L	<.06	<.05	<.10
NITROGEN, NITRITE MG/L	<.01	<.01	<.01
NITROGEN, ORGANIC MG/L	.20	.01	.30
SULFUR			
SULFATE MG/L	<5	<1	10
SULFIDE MG/L	<.01	<.01	<.01
SULFUR, TOTAL MG/L	<1.73	<.33	3.30
SOLIDS			
SOLIDS, DISSOLVED MG/L	110	106	115
SOLIDS, SUSPENDED MG/L	<3	<1	5

TABLE G-26 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	<2	<1	4
SOLIDS, TOTAL MG/L	113	109	116
SOLIDS, VOLATILE MG/L	85	66	104
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	28	0	89
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	99	14	300
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	94	73	104
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	<2	<1	3
CHEMICAL OXYGEN DEMAND MG/L	29	7	65
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	27	10	35
CONDUCTIVITY UMHOS/CM	117	95	155
CYANIDE MG/L	<.001	..001	<.001
DISSOLVED OXYGEN MG/L	11.9	9.2	13.4
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-26 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	94	84	108
PH STANDARD UNITS	7.6	7.4	7.8
PHENOL UG/L	5	1	8
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	4.8	0.	13.0
TRANSPARENCY (SECCHI DISC) METER	.8	.8	.9
TURBIDITY FTU	.7	.4	1.1



TABLE G-27

WATER QUALITY DATA, STATION A-1  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/01/80. 20. 03. 31.

STATION: A-1 PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .01	< .01	< .01
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.08	.02	.17
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.025	.011	.047
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-27 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: A-1 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	.005	.003	.007
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	<.01	<.01	.01
PHOSPHORUS, TOTAL MG/L	.03	.01	.05
NITROGEN			
NITROGEN, AMMONIA MG/L	.41	.22	.55
NITROGEN, NITRATE MG/L	<.05	<.05	.05
NITROGEN, NITRITE MG/L	<.01	<.01	.01
NITROGEN, ORGANIC MG/L	<.09	<.01	.23
SULFUR			
SULFATE MG/L	3	1	6
SULFIDE MG/L	<.01	<.01	.01
SULFUR, TOTAL MG/L	.99	.33	1.98
SOLIDS			
SOLIDS, DISSOLVED MG/L	126	97	156
SOLIDS, SUSPENDED MG/L	3	1	4

TABLE G-27 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: A-1 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	3	1	3
SOLIDS, TOTAL MG/L	129	100	160
SOLIDS, VOLATILE MG/L	70	43	95
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	18	0	43
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	43	2	92
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	108	96	124
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	<37	<1	65
CHLORIDE MG/L	<2	<1	4
COLOR, TRUE COLOR UNITS	26	10	35
CONDUCTIVITY UMHOS/CM	133	113	168
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	7.8	5.0	11.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

6143

TABLE G-27 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: A-1 PERIOD	MEAN	RANGE	
HARDNESS MG/L	113	96	124
PH STANDARD UNITS	7.7	7.6	7.8
PHENOL UG/L	<2	<1	3
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	7.5	1.0	18.0
TRANSPARENCY (SECCHI DISC) METER	1.0	.9	1.0
TURBIDITY FTU	1.7	.6	4.0

TABLE G-28

WATER QUALITY DATA, STATION M-5  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/02/80. 20. 04. 01.

STATION: PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< .02	< .01	.04
ARSENIC, TOTAL MG/L	< .001	< .001	< .001
CADMIUM, TOTAL MG/L	< .001	< .001	< .001
CHROMIUM, HEXAVALENT MG/L	< .01	< .01	< .01
CHROMIUM, TRIVALENT MG/L	< .001	< .001	< .001
COBALT, TOTAL MG/L	< .01	< .01	< .01
COPPER, TOTAL MG/L	< .001	< .001	< .001
IRON, TOTAL MG/L	.27	.09	.44
LEAD, TOTAL MG/L	< .01	< .01	< .01
MANGANESE, TOTAL MG/L	.058	.031	.108
MERCURY, TOTAL UG/L	< .1	< .1	< .1
MOLYBDENUM, TOTAL MG/L	< .01	< .01	< .01
NICKEL, TOTAL MG/L	< .01	< .01	< .01

TABLE G-2B (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-5 PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	< .005	< .001	.008
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	< .01	< .01	.01
PHOSPHORUS, TOTAL MG/L	.03	.03	.04
NITROGEN			
NITROGEN, AMMONIA MG/L	.58	.07	.89
NITROGEN, NITRATE MG/L	< .05	< .05	< .05
NITROGEN, NITRITE MG/L	< .01	< .01	< .01
NITROGEN, ORGANIC MG/L	< .13	< .01	.36
SULFUR			
SULFATE MG/L	< 3	< 1	6
SULFIDE MG/L	< .01	< .01	< .01
SULFUR, TOTAL MG/L	< .99	< .33	1.98
SOLIDS			
SOLIDS, DISSOLVED MG/L	103	94	118
SOLIDS, SUSPENDED MG/L	3	1	6

G-146

TABLE G-28 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-5 PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	2	1	5
SOLIDS, TOTAL MG/L	106	100	119
SOLIDS, VOLATILE MG/L	75	60	82
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	11	0	41
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	122	0	400
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	80	48	104
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	1	1	2
CHEMICAL OXYGEN DEMAND MG/L	37	7	55
CHLORIDE MG/L	<1	<1	2
COLOR, TRUE COLOR UNITS	72	15	140
CONDUCTIVITY UMHDS/CM	89	55	120
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	10.0	7.8	12.6
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

TABLE G-28 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: M-5 PERIOD	MEAN	RANGE	
HARDNESS MG/L	82	52	100
PH STANDARD UNITS	7.2	7.1	7.3
PHENOL UG/L	3	2	4
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	4.8	0.	14.0
TRANSPARENCY (SECCHI DISC) METER	.8	.8	.9
TURBIDITY FTU	1.1	.8	1.4



TABLE G-29

WATER QUALITY DATA, STATION D  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
OWNER: EXXON MINERALS COMPANY, U. S. A.  
JOB NUMBER: 8837-045-07  
TABLE GENERATED: 12/02/80. 20. 03. 50.

STATION: D PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	< . 01	< . 01	. 02
ARSENIC, TOTAL MG/L	< . 001	< . 001	< . 001
CADMIUM, TOTAL MG/L	< . 001	< . 001	< . 001
CHROMIUM, HEXAVALENT MG/L	< . 01	< . 01	< . 01
CHROMIUM, TRIVALENT MG/L	< . 001	< . 001	< . 001
COBALT, TOTAL MG/L	< . 01	< . 01	< . 01
COPPER, TOTAL MG/L	< . 001	< . 001	< . 001
IRON, TOTAL MG/L	. 21	. 14	. 30
LEAD, TOTAL MG/L	< . 01	< . 01	< . 01
MANGANESE, TOTAL MG/L	. 060	. 043	. 070
MERCURY, TOTAL UG/L	< . 1	< . 1	< . 1
MOLYBDENUM, TOTAL MG/L	< . 01	< . 01	< . 01
NICKEL, TOTAL MG/L	< . 01	< . 01	< . 01

TABLE G-29 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: D PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	< .003	< .001	.007
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	< .01	< .01	< .01
PHOSPHORUS, TOTAL MG/L	.03	.01	.05
NITROGEN			
NITROGEN, AMMONIA MG/L	.27	.19	.39
NITROGEN, NITRATE MG/L	< .05	< .05	< .05
NITROGEN, NITRITE MG/L	< .01	< .01	< .01
NITROGEN, ORGANIC MG/L	.16	.11	.23
SULFUR			
SULFATE MG/L	< 4	< 1	9
SULFIDE MG/L	< .01	< .01	< .01
SULFUR, TOTAL MG/L	< 1.24	< .33	2.97
SOLIDS			
SOLIDS, DISSOLVED MG/L	103	96	117
SOLIDS, SUSPENDED MG/L	4	3	4

G-1-150

TABLE C-29 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: D PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	2	2	3
SOLIDS, TOTAL MG/L	106	99	121
SOLIDS, VOLATILE MG/L	61	48	70
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	15	0	33
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	30	0	78
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	96	84	106
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	37	10	76
CHLORIDE MG/L	<3	<1	4
COLOR, TRUE COLOR UNITS	36	8	70
CONDUCTIVITY UMHOS/CM	124	108	165
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	10.4	8.2	12.8
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

C-151

TABLE G-29 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: D PERIOD	MEAN	RANGE	
HARDNESS MG/L	97	84	112
PH STANDARD UNITS	7.4	7.1	7.8
PHENOL UG/L	<3	<1	5
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	7.4	0.	19.0
TRANSPARENCY (SECCHI DISC) METER	.5	.4	.5
TURBIDITY FTU	1.2	.8	1.8

TABLE G-29 (CONTINUED)

WATER QUALITY DATA, STATION E  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U. S. A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 12/03/80. 20. 02. 39.

STATION: E PERIOD	MEAN	RANGE	
METALS			
ALUMINUM, TOTAL MG/L	<. 05	<. 01	<. 08
ARSENIC, TOTAL MG/L	<. 001	<. 001	<. 001
CADMIUM, TOTAL MG/L	<. 001	<. 001	<. 001
CHROMIUM, HEXAVALENT MG/L	<. 01	<. 01	<. 01
CHROMIUM, TRIVALENT MG/L	<. 001	<. 001	<. 001
COBALT, TOTAL MG/L	<. 01	<. 01	<. 01
COPPER, TOTAL MG/L	<. 001	<. 001	<. 001
IRON, TOTAL MG/L	. 27	. 14	. 53
LEAD, TOTAL MG/L	<. 01	<. 01	<. 01
MANGANESE, TOTAL MG/L	. 078	. 044	. 156
MERCURY, TOTAL UG/L	<. 1	<. 1	<. 1
MOLYBDENUM, TOTAL MG/L	<. 01	<. 01	<. 01
NICKEL, TOTAL MG/L	<. 01	<. 01	<. 01

TABLE G-29 (CONTINUED)  
 SUMMARY OF MONTHLY MEANS AND RANGES  
 NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: E PERIOD	MEAN	RANGE	
ZINC, TOTAL MG/L	< .004	< .001	.006
PHOSPHORUS			
ORTHOPHOSPHATE, DISSOLVED MG/L	< .01	< .01	< .01
PHOSPHORUS, TOTAL MG/L	.04	.02	.06
NITROGEN			
NITROGEN, AMMONIA MG/L	.30	.10	.44
NITROGEN, NITRATE MG/L	< .05	< .05	< .05
NITROGEN, NITRITE MG/L	< .01	< .01	< .01
NITROGEN, ORGANIC MG/L	< .08	< .01	.18
SULFUR			
SULFATE MG/L	< 3	< 1	4
SULFIDE MG/L	< .01	< .01	< .01
SULFUR, TOTAL MG/L	< .82	< .33	1.32
SOLIDS			
SOLIDS, DISSOLVED MG/L	110	101	119
SOLIDS, SUSPENDED MG/L	3	1	5

G-154

TABLE G-29 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: E PERIOD	MEAN	RANGE	
SOLIDS, SUSPENDED VOLATILE MG/L	2	1	3
SOLIDS, TOTAL MG/L	112	103	120
SOLIDS, VOLATILE MG/L	69	65	73
BACTERIA			
FECAL COLIFORM BACTERIA ORG/100 ML	>78	6	>250
FECAL STREPTOCOCCUS BACTERIA ORG/100 ML	60	0	175
GENERAL PARAMETERS			
ALKALINITY, TOTAL MG/L	94	86	104
BIOCHEMICAL OXYGEN DEMAND (5-DAY, 20C) MG/L	2	1	2
CHEMICAL OXYGEN DEMAND MG/L	35	7	55
CHLORIDE MG/L	4	2	6
COLOR, TRUE COLOR UNITS	36	10	50
CONDUCTIVITY UMHOS/CM	123	97	165
CYANIDE MG/L	<.001	<.001	<.001
DISSOLVED OXYGEN MG/L	8.8	5.1	10.9
FREON EXTRACTABLE SUBSTANCES PPM	<1	<1	<1

G-155

TABLE G-29 (CONTINUED)  
SUMMARY OF MONTHLY MEANS AND RANGES  
NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

STATION: E PERIOD	MEAN	RANGE	
HARDNESS MG/L	95	84	108
PH STANDARD UNITS	7.4	7.1	7.6
PHENOL UG/L	<5	<1	9
SURFACTANTS (MBAS), TOTAL UG/L	<10	<10	<10
TEMPERATURE DEGREES C	7.3	0.	19.0
TRANSPARENCY (SECCHI DISC) METER	.9	.9	1.0
TURBIDITY FTU	1.5	1.1	2.0



APPENDIX 2.4H  
SUPPLEMENTARY WATER QUALITY DATA

APPENDIX 2.4H  
SUPPLEMENTARY WATER QUALITY DATA

<u>Table</u>	<u>Title</u>	<u>Page</u>
H-1	SPRING METALS SURVEY, APRIL 1978 . . . . .	H-1
H-2	WATER QUALITY DATA, STATION A-2 (HEMLOCK CREEK) OCTOBER 1977 THROUGH MARCH 1978. . . . .	H-5
H-3	WATER QUALITY DATA, STATIONS Q AND S (SWAMP CREEK) OCTOBER 1977 THROUGH MARCH 1978 . . . . .	H-7
H-4	DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION L (DEEP HOLE LAKE) MARCH 1977 THROUGH OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980 . . . . .	H-11
H-5	DEPTH PROFILE OF GENERAL WATER QUALITY PARAMETERS FOR STATION K (DUCK LAKE) MARCH 1977 THROUGH OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980 . . . . .	H-14
H-6	DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION GH (GROUND HEMLOCK LAKE) NOVEMBER 1979 THROUGH OCTOBER 1980 . . . . .	H-16
H-7	DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATIONS H AND I (LITTLE SAND LAKE) MARCH 1977 THROUGH MARCH 1978; MAY AND AUGUST 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980. . . . .	H-20
H-8	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATION O (MOLE LAKE) MAY 1977 THROUGH APRIL 1978. . . . .	H-24
H-9	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATION G (OAK LAKE) MARCH 1977 THROUGH AUGUST 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980 . . . . .	H-26
H-10	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATIONS F AND N (RICE LAKE) MARCH 1977-MARCH 1978; MAY, AUGUST AND OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980. . . . .	H-31
H-11	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATIONS M-2 AND M-4 (ROLLING STONE LAKE) OCTOBER 1977 THROUGH SEPTEMBER 1978. . . . .	H-33
H-12	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATION JL (ST. JOHNS LAKE) NOVEMBER 1979 THROUGH OCTOBER 1980 . . . . .	H-37

APPENDIX 2.4H (continued)

<u>Table</u>	<u>Title</u>	<u>Page</u>
H-13	DEPTH PROFILES OF GENERAL WATER QUALITY DATA FOR STATION J (SKUNK LAKE) MARCH 1977 THROUGH MARCH 1978; NOVEMBER 1979; AND FEBRUARY, MAY AND AUGUST 1980 . . . . .	H-39
H-14	DEPTH PROFILE FOR GENERAL WATER QUALITY PARAMETERS FOR STATION WL (WALSH LAKE) NOVEMBER 1979 THROUGH OCTOBER 1980 . . . . .	H-41

## SPRING METALS STUDY

In April 1978 when surface water runoff was high because of snowmelt, water samples were collected from Hemlock Creek (Station A-1), Swamp Creek (Stations D, E, and V), Creek 11-4 (Station M-3), Creek 12-9 (Station M-1), Pickerel Creek (Station M-5), and the Wolf River (Stations Y and Z). The results of the analysis of the selected metals (total and dissolved concentrations) and solids are presented in Appendix 2.4H, Table H-1. The values in this table were not included in the calculations of means and ranges presented in Appendix 2.4G. The intent of this investigation was to evaluate the influence of maximum or near-maximum runoff on quantities of metals transported by the surface water system.

Cadmium was detected in Hemlock Creek, Swamp Creek, Creek 12-9 and Pickerel Creek. The concentration (total cadmium) of 0.005 mg/l detected at Station D on Swamp Creek was the highest level of cadmium recorded from this station during the entire study. However, cadmium had been detected at Station D before, including a concentration of 0.004 mg/l in September 1977. All other cadmium concentrations were within previously recorded ranges.

At all sampling stations, iron, manganese, and zinc were also detected from these samples in concentrations that were generally below the mean concentrations for these metals presented in Appendix 2.4G. Solids were generally below the means calculated for these stations except for suspended solids, which were found occasionally in concentrations above the reported average.

The results indicate that the dissolved fraction of the measureable metals (cadmium, iron, manganese, and zinc) was the larger portion of total metals present in the water samples. The results also suggest that the transport of these metals is a more subtle process throughout the basins, perhaps continuing at a relatively uniform rate throughout the year in both surface water runoff and ground water inflow.

TABLE H-1  
 SPRING METALS SURVEY  
 APRIL, 1978  
 WATER QUALITY DATA

SITE: CRANDON  
 OWNER: EXXON MINERALS COMPANY, U.S.A.  
 JOB NUMBER: 8837-045-07  
 TABLE GENERATED: 10/05/78. 20.07.34.

STATION TIME	A-1 0545	D 0620	E 0645	H-1 0750	M-3 0805	M-5 0810	V 0700	Y 0710	Z 0725
METALS									
ALUMINUM, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ALUMINUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ARSENIC, DISSOLVED MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
ARSENIC, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CADMIUM, DISSOLVED MG/L	<0.001	.004	<0.001	<0.001	<0.001	.002	<0.001	<0.001	<0.001
CADMIUM, TOTAL MG/L	.002	.005	<0.001	.003	<0.001	.003	<0.001	<0.001	<0.001
CHROMIUM, HEXAVALENT, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CHROMIUM, HEXAVALENT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CHROMIUM, TRIVALENT, DISSOLVED MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
CHROMIUM, TRIVALENT, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
COBALT, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
COBALT, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

1-2

TABLE H-1 (CONTINUED)  
 SPRING METALS SURVEY  
 APRIL, 1978

STATION TIME	A-1 0545	D 0620	E 0645	M 0750	M-3 0805	M-5 0810	V 0700	Y 0710	Z 0725
COPPER, DISSOLVED MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
COPPER, TOTAL MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
IRON, DISSOLVED MG/L	.06	.11	.10	.07	.10	.15	.19	.34	.25
IRON, TOTAL MG/L	.08	.18	.18	.22	.13	.22	.25	.47	.37
LEAD, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
LEAD, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MANGANESE, DISSOLVED MG/L	.010	.019	.011	.007	.014	.010	.008	.050	.014
MANGANESE, TOTAL MG/L	.012	.024	.013	.053	.015	.019	.010	.067	.026
MERCURY, DISSOLVED UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MERCURY, TOTAL UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MOLYBDENUM, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MOLYBDENUM, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
NICKEL, DISSOLVED MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
NICKEL, TOTAL MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ZINC, DISSOLVED MG/L	.004	.002	<0.001	.002	.004	.002	.004	.004	.003
ZINC, TOTAL MG/L	.005	.003	<0.001	.008	.005	.004	.005	.006	.007

H-3

TABLE H-1 (CONTINUED)  
 SPRING METALS SURVEY  
 APRIL, 1978

STATION TIME	A-1 0545	D 0620	E 0645	M 0750	M-3 0805	M-5 0810	V 0700	Y 0710	Z 0725
SOLIDS									
SOLIDS, DISSOLVED MG/L	98	90	100	90	58	98	54	78	62
SOLIDS, SUSPENDED MG/L	2	6	10	10	8	16	10	14	8
SOLIDS, SUSPENDED VOLATILE MG/L	<1	2	<1	2	4	4	6	4	4
SOLIDS, TOTAL MG/L	100	96	110	100	66	104	64	92	70
SOLIDS, VOLATILE MG/L	40	36	18	36	30	56	32	50	46
GENERAL PARAMETERS									
TEMPERATURE DEGREES C	2.5	2.5	2.5	2.5	3.0	2.0	2.0	3.0	*

H-4

TABLE H-2

Page 1 of 2

WATER QUALITY DATA, STATION A-2  
OCTOBER 1977-MARCH 1978

PARAMETERS	1977			1978		
	OCT	NOV	DEC	JAN	FEB	MAR
<b>METALS</b>						
Aluminum, total mg/l	<0.01	--	--	--	--	<0.01
Arsenic, total mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium, total mg/l	<0.001	0.002	0.002	<0.001	0.002	0.004
Chromium, hexavalent mg/l	<0.01	--	--	--	--	<0.01
Chromium, trivalent mg/l	<0.001	--	--	--	--	<0.001
Cobalt, total mg/l	<0.01	--	--	--	--	<0.01
Copper, total mg/l	<0.001	0.005	0.006	0.006	0.002	<0.001
Iron, total mg/l	0.10	0.11	0.06	0.03	0.06	0.09
Lead, total mg/l	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Manganese, total mg/l	0.026	0.046	0.017	0.015	0.008	0.017
Mercury, total µg/l	<0.1	<0.1	0.1	<0.1	<0.01	<0.1
Molybdenum, total mg/l	<0.01	--	--	--	--	<0.01
Nickel, total mg/l	<0.01	--	--	--	--	<0.01
Zinc, total mg/l	0.010	0.004	0.004	0.003	0.004	0.003
<b>PHOSPHORUS</b>						
Orthophosphate, dissolved mg/l	<0.01	--	--	--	--	<0.01
Phosphorus, total mg/l	0.02	--	--	--	--	0.02
<b>NITROGEN</b>						
Nitrogen, ammonia mg/l	0.37	--	--	--	--	0.09
Nitrogen, nitrate mg/l	<0.01	--	--	--	--	0.29
Nitrogen, nitrite mg/l	<0.01	--	--	--	--	<0.01
Nitrogen, organic mg/l	1.53	--	--	--	--	0.66
<b>SULFUR</b>						
Sulfate mg/l	<1	6	2	7	7	7
Sulfide mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfur, total mg/l	<0.01	1.98	0.66	2.31	2.33	2.33
<b>SOLIDS</b>						
Solids, dissolved mg/l	144	139	142	137	100	156
Solids, suspended mg/l	4	8	8	5	8	6
Solids, suspended volatile mg/l	4	--	--	--	--	4
Solids, total mg/l	148	147	150	142	108	162
Solids, volatile mg/l	95	--	--	--	--	70
<b>BACTERIA</b>						
Fecal coliform bacteria org/100ml	0	--	--	--	--	0
Fecal streptococcus bacteria org/100ml	0	--	--	--	--	2

Note: -- Indicates no data.



TABLE H-2 (continued)

Page 2 of 3

PARAMETERS	1977			1978		
	OCT	NOV	DEC	JAN	FEB	MAR
GENERAL						
Alkalinity, total mg/l	100	102	112	108	116	118
BOD (5-day, 20°C) mg/l	2	--	--	--	--	1
Chloride mg/l	2	4	<1	<1	<1	<1
Color, true color units	40	--	--	--	--	5
Conductivity µmhos/cm	160	205	145	121	118	130
Cyanide mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved oxygen mg/l	15.1	10.1	7.4	10.2	11.0	8.4
Freon extractable substances ppm	1	<1	<1	2	1	<1
Hardness mg/l	112	116	108	116	114	124
pH standard units	7.5	7.6	7.6	7.0	5.8	7.4
Phenol µg/l	8	8	7	9	9	3
Surfactants (MBAS), total µg/l	<10	--	--	--	--	<10
Temperature °C	6.0	5.5	0.0	0.0	1.0	0.5
Transparency meter	0.5	0.5	--	--	--	--
Turbidity FTU	1.6	5.4	3.9	4.0	2.8	2.8

WATER QUALITY DATA, STATION Q  
OCTOBER AND NOVEMBER 1977

PARAMETERS	1977	
	OCT	NOV
METALS		
Aluminum, total mg/l	<0.01	--
Arsenic, total mg/l	<0.001	<0.001
Cadmium, total mg/l	<0.001	0.002
Chromium, hexavalent mg/l	<0.01	--
Chromium, trivalent mg/l	<0.001	--
Cobalt, total mg/l	<0.01	--
Copper, total mg/l	0.001	0.003
Iron, total mg/l	0.23	0.18
Lead, total mg/l	<0.01	0.02
Manganese, total mg/l	0.009	0.019
Mercury, total µg/l	<0.1	<0.1
Molybdenum, total mg/l	<0.01	--
Nickel, total mg/l	<0.01	--
Zinc, total mg/l	0.010	0.002
PHOSPHORUS		
Orthophosphate, dissolved mg/l	<0.01	--
Phosphorus, total mg/l	0.02	--
NITROGEN		
Nitrogen, ammonia mg/l	0.77	--
Nitrogen, nitrate mg/l	<0.01	--
Nitrogen, nitrite mg/l	<0.01	--
Nitrogen, organic mg/l	1.91	--
SULFUR		
Sulfate mg/l	<1	9
Sulfide mg/l	<0.01	<0.01
Sulfur, total mg/l	<0.01	2.97

Note: -- Indicates no data.

## STATION Q

PARAMETERS	1977	
	OCT	NOV
SOLIDS		
Solids, dissolved mg/l	163	117
Solids, suspended mg/l	2	5
Solids, suspended volatile mg/l	<1	--
Solids, total mg/l	165	122
Solids, volatile mg/l	53	--
BACTERIA		
Fecal coliform bacteria org/100ml	12	--
Fecal streptococcus bacteria org/100ml	16	--
GENERAL		
Alkalinity, total mg/l	76	100
BOD (5-day, 20°C) mg/l	3	--
Chloride mg/l	4	2
Color, true color units	75	--
Conductivity µmhos/cm	105	125
Cyanide mg/l	<0.001	<0.001
Dissolved oxygen mg/l	8.5	8.4
Freon extractable substances ppm	1	<1
Hardness mg/l	108	112
pH standard units	7.4	7.4
Phenol µg/l	12	5
Surfactants (MBAS), total µg/l	<10	--
Temperature °C	8.0	8.0
Transparency meter	0.6	0.8
Turbidity FTU	1.1	1.3

TABLE H-3 (continued)

Page 3 of 4

WATER QUALITY DATA, STATION S  
OCTOBER 1977-MARCH 1978

PARAMETERS	1977			1978		
	OCT	NOV	DEC	JAN	FEB	MAR
<b>METALS</b>						
Aluminum, total mg/l	<0.01	--	--	--	--	<0.01
Arsenic, total mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium, total mg/l	<0.001	0.001	<0.001	0.004	<0.001	<0.001
Chromium, hexavalent mg/l	<0.01	--	--	--	--	<0.01
Chromium, trivalent mg/l	<0.001	--	--	--	--	<0.001
Cobalt, total mg/l	<0.01	--	--	--	--	<0.01
Copper, total mg/l	0.001	0.006	0.002	0.002	0.002	0.001
Iron, total mg/l	0.30	0.24	0.21	0.17	0.27	0.23
Lead, total mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese, total mg/l	0.021	0.020	0.019	0.027	0.061	0.075
Mercury, total µg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum, total mg/l	<0.01	--	--	--	--	<0.01
Nickel, total mg/l	<0.01	--	--	--	--	<0.01
Zinc, total mg/l	0.010	0.013	0.002	0.006	0.003	0.004
<b>PHOSPHORUS</b>						
Orthophosphate, dissolved mg/l	<0.01	--	--	--	--	<0.01
Phosphorus, total mg/l	0.02	--	--	--	--	<0.01
<b>NITROGEN</b>						
Nitrogen, ammonia mg/l	0.91	--	--	--	--	0.28
Nitrogen, nitrate mg/l	<0.01	--	--	--	--	0.44
Nitrogen, nitrite mg/l	<0.01	--	--	--	--	<0.01
Nitrogen, organic mg/l	2.02	--	--	--	--	0.48
<b>SULFUR</b>						
Sulfate mg/l	<1	8	7	8	8	8
Sulfide mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfur, total mg/l	<0.01	2.64	2.31	2.64	2.67	2.67
<b>SOLIDS</b>						
Solids, dissolved mg/l	156	126	135	169	158	180
Solids, suspended mg/l	1	6	2	1	2	10
Solids, suspended volatile mg/l	<1	--	--	--	--	6
Solids, total mg/l	157	132	137	170	160	190
Solids, volatile mg/l	53	--	--	--	--	108
<b>BACTERIA</b>						
Fecal coliform bacteria org/100ml	42	--	--	--	--	2
Fecal streptococcus bacteria org/100ml	44	--	--	--	--	0

Note: -- Indicates no data.

TABLE H-3 (continued)

## STATION S

PARAMETERS	1977			1978		
	OCT	NOV	DEC	JAN	FEB	MAR
GENERAL						
Alkalinity, total mg/l	72	92	100	98	110	114
BOD (5-day, 20°C) mg/l	3	--	--	--	--	3
Chloride mg/l	4	6	2	2	4	2
Color, true color units	80	--	--	--	--	10
Conductivity µmhos/cm	100	228	40	105	109	118
Cyanide mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved oxygen mg/l	8.4	8.4	7.8	7.0	4.0	2.7
Freon extractable substances ppm	1	1	<1	2	<1	<1
Hardness mg/l	96	104	104	104	114	120
pH standard units	7.4	7.4	7.2	6.6	5.8	6.8
Phenol µg/l	10	14	5	2	2	8
Surfactants (MBAS), total µg/l	10	--	--	--	--	<10
Temperature °C	6.0	8.0	0.0	1.0	0.0	0.0
Transparency meter	1.7	1.5	--	--	--	--
Turbidity FTU	1.1	1.5	2.5	1.7	1.4	1.5

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION L - DEEP HOLE LAKE  
MARCH 1977-OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY ( mhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.5	2.5	18	5.4	28	1.8
	1.0	0.6	2.2	16	--	28	--
April 1977	Subsurface	2.0	--	--	--	20	--
	1.0	2.0	--	--	5.8	18	0.8
	2.0	2.0	--	--	--	18	--
May 1977	Subsurface	16.0	6.4	67	6.1	25	2.6
	1.0	16.0	6.4	67	6.0	25	1.8
June 1977	Subsurface	18.0	9.2	102	6.4	35	1.6
	1.6	17.5	8.7	95	6.1	35	1.9
July 1977	Subsurface	24.0	9.4	117	6.8	85	1.4
	1.0	24.0	9.4	117	6.6	85	1.4
	1.8	24.0	9.4	117	6.2	85	2.4
August 1977	Subsurface	21.3	10.2	122	6.0	28	1.2
	1.8	20.4	9.6	112	6.3	29	1.4
September 1977	Subsurface	18.5	7.8	87	6.2	--	1.0
	1.4	18.5	7.6	87	6.2	--	0.9
October 1977	Subsurface	10.0	10.6	99	6.2	28	0.8
	1.0	9.5	10.4	96	6.2	28	0.8
	1.8	8.5	10.4	93	6.2	28	0.9
November 1977	Subsurface	8.0	10.4	92	6.0	--	0.9
	1.0	7.0	10.4	90	6.0	--	0.8
	1.8	7.0	10.4	90	6.1	--	1.0
December 1977	Subsurface	2.0	14.8	112	6.6	20	1.9
January 1978	Subsurface	2.0	10.0	76	6.1	21	1.4
	1.0	3.5	8.3	66	6.0	21	1.3

Note: -- Indicates no data.

TABLE H-4 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (μmhos/cm)	TURBIDITY (FTU)
February 1978	Subsurface	2.0	14.0	99	—	29	—
	1.0	4.5	7.1	57	6.2	28	1.5
March 1978	Subsurface	1.8	9.2	70	5.3	20	1.5
	1.0	3.2	1.3	10	5.8	20	2.5
	1.8	4.0	0.7	5	—	22	—
April 1978	Subsurface	3.2	6.0	47	6.1	29	1.9
	1.0	4.0	5.8	47	6.2	29	2.1
May 1978	Subsurface	10.0	11.8	109	6.4	25	1.8
	1.0	10.0	11.2	104	6.4	25	1.7
	2.1	10.0	11.2	104	6.4	25	1.6
June 1978	Subsurface	19.0	8.8	100	5.9	30	1.5
	1.0	19.0	8.8	100	—	30	—
	2.0	19.0	8.8	100	5.8	30	1.6
July 1978	Subsurface	21.5	8.2	98	5.9	40	1.5
	1.0	21.5	8.4	101	6.1	40	1.4
August 1978	Subsurface	21.0	8.2	98	5.6	28	0.6
	1.0	21.0	8.2	98	5.6	28	0.6
	2.3	21.0	8.0	94	5.6	28	0.6
September 1978	Subsurface	21.2	8.3	99	5.8	29	0.5
	1.0	21.2	8.3	99	5.9	30	0.6
	2.0	21.2	8.1	96	5.8	30	0.7
October 1978	Subsurface	11.5	12.0	116	6.0	21	1.4
	1.0	11.5	11.8	113	6.0	21	1.5
	2.3	11.5	11.8	113	6.1	21	1.5
November 1979	Subsurface	1.5	12.4	93	5.5	20	1.3
	1.0	2.0	12.2	93	—	18	—
	2.0	2.5	11.6	90	6.6	18	1.3

TABLE H-4 (continued)

Page 3 of 3

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
February 1980	Subsurface	0.0	8.4	61	6.6	25	0.9
	1.0	1.5	4.7	35	6.6	29	0.9
	2.0	2.0	1.3	9	--	30	--
May 1980	Subsurface	11.0	13.2	126	6.0	18	0.4
	1.0	11.0	13.3	127	6.4	17	0.6
	2.0	11.0	13.3	127	6.2	18	0.4
August 1978	Subsurface	23.5	7.9	98	6.0	22	0.7
	1.0	23.5	7.8	97	6.2	22	0.8
	2.0	23.5	7.8	97	6.2	22	0.8



TABLE H-5

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION K - DUCK LAKE  
MARCH 1977-OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.2	1.4	10	5.4	29	1.5
	0.5	0.5	1.1	7	--	29	--
April 1977	Subsurface	2.0	--	--	--	25	--
	1.0	2.0	--	--	5.6	25	1.3
May 1977	Subsurface	16.5	6.5	69	4.8	30	1.2
	1.0	15.5	6.4	67	5.2	30	1.6
June 1977	Subsurface	18.0	8.8	98	4.8	35	1.1
	1.5	18.0	7.7	85	4.9	35	1.1
July 1977	Subsurface	27.0	8.7	113	5.4	40	3.6
	1.0	27.5	8.5	113	5.5	40	1.5
	2.0	27.5	8.5	112	6.3	40	1.1
August 1977	Subsurface	21.1	9.2	108	4.7	34	1.3
	1.8	20.9	9.4	110	5.0	37	1.7
September 1977	Subsurface	18.0	8.0	89	4.6	--	1.5
	1.8	18.0	8.0	89	4.6	--	1.0
October 1977	Subsurface	9.0	10.8	99	4.8	31	1.3
	1.0	9.0	11.0	101	4.8	31	1.5
November 1977	Subsurface	8.0	9.0	80	4.6	35	0.9
	1.0	7.0	9.0	78	4.7	32	1.4
December 1977	Subsurface	1.5	12.6	95	5.8	25	2.0
January 1978	Subsurface	3.0	13.9	108	--	28	--
	1.5	5.0	7.7	64	--	28	--
February 1978	Subsurface	1.0	3.3	24	5.0	22	3.2
	1.0	2.8	2.8	21	5.2	25	1.5
March 1978	Subsurface	1.0	1.3	9	4.9	25	1.3
	1.0	3.0	1.3	10	5.4	25	2.9
	1.8	4.5	0.2	2	--	25	--

Note: -- Indicates no data.

TABLE H-5 (continued)

Page 2 of 2

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
April 1978	Subsurface	3.9	0.4	3	5.7	28	2.5
	1.0	3.8	0.5	4	6.0	28	4.7
May 1978	Subsurface	10.2	11.2	106	5.0	28	1.1
	1.0	10.2	10.6	100	4.8	28	1.4
	2.1	10.0	10.4	98	—	28	—
June 1978	Subsurface	19.0	8.7	99	4.5	31	1.2
	1.0	19.0	8.7	99	—	31	—
	1.8	16.0	7.1	75	4.3	31	1.1
July 1978	Subsurface	22.5	7.5	90	4.3	30	1.8
	1.0	22.0	7.8	93	4.7	30	1.8
August 1978	Subsurface	21.0	8.2	98	4.6	28	5.3
	1.0	20.0	8.0	92	4.6	28	5.6
	2.0	20.0	7.0	81	4.6	28	5.3
September 1978	Subsurface	21.0	7.6	89	5.2	31	1.0
	1.0	21.0	7.5	88	4.8	31	1.1
	1.8	21.0	7.3	86	—	31	—
October 1978	Subsurface	10.0	9.2	85	5.2	25	0.7
	1.0	11.0	9.6	91	5.2	25	0.9
	2.0	11.0	9.4	89	5.2	25	0.9
November 1979	Subsurface	1.0	13.3	99	4.8	15	0.8
	1.0	2.0	8.8	66	5.2	15	0.8
February 1980	Subsurface	1.0	3.4	25	6.4	20	0.6
	1.0	3.5	0.7	5	6.4	20	0.6
	2.0	4.0	0.4	3	6.5	20	0.5
May 1980	Subsurface	12.0	10.4	101	5.3	22	0.6
	1.0	12.0	10.2	99	5.3	25	0.5
	1.9	12.0	10.2	99	5.5	25	0.9
August 1978	Subsurface	22.5	7.4	89	7.9	140	1.0
	1.0	22.5	7.3	83	8.0	140	0.9
	2.0	22.5	6.9	83	8.0	140	0.9

H-15

TABLE H-6

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION GH - GROUND HEMLOCK LAKE  
NOVEMBER 1979-OCTOBER 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
November 1979	Subsurface	2.5	12.2	95	8.0	128	5.5
	1.0	3.0	12.0	94	7.6	135	4.5
	1.5	3.0	11.2	87	--	135	--
December 1979	Subsurface	3.0	12.5	97	8.4	129	1.7
	1.0	3.5	12.5	98	8.4	132	3.4
	2.0	3.5	12.5	98	8.3	132	3.6
	3.0	3.5	12.0	95	8.2	134	3.0
	4.0	4.0	10.4	84	8.2	136	3.1
	5.0	4.0	8.2	66	8.0	139	4.1
	6.0	4.0	7.8	63	7.9	140	3.4
	7.0	4.0	6.4	52	7.8	140	3.6
	8.0	4.3	6.0	49	7.7	142	4.4
	9.0	4.5	5.6	45	7.6	142	3.6
	10.0	4.6	5.2	42	7.6	142	3.4
	11.0	4.8	4.2	35	--	146	--
January 1980	Subsurface	3.0	8.6	67	8.4	139	2.0
	1.0	3.5	8.2	65	8.4	140	2.3
	2.0	3.5	8.0	64	8.2	140	1.6
	3.0	3.5	7.8	62	8.0	140	2.8
	4.0	3.5	7.6	61	7.9	141	2.8
	5.0	3.8	7.4	59	7.8	141	2.8
	6.0	4.0	6.0	49	7.8	143	3.1
	7.0	4.0	5.5	44	7.8	145	2.9
	8.0	4.0	5.5	44	7.8	146	2.4
	9.0	4.0	5.5	44	7.7	148	3.2
February 1980	Subsurface	0.0	4.6	33	7.4	122	0.6
	1.0	2.5	2.9	22	7.3	134	1.2
	2.0	4.0	2.2	17	7.3	140	1.2
	3.0	4.5	2.1	17	7.3	140	1.3
	4.0	4.5	2.0	16	7.3	140	1.0
	5.0	4.5	2.8	23	7.3	140	1.2
	6.0	4.5	1.6	13	7.3	140	1.1
	7.0	4.5	1.5	12	7.2	140	1.4
	8.0	5.0	1.4	11	7.2	130	1.1
	9.0	5.0	1.3	10	7.2	140	1.4
	10.0	5.0	1.2	10	7.2	145	1.5
	11.0	5.0	1.1	9	7.2	150	2.4

Note: -- Indicates no data.

TABLE H-6 (continued)

Page 2 of 4

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1980	Subsurface	1.0	2.4	17	6.8	138	0.7
	1.0	3.0	1.1	8	6.7	140	0.7
	2.0	3.5	0.8	6	7.0	141	1.0
	3.0	3.5	0.6	4	7.0	143	1.0
	4.0	3.5	0.5	3	6.8	145	1.0
	5.0	3.5	0.4	3	6.8	145	1.0
	6.0	3.5	0.4	3	6.8	147	1.1
	7.0	3.5	0.4	3	6.8	148	1.0
	8.0	3.5	0.4	3	6.7	148	1.4
	9.0	3.5	0.4	3	6.9	148	1.2
	10.0	4.0	0.3	2	6.8	148	1.2
11.0	4.0	0.2	2	6.4	148	1.6	
April 1980	Subsurface	1.0	--	--	--	--	1.1
	1.0	6.0	--	--	--	140	1.4
	1.5	6.0	--	--	--	140	--
May 1980	Subsurface	11.0	--	--	8.8	160	4.4
	1.0	11.0	--	--	8.9	160	4.3
	2.0	11.0	--	--	8.7	160	4.6
	3.0	10.8	--	--	8.6	160	4.2
	4.0	10.2	--	--	8.8	160	4.1
	5.0	9.7	--	--	8.7	157	5.1
	6.0	8.5	--	--	8.3	157	5.2
	7.0	7.5	--	--	7.9	153	4.4
	8.0	6.8	--	--	7.8	150	3.5
	9.0	6.5	--	--	7.9	150	2.4
	10.0	6.0	--	--	7.8	150	2.2
11.0	6.0	--	--	7.8	150	2.8	
June 1980	Subsurface	18.0	10.6	117	8.8	188	0.9
	1.0	18.0	10.6	117	8.8	188	1.2
	2.0	18.0	10.8	119	8.8	188	0.8
	3.0	17.9	10.7	118	8.8	188	0.9
	4.0	17.5	10.7	117	8.8	188	0.6
	5.0	15.0	12.0	125	8.8	189	1.1
	6.0	11.2	11.8	111	8.8	171	1.7
	7.0	9.0	8.6	78	8.0	167	17
	8.0	7.5	0.8	6	7.4	162	28
	9.0	7.0	0.6	4	7.3	160	10
	10.0	6.5	0.4	3	7.3	160	5.0
11.0	6.5	0.2	2	7.3	160	4.8	

H-17

TABLE H-6 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
July 1980	Subsurface	24.5	9.4	119	8.8	200	2.7
	1.0	24.5	9.4	119	8.8	200	2.6
	2.0	24.0	9.5	119	8.8	200	2.6
	3.0	24.0	9.9	124	8.8	200	3.1
	4.0	21.0	11.4	135	8.8	190	5.1
	5.0	17.0	12.5	135	8.8	182	7.4
	6.0	12.0	13.8	134	8.8	155	6.1
	7.0	8.0	5.2	46	8.9	180	14
	8.0	7.0	1.2	10	7.4	180	16
	9.0	6.5	0.3	2	7.2	170	14
	10.0	6.5	0.2	1	7.4	170	13
	11.0	6.0	0.2	1	7.4	170	6.4
August 1980	Subsurface	22.0	10.6	126	8.8	185	2.0
	1.0	23.0	10.5	127	8.8	185	2.2
	2.0	23.0	10.5	127	8.8	185	2.2
	3.0	23.0	10.9	134	9.0	185	2.2
	4.0	22.0	11.6	140	9.2	185	3.9
	5.0	19.0	>20	>150	9.4	170	3.6
	6.0	13.0	15.6	>150	9.0	160	22
	7.0	9.0	0.2	2	7.7	200	18
	8.0	8.0	0.1	1	7.7	195	14
	9.0	7.5	0.1	1	7.6	190	11
	10.0	7.5	<0.1	<1	7.6	188	10
	11.0	7.0	<0.1	<1	7.6	188	10
September 1980	Subsurface	17.0	9.8	106	8.3	155	3.4
	1.0	17.0	9.8	106	8.4	159	3.4
	2.0	17.0	9.8	106	8.4	160	3.2
	3.0	17.0	9.7	105	8.5	160	3.1
	4.0	17.0	9.7	105	8.4	160	3
	5.0	17.0	10.1	109	8.5	170	3.7
	6.0	12.0	0.4	3	7.2	210	27
	7.0	8.0	0.2	2	7.0	195	10
	8.0	7.0	0.2	2	7.1	188	7.7
	9.0	6.5	0.1	1	7.1	183	8.8
	10.0	6.5	0.1	1	7.1	182	7.0
	11.0	6.3	0.1	1	7.2	185	7.3
12.0	6.2	0.1	1	7.2	187	7.7	

TABLE H-6 (continued)

Page 4 of 4

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
October 1980	Subsurface	8.5	9.5	85	8.2	145	3.3
	1.0	8.5	9.3	83	8.2	150	2.8
	2.0	8.5	9.3	83	8.2	150	3.2
	3.0	8.5	9.3	83	8.4	150	2.7
	4.0	8.5	9.2	82	8.4	150	3.0
	5.0	8.5	9.2	82	8.2	150	2.7
	6.0	8.5	8.8	79	8.4	150	2.8
	7.0	8.5	8.5	76	7.9	155	3.0
	8.0	8.5	7.5	67	7.6	155	2.9
	9.0	8.5	5.2	47	7.6	160	7.4
	10.0	8.0	0.5	4	7.4	175	7.3
	11.0	7.0	0.2	1	7.5	185	--

TABLE H-7

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION H - LITTLE SAND LAKE  
 MARCH 1977-MARCH 1978; MAY AND AUGUST 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	2.0	3.0	23	5.0	34	1.3
	1.0	2.0	2.8	21	4.9	35	1.2
	2.0	1.9	2.6	19	5.0	35	3.5
April 1977	Subsurface	4.5	--	--	5.5	25	0.9
	1.0	4.8	--	--	6.1	28	1.1
	2.0	5.0	--	--	5.5	28	0.9
	3.0	5.0	--	--	5.1	28	0.9
May 1977	Subsurface	13.5	8.9	90	5.2	25	1.4
	1.0	13.0	8.5	85	5.8	25	1.0
	2.0	13.0	8.4	83	6.0	25	0.8
	3.0	13.0	8.5	85	6.0	25	0.8
	4.6	13.5	8.6	86	6.0	25	0.6
June 1977	Subsurface	13.0	9.2	92	5.8	28	0.8
	1.0	13.0	9.2	92	5.8	28	0.8
	3.3	12.0	9.4	92	5.6	28	0.7
July 1977	Subsurface	24.9	8.4	106	4.7	59	0.8
	1.0	24.9	8.5	107	5.2	59	1.0
	2.0	24.0	7.9	100	5.3	55	0.8
August 1977	Subsurface	21.2	9.8	113	5.4	25	1.0
	1.0	21.2	9.4	109	5.4	27	0.8
	2.0	20.8	9.4	110	5.4	27	0.9
September 1977	Subsurface	20.0	9.3	108	5.2	28	0.8
	1.5	20.0	8.8	102	5.1	28	0.7
	3.0	20.0	8.5	99	5.2	28	0.8
October 1977	Subsurface	12.0	9.0	87	5.2	24	0.9
	1.5	12.0	9.0	87	5.2	24	0.9
	3.0	11.5	8.8	85	5.3	25	0.9
November 1977	Subsurface	8.5	10.6	95	5.2	45	0.8
	1.0	8.5	10.6	95	5.2	45	1.1
	2.0	8.5	10.5	94	5.2	45	3.2
	2.8	8.5	10.4	94	--	45	--

Note: -- Indicates no data.

TABLE H-7 (continued)

## STATION H - LITTLE SAND LAKE

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
December 1977	Subsurface	1.5	--	--	5.9	--	1.0
January 1978	Subsurface	2.0	12.0	91	4.8	10	1.4
	1.0	3.0	11.8	92	--	11	--
	1.5	--	--	--	5.4	--	1.4
	3.0	5.0	7.6	61	5.1	22	--
February 1978	Subsurface	2.0	14.0	106	--	18	--
	1.0	4.6	10.8	88	5.0	20	0.9
	2.0	5.2	5.3	42	5.2	21	0.6
	3.0	5.5	4.6	38	--	21	--
March 1978	Subsurface	0.5	13.0	95	--	22	--
	1.0	4.0	7.5	60	4.8	22	0.9
	2.0	4.0	2.8	22	5.0	22	1.2
	3.0	4.0	2.0	16	--	21	--
May 1978	Subsurface	8.5	10.4	93	--	22	--
	1.0	9.5	10.5	98	5.6	22	1.4
	2.0	9.5	10.5	98	5.6	22	1.5
	3.0	9.5	10.5	98	5.6	22	1.4
August 1978	Subsurface	21.0	10.8	127	5.1	27	0.4
	1.0	21.0	10.8	127	5.2	27	0.8
	2.0	21.0	10.8	127	5.2	27	0.4
	3.0	21.0	10.8	127	--	30	--
November 1979	Subsurface	1.5	13.2	100	6.1	20	1.0
	0.6	2.0	13.0	100	--	20	--
February 1980	Subsurface	0.0	11.6	84	6.5	40	0.8
	1.0	2.0	5.6	42	6.4	20	0.5
	2.0	2.5	3.4	26	6.4	30	0.5
	3.0	2.5	2.4	18	6.4	30	0.5
May 1980	Subsurface	11.0	10.4	99	5.9	15	0.6
	1.0	11.5	10.2	99	5.8	15	0.5
	2.0	11.5	10.2	99	5.6	15	0.4
	3.0	11.5	10.2	99	5.6	15	0.8
August 1980	Subsurface	24.0	8.2	101	5.8	21	0.7
	1.0	24.0	8.1	100	5.6	21	0.7
	2.0	24.0	7.7	96	5.6	21	0.7
	3.0	23.5	7.1	87	--	25	--

H-21



TABLE H-7 (continued)

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION I - LITTLE SAND LAKE  
MARCH 1977-MARCH 1978; MAY AND AUGUST 1978

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	1.8	2.8	21	5.0	35	1.2
	1.0	1.9	2.5	19	5.0	35	2.8
	2.0	1.9	2.2	17	4.9	35	1.2
April 1977	Subsurface	4.5	--	--	5.5	25	1.2
	1.0	4.8	--	--	5.4	28	0.9
	2.0	5.0	--	--	6.0	28	0.9
May 1977	Subsurface	14.0	8.9	90	5.6	25	1.2
	1.0	14.0	8.8	89	5.9	25	1.0
	2.0	14.0	8.8	89	5.8	25	1.4
	3.0	14.0	8.4	85	5.8	25	0.8
	3.8	14.0	8.6	87	5.8	25	0.9
June 1977	Subsurface	13.1	9.4	94	6.4	25	0.8
	1.0	13.0	9.4	93	6.0	28	0.8
	3.4	12.5	9.8	98	5.4	28	0.6
July 1977	Subsurface	25.0	8.6	109	5.7	32	0.9
	1.0	25.1	8.5	108	5.4	35	0.9
	2.0	25.0	7.7	99	5.3	38	0.8
August 1977	Subsurface	21.5	8.8	104	6.8	25	1.0
	1.0	21.2	8.9	105	5.4	27	1.0
	3.0	21.1	8.3	99	5.4	27	1.2
September 1977	Subsurface	20.0	8.7	101	5.4	28	0.7
	1.5	20.0	8.9	103	5.2	28	0.7
	3.0	20.0	8.8	102	5.3	28	1.0
October 1977	Subsurface	12.0	10.0	98	5.0	22	0.8
	1.5	12.0	9.6	93	5.2	22	0.9
	3.0	11.5	9.3	90	5.2	25	1.0
November 1977	Subsurface	9.0	10.1	92	5.2	48	1.1
	1.0	9.0	10.3	93	5.2	48	1.6
	2.0	9.0	10.3	93	5.3	48	8.6
	3.1	9.0	10.4	95	--	48	--

H-22

TABLE H-7 (continued)

## STATION I - LITTLE SAND LAKE

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
December 1977	Subsurface	0.0	15.8	113	6.0	20	2.2
	1.0	1.5	15.5	116	6.3	20	2.1
	2.5	3.0	15.5	120	5.4	20	2.2
January 1978	Subsurface	4.0	8.0	65	5.6	20	1.9
	1.0	5.0	11.4	93	5.6	20	1.7
	2.0	6.0	7.0	59	5.3	21	2.3
February 1978	Subsurface	3.0	12.5	98	—	22	—
	1.0	4.9	7.0	57	5.2	22	0.6
	2.0	5.2	4.9	40	5.2	22	1.4
	3.0	5.2	4.0	33	—	22	—
	4.0	5.1	3.9	32	5.2	22	2.3
March 1978	Subsurface	1.0	16.4	121	4.8	28	1.8
	1.0	3.5	4.8	38	5.2	21	1.4
	2.0	4.0	3.8	41	5.2	21	1.0
	3.0	4.0	3.6	39	—	21	—
May 1978	Subsurface	8.5	10.2	92	—	22	—
	1.0	9.5	10.2	93	5.6	22	1.3
	2.0	10.0	10.3	96	5.6	22	1.4
	3.0	10.0	10.4	98	5.7	22	1.2
August 1978	Subsurface	21.0	11.0	129	5.0	25	0.5
	1.0	21.0	11.0	129	5.0	27	0.8
	2.0	21.0	11.0	129	5.4	27	0.5
	3.0	21.0	11.0	129	—	27	—

H-23

TABLE H-8

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION O - MOLE LAKE  
MAY 1977 - APRIL 1978

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
May 1977	Subsurface	14.0	11.2	113	7.0	—	1.6
	1.0	14.0	11.2	113	7.2	—	1.7
	2.0	14.0	11.8	121	7.2	—	2.4
June 1977	Subsurface	19.0	9.6	108	8.3	55	2.2
	1.0	18.5	9.5	106	8.4	55	1.6
	1.8	18.0	9.2	103	8.2	55	1.8
July 1977	Subsurface	24.0	9.6	120	7.6	65	1.9
	1.0	24.0	9.4	118	7.7	60	1.9
	2.0	24.0	9.4	118	8.8	60	1.9
August 1977	Subsurface	21.8	10.1	121	8.4	52	1.7
	1.8	21.7	11.8	141	8.8	47	1.6
September 1977	Subsurface	19.0	7.3	82	7.4	—	2.4
	1.0	19.0	7.3	82	—	—	—
	1.8	19.5	7.3	83	7.7	—	2.1
October 1977	Subsurface	11.0	7.6	72	6.8	42	2.3
	1.0	11.0	7.6	72	—	41	—
	2.0	11.0	7.4	70	6.8	41	2.4
	3.0	11.0	7.2	69	6.8	41	1.9
	4.0	11.0	6.7	64	6.8	41	2.0
	4.5	11.0	4.3	40	—	60	—
November 1977	Subsurface	7.5	10.8	92	7.4	35	1.9
	1.0	7.0	10.8	92	7.4	35	1.6
	2.0	7.0	10.8	92	7.4	35	1.6
December 1977	Subsurface	1.0	13.6	101	7.6	35	1.4
January 1978	Subsurface	1.2	9.4	71	6.8	35	1.3
	1.0	2.5	7.6	58	—	35	—
	2.0	—	—	—	6.9	—	1.4
	3.0	3.0	6.2	49	6.9	39	1.7

Note: -- Indicates no data.

TABLE H-8 (continued)

Page 2 of 2

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
February 1978	Subsurface	3.0	10.2	80	--	35	--
	1.0	5.0	7.8	65	5.6	35	0.9
	2.0	6.0	5.4	46	5.0	35	1.6
March 1978	Subsurface	1.5	4.7	35	6.6	35	1.1
	1.0	2.0	4.9	37	6.6	40	0.9
	2.0	2.8	1.4	11	6.4	40	1.3
April 1978	Subsurface	--	--	--	--	--	--
	1.0	4.0	2.1	16	6.6	40	1.5
	2.0	4.5	1.9	15	6.6	45	2.1
	3.0	4.5	1.3	10	6.6	45	2.6

TABLE H-9

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION G - OAK LAKE  
 MARCH 1977-MARCH 1978; MAY AND AUGUST 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.5	6.0	44	7.6	35	1.5
	1.0	2.2	5.6	42	7.5	32	2.0
	2.0	3.2	5.3	41	7.0	32	1.7
	3.0	3.4	5.0	39	6.8	32	1.5
	4.0	3.4	4.7	36	6.6	32	1.5
	5.0	3.4	4.4	34	5.5	32	1.5
	6.0	3.4	3.4	26	5.6	34	0.6
	7.0	3.5	2.5	19	5.6	34	0.6
	8.0	3.5	2.5	19	--	35	--
	9.0	3.9	--	--	--	39	--
April 1977	Subsurface	4.0	--	--	5.8	19	1.0
	1.0	4.5	--	--	6.1	20	1.0
	2.0	4.8	--	--	6.1	21	1.1
	3.0	4.8	--	--	5.8	21	1.2
	4.0	4.8	--	--	--	21	--
May 1977	Subsurface	12.5	8.6	85	6.4	20	1.3
	0.9	12.5	8.4	82	6.1	20	0.9
	1.5	12.0	8.4	81	7.4	20	1.1
	2.4	12.0	8.4	81	6.3	20	1.0
	3.4	12.0	8.4	81	6.2	20	1.3
	4.3	11.5	8.5	82	6.2	20	1.4
	5.2	11.0	9.4	90	6.1	20	1.1
	6.1	6.5	9.7	83	6.1	20	1.7
	7.0	5.0	8.8	72	6.0	20	1.7
	7.9	5.0	8.8	72	5.9	20	3.5
	8.8	5.0	8.3	68	--	20	--
	9.8	5.0	7.8	65	--	20	--
	10.7	6.0	7.8	66	--	20	--
June 1977	Subsurface	12.9	10.2	102	6.6	27	0.8
	1.0	12.8	9.8	98	6.6	27	0.8
	2.0	12.6	9.6	95	6.6	27	0.8
	3.0	12.5	9.8	98	6.7	27	0.9
	4.0	12.0	9.7	94	6.6	24	0.9
	5.0	12.8	8.2	82	6.5	21	0.9
	6.0	13.2	5.0	50	4.6	20	1.3
	7.0	12.8	3.0	30	6.6	20	1.4
	8.0	9.5	2.2	20	6.2	20	1.6
	9.0	8.7	2.1	19	5.8	20	1.9
	10.0	7.4	2.0	17	--	20	--

Note: -- Indicates no data.

TABLE H-9 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
July 1977	Subsurface	25.0	8.6	110	5.8	29	0.8
	1.0	25.1	8.6	110	--	30	--
	2.0	22.5	9.2	111	6.3	30	0.9
	3.0	21.5	9.5	112	6.3	31	0.9
	4.0	18.9	10.8	122	6.4	31	1.0
	5.0	13.5	11.6	118	6.0	31	1.1
	6.0	11.0	3.2	31	6.2	39	1.4
	7.0	10.9	1.4	13	6.2	39	1.4
	8.0	10.0	0.9	7	6.0	40	2.4
	9.0	10.5	0.8	7	5.6	40	2.6
August 1977	Subsurface	21.9	9.5	113	6.2	32	0.8
	1.0	22.1	9.2	111	6.0	31	0.9
	2.0	22.3	9.1	110	6.0	31	0.8
	3.0	22.3	9.1	110	6.4	31	1.1
	4.0	22.3	9.1	110	--	30	1.3
	5.0	22.2	9.0	108	6.0	30	0.9
	6.0	21.6	13.1	156	6.0	30	1.0
	7.0	15.3	10.5	111	6.0	26	2.1
	8.0	13.1	4.3	42	--	27	--
	9.0	12.2	2.8	28	--	33	--
September 1977	Subsurface	20.5	9.4	110	6.0	22	1.2
	1.0	20.0	9.4	109	6.1	22	1.2
	2.0	20.0	9.2	106	6.2	22	1.5
	3.0	20.0	9.0	105	6.2	23	1.1
	4.0	20.0	9.2	106	6.2	24	1.1
	5.0	20.0	9.2	106	6.3	25	1.1
	6.0	20.0	9.2	106	6.0	26	1.1
	7.0	20.5	7.6	89	5.8	27	1.6
	8.0	21.0	5.9	69	5.1	27	3.0
	9.0	22.5	3.8	46	--	27	--
October 1977	Subsurface	13.0	9.0	90	6.0	20	1.6
	1.0	13.0	9.0	90	5.9	20	1.2
	2.0	13.0	8.9	89	5.8	20	1.2
	3.0	13.0	8.9	89	6.0	20	1.3
	4.0	13.0	8.4	84	6.4	20	1.2
	5.0	13.0	8.4	84	6.0	20	1.2
	6.0	13.0	8.2	82	6.2	21	1.3
	7.0	13.0	7.9	78	6.0	21	1.2
	8.0	13.0	7.6	75	6.0	22	1.9

H-27

TABLE H-9 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
November 1977	Subsurface	9.0	10.2	92	6.0	30	2.3
	1.0	9.0	10.2	92	6.0	32	2.5
	2.0	9.0	10.1	92	6.0	32	2.7
	3.0	9.0	10.2	92	6.0	32	1.4
	4.0	9.0	10.0	91	6.2	36	3.4
	5.0	9.0	10.0	91	6.0	38	1.6
	6.0	9.0	10.2	92	6.0	38	1.9
	7.0	9.0	10.2	92	6.0	38	1.9
	8.0	9.0	10.3	93	6.0	38	1.1
9.0	9.0	--	--	--	38	--	
December 1977	Subsurface	0.0	13.8	79	6.6	15	1.5
	1.0	1.0	13.8	82	6.3	15	1.5
	2.0	2.5	13.1	81	6.2	15	1.3
	3.0	3.0	13.0	81	6.4	15	1.1
	4.0	3.0	13.0	81	6.4	17	1.5
	5.0	3.5	12.2	98	6.2	18	1.2
	6.0	3.5	12.2	98	6.1	19	1.1
	7.0	3.5	11.8	93	--	19	--
	8.0	3.5	11.1	88	--	20	--
January 1978	Subsurface	2.0	11.0	84	6.0	11	1.4
	1.0	2.5	10.0	77	6.0	11	0.8
	2.0	5.0	9.4	77	6.0	18	1.2
	3.0	3.5	9.2	71	6.0	18	0.7
	4.0	3.8	9.0	71	6.0	19	0.8
	5.0	4.0	8.4	67	5.9	19	0.8
	6.0	4.5	7.8	64	6.0	19	0.6
	7.0	4.9	6.8	56	6.0	19	0.6
	8.0	4.9	5.0	51	5.8	20	5.8
9.0	5.0	3.4	28	--	20	--	
February 1978	Subsurface	1.5	14.0	106	6.0	20	1.2
	1.0	3.0	11.9	93	6.0	20	0.8
	2.0	3.7	10.5	83	6.0	20	0.8
	3.0	5.0	9.3	76	6.0	20	1.0
	4.0	5.0	7.8	65	6.0	21	0.8
	5.0	5.1	6.9	56	6.0	21	0.8
	6.0	5.1	6.4	53	5.8	21	0.6
	7.0	5.1	6.5	54	5.4	21	0.9
	8.0	5.1	6.2	51	5.4	21	1.0
9.0	5.9	4.7	39	--	26	--	

TABLE H-9 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (μmhos/cm)	TURBIDITY (FTU)
March 1978	Subsurface	2.1	16.0	119	5.9	18	2.0
	1.0	2.1	11.2	86	5.8	18	2.4
	2.0	4.1	8.6	70	5.8	18	2.1
	3.0	4.6	6.7	55	6.1	18	1.6
	4.0	4.6	6.8	56	5.3	18	1.9
	5.0	4.6	6.7	55	5.4	18	1.4
	6.0	4.6	6.7	55	5.3	18	1.3
	7.0	4.6	6.6	54	5.4	18	1.6
	8.0	4.5	2.8	23	5.4	22	0.9
May 1978	Subsurface	9.0	9.8	89	5.8	20	1.4
	1.0	9.0	9.8	89	5.8	20	1.5
	2.0	9.0	10.0	91	5.6	20	1.5
	3.0	9.0	10.0	91	5.6	20	1.5
	4.0	9.0	10.0	91	5.6	20	1.6
	5.0	8.5	9.8	80	5.6	20	1.6
	6.0	7.5	9.2	81	5.2	20	1.9
	7.0	6.0	8.1	68	5.4	20	1.4
	8.0	5.5	6.7	56	5.2	20	1.4
	9.0	5.0	6.3	52	—	20	—
	10.0	4.5	5.5	45	—	20	—
August 1978	Subsurface	21.0	10.1	119	6.1	25	0.6
	1.0	21.0	10.1	119	6.2	25	0.7
	2.0	21.0	10.5	124	6.2	25	0.8
	3.0	21.0	10.5	124	6.1	25	0.9
	4.0	21.0	10.2	119	6.2	27	0.8
	5.0	21.0	10.3	121	6.2	27	0.9
	6.0	21.0	10.3	121	6.0	27	1.4
	7.0	16.0	6.0	64	5.4	27	1.3
	8.0	15.0	3.7	38	5.4	27	1.1
	9.0	12.0	2.1	20	—	27	—
November 1979	Subsurface	3.0	11.1	87	6.3	10	0.8
	1.0	3.5	11.1	88	6.1	10	0.8
	2.0	3.0	11.1	87	6.0	11	0.8
	3.0	3.0	11.2	88	6.4	12	0.8
	4.0	3.5	11.1	88	6.2	12	0.8
	5.0	3.5	11.0	87	6.4	15	1.0
	6.0	4.0	10.2	82	6.6	17	1.0
	7.0	4.5	9.6	78	6.1	19	0.8
	8.0	4.0	8.9	71	6.2	20	0.8



TABLE H-9 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (μmhos/cm)	TURBIDITY (FTU)
February 1980	Subsurface	0.0	12.0	86	7.5	20	1.4
	1.0	0.0	8.6	62	7.6	20	0.9
	2.0	2.0	5.5	42	7.1	20	0.6
	3.0	2.0	5.0	38	6.6	20	0.7
	4.0	2.0	4.6	35	6.5	20	0.4
	5.0	2.5	2.8	21	6.7	20	0.5
	6.0	2.5	2.8	21	6.6	20	0.5
	7.0	3.0	3.0	23	6.5	20	0.7
	8.0	2.8	2.8	22	6.5	20	0.5
	9.0	2.8	3.0	23	6.6	20	0.7
	10.0	2.8	2.4	18	--	20	--
May 1980	Subsurface	11.0	10.8	103	6.0	16	0.6
	1.0	11.0	10.8	103	6.2	16	0.5
	2.0	11.0	10.8	103	6.2	16	0.5
	3.0	11.0	10.8	103	6.5	16	0.6
	4.0	11.0	10.9	104	6.3	16	0.6
	5.0	10.8	10.9	104	6.5	17	0.6
	6.0	10.0	11.0	102	6.1	18	0.5
	7.0	8.6	10.6	95	5.9	18	0.7
	8.0	8.0	9.8	87	5.5	18	0.9
	9.0	8.0	8.0	71	5.8	20	0.9
	10.0	7.8	6.6	58	--	20	--
August 1980	Subsurface	23.0	8.0	97	6.2	20	0.7
	1.0	23.0	8.0	97	6.3	20	0.6
	2.0	23.5	8.0	99	6.2	20	0.6
	3.0	23.5	8.2	101	6.4	22	0.5
	4.0	23.5	8.2	101	6.3	22	0.6
	5.0	23.5	8.2	101	6.6	22	0.7
	6.0	23.5	8.1	100	6.1	22	0.7
	7.0	21.0	6.3	74	5.8	22	0.9
	8.0	16.5	3.0	32	5.8	22	1.1
	9.0	14.0	0.7	6	5.4	25	1.0

TABLE H-10

Page 1 of 2

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION F - RICE LAKE  
MARCH 1977 - MARCH 1978

---

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY ( mhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.5	12.6	92	7.3	130	1.2
May 1977	Subsurface	10.5	7.8	74	7.6	150	2.2
	1.5	11.0	7.6	71	7.6	150	1.6
June 1977	Subsurface	16.5	5.6	59	7.6	163	1.5
July 1977	Subsurface	25.0	3.6	47	7.3	173	1.3
August 1977	Subsurface	18.9	4.1	46	6.6	175	1.3
	1.2	18.9	4.1	46	--	179	--
September 1977	Subsurface	17.0	2.5	26	7.2	140	1.0
	1.0	17.0	2.4	26	--	140	--
October 1977	Subsurface	6.8	8.7	75	7.2	130	1.8
	1.2	6.8	8.4	72	7.4	130	2.0
November 1977	Subsurface	8.5	8.2	74	7.4	140	2.4
	1.0	8.5	8.2	74	--	137	--
December 1977	Subsurface	1.0	9.2	68	7.5	135	2.5
January 1978	Subsurface	1.0	2.8	20	7.1	157	>10.0
February 1978	Subsurface	1.0	8.7	66	5.6	115	1.9
March 1978	Subsurface	0.5	9.0	66	7.1	45	4.1

Note: -- Indicates no data.

TABLE H-10 (continued)

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION N - RICE LAKE  
MARCH 1977-MARCH 1978; MAY, AUGUST AND OCTOBER 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.5	2.8	20	1.5	205	6.8
May 1977	Subsurface	12.0	7.8	75	7.6	150	2.0
June 1977	Subsurface	16.5	7.6	82	8.2	175	1.7
July 1977	Subsurface	20.0	4.7	59	8.2	182	1.2
August 1977	Subsurface	18.0	5.7	63	7.4	175	1.4
September 1977	Subsurface	17.0	4.2	45	7.2	150	1.2
	0.9	17.0	4.1	44	--	150	--
October 1977	Subsurface	7.0	8.3	72	7.2	122	1.0
	0.9	7.0	6.2	53	7.4	120	1.2
November 1977	Subsurface	9.0	8.8	80	7.6	140	2.3
	0.9	9.0	8.8	80	--	140	--
February 1978	Subsurface	1.0	8.4	61	5.8	40	1.4
March 1978	Subsurface	1.0	8.2	60	7.4	172	1.8
May 1978	Subsurface	8.5	9.5	86	7.1	110	1.6
August 1978	Subsurface	17.0	6.4	69	7.6	146	0.9
	1.2	--	--	--	7.6	--	0.7
October 1978	Subsurface	11.0	5.6	53	6.7	123	2.2
	0.8	11.0	5.2	50	6.8	123	2.0
November 1979	Subsurface	1.5	4.3	33	7.0	135	9.1
February 1980	Subsurface	1.0	1.0	7	7.0	137	2.6
May 1980	Subsurface	12.0	10.2	99	8.8	125	1.1
	0.5	12.0	10.8	105	8.7	135	1.0
August 1980	Subsurface	20.0	3.5	40	7.2	152	0.9
	1.0	20.0	3.2	37	--	160	--

TABLE H-11

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION M-2 - ROLLING STONE LAKE  
OCTOBER 1977 - SEPTEMBER 1978

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
October 1977	Subsurface	11.5	10.1	98	8.7	108	2.4
	1.2	11.5	9.6	87	8.8	108	2.5
November 1977	Subsurface	7.5	10.0	87	8.0	110	1.6
	1.0	7.5	10.0	87	8.0	110	2.6
	2.4	7.5	9.9	87	8.0	110	3.2
December 1977	Subsurface	3.5	13.2	104	7.6	—	1.4
January 1978	Subsurface	0.5	12.4	91	7.4	90	3.5
	1.0	2.5	10.2	78	—	95	—
	2.1	4.0	4.2	33	7.4	110	3.4
February 1978	Subsurface	1.1	3.8	29	6.0	112	1.9
	1.0	1.8	1.6	12	6.0	118	1.6
	2.7	3.0	1.4	11	—	121	—
March 1978	Subsurface	1.5	2.4	18	6.7	50	3.1
	1.8	2.3	1.4	10	—	50	—
April 1978	Subsurface	3.8	2.1	16	6.9	130	1.6
	1.0	4.1	1.6	13	7.0	138	2.0
	1.7	4.0	1.4	11	6.8	140	3.1
May 1978	Subsurface	10.0	12.4	116	7.8	112	1.9
	1.0	10.0	12.5	117	7.8	112	1.9
	1.9	10.0	12.5	117	7.8	110	1.9
June 1978	Subsurface	19.0	9.3	105	7.3	140	2.0
	1.0	19.0	9.3	105	7.5	140	2.1
	2.0	19.0	9.2	105	7.4	140	1.8
	2.5	19.0	9.0	103	—	140	—
July 1978	Subsurface	24.0	8.5	106	9.2	150	2.3
	1.0	23.0	7.5	91	8.9	132	2.1
	1.5	20.0	2.8	31	8.6	132	2.7

Note: -- Indicates no data.

TABLE H-11 (continued)

Page 2 of 4

## STATION M-2 - ROLLING STONE LAKE

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
August 1978	Subsurface	20.0	7.9	91	8.8	130	1.2
	1.0	20.0	7.9	91	8.8	130	1.2
	2.0	20.0	7.4	86	--	132	--
September 1978	Subsurface	22.0	9.2	110	8.5	140	1.7
	1.0	22.0	9.2	110	8.0	140	1.7
	2.0	22.0	8.9	106	8.2	140	1.7
	3.0	22.0	8.8	105	--	140	--

TABLE H-11 (continued)

Page 3 of 4

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION M-4 - ROLLING STONE LAKE  
OCTOBER 1977 - SEPTEMBER 1978

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
October 1977	Subsurface	6.5	13.1	112	8.6	108	1.5
	1.0	6.5	13.0	111	8.7	108	1.9
November 1977	Subsurface	8.0	10.4	92	8.0	110	1.6
	1.0	8.0	10.4	92	8.2	110	2.4
	2.0	8.0	10.4	92	8.2	110	1.7
December 1977	Subsurface	1.0	13.2	99	7.8	105	1.0
	1.0	1.0	10.0	74	7.4	105	2.5
January 1978	Subsurface	0.5	10.2	75	7.3	95	2.6
	1.0	2.0	6.4	49	--	105	--
	2.1	3.0	2.5	19	--	120	2.7
February 1978	Subsurface	0.0	4.4	32	6.0	115	1.5
	1.0	1.8	3.4	25	5.7	115	0.9
	2.1	3.0	1.4	11	--	121	--
March 1978	Subsurface	1.0	4.2	31	6.8	--	4.5
	1.2	2.0	1.2	8	--	--	--
April 1978	Subsurface	4.0	1.4	11	7.0	140	1.3
	1.0	4.8	1.1	8	7.1	148	1.5
	2.0	5.0	1.0	7	7.0	150	2.1
May 1978	Subsurface	12.0	12.6	123	7.8	125	1.5
	1.0	12.0	12.8	124	7.8	125	2.1
	2.0	11.0	12.2	116	7.8	120	3.4
June 1978	Subsurface	20.0	10.0	116	7.8	135	1.5
	1.0	20.0	9.9	113	7.8	137	2.2
	2.0	19.9	9.9	113	--	139	--
July 1978	Subsurface	20.5	5.2	60	8.0	162	2.6
	1.0	20.0	4.6	53	8.0	165	3.0
	1.5	19.0	0.1	2	7.5	181	3.6

H-35

TABLE H-11 (continued)

## STATION M-4 - ROLLING STONE LAKE

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
August 1978	Subsurface	20.0	9.2	106	9.0	133	1.3
	1.0	20.0	9.0	105	9.0	133	1.3
	2.0	19.0	8.2	92	--	135	--
September 1978	Subsurface	22.0	9.0	108	8.3	140	1.5
	1.0	22.0	8.6	103	8.3	140	1.6
	2.0	22.0	8.7	104	8.2	140	1.6
	2.6	22.0	8.3	100	--	140	--

TABLE H-12

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION JL - ST. JOHNS LAKE  
NOVEMBER 1979 - OCTOBER 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
November 1979	Subsurface	1.5	13.8	105	6.6	10	1.4
	1.0	2.5	13.1	102	--	10	--
December 1979	Subsurface	1.5	13.0	98	5.9	12	1.2
	1.0	3.5	11.2	89	6.0	12	1.4
	2.0	4.0	9.4	75	6.0	12	1.4
	3.0	4.0	9.2	74	5.8	15	1.1
	4.0	4.0	9.0	72	5.4	15	1.0
	5.0	4.0	9.0	72	5.6	15	1.6
January 1980	Subsurface	3.0	8.3	65	--	12	--
	1.0	3.5	8.3	66	5.8	12	0.6
	2.0	4.0	8.2	66	5.5	13	0.6
	3.0	4.0	8.1	65	5.4	13	0.9
	4.0	4.0	8.0	64	5.4	14	1.2
	5.0	4.0	7.7	62	6.2	15	1.7
February 1980	Subsurface	0.0	--	--	5.6	19	0.8
	1.0	2.5	6.2	48	5.6	15	0.9
	2.0	3.0	4.6	36	5.5	17	0.8
	3.0	3.0	4.3	34	5.4	19	0.6
	4.0	3.0	3.9	30	5.4	19	0.5
	5.0	3.0	3.3	26	5.6	19	0.7
March 1980	Subsurface	1.0	11.2	84	5.4	12	0.7
	1.0	2.0	7.0	53	5.3	12	0.7
	2.0	4.0	2.3	18	5.1	12	0.6
	3.0	4.0	2.2	17	5.2	12	0.6
	4.0	4.0	2.2	17	5.2	12	0.7
	5.0	4.0	2.1	16	5.2	15	0.7
April 1980	Subsurface	2.0	8.5	65	5.8	10	1.2
	1.0	4.0	8.5	67	6.0	15	1.5
	2.0	4.5	8.4	68	6.1	15	1.1
	3.0	4.5	8.4	68	6.5	15	1.0
	4.0	4.5	6.1	50	6.2	17	0.9
	5.0	4.5	5.4	44	6.2	18	0.9
	6.0	4.5	5.2	42	5.8	18	0.8

Note: -- Indicates no data.



TABLE H-12 (continued)

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (μmhos/cm)	TURBIDITY (FTU)
May 1980	Subsurface	12.0	--	--	6.1	12	0.8
	1.0	11.5	--	--	6.1	15	0.8
	2.0	11.5	--	--	6.2	18	0.6
	3.0	11.5	--	--	6.1	19	0.8
	4.0	11.5	--	--	5.6	20	0.8
	5.0	11.5	--	--	6.1	20	0.8
	6.0	11.5	--	--	6.0	20	1.1
June 1980	Subsurface	18.5	9.9	110	6.2	18	1.5
	1.0	18.7	9.8	110	6.6	19	1.6
	2.0	18.6	9.9	110	6.4	20	1.8
	3.0	18.8	9.8	110	6.3	20	1.3
	4.0	18.5	9.7	109	6.2	20	2.1
	5.0	17.0	6.7	72	5.7	20	2.6
	6.0	13.0	0.8	7	5.6	30	5.9
July 1980	Subsurface	25.5	8.7	110	6.3	20	1.0
	1.0	25.5	8.6	110	6.6	20	1.0
	2.0	25.0	8.6	110	6.4	20	1.0
	3.0	25.0	8.8	110	6.4	21	1.0
	4.0	25.5	8.7	110	6.2	21	1.1
	5.0	20.0	5.8	66	5.6	21	1.1
	6.0	18.0	0.7	6	5.5	25	3.5
August 1980	Subsurface	23.0	8.8	106	6.6	20	0.8
	1.0	23.0	8.8	106	6.7	20	0.7
	2.0	23.0	8.8	106	6.7	20	0.8
	3.0	23.0	8.8	106	6.5	21	0.8
	4.0	23.0	8.4	102	6.2	21	0.8
	5.0	22.0	8.3	99	6.2	21	1.4
September 1980	Subsurface	18.0	8.4	93	5.5	10	1.2
	1.0	18.0	8.3	92	5.5	11	1.3
	2.0	18.0	8.3	92	5.3	12	1.1
	3.0	18.0	8.3	92	5.1	12	1.1
	4.0	18.0	8.3	92	5.1	15	1.3
	5.0	18.0	8.3	92	5.1	15	1.3
	6.0	18.0	8.3	92	5.2	15	1.1
October 1980	Subsurface	8.5	11.2	101	6.1	10	1.3
	1.0	8.5	11.2	101	6.2	10	1.2
	2.0	8.5	11.2	101	6.1	10	1.1
	3.0	8.5	11.0	99	6.0	10	1.1
	4.0	8.5	11.0	99	6.2	12	1.0
	5.0	8.5	10.9	98	5.9	12	1.2

TABLE H-13

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION J - SKUNK LAKE  
 MARCH 1977 - MARCH 1978; NOVEMBER 1979; FEBRUARY, MAY AND AUGUST 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
March 1977	Subsurface	0.8	--	--	--	38	--
April 1977	Subsurface	2.0	--	--	6.6	20	3.4
May 1977	Subsurface	10.0	8.6	80	6.0	20	1.5
	1.1	11.0	8.4	80	--	20	--
June 1977	Subsurface	15.5	5.5	57	5.4	16	1.3
	0.5	14.8	4.0	41	6.2	16	1.6
July 1977	Subsurface	26.0	4.4	56	5.8	38	1.5
	1.0	25.0	2.1	26	--	39	--
August 1977	Subsurface	19.5	3.4	39	5.2	20	1.6
	0.9	19.7	3.0	34	--	20	--
September 1977	Subsurface	17.0	3.0	32	5.8	25	1.4
	0.9	17.0	2.8	30	6.0	25	4.1
October 1977	Subsurface	9.0	9.8	89	6.0	20	0.9
	1.0	8.0	7.6	68	6.0	20	1.5
November	Subsurface	8.0	10.5	93	6.0	19	1.2
	0.8	6.5	9.9	85	--	20	--
December 1977	Subsurface	1.0	7.3	55	6.3	20	3.5
January 1978	Subsurface	2.5	0.7	5	5.8	30	3.7
	0.5	--	--	--	5.9	--	5.7
	1.2	3.0	0.5	3	--	30	--
February 1978	Subsurface	1.0	2.7	20	5.4	40	8.7
March 1978	Subsurface	1.0	0.4	3	5.8	45	5.7

Note: -- Indicates no data.

TABLE H-13 (continued)

Page 2 of 2

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY ( $\mu$ mhos/cm)	TURBIDITY (FTU)
November 1979	Subsurface	4.0	7.4	58	5.0	11	1.1
	1.0	5.0	4.2	35	--	12	--
February 1980	Subsurface	1.5	0.7	4	6.5	28	5.0
May 1980	Subsurface	11.0	8.4	80	5.9	25	0.9
	1.2	11.0	7.2	67	5.9	25	1.2
August 1980	Subsurface	20.0	5.0	57	5.6	18	1.0
	1.0	20.0	4.7	55	--	20	--

Note: -- Indicates no data.

TABLE H-14

DEPTH PROFILES OF GENERAL WATER QUALITY PARAMETERS FOR STATION WL - WALSH LAKE  
NOVEMBER 1979 - OCTOBER 1980

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
November 1979	Subsurface	2.0	13.3	102	6.8	17	1.2
	0.8	2.5	13.2	103	7.4	15	2.9
December 1979	Subsurface	1.0	13.4	100	6.1	18	0.8
	1.0	3.5	10.6	84	6.1	19	0.7
	2.0	4.0	9.2	74	6.0	19	0.7
	3.0	4.0	9.0	72	6.1	20	0.6
	4.0	4.2	8.9	72	6.0	20	0.8
January 1980	Subsurface	3.5	8.9	70	6.2	15	0.9
	1.0	3.5	8.5	68	6.1	15	0.9
	2.0	3.5	8.4	67	6.2	18	1.1
	3.0	3.5	8.3	66	5.8	18	0.6
	4.0	4.0	7.3	58	5.8	20	0.6
February 1980	Subsurface	0.0	9.5	69	6.4	19	0.5
	1.0	1.0	6.6	49	6.1	19	0.2
	2.0	2.0	5.1	39	6.1	19	0.3
	3.0	2.1	4.7	36	6.0	19	0.3
	4.0	2.9	3.6	28	6.0	20	0.2
March 1980	Subsurface	1.0	11.2	83	5.6	18	0.6
	1.0	1.0	7.6	57	5.6	18	0.6
	2.0	3.5	3.8	30	5.4	18	0.5
	3.0	4.0	3.1	25	5.6	19	0.7
	4.0	4.5	2.0	16	5.8	20	0.8
April 1980	Subsurface	3.5	8.9	70	6.8	10	0.9
	1.0	4.0	8.9	71	6.3	15	0.8
	2.0	4.5	8.6	70	6.2	16	1.0
May 1980	Subsurface	12.0	--	--	6.2	60	0.4
	1.0	12.0	--	--	6.6	40	0.4
	2.0	12.0	--	--	6.8	40	0.5
	3.0	12.0	--	--	6.6	30	0.4
	4.0	12.0	--	--	6.6	20	0.4
June 1980	Subsurface	18.8	9.6	107	6.8	25	0.8
	1.0	18.9	9.6	108	6.7	25	0.6
	2.0	18.9	9.5	107	6.7	25	0.8
	3.0	18.5	9.3	105	6.7	25	0.8
	4.0	17.8	6.3	64	6.2	28	1.2

Note: -- Indicates no data.

TABLE H-14 (continued)

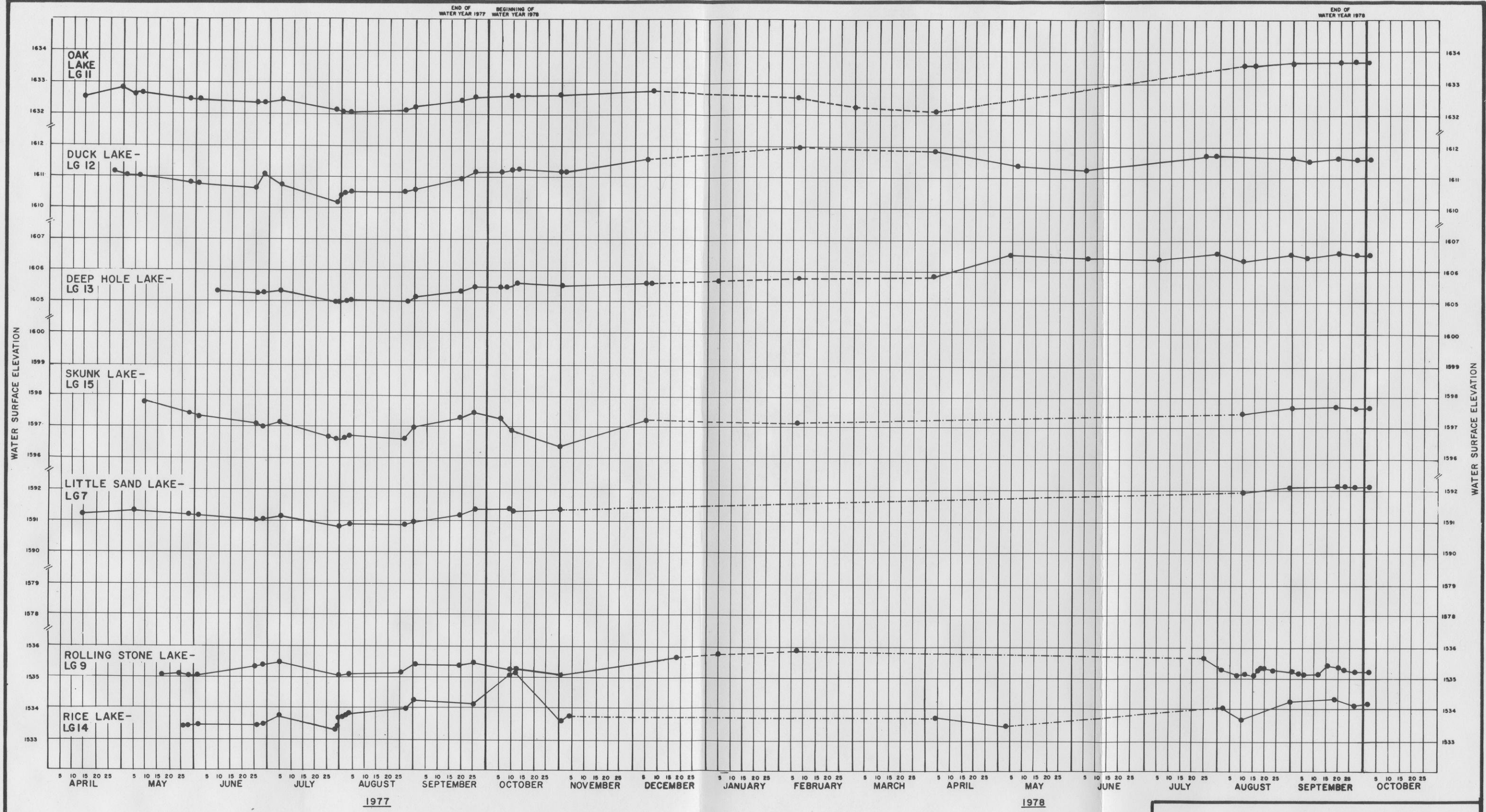
Page 2 of 2

DATE	DEPTH (m)	TEMPERATURE (°C)	DISSOLVED OXYGEN CONCENTRATION (ppm)	DISSOLVED OXYGEN % SATURATION	pH	CONDUCTIVITY (µmhos/cm)	TURBIDITY (FTU)
July 1980	Subsurface	25.0	8.4	105	6.6	27	0.9
	1.0	25.0	8.3	105	6.6	29	0.9
	2.0	25.0	8.3	105	6.8	29	0.8
	3.0	25.0	8.2	104	6.7	30	0.8
	4.0	23.0	4.7	57	6.2	30	1.3
August 1980	Subsurface	23.0	8.0	98	—	28	—
	1.0	23.0	8.0	98	6.2	28	1.2
	2.0	23.0	8.0	98	6.6	28	1.0
	3.0	23.0	8.0	98	6.8	30	1.0
September 1980	Subsurface	18.0	8.3	92	6.1	19	1.2
	1.0	18.0	8.3	92	6.1	20	1.3
	2.0	18.0	8.3	92	6.1	20	1.1
	3.0	18.0	8.3	92	6.2	20	1.2
	4.0	18.0	8.3	92	5.9	21	1.0
October 1980	Subsurface	8.5	10.5	95	5.6	15	0.8
	1.0	8.5	10.3	93	5.8	15	0.8
	2.0	8.5	10.2	92	5.7	18	0.7
	3.0	8.5	10.2	92	6.5	18	0.9
	4.0	8.5	10.2	92	6.3	18	1.0

H-42

APPENDIX 2.4I

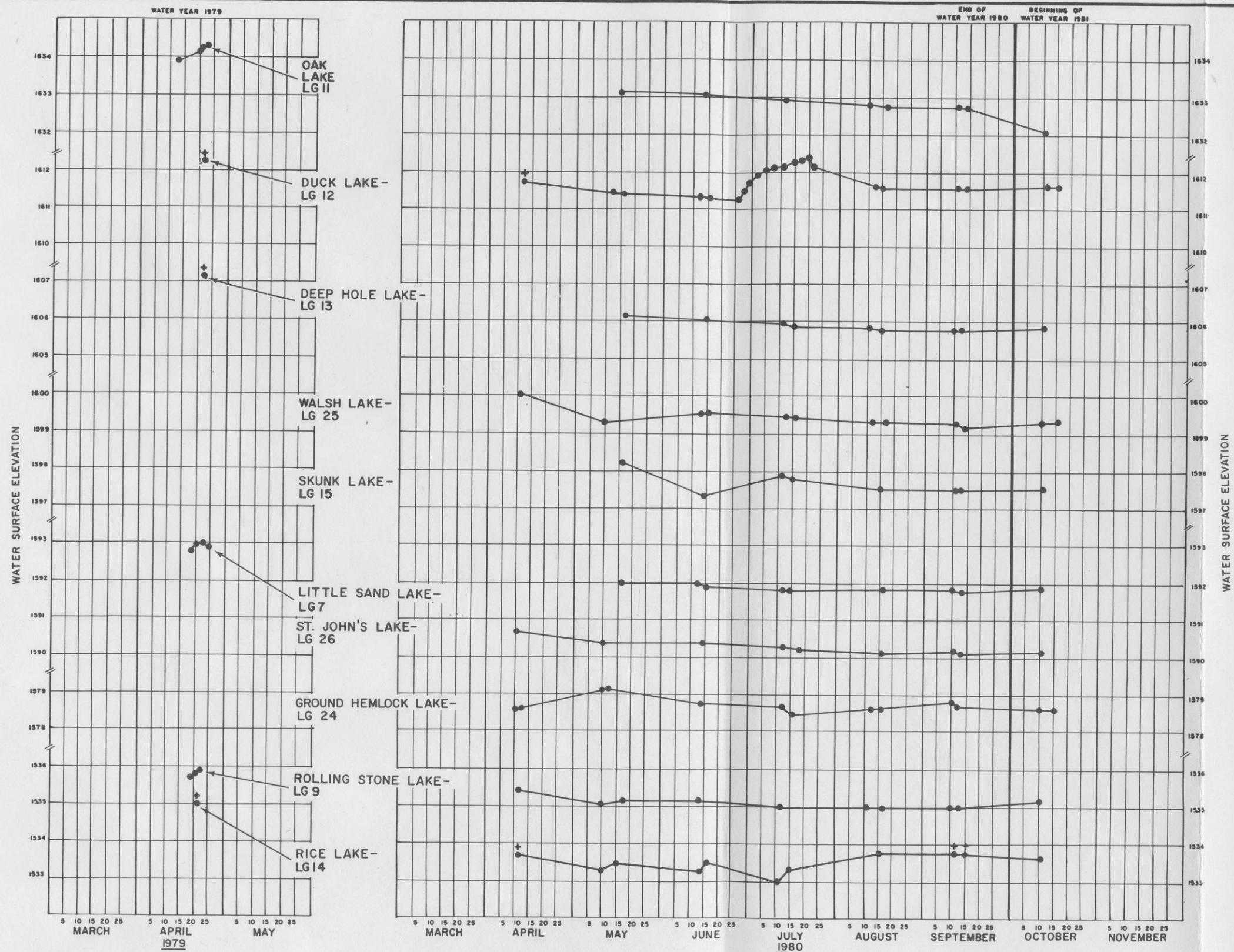
LAKE WATER SURFACE ELEVATIONS  
(FIGURE I-1, APRIL 1977 TO SEPTEMBER 1978;  
FIGURE I-2, MARCH TO MAY 1979 AND MARCH TO OCTOBER 1980)



**EXXON MINERALS COMPANY**  
CRANDON PROJECT

LAKE WATER SURFACE ELEVATIONS  
APRIL 1977 TO SEPTEMBER 1978

**DAMES & MOORE**      **FIGURE I-1**



**NOTE:**

HIGH SURFACE ELEVATIONS AT DUCK LAKE IN JULY 1980 WERE GENERATED BY THE ADDITION OF APPROXIMATELY 0.090 TO 0.091 m<sup>3</sup>/s (1420 TO 1440 GALLONS/MINUTE) OF GROUND WATER FROM JUNE 27, 1980 THROUGH JULY 21, 1980 (GOLDER ASSOCIATES, 1981). ELEVATIONS ILLUSTRATED FOR THE MONTH OF JULY WERE RECORDED FROM A SECOND LAKE GAGE INSTALLED TO RECORD THE EFFECTS OF THE MAIN GROUND WATER AQUIFER PUMP TEST.

**KEY:**

- LAKE SURFACE ELEVATION
- STAFF GAGE READING
- + LAKE GAGE SUBMERGED, ACTUAL LAKE SURFACE ELEVATION IS AT LEAST THIS VALUE

EXXON MINERALS COMPANY  
CRANDON PROJECT

LAKE WATER SURFACE ELEVATIONS  
MARCH TO MAY 1979 AND  
MARCH TO OCTOBER 1980

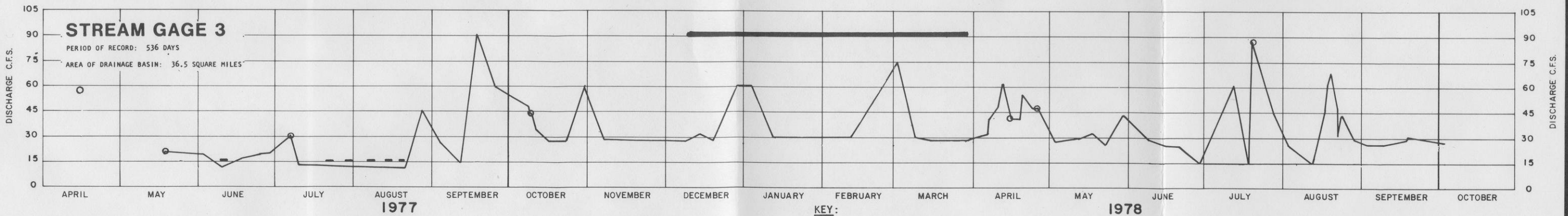
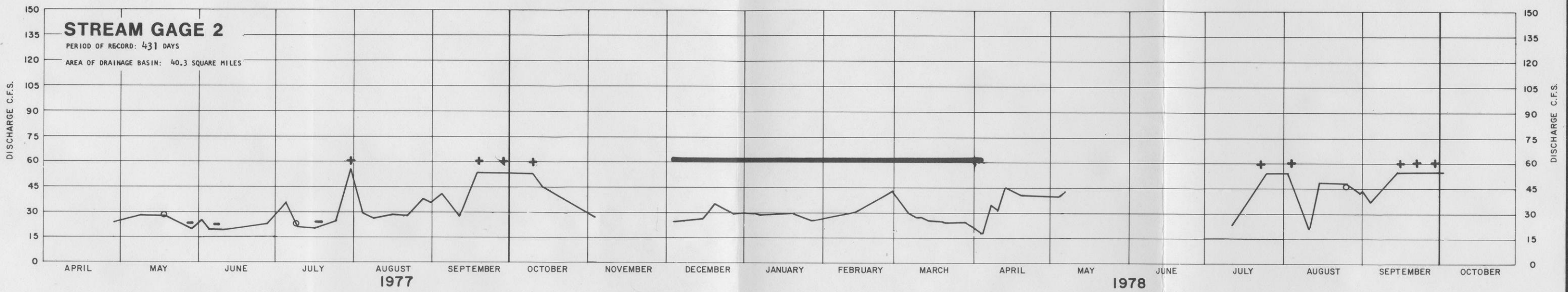
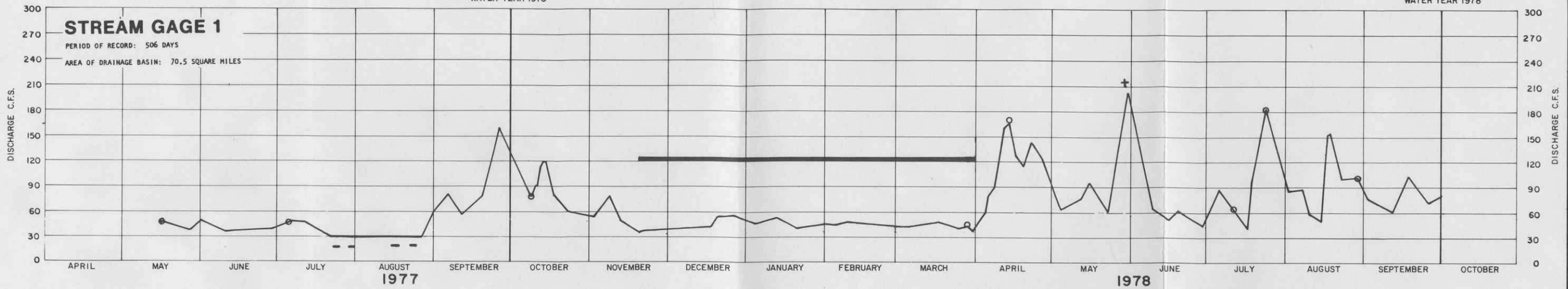


APPENDIX 2.4J

STREAM DISCHARGE HYDROGRAPHS  
(FIGURES J-1 THROUGH J-11)

BEGINNING OF WATER YEAR 1978

END OF WATER YEAR 1978



KEY:

— TOTAL STREAM FLOW

— PERIOD OF ICE COVER

○ STREAM DISCHARGE MEASUREMENT

— ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

+ ACTUAL DISCHARGE HIGHER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

EXXON MINERALS COMPANY  
CRANDON PROJECT

STREAM DISCHARGE HYDROGRAPHS FOR  
SG1, SG2 AND SG3  
1977-1978

DAMES & MOORE

FIGURE J-1

WATER YEAR 1979

END OF WATER YEAR 1980 BEGINNING OF WATER YEAR 1981

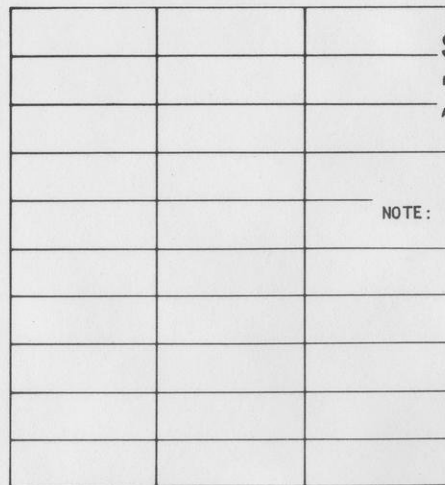
### STREAM GAGE 1

PERIOD OF RECORD: 0 DAYS

AREA OF DRAINAGE BASIN: 70.5 SQUARE MILES

NOTE: NO STREAM FLOW OBSERVATIONS WERE MADE AT THIS LOCATION DURING 1979 OR 1980.

DISCHARGE C.F.S.



MARCH APRIL 1979 MAY



MARCH APRIL MAY JUNE JULY 1980 AUGUST SEPTEMBER OCTOBER NOVEMBER

DISCHARGE C.F.S.

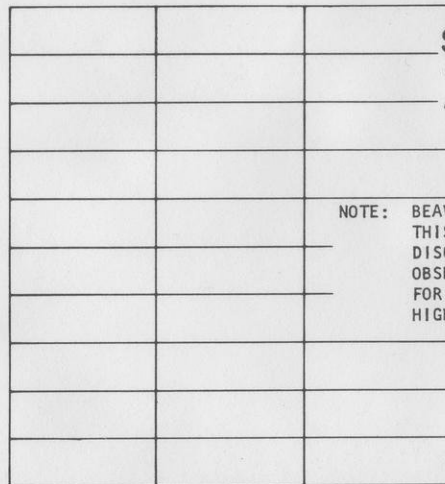
### STREAM GAGE 2

PERIOD OF RECORD: 217 DAYS

AREA OF DRAINAGE BASIN: 40.3 SQUARE MILES

NOTE: BEAVER DAMS WERE CONSTRUCTED IMMEDIATELY ABOVE AND BELOW THIS GAGE LOCATION IN LATE 1978. THIS CHANGED THE STAGE-DISCHARGE RELATIONSHIP AND INVALIDATES ALL SUBSEQUENT OBSERVATIONS OF FLOW AT THIS LOCATION. SEE THE HYDROGRAPH FOR THE U.S.G.S. GAGING STATION LOCATED ON SWAMP CREEK AT HIGHWAY 55.

DISCHARGE C.F.S.



MARCH APRIL 1979 MAY



MARCH APRIL MAY JUNE JULY 1980 AUGUST SEPTEMBER OCTOBER NOVEMBER

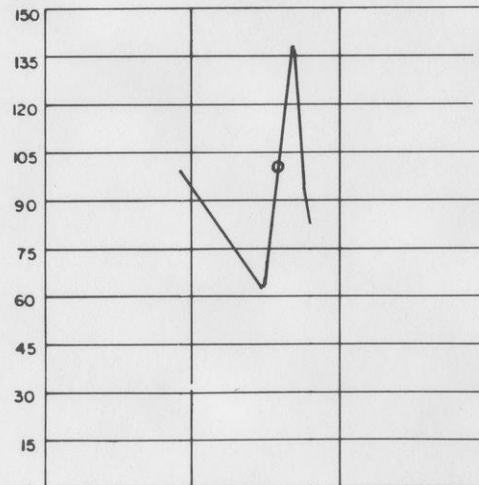
DISCHARGE C.F.S.

### STREAM GAGE 3

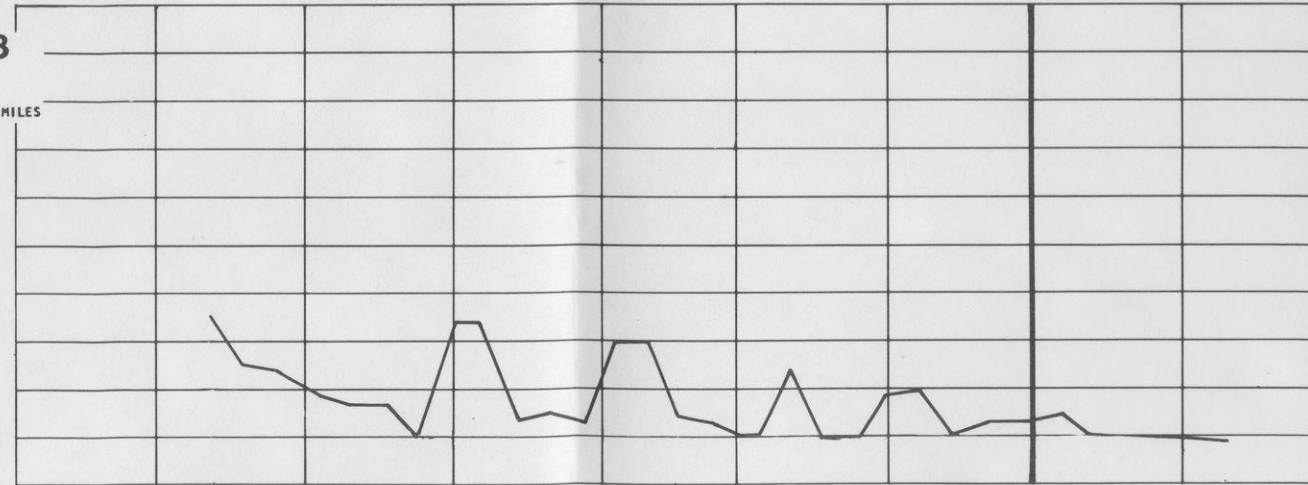
PERIOD OF RECORD: 238 DAYS

AREA OF DRAINAGE BASIN: 36.5 SQUARE MILES

DISCHARGE C.F.S.



MARCH APRIL 1979 MAY



MARCH APRIL MAY JUNE JULY 1980 AUGUST SEPTEMBER OCTOBER NOVEMBER

DISCHARGE C.F.S.

KEY:

— TOTAL STREAM FLOW

○ STREAM DISCHARGE MEASUREMENT

EXXON MINERALS COMPANY  
CRANDON PROJECT

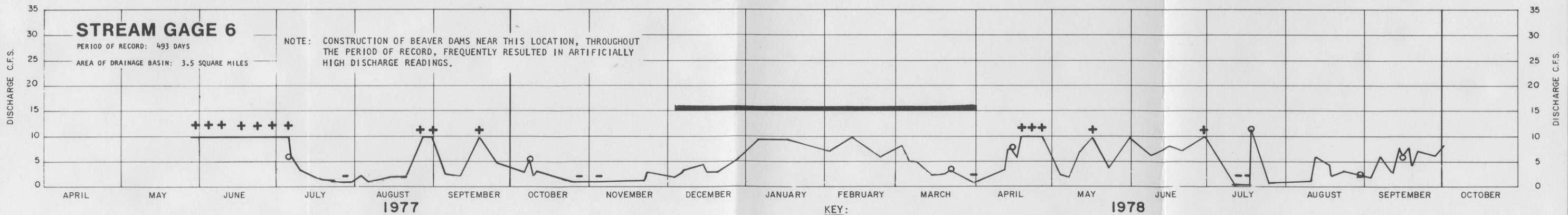
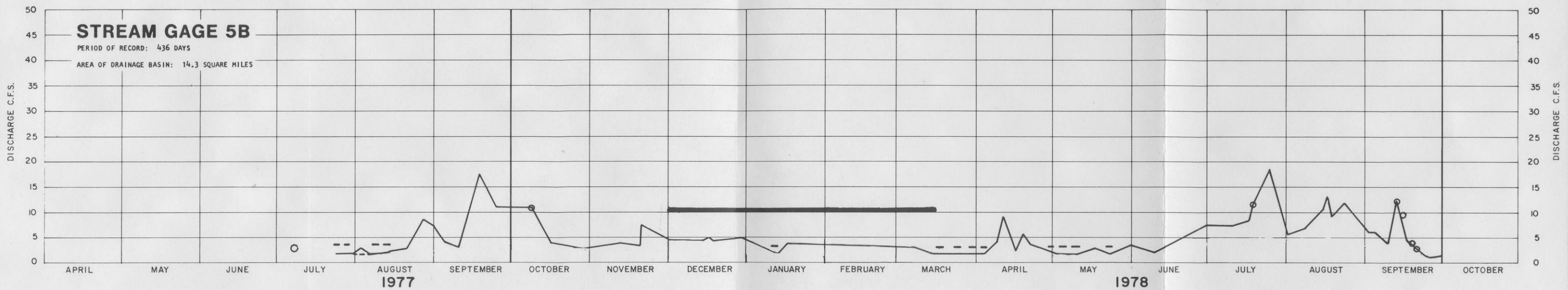
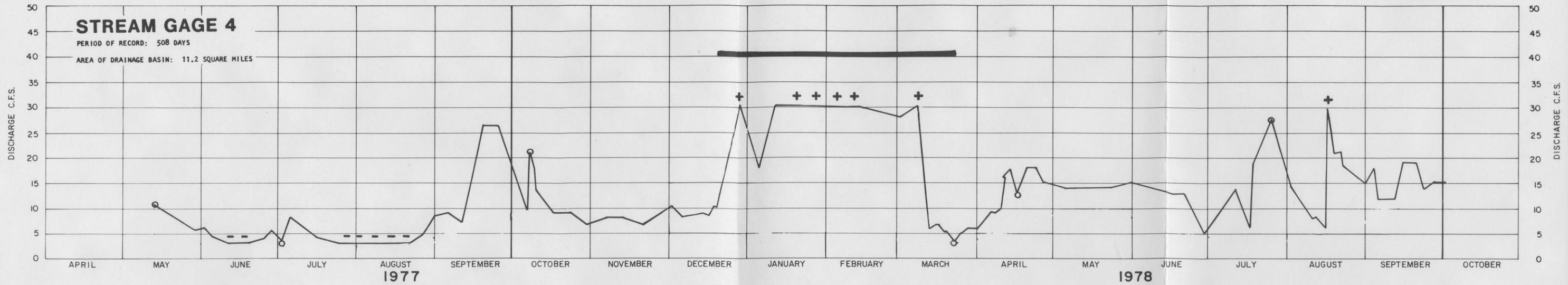
STREAM DISCHARGE HYDROGRAPHS FOR  
SG1, SG2 AND SG3  
1979-1980

DANES & MOORE

FIGURE J-2

BEGINNING OF WATER YEAR 1978

END OF WATER YEAR 1978



KEY:

— TOTAL STREAM FLOW

— PERIOD OF ICE COVER

o STREAM DISCHARGE MEASUREMENT

- ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

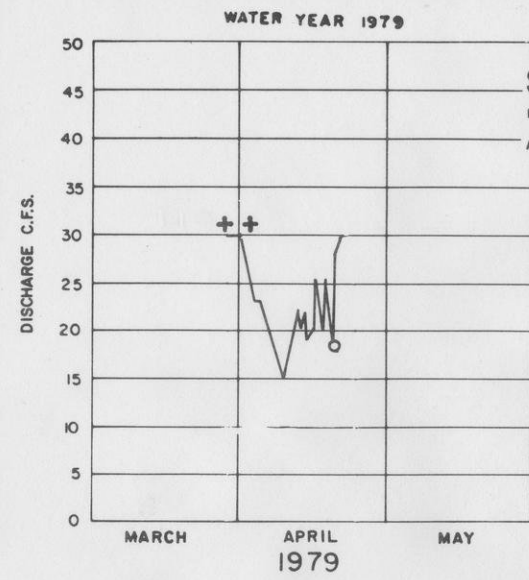
+ ACTUAL DISCHARGE HIGHER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

EXXON MINERALS COMPANY  
CRANDON PROJECT

STREAM DISCHARGE HYDROGRAPHS FOR  
SG4, SG5B AND SG6  
1977-1978

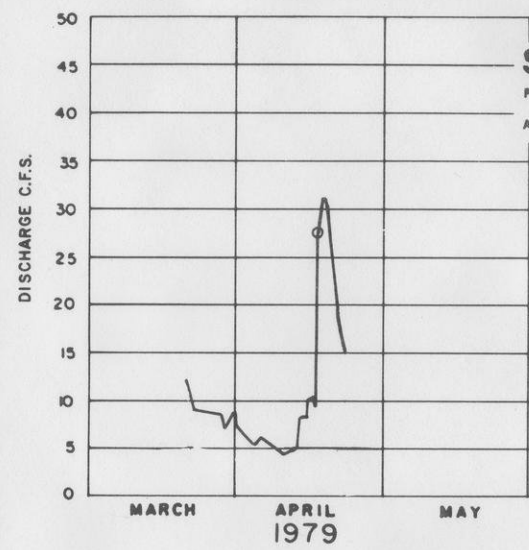
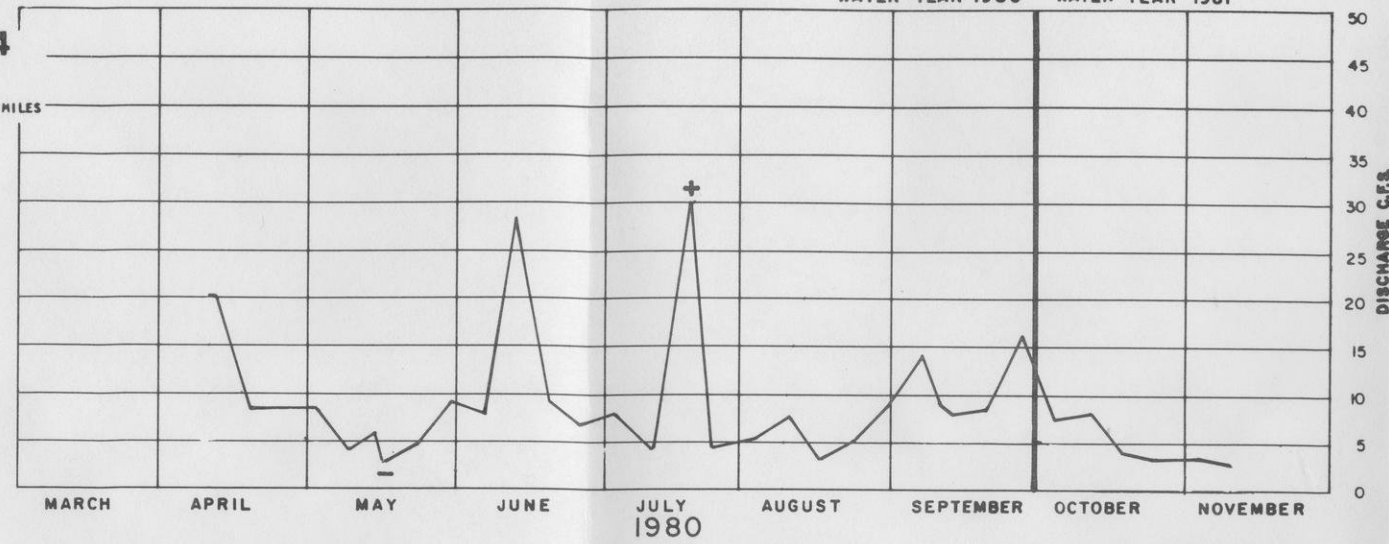
DAMES & MOORE

FIGURE J-3



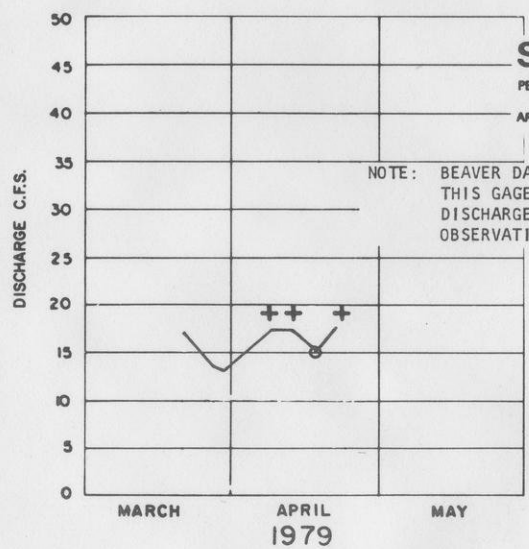
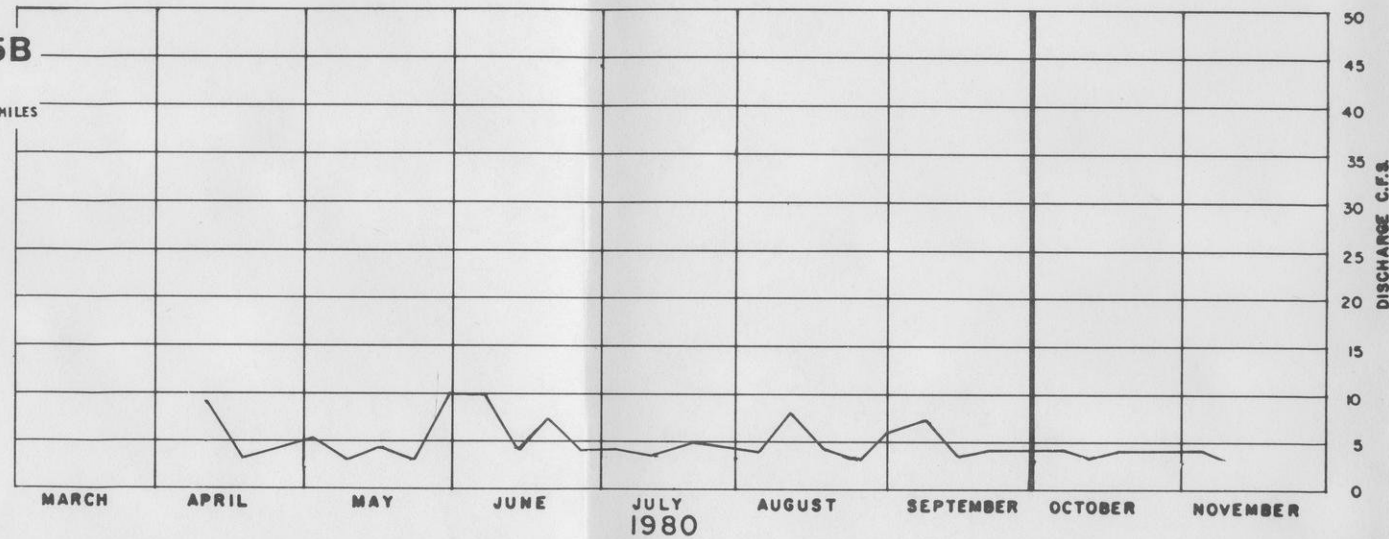
**STREAM GAGE 4**

PERIOD OF RECORD: 238 DAYS  
 AREA OF DRAINAGE BASIN: 11.2 SQUARE MILES



**STREAM GAGE 5B**

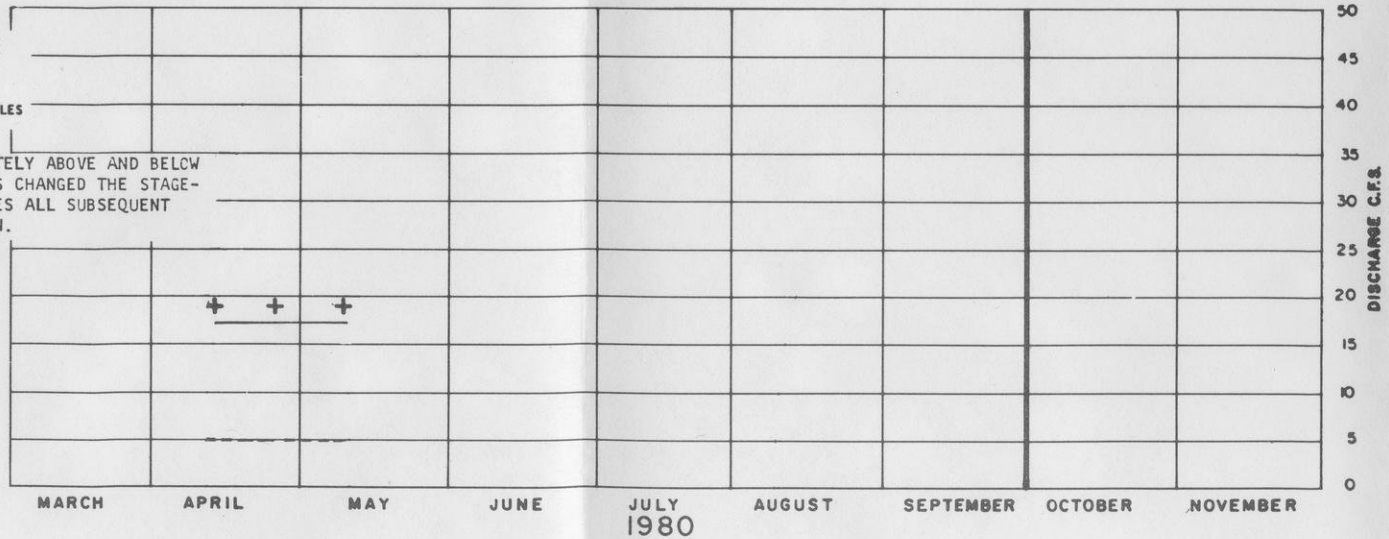
PERIOD OF RECORD: 245 DAYS  
 AREA OF DRAINAGE BASIN: 14.3 SQUARE MILES



**STREAM GAGE 6**

PERIOD OF RECORD: 245 DAYS  
 AREA OF DRAINAGE BASIN: 3.5 SQUARE MILES

NOTE: BEAVER DAMS WERE CONSTRUCTED IMMEDIATELY ABOVE AND BELOW THIS GAGE LOCATION IN MAY 1980. THIS CHANGED THE STAGE-DISCHARGE RELATIONSHIP AND INVALIDATES ALL SUBSEQUENT OBSERVATIONS OF FLOW AT THIS LOCATION.



- KEY:
- TOTAL STREAM FLOW
  - o STREAM DISCHARGE MEASUREMENT
  - ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).
  - + ACTUAL DISCHARGE HIGHER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

**EXXON MINERALS COMPANY**  
 CRANDON PROJECT

STREAM DISCHARGE HYDROGRAPHS FOR  
 SG4, SG5B AND SG6  
 1979-1980

**DAMES & MOORE**      FIGURE J-4

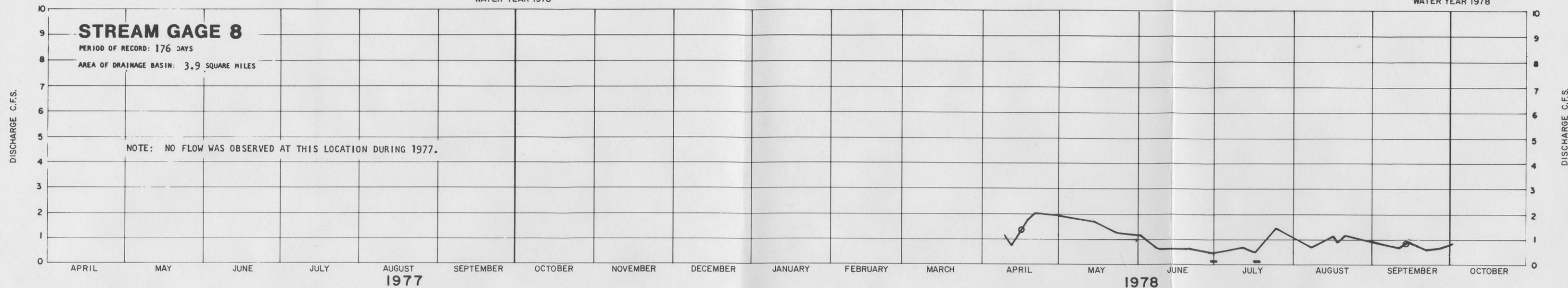
BEGINNING OF  
WATER YEAR 1978

END OF  
WATER YEAR 1978

### STREAM GAGE 8

PERIOD OF RECORD: 176 DAYS  
AREA OF DRAINAGE BASIN: 3.9 SQUARE MILES

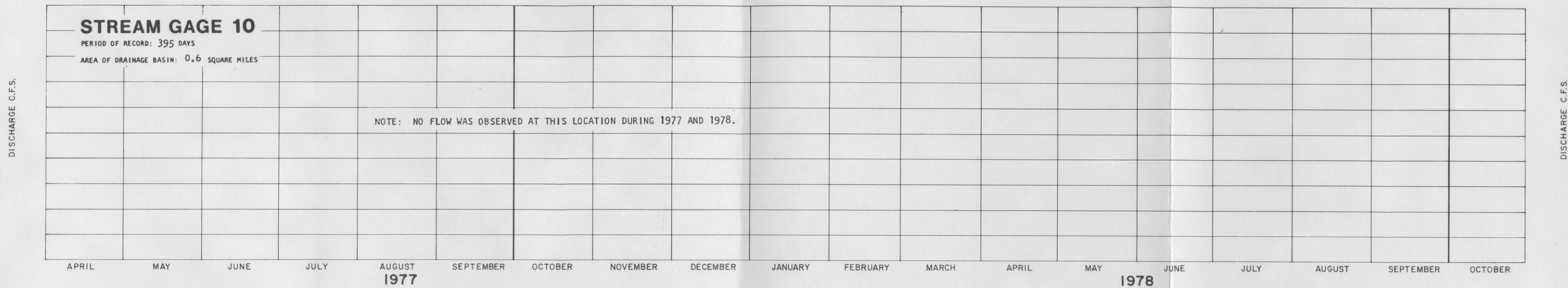
NOTE: NO FLOW WAS OBSERVED AT THIS LOCATION DURING 1977.



### STREAM GAGE 10

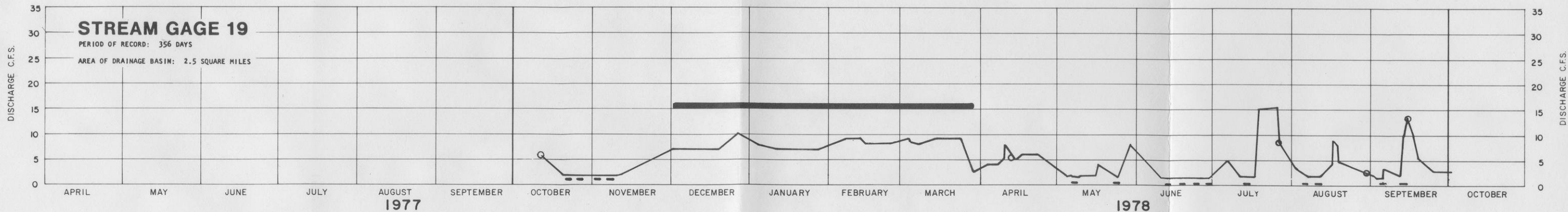
PERIOD OF RECORD: 395 DAYS  
AREA OF DRAINAGE BASIN: 0.6 SQUARE MILES

NOTE: NO FLOW WAS OBSERVED AT THIS LOCATION DURING 1977 AND 1978.



### STREAM GAGE 19

PERIOD OF RECORD: 356 DAYS  
AREA OF DRAINAGE BASIN: 2.5 SQUARE MILES



**KEY:**

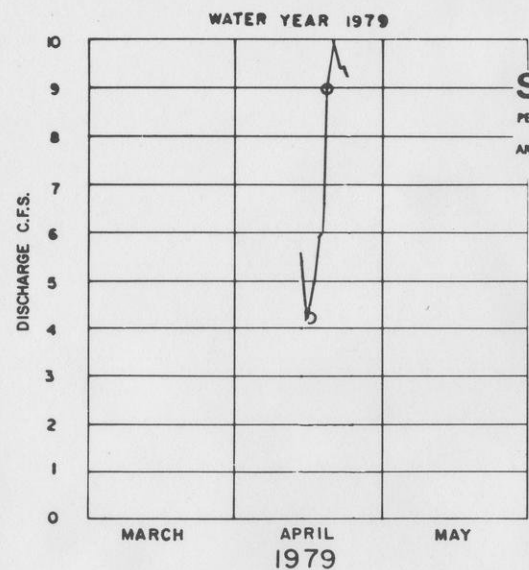
- TOTAL STREAM FLOW
- PERIOD OF ICE COVER
- STREAM DISCHARGE MEASUREMENT
- ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

EXXON MINERALS COMPANY  
CRANDON PROJECT

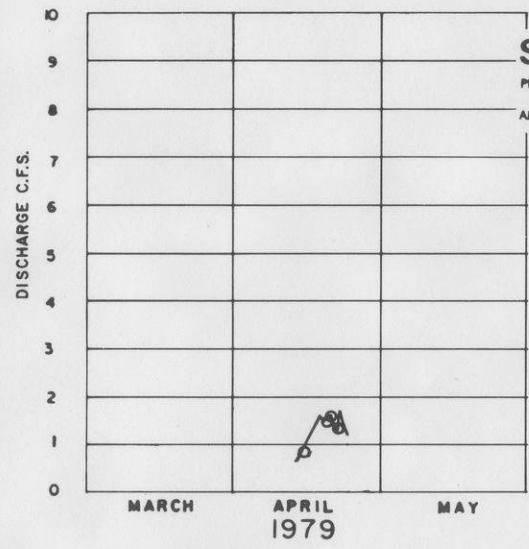
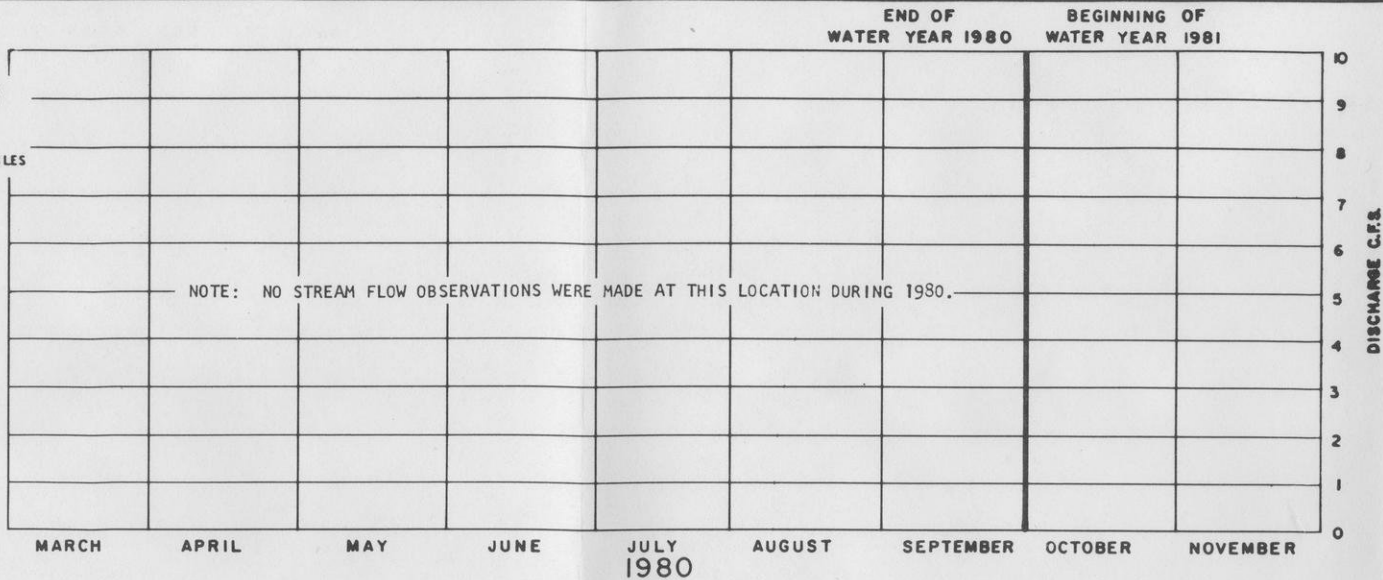
STREAM DISCHARGE HYDROGRAPHS FOR  
SG8, SG10 AND SG19  
1977-1978

DAMES & MOORE

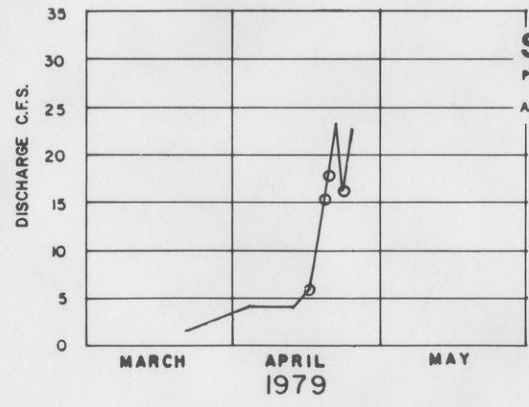
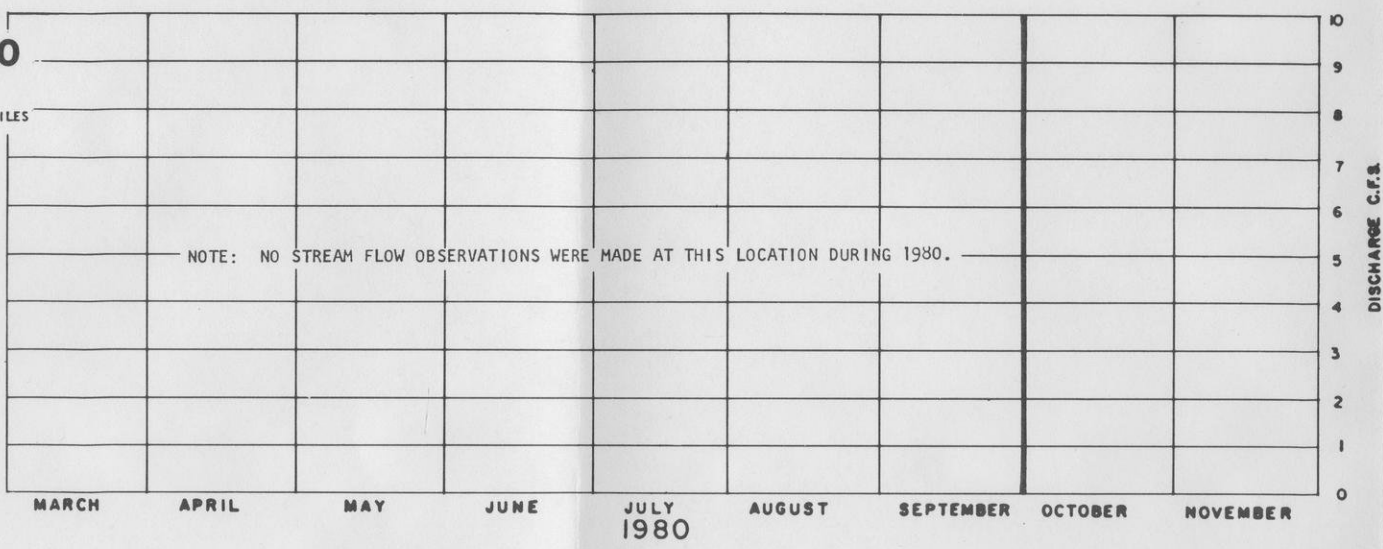
FIGURE J-5



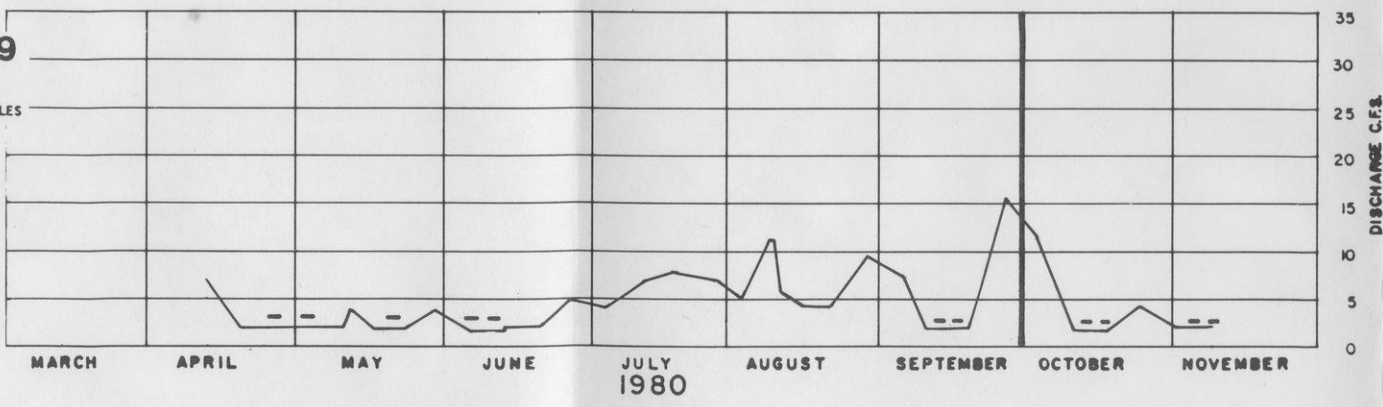
**STREAM GAGE 8**  
 PERIOD OF RECORD: 11 DAYS  
 AREA OF DRAINAGE BASIN: 3.9 SQUARE MILES



**STREAM GAGE 10**  
 PERIOD OF RECORD: 11 DAYS  
 AREA OF DRAINAGE BASIN: 0.6 SQUARE MILES



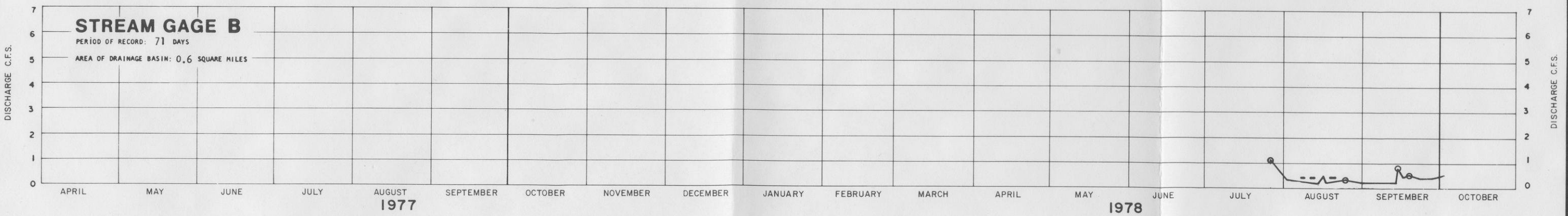
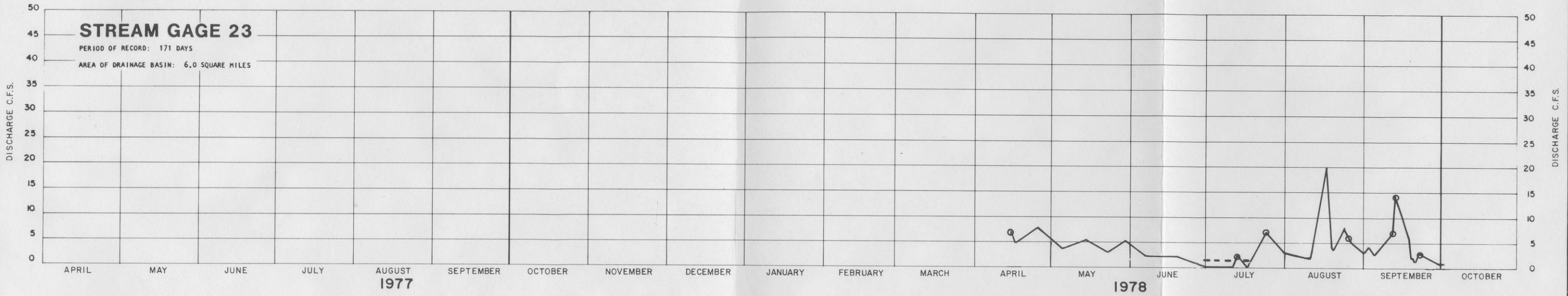
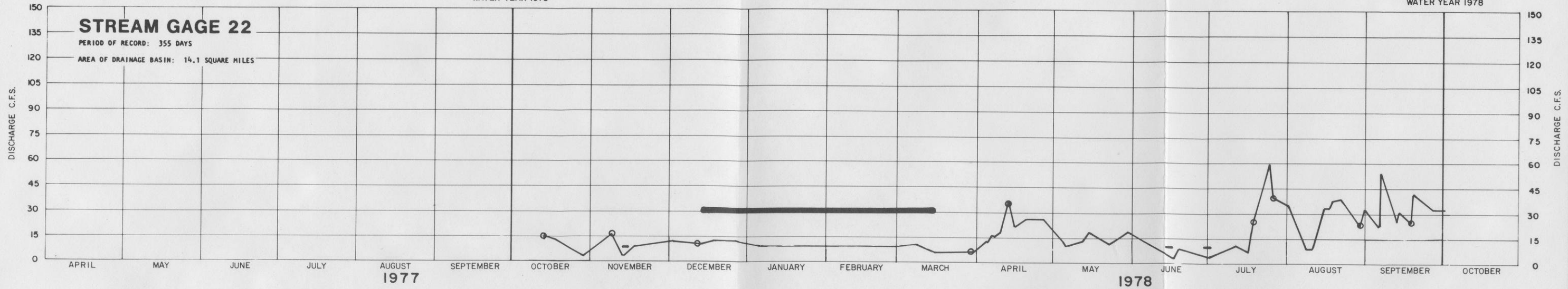
**STREAM GAGE 19**  
 PERIOD OF RECORD: 244 DAYS  
 AREA OF DRAINAGE BASIN: 2.5 SQUARE MILES



KEY:  
 — TOTAL STREAM FLOW  
 ○ STREAM DISCHARGE MEASUREMENT  
 — ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

BEGINNING OF  
WATER YEAR 1978

END OF  
WATER YEAR 1978



**KEY:**

- TOTAL STREAM FLOW
- PERIOD OF ICE COVER
- STREAM DISCHARGE MEASUREMENT
- - - ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

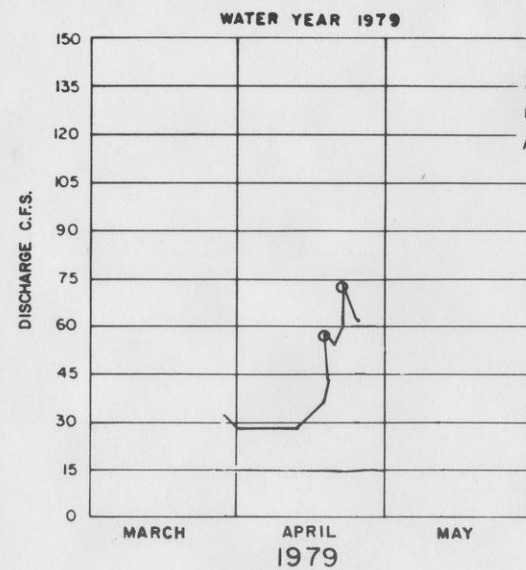
EXXON MINERALS COMPANY  
CRANDON PROJECT

STREAM DISCHARGE HYDROGRAPHS FOR  
SG22, SG23 AND SGB  
1977-1978

DAMES & MOORE

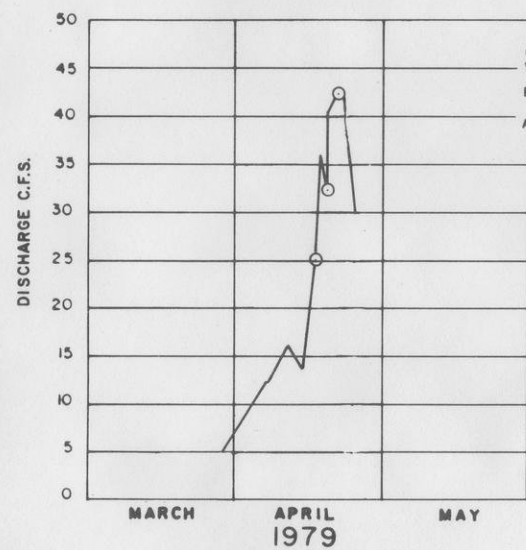
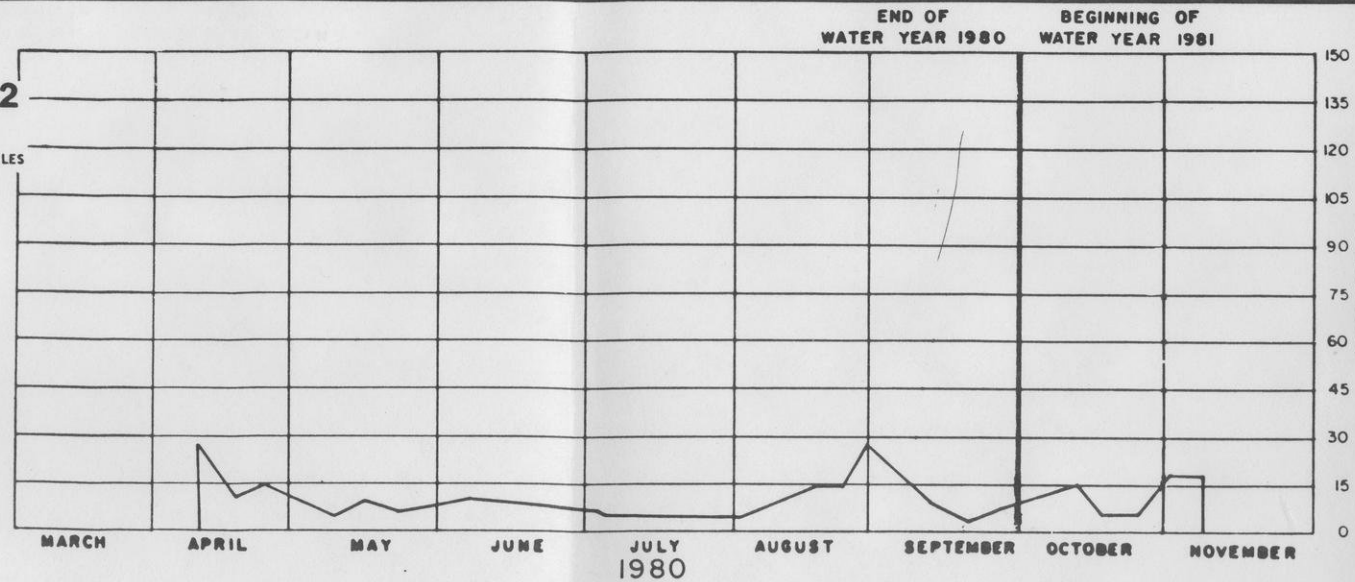
FIGURE J-7





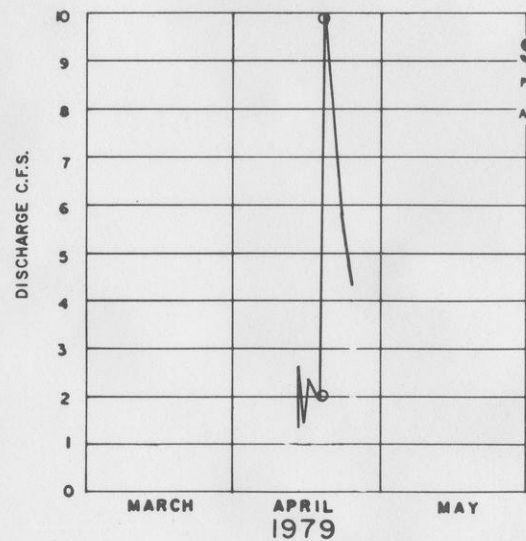
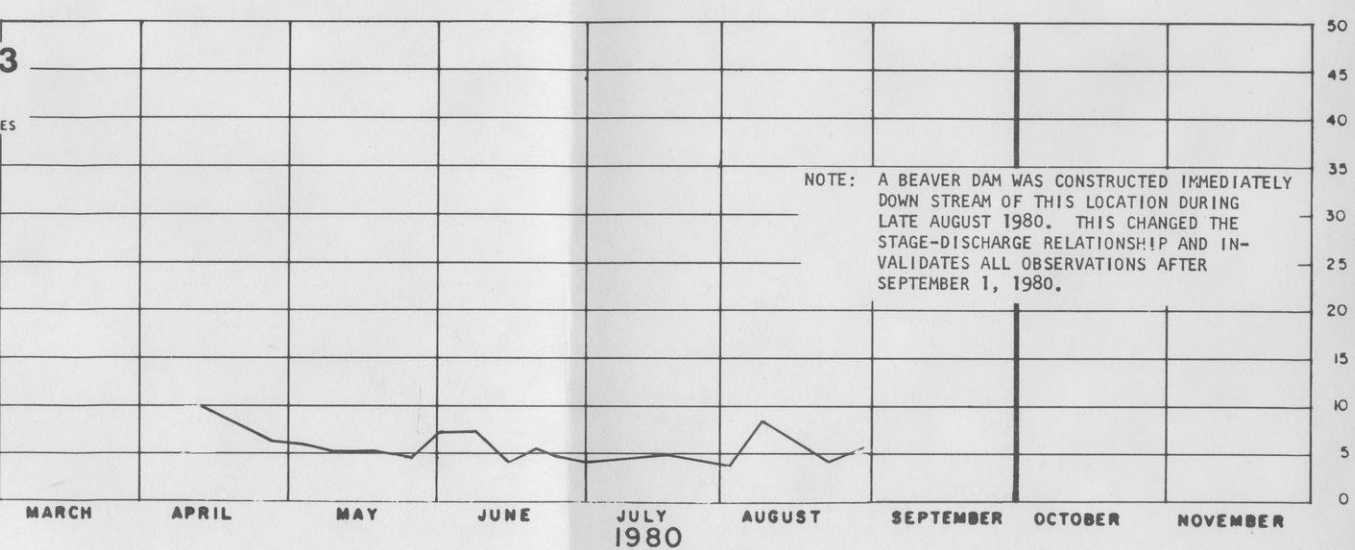
**STREAM GAGE 22**

PERIOD OF RECORD: 239 DAYS  
 AREA OF DRAINAGE BASIN: 14.1 SQUARE MILES



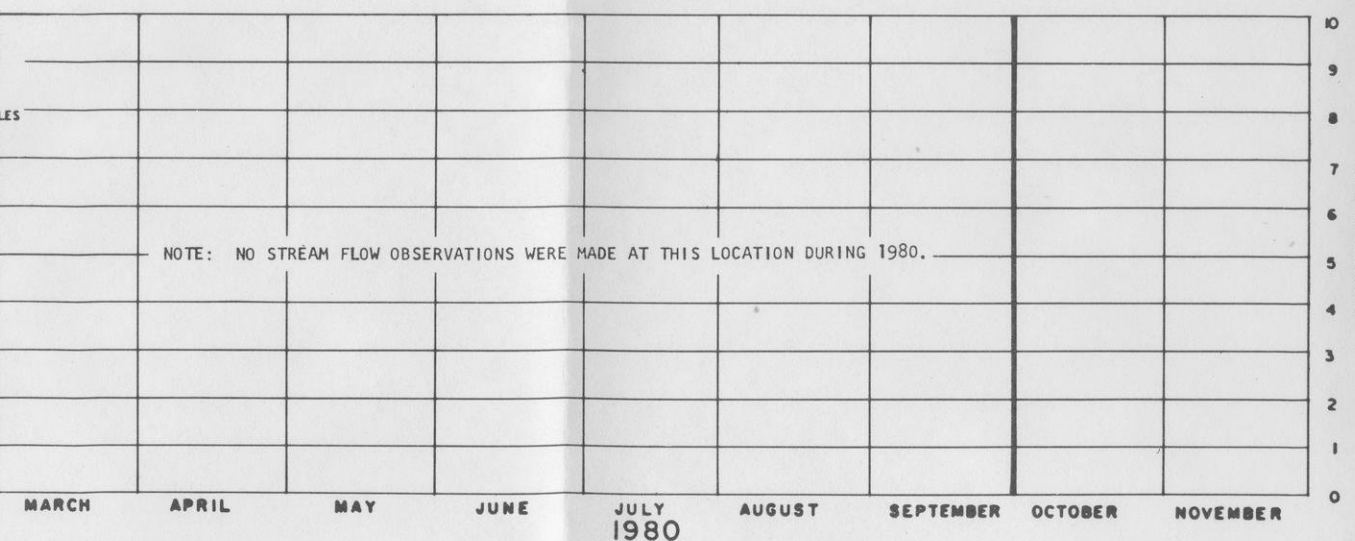
**STREAM GAGE 23**

PERIOD OF RECORD: 238 DAYS  
 AREA OF DRAINAGE BASIN: 6.0 SQUARE MILES



**STREAM GAGE B**

PERIOD OF RECORD: 10 DAYS  
 AREA OF DRAINAGE BASIN: 0.6 SQUARE MILES

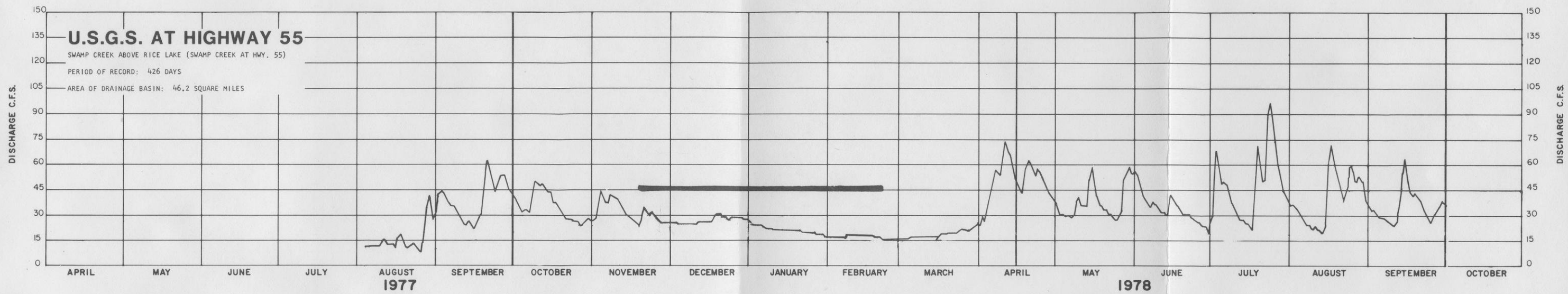
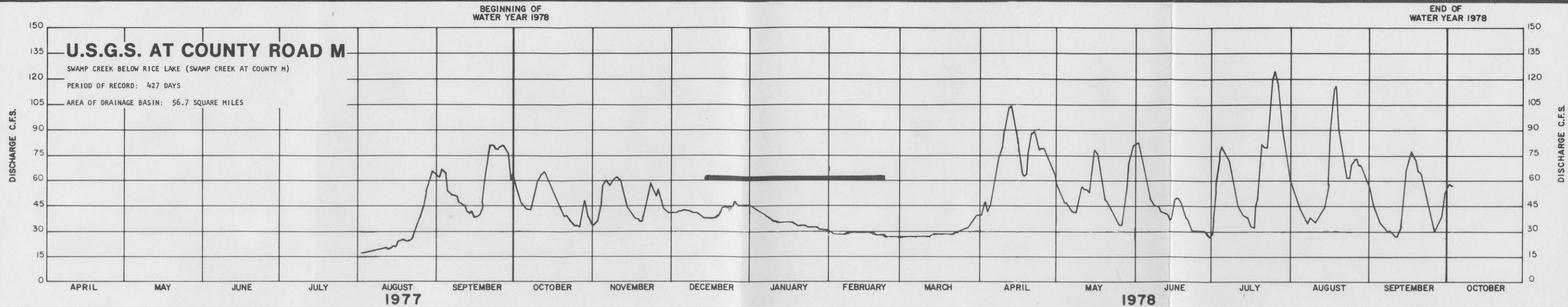


KEY:  
 — TOTAL STREAM FLOW  
 ○ STREAM DISCHARGE MEASUREMENT  
 — ACTUAL DISCHARGE LOWER THAN THAT INDICATED ON HYDROGRAPH (BEYOND LIMITS OF RATING CURVE).

EXXON MINERALS COMPANY  
 CRANDON PROJECT

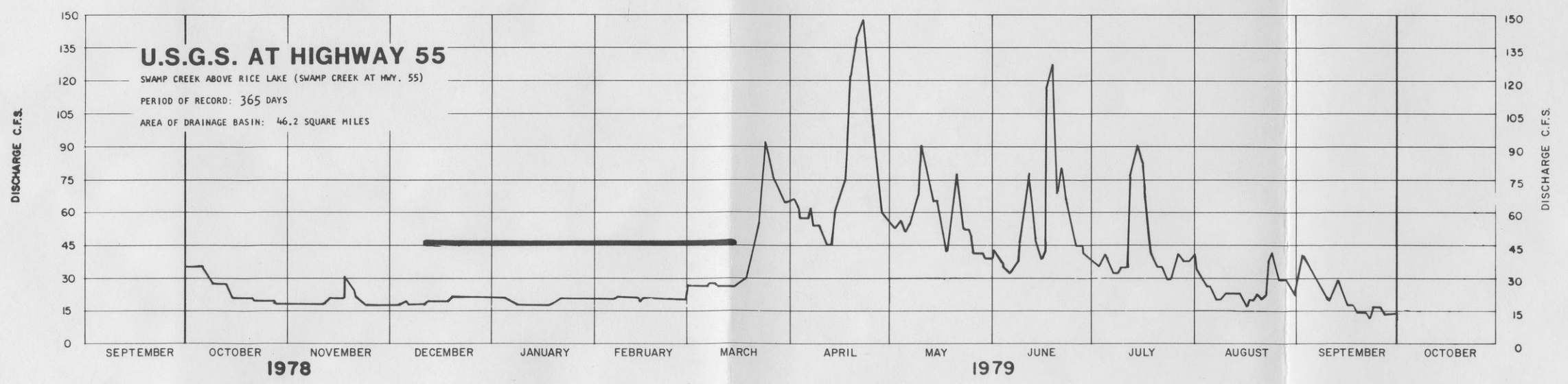
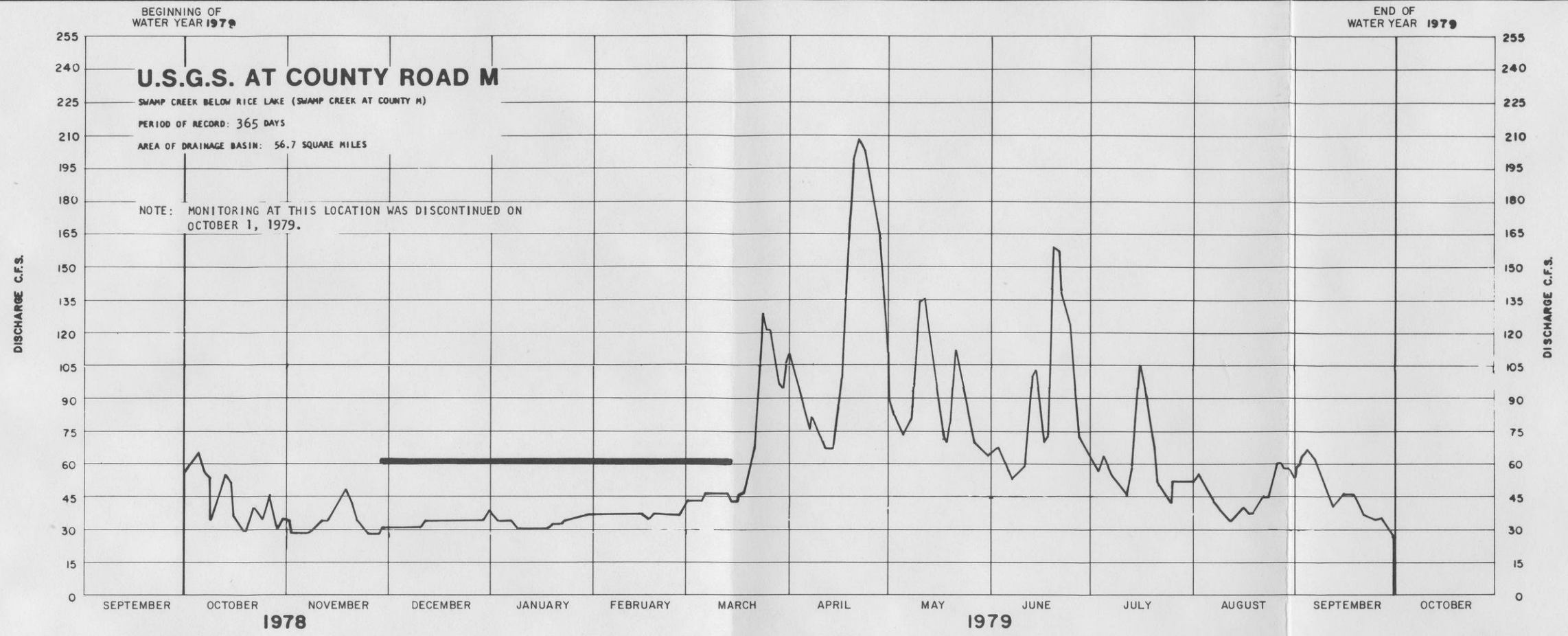
STREAM DISCHARGE HYDROGRAPHS FOR  
 SG22, SG23 AND SGB  
 1979-1980

DAMES & MOORE      FIGURE J-8



**KEY:**  
 — TOTAL STREAM FLOW  
 — PERIOD OF ICE COVER

<b>EXXON MINERALS COMPANY</b> CRANDON PROJECT	
STREAM DISCHARGE HYDROGRAPHS FOR U.S.G.S. GAGING STATIONS 1977-1978	
<b>DAMES &amp; MOORE</b>	FIGURE J-9



KEY:

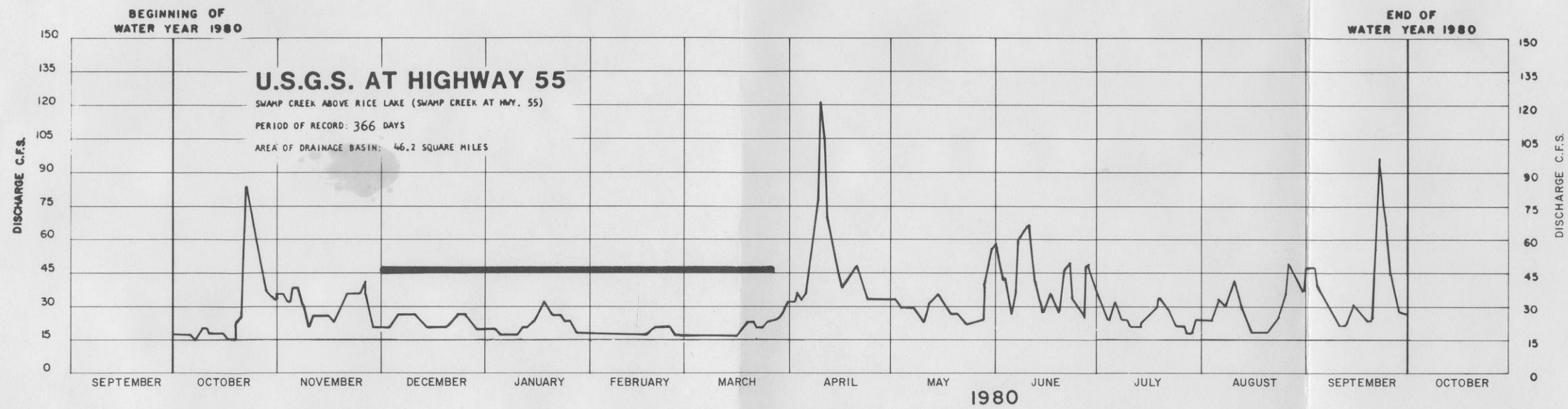
— TOTAL STREAM FLOW

— PERIOD OF ICE COVER

**EXXON MINERALS COMPANY**  
CRANDON PROJECT

STREAM DISCHARGE HYDROGRAPHS FOR  
U.S.G.S. GAGING STATIONS  
1979

**DAMES & MOORE** | FIGURE J-10



**KEY:**  
 — TOTAL STREAM FLOW  
 — PERIOD OF ICE COVER

<b>EXXON MINERALS COMPANY</b> CRANDON PROJECT	
STREAM DISCHARGE HYDROGRAPHS FOR U.S.G.S. GAGING STATIONS 1980	
<b>DAMES &amp; MOORE</b>	FIGURE J-11