WATER-QUALITY MONITORING PROGRAM
CHATFIELD BASIN AND RESERVOIR
DENVER METROPOLITAN AREA
FINAL BASIC-DATA REPORT
JANUARY 1996-DECEMBER 1996

ADVANCED
SCIENCES, INC.

WATER-QUALITY MONITORING PROGRAM
CHATFIELD BASIN AND RESERVOIR
DENVER METROPOLITAN AREA
FINAL BASIC-DATA REPORT
JANUARY 1996-DECEMBER 1996

Prepared For:

Chatfield Basin Authority
Denver, Colorado

Prepared By:

Advanced Sciences, Inc.
Lakewood, Colorado

ASI Project No. 8144.60

First Interim: May 28, 1996
Second Interim: September 3, 1996
Third Interim: November 14, 1996
Final: February 19, 1997

File: 96Q4LTR.RPT

ADVANCED
SCIENCES, INC.

February 17, 1997

Mr. Ron Mitchell
Chair, Chatfield Basin Authority
Castle Rock Town Manager
680 North Wilcox Street
Castle Rock, CO 80104

Subject: Water-Quality Monitoring Program, Chatfield Basin and Reservoir, Denver Metropolitan Area: Final Basic-Data Report, January 1996-December 1996
ASI Project No. 8144.60

Dear Mr. Mitchell:

The 1996 Annual Basic-Data Report is submitted in fulfillment of the subject program's contract requirements. Chemical analyses were performed by ACZ Laboratories, Inc., Steamboat Springs, CO, and biological analyses were performed by the University of Colorado Limnology Center, Boulder, CO. A total of 12 duplicate samples were analyzed for chemical constituents in this year's program. No supplemental tributary (sites 2B, 3, 4A, 4B, 6, 6A, 6B, and 6C; Figure 3) data were collected during the 1996 sampling program and the associated Tables 10, and 12 through 21 have been omitted from this report.

The attached Tables 1 through 6 incorporate the field measurements and laboratory chemical data, chlorophyll-a concentrations and phytoplankton-species numbers collected by Advanced Sciences, Inc. (ASI) and available to date in conjunction with the Chatfield Basin and Reservoir Monitoring Program for the January-through-December 1996 period. On September 18, 1996 ASI collected a supplemental South Platte River sample during the Strontia Springs Reservoir "flushing" which caused a high-inflow event into Chatfield Reservoir. The measured instantaneous discharge during sampling was 549 cfs, and the total phosphorous concentration was 0.315 mg/L. These values, extended over a 24-hour period, would result in a 932 pound phosphorous load entering the Chatfield Reservoir per day.

Figures 1 through 3 are maps showing the location of monitoring sites for inflow streams, in-reservoir, alluvial wells and supplemental tributary sampling .Time-series plots for the indicator in-reservoir variables (total phosphorus, chlorophyll-a, and Secchi depth) are given in Figures 4 through 6. Comparison of growing-season average total-phosphorus versus chlorophyll-a concentrations are shown in Figure 7; note that the 1996 data point falls in the lower right-hand end of the historical-period cluster of data points. Time-series plots for 2 biological variables (*asterionella formosa* and *aphanizomenon flos-aquae*), as well as average total cells are provided in Figures 8 through 10, respectively.

Appendix A includes the detailed biological (phytoplankton-species) data for the July through September 1996 growing season in-reservoir surveys, a comparison of growing-season averages of total phosphorous and chlorophyll-a concentrations, and the monthly chlorophyll-a concentrations for each of the three reservoir monitoring locations.

File: 96Q4LTR.RPT

405 Urban Street, Suite 401 Lakewood, CO 80228-1236 (303) 980-0036 FAX (303) 980-1206

Appendix B includes tabular in-reservoir water-quality profiles for the March 21 through November 13 water-quality surveys. The field parameter are presented at one-foot increments for pH, specific conductance, dissolved oxygen and temperature. This data is presented in graphic form in Figure series B-1A through L, B-2A through L, and B-3A through L for sites 7, 8, and 9, respectively.

Appendix C contains miscellaneous supplemental data collected from Chatfield Reservoir by other groups or agencies. This information has not been reviewed by ASI and is included in this report as it was received.

ASI appreciates having the opportunity to provide the Chatfield Basin Authority with continuing water-quality monitoring and data compilation services. This interim Basic-Data Report constitutes a deliverable under our 1996 calendar-year contract. If you have any questions, or need additional information, please give us a call.

Yours truly,

Tyler D. Smart, P.E.
Project Manager
Water-Resources Department

File: 8144.60

Attachments - Monitoring Site Locations Figures 1 through 3
- Water-Quality Basic Data Tables 1 through 6, January - December 1996
- Time-Series of 1996 Program Data, 1987-1996, Figures 4 through 10
- Appendices A, B and C

Distribution - See following page.

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Carruth Development Corporation
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Littleton, CO 80127
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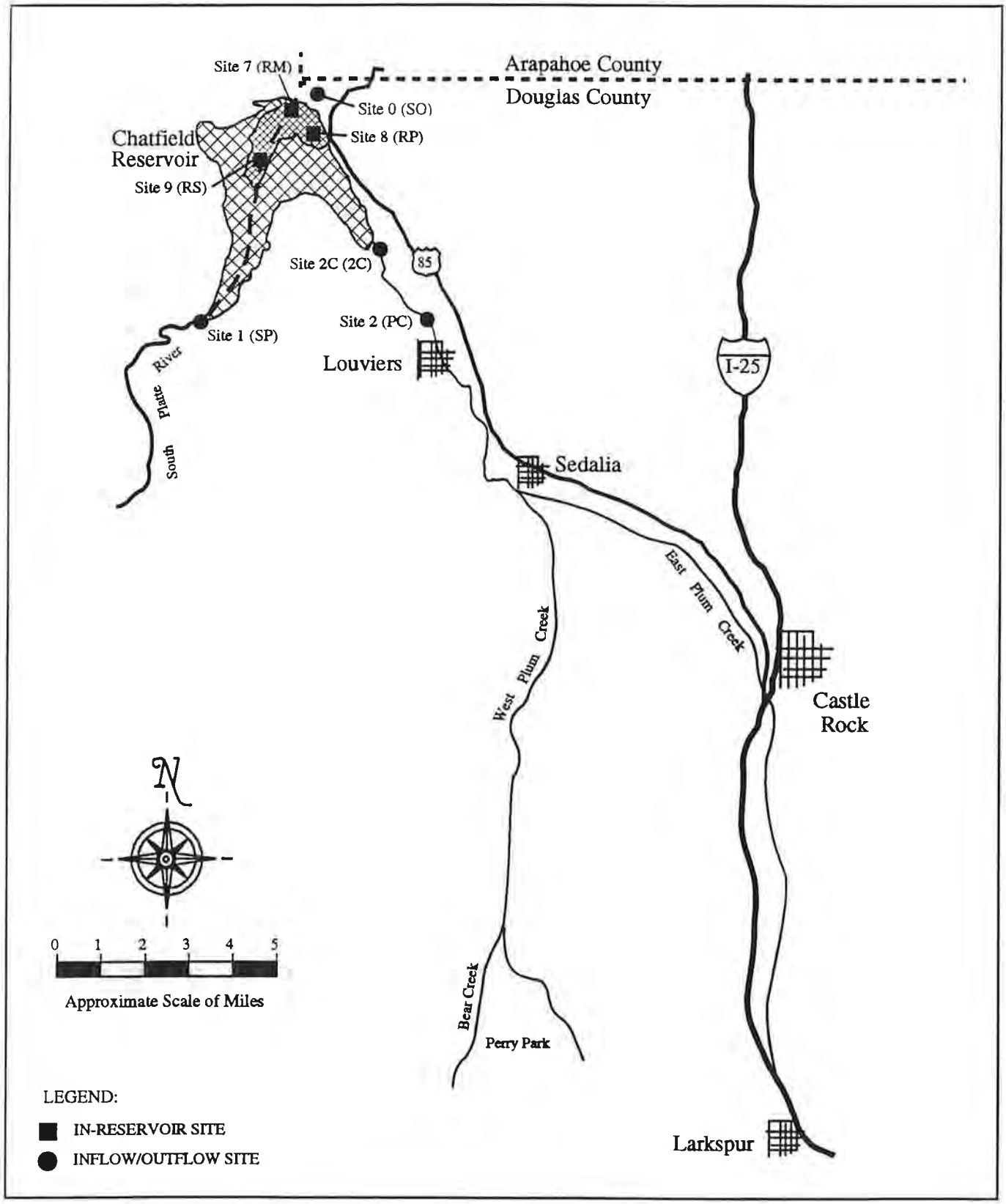
FIGURES



INFLOW/OUTFLOW AND IN-RESERVOIR
MONITORING LOCATIONS

ADVANCED SCIENCES, INC.

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

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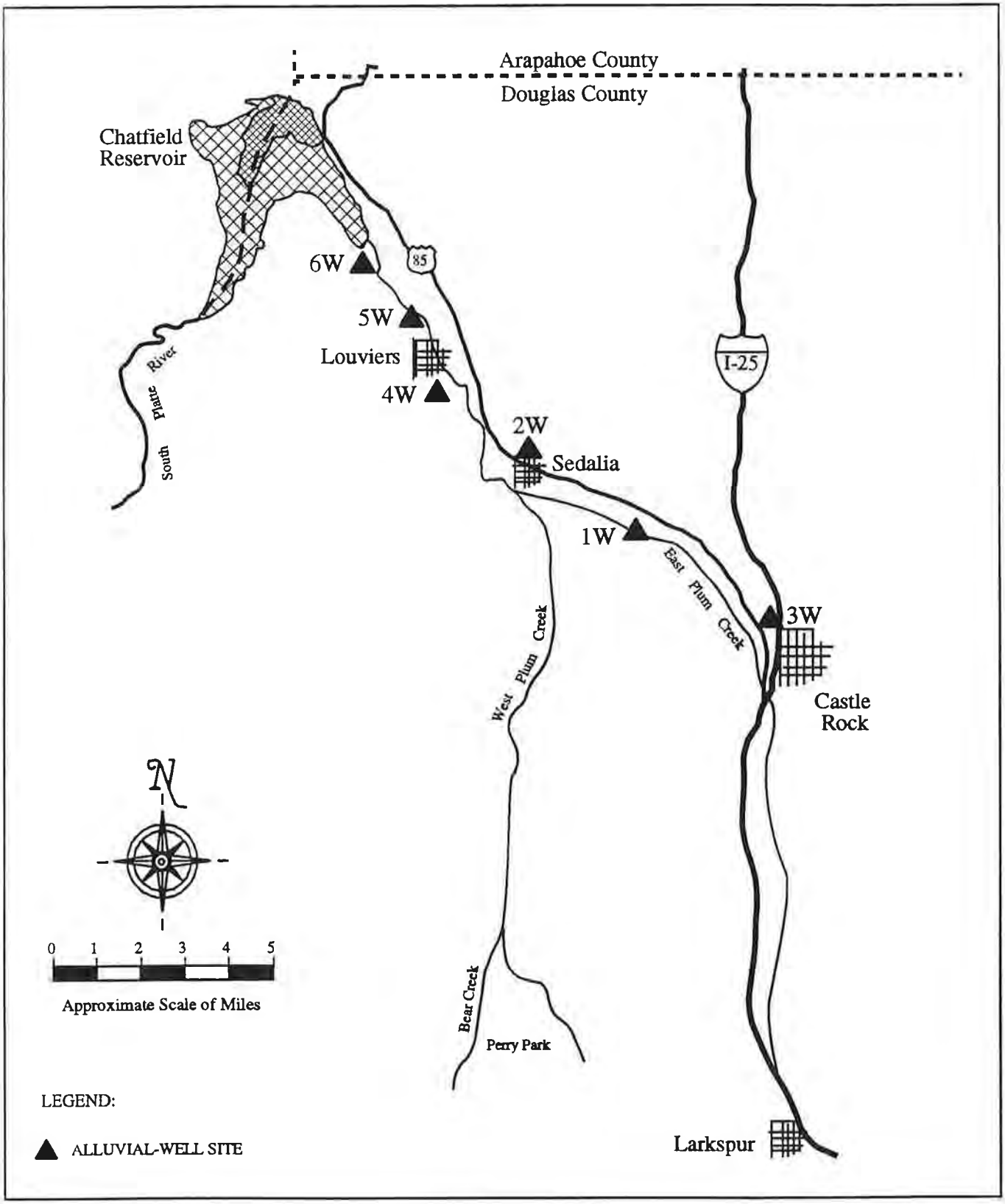
FIGURE 1

File: CHATFIG1.DRW

Status: 2/11/96



ALLUVIAL-WELL
MONITORING LOCATIONS

ADVANCED SCIENCES, INC.

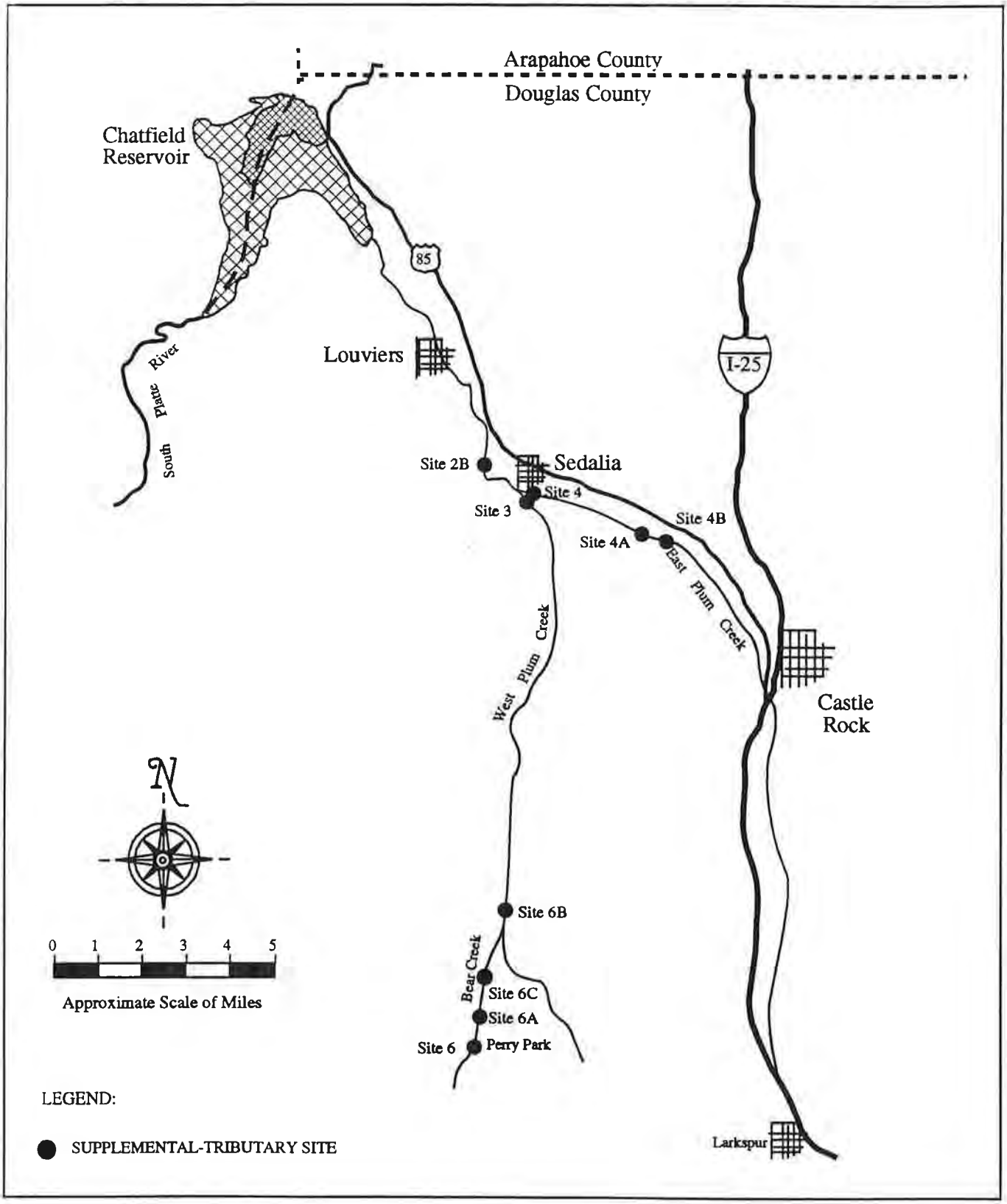
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

PROJECT NO. 8144.60

FIGURE 2

File: CHATFIG2.DRW

Status: 2/11/97



MONITORING LOCATIONS
SUPPLEMENTAL-TRIBUTARY

ADVANCED SCIENCES, INC.

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

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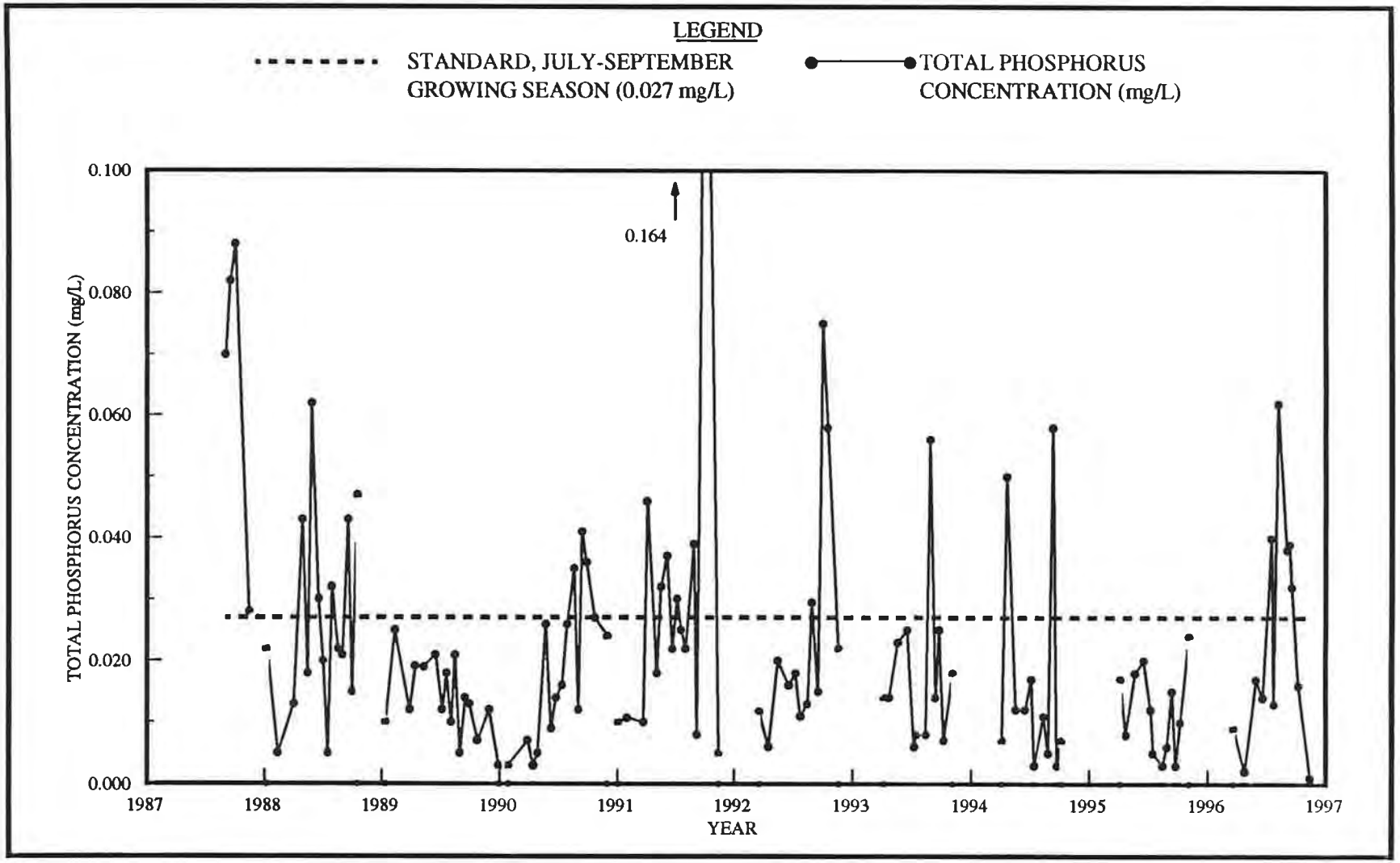
FIGURE 3

File: CHATFIG3.DRW

Status: 2/11/97



TIME SERIES OF AVERAGE TOTAL PHOSPHORUS CONCENTRATION CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC.

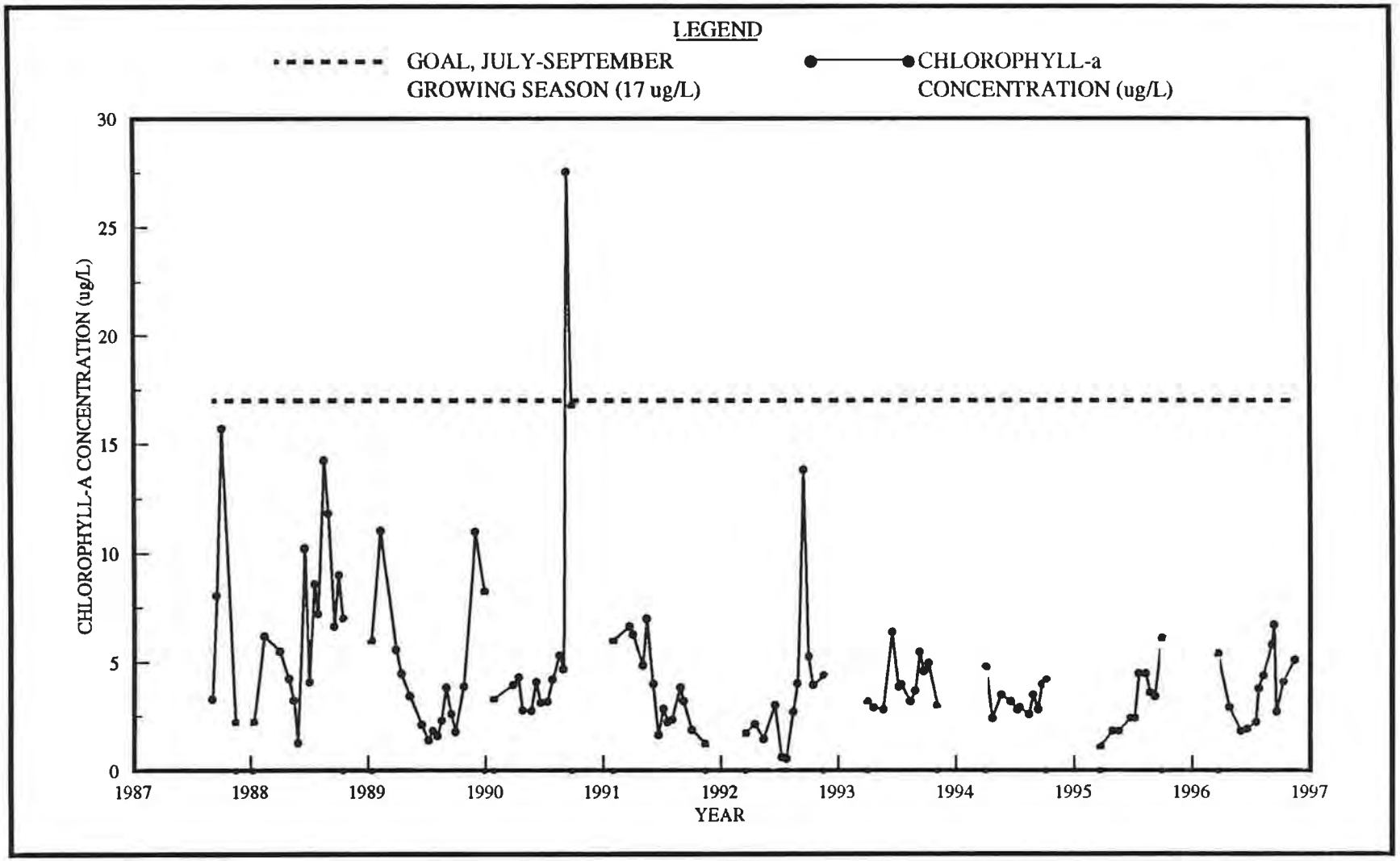
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8144.60

Figure 4

File: CHATFIG4.DRW

Status: 2/17/97



TIME SERIES OF AVERAGE CHLOROPHYLL-a CONCENTRATION CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC.

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

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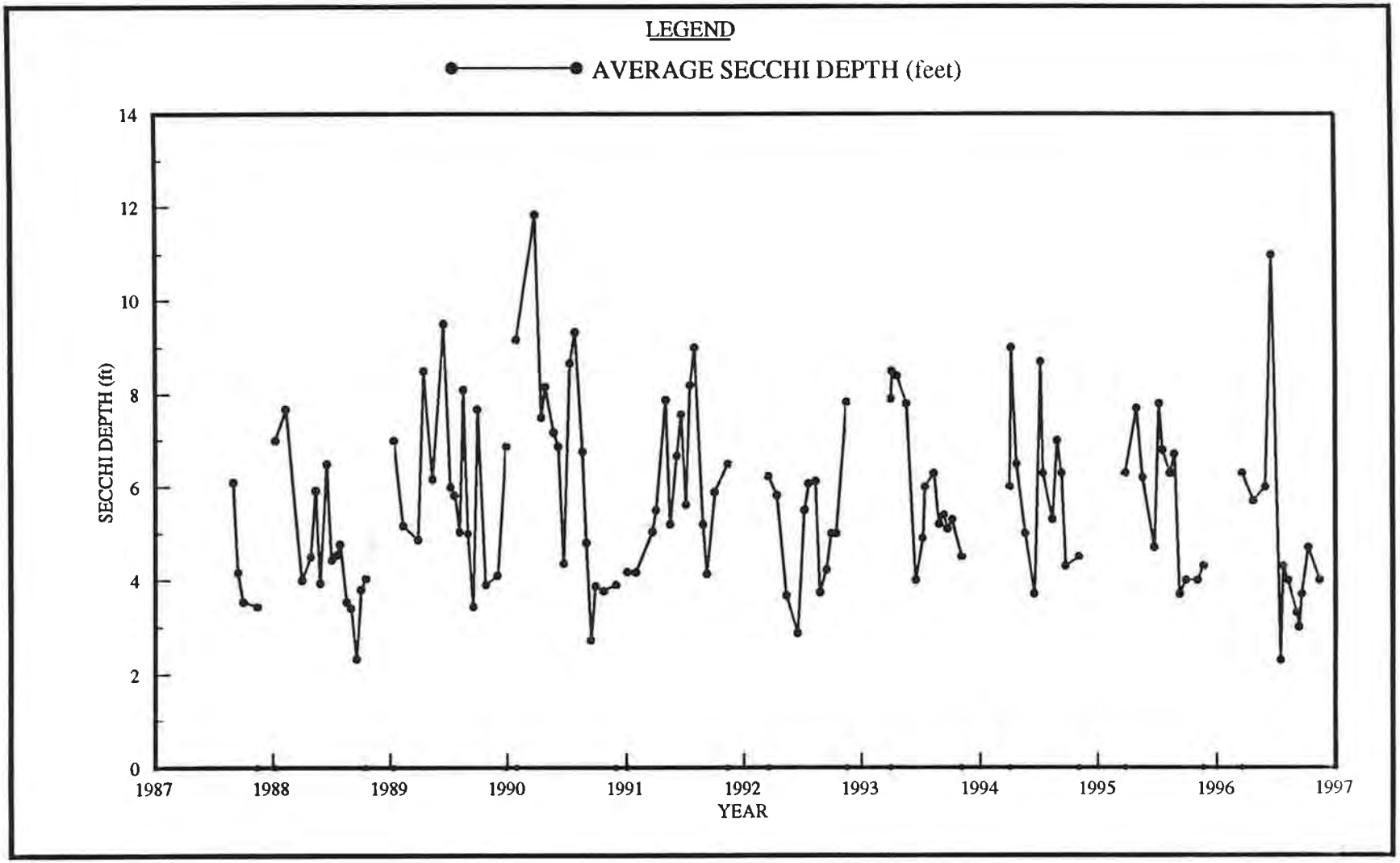
Figure 5

File: CHATFIG5.DRW

Status: 2/11/97



TIME SERIES OF AVERAGE SECCHI DEPTH
CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC.

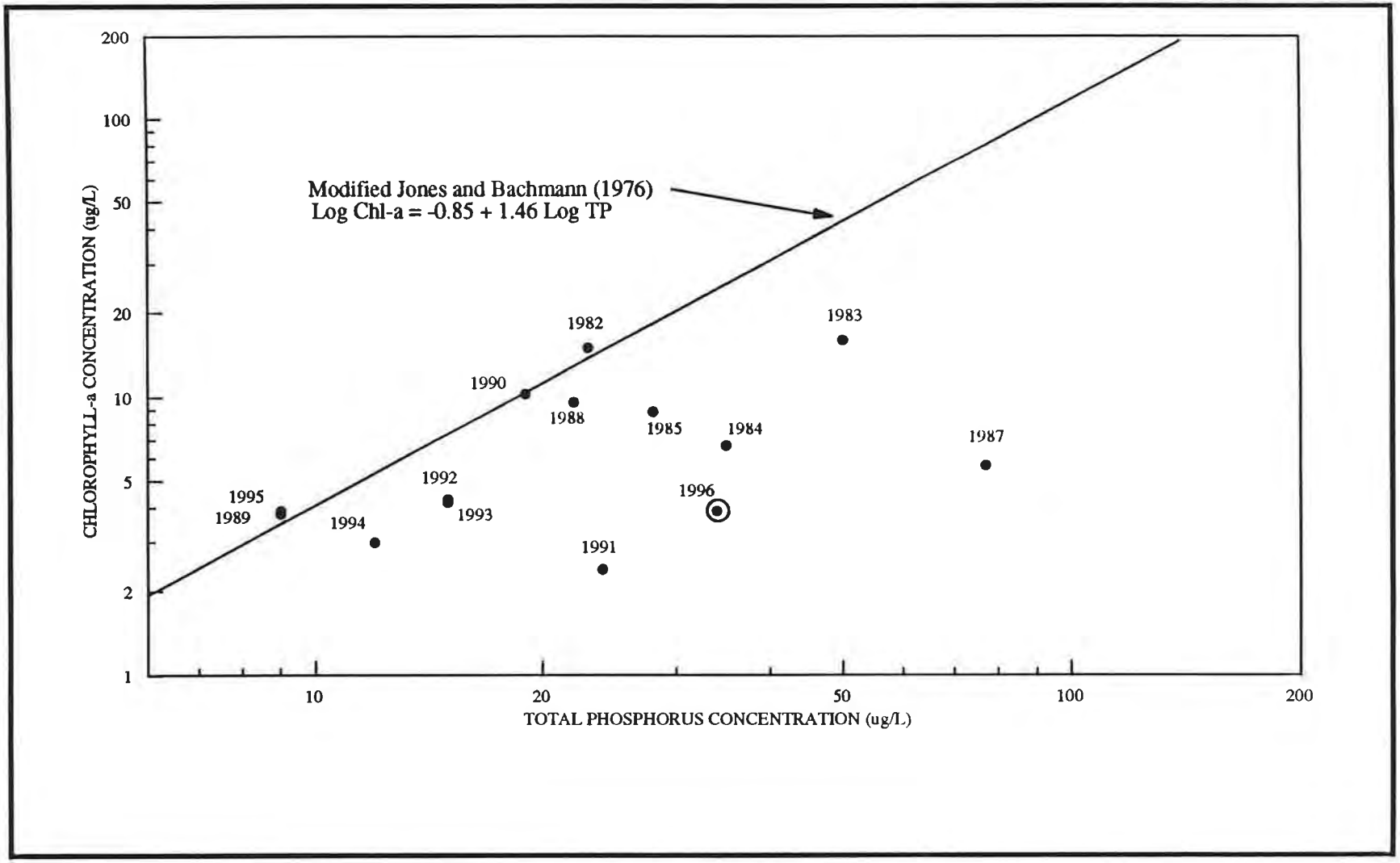
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8144.60

Figure 6

File: CHATFIG6.DRW

Status: 2/11/97



JULY THROUGH SEPTEMBER VALUES OF CHLOROPHYLL-a vs. TOTAL PHOSPHORUS
CHATFIELD RESERVOIR 1982 - 1996

ADVANCED SCIENCES, INC.

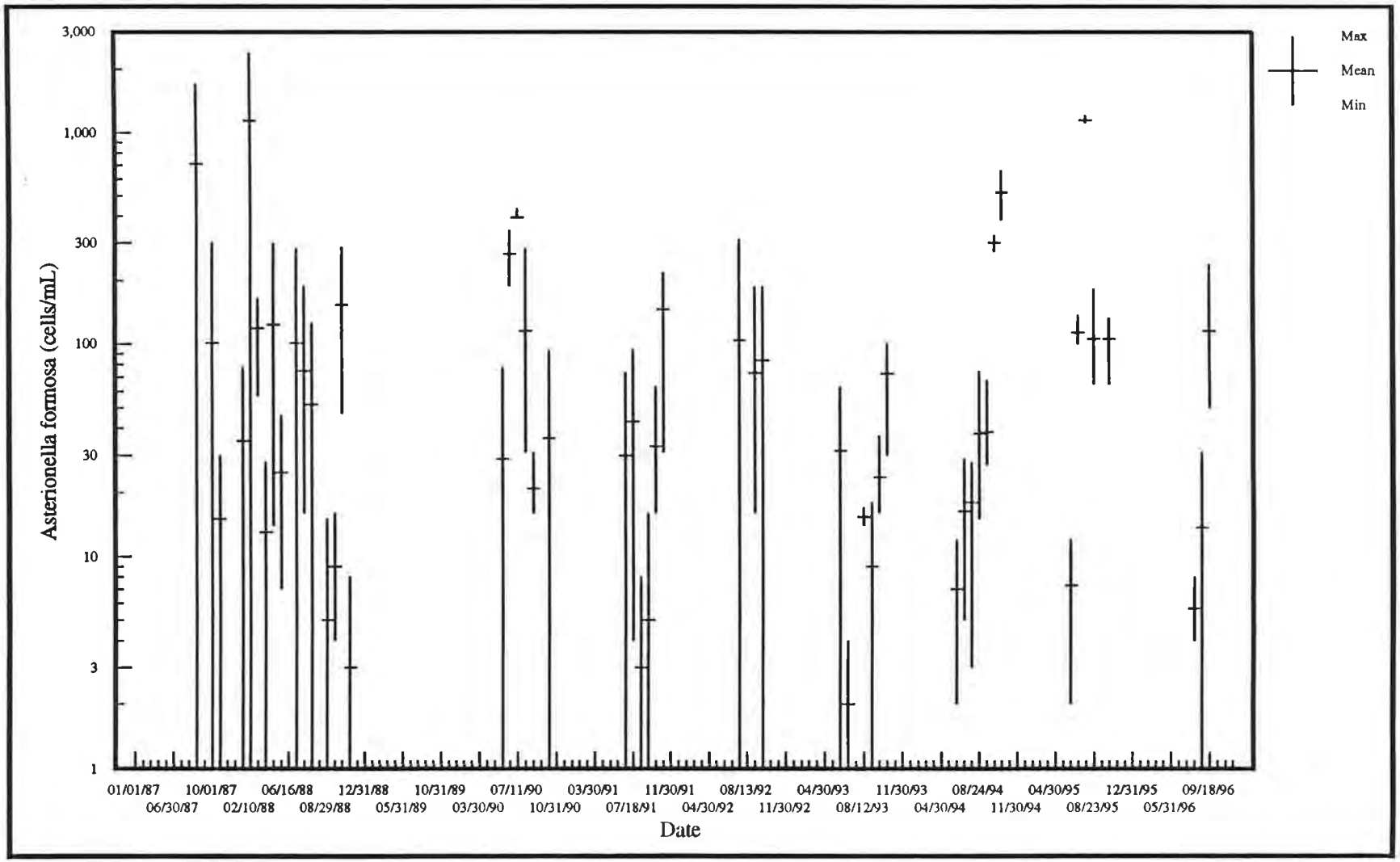
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8144.60

Figure 7

File: CHATFIG7.DRW

Status: 2/11/97



TIME SERIES OF MAXIMUM, MINIMUM, AND AVERAGE ASTERIONELLA FORMOSA CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC.

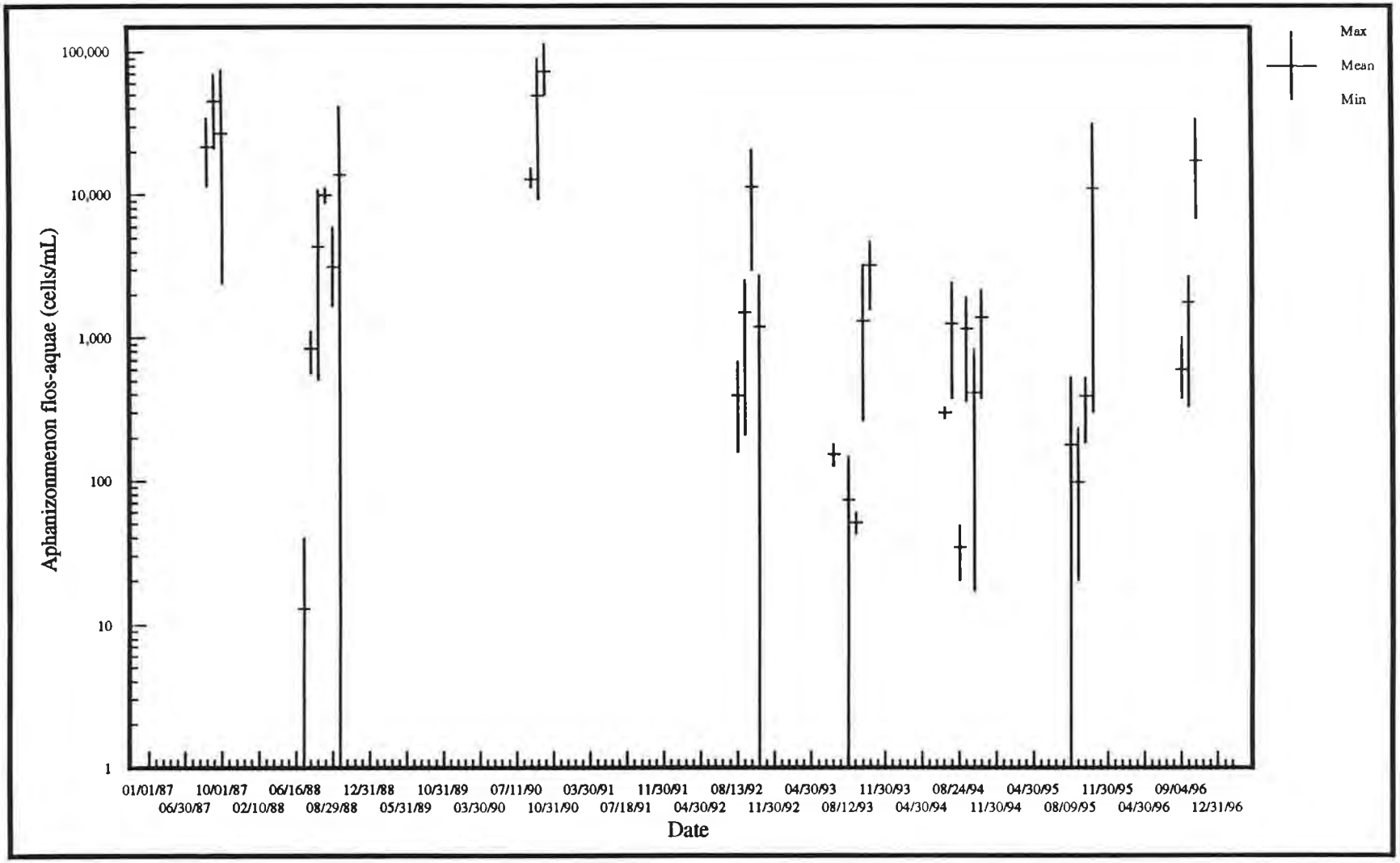
CHATFIELD BASIN
MONITORING PROGRAM

Project No. 8144.60

Figure 8

File: CHATFIG8.DRW

Status: 2/11/97



TIME SERIES OF MAXIMUM, MINIMUM, AND AVERAGE APHANIZOMENON FLOS-AQUAE CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC

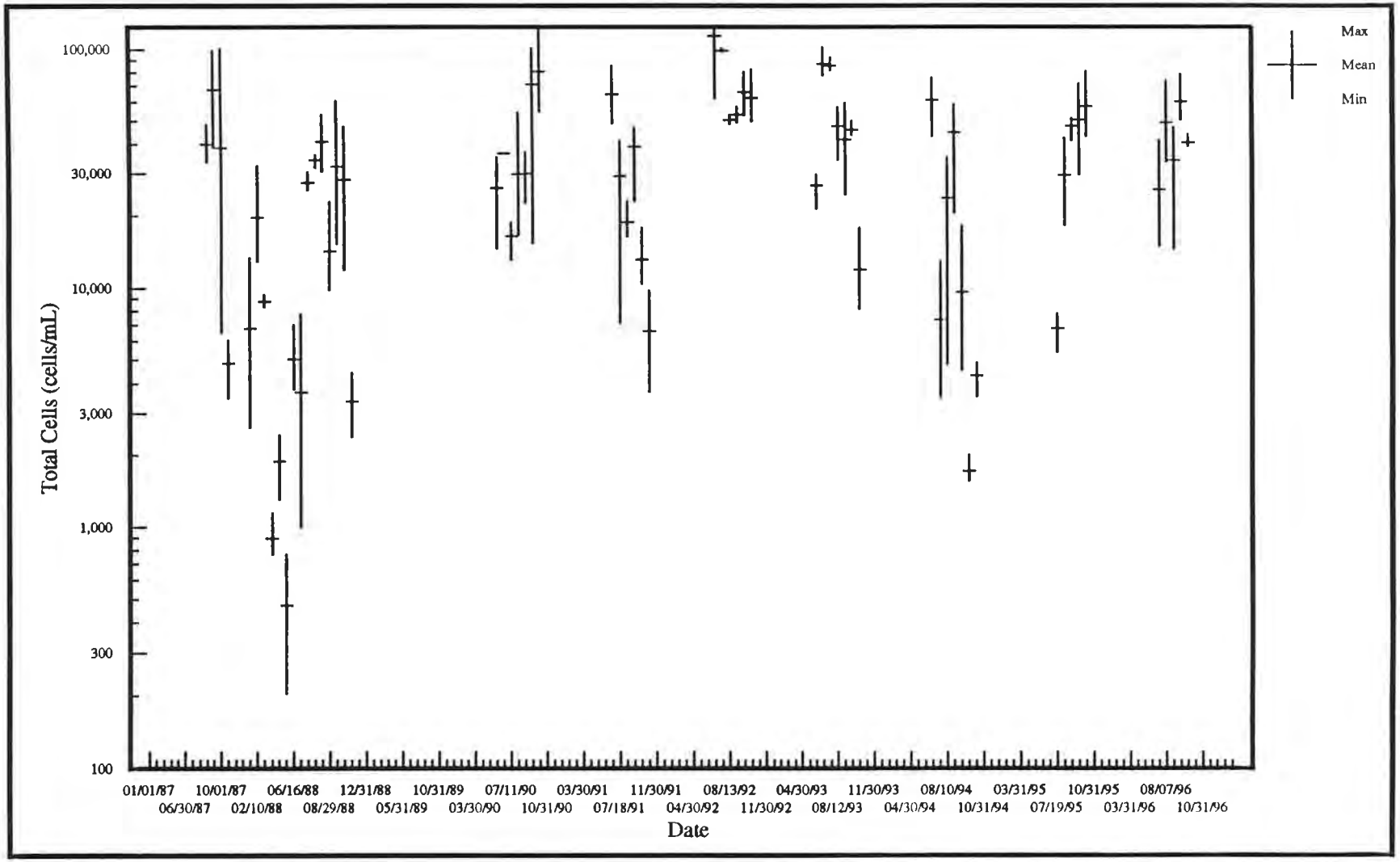
CHATFIELD BASIN
MONITORING PROGRAM

Project No. 8144.60

Figure 9

File: CHATFIG9.DRW

Status: 2/11/97



TIME SERIES OF MAXIMUM, MINIMUM, AND AVERAGE TOTAL CELLS CHATFIELD RESERVOIR 1987 - 1996

ADVANCED SCIENCES, INC.

CHATFIELD BASIN
MONITORING PROGRAM

Project No. 8144.60

Figure 10

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Status: 2/11/97

BASIC-DATA TABLES

File: 96Q4LTR.RPT

TABLE 1
CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO. (SITE 0), SO
06709601
WATER-QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS STREAMFLOW (CFS) [1]	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)	NITRATE/ NITRITE TOTAL (MG/L as N)
31-Jan-96	1425	2.8	2	430	11.0	7.4		0.15
31-Jan-96	9999							0.16
21-Feb-96	1505	10.7	1	375	6.9	8.2	3	0.08
21-Mar-96	1300	7.2	10	365	11.1	8.3	3	-0.02
24-Apr-96	1205	12.7	7	380	11.8	8.4	9	-0.02
30-May-96	1245	15.5	350	270	9.9	8.2	3	0.05
19-Jun-96	1140	18.1	300	285	10	7.9	<10	0.03
16-Jul-96	1215	21.5	249	290	7.4	7.8	59	0.1
7-Aug-96	1220	22.4	94	285	10.6	8.2	6	0.03
11-Sep-96	1300	18.9	140	315	9.4	8.1	5	0.03
09-Oct-96	1205	15.3	3.4	325	12.0	8.6	12	0.03
13-Nov-96	1045	5.7	1.2	370	13.1	8.3	18	-0.02
05-Dec-96	1320	6.1	24.4	320	13.9	8.3	16	-0.02

TABLE 1
CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO. (SITE 0), SO
06709601
WATER-QUALITY DATA

DATE	TIME	NITROGEN, AMMONIA TOTAL (MG/L as N)	NITROGEN, NITRITE TOTAL (MG/L as N)	NITROGEN, NITRATE TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	SUSPENDED SEDIMENT (G/M^3)	LABORATORY SAMPLE NUMBER
31-Jan-96	1425	-0.05	-0.01	0.15	0.015	-0.005	5	L8578-02
31-Jan-96	9999	-0.05	-0.01	0.16	0.017	-0.005	-2	L8578-03
21-Feb-96	1505	-0.05	-0.01	0.08	-0.005	-0.005	-2	L8760-04
21-Mar-96	1300	-0.05	-0.01	-0.02	0.010	-0.005	-2	L9062-09
24-Apr-96	1205	0.09	-0.01	-0.02	0.021	0.006	6	L9410-02
30-May-96	1245	0.06	-0.01	0.05	0.024	-0.005	5	L9775-08
19-Jun-96	1140	0.05	-0.01	0.03	0.025	-0.005	3	L10021-07
16-Jul-96	1215	.09	0.03	0.07	0.102	0.064	24	L10330-09
7-Aug-96	1220	0.09	-0.01	0.03	0.054	-0.005	9	L10586-07
11-Sep-96	1300	0.05	-0.01	0.03	0.025	0.01	7	L11000-07
09-Oct-96	1205	-0.05	-0.01	0.03	0.019	-0.005	4	L11393-07
13-Nov-96	1045	-0.05	0.01	-0.02	0.009	-0.005	6	L11747-01
05-Dec-96	1320	0.06	-0.01	-0.02	-0.005	-0.005	3	L11997-01

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.

BLANK RANGES INDICATE NO DATA WERE AVAILABLE.

TIME=9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.

1) STREAMFLOW DATA SOURCE: U.S.ARMY CORPS OF ENGINEERS (WRITTEN COMMUNS., OCTOBER 25,1996)

TABLE 2
SOUTH PLATTE RIVER AT WATERTON, CO (SITE 1), SP
06708000
WATER-QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS STREAMFLOW (CFS) [1]	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)	NITRATE/ NITRITE TOTAL (MG/L as N)
31-Jan-96			.	Frozen, no samples				
21-Feb-96	1420	7.4	26	335	9.2	8.3	16	0.08
21-Mar-96	1240	7.2	32	350	10.4	8.3	1	0.05
04-Apr-96	1430	6.6	34	335	10.9	8.5	70	0.07
10-Apr-96	1020	9.3	32	335	11.5	8.6	15	0.06
17-Apr-96	1125	10	32	330	11.5	8.6	8	0.08
24-Apr-96	1150	9.5	36	345	11.2	8.6	10	0.06
01-May-96	1255	12.4	34	300	12.6	8.8	23	0.06
08-May-96	1120	10.7	344	440	10.2	8.2	-10	0.03
22-May-96	0910	11.4	168	230	11	8.2	5	0.03
30-May-96	0915	9.6	242	195	10.7	8.2	3	0.09
08-Jun-96	1100	13.0	164	220	11.3	7.5	7	0.13
16-Jun-96	1430	14.1	302	185	10.3	8.3	109	0.07
19-Jun-96	1210	14	214	225	12.3	8.4	-10	-0.01
19-Jun-96	9999							0.02
26-Jun-96	1545	16.3	223	225	10.5	8.5	169	0.07
16-Jul-96	1215	16.5	123	270	8.7	7.5	166	0.15
7-Aug-96	0915	15.2	67	280	10.8	8.1	6	0.06
11-Sep-96	1330	16.7	63	200	13.2	9.2	10	0.04
18-Sep-96	1340	15.8	549	300	8.9	8.2	67	0.10
9-Oct-96	0915	8.6	102	235	11.0	7.8	18	0.13
9-Oct-96	9999							0.14
13-Nov-96	0810	4.6	35.7	290	13.5	7.4	10	0.24
5-Dec-96	1350	2.1	40.8	275	15.1	7.5	22	0.13

TABLE 2

SOUTH PLATTE RIVER AT WATERTON, CO (SITE 1), SP

06708000

WATER-QUALITY DATA

DATE	TIME	NITROGEN, AMMONIA TOTAL (MG/L as N)	NITROGEN, NITRITE TOTAL (MG/L as N)	NITROGEN, NITRATE TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	SUSPENDED SEDIMENT (G/M)	LABORATORY SAMPLE NUMBER
31-Jan-96				Frozen, no samples				
21-Feb-96	1420	-0.05	-0.01	0.08	0.006	-0.005	13	L8760-01
21-Mar-96	1240	0.05	-0.01	0.05	-0.005	-0.005	-2	L9062-08
04-Apr-96	1430	0.05	-0.01	0.07	-0.005	-0.005	-2	L9197-01
10-Apr-96	1020	-0.05	-0.01	0.06	0.006	-0.005	3	L9254-01
17-Apr-96	1125	0.07	-0.01	0.08	0.022	-0.005	-2	L9327-03
24-Apr-96	1150	0.05	-0.01	0.06	-0.005	-0.005	3	L9410-01
01-May-96	1255	-0.05	-0.01	0.06	0.045	-0.005	4	L9473-01
08-May-96	1120	0.06	-0.01	0.03	0.048	-0.005	54	L9573-01
22-May-96	0910	0.06	-0.01	0.03	0.013	0.022	4	L9695-01
30-May-96	0915	-0.05	-0.01	0.09	0.016	-0.005	5	L9775-09
08-Jun-96	1100	0.06	-0.01	0.13	0.015	0.006	5	L9873-01
16-Jun-96	1430	-0.05	-0.01	0.07	0.035	0.006	8	L9958-01
19-Jun-96	1210	-0.05	-0.01	-0.02	0.020	-0.005	6	L10021-08
19-Jun-96	9999	-0.05	-0.01	0.02	0.017	-0.005	6	L10021-10
26-Jun-96	1545	-0.05	-0.01	0.07	0.015	-0.005	4	L10099-01
16-Jul-96	1215	.09	0.06	0.09	0.355	0.203	111	L10330-08
7-Aug-96	0915	0.05	-0.01	0.06	0.039	-0.005	14	L10586-08
11-Sep-96	1330	0.06	-0.01	0.04	0.005	-0.005	-2	L11000-08
18-Sep-96	1340	0.09	0.02	0.08	0.315	0.052	242	L11079-07
9-Oct-96	0915	0.07	-0.01	0.13	0.043	-0.005	34	L11393-08
9-Oct-96	9999	-0.05	-0.05	0.14	0.052	-0.005	128	L11393-09
13-Nov-96	0810	0.06	0.01	0.23	-0.005	-0.005	-2	L11747-02
5-Dec-96	1350	0.08	-0.01	0.13	0.028	-0.005	14	L11997-02

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.
TIME=9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.
1) STREAMFLOW DATA SOURCE: COLORADO STATE ENGINEERS OFFICE (WRITTEN COMMUNS., OCTOBER 25,1996)
2) ESTIMATED STREAMFLOW DATA

TABLE 3
PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO. (SITE 2), PC
06709530
WATER-QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS STREAMFLOW (CFS) [1]	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)	NITRATE/ NITRITE TOTAL (MG/L as N)
31-Jan-96	1355	0.4	9.9 [2,3]	460	4.2	7.7		0.97
21-Feb-96	1400	8.0	11.9 [2,3]	380	8.9	7.5	29	0.57
21-Mar-96	1220	11.8	14.6 [2,3]	420	8.7	7.9	38	0.65
4-Apr-96	1445	8.1	18.0 [2,3]	375	8.5	8.1	35	0.33
10-Apr-96	1040	13.9	20.3 [2,3]	370	9.3	8.1	28	0.30
17-Apr-96	1100	14.1	23.2 [2,3]	345	9.1	8.2	30	0.33
17-Apr-96	9999							0.35
24-Apr-96	1135	15.1	20.6 [2,3]	355	8.5	8.1	9	0.24
1-May-96	1310	18.3	17.5 [2,3]	320	9.1	8.1	30	0.20
8-May-96	1145	19.9	14.5 [2,3]	465	9.0	8.0	-10	0.15
22-May-96	0930	15.5	13.0 [2,3]	335	9.3	7.9	13	0.09
30-May-96	* NO SAMPLE COLLECTED DUE TO CONSTRUCTION. NO ACCESS.							
8-Jun-96	* NO SAMPLE COLLECTED DUE TO CONSTRUCTION. NO ACCESS.							
16-Jun-96	1500	23.6	12.1 [2,3]	290	7.7	8		0.17
19-Jun-96	1235	23.5	10.9 [2,3]	330	6.9	7.8	-10	0.11
26-Jun-96	1600	24.7	8.1 [2,3]	355	6.1	7.5	20	0.16
16-Jul-96	* STREAM DRY; NO SAMPLE COLLECTED.							
7-Aug-96	* STREAM DRY; NO SAMPLE COLLECTED.							
11-Sep-96	* STREAM DRY; NO SAMPLE COLLECTED.							
9-Oct-96	* STREAM DRY; NO SAMPLE COLLECTED.							
13-Nov-96	0830	4.8	2.3	540	12.0	7.5	17	0.34
5-Dec-96	1440	7.8	14	310	10.1	7.9	30	1.37

TABLE 3
PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO. (SITE 2), PC 06709530
WATER-QUALITY DATA

DATE	TIME	NITROGEN, AMMONIA TOTAL (MG/L as N)	NITROGEN, NITRITE TOTAL (MG/L as N)	NITROGEN, NITRATE TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P) AS P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	SUSPENDED SEDIMENT ($G/M^{3)}$	LABORATORY SAMPLE NUMBER
31-Jan-96	1355	-0.05	-0.01	0.97	0.028	0.006	-2	L8578-01
21-Feb-96	1400	0.06	0.01	0.56	0.021	0.014	12	L8760-02
21-Mar-96	1220	0.08	0.01	0.64	0.055	-0.005	36	L9062-07
4-Apr-96	1445	-0.05	-0.01	0.33	0.067	0.026	68	L9197-02
10-Apr-96	1040	-0.05	-0.01	0.30	0.057	0.032	47	L9254-02
17-Apr-96	1100	0.07	-0.01	0.33	0.058	0.020	56	L9327-02
17-Apr-96	9999	0.09	-0.01	0.35	0.062	0.021	65	L9327-01
24-Apr-96	1135	-0.05	-0.01	0.24	0.043	0.023	36	L9410-03
1-May-96	1310	-0.05	-0.01	0.20	0.032	0.013	138	L9473-02
8-May-96	1145	-0.05	-0.01	0.02	0.157	0.016	55	L9573-02
22-May-96	0930	0.06	-0.01	0.09	0.063	0.031	25	L9695-02
30-May-96		* NO SAMPLE COLLECTED DUE TO CONSTRUCTION. NO ACCESS.						
8-Jun-96		* NO SAMPLE COLLECTED DUE TO CONSTRUCTION. NO ACCESS.						
16-Jun-96	1500	-0.05	0.01	0.16	0.069	0.034	56	L9958-02
19-Jun-96	1235	-0.05	-0.01	0.11	0.047	0.021	14	L10021-09
26-Jun-96	1600	-0.05	-0.05	0.16	0.053	0.039	4	L10099-02
16-Jul-96		* STREAM DRY; NO SAMPLE COLLECTED.						
7-Aug-96		* STREAM DRY; NO SAMPLE COLLECTED.						
11-Sep-96		* STREAM DRY; NO SAMPLE COLLECTED.						
9-Oct-96		* STREAM DRY; NO SAMPLE COLLECTED.						
13-Nov-96	0830	0.08	0.01	0.33	-0.005	0.008	-2	L11747-03
5-Dec-96	1440	0.08	-0.01	1.37	-0.005	-0.005	19	L11997-03

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.

BLANK RANGES INDICATE NO DATA WERE AVAILABLE.

TIME = 9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.

1) STREAMFLOW DATA SOURCE: U. S. GEOLOGICAL SURVEY (WRITTEN COMMUNS., OCTOBER 25,1996)

2) USGS GAGING STATION REMOVED AUGUST 1995 AND RE-ACTIVATED ON JULY 10, 1996 (TITAN RD. RECONSTRUCTION).

3) ESTIMATED FLOWS WERE MEASURED ON 1/12, 3/26,4/18, 5/15 AND 6/5 1996. VALUES SHOWN HERE ARE INTERPOLATED.

TABLE 3A
PLUM CREEK ABOVE CHATFIELD RESERVOIR (SITE 2C)
393214105024201
WATER-QUALITY DATA (PAIRED SAMPLE)

DATE	TIME	TEMPERATURE (DEG C)	INSTANTANEOUS STREAMFLOW (CFS)	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)	NITRATE/ NITRITE TOTAL (MG/L as N)
21-Feb-96	1445	8.3		400	9.0	7.3	14	0.49
30-May-96	0940	12.5		305	8.1	7.7	23	0.19
7-Aug-96	1200	14.1		380	6.1	7.2	46	0.03
7-Aug-96	9999							0.02
13-Nov-96	0845	8.7		485	8	7	31	0.04

TABLE 3A
PLUM CREEK ABOVE CHATFIELD RESERVOIR (SITE 2C)
393214105024201
WATER-QUALITY DATA (PAIRED SAMPLE)

DATE	TIME	NITROGEN AMMONIA TOTAL (MG/L as N)	NITROGEN NITRITE TOTAL (MG/L as N)	NITROGEN NITRATE TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS, ORTHO, TOTAL (MG/L as P)	SUSPENDED SEDIMENT (G/M^3)	LABORATORY SAMPLE NUMBER
21-Feb-96	1445	0.09	0.02	0.47	0.037	0.029	10	L8760-03
30-May-96	0940	0.06	-0.01	0.19	0.077	0.027	28	L9775-10
7-Aug-96	1200	0.06	0.01	0.02	0.103	0.034	38	L10586-09
7-Aug-96	9999	0.07	0.01	-0.02	0.107	0.035	38	L10586-10
13-Nov-96	0845	0.12	0.02	0.02	0.048	0.036	4	L11747-04

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.
BLANK RANGES INDICATE NO DATA WERE AVAILABLE.
TIME = 9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.

TABLE 4
CHATFIELD RESERVOIR NEAR DAM (SITE 7), RM
393319105033501
WATER-QUALITY DATA

DATE	TIME	TOTAL DEPTH (FEET)	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	TRANSPARENCY SECCHI DISK (FEET)	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)
21-Mar-96	1040	37.5		5.7	7	360	11.3	8.4	7
21-Mar-96	1050		35.5	4.7		375	10.5	8.3	2
24-Apr-96	1010			11.0	6	370	9.7	8.4	2
24-Apr-96	1015	34	32	9.6		375	9.1	8.3	4
30-May-96	1030			14.9	8	320	8.5	8.1	1
30-May-96	1035	28	26	13.8		310	7.0	7.9	2
19-Jun-96	0955			19.8	14	300	10.4	7.9	-10
19-Jun-96	9999								
19-Jun-96	1000	30	28	15.6		285	5.0	7.0	-10
16-Jul-96	1015			22.4	3	295	7.4	7.3	5
16-Jul-96	1020	26	24	20.6		295	4.0	6.9	70
24-Jul-96	1125			22.2	5	280	7.7	7.9	1
24-Jul-96	1035	27	25	20.5		280	2.8	7.2	6
7-Aug-96	1055			21.4	6	290	8.2	7.8	3
7-Aug-96	1100	33	35	20.5		285	4.0	7.3	8
4-Sep-96	1200			20.5	4	290	9.1	7.9	-10
4-Sep-96	9999								
4-Sep-96	1205	20	22	20.1		290	8.5	7.7	-10
11-Sep-96	1135			19.2	4	315	9.3	8.2	10
11-Sep-96	1140	32	34	17.9		305	4.8	7.5	6
18-Sep-96	1150			18.0	4	300	7.9	7.7	10
18-Sep-96	1200	24	22	17.6		300	7.2	7.5	10
9-Oct-96	1045			14.8	6	330	10.9	8.2	10
9-Oct-96	1050	25	23	14.4		330	8.9	7.9	10
13-Nov-96	0930			6.7	4	360	12.3	8.1	0
13-Nov-96	9999								
13-Nov-96	0940	31	29	6.3		360	12.4	8.2	10

TABLE 4
CHATFIELD RESERVOIR NEAR DAM (SITE 7), RM
393319105033501
WATER-QUALITY DATA

DATE	TIME	SOLIDS RESIDUE AT 105 SUSPENDED (MG/L)	NITROGEN TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	CHLOROPHYLL A CORR. (UG/L)	PHYTOPLANKTON (SPECIES NUMBER)	LABORATORY SAMPLE NUMBER
21-Mar-96	1040	-5	0.2	0.009	-0.005	5.6		L9062-01
21-Mar-96	1050	-5	0.2	0.008	-0.005			L9062-02
24-Apr-96	1010	-5	-0.1	-0.005	-0.005	2.8		L9410-04
24-Apr-96	1015	-5	0.1	-0.005	-0.005			L9410-05
30-May-96	1030	-5	0.2	0.020	-0.005	2.2		L9775-01
30-May-96	1035	-5	0.3	0.027	-0.005			L9775-02
19-Jun-96	0955	-5	0.1	0.011	-0.005	1.7		L10021-03
19-Jun-96	9999					2.0		
19-Jun-96	1000	-5	0.2	0.03	0.01			L10021-04
16-Jul-96	1015	12	0.2	0.022	0.008	2.4		L10330-01
16-Jul-96	1020	26	0.4	0.097	0.076			L10330-02
24-Jul-96	1125	-5	0.1	0.007	-0.005	2.8	7	L10434-03
24-Jul-96	1035	18	0.2	0.031	0.018			L10434-04
7-Aug-96	1055	-5	0.6	0.078	-0.005	4.4	16	L10586-03
7-Aug-96	1100	8	0.3	0.069	-0.005			L10586-04
4-Sep-96	1200	10	0.3	0.067	-0.005	5.4	30	L10914-01
4-Sep-96	9999	6	0.4	0.012	-0.005			L10914-07
4-Sep-96	1205	6	0.2	0.02	-0.005			L10914-02
11-Sep-96	1135	-5	0.3	0.039	0.008	7.2	19	L11000-03
11-Sep-96	1140	8	0.3	0.039	0.012			L11000-04
18-Sep-96	1150	8	0.3	0.034	-0.005	1.7	21	L11079-01
18-Sep-96	1200	8	0.3	0.037	0.010			L11079-02
9-Oct-96	1045	8	0.1	0.018	-0.005	3.7		L11393-01
9-Oct-96	1050	8	0.04	0.021	-0.005			L11393-02
13-Nov-96	0930	8	-0.1	-0.005	-0.005	5.6		L11747-05
13-Nov-96	9999	-5	0.1	-0.005	-0.005			L11747-11
13-Nov-96	0940	6	-0.1	0.008	-0.005			L11747-06

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.
BLANK RANGES INDICATE NO DATA WERE AVAILABLE.
TIME=9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.

TABLE 5
CHATFIELD RESERVOIR NEAR PLUM CREEK INFLOW (SITE 8), RP
393248105030201
WATER-QUALITY DATA

DATE	TIME	TOTAL DEPTH (FEET)	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	TRANSPARENCY SECCHI DISK (FEET)	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)
21-Mar-96	1145			5.2	6	370	10.2	8.3	3
21-Mar-96	9999								
21-Mar-96	1155	8	6	5.1		370	10.2	8.3	5
24-Apr-96	1055			10.7	6	380	9.3	8.3	8
24-Apr-96	1100	12	10	10.2		380	9.8	8.3	10
30-May-96	1150			15.5	5	320	8.7	8.1	2
30-May-96	1155	13	11	14.6		320	8.1	8.0	5
19-Jun-96	0925			19.7	9	295	10.3	8.1	-10
19-Jun-96	0930	26	24	17.2		285	6.4	7.3	-10
16-Jul-96	1120			22.8	3	295	6.5	7.8	6
16-Jul-96	1125	13	11	20.4		295	6.8	7.6	70
24-Jul-96	1140			22.4	4	285	8.1	7.9	0
24-Jul-96	9999								
24-Jul-96	1145	11	13	21.8		285	7.1	7.7	20
7-Aug-96	1130			21.8	4	290	8.5	7.8	0
7-Aug-96	1130	10	12	21.2		290	8.6	7.8	2
4-Sep-96	1155			20.1	3	290	8.7	7.9	-10
4-Sep-96	1200	17	19	19.6		290	8.3	7.7	-10
11-Sep-96	1110			19.0	2	315	9.1	8.2	6
11-Sep-96	9999								
11-Sep-96	1115	13	15	18.8		315	8.5	8.0	4
18-Sep-96	1100			17.6	4	305	7.8	7.8	10
18-Sep-96	1110	19	17	17.6		300	7.8	7.7	10
9-Oct-96	1015			14.6	4	330	10.7	8.3	10
9-Oct-96	1020	21	19	14.3		330	10.4	8.0	10
13-Nov-96	0900			6.6	4.0	360	11.7	8.1	2
13-Nov-96	0910	14	12	6.4		360	11.7	7.9	1

TABLE 5
CHATFIELD RESERVOIR NEAR PLUM CREEK INFLOW (SITE 8), RP
393248105030201
WATER-QUALITY DATA

DATE	TIME	SOLIDS RESIDUE AT 105 SUSPENDED (MG/L)	NITROGEN TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	CHLOROPHYLL A CORR. (UG/L)	PHYTOPLANKTON (SPECIES NUMBER)	LABORATORY SAMPLE NUMBER
21-Mar-96	1145	8	0.3	0.010	-0.005	6.0		L9062-05
21-Mar-96	9999					4.6		
21-Mar-96	1155	6	0.2	0.010	-0.005			L9062-06
24-Apr-96	1055	-5	0.4	0.005	-0.005	2.2		L9410-08
24-Apr-96	1100	-5	0.4	0.015	0.017			L9410-09
30-May-96	1150	-5	0.2	0.015	-0.005	1.5		L9775-05
30-May-96	1155	-5	-0.1	0.03	-0.005			L9775-06
19-Jun-96	0925	-5	0.2	0.019	-0.005	1.5		L10021-01
19-Jun-96	0930	-5	0.3	0.032	-0.005			L10021-02
16-Jul-96	1120	14	0.2	0.023	0.013	1.8		L10330-05
16-Jul-96	1125	12	0.3	0.019	0.010			L10330-06
24-Jul-96	1140	-5	0.2	0.012	-0.005	4.4	8	L10434-01
24-Jul-96	9999	16	0.2	0.042	-0.005			L10434-07
24-Jul-96	1145	10	0.2	0.021	0.007			L10434-02
7-Aug-96	1130	6	0.3	0.064	-0.005	4.4	16	L10586-05
7-Aug-96	1130	-5	0.4	0.044	-0.005			L10586-06
4-Sep-96	1155	10	0.3	0.023	-0.005	5.5	21	L10914-05
4-Sep-96	1200	16	0.3	0.023	-0.005			L10914-06
11-Sep-96	1110	8	0.4	0.045	0.014	6.4	22	L11000-01
11-Sep-96	9999					6.8		
11-Sep-96	1115	10	0.3	0.048	0.013			L11000-02
18-Sep-96	1100	-5	0.4	0.023	0.006	2.7	22	L11079-05
18-Sep-96	1110	12	0.2	0.024	0.008			L11079-06
9-Oct-96	1015	10	0.2	0.014	-0.005	6.1		L11393-05
9-Oct-96	1020	12	0.4	0.018	-0.005			L11393-06
13-Nov-96	0900	-5	-0.1	0.014	-0.005	7.6		L11747-09
13-Nov-96	0910	6	-0.1	-0.005	-0.005			L11747-10

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.
BLANK RANGES INDICATE NO DATA WERE AVAILABLE.
TIME = 9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE SAMPLE IMMEDIATELY ABOVE.

TABLE 6
CHATFIELD RESERVOIR NEAR SOUTH PLATTE RIVER INFLOW (SITE 9), RS
393212015042701
WATER-QUALITY DATA

DATE	TIME	TOTAL DEPTH (FEET)	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	TRANSPARENCY SECCHI DISK (FEET)	SPECIFIC CONDUCTANCE FIELD (US/CM)	OXYGEN, DISSOLVED (MG/L)	pH, FIELD (STANDARD UNITS)	TURBIDITY (NTUS)
21-Mar-96	1115			5.4	6	370	10.6	8.3	3
21-Mar-96	1125	11.5	9.5	5.3		370	9.7	8.3	2
24-Apr-96	1035			10.6	5	380	9.5	8.3	6
24-Apr-96	1040	16	14	9.6		380	6.2	8.3	7
30-May-96	1110			15.0	5	310	8.9	8.1	2
30-May-96	9999								
30-May-96	1115	16	14	13.2		275	6.8	8.2	0
19-Jun-96	1040			20.9	10	300	9.9	7.9	-10
19-Jun-96	1045	15	13	16.8		260	8.7	7.6	-10
16-Jul-96	1055			21.8	1	295	6.1	7.4	37
16-Jul-96	9999								
16-Jul-96	1100	10	8	21.4		295	6	7.4	40
24-Jul-96	1105			22.6	4	285	8	7.9	5
24-Jul-96	1110	10	12	22.1		285	7.2	7.8	8
7-Aug-96	1030			21.3	2	295	8.8	8.1	8
7-Aug-96	1035	7	9	21.0		295	9.3	8.2	6
4-Sep-96	1125			20.3	3	290	8.3	7.9	-10
4-Sep-96	1130	7	9	20.2		290	8.6	7.8	-10
11-Sep-96	1210			19.5	3	310	9.4	8.2	6
11-Sep-96	1215	8	10	19.2		310	9.3	8.1	7
18-Sep-96	1235			17.4	3	250	8.9	8.0	10
18-Sep-96	9999								
18-Sep-96	1245	10	8	16.8		250	8.1	7.9	6
9-Oct-96	1115			15.2	4	330	11.5	8.4	10
9-Oct-96	1120	14.0	12.0	14.6		315	10.1	8.3	10
13-Nov-96	1000			7.2	4	360	12.6	8.3	4
13-Nov-96	1010	13	11	6.9		355	12.8	8.2	8

TABLE 6
CHATFIELD RESERVOIR NEAR SOUTH PLATTE RIVER INFLOW (SITE 9), RS
393212015042701
WATER-QUALITY DATA

DATE	TIME	SOLIDS RESIDUE AT 105 SUSPENDED (MG/L)	NITROGEN TOTAL (MG/L as N)	PHOSPHORUS, TOTAL (MG/L as P)	PHOSPHORUS ORTHO, TOTAL (MG/L as P)	CHLOROPHYLL A CORR. (UG/L)	PHYTOPLANKTON (SPECIES NUMBER)	LABORATORY SAMPLE NUMBER
21-Mar-96	1115	6	0.2	0.008	-0.005	4.6		L9062-03
21-Mar-96	1125	-5	0.3	0.009	-0.005			L9062-04
24-Apr-96	1035	-5	0.4	0.007	0.006	3.6		L9410-06
24-Apr-96	1040	-5	0.1	0.009	0.012			L9410-07
30-May-96	1110	-5	-0.1	0.016	-0.005	1.6		L9775-03
30-May-96	9999	-5	-0.1	0.05	-0.005			L9775-07
30-May-96	1115	-5	0.2	0.021	-0.005			L9775-04
19-Jun-96	1040	-5	0.4	0.013	-0.005	2.4		L10021-05
19-Jun-96	1045	-5	0.3	0.022	-0.005			L10021-06
16-Jul-96	1055	24	0.4	0.076	0.047	2.4		L10330-03
16-Jul-96	9999	20	0.6	0.132	0.05			L10330-07
16-Jul-96	1100	24	0.3	0.09	0.052			L10330-04
24-Jul-96	1105	-5	-0.1	0.02	-0.005	4.2	7	L10434-05
24-Jul-96	1110	10	0.2	0.010	-0.005			L10434-06
7-Aug-96	1030	-5	0.3	0.044	-0.005	4.5	9	L10586-01
7-Aug-96	1035	6	0.3	0.035	-0.005			L10586-02
4-Sep-96	1125	8	0.4	0.024	-0.005	6.4	26	L10914-03
4-Sep-96	1130	12	0.4	0.025	-0.005			L10914-04
11-Sep-96	1210	8	0.3	0.032	0.007	6.4	29	L11000-05
11-Sep-96	1215	6	0.1	0.036	0.007			L11000-06
18-Sep-96	1235	12	0.5	0.039	0.007	3.6	24	L11079-03
18-Sep-96	9999					4.0		
18-Sep-96	1245	12	0.4	0.036	0.010			L11079-04
9-Oct-96	1115	8	0.2	0.016	-0.005	2.4		L11393-03
9-Oct-96	1120	-5	0.3	0.014	-0.005			L11393-.4
13-Nov-96	1000	-5	-0.1	-0.005	-0.005	2.2		L11747-07
13-Nov-96	1010	-5	-0.1	-0.005	-0.005			L11747-08

MINUS SIGN MEANS "LESS THAN" INDICATED VALUE.

BLANK RANGES INDICATE NO DATA WERE AVAILABLE.

TIME=9999 MEANS THE SAMPLE IS A DUPLICATE OR A SPLIT OF THE VALUE IMMEDIATELY ABOVE.

APPENDIX A

PHYTOPLANKTON SPECIES AND DENSITY - 1996 CY
(with comparative chlorophyll-a results)

TABLE A-1
GROWING SEASON (JULY-THROUGH-SEPTEMBER)
TOTAL-PHOSPHORUS AND CHLOROPHYLL-a CONCENTRATIONS
CHATFIELD RESERVOIR

Year	Total-Phosphorus Concentration (mg/L)[1)2)]	Chlorophyll-a Concentration (ug/L)[1)3)]
1982	0.023	15
1983	0.050	16
1984	0.035	6.7
1985	0.028	8.9
1986	[4)]	[4)]
1987	0.077	5.7
1988	0.022	9.6
1989	0.009	3.9
1990	0.019	10.3
1991	0.024	2.4
1992	0.015	4.3
1993	0.015	4.2
1994	0.012	3.0
1995	0.009	3.8
1996	0.034	3.9
Mean	0.027	7.0
Std. Dev.	0.018	4.2
Maximum	0.077	16.0
Minimum	0.009	2.4
N	14	14

1) Average Reservoir values.
2) Growing-season standard = 0.027 mg/L.
3) Growing-season goal = 17 ug/L.
4) No data.

TABLE A-2
PHYTOPLANKTON, DATA 1996 SURVEY RESULTS
CHATFIELD RESERVOIR

Date (mm/dd/yy)	24-Jul-96			07-Aug-96			04-Sep-96			11-Sep-96			18-Sep-96			Species
Site Identification	RM	RP	RS	RM	RP	RS	RM	RP	RS	RM	RP	RS	RM	RP	RS	Totals
BACILLARIOPHYTA (cells/mL)																
Asterionella formosa							8	5	4		10	31	50	55	240	403
Aulacoseira granulata																
var. angustissima							23	29	10	25	3	14	3	3	290	398
var. granulata					7		145	88	3000	370	13	59	123	128	360	4291
Cyclotella stelligera							2125	1375		500	625	125	188	63	500	5500
Fragilaria crotonensis								7				2				8
Melosira varians								1	6							7
Nitzschia acicularis							4	1	1			1				7
Stephanodiscus niagarae					4		25	27	25	40	10	9	3	15	5	161
Surirella linearis							1									1
CHLOROPHYTA (cells/mL)																
Actinastrum hantzschii												1				1
Ankyra judayi	16	16	8	125	31	94										289
Carteria sp.							37	16	8	500	335	204	3	30	395	1527
Chlamydomonas globosa								8	31							39
Chlamydomonas sp. 1						63	250	250	63			250	125	500		1500
Chlorella sp.	375	125	250	500	125	1250	3000	1063	375	500	625	500	188	375	1000	10250
Chlorococcum sp.							125					32				157
Choricystis minor	10500	10688	25500	32313	28188	56938	18625	9000	27750	9375	21625	13250	7875	16500	18125	306250
Closterium sp.									1							1
Elakatothrix viridis											3			5		8
Eudorina elegans													15	10	30	55
Eutetramorus sp.					3		6		16							24
Oocystis lacustris							2									2
Pandorina morum											3	5				8
Pediastrum duplex								11			8	13		50		81
Scenedesmus intermedius							4					3	8			15
Scenedesmus linearis							7	6	7	90		3		25		137
Schroederia setigera							1									1
Staurastrum paradoxum							1									1
CHRYSOPHYTA (cells/mL)																
Chromulina sp.									31	63			125			219
Mallomonas akrokomos					3		2									4
Mallomonas sp.															15	15
Ochromonas sp.				63			63		63							188
CRYPTOPHYTA (cells/mL)																
Chroomonas acuta				188	125	281	1250	500	625	3250	7500	4125	938	3500	5000	27281
Cryptomonas marsonii				1	1		2		1	10	20	12	8	100	155	308
Cryptomonas ovata												1				1
Cryptomonas reflexa				2	2		1	5	1	15	15	7		15	35	96
Cryptomonas rostrata				1			7		1	15	25	29	68	230	555	930
Cryptomonas rostratiformis				1			2			5	10	11		5	30	64
CYANOPHYTA (cells/mL)																
Anabaena affinis													55			55
Anabaena circinalis											3					3
Anabaena flos-aquae				15	6	156	50	7	33	190	23	31	30	225	125	890
Anabaena spiroides				15		469									70	554
Aphanizomenon flos-aquae							1010	417	372	2740	2250	328	34000	11245	6765	59127
Aphanocapsa delicatissima		63	3125				1625		4250	1375	2875		313			13625
Aphanocapsa elachista var. conferta	813	250						1625								2688
Aphanothece sp.	250	875	1625	625	625		19000		3875	31000	42625	32375		5875	4875	143625
Dactylococcopsis acicularis													3		3	5
Dactylococcopsis fascicularis															15	15
Gloeocapsa punctata	375	250		1250	563	1875										4313
Gomphosphaeria sp.			625													625
Mermismopedia tenuissima				1625	1000											2625
Microcystis sp.	2527	7844	10719	3531	2750	13000						125				40496
EUGLENOPHYTA (cells/mL)																
Euglena viridis									1			1			15	16
Trachelomonas gibberosa															3	3
PYRROPHYTA (cells/mL)																
Ceratium hirundinella				1	2		4	4	6	15	8	3	5	3	3	51
TOTAL DENSITY (cells/mL)	14855	20110	41852	40254	33431	74125	47398	14441	40552	50078	78610	51546	44121	38955	38608	
Number of Species	7	8	7	16	16	9	30	21	26	19	22	29	21	22	24	55

University of Colorado Center for Limnology

Client: ASI

Site: Chatfield Reservoir

Collection Dates: 3/21/96, 4/24/96, 5/30/96, 6/19/96, 7/16/96

Date	Sample Code	Volume Filtered, l	Chlorophyll *a*, µg/l
3/21	RS	1.0	4.6
3/21	RM	1.0	.6
3/21	RP	1.0	6.0
3/21	XXX	1.0	4.6
4/24	RS	1.0	3.6
4/24	RM	1.0	2.8
4/24	RP	1.0	2.2
5/30	RS	1.0	1.6
5/30	RM	1.0	2.2
5/30	RP	1.0	1.5
6/19	RS	1.0	1.2
6/19	RM	1.0	1.7
6/19	RP	1.0	1.5
6/19	XXX	1.0	2.0
7/16	RS	1.0	2.4
7/16	RM	1.0	2.4
7/16	RP	1.0	1.8

University of Colorado Center for Limnology

Client: ASI

Site: Chatfield Reservoir

Collection Dates: 7/24/96, 8/7/96, 9/4/96, 9/11/96, 9/18/96

Date	Sample Code	Volume Filtered, l	Chlorophyll *a*, µg/l
7/24	RM	1.0	2.8
7/24	RP	1.0	4.4
7/24	RS	1.0	4.2
8/7	RM	1.0	4.4
8/7	RP	1.0	4.4
8/7	RS	1.0	4.5
9/4	RM	1.0	5.4
9/4	RP	1.0	5.5
9/4	RS	1.0	6.4
9/11	RM	1.0	7.2
9/11	RP	1.0	6.4
9/11	RS	1.0	6.4
9/11	XXX	1.0	6.8
9/18	RM	1.0	1.7
9/18	RP	1.0	2.7
9/18	RS	1.0	3.6
9/18	XXX	1.0	4.0

University of Colorado Center for Limnology

Client: ASI

Site: Chatfield Reservoir

Collection Dates: 10/9/96, 11/13/96

Date	Sample Code	Volume Filtered, ℓ	Chlorophyll *a*, µg/ℓ
10/9	RM	*	3.7
10/9	RP	*	6.1
10/9	RS	*	2.4
11/13	RM	*	5.6
11/13	RP	*	7.6
11/13	RS	*	2.2

*volume not provided; assumed 1.0 ℓ.

APPENDIX B

WATER-COLUMN INDICATOR-VARIABLE PROFILES
1996 CY MONITORING PROGRAM

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

March 21, 1996, 1040 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.4	355	11.6	6.3
2	8.4	360	11.6	6.0
3	8.4	360	11.6	5.9
4	8.4	360	10.8	5.7
5	8.4	365	11.1	5.7
6	8.3	365	10.9	5.5
7	8.3	360	10.3	5.5
8	8.3	365	10.7	5.4
9	8.3	365	10.1	5.3
10	8.3	365	10.1	5.3
11	8.3	365	10.5	5.2
12	8.3	365	10.7	5.1
13	8.3	370	10.2	5.0
14	8.3	370	10.2	5.0
15	8.3	370	10.4	4.9
16	8.3	370	9.7	4.8
17	8.3	370	10.0	4.8
18	8.3	370	10.0	4.8
19	8.3	370	10.0	4.8
20	8.3	370	10.1	4.8
21	8.3	370	10.4	4.8
22	8.3	370	10.8	4.7
23	8.3	370	10.2	4.7
24	8.3	370	10.7	4.7
25	8.3	375	10.8	4.7
26	8.3	370	10.5	4.7
27	8.3	370	11.0	4.7
28	8.3	370	10.4	4.7
29	8.3	370	10.8	4.7
30	8.3	375	10.4	4.7
31	8.3	370	10.3	4.7
32	8.3	375	10.5	4.7
33	8.3	370	10.6	4.7
34	8.3	375	10.6	4.7

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

April 24, 1996, 1010 hours				
DEPTH (ft)	pH	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.4	360	9.8	11.2
2	8.4	370	9.9	11.1
3	8.4	370	9.8	11.0
4	8.4	370	9.7	11.0
5	8.4	370	9.7	11.0
6	8.4	370	9.7	10.9
7	8.4	370	9.5	10.8
8	8.4	375	9.8	10.7
9	8.4	375	9.8	10.7
10	8.4	375	9.5	10.6
11	8.4	375	9.6	10.6
12	8.3	375	9.7	10.6
13	8.3	375	9.8	10.6
14	8.3	375	9.7	10.6
15	8.3	375	9.7	10.5
16	8.3	375	9.7	10.5
17	8.4	375	9.4	10.5
18	8.4	375	9.7	10.5
19	8.4	375	9.7	10.5
20	8.4	375	9.7	10.4
21	8.3	375	9.7	10.4
22	8.3	375	9.7	10.3
23	8.3	375	9.8	10.3
24	8.3	380	9.8	10.3
25	8.3	380	9.9	10.3
26	8.3	380	9.8	10.3
27	8.3	380	9.7	10.3
28	8.3	380	9.4	10.3
29	8.3	380	9.4	10.3
30	8.3	380	9.6	10.3
31	8.3	380	9.5	10.1
32	8.3	380	9.1	9.6
33	8.2	380	9.1	9.5
34	8.2	380	8.9	9.4

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

May 30, 1996, 1020 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.1	320	8.4	15.0
2	8.1	320	8.5	15.0
3	8.1	320	8.8	14.9
4	8.1	320	8.7	14.8
5	8.1	320	8.7	14.8
6	8.1	320	8.4	14.8
7	8.1	320	8.3	14.8
8	8.1	320	8.8	14.8
9	8.1	320	8.6	14.8
10	8.1	320	8.8	14.7
11	8.1	320	8.3	14.7
12	8.0	320	8.3	14.7
13	8.0	320	8.4	14.7
14	8.0	320	8.4	14.7
15	8.0	320	8.5	14.7
16	8.0	320	8.8	14.6
17	8.0	320	9.0	14.6
18	8.0	315	8.7	14.6
19	8.0	315	8.3	14.6
20	8.0	320	8.1	14.5
21	8.0	315	8.3	14.5
22	8.0	310	7.5	14.1
23	7.9	310	7.5	13.9
24	7.9	310	7.9	13.9
25	7.9	310	7.7	13.9
26	7.9	310	7.0	13.8
27	7.9	310	6.5	13.7
28	7.8	310	5.2	13.8

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

June 19, 1996, 0955 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.8	305	10.0	20.3
2	7.8	305	10.1	20.3
3	7.8	305	10.2	20.2
4	7.8	300	10.2	19.7
5	7.9	300	10.6	19.5
6	7.9	300	10.8	19.4
7	7.9	300	10.6	19.2
8	7.9	300	10.4	19.1
9	7.9	300	10.4	19.1
10	7.9	300	10.5	19.1
11	7.9	300	10.6	19.0
12	7.8	295	10.4	19.0
13	7.8	300	10.2	18.9
14	7.7	300	10.2	18.9
15	7.7	300	9.1	18.5
16	7.6	295	8.4	17.8
17	7.2	290	6.4	17.3
18	7.2	280	6.4	17.1
19	7.1	275	6.3	17.0
20	7.1	275	6.5	16.9
21	7.1	275	6.5	16.9
22	7.1	275	6.5	16.8
23	7.1	275	6.4	16.7
24	7.1	275	6.5	16.7
25	7.1	275	6.5	16.7
26	7.1	270	6.4	16.0
27	7.1	285	5.1	15.6
28	7.0	285	5.0	15.6
29	7.0	285	3.5	15.5
30	7.0	285	1.5	15.6

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

July 16, 1996, 1020 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.3	295	7.3	22.6
2	7.3	295	7.3	22.5
3	7.3	295	7.3	22.4
4	7.4	295	8.0	22.4
5	7.4	295	8.0	22.4
6	7.3	295	7.4	22.4
7	7.3	295	7.1	22.3
8	7.3	295	7.4	22.3
9	7.3	295	7.2	22.3
10	7.2	295	7.2	22.3
11	7.2	295	7.2	22.3
12	7.3	295	7.3	22.2
13	7.2	295	7.2	22.2
14	7.3	295	6.9	22.2
15	7.3	295	6.8	22.2
16	7.3	295	7.0	22.2
17	7.2	295	6.5	22.0
18	7.0	295	5.0	21.3
19	7.0	295	4.5	21.1
20	6.9	295	4.3	20.8
21	6.9	295	4.4	20.7
22	6.9	295	4.3	20.7
23	6.9	295	4.3	20.7
24	6.9	295	4.0	20.6
25	6.9	295	3.6	20.5
26	6.9	295	3.4	20.5

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

July 24, 1996, 1030 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.7	280	7.5	21.1
2	7.9	280	7.8	22.2
3	7.9	280	7.4	22.2
4	7.9	280	7.2	22.2
5	7.9	280	7.4	22.2
6	7.8	280	7.7	22.2
7	7.8	280	7.8	22.2
8	7.8	280	7.7	22.2
9	7.8	285	7.8	22.2
10	7.8	285	7.8	22.1
11	7.8	285	7.6	22.1
12	7.7	285	6.8	22.0
13	7.6	285	4.9	21.7
14	7.5	280	3.8	21.5
15	7.5	280	3.0	21.3
16	7.4	280	3.0	21.3
17	7.4	280	3.2	21.2
18	7.3	280	3.3	21.0
19	7.3	280	3.3	20.9
20	7.3	280	3.4	20.8
21	7.3	280	3.5	20.8
22	7.3	280	3.1	20.6
23	7.2	280	3.3	20.6
24	7.2	280	3.0	20.6
25	7.2	280	2.8	20.5
26	7.1	280	2.6	20.5
27	7.1	280	2.0	20.5

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

August 7, 1996, 1130 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.0	290	7.5	21.6
2	7.9	290	8.2	21.6
3	7.8	290	8.1	21.4
4	7.8	290	8.2	21.3
5	7.8	290	8.3	21.3
6	7.8	290	8.4	21.3
7	7.8	290	8.3	21.2
8	7.7	290	8.2	21.2
9	7.7	290	8.3	21.2
10	7.7	290	8.4	21.1
11	7.7	290	8.3	21.1
12	7.6	290	8.5	21.0
13	7.6	290	8.1	21.1
14	7.6	290	8.1	21.1
15	7.6	290	8.4	21.1
16	7.6	290	8.2	21.1
17	7.6	290	7.9	21.0
18	7.6	290	8.2	21.0
19	7.6	290	8.3	21.0
20	7.6	290	8.3	21.0
21	7.6	290	8.3	21.0
22	7.6	290	8.2	21.0
23	7.6	290	8.1	21.0
24	7.5	290	7.8	20.9
25	7.5	290	7.6	20.9
26	7.5	290	7.6	20.9
27	7.5	290	7.9	20.9
28	7.5	290	7.5	20.9
29	7.5	290	7.3	20.9
30	7.5	290	7.4	20.9
31	7.5	290	6.6	20.8
32	7.4	290	6.8	20.8
33	7.3	285	4.0	20.5
34	7.1	285	0.8	20.1

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

September 4, 1996, 1100 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	5.9	290	9.1	20.6
2	7.9	290	9.1	20.6
3	7.9	290	8.9	20.6
4	8.0	290	9.1	20.5
5	8.0	290	9.1	20.5
6	8.0	290	9.1	20.4
7	8.0	290	9.1	20.5
8	8.0	290	9.2	20.4
9	8.0	290	9.0	20.4
10	7.9	290	9.1	20.4
11	7.9	290	9.1	20.4
12	7.9	290	8.9	20.4
13	7.9	290	8.8	20.4
14	7.9	290	8.9	20.3
15	7.9	290	8.9	20.3
16	7.8	290	8.9	20.3
17	7.8	290	8.8	20.2
18	7.8	290	8.9	20.2
19	7.8	290	8.8	20.1
20	7.8	290	8.5	20.1
21	7.8	290	8.5	20.1
22	7.8	290	8.5	20.1

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

September 11, 1996, 1130 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.2	315	9.9	19.4
2	8.2	315	10.0	19.4
3	8.2	315	9.8	19.4
4	8.2	315	9.7	19.3
5	8.2	315	9.6	19.2
6	8.1	315	9.5	19.2
7	8.1	315	9.4	18.9
8	8.1	315	9.5	18.9
9	8.0	315	9.2	18.9
10	8.0	315	9.0	18.9
11	8.0	315	9.0	18.9
12	8.0	315	8.9	18.9
13	7.9	315	8.2	18.8
14	7.9	315	8.1	18.8
15	7.8	315	7.8	18.8
16	7.8	315	7.9	18.7
17	7.7	315	8.1	18.6
18	7.7	315	7.5	18.7
19	7.6	315	7.3	18.6
20	7.6	315	7.0	18.6
21	7.5	315	6.6	18.5
22	7.6	315	6.4	18.5
23	7.6	310	6.1	18.4
24	7.6	310	5.5	18.2
25	7.5	310	5.3	18.2
26	7.5	310	5.2	18.2
27	7.5	310	5.1	18.2
28	7.5	305	5.0	18.1
29	7.5	305	5.0	18.3
30	7.5	305	5.0	18.0
31	7.5	305	4.9	18.0
32	7.5	305	4.8	17.9
33	7.4	300	3.5	17.8
34	7.4	300	2.1	17.3

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

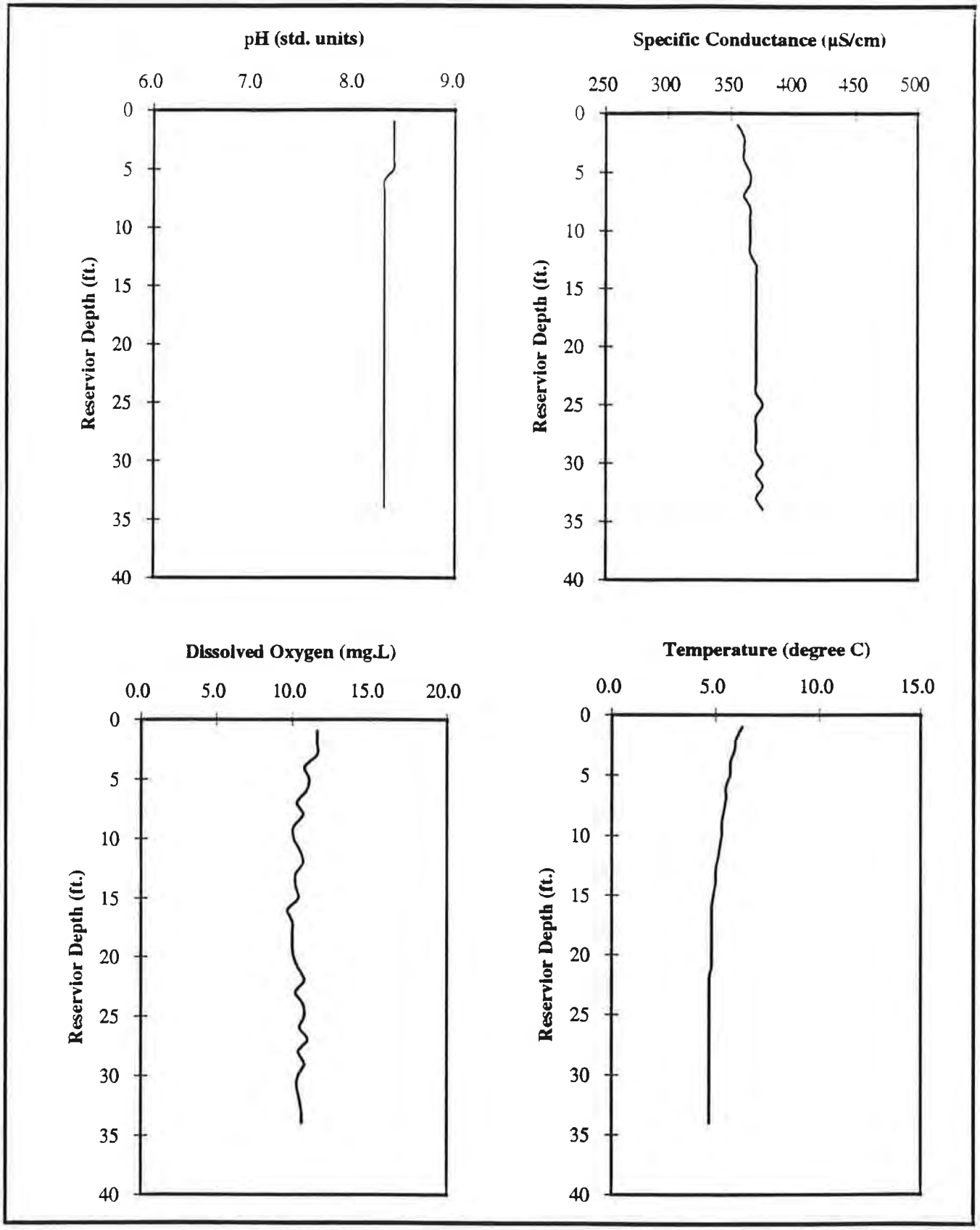
September 18, 1996, 1145 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.8	300	6.6	18.0
2	7.7	300	6.2	18.1
3	7.7	300	8.5	18.0
4	7.7	300	8.1	17.9
5	7.7	300	7.9	17.9
6	7.7	300	7.7	17.8
7	7.6	300	7.6	17.8
8	7.6	300	7.6	17.8
9	7.6	300	7.3	17.7
10	7.6	300	6.8	17.7
11	7.5	300	7.1	17.7
12	7.5	300	7.4	17.7
13	7.5	300	7.3	17.7
14	7.5	300	7.3	17.7
15	7.5	300	7.1	17.7
16	7.5	300	6.9	17.7
17	7.5	300	7.1	17.7
18	7.5	300	7.0	17.7
19	7.5	300	6.9	17.7
20	7.5	300	7.1	17.7
21	7.5	300	6.7	17.7
22	7.5	300	7.2	17.6
23	7.5	300	7.1	17.6
24	7.6	300	7.0	17.6

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

October 9, 1996, 1040 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.2	330	11.8	14.9
2	8.2	330	11.2	14.9
3	8.2	330	12.0	14.8
4	8.2	330	10.8	14.7
5	8.2	330	10.4	14.6
6	8.1	330	10.3	14.6
7	8.1	330	10.2	14.6
8	8.1	330	10.0	14.6
9	8.0	330	9.8	14.5
10	8.0	330	9.8	14.5
11	8.0	330	9.8	14.5
12	8.0	330	9.9	14.5
13	8.0	330	9.7	14.5
14	8.0	330	9.6	14.5
15	8.0	330	9.7	14.5
16	8.0	330	9.7	14.4
17	8.0	330	9.6	14.4
18	8.0	330	9.4	14.4
19	8.0	330	9.5	14.4
20	8.0	330	9.0	14.4
21	8.0	330	9.0	14.4
22	8.0	330	9.0	14.4
23	7.9	330	8.9	14.4
24	8.0	330	9.1	14.4
25	7.9	330	8.9	14.4

TABLE B-1
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 7 (RM)

November 13, 1996, 0930 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.1	360	12.2	6.7
2	8.1	360	12.2	6.7
3	8.1	360	12.2	6.7
4	8.1	360	12.3	6.7
5	8.1	360	12.2	6.7
6	8.1	360	12.3	6.7
7	8.1	360	12.2	6.7
8	8.1	360	12.3	6.7
9	8.1	360	11.9	6.7
10	8.1	360	12.3	6.6
11	8.1	360	12.3	6.6
12	8.1	360	12.3	6.6
13	8.1	360	12.2	6.6
14	8.0	360	12.4	6.6
15	8.0	360	12.3	6.5
16	8.0	360	12.4	6.5
17	8.0	360	12.3	6.5
18	8.0	360	12.4	6.6
19	8.0	360	12.4	6.7
20	8.0	360	12.5	6.4
21	8.0	360	12.5	6.4
22	8.0	360	12.5	6.4
23	8.0	360	12.5	6.4
24	8.0	360	12.7	6.4
25	8.0	360	12.5	6.4
26	8.0	360	12.7	6.3
27	8.0	360	12.6	6.3
28	8.0	360	12.7	6.3
29	8.2	360	12.4	6.3
30	8.3	360	12.8	6.2
31	8.3	370	10.3	6.2



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - MARCH 21, 1996

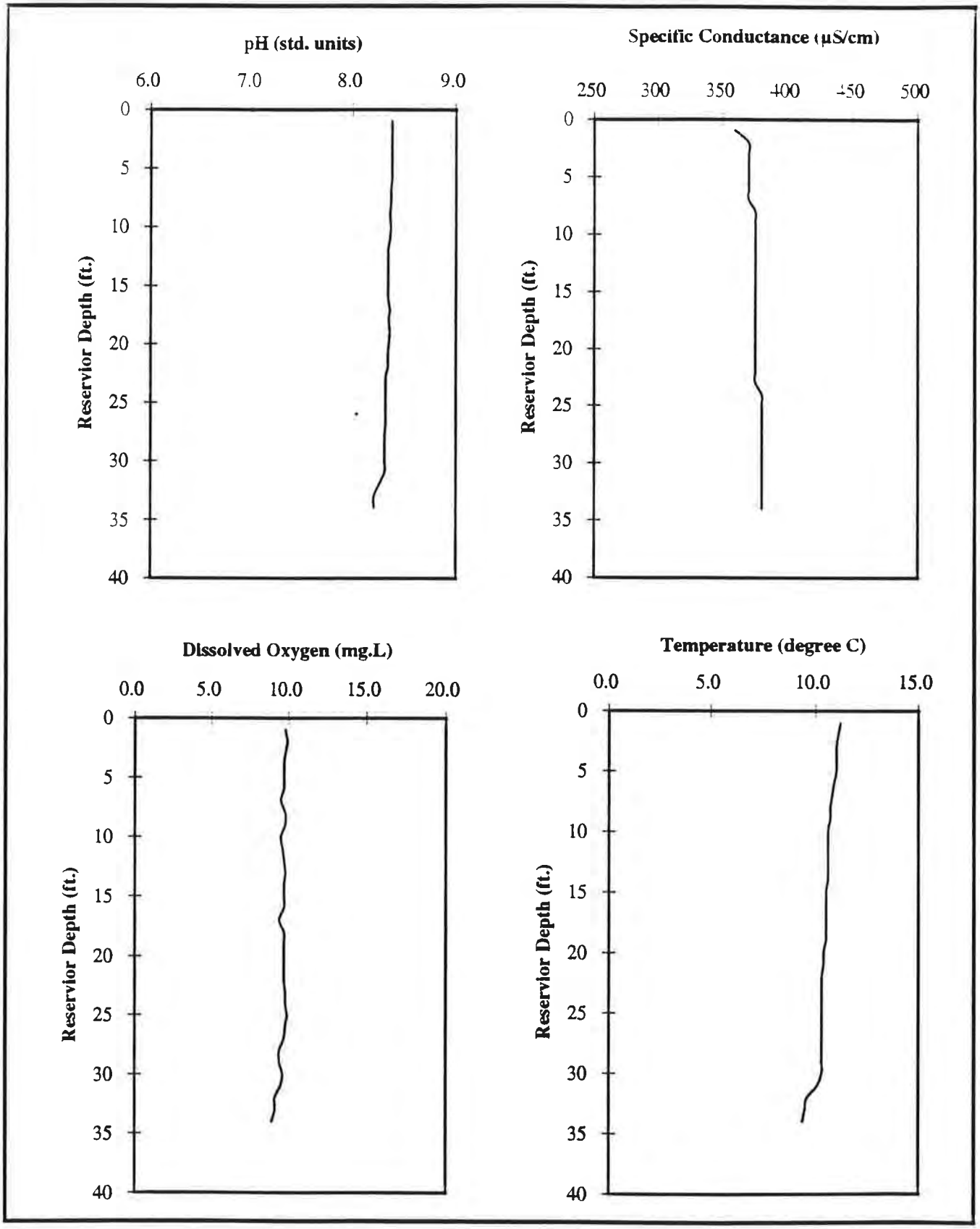
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1A

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - APRIL 24, 1996

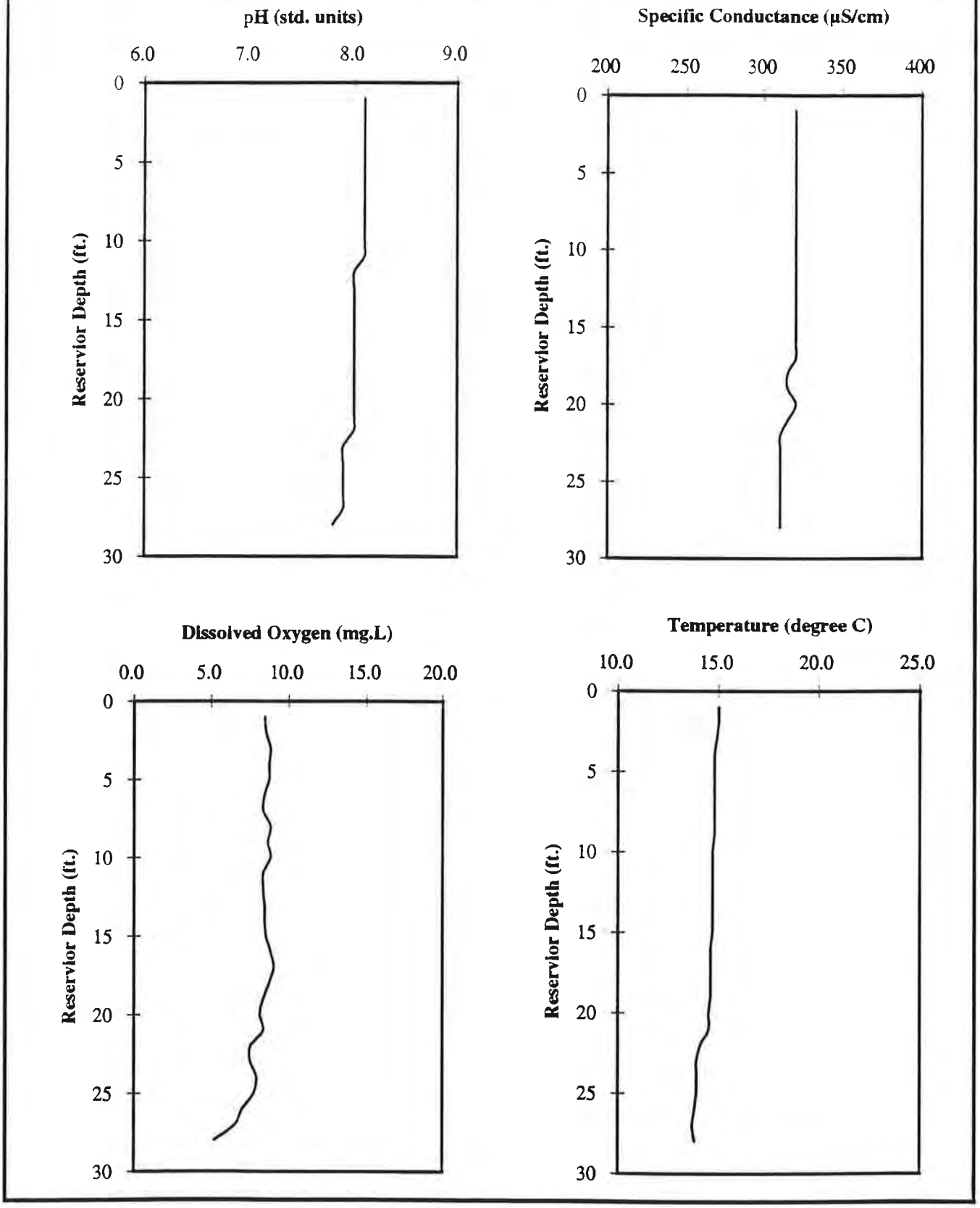
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1B

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - MAY 30, 1996

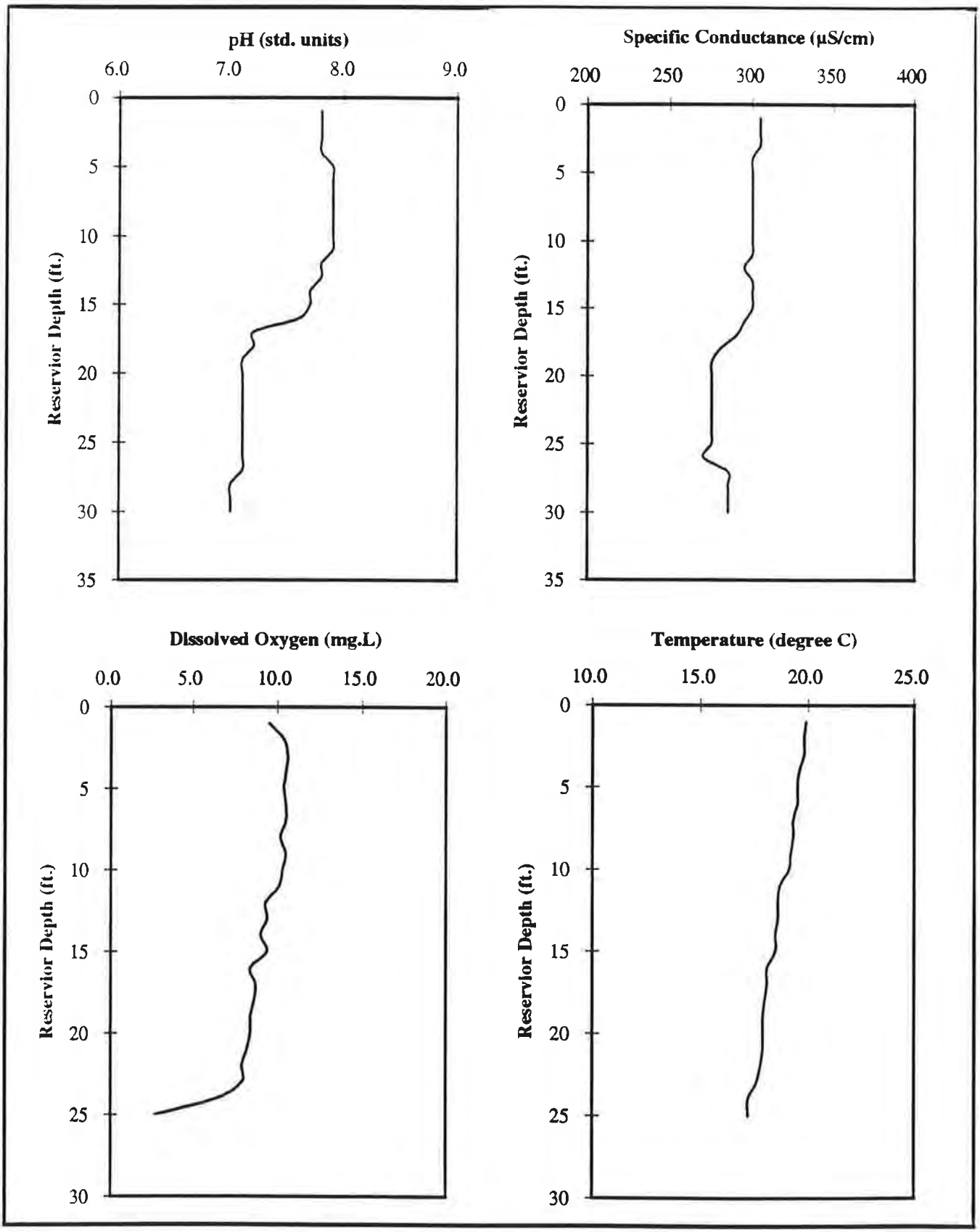
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1C

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - JUNE 19, 1996

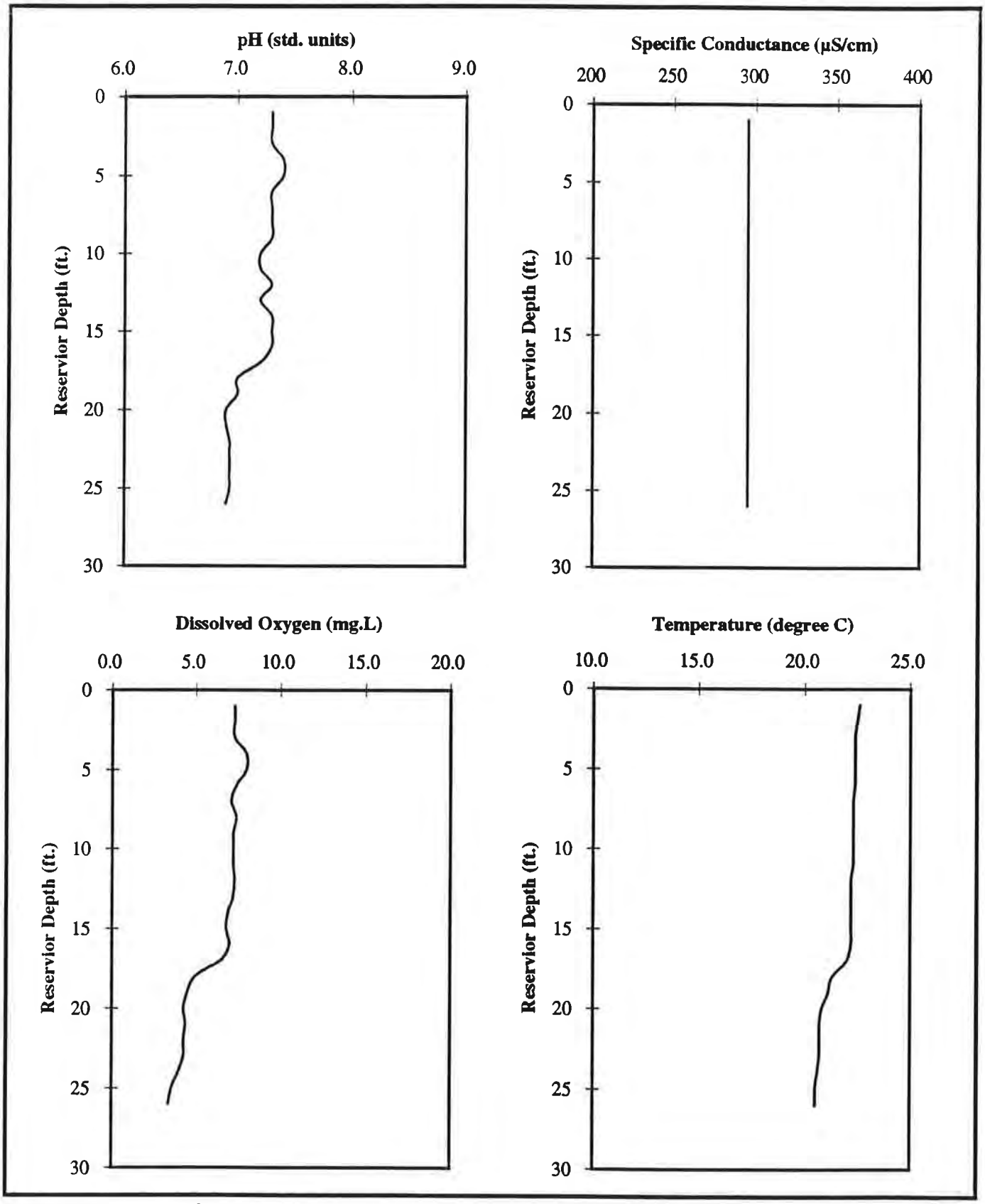
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1D

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - JULY 16, 1996

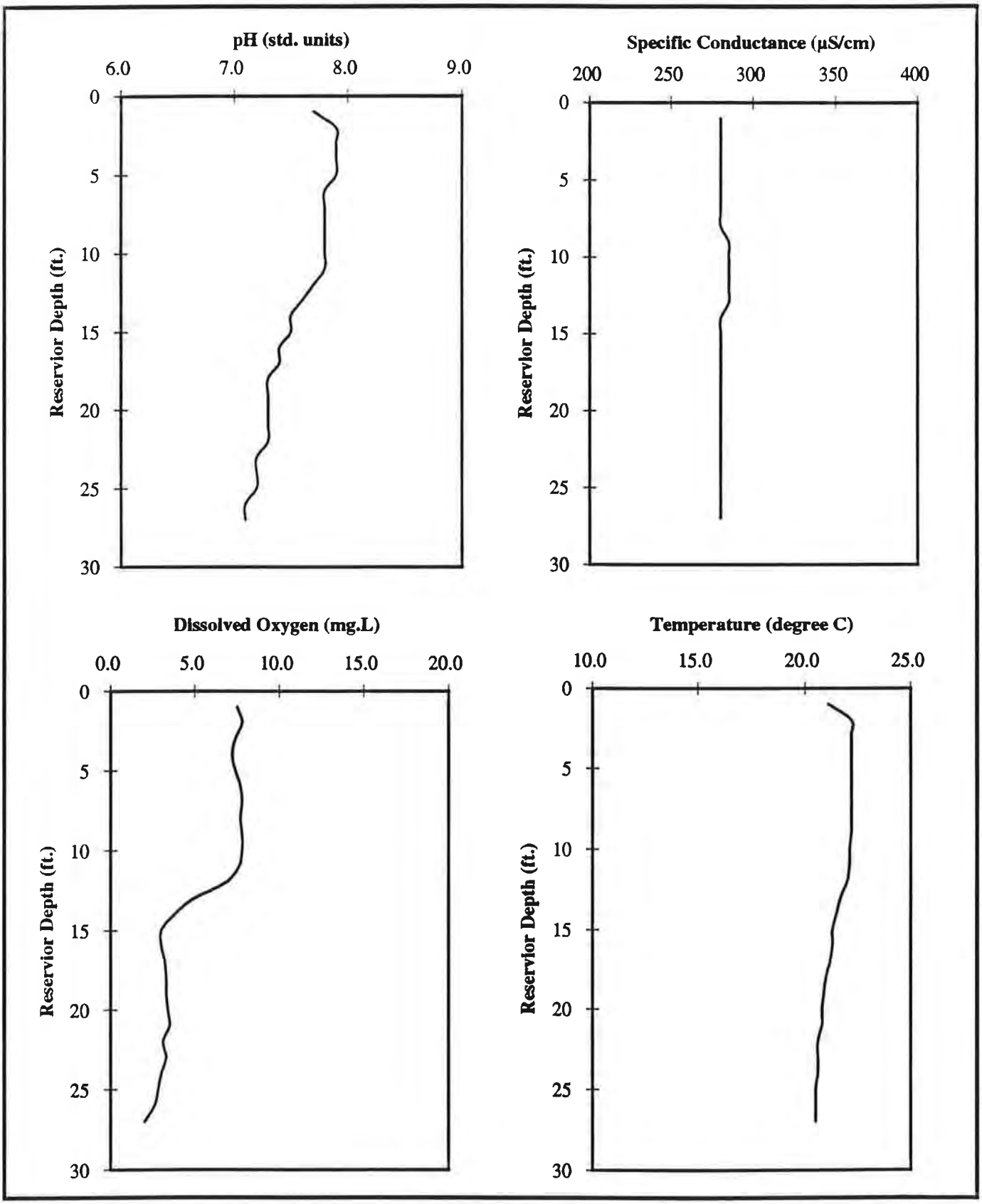
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1E

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - JULY 24, 1996

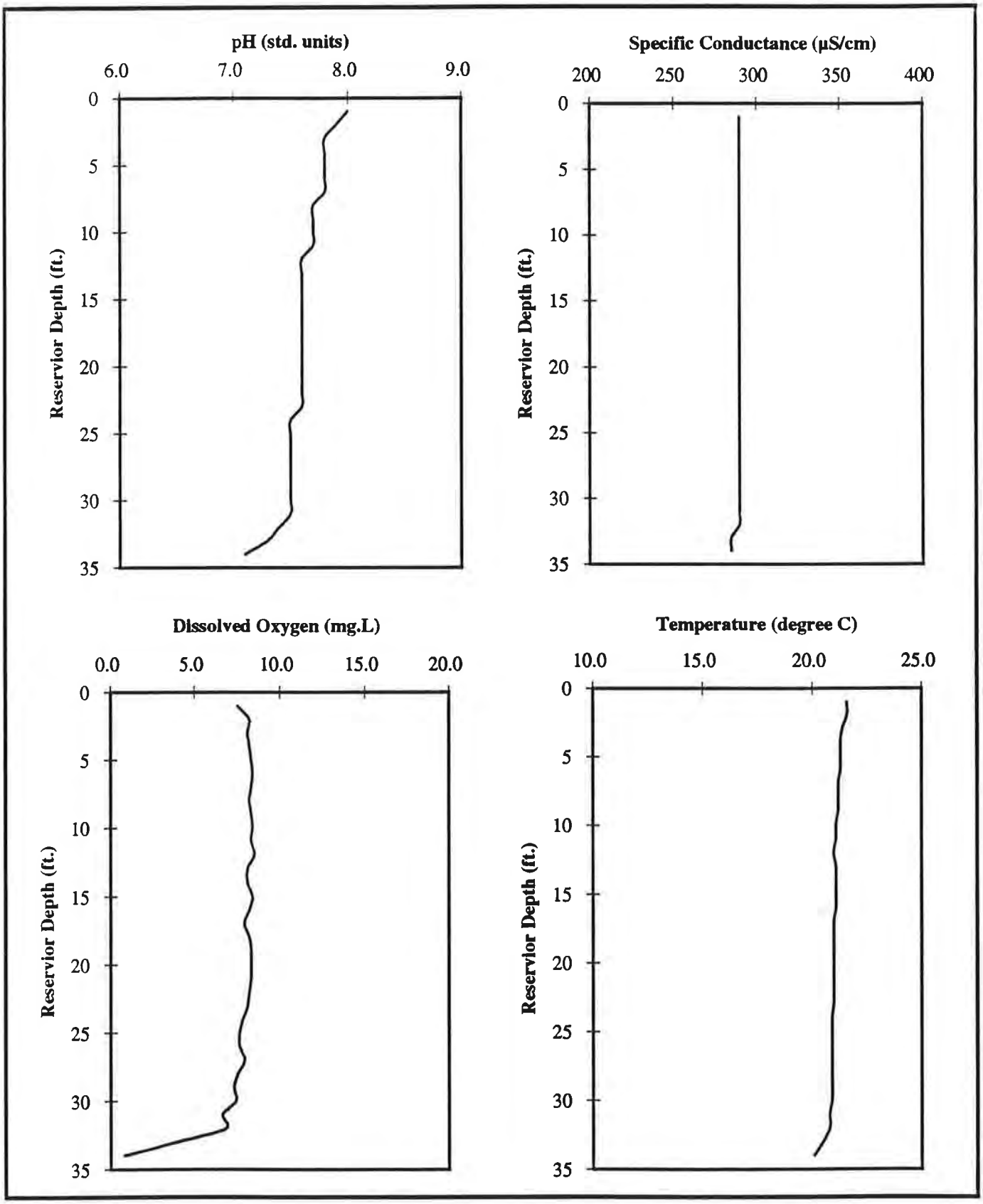
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1F

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - AUGUST 7, 1996

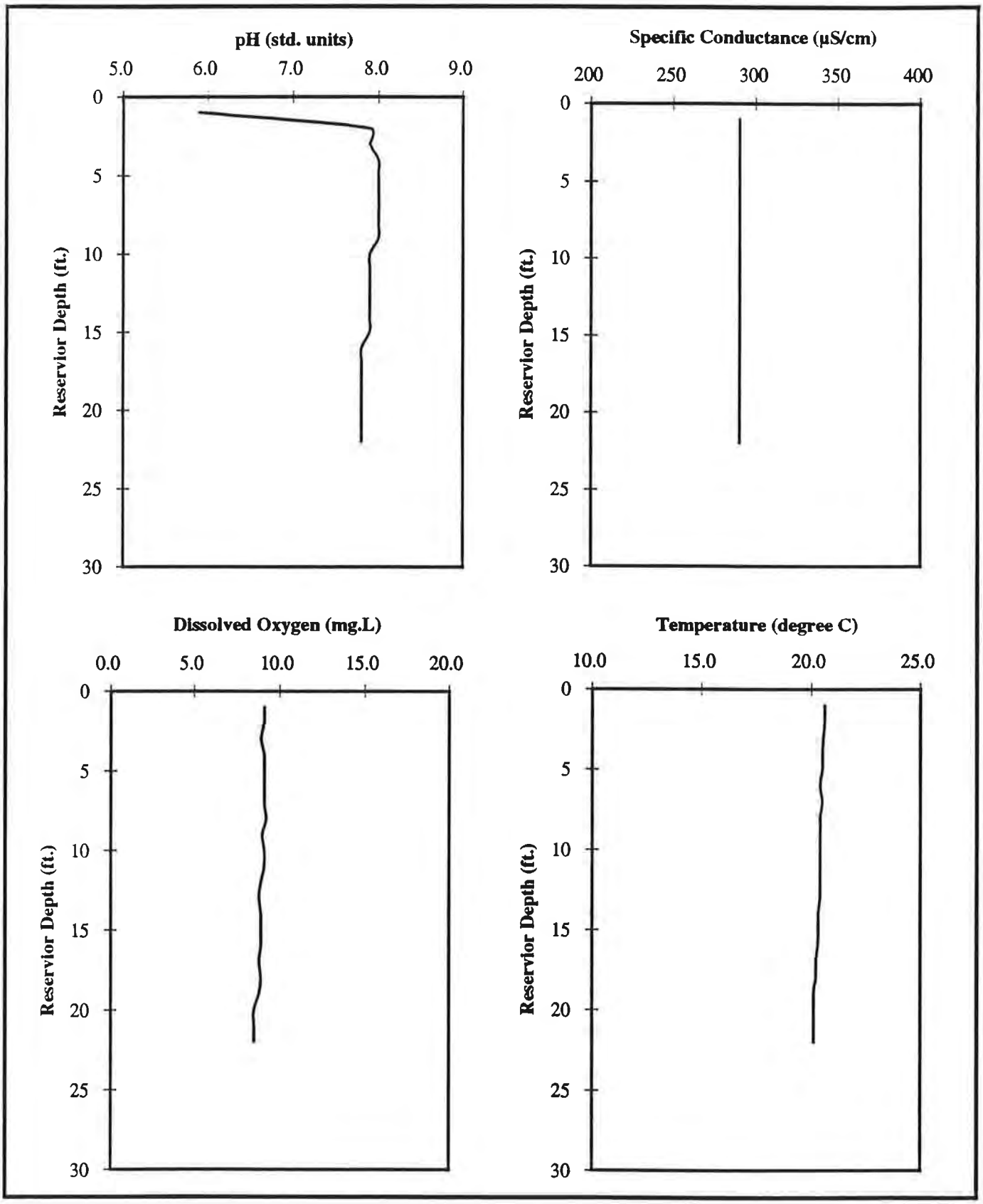
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1G

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - SEPTEMBER 4, 1996

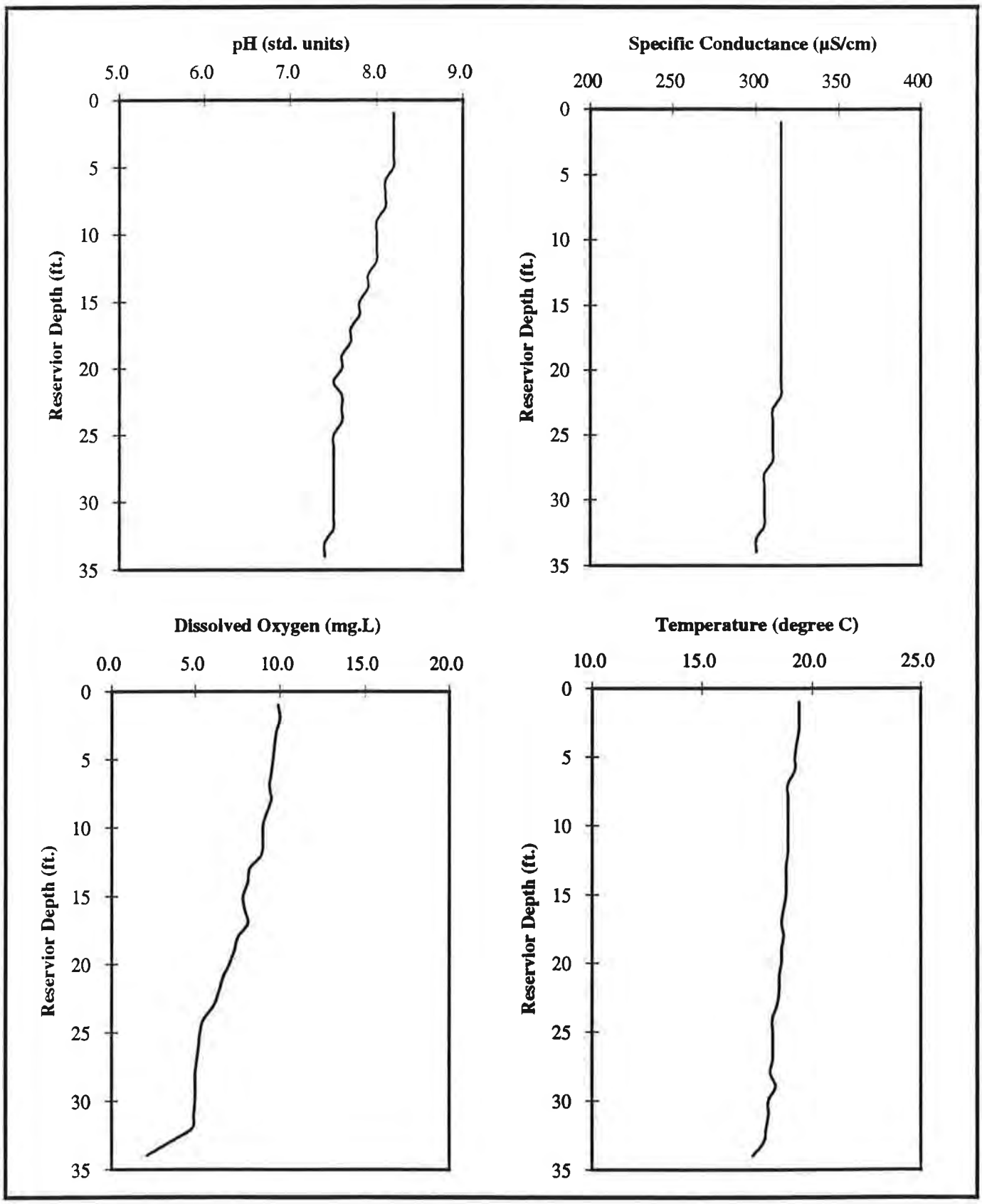
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1H

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - SEPTEMBER 11, 1996

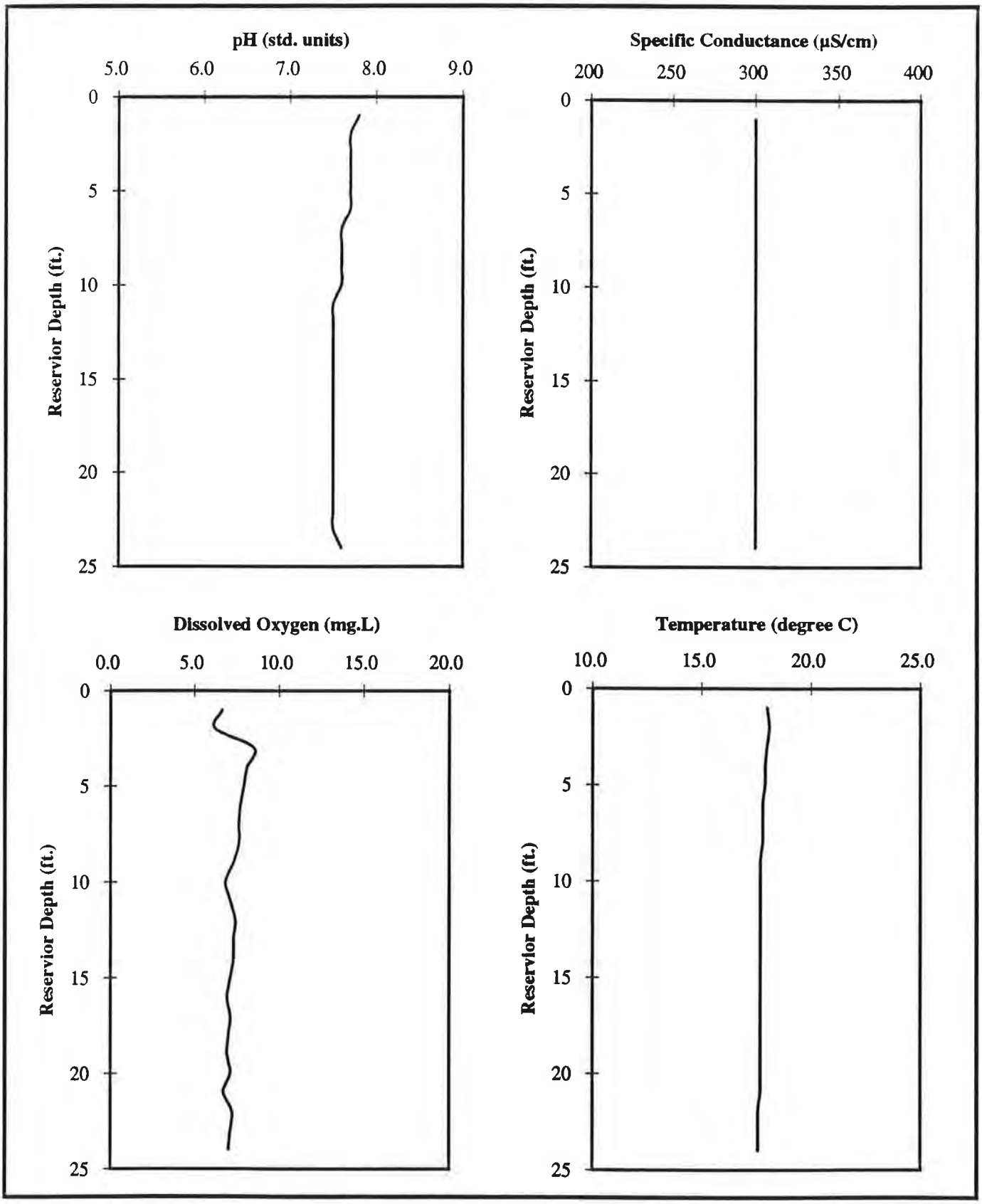
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1I

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - SEPTEMBER 18, 1996

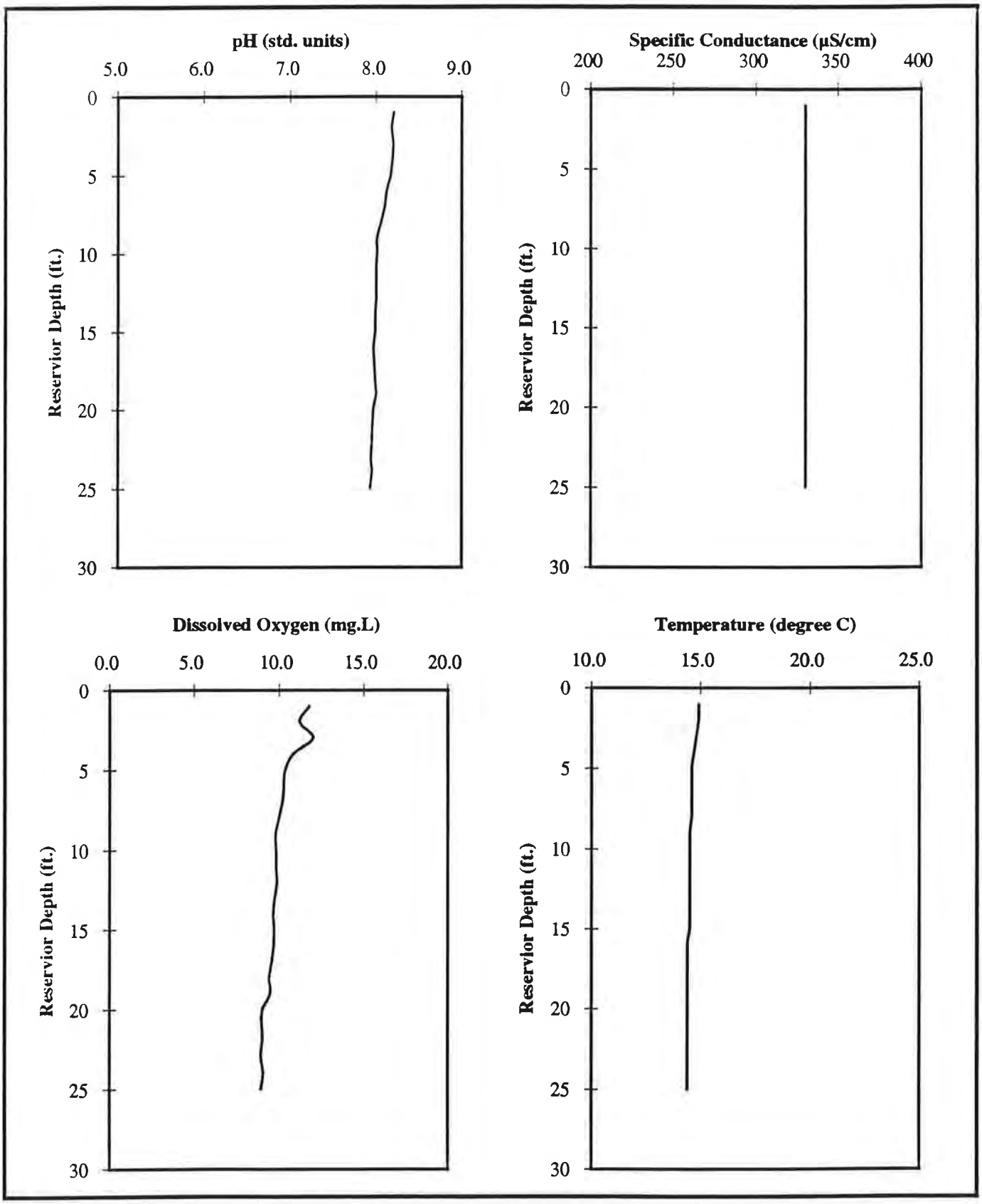
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1J

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - OCTOBER 9, 1996

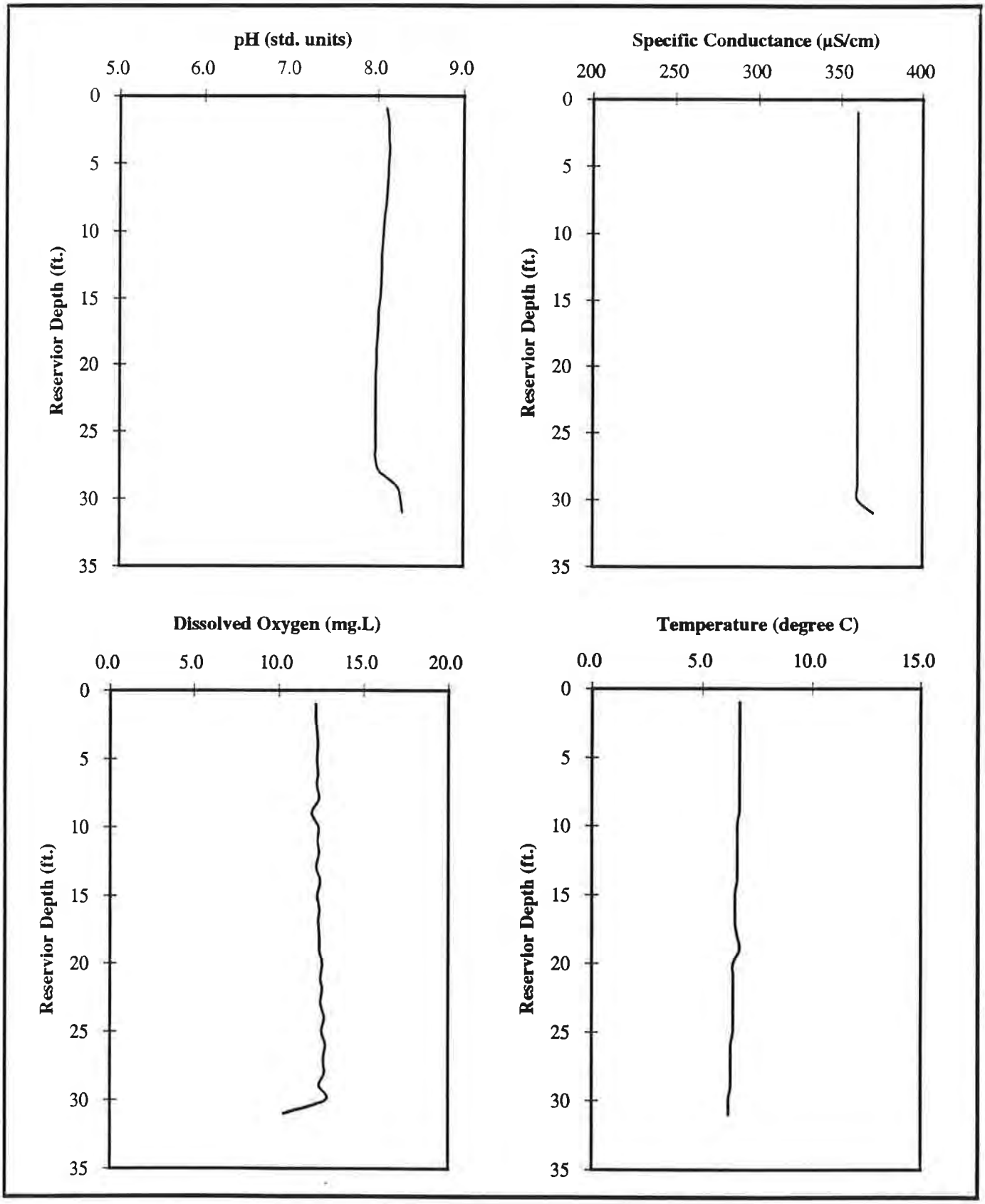
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-1k

File: 96-APX-B.XLS

Status Date: 2/10/97



IN-RESERVOIR DEPTH PROFILE DATA, SITE 7 (RM)
CHATFIELD RESERVOIR - NOVEMBER 13, 1996

TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

March 21, 1996, 1145 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.8	310	15.5	7.5
2	7.8	315	16.3	7.5
3	7.9	315	16.1	7.4
4	7.9	315	16.0	7.4
5	7.9	315	16.0	7.4
6	7.9	315	16.1	7.4
7	7.9	315	15.7	7.4
8	7.8	315	16.1	7.4
9	7.8	315	15.8	7.3
10	7.8	315	16.1	7.3
11	7.8	315	15.7	7.3
12	7.8	315	16.1	7.3
13	7.8	315	16.0	7.3
14	7.8	315	16.0	7.3
15	7.8	325	15.4	7.3
16	7.8	315	15.9	7.3

April 24, 1996, 1058 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.3	380	9.7	10.8
2	8.3	380	9.8	10.7
3	8.3	380	9.7	10.7
4	8.3	380	9.0	10.7
5	8.3	380	9.0	10.6
6	8.3	380	9.5	10.6
7	8.3	380	9.7	10.5
8	8.3	380	9.5	10.5
9	8.3	380	9.8	10.4
10	8.3	380	9.8	10.2
11	8.3	380	9.9	10.1
12	8.3	380	9.6	10.0

TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

May 30, 1995, 1150 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.1	320	8.5	15.7
2	8.1	320	8.7	15.7
3	8.1	320	8.7	15.7
4	8.1	320	8.5	15.5
5	8.1	320	9.1	15.5
6	8.1	320	8.8	15.2
7	8.1	320	8.6	15.0
8	8.1	320	8.4	14.8
9	8.1	320	8.1	14.8
10	8.1	320	8.0	14.7
11	8.0	320	8.1	14.6
12	8.0	320	8.1	14.3
13	7.9	315	6.3	14.3

June 19, 1995, 1140 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.0	300	9.5	19.9
2	8.1	300	10.4	19.8
3	8.1	295	10.6	19.8
4	8.1	300	10.5	19.6
5	8.1	295	10.4	19.5
6	8.1	295	10.5	19.5
7	8.1	295	10.5	19.3
8	8.1	300	10.2	19.3
9	8.1	300	10.5	19.2
10	8.0	300	10.3	19.1
11	7.9	300	10.1	18.7
12	7.9	300	9.3	18.6
13	7.9	295	9.4	18.6
14	7.8	300	9.0	18.5
15	7.8	300	9.4	18.5
16	7.6	295	8.4	18.1
17	7.6	295	8.7	18.1
18	7.5	295	8.6	18.0
19	7.5	295	8.4	17.9
20	7.5	295	8.4	17.9
21	7.5	295	8.2	17.9
22	7.5	290	7.9	17.8
23	7.4	290	7.9	17.6
24	7.3	285	6.4	17.2
25	7.1	285	2.7	17.2

TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

July 16, 1995, 1125 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.7	290	6.9	23.0
2	7.8	295	6.6	22.9
3	7.8	295	6.6	22.8
4	7.8	295	6.9	22.7
5	7.8	295	6.9	22.7
6	7.8	295	7.1	22.7
7	7.8	295	6.8	22.6
8	7.7	295	7.3	22.4
9	7.7	295	6.8	22.0
10	7.7	295	6.7	21.6
11	7.6	295	6.8	20.4

July 24, 1996, 1130 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.9	280	7.8	22.4
2	7.9	280	8.2	22.4
3	7.9	285	8.1	22.4
4	7.9	285	8.1	22.4
5	7.9	285	8.0	22.2
6	7.9	285	8.3	22.3
7	7.9	285	8.5	22.2
8	7.9	285	8.4	22.1
9	7.9	285	7.9	22.0
10	7.8	285	7.3	21.9
11	7.7	285	7.1	21.8

TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

August 7, 1996, 1130 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.8	290	8.0	21.8
2	7.8	290	8.3	21.8
3	7.8	290	8.4	21.8
4	7.8	290	8.7	21.8
5	7.8	290	8.6	21.6
6	7.8	290	8.5	21.6
7	7.8	290	8.8	21.6
8	7.8	290	8.8	21.4
9	7.8	290	8.6	21.3
10	7.7	290	8.6	21.2
11	7.7	285	8.7	21.0
12	7.7	285	8.1	20.8
13	7.6	290	7.6	20.9

September 4, 1996, 1150 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.0	280	8.9	20.1
2	8.0	290	8.5	20.1
3	8.0	290	8.7	20.1
4	7.9	290	8.6	20.1
5	7.9	290	8.4	20.0
6	7.9	290	8.5	20.0
7	7.9	290	8.5	20.0
8	7.9	290	8.5	19.9
9	7.8	290	8.5	19.9
10	7.8	290	8.4	19.8
11	7.8	290	8.4	19.8
12	7.8	290	8.4	19.8
13	7.8	290	8.2	19.7
14	7.7	290	8.4	19.6
15	7.7	290	8.4	19.6
16	7.7	290	8.4	19.6
17	7.7	290	8.3	19.6
18	7.7	290	8.3	19.6
19	7.7	290	8.3	19.6

TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

September 11, 1996, 1105 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.1	415	9.4	19.1
2	8.2	315	9.2	19.0
3	8.2	315	9.3	19.0
4	8.2	315	9.2	19.1
5	8.2	315	9.2	19.1
6	8.2	315	9.1	19.0
7	8.2	315	9.0	19.0
8	8.2	315	8.6	19.0
9	8.2	315	8.3	19.0
10	8.2	315	8.7	19.0
11	8.1	315	8.7	18.9
12	8.1	315	8.6	19.0
13	8.0	315	8.5	18.9
14	8.0	315	8.2	18.6
15	8.0	315	7.8	18.3

September 18, 1996, 1045 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.6	320	7.4	17.6
2	7.6	305	7.9	17.7
3	7.8	305	7.6	17.7
4	8.0	300	7.8	17.6
5	8.0	300	7.9	17.6
6	8.0	300	7.8	17.6
7	8.0	300	8.0	17.6
8	8.0	300	7.6	17.6
9	8.0	300	7.6	17.6
10	7.9	300	7.4	17.6
11	7.9	300	7.9	17.6
12	7.9	300	8.0	17.6
13	7.9	300	8.1	17.6
14	7.8	300	7.8	17.6
15	7.8	300	7.6	17.6
16	7.8	300	8.0	17.6
17	7.7	300	7.7	17.6
18	7.7	300	7.6	17.6
19	7.7	300	8.0	17.4

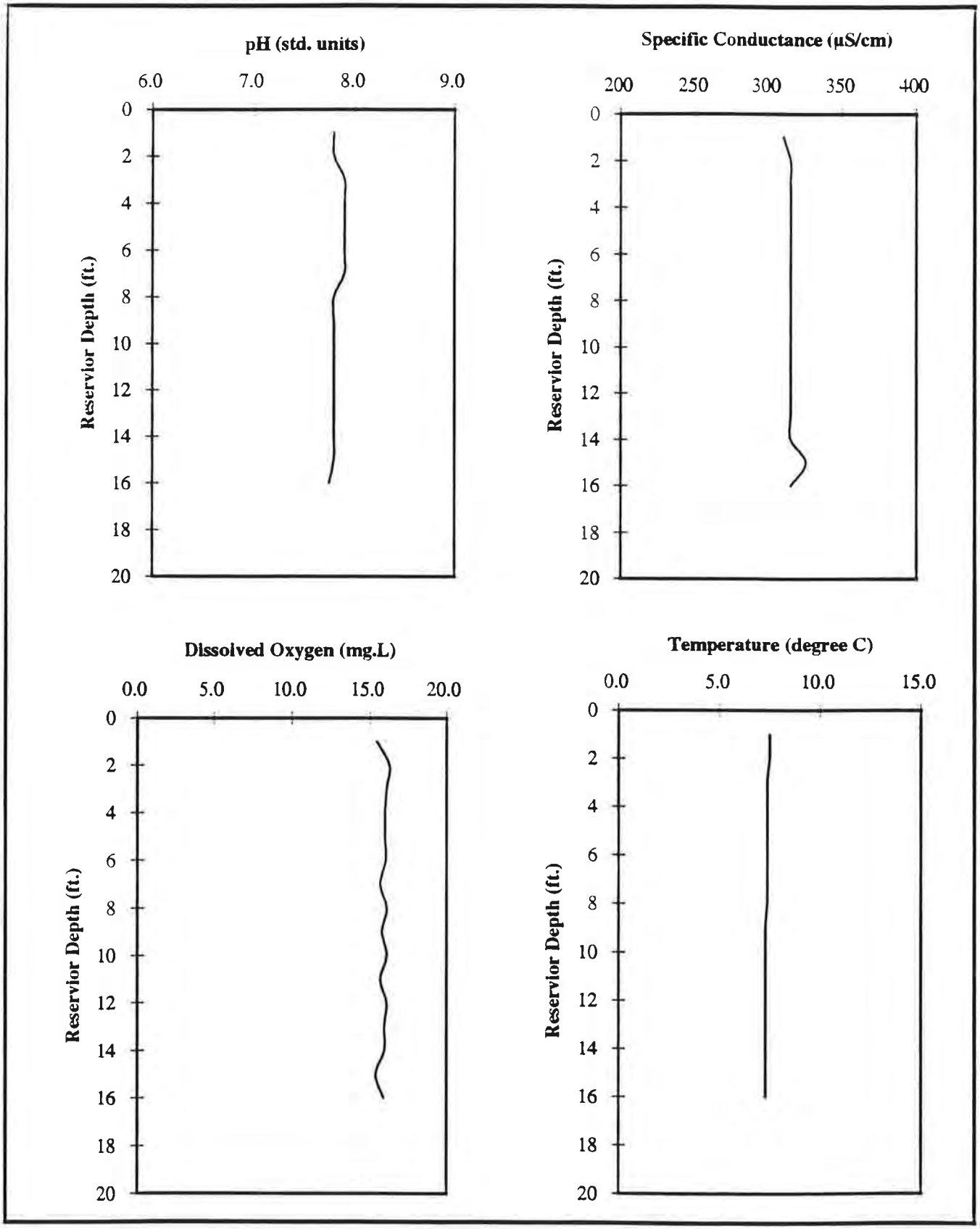
TABLE B-2
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 8 (RP)

October 9, 1996, 1010 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.3	330	10.1	14.6
2	8.4	330	10.6	14.6
3	8.3	330	10.6	14.6
4	8.3	330	11.1	14.6
5	8.3	330	11.2	14.5
6	8.2	330	11.4	14.5
7	8.2	330	11.2	14.5
8	8.1	330	10.8	14.5
9	8.1	330	11.2	14.5
10	8.1	330	10.2	14.4
11	8.1	330	10.3	14.4
12	8.0	330	10.6	14.3
13	8.0	330	10.0	14.3
14	8.0	330	10.5	14.3
15	7.9	330	10.7	14.3
16	7.9	330	10.6	14.3
17	7.9	330	10.6	14.3
18	8.0	330	10.2	14.3
19	8.0	330	10.4	14.3
20	8.0	330	10.4	14.3
21	8.0	330	10.0	14.3

November 13, 1996, 0930 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.9	360	11.9	7.1
2	8.1	360	12.0	6.6
3	8.1	360	11.8	6.6
4	8.1	360	11.9	6.6
5	8.1	360	11.7	6.6
6	8.1	360	11.7	6.6
7	8.0	360	11.7	6.6
8	8.0	360	11.5	6.6
9	7.8	360	11.5	6.5
10	7.9	360	11.8	6.5
11	7.9	360	11.6	6.4
12	7.9	360	11.7	6.4
13	7.9	360	11.6	6.3
14	7.9	370	10.7	6.2



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - MARCH 21, 1996

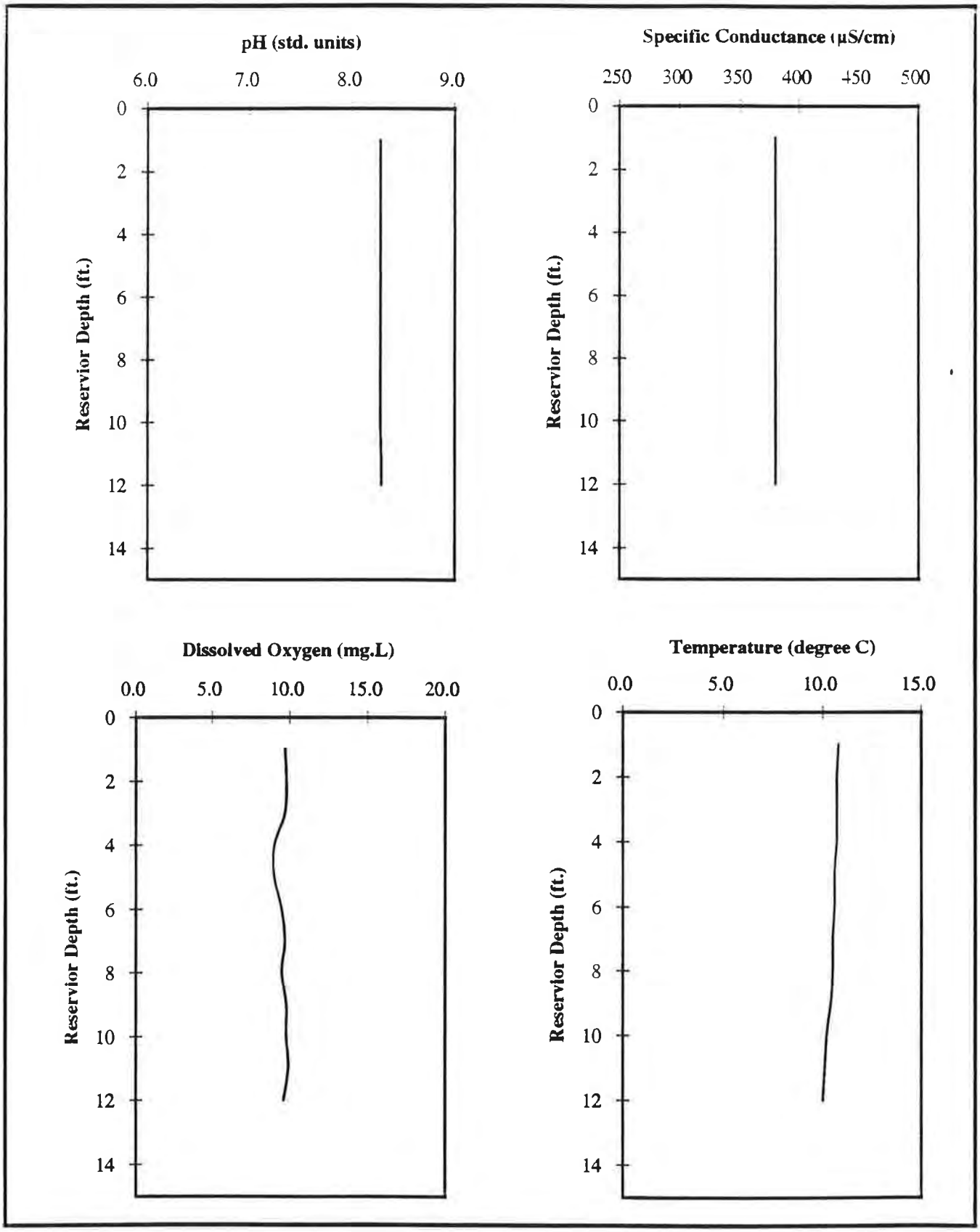
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2A

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - APRIL 24, 1996

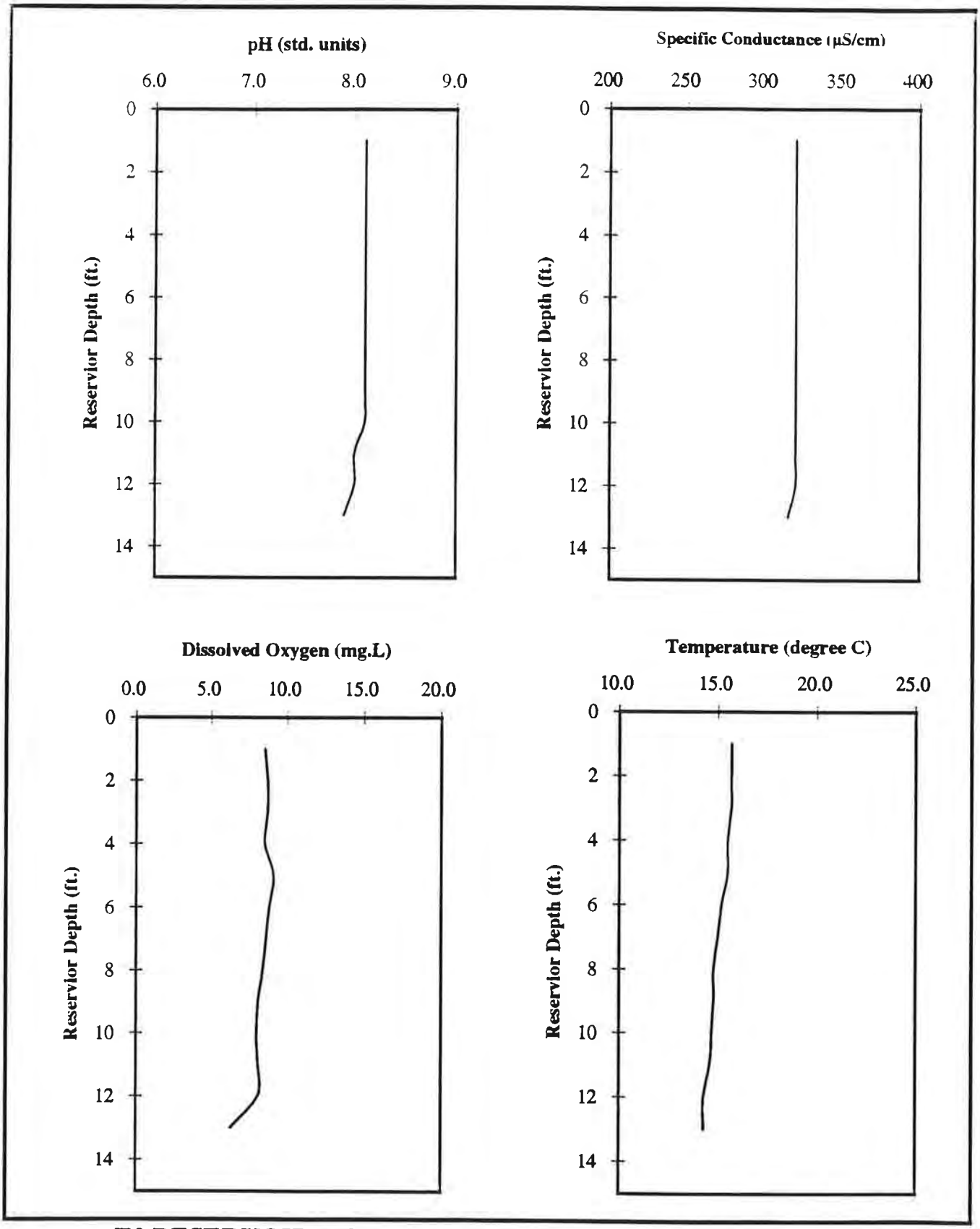
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2B

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - MAY 30, 1996

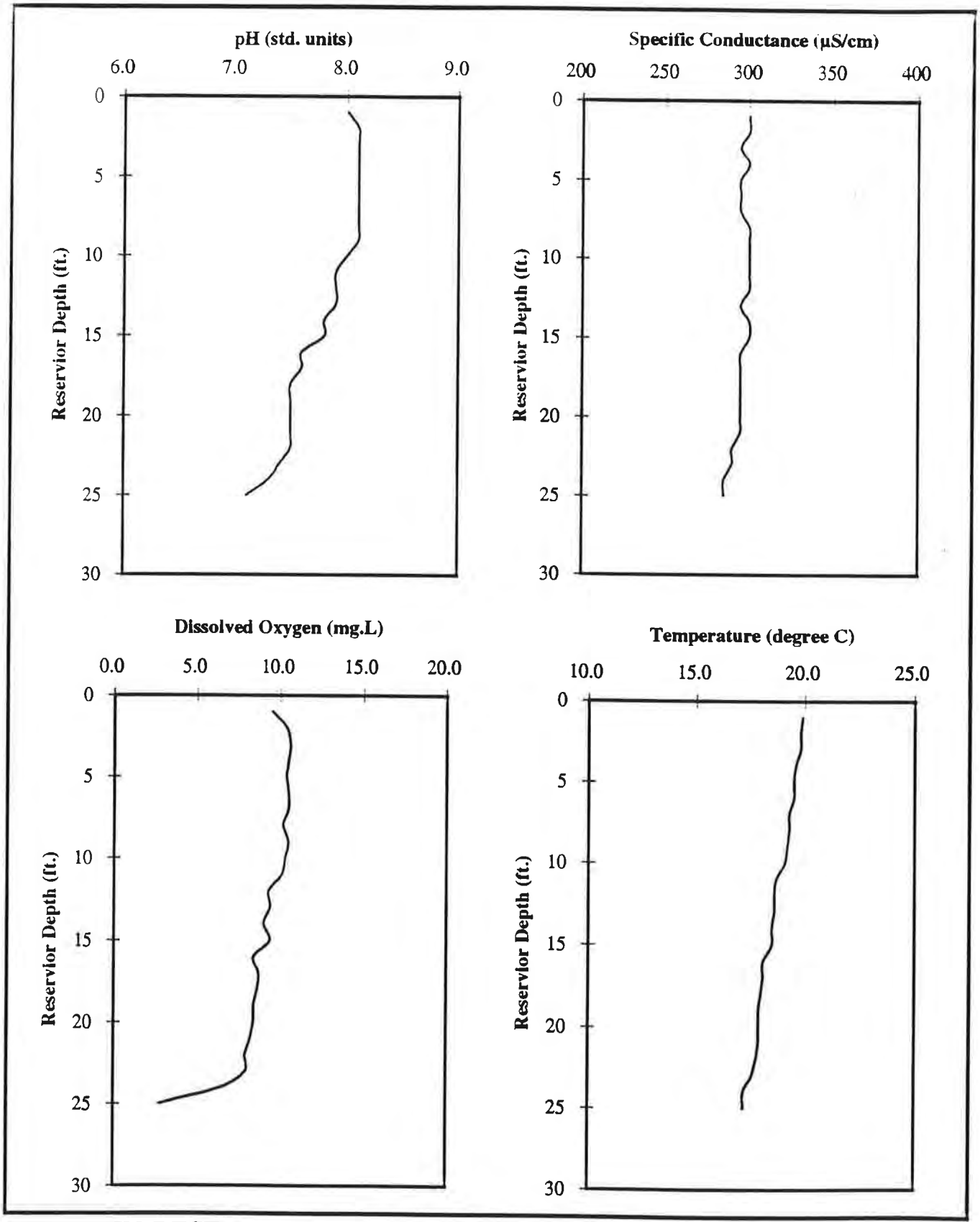
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2C

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - JUNE 19, 1996

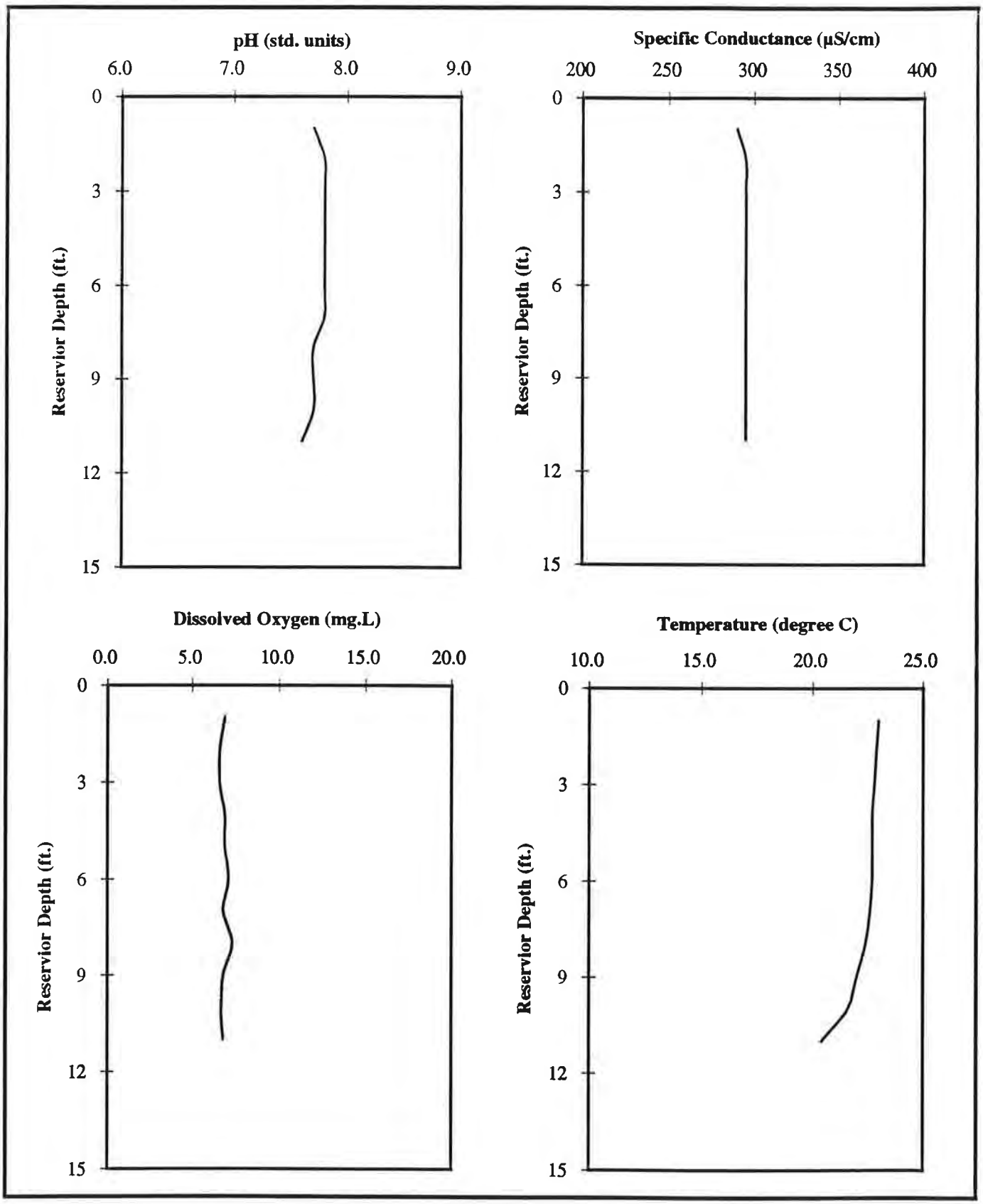
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2D

File: 96-APX-B.XLS

Status Date: 8/29/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - JULY 16, 1996

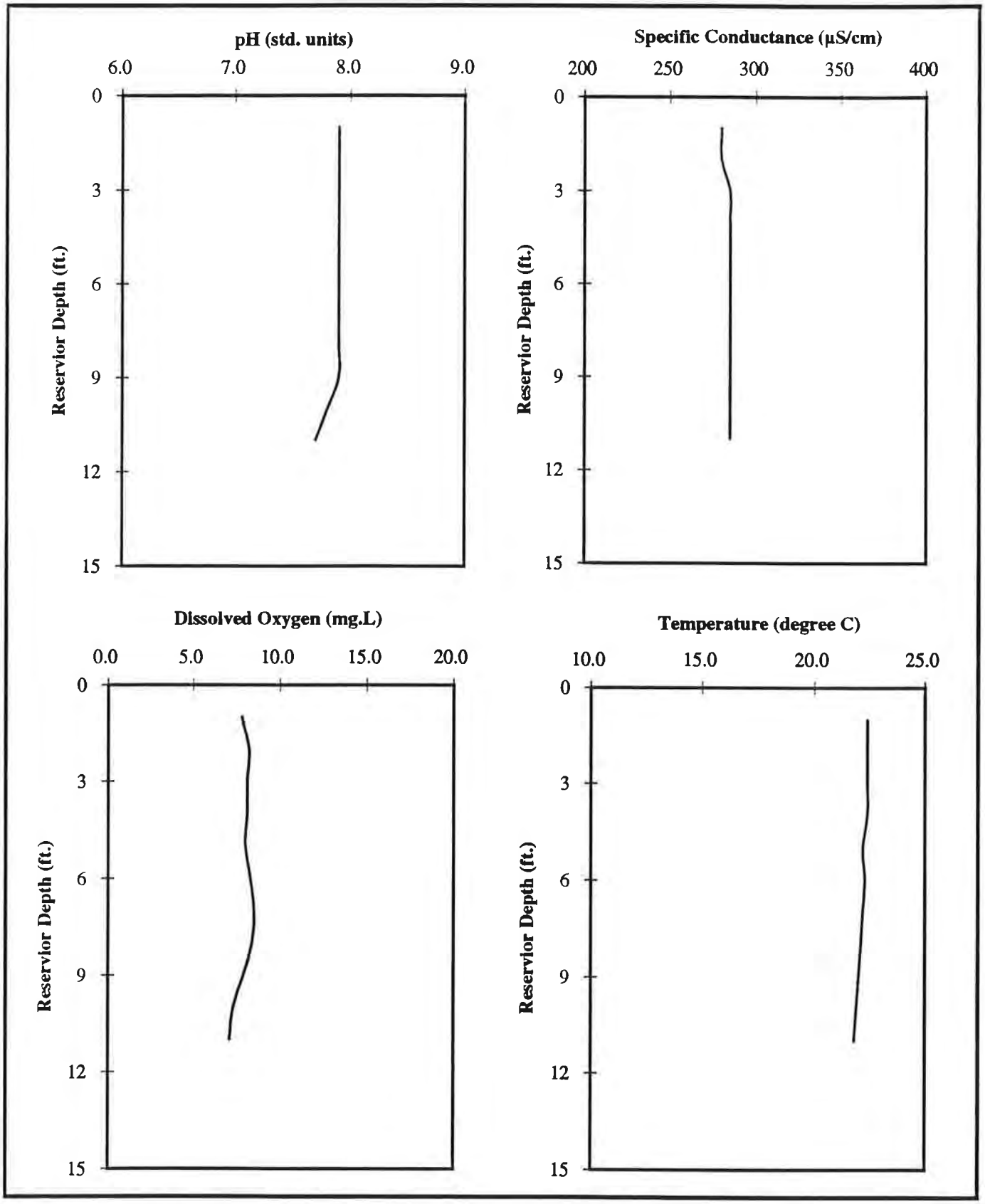
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2E

File: 96-APX-B.XLS

Status Date: 10/21/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - JULY 24 1996

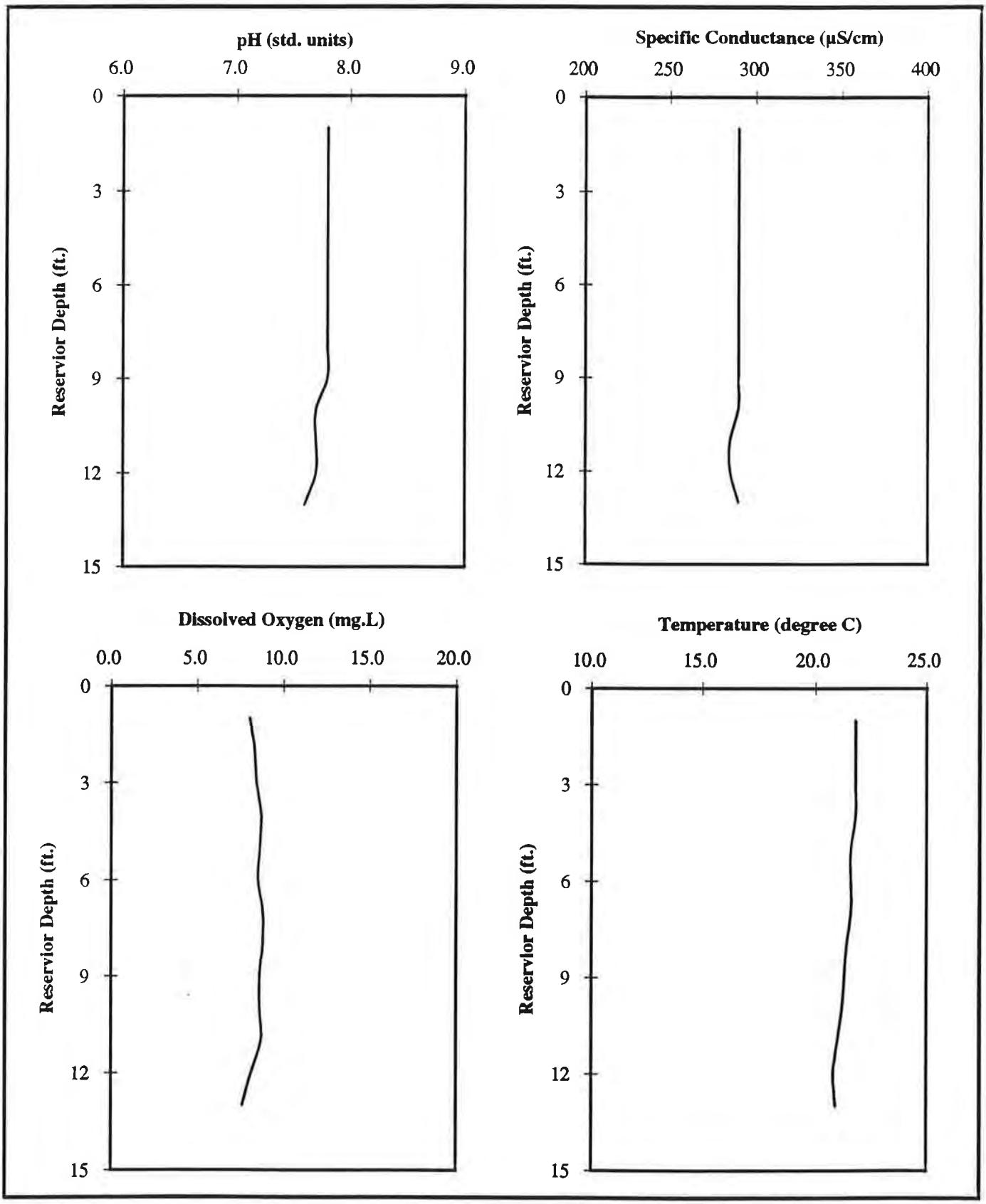
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2F

File: 96-APX-B.XLS

Status Date: 10/21/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - AUGUST 7, 1996

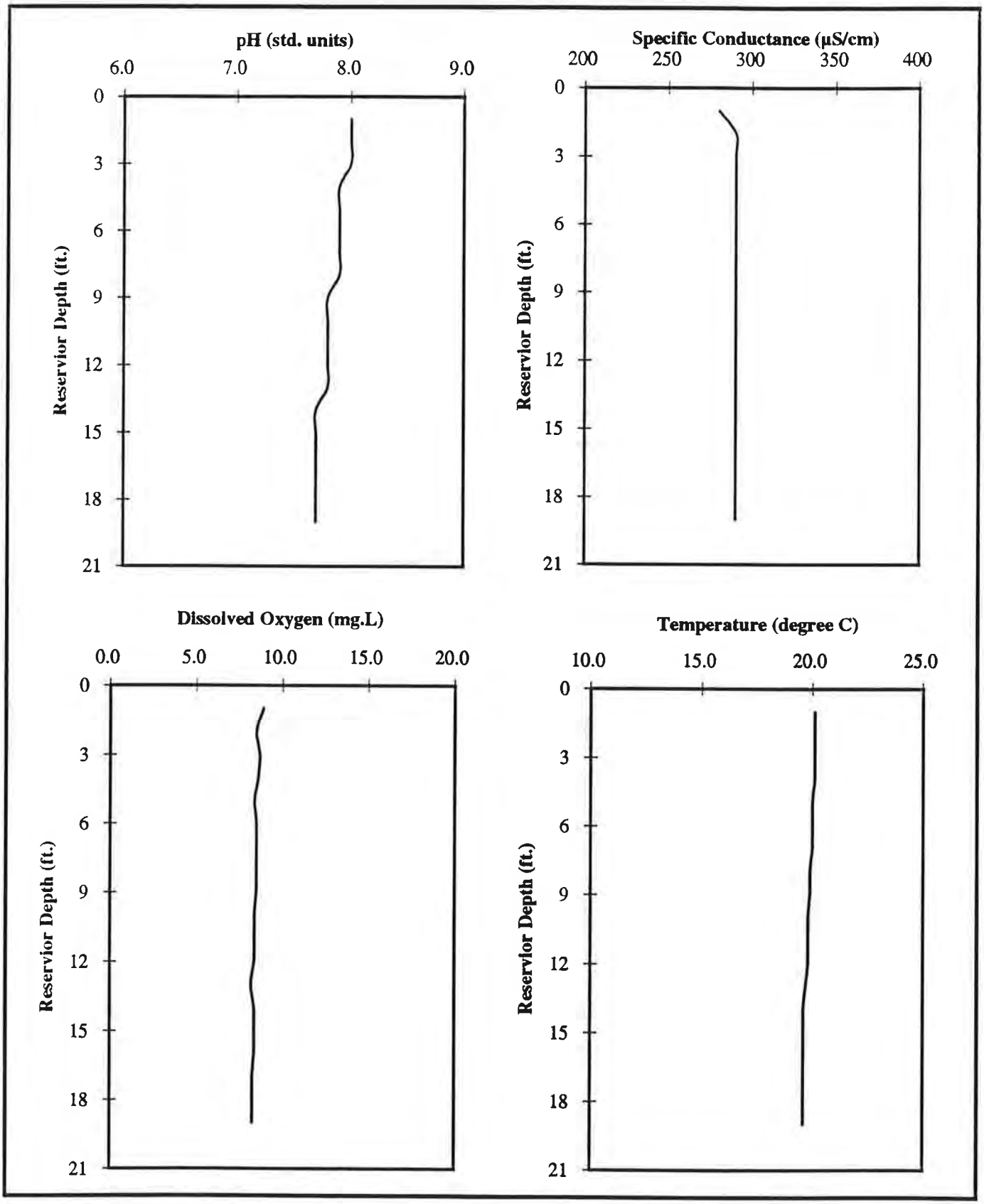
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2G

File: 96-APX-B.XLS

Status Date: 10/21/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - SEPTEMBER 4, 1996

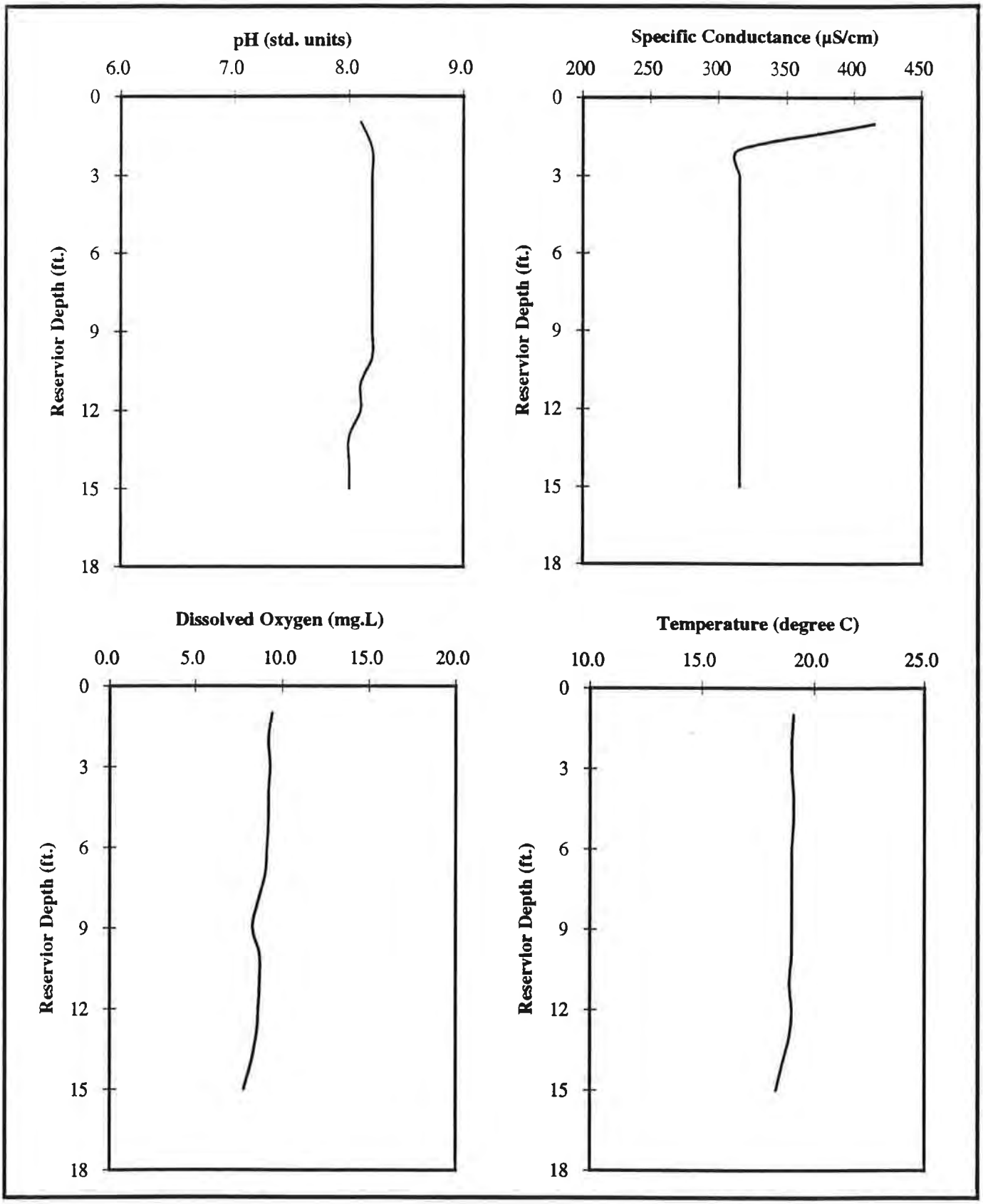
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2H

File: 96-APX-B.XLS

Status Date: 10/21/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - SEPTEMBER 11, 1996

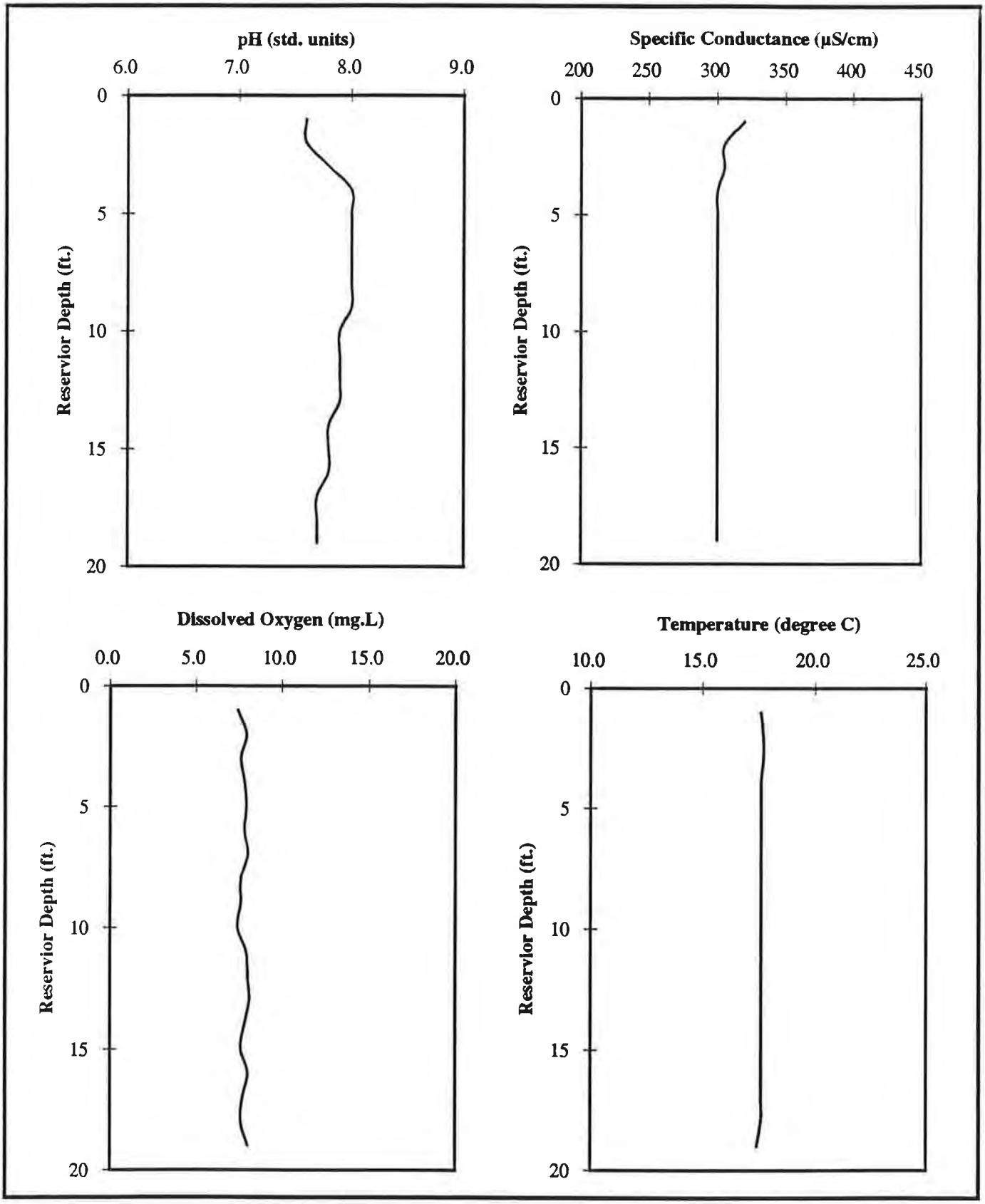
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2I

File: 96-APX-B.XLS

Status Date: 10/21/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - SEPTEMBER 18, 1996

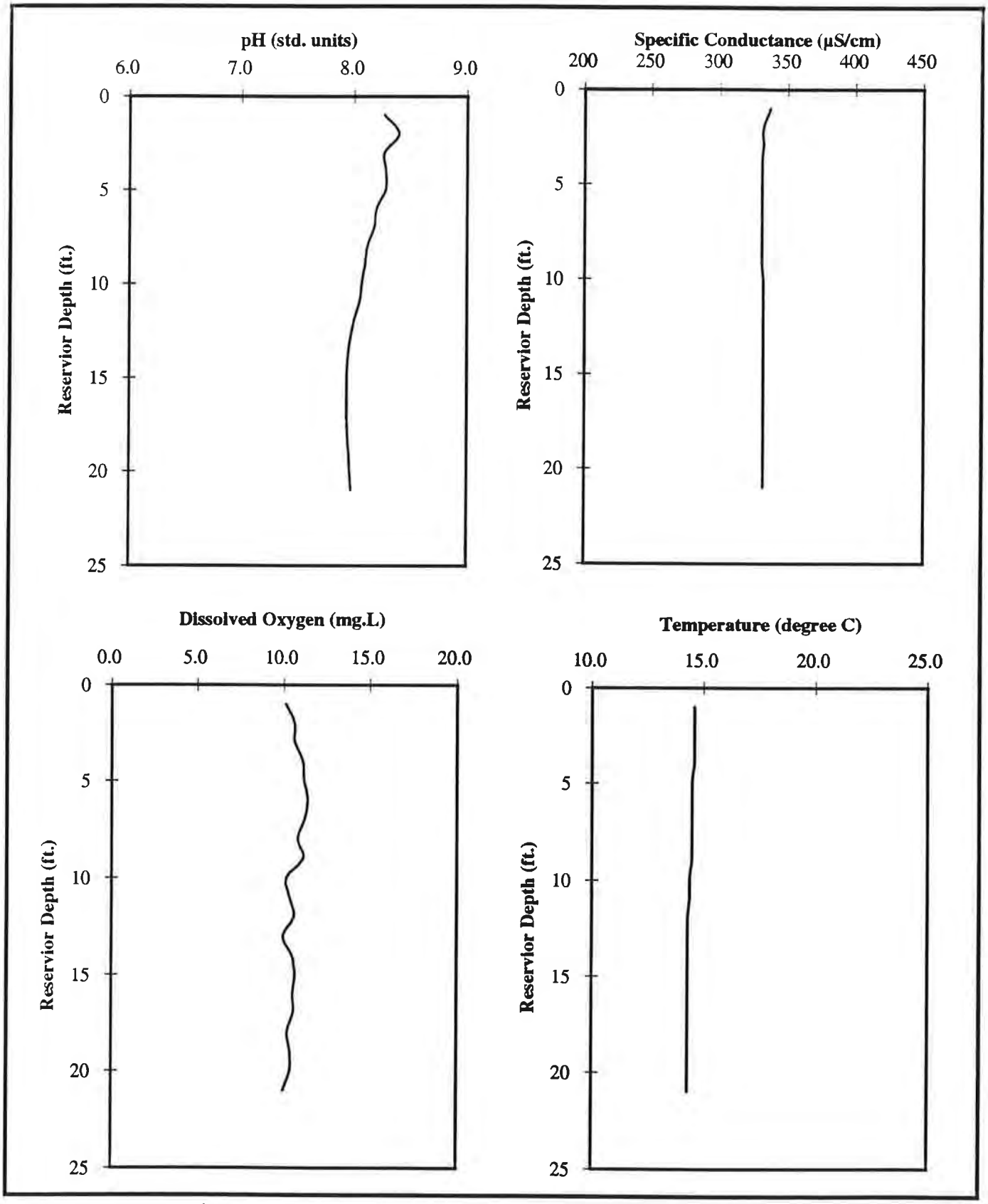
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2J

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - OCTOBER 9, 1996

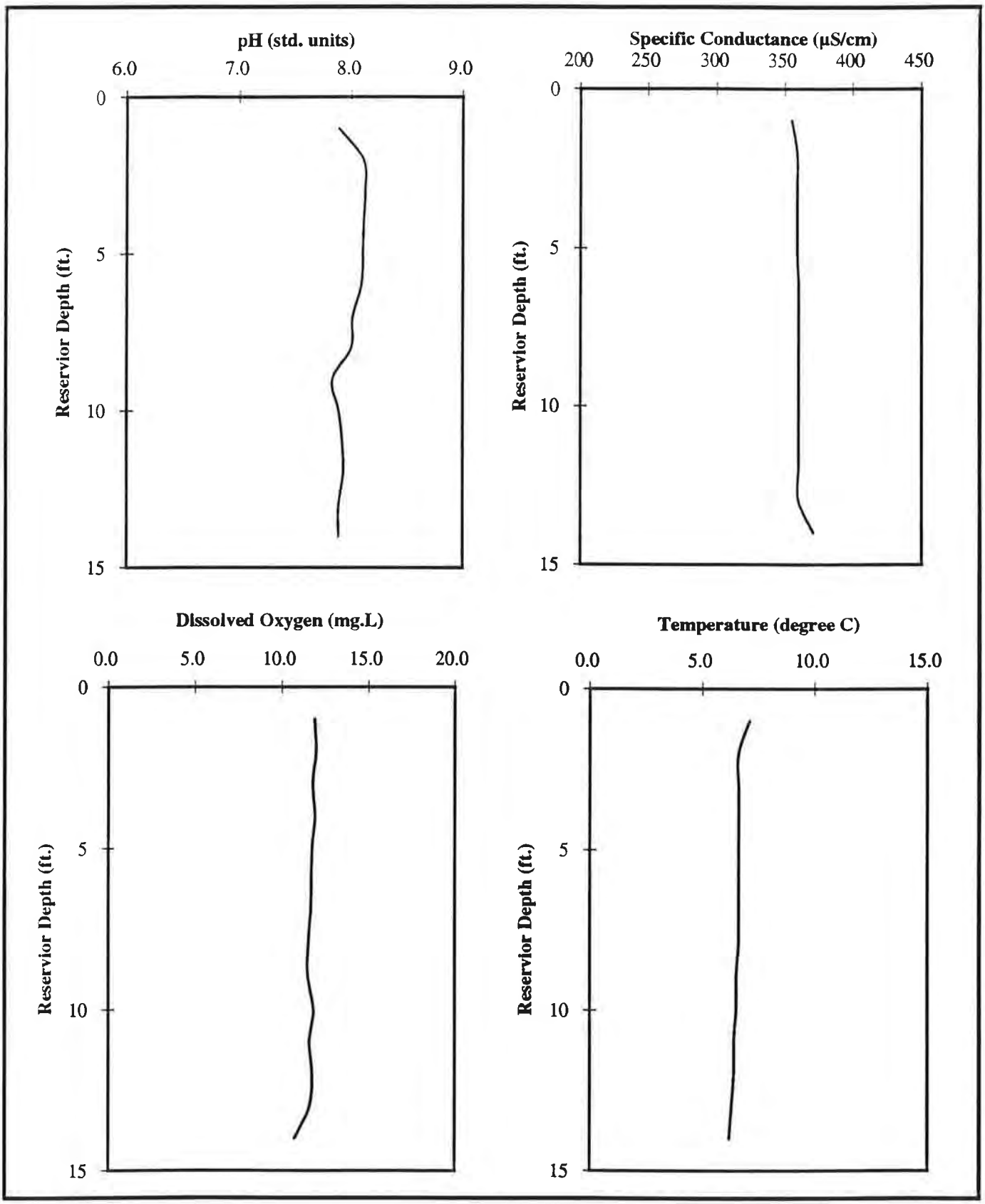
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-2k

File: 96-APX-B.XLS

Status Date: 2/6/97



IN-RESERVOIR DEPTH PROFILE DATA, SITE 8 (RP)
CHATFIELD RESERVOIR - NOVEMBER 13, 1996

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-21

File: 96-APX-B.XLS

Status Date: 2/6/97

TABLE B-3
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 9 (RS)

March 21, 1996, 1115 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.3	370	9.8	5.4
2	8.3	370	10.3	5.4
3	8.3	370	10.5	5.4
4	8.3	370	9.8	5.4
5	8.3	370	10.1	5.4
6	8.3	370	9.8	5.4
7	8.3	370	10.1	5.4
8	8.3	370	10.0	5.4
9	8.3	370	9.7	5.3
10	8.3	370	10.2	5.3
11	8.3	370	9.6	5.3
12	8.3	370	8.4	5.3

April 24, 1996, 1035 hours				
DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.3	375	9.7	11.0
2	8.3	380	9.6	10.9
3	8.3	380	9.4	10.9
4	8.3	380	9.3	10.7
5	8.3	380	9.4	10.4
6	8.3	380	9.4	10.3
7	8.3	380	9.3	9.9
8	8.3	380	9.2	9.8
9	8.3	380	8.7	9.7
10	8.3	380	9.0	9.6
11	8.3	380	8.1	9.6
12	8.3	380	7.7	9.7
13	8.3	380	7.0	9.6
14	8.3	380	6.2	9.6
15	8.3	380	6.0	9.7
16	8.3	380	7.8	9.6

TABLE B-3
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 9 (RS)

May 30 1996, 1110 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.2	310	8.9	15.5
2	8.1	315	9.0	15.4
3	8.1	315	8.6	15.0
4	8.1	310	8.9	14.9
5	8.1	310	8.7	14.8
6	8.1	310	8.8	14.7
7	8.1	310	8.8	14.7
8	8.2	305	8.4	14.7
9	8.2	300	8.3	14.6
10	8.2	290	8.8	14.4
11	8.2	270	9.4	13.7
12	8.2	270	9.6	13.3
13	8.2	275	9.8	13.3
14	8.2	275	6.8	13.2
15	8.2	275	5.3	13.2
16	8.2	275	5.0	13.2

June 19, 1996, 1040 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.9	300	10.1	21.3
2	7.9	300	9.9	21.0
3	7.9	300	9.8	20.8
4	7.9	295	9.8	20.7
5	7.9	300	9.5	20.7
6	7.9	300	9.8	20.6
7	7.9	300	9.8	20.5
8	7.9	300	9.9	20.4
9	7.9	280	10.0	19.5
10	7.8	270	9.1	18.9
11	7.8	265	9.3	18.1
12	7.7	265	9.2	17.6
13	7.6	260	8.7	16.8

TABLE B-3
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 9 (RS)

July 16, 1996, 1100 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.4	295	6.2	22.7
2	7.4	295	5.9	22.4
3	7.4	295	6.2	21.7
4	7.4	295	6.2	21.7
5	7.4	295	5.9	21.5
6	7.4	295	6.2	21.5
7	7.4	295	6.3	21.4
8	7.4	295	6.0	21.4
9	7.4	295	6.0	21.3
10	7.4	295	5.9	21.1

July 24, 1996, 1105 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.9	285	7.4	22.5
2	7.9	285	7.9	22.6
3	7.9	285	7.7	22.6
4	7.9	285	8.0	22.6
5	7.9	285	7.8	22.6
6	7.9	285	8.3	22.5
7	7.9	285	8.0	22.4
8	7.9	285	7.8	22.3
9	7.9	285	8.2	22.2
10	7.8	285	7.2	22.1
11	7.8	285	6.7	22.1

August 7, 1996, 1130 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.1	295	12.0	21.2
2	8.1	295	8.8	21.3
3	8.1	295	8.5	21.3
4	8.1	290	8.6	21.2
5	8.1	295	8.8	21.2
6	8.2	295	9.1	21.0
7	8.2	295	9.3	21.0
8	8.2	295	9.0	20.9
9	8.1	285	8.9	21.0

TABLE B-3
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 9 (RS)

September 4, 1996, 1125 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.0	290	8.3	20.3
2	7.9	290	8.3	20.3
3	7.9	290	8.0	20.3
4	7.9	290	8.3	20.3
5	7.9	290	8.5	20.3
6	7.8	290	8.3	20.2
7	7.8	290	8.6	20.2
8	7.8	290	8.3	20.2
9	7.8	290	8.0	20.1

September 11, 1996, 1205 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.2	310	9.6	19.5
2	8.2	310	9.4	19.5
3	8.2	310	9.8	19.5
4	8.2	310	9.8	19.5
5	8.2	310	9.7	19.4
6	8.2	310	9.4	19.4
7	8.1	310	9.6	19.4
8	8.1	310	9.3	19.2
9	8.0	305	8.1	18.8
10	7.9	305	7.0	18.8

September 18, 1996, 1230 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.0	295	9.3	17.5
2	8.0	295	10.0	17.5
3	8.0	295	9.6	17.5
4	8.0	295	8.9	17.3
5	7.9	295	8.3	17.1
6	7.9	295	8.3	17.0
7	7.9	295	8.3	16.9
8	7.9	295	8.1	16.8
9	7.8	295	7.8	16.7
10	7.8	295	7.6	16.7

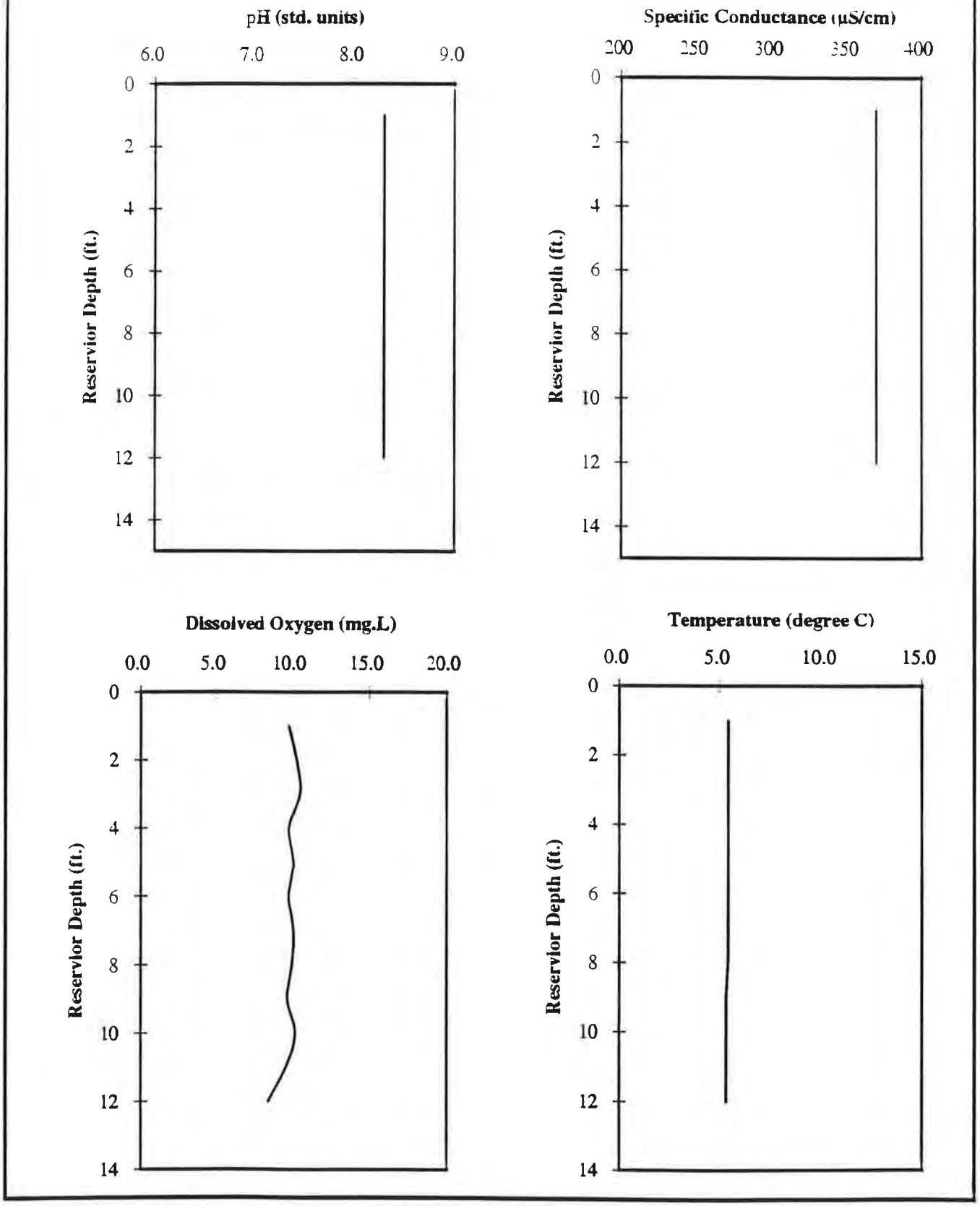
TABLE B-3
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
SITE 9 (RS)

October 9, 1996, 1110 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.4	330	10.3	15.3
2	8.4	330	12.2	15.3
3	8.4	330	12.2	15.2
4	8.4	330	11.6	15.2
5	8.4	330	11.2	15.0
6	8.4	330	10.7	15.0
7	8.4	330	10.5	14.9
8	8.4	330	10.4	14.9
9	8.4	330	10.2	14.9
10	8.4	325	10.0	14.8
11	8.3	325	9.1	14.8
12	8.3	315	10.1	14.6
13	8.2	315	9.1	14.5
14	8.2	315	8.3	14.4

November 13, 1996, 1000 hours

DEPTH (ft)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	8.3	360	12.7	7.2
2	8.3	360	12.9	7.2
3	8.3	360	12.5	7.2
4	8.3	360	12.9	7.2
5	8.3	360	12.7	7.2
6	8.3	360	12.9	7.1
7	8.3	360	13.0	7.1
8	8.2	360	12.8	7.1
9	8.2	360	12.8	7.0
10	8.2	355	12.8	6.9
11	8.2	355	12.8	6.9
12	8.2	355	12.3	6.9
13	8.2	355	11.6	6.8



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - MARCH 21, 1996

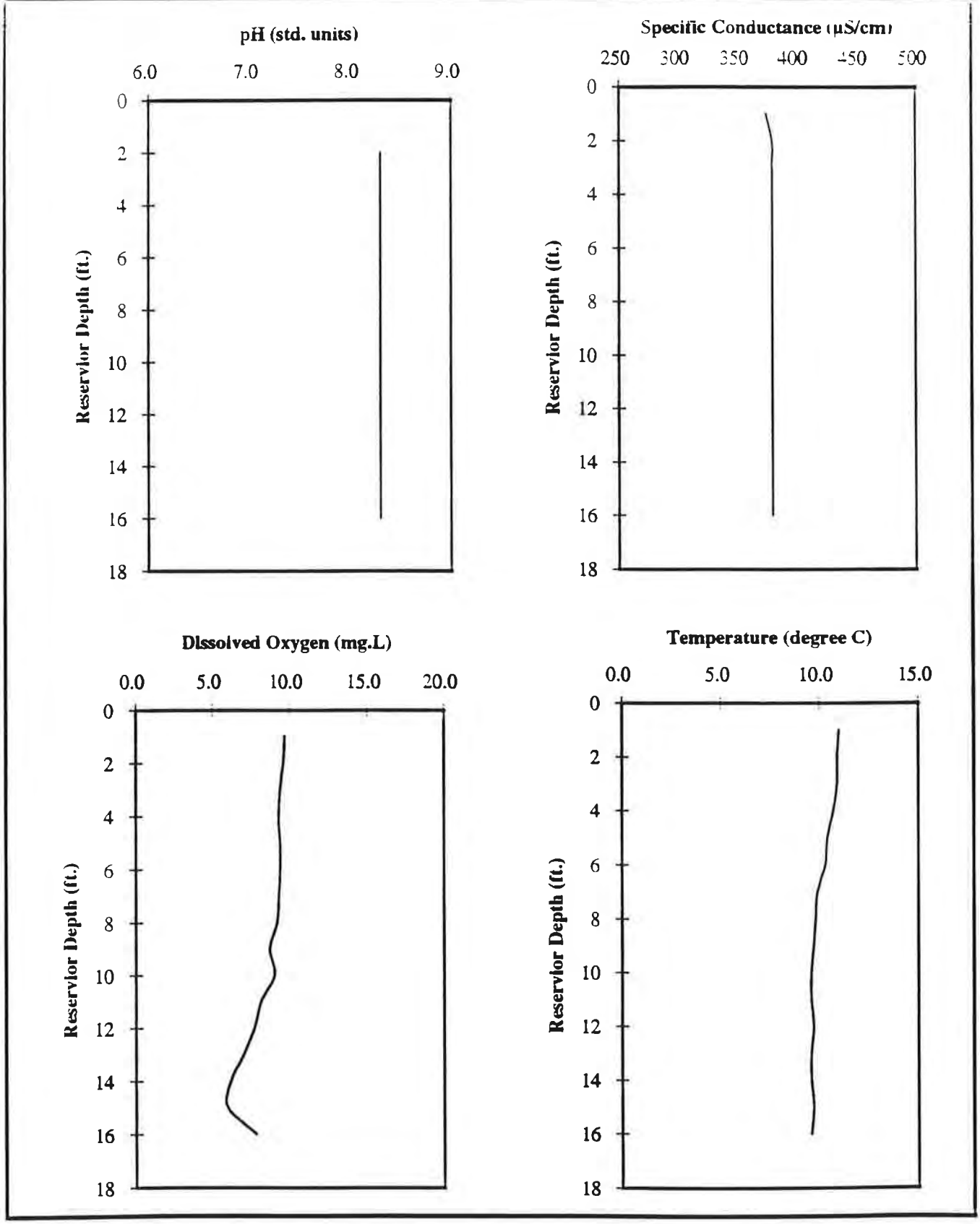
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3A

File: 96-APX-B.XLS

Status Date: 9/3/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - APRIL 24, 1996

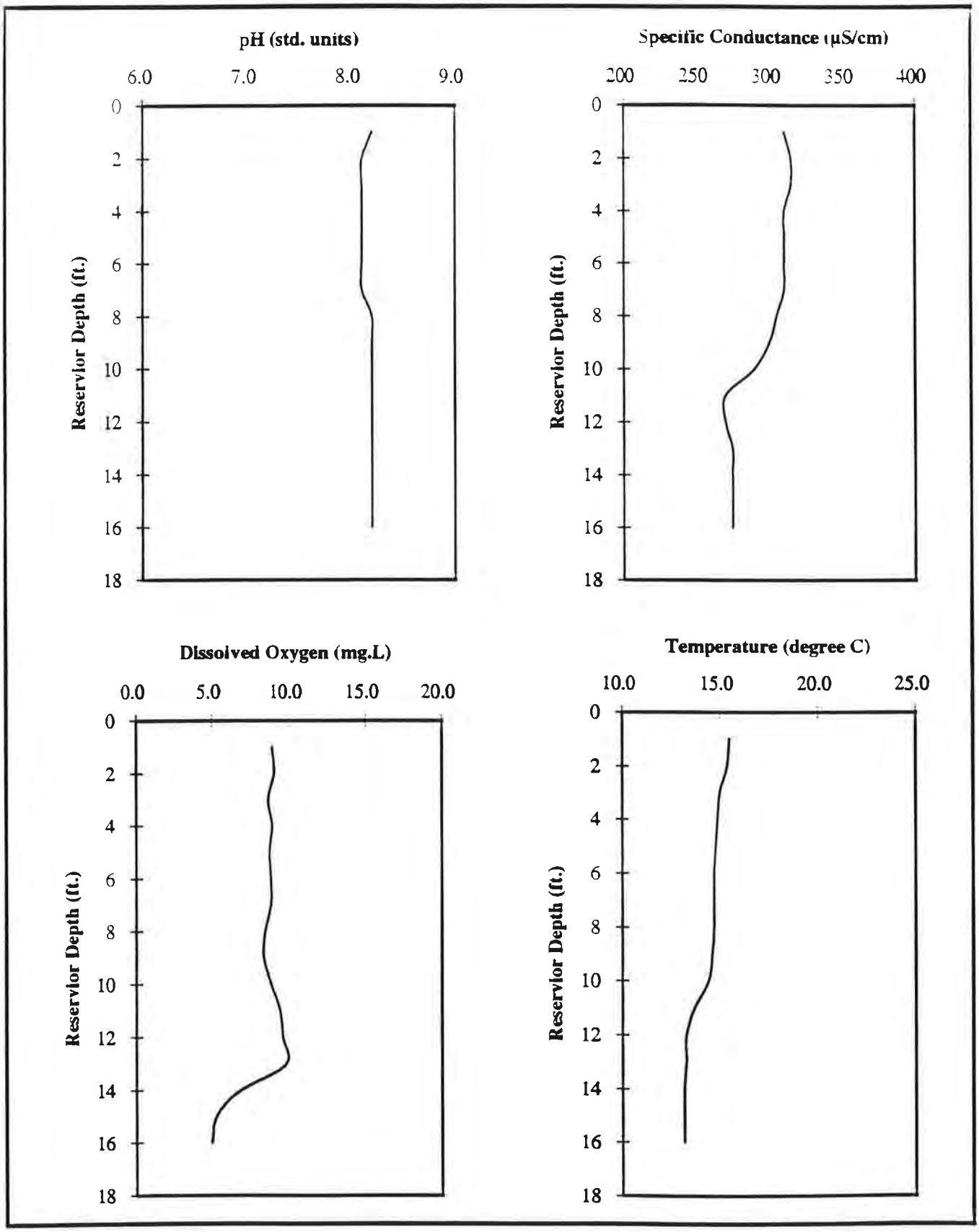
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3B

File: 96-APX-B.XLS

Status Date: 9/3/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - MAY 30. 1996

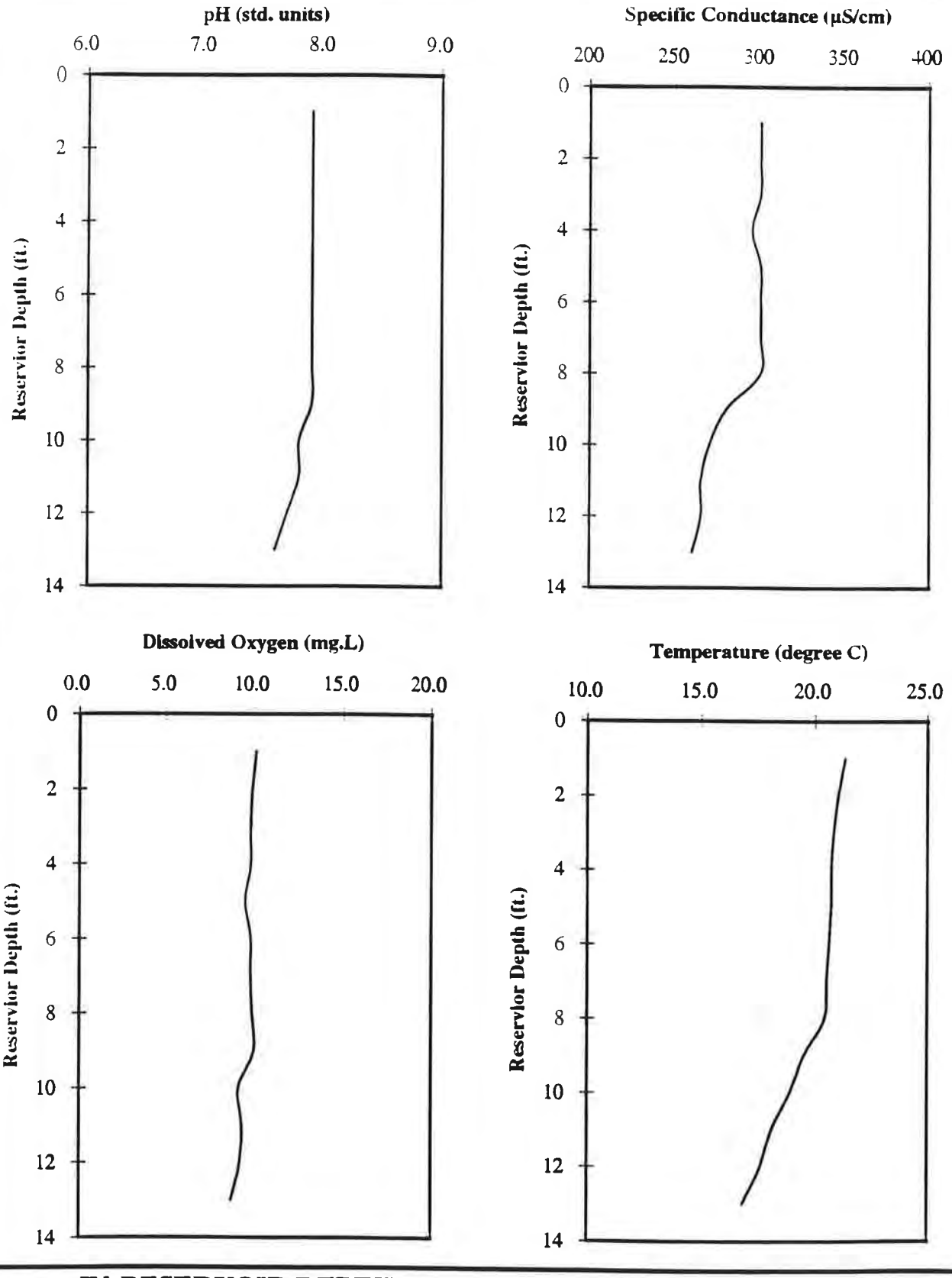
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3C

File: 96-APX-B.XLS

Status Date: 9/3/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - JUNE 19, 1996

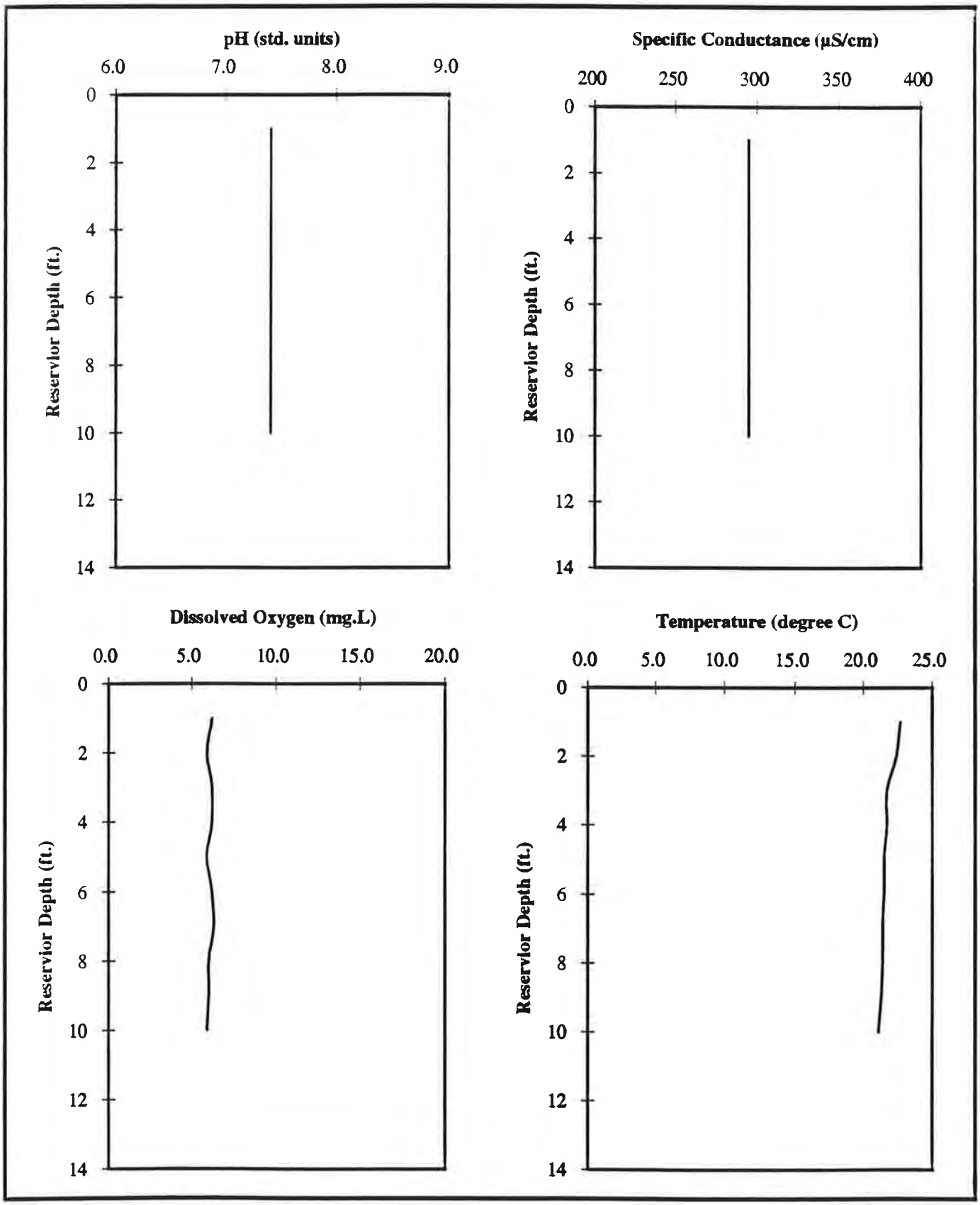
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3D

File: 96-APX-B.XLS

Status Date: 9/3/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - JULY 16, 1996

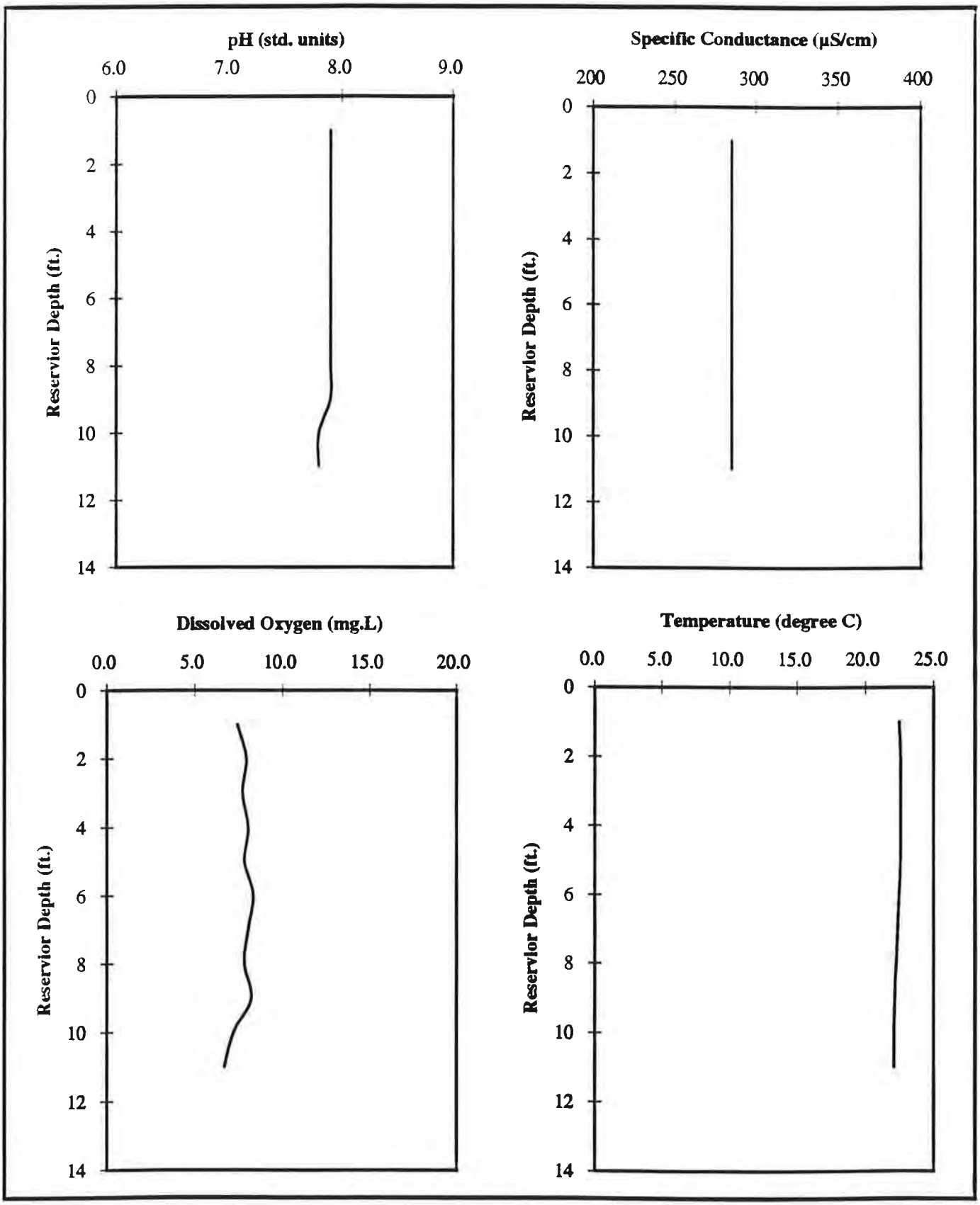
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3E

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - JULY 24, 1996

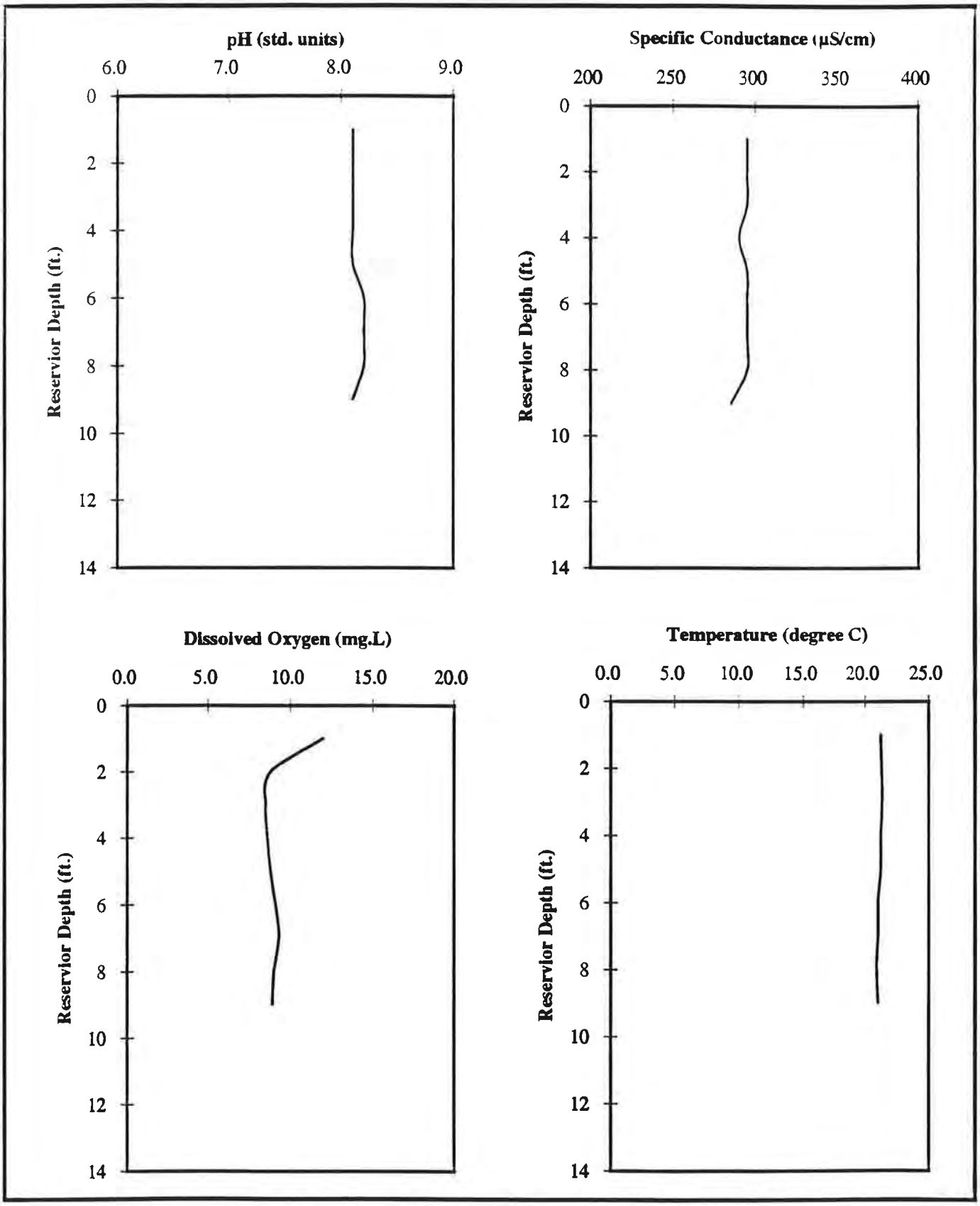
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3F

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - AUGUST 7, 1996

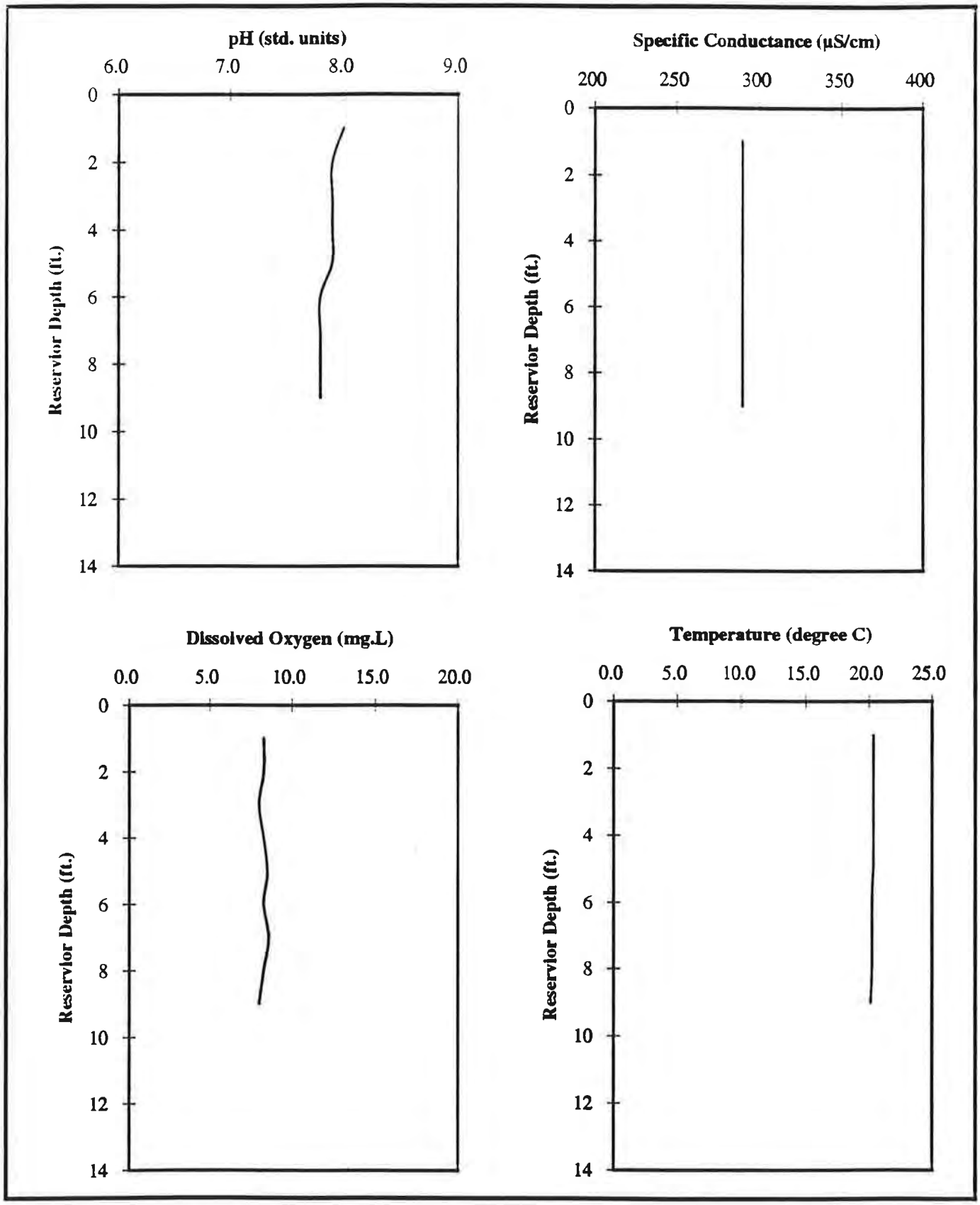
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3G

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - SEPTEMBER 4, 1996

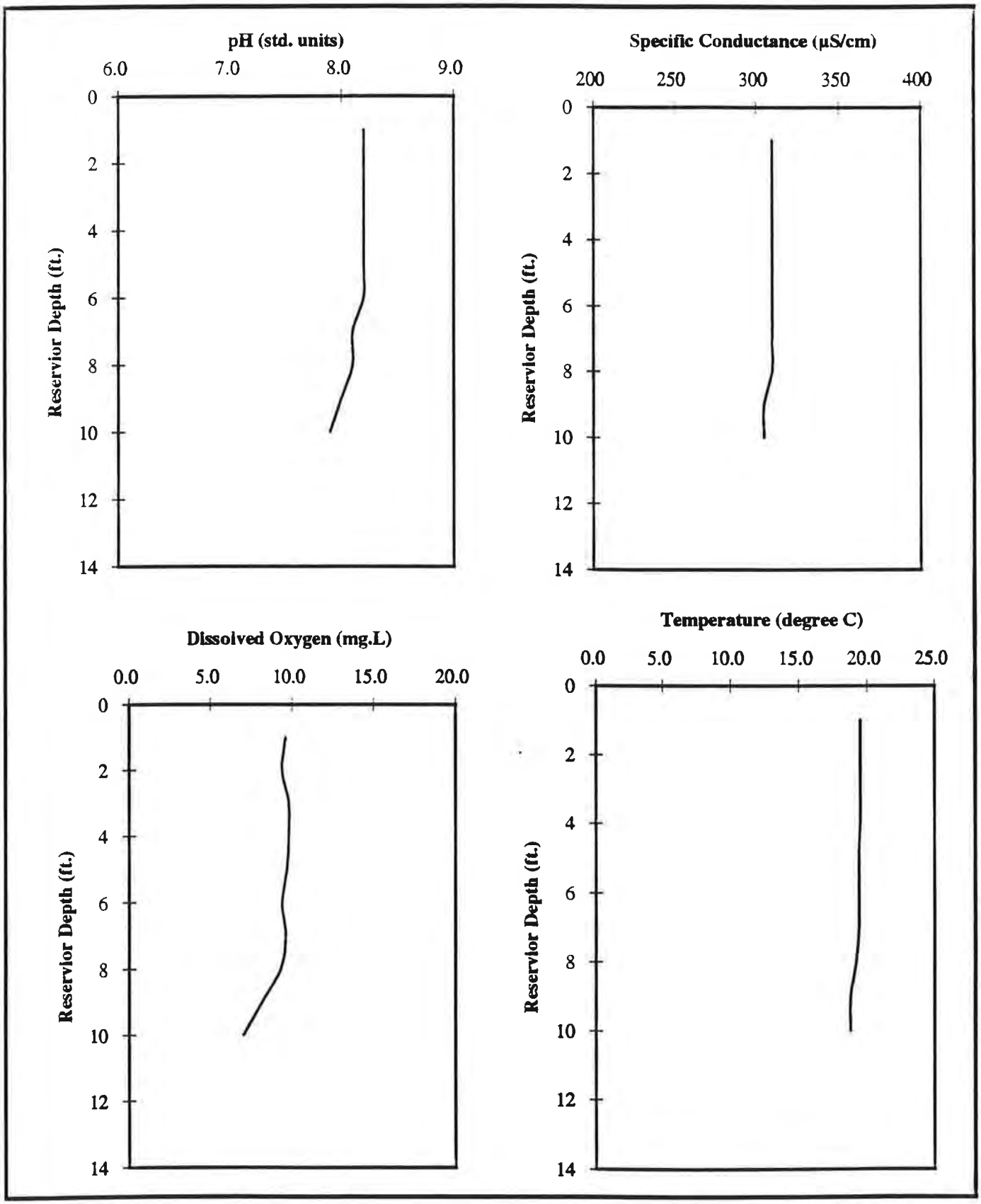
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3H

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - SEPTEMBER 11, 1996

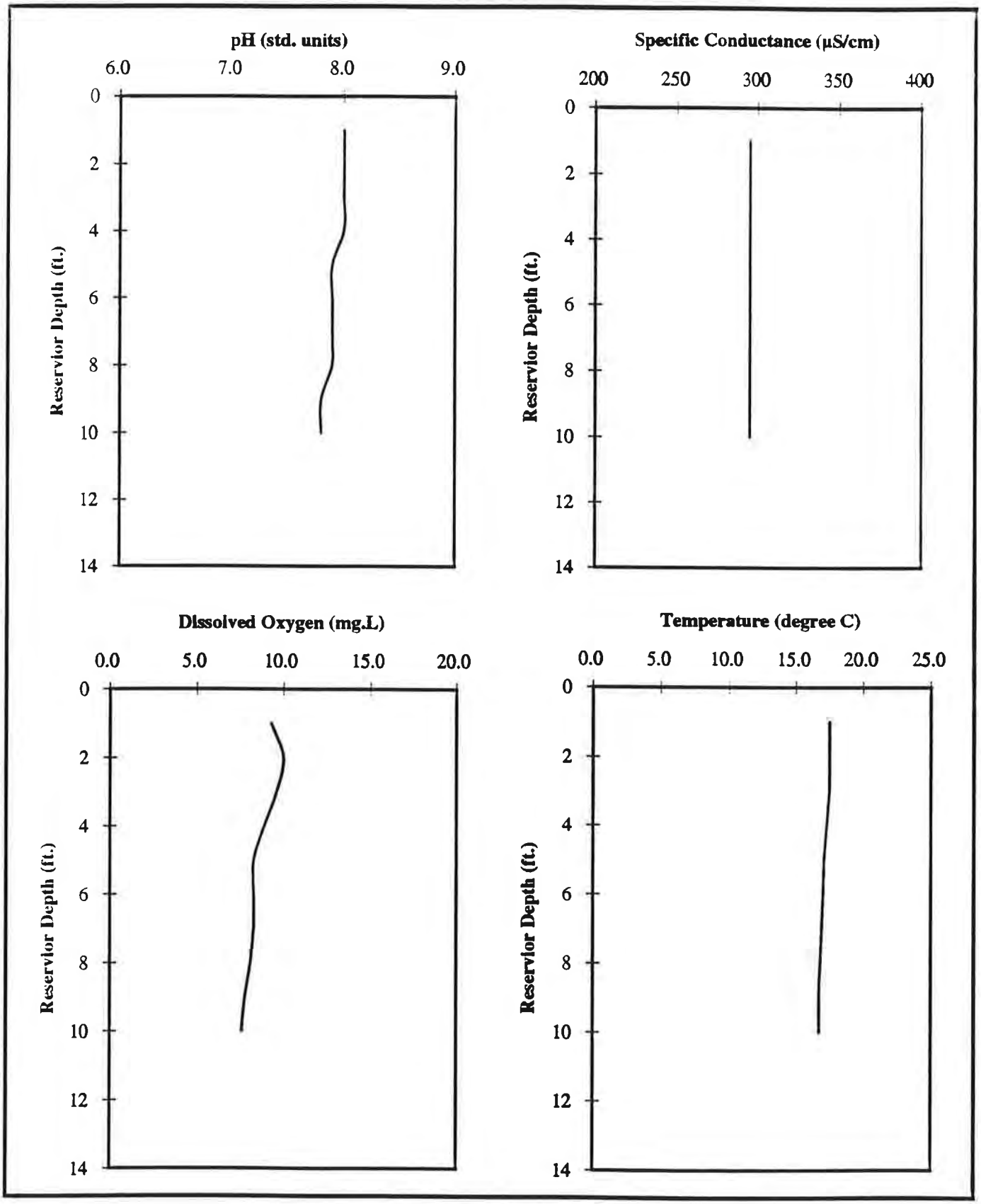
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-31

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - SEPTEMBER 18, 1996

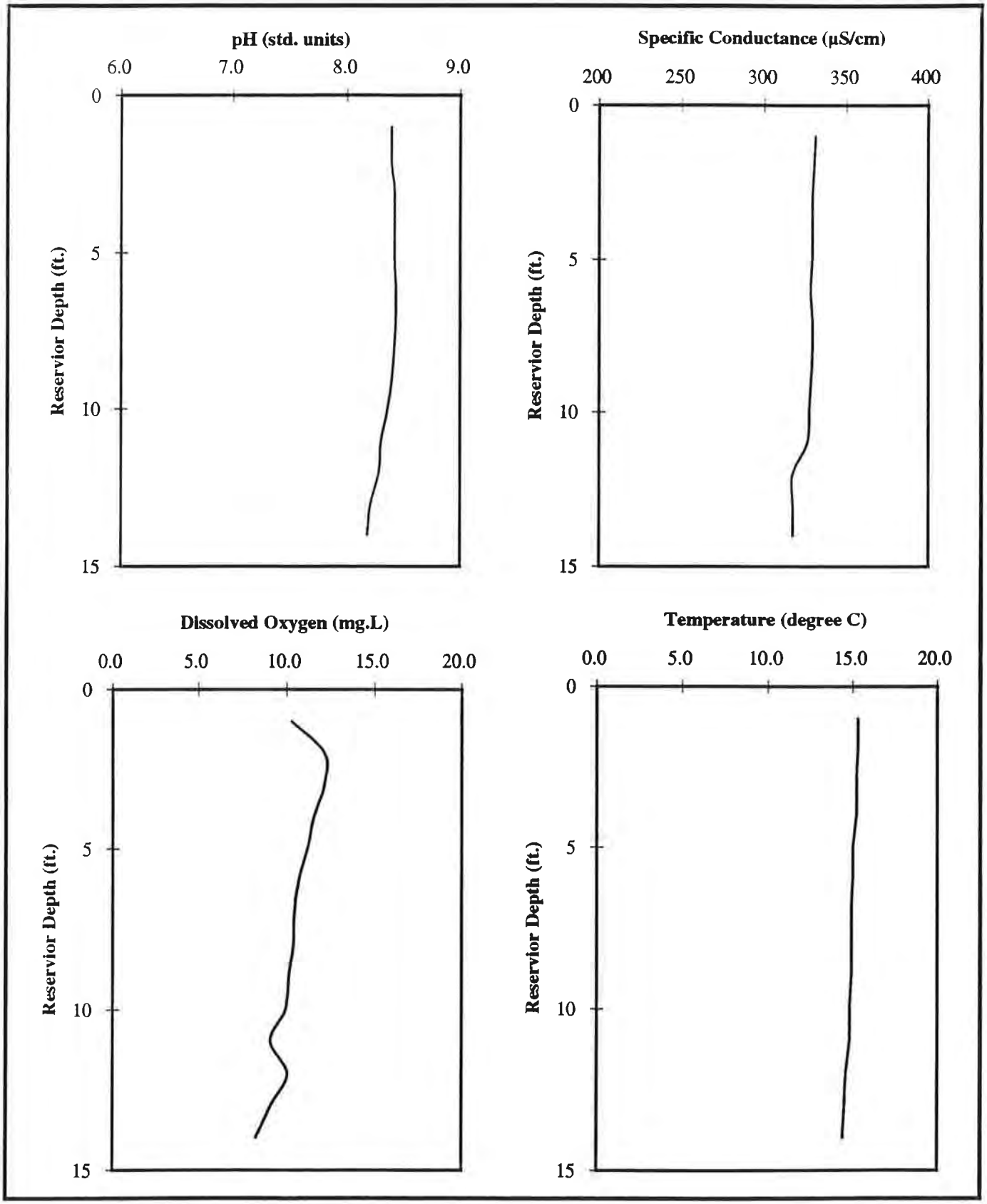
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3J

File: 96-APX-B.XLS

Status Date: 10/23/96



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - OCTOBER 9, 1996

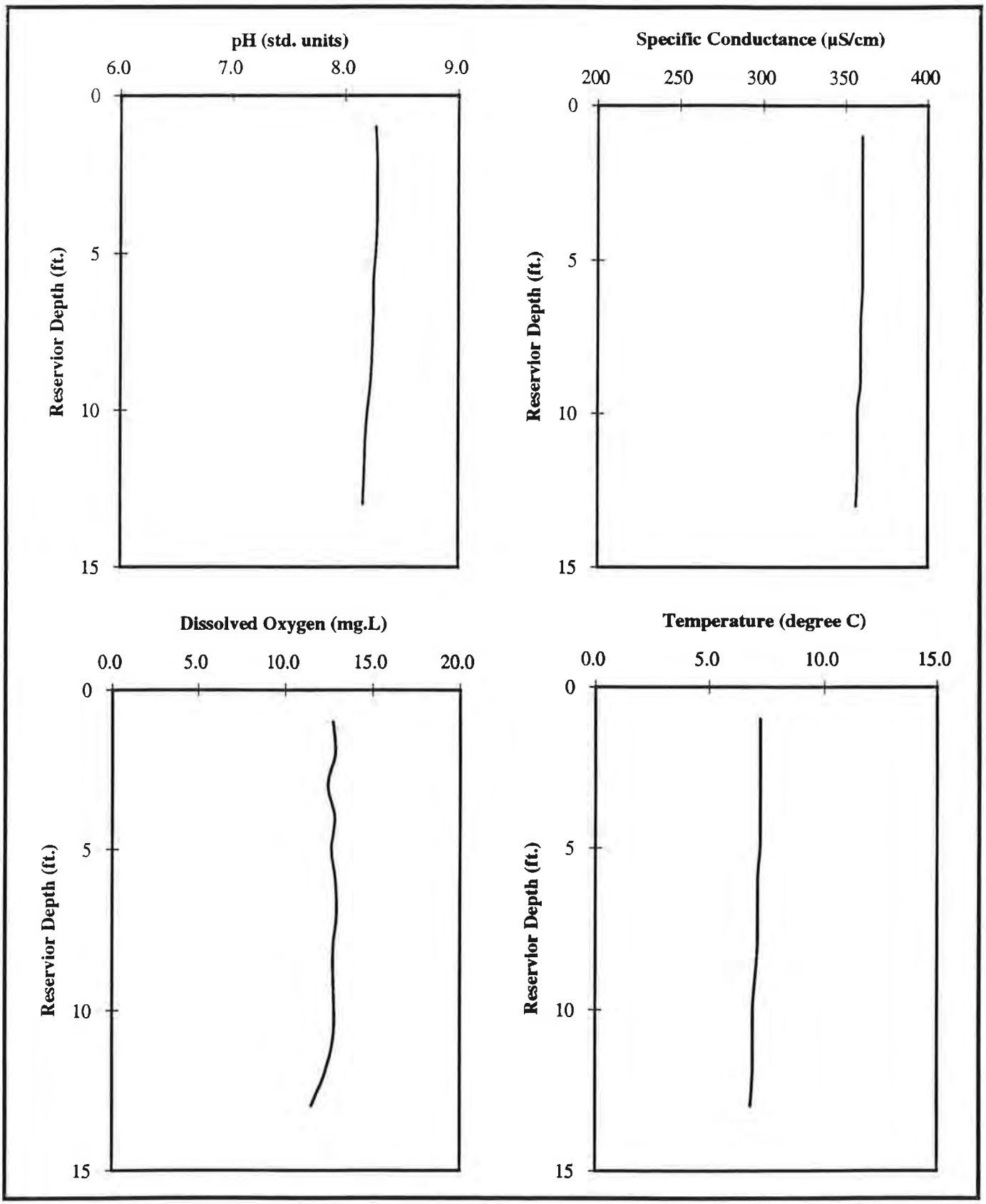
CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60

Figure B-3k

File: 96-APX-B.XLS

Status Date: 2/6/97



IN-RESERVOIR DEPTH PROFILE DATA, SITE 9 (RS)
CHATFIELD RESERVOIR - NOVEMBER 13, 1996

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

Project No. 8044.60
Figure B-31

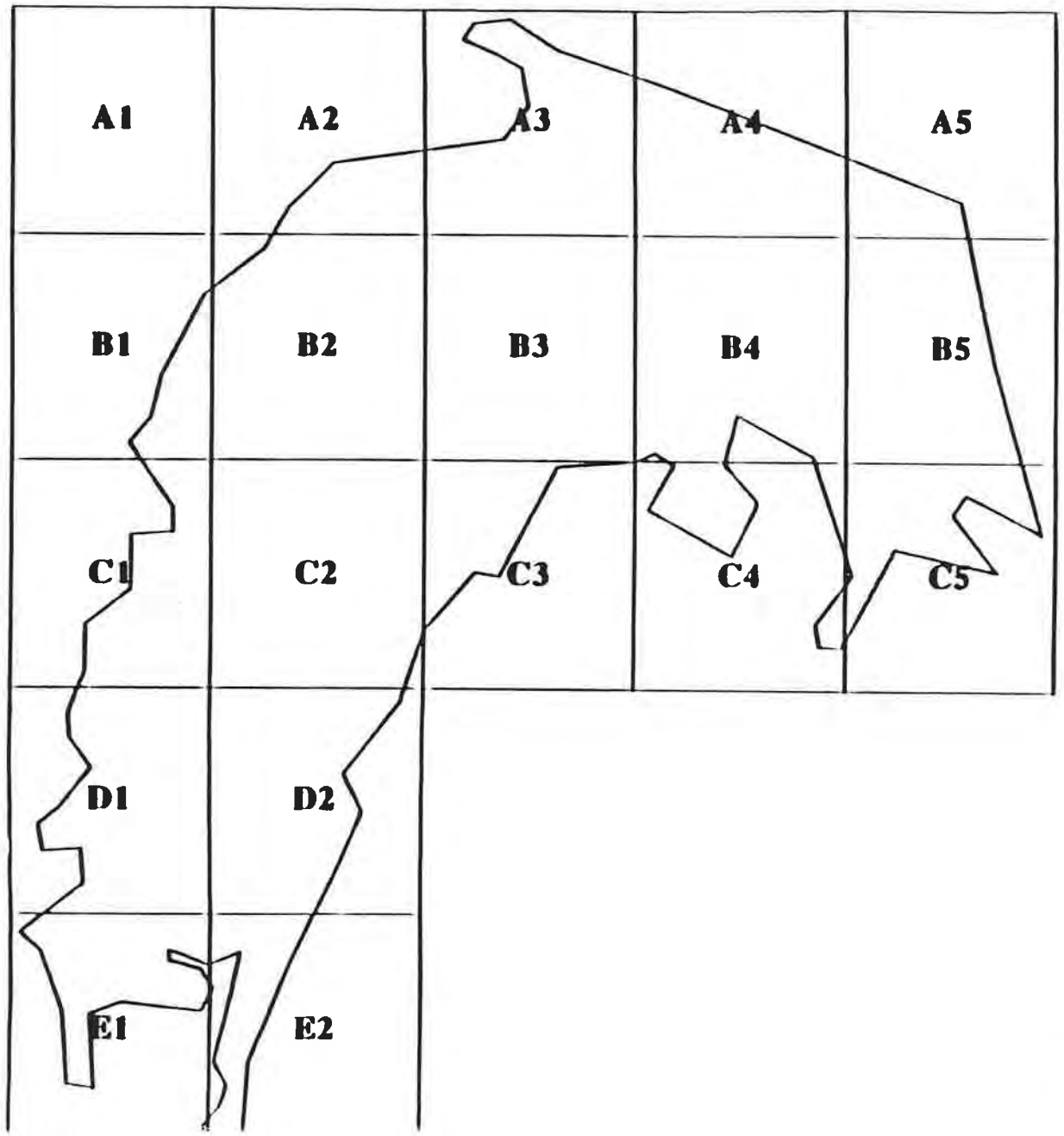
File: 96-APX-B.XLS

Status Date: 2/6/97

APPENDIX C

SUPPLEMENTAL DISSOLVED OXYGEN DEPTH PROFILE DATA SHEETS 1996 CY MONITORING PROGRAM

Chatfield Reservoir
Sample Reference Grids



CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: A-3		Samplers: K. HICKS	
Date: 05-30-96		Sample Time: 1345 HRS	
Total Profile Depth (ft): 13		General Weather: WINDY/OVERCAST	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
12 FT	8.53	15.1°C	MURKY FROM RAIN
9	7.70	15.1	SOME ALGAE
6	7.52	15.3	3 FT VISIBILITY
3	7.55	15.5	
6"	7.50	15.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: B-2	Samplers: K. HICKS J. NAGLE
Date: 05-30-96	Sample Time: 11:35 AM
Total Profile Depth (ft): 12'	General Weather: WARM/PARTLY CLOUDY

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
10	7.57	15.2°C	SOME ALGAE & MURKY
9	7.21	15.4	FROM RECENT RAIN —
6	7.36	15.3	GOOD VISIBILITY 6 Ft
3	7.36	15.5	
6"	7.37	15.9	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: B-3		Samplers: R. HICKS, J. NAGLE	
Date: 05-30-96		Sample Time: 1400 HRS	
Total Profile Depth (ft): 32 FT		General Weather: OVERCAST/WARM/BREEZY	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
30 FT	7.46	13.6°C	MURKY
27	7.27	13.8	SOME ALGAE
24	7.24	13.8	3 FT VISIBILITY
21	7.44	14.4	
18	7.55	14.6	
15	7.59	14.7	
12	7.57	14.9	
9	7.55	15.0	
6 FT	7.43	15.1	
3	7.61	15.2	
6"	7.66	16.0	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: B-4		Samplers: K. HICKS, T. NAGLE	
Date: 05-30-96		Sample Time: 11:55 AM	
Total Profile Depth (ft): 22 FT		General Weather: PARTLY CLOUDY/CALM/WARM	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
21 FT	7.81	14.2°C	SOME ALGAE/MURKY
18	7.27	14.4	FROM RAIN -
15	7.17	14.4	VERY MURKY
12	7.19	14.7	3' VISIBILITY
9	7.17	14.9	
6	7.24	15.3	
3	7.12	15.6	
6"	7.12	16.1	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: C-2		Samplers: K. HICKS, J. WAGAE	
Date: 6-30-06		Sample Time: 11:10 am	
Total Profile Depth (ft): 23		General Weather: SUNNY, WARM	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
21'	8.04	12.5°C	MURKY FROM RAIN/ SOME ALGAE
18'	7.52	12.9	9' OF VISIBILITY
15	7.43	13.4	
12	7.38	14.7	
9	7.64	14.8	
6	7.44	14.9	
3	7.36	15.1	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: A5	Samplers: B. Pedretti / B. Thompson / M. [illegible]
Date: 6/19/01	Sample Time: 10:45
Total Profile Depth (ft): 28	General Weather: Clear + Calm

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
28	5.54	16.2	
24	5.80	16.4	
20	5.82	17.0	
16	6.36	17.9	
12	7.31	19.4	
8	7.47	19.7	Clear w/ green tint
			floating Algae
4	7.40	19.8	
6"	7.43	20.4	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: B 1		Samplers: B. Pedroff/M Barcewski	
Date: 06/18/96		Sample Time: 12:27	
Total Profile Depth (ft): 14ft		General Weather: Clear + Dry	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
14'	7.19	18.4	
11'	7.45	18.8	
9'	7.61	18.8	
6'	7.69	19.4	
3'	7.78	19.6	
1'	7.85	19.8	
6"	7.77	20.1	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: 31 / ZI 10 NTR.	Samplers: B PEDRETT - B. THOMPSON
Date: 6-19-96	Sample Time: 800
Total Profile Depth (ft): 27'	General Weather: SUNNY / LIGHT BREEZE

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
27'	5.44	16.4	
23'	5.73	16.7	
19'	6.20	17.7	
15'	7.43	19.6	
11'	7.52	19.7	
7'	7.27	19.8	
3'	7.07	19.9	VERY GREEN W/ ALGAE
1'	7.03	19.9	
6"	7.16	19.9	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: RL [illegible] / [illegible]	Samplers: [illegible] / [illegible]
Date: 6/18/96	Sample Time: 1404
Total Profile Depth (ft): 17'	General Weather: Clear & [illegible]

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
17'	7.66	18.1	
14'	7.90	18.1	
11'	7.92	18.8	
8'	8.18	19.2	
5'	8.64	20.2	
2'	7.95	20.9	
1'	8.01	21.5	
6"	7.91	21.9	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: CL - 3 / BT	Samplers: BP & MR
Date: 06/24/96	Sample Time: 1352
Total Profile Depth (ft): 16	General Weather: CLEAR & HOT

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
16'	10.36	17.7	CLEAR & GREEN.
13'	8.04	20.1	
10'	8.08	20.3	
7'	8.10	20.5	
4'	7.88	21.3	CLEAR w/ GREEN TINT.
1'	7.88	21.3	
6"	7.86	21.3	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: C5 top 1.5	Samplers: RP & MB
Date: 08/15/96	Sample Time: 11:11 hrs
Total Profile Depth (ft): 13 ft	General Weather: overcast dry fast 3

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
13'	7.10 mg/l	18.8	dark green.
12'	7.06	19.1	
10	7.27	20.00	
9	7.15	20.00	
7	7.31	20.1	
4'	7.36	20.1	probe visable
1	7.26	20.2	green murky
~~six inches~~	~~7.24~~	~~20.2~~	
six inches	7.24	20.2	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: AZ / BTM / ET		Samplers: JP & MB	
Date: 06/21/16		Sample Time: 0814	
Total Profile Depth (ft): 15		General Weather: CLEAR & CALM	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
15'	6.15	20.2	CLEAR & GREEN
12'	6.45	20.5	
9'	6.49	20.6	
6'	6.59	20.7	CLEAR W/ GREENTINT
3'	6.60	20.7	
1'	6.70	20.7	
6"	6.89	20.8	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: PL		Samplers: [illegible]	
Date: 2/21/96		Sample Time: 1202	
Total Profile Depth (ft): 26'		General Weather: [illegible]	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
26	5.17	18.6	
	[illegible]		
23	6.29	19.7	
20	7.13	20.0	
17	7.13	20.1	
14	7.31	20.2	
11	7.14	20.3	
9	7.46	20.6	Light green in color
5	7.38	20.6	
2'	7.29	21.8	
[illegible]			
0"	7.36	22.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: 32 / LOWER, E	Samplers: B. FOOTE M BARCEWSKI, B TV
Date: 06/25/96	Sample Time: 1045
Total Profile Depth (ft):	General Weather: OVERCAST, LIGHT WIND

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
29'	4.52	11.3	CLEAR / GREEN TINT
26'	5.30	16.6	
23'	5.86	17.2	
20'	5.26	17.7	
17'	6.08	18.0	
14'	6.36	19.2	
11'	7.01	20.3	
8'	7.07	20.4	
3'	7.22	20.5	CLEAR / GREEN TINT
6"	7.24	20.7	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: CHATF.	Samplers: ZP & MB
Date: 7/21/16	Sample Time: 1521
Total Profile Depth (ft): 25'	General Weather: CLEAR & HOT

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
25'	7.4	18.1	
21'	6.54	18.4	
17'	6.23	19.0	
13'	6.65	19.5	
9'	7.34	20.7	
5'	7.46	21.5	CLEAR & CALM
1'	7.29	22.7	
16"	7.29	22.6	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: C2 Bottom r-		Samplers: BP + MB	
Date: 7-01		Sample Time: 5:40	
Total Profile Depth (ft): 18		General Weather: Clear + Hot	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
18'	6.71	20.1	
15'	7.06	20.3	
12'	6.77	20.5	
9'	7.02	20.6	
6'	6.89	20.9	
3'	6.84	21.4	
1'	6.88	22.1	
4"	7.01	22.4	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: DZ / CENTER	Samplers: S. PENDETT / M. BAROZLUSKI
Date: 7/25	Sample Time: 1545
Total Profile Depth (ft): 15'	General Weather: HOT & CLEAR

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
15'	7.46	14.9	
12'	7.77	17.2	
9'	7.50	20.5	
6'	7.34	21.1	
3'	7.44	21.3	MURKEY & (GREEN)
1'	7.33	21.5	
6"	7.46	21.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: A3 -0 (R)		Samplers: BP + MB	
Date: 7-02-96		Sample Time: 13:00	
Total Profile Depth (ft): 28'		General Weather: Hot + Clear + Dry	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
28'	4.96	18.6	
24'	5.25	18.9	
20	6.26	19.5	
16'	6.87	20.4	
12'	7.66	21.0	
8'	7.77	21.3	
4'	7.63	21.7	Clear - Light green
1'	7.47	23.2	
6"	7.48	23.2	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: CL-LFT		Samplers: MB & EP	
Date: 07/03/19		Sample Time: 0802	
Total Profile Depth (ft): 13'		General Weather: CLEAR & WARM	
Depth	**Dissolved Oxygen**	**Temperature**	**Water Appearance and Notes**
13'	5.40	21.2	
10'	5.57	21.3	
7'	6.48	21.3	
4'	6.62	21.3	
1'	6.67	21.5	VERY MIRKEY
12'	5.41	21.2	
5'	6.46	21.3	
6"	6.51	21.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: D1 (center (R)	Samplers: BP + MB
Date: 7-02-96	Sample Time: 15:00
Total Profile Depth (ft): 26	General Weather: Clear + Hot + Dry

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
26'	6.43	15.3	
22'	6.67	15.4	
18'	6.68	15.5	
14'	7.02	16.0	
10'	7.84	17.0	
6'	7.70	19.5	green/w/small debris
2'	7.05	24.6	
6"	7.06	24.8	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: CL / 3ST. / UT	Samplers: SP & MB		
Date: 07/02/96	Sample Time: 1025		
Total Profile Depth (ft): 14	General Weather: OVERCAST / WARM		
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
14'	5.90	22.1	
12'	6.14	22.2	
10'	6.22	22.3	
8'	6.34	22.3	
6'	6.29	22.4	
4'	6.47	22.3	
2'	6.36	22.4	
6"	6.35	22.3	VERY MURKEY
			GREEN/BROWN

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: DI / [illegible]		Samplers: [illegible] & MB	
Date: 07/08/96		Sample Time: 1146	
Total Profile Depth (ft): 14		General Weather: [illegible] / WARM	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
14'	3.11	22.3	
12'	2.75	22.4	
10'	2.98	22.4	
8'	6.02	22.4	
6'	6.13	22.4	
4'	6.00	22.4	
2'	6.12	22.5	[illegible] / [illegible]
6"	6.19	22.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site:		Samplers:	
Date:		Sample Time:	
Total Profile Depth (ft):		General Weather:	

Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
19'	[illegible]	21.2	
18'	[illegible]	21.3	
15'	5.13	21.6	
12'	5.31	22.0	
10'	6.20	22.0	
7'	6.36	22.1	
4'	6.44	22.2	
1'	6.56	22.1[illegible]	[illegible]
16"	6.57	22.5	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: #3 mid Left		Samplers: BT MB BP	
Date: 7-15-06		Sample Time: 9:10	
Total Profile Depth (ft): 17'		General Weather: Clear + Hot	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
17'	4.70	21.5	
14'	5.60	21.9	
11'	5.95	22.00	
8'	6.06	22.1	
5'	6.20	22.1	
2'	5.96	22.3	Milky green/Brown-cloudy
1'	6.01	22.5	
6"	6.13	22.7	

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: C2 CENTER		Samplers: BP MB JT	
Date: 07-15		Sample Time: 1050	
Total Profile Depth (ft):		General Weather: CLOUDY, WARM	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
18'	2.30	20.2	
	[redacted]	[redacted]	
15'	4.81	19.9	
12'	5.65	22.3	
9'	5.90	22.4	
6'	5.93	22.4	
3'	6.00	23.8	
1'	5.94	24.0	
6"	6.18	24.1	VERY CLOUDY, VERY BROWN

CHATFIELD RESERVOIR
DISSOLVED OXYGEN DEPTH PROFILE DATA SHEET

Site: C5 top left		Samplers: BT BP MB	
Date: 7-15-96		Sample Time: 10:01	
Total Profile Depth (ft): 15'		General Weather: Cloudy + Hot	
Depth	Dissolved Oxygen	Temperature	Water Appearance and Notes
15'	2.62	21.6	
12'	2.52	21.4	
9'	5.08	21.7	
6'	5.53	21.8	
3'	5.86	22.0	Not visible
1'	5.88	23.2	Very Brown + V. murky
6"	5.96	23.5	

STATE OF COLORADO

COLORADO STATE PARKS
Chatfield State Park
11500 N. Roxborough Park Road
Littleton, Colorado 80125
Phone (303) 791-7275
FAX (303) 791-1231

March 13, 1996

Mr. Jack Lanning
4899 S. Dudley Street #23
Denver, Colorado 80123

Dear Jack:

On behalf of Chatfield State Park I want to thank you for donating the results of the Water Quality and Sedimentology Study done by your students on the Chatfield Reservoir.

The research done and data generated are invaluable tools for us as we do not have the resources to allocate for long-term study.

I hope the experiences of your students are as rewarding to them as this partnership is to us.

Sincerely,

Michael D. Widler
Park Manager VI

CHATFIELD RESERVOIR
PROJECT SUMMARY-SPRING 1996

PROJECT

THE CHATFIELD RESERVOIR WATER QUALITY AND SEDIMENT STUDY IS AN ONGOING VENTURE INCLUDING BEAR CREEK HIGH SCHOOL STUDENTS, CHATFIELD STATE PARK, AND CHEERS (CHATFIELD ENVIRONMENTAL EDUCATION RESOURCE SYSTEM). THIS PHASE OF THE PROJECT, "SPRING 1996", INCLUDED 7 SAMPLING DATES AND 33 STUDENTS COLLECTING AND INTERPRETTING DATA. TWENTY-THREE SITES WERE SAMPLED AND 61 WATER SAMPLES WERE TAKEN AT A VARIETY OF DEPTHS AT EACH SITE. WATER CHEMISTRY DATA INCLUDED: DISSOLVED OXYGEN, pH, T°C, AND NITRATES. PHYSICAL ABIOTIC DATA SAMPLED WERE: WATER DEPTH, VERTICAL WATER CLARITY, AND BOTTOM SEDIMENT SAMPLE. BIOLOGICAL SAMPLING INCLUDED: SURFACE ZOO/PHYTOPLANKTON AND QUALITATIVE IDENTIFICATION IN WATER SAMPLES. IN ADDITION, SATELLITE NAVIGATION WAS USED TO ACCURATELY LOCATE EACH SAMPLING SITE.

EQUIPMENT AND TECHNOLOGY USED IN THIS VENTURE INCLUDED: DIGITAL DEPTH SOUNDER, GPS (GLOBAL POSITIONING SYSTEM), DIGITAL pH METER, DISSOLVED OXYGEN/TEMPERATURE METER, LAMOTTE BOTTOM DREDGE, KEMMERER WATER SAMPLER, SECCHI DISK, AND MACINTOSH DATA BASE/SPREAD SHEET PROGRAM.

DATA WAS ANALYZED AND INTERPRETTED BY STUDENTS AND A COPY OF RESULTS AND INTERPRETATIONS WERE SENT TO MIKE WIDLER-PARK MANAGER-CHATFIELD STATE PARK, AND BRAD TAYLOR, CHEERS COORDINATOR.

SCIENTIFIC RESULTS OF PROJECT

BASED ON VERTICAL PROFILES OF D.O., pH, T°C, AND NITRATES, IT WAS CONCLUDED THAT AT THE TIME OF THIS STUDY, THE RESERVOIR WAS IN A WELL-MIXED PHASE. DATA INDICATES THE LAKE TO BE OLIGOTROPHIC, WITH HIGH D.O. AND LOW NITRATES. LIMITED BOTTOM PLANT GROWTH FROM DREDGE SAMPLE ALSO SUPPORTS THIS CONCLUSION. CONCLUSIONS DRAWN FROM MAPPED RELATIONSHIPS INCLUDE: 1) WATER CLARITY SEEMS TO BE RELATED TO WATER DEPTH. DEPTH COULD ALSO BE DEFINED AS "INTERVAL BETWEEN SEDIMENT/WATER INTERFACE AND WAVE ENERGY SOURCE. 2) SEDIMENT GRAIN SIZE SEEMS TO BE RELATED TO WATER DEPTH. THE DEEPER THE WATER, THE FINER THE GRAIN SIZE. ALSO CONCLUDED IS THAT GENERAL SEDIMENT DISTRIBUTION IS A RESULT OF MODERN LAKE ENERGY REGIMES AND NOT RELICT RIVER SEDIMENT PATTERNS. 3) ZOO/PHYTOPLANKTON IS RICH AND DIVERSE, INCLUDING COPEPODS, EUGLENA, DAPHNIA, AND A VARIETY OF FILAMENTOUS ALGAE. ALSO NOTED WERE GASTROPODS (SNAILS) LIVING ON BOTTOM PLANT GROWTH.

EDUCATIONAL RESULTS OF PROJECT

STUDENTS WERE ACTIVE PARTICIPANTS IN AN AUTHENTIC TASK. AFTER BRIEF INTRODUCTIONS TO THE EQUIPMENT, STUDENTS BECAME SELF-DIRECTED COOPERATIVE DATA GATHERERS. THEY NOT ONLY DID WHAT REAL SCIENTISTS DO, THEY WERE REAL SCIENTISTS. THE DATA GATHERING TASKS REQUIRED TEAM COOPERATION, INSTRUMENT CALIBRATION AND READING, DATA RECORDING, AND ANALYSIS AND SYNTHESIS OF GATHERED INFORMATION. IN ADDITION, STUDENTS ACTIVELY PARTICIPATED IN SAILING THE RESEARCH VESSEL AND LEARNING SAFE BOATING AND NAVIGATION SKILLS. WORD-OF-MOUTH STORIES OF THE VENTURE ENCOURAGED OTHER STUDENTS TO BECOME INVOLVED IN THE PROJECT, AND HOPEFULLY WILL PROMOTE THE PROJECT AMONG NEW STUDENT VOLUNTEERS. AN INTERESTING UNPLANNED OUTCOME OCCURRED WHEN ONE OLDER STUDENT (A SENIOR GIRL) WORKED AS A "MENTOR". ATTENDING SEVERAL SESSIONS AND SERVING AS AN EFFECTIVE ROLE MODEL FOR THE YOUNGER STUDENTS, THIS STUDENT ASSUMED A POSITION ANALOGOUS TO A FIRST MATE ON A RESEARCH VESSEL (IN FACT, SINCE REAL RESEARCH WAS BEING CONDUCTED, SHE WAS A REAL FIRST MATE!).

DISTRICT OBJECTIVES:

THE OBJECTIVES OF THE DISTRICT THAT WERE MET BY THIS PART OF KAREN BRUNSON'S AND JACK LANNING'S "TEACHER ALTERNATIVE COMPENSATION PROJECT" WERE AS FOLLOWS:

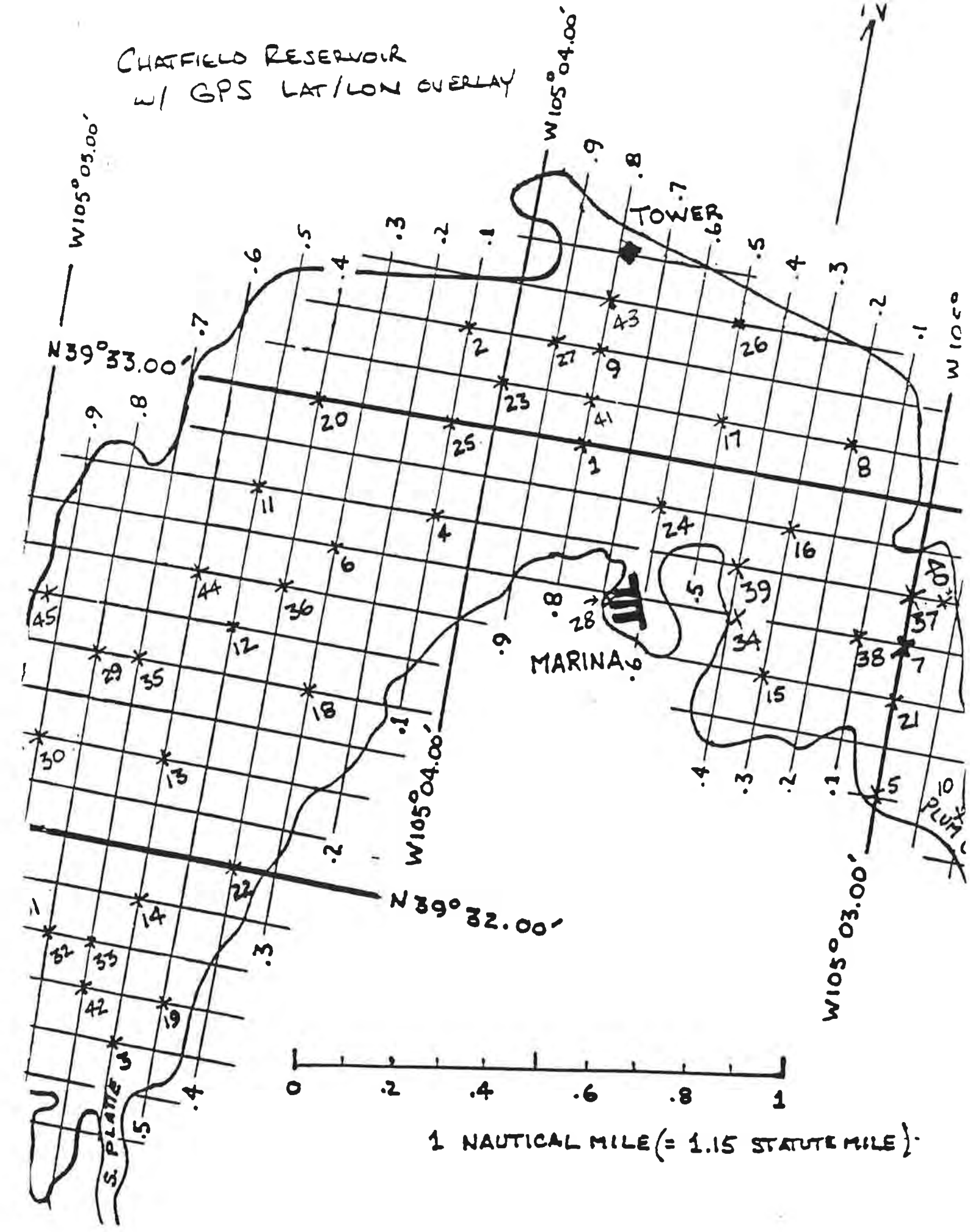
1) IMPLEMENTATION OF SCIENCE CONTENT STANDARDS: BENCHMARKS MET OR EXCEEDED- STANDARD 1.1: ALL BENCHMARKS MET; STANDARD 1.2: ALL BENCHMARKS MET; STANDARD 1.3: BENCHMARK L, M, AND P; STANDARD 2.1: ALL BENCHMARKS MET; STANDARD 2.2: ALL BENCHMARKS MET; STANDARD 2.3: ALL BENCHMARKS MET; STANDARD 3.1: ALL BENCHMARKS MET; STANDARD 3.2: BENCHMARK M; STANDARD 3.3: H,I; STANDARD 4.1: BENCHMARK O; STANDARD 4.2: BENCHMARKS P AND Q; STANDARD 4.3: BENCHMARK K; STANDARD 4.4; BENCHMARK T; STANDARD 5.1: BENCHMARKS U,V,X, AND Y; STANDARD 5.2: BENCHMARK L AND P; AND STANDARD 6.1: BENCHMARKS M AND N.

2) TECHNOLOGY:
   1) USE OF DIGITAL EQUIPMENT TO RECORD DATA
   2) USE OF SATELLITE NAVIGATION EQUIPMENT
   3) USE OF COMPUTER TO STORE AND RETRIEVE DATA

3) LEAST RESTRICTIVE ENVIRONMENT: FIVE STUDENTS WITH LEARNING DIFFERENCES SUCCESSFULLY MET DISTRICT CONTENT STANDARD GUIDELINES WHILE PARTICIPATING IN THIS PROJECT.

4) CULTURAL DIVERSITY: CULTURAL/ETHNIC GROUPS THAT HAVE PARTICIPATED IN THIS PROJECT INCLUDE: NATIVE AMERICAN, HISPANIC, AFRICAN-AMERICAN, ASIAN-AMERICAN, AND ANGLO-AMERICAN. THIS PHASE OF DATA COLLECTION AND INTERPRETATION INVOLVED 15 FEMALES AND 16 MALES. AS THE FACE OF SCIENCE CHANGES IN AMERICA, THESE STUDENTS WILL KNOW THAT SCIENCE IS A UNIVERSAL LANGUAGE AND CAN BE SUCCESSFULLY "SPOKEN" BY ALL STUDENTS.

5) EDUCATIONAL CHOICE: ALL STUDENTS INVOLVED IN THIS PROJECT MADE A CHOICE TO PARTICIPATE IN AN OUTDOOR ALTERNATIVE LEARNING ENVIRONMENT THAT INVOLVES AN AUTHENTIC SCIENCE TASK.


CHATFIELD RESERVOIR
w/ GPS LAT/LON OVERLAY
W105°05.00'
W105°04.00'
W105°03.00'
N39°33.00'
N39°32.00'
TOWER
MARINA
S. PLATTE
PLUM
0
.2
.4
.6
.8
1
1 NAUTICAL MILE (= 1.15 STATUTE MILE)

DATE: 4-20-96 AIR TEMP: 45 [illegible] TEAM: [illegible]

LOCATION	DEPTH '	CLARITY '	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	BOTTOM SEDIMENT	SURFACE PLANKTON: PHYTO-	SURFACE PLANKTON: ZOO-
			0'		10'		20'		30'		40'		50'				
(4) W105a16	17'	3'	7.1	10°	7.4	10°	—	—						—	SS, brn	ALGAE	NONE
			8.2	mg/l O	8	mg/l O	—	—	—	—	—	—	—	—			
(5) W105a04.1	33'	3'	7.4	11°	7.6	11°	7.6	11°	7.0	12°	—	—	—	—	Cly, blk		20'- copepods
			7.9	0	7.8	0	8.0	0	8.1	0	—	—	—	—			
(6) W 3.5'	42'	4'	7.2	12°	7.2	12°	7	11°	7.2	12°	7	12°	—	—	Cly, blk w/ blk oil slick hydrocarbon slick		20' copepods
			7.8	0	7.9	0	7.8	0	7.9	0	7.8	0	—	—			
(7) W3.9	58'	5'	7.1	12°	7.5	11°	7.4	10°	7.5	10°	7.3	13°	7.2	16°	Cly, blk	ALGAE -	40' copx. white ? clear
			7.8	0	7.8	0	7.9	0	7.9	0	7.9	0	7.9	0			

DATE: 4-21-95 AIR TEMP: 55° TEAM:

LOCATION	DEPTH'	CLARITY'	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	BOTTOM SEDIMENT	SURFACE PLANKTON PHYTO-	SURFACE PLANKTON ZOO-
			0'		10'		20'		30'		40'		50'				
(8) 400m	15'	4'	7.1	9.0°	7.0	10°									cly, blk w/mica sm leaf debri		10'- Copepod
			8.0	mg/l O	8.0	O											
(9) 800m	16'	4'	7.0	14°	6.8	15°									, Sand w/matrix of clay		10' Copepod
			8.0	O	8.0	O											
(0) 400m	4'	4'	6.9	11°											GVL, lts fldspr		
			8.0	O													
(1) 540m W	34'	4'	7.1	12°	7.0	12°	7.0	14°	7	18°					cly, blK like grease		30'-20' copepods LOTS!!
			8.2	O	8.0	O	7.9	O	7.8	O							

DATE: 4-27-16 AIR TEMP: 60's WINDY TEAM: PAUL DAVIDSON, CASEY SPINDEN, JILL DAVIDSON, KRIS SPINDEN

LOCATION	DEPTH	CLARITY	D.O. pH 0′	T°C Ni 0′	D.O. pH 10′	T°C Ni 10′	D.O. pH 20′	T°C Ni 20′	D.O. pH 30′	T°C Ni 30′	D.O. pH 40′	T°C Ni 40′	D.O. pH 50′	T°C Ni 50′	BOTTOM SEDIMENT	SURFACE PLANKTON PHYTO-	ZOO-
32	4′	1′	6.9	16°											GVL [illegible]	None	[illegible]
			8.2	0													
33	25	3′	8.1	14°	8.2	14°	8.0	15°							Clay brown to black	NONE	MICRO-BLACK THINGS
			8.0	0	8.0	0	8.0	0								algae on the surface	
11	9′		[illegible]	15°	8.4	16°									Sand w/ Clay [illegible]	None [illegible]	Copepo 9'-LOTS [illegible]
			[illegible]	6	7.9	[illegible]											

DATE: 5-2-96 AIR TEMP: 70° Sunny TEAM: Carla Phillips / Leslie Elder

STATION	DEPTH'	CLARITY'	D.O. pH / T°C Ni 0'	D.O. pH / T°C Ni 10'	D.O. pH / T°C Ni 20'	D.O. pH / T°C Ni 30'	D.O. pH / T°C Ni 40'	D.O. pH / T°C Ni 50'	BOTTOM SEDIMENT	SURFACE PLANKTON PHYTO-	SURFACE PLANKTON ZOO-
5	12'	8'	7.8 / 14° / 8.1 / 0	7.5 / 16° / 8.1 / 0					Sand, w/gravel		Copep & thick!
6	20'	10'	7.6 / 14° / 8.1 / 0	7.5 / 15° / 8.1 / 0	7.6 / 16° / 8.1 / 0				cly, brn-blk		Copepods thick! bloom?
1 W03.0	10'	4'	7.6 / 15° / 8.1 / 0	7.1 / 17° / 8.2 / 0					cly, blk-brn		Copepods thick!

DATE: 5/4/96 AIR TEMP: 65° Sunny TEAM: [illegible]

STATION	DEPTH '	CLARITY '	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	BOTTOM SEDIMENT	SURFACE PLANKTON PHYTO-	SURFACE PLANKTON ZOO-
			0'		10'		20'		30'		40'		50'				
8	11'	8'	6	14°	6.9	17°									clay [illegible] brownish [illegible]	Algae	Daphnia Euglena
			8.1	0	8.2	0											
1	5'	5'	5.6	17°C											Gravel plants different colors		
			8.0	0													
2	3'	2'	6	15°C											clay- gray clay black		
			8.1	0													

ATE . 5/5/96 AIR TEMP: 70° Sunny TEAM: Paul Rightmire Kevin Sjursen
Brian [illegible] Leslie Sider

DEPTH	CLARITY	0' D.O. / pH	0' T°C / Ni	10' D.O. / pH	10' T°C / Ni	20' D.O. / pH	20' T°C / Ni	30' D.O. / pH	30' T°C / Ni	40' D.O. / pH	40' T°C / Ni	50' D.O. / pH	50' T°C / Ni	BOTTOM SEDIMENT	SURFACE PLANKTON PHYTO-	SURFACE PLANKTON ZOO-
51'	8'	6.5	14°	6.5	18°	6.4	16°	6.0	14°	6.6	11°	6.4	11°	Cly, brn, no life	Filamentous Algae	Euglena Copepods Daphnia
		8.1	0	8.2	0	8.2	0	8.2	0	8.1	0	8.1	0			
21'	5'	7	16°	6.7	18°	6.8	17°							Sand, brown	a/a	a/a
		8.0	0	8.0	0	8.1	0									

DATE: 5/11/96 AIR TEMP: 80°F TEAM: Leslie Zeiter, Lisa Aaron, Natasha Ginev, Steph Spaulding, Melissa Carrillo, Trish Cypher

DEPTH'	CLARITY'	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	D.O. / pH	T°C / Ni	BOTTOM SEDIMENT	SURFACE PLANKTON: PHYTO-	SURFACE PLANKTON: ZOO-
		0'		10'		20'		30'		40'		50'				
36'	19'	5.8 / 8.1	13° / 0	5.4 / 8.4	18° / 0	5.9 / 8.2	13° / 0	5.9 / 6.1	10° / 0					clay, coco rocks 10' down	Filament Algae	Copepods, Euglena, Mayfly larvae
14'	8'	6.9 / 8.0	19 / 0	6.8 / 8.2	19° / 0									Sand	a/a	a/a
3'	3'	8.9 / 8.2	19° / 0											GVL	NONE	NONE
1'	5'	6.9 / 8.1	19° / 0											Sand and seaweed		

ATHER: 1993 DATA

DATE:

TEAM:

#	WATER DEPTH FEET	VERTICAL CLARITY FEET	DISSOLVED OXYGEN ppm / pH 0'	10'	20'	30'	40'	50'	60'	SEDIMENT DOMINANT DESCRIPTION	PLANTS	ANIMALS
5	45'	+11	12 / 8.6							cly, brn, blk	none	copepod -45'
5	14'	9'	12 / 8.2	12 / 8.6						Sd, cs, clr, pnk, sm gravel	none	none
15	34'	+11'	12 / 7.6 B.2	12 / 8.4 8.2	12 / 3.2 8.2	12 / 3.7 8.6				cly, brn, blk	small twigs	1 wee beastie copepod?
10	23'	10			16 / 6.4 8.6					gvl, clr grains sm cly, blk		
6	4'	3	16 / 8.2 8.6							gvl, clr, sm cly, blk		
16	30'	9			15 / 9 8.4					cly, smooth, blk		
13	7'	6	16 / 7.4 8.2	14 / 7.7 8.5						cly, brn, blk	Eulodea	planktonic-copepod crayfish, snail
13	21'	7	16 / 7.0 8.6	16 / 7.2 8.2	16 / 8.6 8.2					cly, brn, blk mica	phytoplankton "algae"	planktonic-copepods
13	38'	+11	14 / 7.2 8.2	14 / 7.5 8.2	14 / 7.5 8.3	8.2	14 / 8.2 8.2			cly, brn, blk	phytoplankton "algae"	planktonic copepods
13	3'	3	12 / 7.6 8.2							gvl, clr, pnk, ss, cs, prly sorted		
20	17'	7	18 / 7.5 8.3	16 / 7.6 8.3	16 / 7.6 8.4					cly, brn	small twigs	one small copepod
20	20'	9	19 / 7.3 8.2	18 / 7.6	20 / 8.4 8.2					cly, brn slt, clr to white	filamentous algae	copepods
20	20'	7	19 / 7.3 8.2	19 / 8 8.3	20 / 6.6 8					cly, brn		copepods
20	20'	7	20 / 6.5	22 / 7.5	22 / 7.5					gvl, fldspar, quartz		copepods

DATE	WATER DEPTH FEET	VERTICAL CLARITY FEET	DISSOLVED OXYGEN ppm / T / pH 0′	10′	20′	30′	40′	50′	60′	SEDIMENT DOMINANT DESCRIPTION	PLANTS	ANIMALS
5-21 (15)	16	Lots of susp 1′	19 / 6.6 / 8.3	21 / 6.5 / 8.2	22 / 5.2 / 8					cly, brn	none	planktonic copepods w/ eggs
5-21 (16)	16	lots of susp 1′	20 / 7.8 / 8.4	22 / 7 / 8	20 / 7.5 / 8					cly, brn	none	copepods
5-21 (17)	29	4′	19 / 7.8 / 8	20 / 8 / 7.9	22 / 7.4 / 8	15 / 8 / 8.2				cly, brn	none	copepods
5-21 (18)	17	8′	19 / 3.5 / 8.2	19 / 8.2 / 8.2	22 / 7.5 / 8.9					ss, slt, clr, sm cly	none	
5-21 (19)	11	7′	20 / 7.4 / 8.3	22 / 8.5 / 8.2						plants only w/ bulbs for flotation?	bottom plants – complete ecosystems	planktonic copepods annelids!
7-4 (20)	11	7′	25 / 1.2 / 8.2	21 / 8.3 / 8.7						ss, slt, min – fldspr, qtz mica	lts filament algae	PLANKON – copepod arthropod egg sacks
6-16 (21)	6	3.5′		21 / 8.5						= cly, blk/brn,	NONE	NONE
7/21 (22)	11′	4′	24 / 7.9	20 / 7.9						ss, pnk, clr, wht; lts min, qtz, fldspr, mag, mica	NONE IN SED	NONE
7-21 (23)	53′	8′	16 / 7.7	16 / 7.8	16 / 7.8	17 / 7.8	16 / 7.8	16 / 7.8		cly, blk	NONE IN SED ALGAE BLOOM IN SURFACE LAYER	NONE to COPEPODS @ 20′

TEAM:


SAMPLE SITES ONLY
X 20 - SITE LOCATION
N
SEDIMENT DISTRIBUTION
G - Gravel
S - Sand
C - Clay
P - Plants

SAMPLE SITES ONLY

X 20 - SITE LOCATION

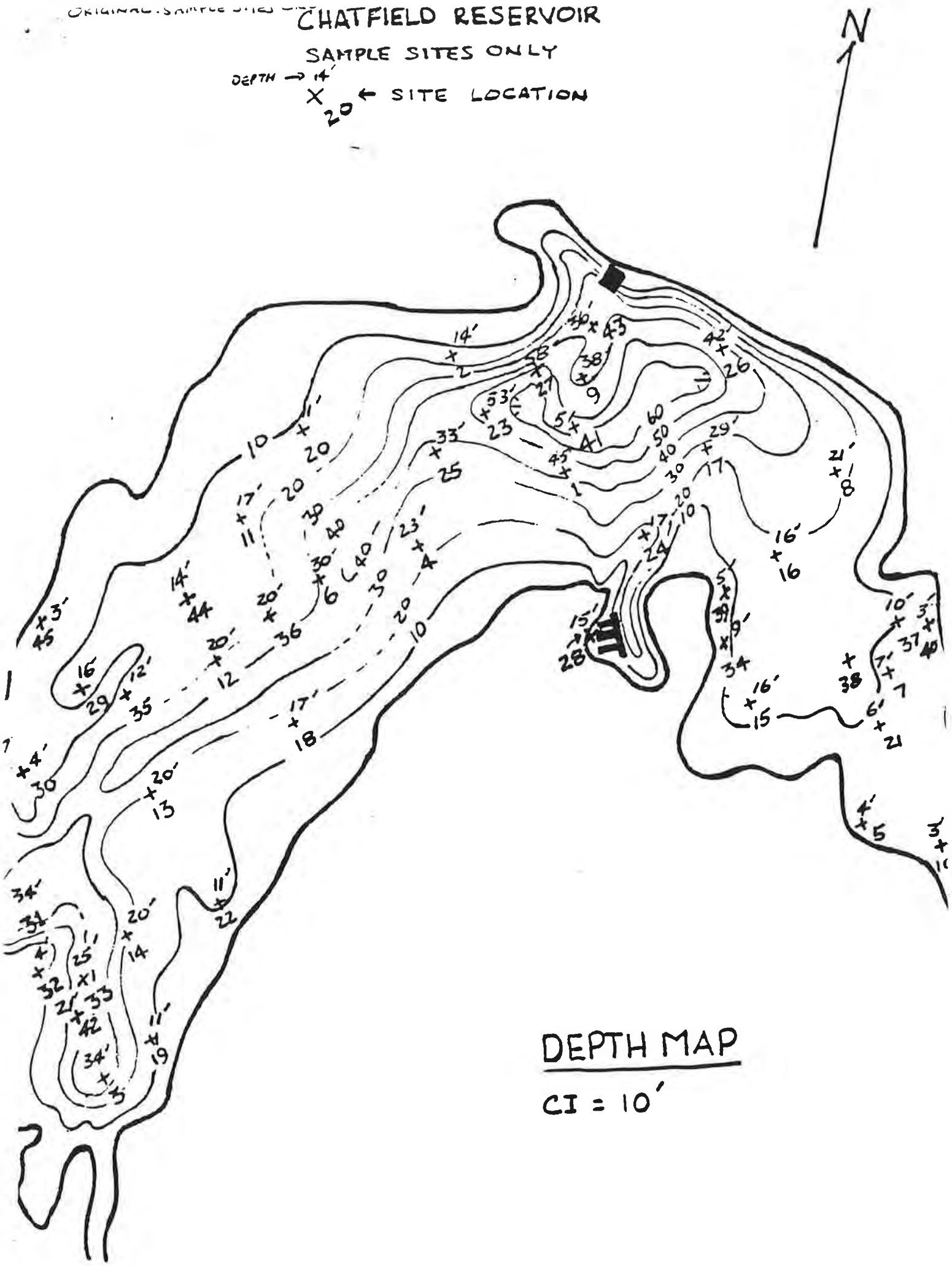
ORIGINAL SAMPLE SITES

CHATFIELD RESERVOIR

SAMPLE SITES ONLY

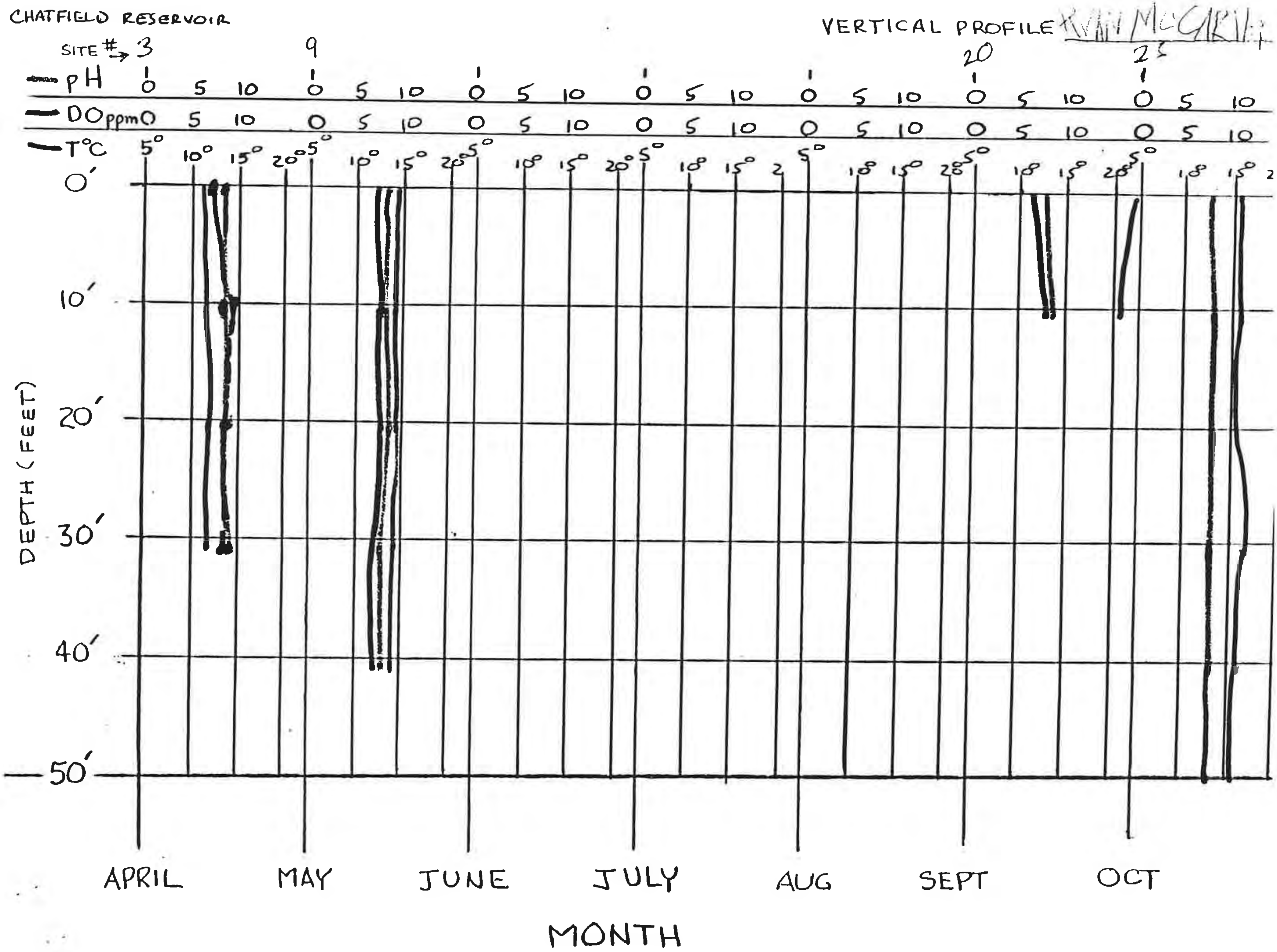
DEPTH → 14′

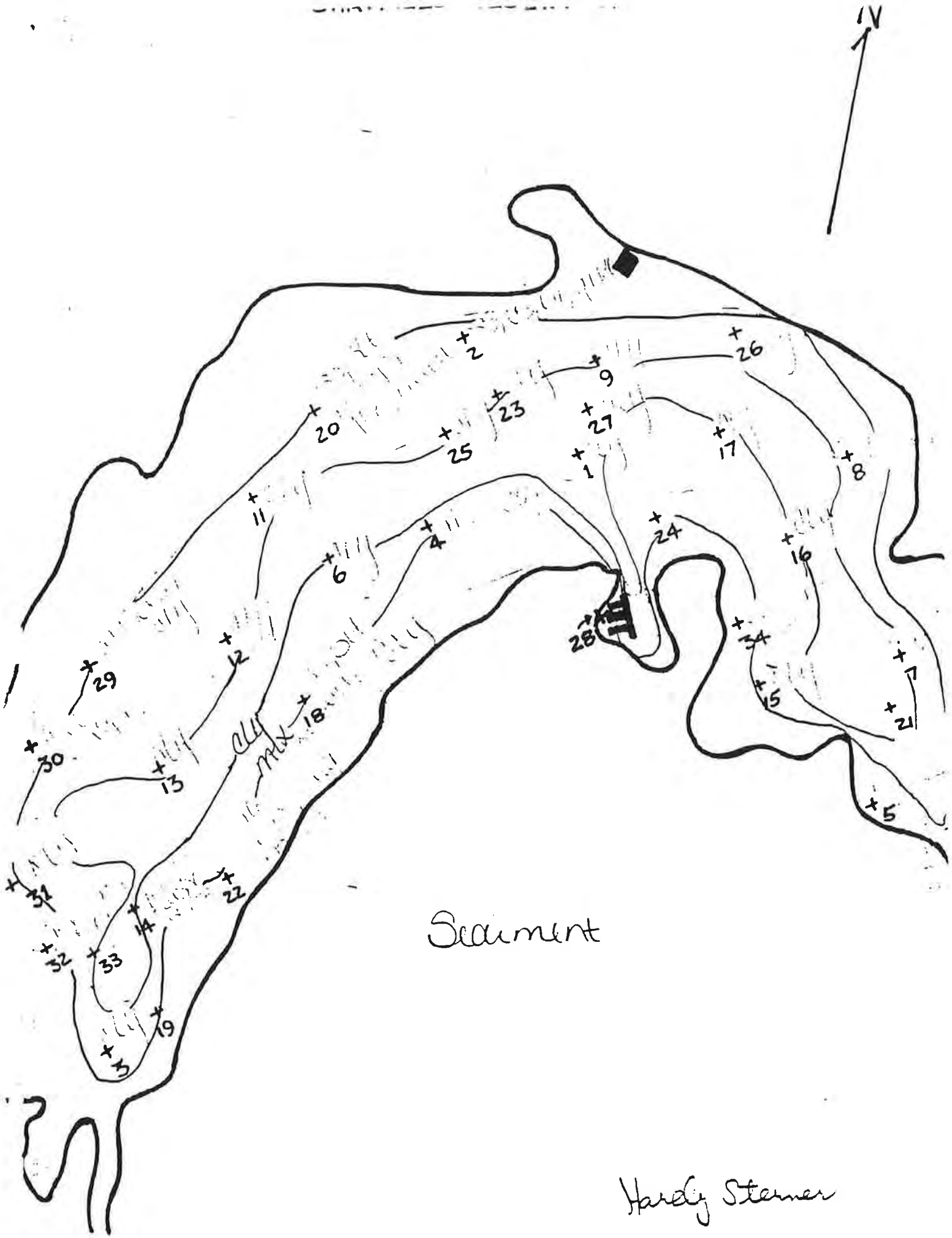
X 20 ← SITE LOCATION



DEPTH MAP

CI = 10′


CHATFIELD RESERVOIR
VERTICAL PROFILE
SITE # 3
9
20
pH
DO ppm
T°C
DEPTH (FEET)
0'
10'
20'
30'
40'
50'
APRIL
MAY
JUNE
JULY
AUG
SEPT
OCT
MONTH



Sediment

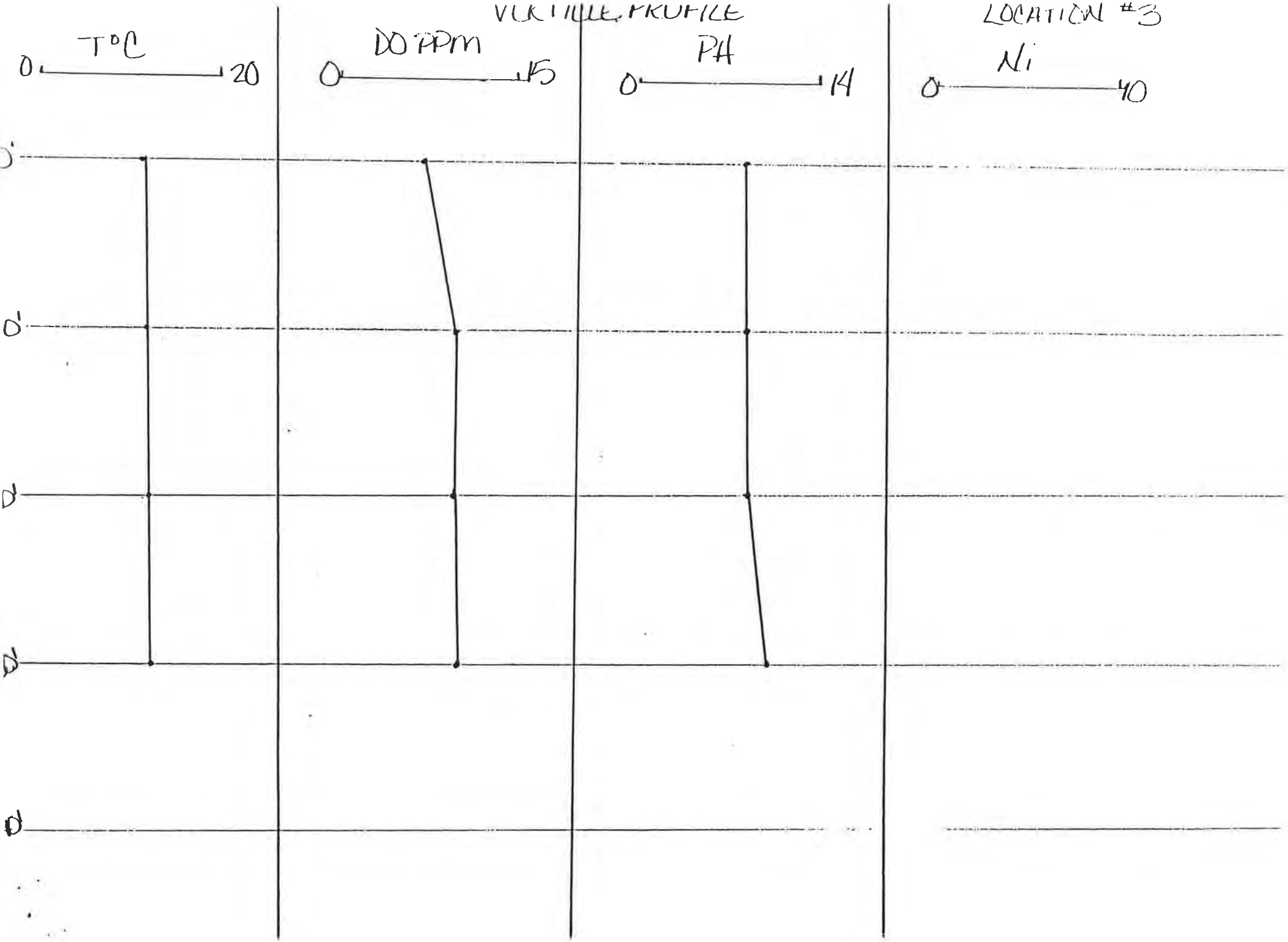
Hardy Steiner

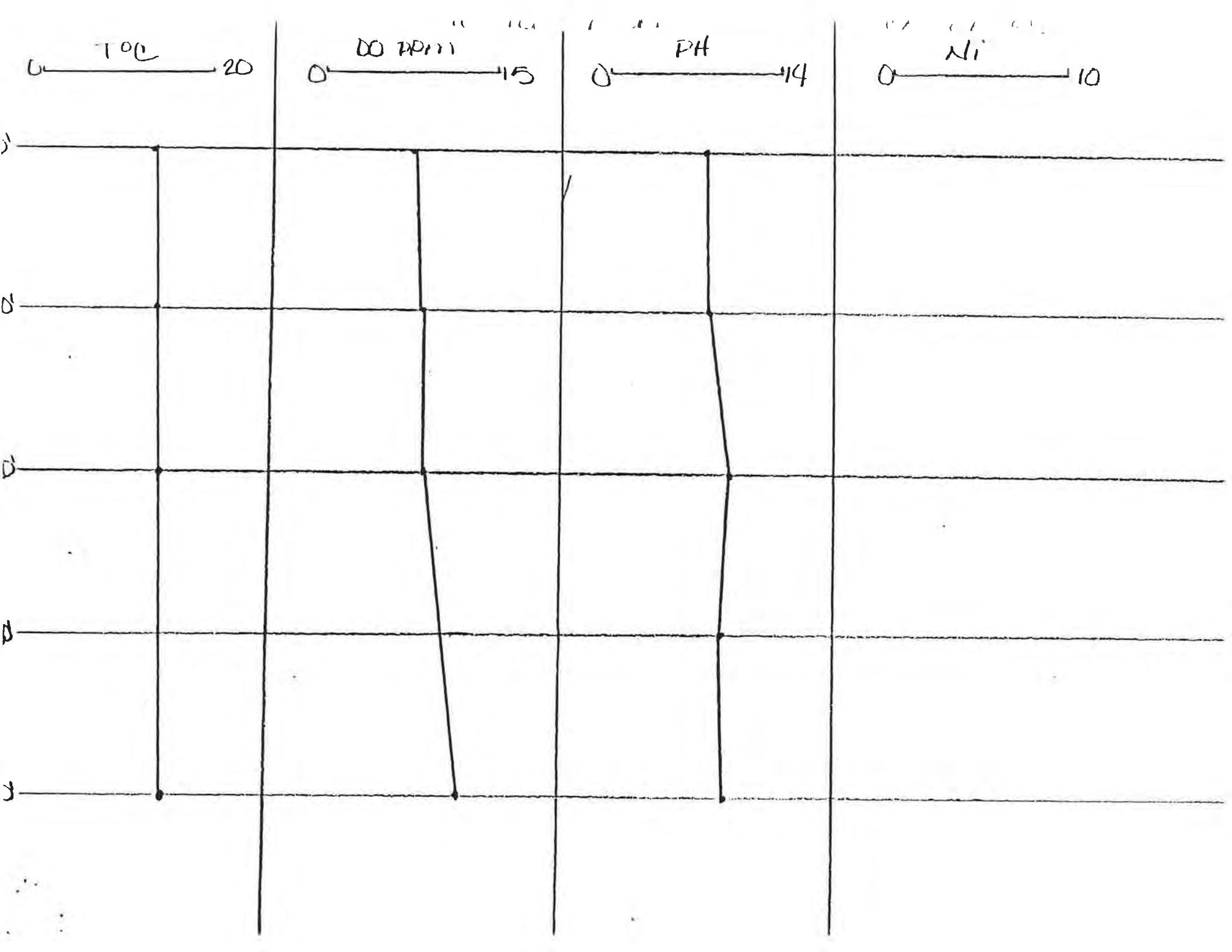

N
Water Depth 10'

CHATFIELD RESERVOIR

VERTICLE PROFILE

LOCATION #3

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PH
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Ni
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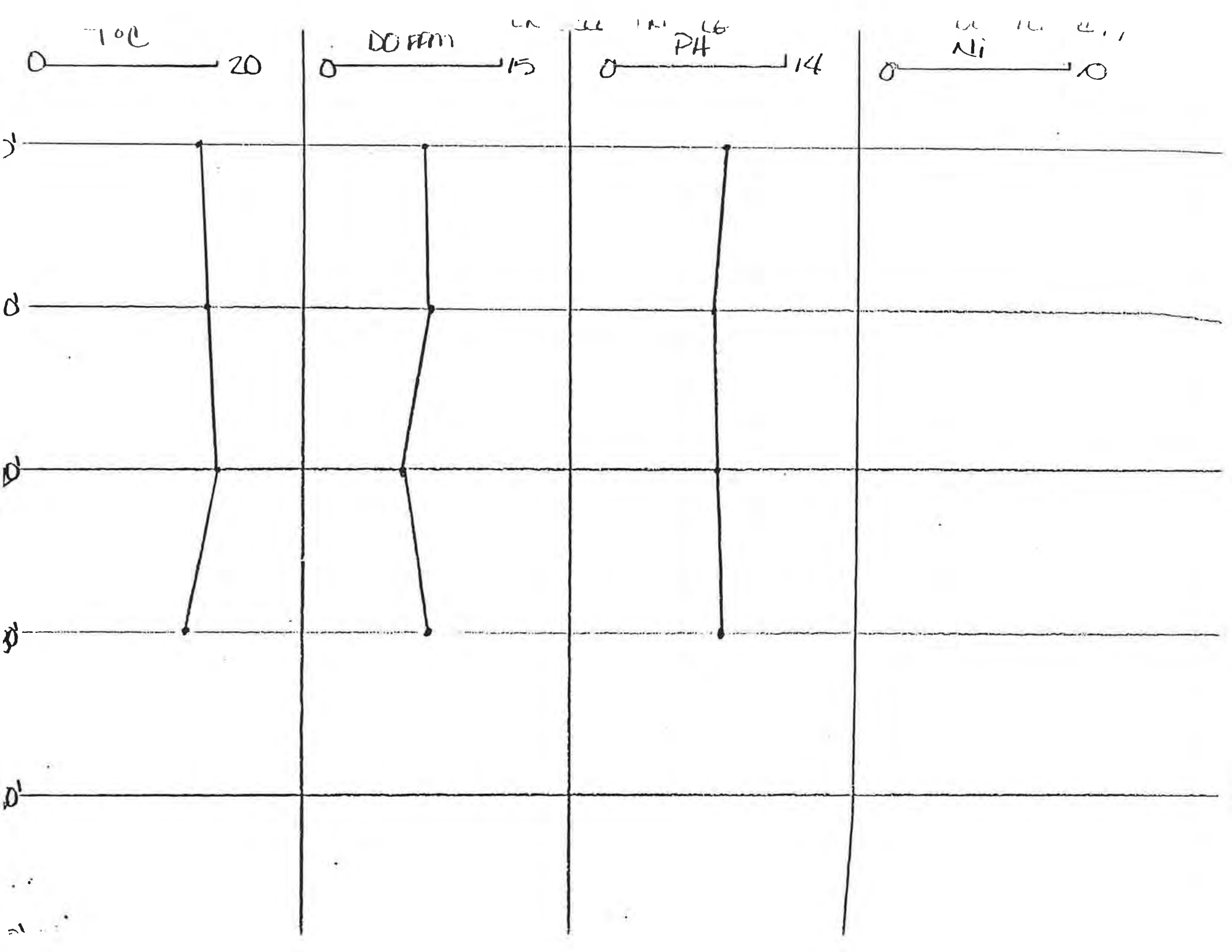
10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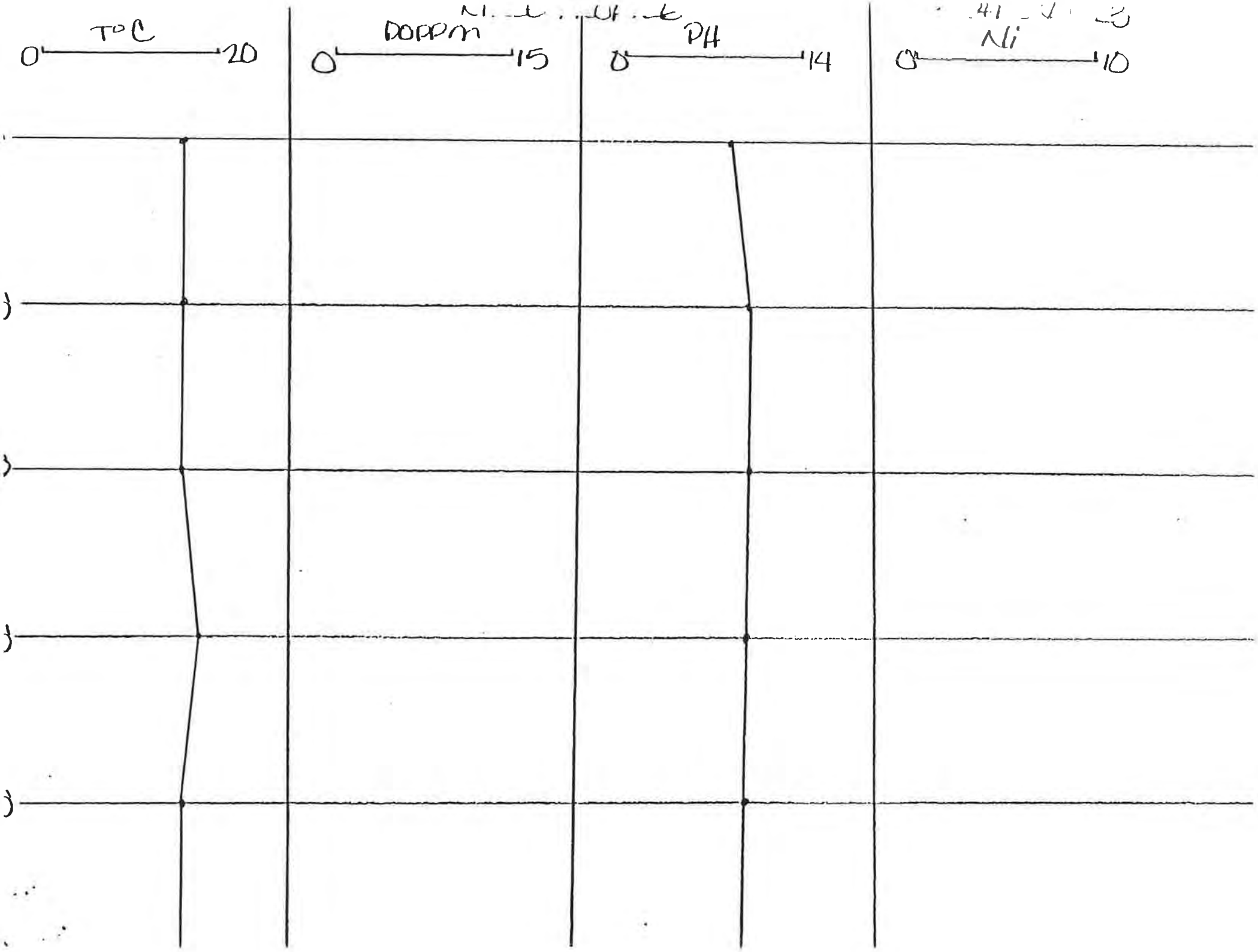
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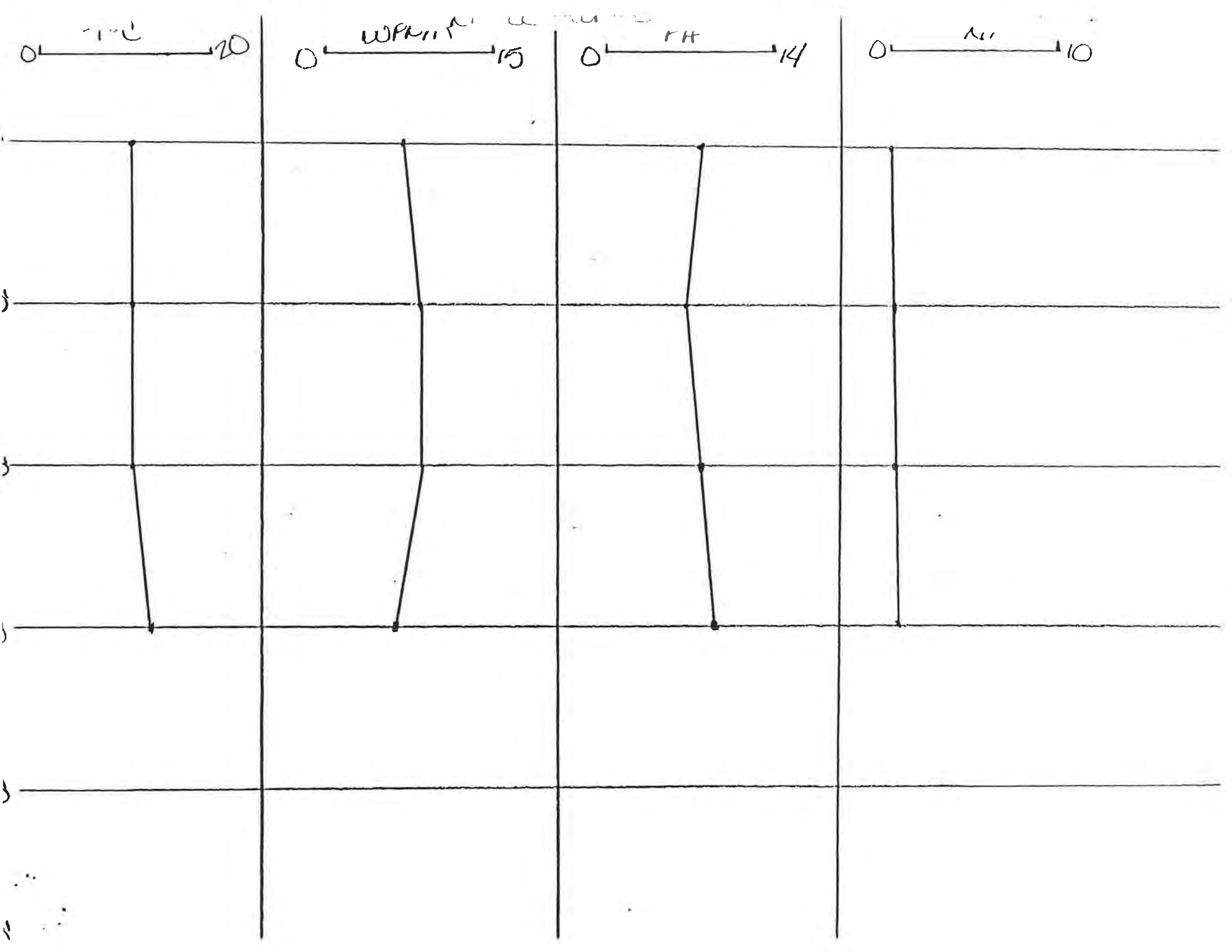
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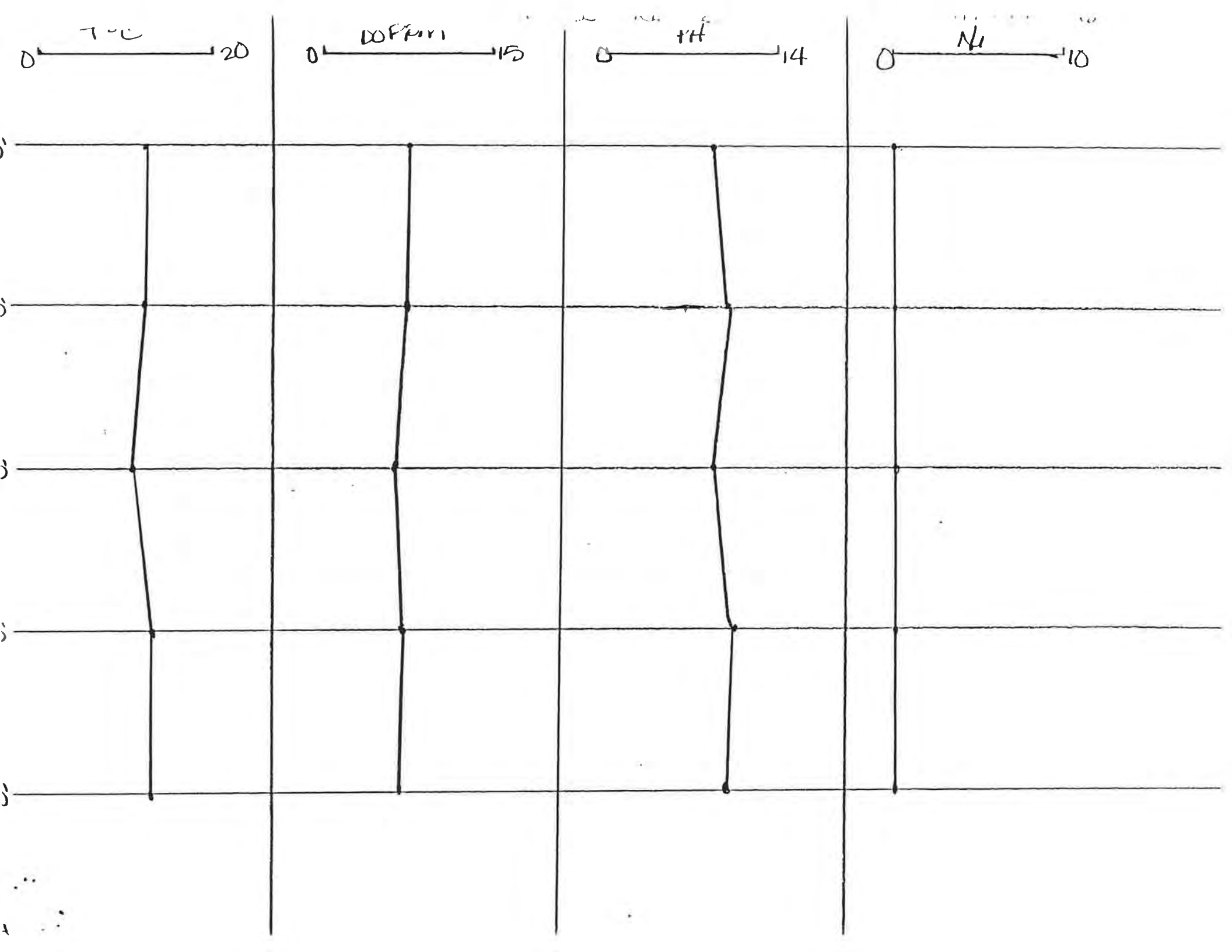
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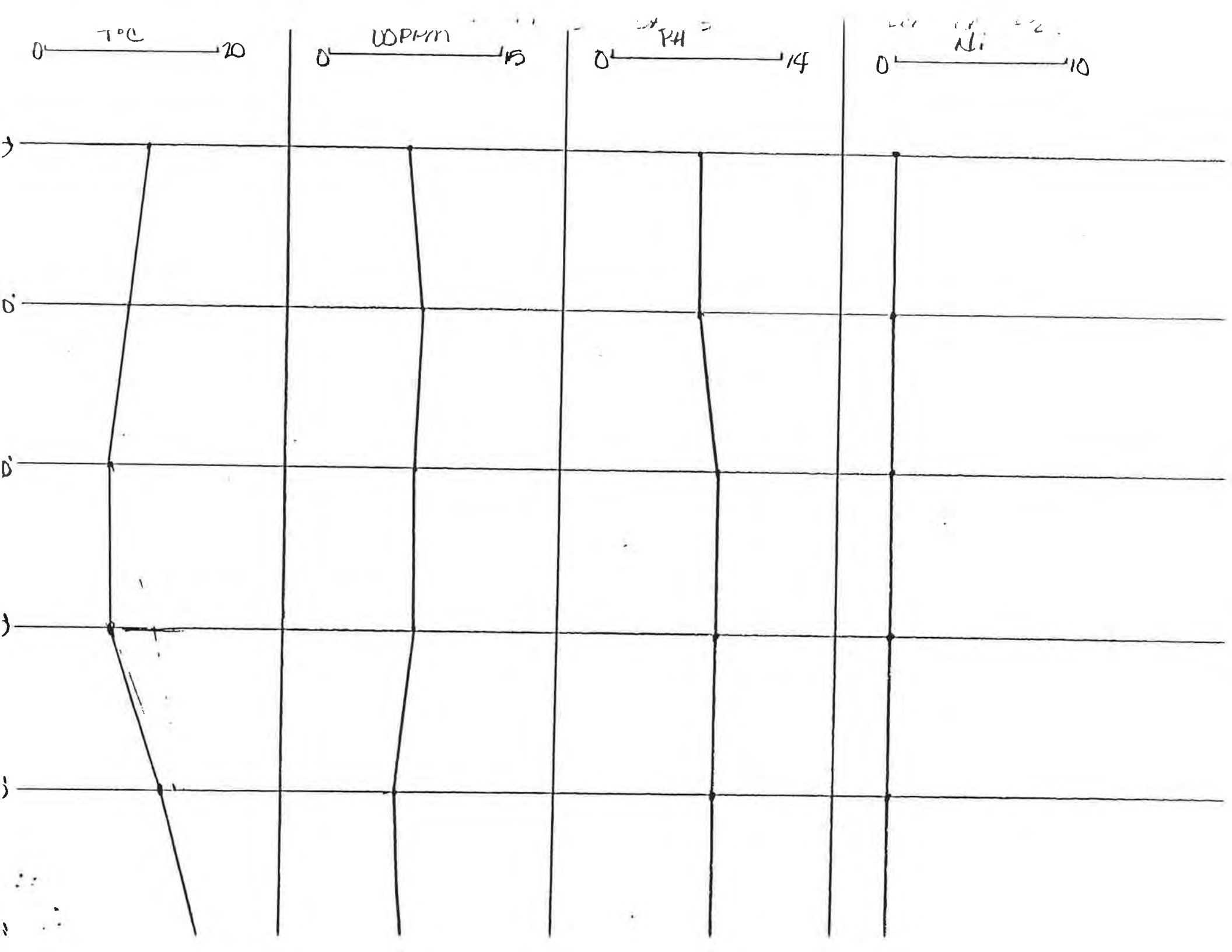
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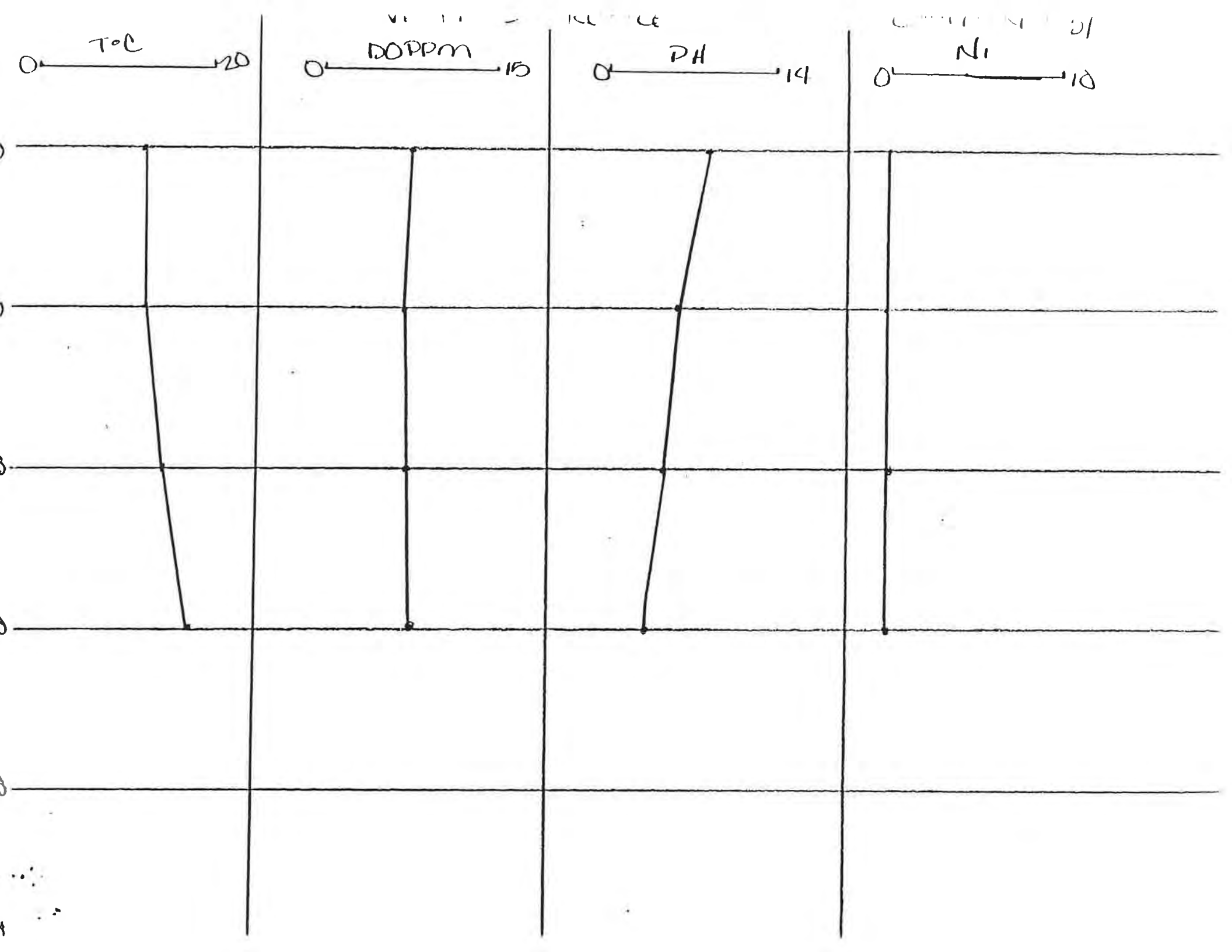
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