

WATER QUALITY MONITORING PROGRAM
CHATFIELD BASIN AND RESERVOIR
ANNUAL DATA REPORT
Calendar Year 2003



Prepared By:

COMMODORE
ADVANCED SCIENCES, INC.

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Attachment A - Analytical Methods and Units

TABLE 1
2001 CHATFIELD WATERSHED AUTHORITY
WATER QUALITY MONITORING PROGRAM

SAMPLING LOCATION DESCRIPTIONS

In-Reservoir and Inflow/Outflow Sites (Figure 1)

<u>Field Code</u>	<u>Description</u>
RM	In-reservoir near dam
PC	Plum Creek at Titan Road, USGS Site 06709530
SO	Outfall from Chatfield Reservoir, USGS Site 06709601
SP	South Platte at Waterton, USGS Site 06708000

Basin-Wide Screening Locations (Figure 2)

<u>Field Code</u>	<u>Description</u>
CH01	6.2 miles up Deer Creek Canyon Road at confluence of north and south forks of Deer Creek
CH02	Deer Creek just west of Chatfield Reservoir - sampled within park boundary
CH03	Up Waterton Canyon Road to just below Strontia Springs Dam
CH04	South Platte River at Waterton Canyon bridge - routine monitoring site SP
CH05	Drainage from Lockheed-Martin facility - sample at bridge across from Waterton Canyon turnoff on Wadsworth Boulevard
CH06	South Platte River approximately 1 mile upstream from Chatfield Reservoir - follow road past beaver ponds on the south end
CH07	South Platte River at the bridge for the main park road
CH08	Massey Draw just west of the Chatfield park perimeter road near the bike path
CH09	Cook Creek at intersection with Noe Road
CH10	East Plum Creek just below confluence with Cook Creek - under railroad tracks just south of Larkspur
CH11	East Plum Creek at subdivision turnoff - bridge on the east frontage road of I-25 near Tomah exit between Larkspur and Castle Rock
CH12	East Plum Creek at the business park on the south end of Castle Rock

TABLE 1
2001 CHATFIELD WATERSHED AUTHORITY
WATER QUALITY MONITORING PROGRAM

SAMPLING LOCATION DESCRIPTIONS

CH13	East Plum Creek just upstream of the Plum Creek Wastewater Plant - bridge at Meadows Boulevard and Highway 85
CH14	East Plum Creek at Sedalia - State Highway 67 bridge
CH15	Plum Creek off County Road 16 from Highway 85 - near alluvial well number 4
CH16	Plum Creek at Titan Road bridge
CH17	Plum Creek within Chatfield State Park boundary above reservoir
CH18	Indian Creek at intersection with Rio Grande Avenue west of Sedalia
CH19	Site is on private land and permission for access was not granted
CH20	Jackson Creek on FR502 (road was washed out) - for last 2 events site was moved to the intersection of Jackson Creek Road off Road 105
CH21	Bear Creek west of Perry Park subdivision - follow Cheyenne Road to intersection
CH22	West Plum Creek at Red Rock Road intersection off Road 105
CH23	West Plum Creek at intersection with Dakan Road off Road 105
CH24	West Plum Creek at intersection with Highway 67 west of Sedalia

Alluvial Groundwater Monitoring Wells (Figure 2)

<u>Field Code</u>	<u>Description</u>
1W	At Plum Creek Wastewater Treatment Plant
2W	Town of Sedalia Cistern
3W	Town of Castle Rock Well Located at Douglas County Fairgrounds
4W	Residential Well on Airport Road Southwest of Louviers - Flying C Ranch
5W	Residential Well Located West of Louviers

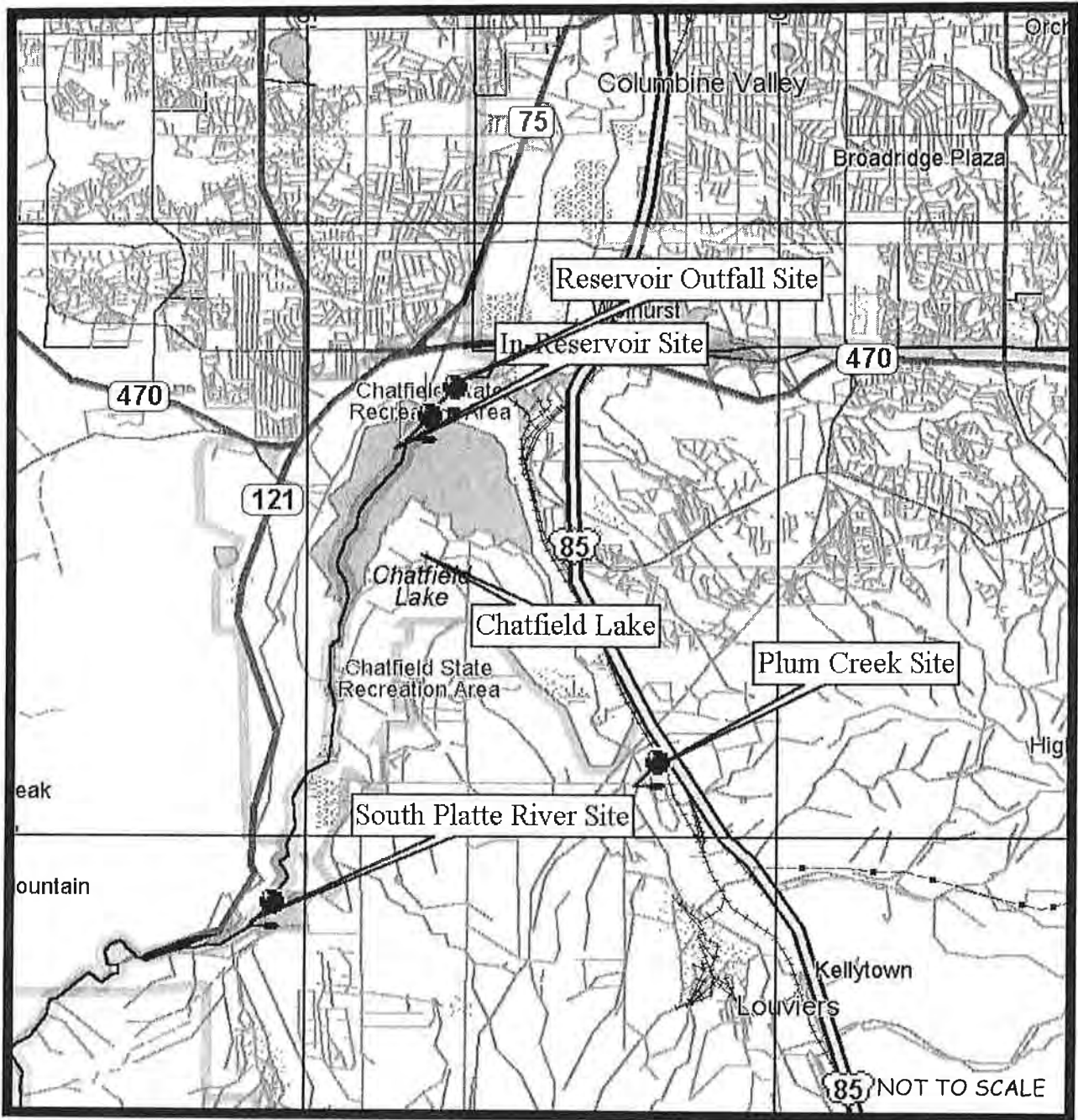


FIGURE 1
IN-RESERVOIR AND INFLOW/OUTFLOW
SAMPLING LOCATIONS

CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM

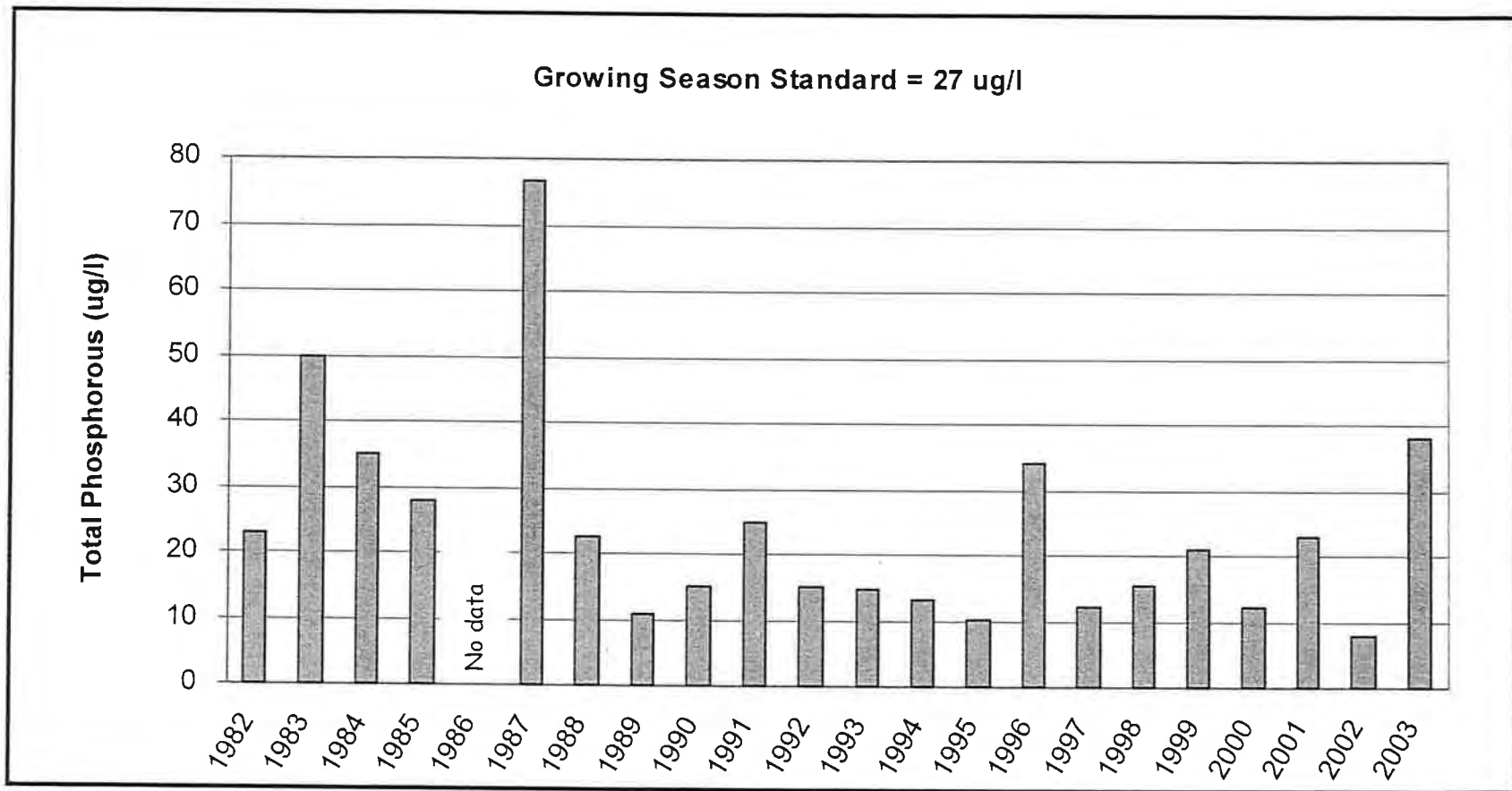


FIGURE 2
AVERAGE GROWING-SEASON TOTAL PHOSPHOROUS CONCENTRATION IN RESERVOIR, 1982-2003

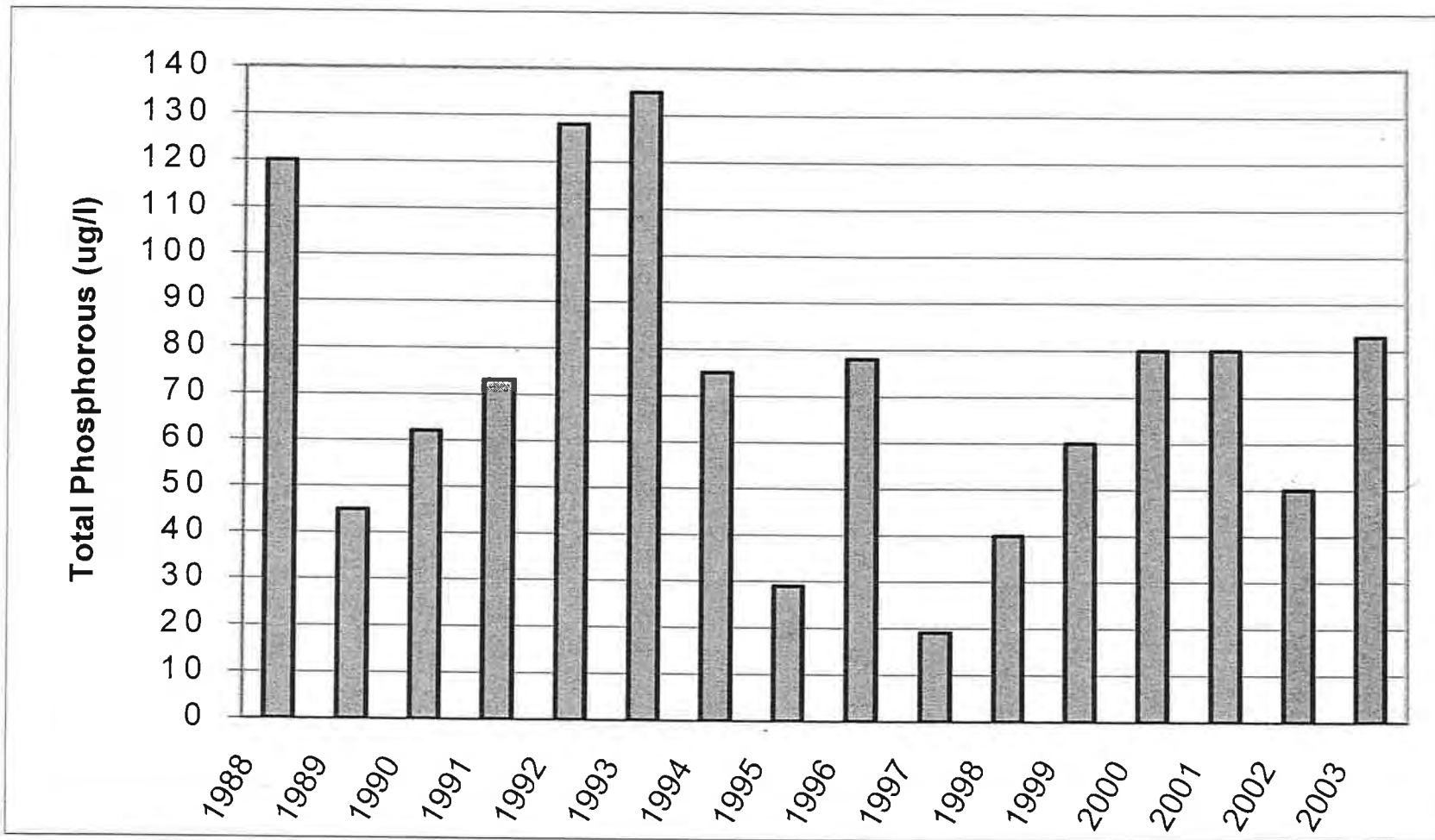


FIGURE 3
PEAK TOTAL PHOSPHOROUS CONCENTRATION IN RESERVOIR, 1988-2003

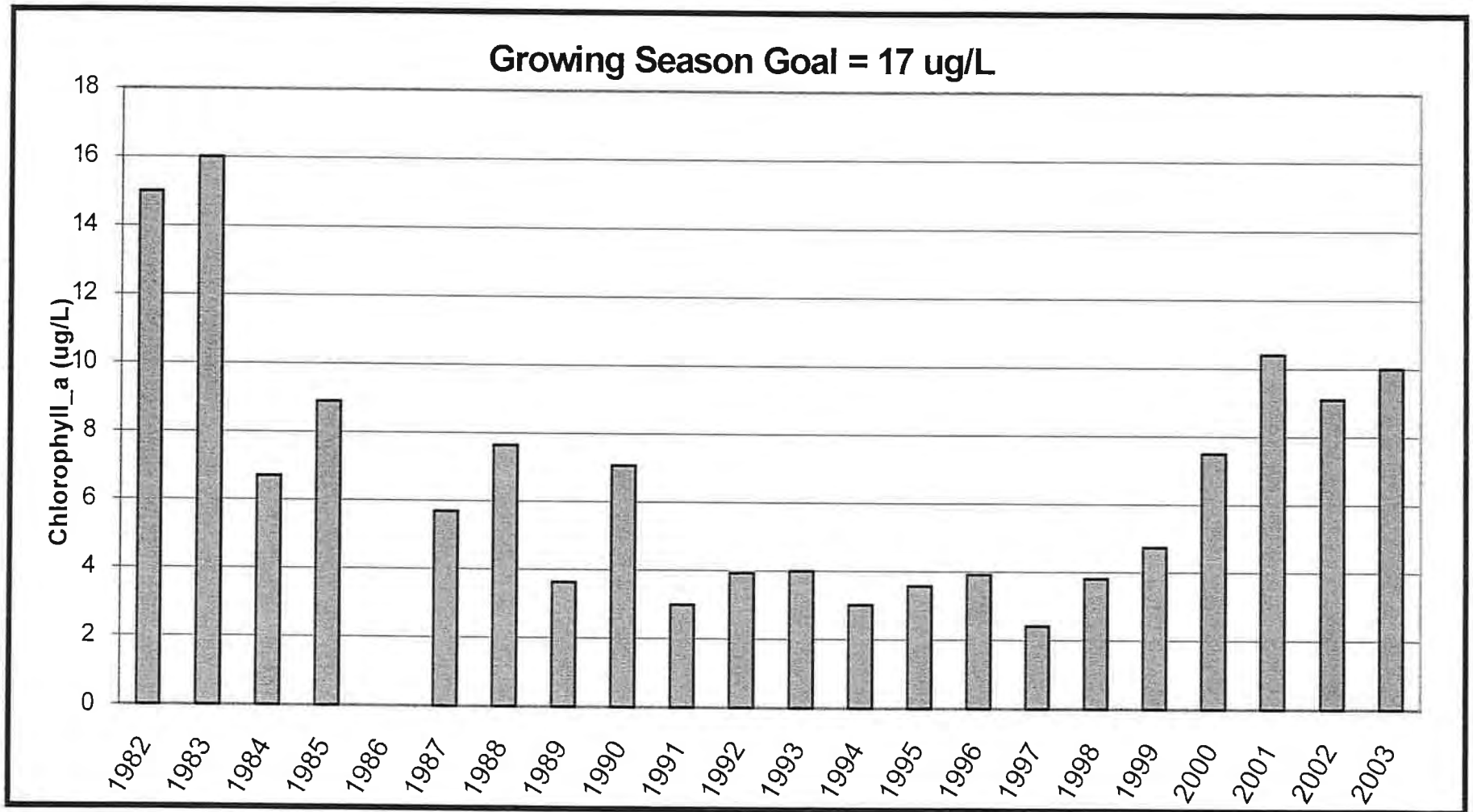


FIGURE 4
AVERAGE GROWING-SEASON CHLOROPHYLL_a CONCENTRATION IN RESERVOIR, 1982-2003

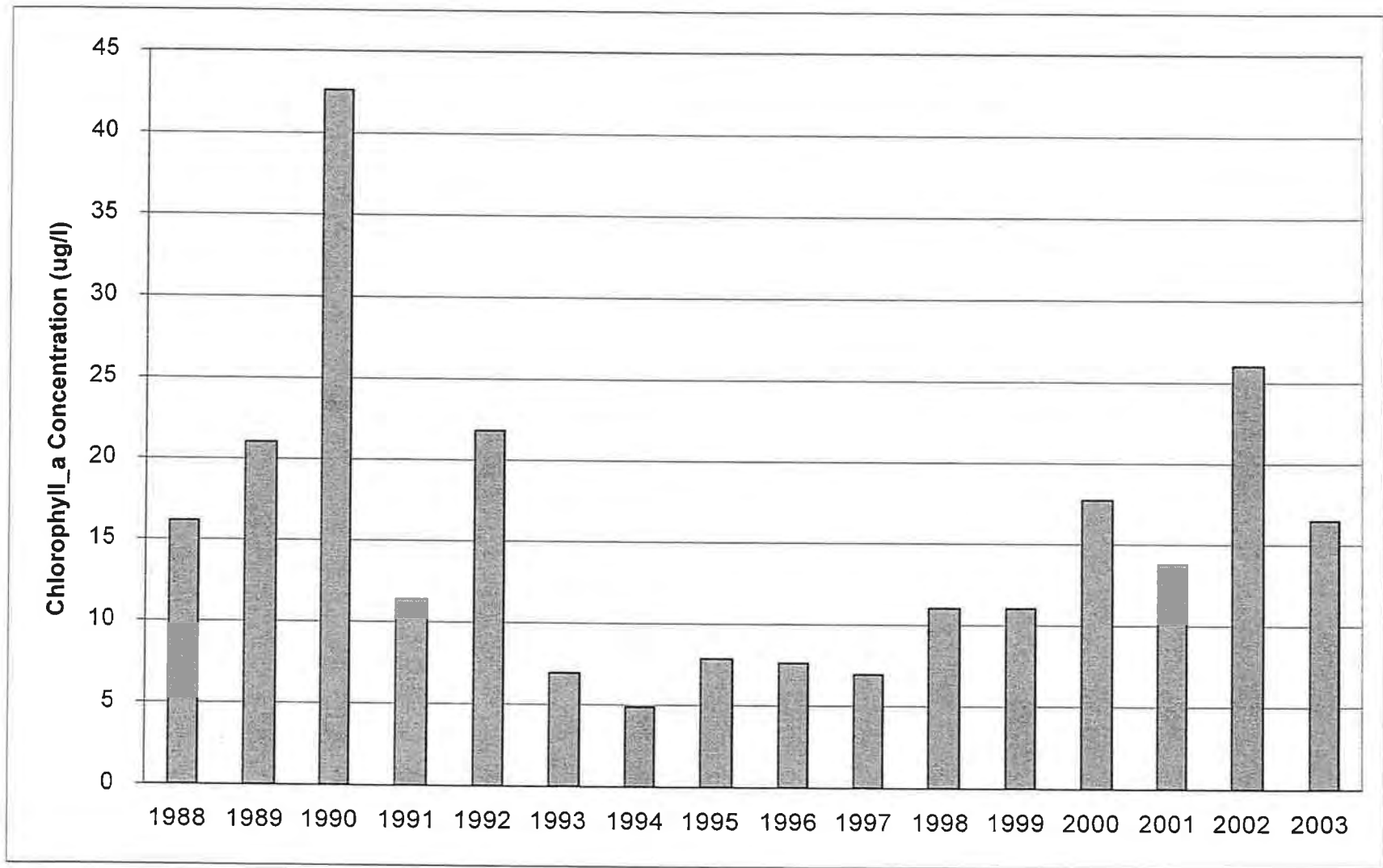


FIGURE 5
PEAK CHLOROPHYLL_a CONCENTRATION IN RESERVOIR, 1988-2003

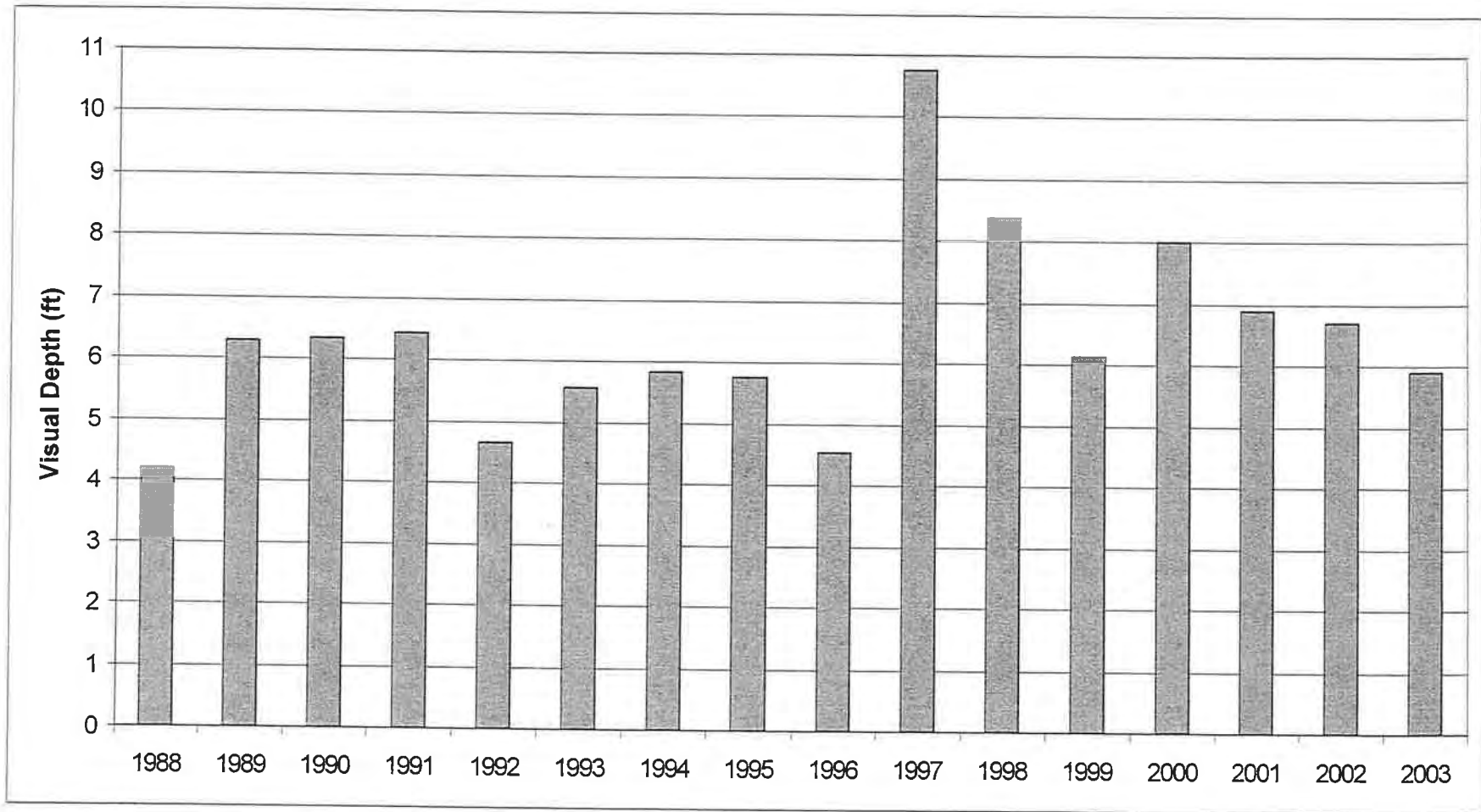


FIGURE 6
AVERAGE GROWING-SEASON SECCHI DEPTH IN RESERVOIR, 1988-2003

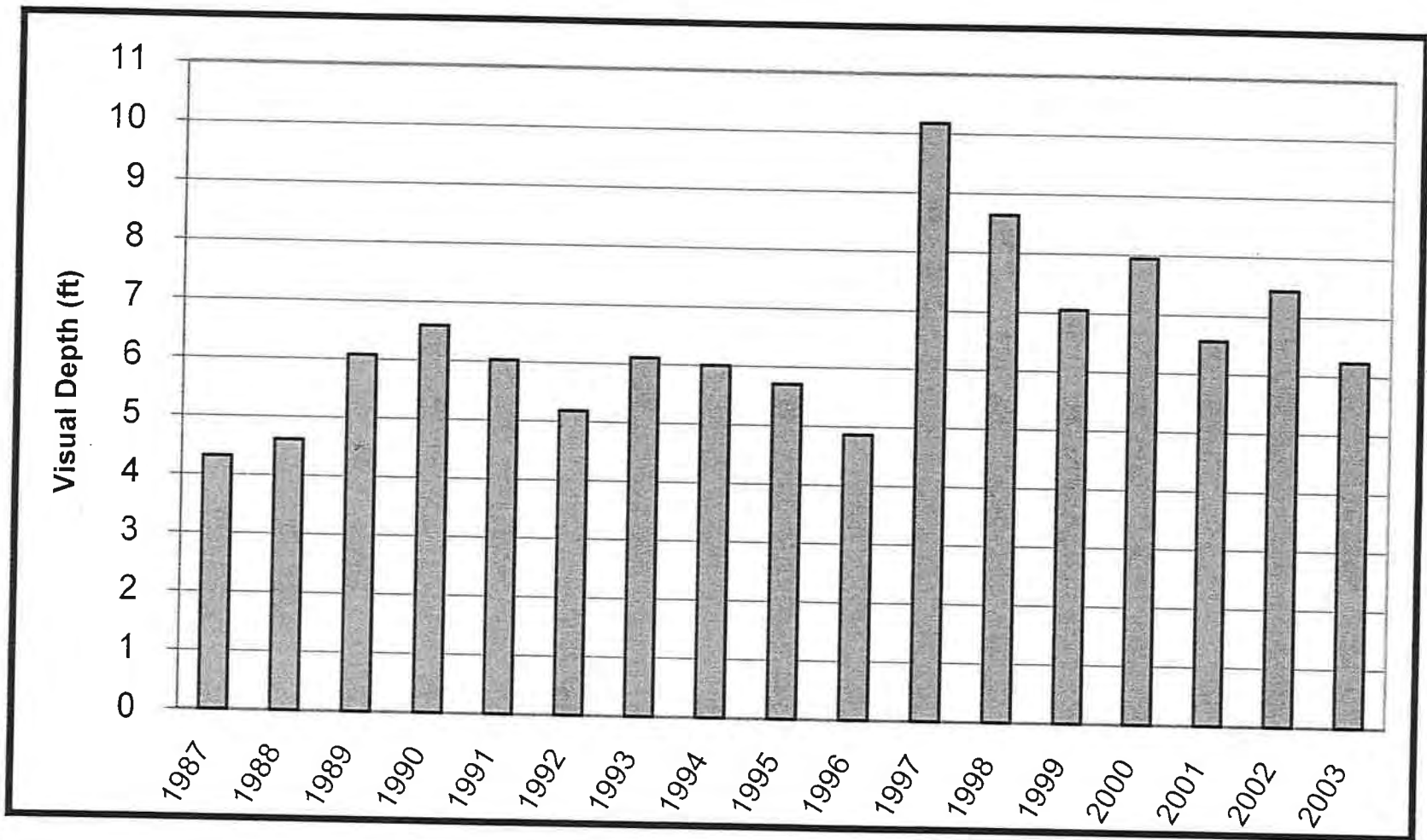


FIGURE 7
 AVERAGE ANNUAL SECCHI DEPTH IN RESERVOIR, 1987-2002

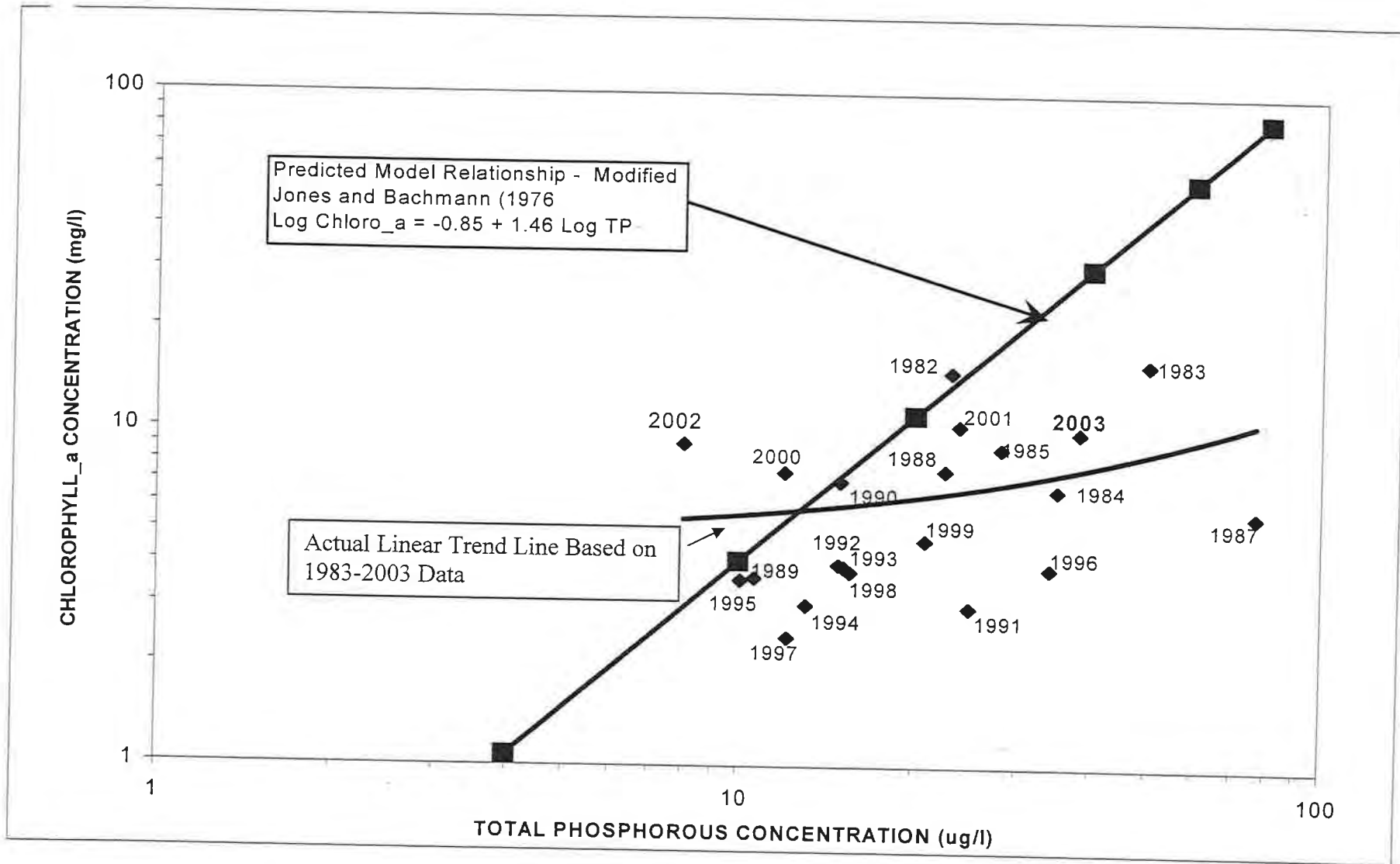


FIGURE 8
 GROWING SEASON CHLOROPHYLL_a vs. TOTAL PHOSPHOROUS IN RESERVOIR, 1982-2003

Chatfield Reservoir Phytoplankton March 2003

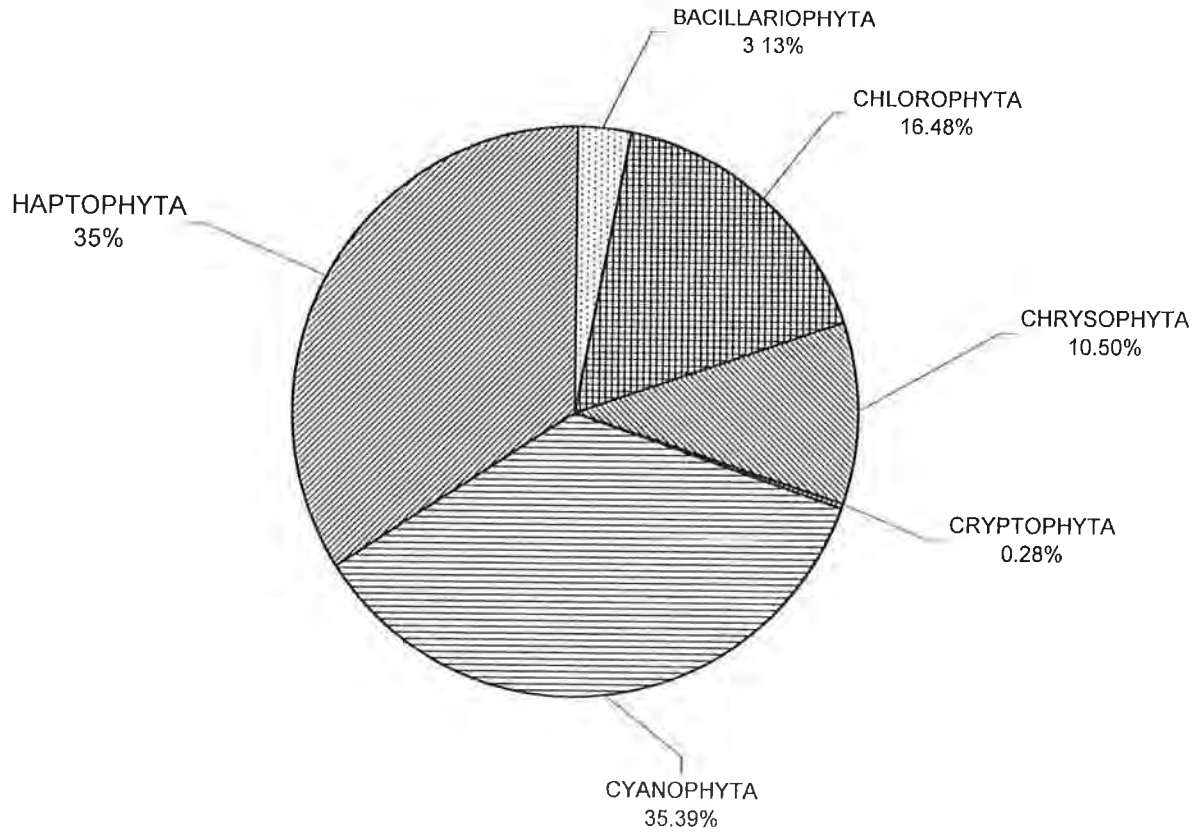


FIGURE 9
SUMMARY OF RESULTS OF PHYTOPLANKTON ANALYSES CONDUCTED FOR A SAMPLE COLLECTED AT
SITE RM-1, CHATFIELD RESERVOIR, MARCH 26, 2003

Chatfield Reservoir Phytoplankton
May 2003

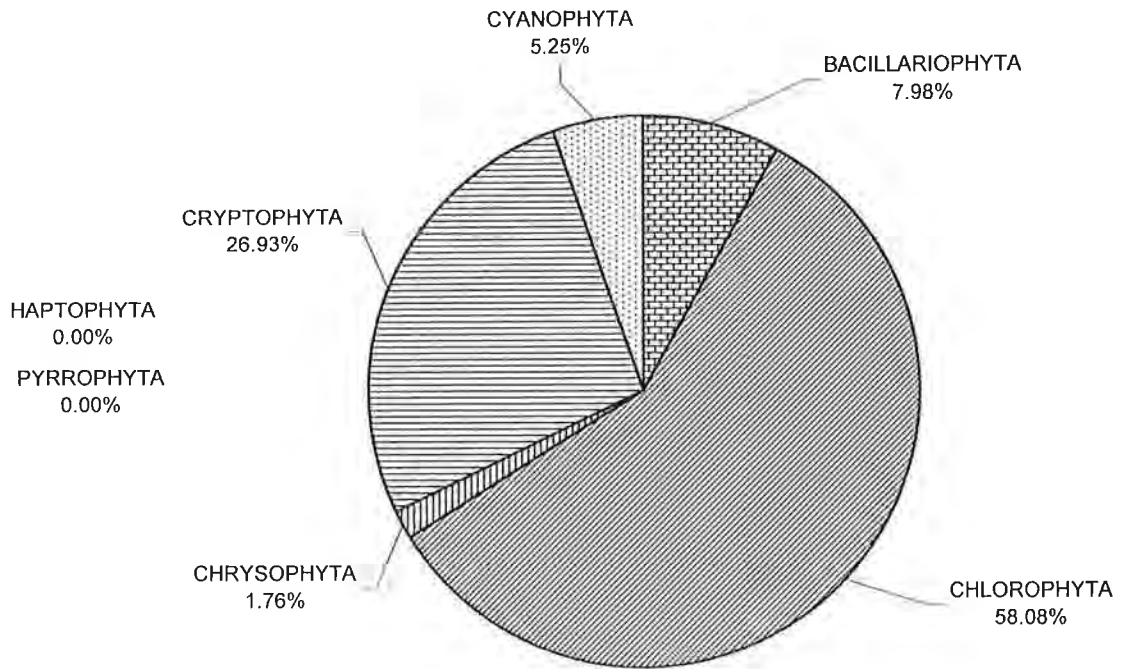


FIGURE 10
SUMMARY OF RESULTS OF PHYTOPLANKTON ANALYSES CONDUCTED FOR A SAMPLE COLLECTED AT
SITE RM-1, CHATFIELD RESERVOIR, MAY 21, 2003

Chatfield Reservoir Phytoplankton August 2003

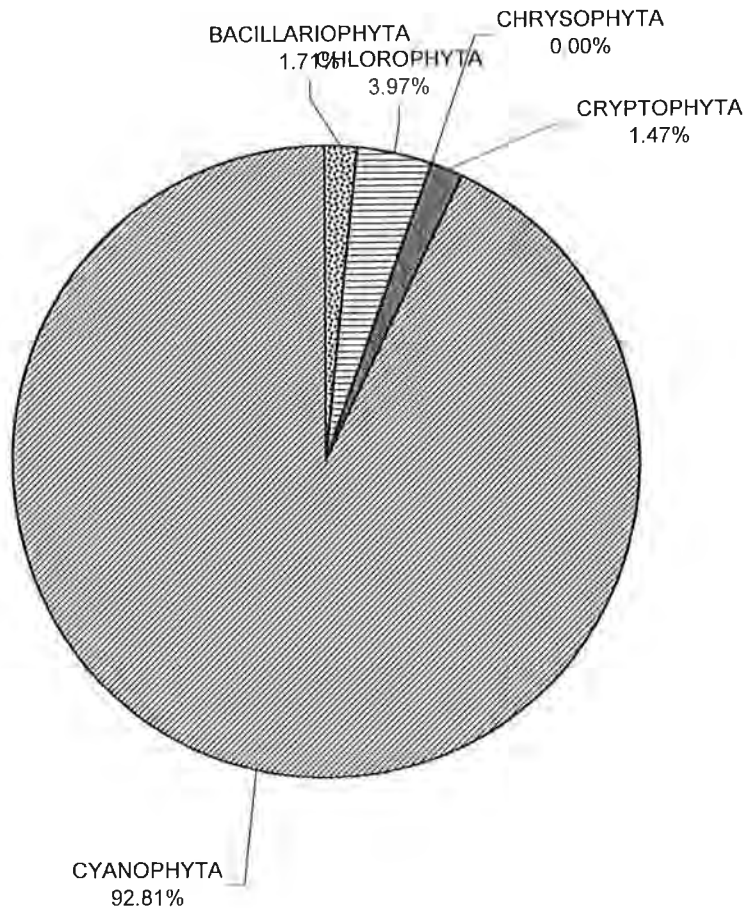


FIGURE 11
SUMMARY OF RESULTS OF PHYTOPLANKTON ANALYSES CONDUCTED FOR A SAMPLE COLLECTED AT
SITE RM-1, CHATFIELD RESERVOIR, AUGUST 6, 2003

Chatfield Reservoir Phytoplankton September 2003

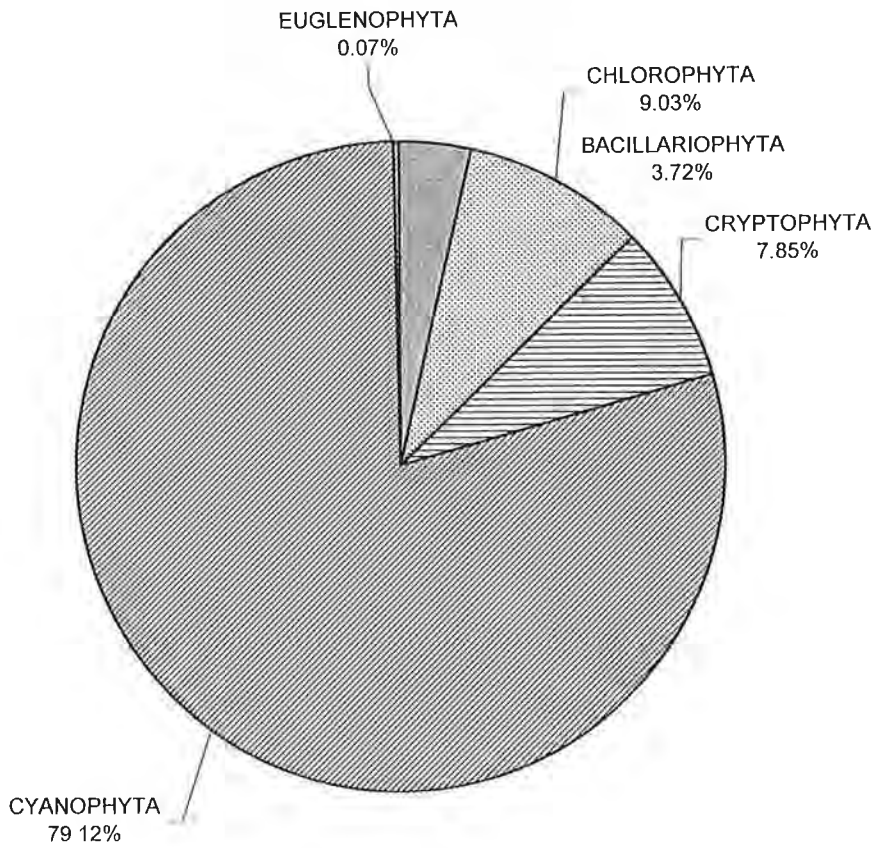


FIGURE 12
SUMMARY OF RESULTS OF PHYTOPLANKTON ANALYSES CONDUCTD FOR A SAMPLE COLLECTED AT
SITE RM-1, CHATFIELD RESERVOIR, SEPTEMBER 3, 2003

Chatfield Reservoir Zooplankton
August 2003

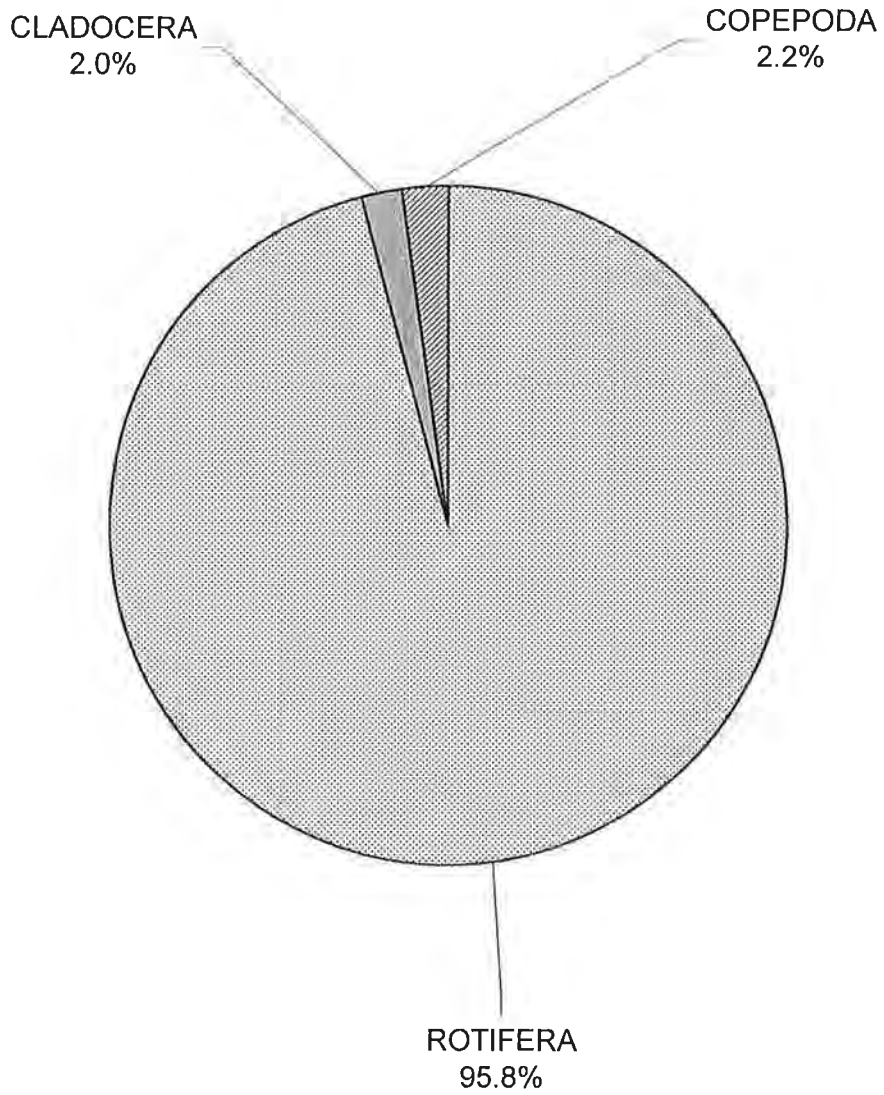


FIGURE 13
SUMMARY OF RESULTS OF ZOOPLANKTON ANALYSES CONDUCTED FOR A SAMPLE COLLECTED AT
SITE RM, CHATFIELD RESERVOIR, AUGUST 6, 2003

TABLE 2
 SOUTH PLATTE RIVER AT WATERTON, CO
 (FIELD CODE - SP; USGS STATION 06708000)
 FIELD MEASUREMENTS

DATE	TIME	Instantaneous	Specific	Oxygen,	pH Field	Temperature
		Streamflow (CFS) ¹⁾	Conductance Field (uS/cm)	Dissolved (mg/l)	(Std. Units)	(Deg C)
01-08-2003	845	NM	385	15.01	6.8	0.9
02-26-2003	850	21.2	376	15.11		0.1
03-26-2003	1130	26.1	282	13.66	7.8	8.7
04-15-2003	840	60.8	213	13.34		4.9
05-21-2003	920	60.8	140	11.93	7.8	10.2
06-25-2003	850	73.6	166	8.90	7.1	13.3
07-02-2003	900	68.4	190	9.38	7.2	14.9
07-16-2003	905	56.1	238	9.41	7.4	16.6
08-06-2003	1115	30.7	249	8.51		19.3
08-20-2003	1215	60.8	247	10.94	8.4	18.6
09-03-2003	955	138.0	338	10.02	7.4	14.1
09-17-2003	900	32.5	271	10.40	7.1	9.8
10-08-2003	940	24.0	256	11.85	7.2	9.5
11-18-2003	915	32.5	306	14.47	7.3	1.1
12-22-2003	1330	8.9	306		7.7	2.5

1) STREAMFLOW DATA SOURCE: Colorado Division of Water Resources website station ID: PLAWATCO)

TABLE 3
 SOUTH PLATTE RIVER AT WATERTON, CO
 (FIELD CODE - SP; USGS STATION 06708000)
 MISCELLANEOUS ANALYSES

Date	Bicarbonate as CaCO ₃ (mg/L)	E. Coli Colonies (#/100 ML)	Cyanide, WAD (mg/L)	Total Suspended Solids (TSS) (gm/M ³)	Total Alkalinity (mg/L)
8-Jan-03		4		0	
26-Feb-03	77		0	6	77
26-Mar-03		2		0	
15-Apr-03		1		10	
21-May-03		2	0	0	
25-Jun-03		17		37	
duplicate		13		5	
2-Jul-03		8		4	
16-Jul-03		13		9	
6-Aug-03		13		34	
20-Aug-03		23		17	
3-Sep-03		30		67	
duplicate		13		15	
17-Sep-03		23		17	
8-Oct-03		13		12	
18-Nov-03		8	0	14	
22-Dec-03		8		5	

duplicate is a duplicate of the sample immediately below
 a zero indicates non-detect reported by laboratory

TABLE 4
SOUTH PLATTE RIVER AT WATERTON, CO
(FIELD CODE - SP; USGS STATION 06708000)
NUTRIENT ANALYSES

DATE	Nitrate/ Nitrite (ug/L as N)	Nitrogen, ammonia (ug/L)	Nitrogen, total (ug/L)	Phosphorus ortho, total (ug/L as P)	Phosphorus, total (ug/L as P)
8-Jan-03	440	0		20	40
26-Feb-03	910	0	1300	10	40
26-Mar-03	940	0		5	20
15-Apr-03	543	22		8	22
21-May-03	223	21	459	7	19
25-Jun-03	261	34		21	36
duplicate	235	7		9	38
2-Jul-03	229	11		9	34
16-Jul-03	341	5		14	12
6-Aug-03	295	23		21	58
20-Aug-03	214	13		5	33
3-Sep-03	357	27		0	192
duplicate	771	18		22	48
17-Sep-03	772	18		21	49
8-Oct-03	344	14		5	21
18-Nov-03	312	32	583	0	24
22-Dec-03	1207	291		53	91

"duplicate" is a duplicate of the sample immediately below

TABLE 5
 SOUTH PLATTE RIVER AT WATERTON, CO
 (FIELD CODE - SP; USGS STATION 06708000)
 METALS ANALYSES

DATE	Arsenic, total (mg/l)	Cadmium, dissolved (mg/l)	Calcium, dissolved (mg/l)	Copper, dissolved (mg/l)	Hardness dissolved (mg/l)	Iron, dissolved (mg/l)
8-Jan-03			39.7		137	
26-Feb-03			42.4		144	
26-Mar-03			46.3		157	
15-Apr-03					118	
21-May-03					90	
25-Jun-03					56	
2-Jul-03					72	
2-Jul-03					74	
16-Jul-03						
6-Aug-03	0.00079	0.0001		0	106	0
20-Aug-03					110	
3-Sep-03						
17-Sep-03					130	
17-Sep-03					128	
8-Oct-03					108	
18-Nov-03					100	
22-Dec-03					106	

a zero indicates non-detect reported by laboratory

TABLE 5
SOUTH PLATTE RIVER AT WATERTON, CO
(FIELD CODE - SP; USGS STATION 06708000)
METALS ANALYSES

DATE	Lead, dissolved (mg/l)	Magnesium, dissolved (mg/l)	Manganese, dissolved (mg/l)	Mercury, dissolved (mg/l)	Nickel, dissolved (mg/l)	Selenium, dissolved (mg/l)	Silver, dissolved (mg/l)	Zinc, dissolved (mg/l)	Chromium, dissolved (mg/l)
8-Jan-03		9.2							
26-Feb-03		9.2							
26-Mar-03		10.0							
15-Apr-03									
21-May-03									
25-Jun-03									
2-Jul-03									
2-Jul-03									
16-Jul-03									
6-Aug-03	0.0001		0	0	0	0	0	0.02	0
20-Aug-03									
3-Sep-03									
17-Sep-03									
17-Sep-03									
8-Oct-03									
18-Nov-03									
22-Dec-03									

a zero indicates non-detect reported by laboratory

TABLE 6
 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO
 (FIELD CODE - PC; USGS STATION 06709530)
 FIELD MEASUREMENTS

DATE	TIME	Instantaneous Streamflow (CFS) ¹⁾	Specific	Oxygen, Dissolved (mg/l)	pH Field (Std. Units)	Temperature (Deg C)
			Conductance Field (uS/cm)			
01-08-2003	945	NM	539	13.28	6.8	1.2
02-26-2003	1120	22.0	539	13.36	6.5	1.2
03-26-2003	1045	10.0	451	11.76	7.0	6.6
04-15-2003	1100	29.5	316	10.22	7.2	9.9
05-21-2003	1140	176.0	256	9.12	7.4	14.9
06-25-2003	915	16.0	381	8.77	6.9	14.2
07-02-2003	920	14	387	7.18	7.1	19.3
07-16-2003	NO FLOW					
08-06-2003	NO FLOW					
08-20-2003	NO FLOW					
09-03-2003	1015	4.2	440	8.75	7.4	18.0
09-17-2003	920	0.15		6.60	7.1	12.6
10-08-2003	950	0.54	492	10.13	6.9	11.4
11-18-2003	945	4.8	557	14.52	7.4	1.4
12-22-2003	1350	8.3	519	6.33	7.5	3.1
11-19-2002	1235	3.8	555	12.95	7.9	6.2
12-12-2002	925	2.9	578	12.34	7.2	0.9

1) STREAMFLOW DATA SOURCE: U.S. Geological Survey gaging station 06709530

TABLE 7
 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO
 (FIELD CODE - PC; USGS STATION 06709530)
 MISCELLANEOUS ANALYSES

Date	Bicarbonate as CaCO ₃ (mg/L)	E. Coli Colonies (#/100 ML)	Cyanide, WAD (mg/L)	Total Suspended Solids (TSS) (gm/M ³)	Total Alkalinity (mg/L)
8-Jan-03		13		8	
26-Feb-03	114		0	6	114
26-Mar-03		23		34	
15-Apr-03		23		75	
duplicate		23	0	52	
21-May-03		30	0	51	
25-Jun-03		30		25	
2-Jul-03		80		7	
3-Sep-03		30		27	
17-Sep-03		23		14	
8-Oct-03		50		11	
duplicate		23	0	62	
18-Nov-03		23	0.01	61	
22-Dec-03		2		33	

duplicate is a duplicate of the sample immediately below
 a zero indicates non-detect reported by laboratory

TABLE 8
 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO
 (FIELD CODE - PC; USGS STATION 06709530)
 NUTRIENT ANALYSES

DATE	Nitrate/ Nitrite (ug/L as N)	Nitrogen, ammonia (ug/L)	Nitrogen, total (ug/L)	Phosphorus ortho, total (ug/L as P)	Phosphorus, total (ug/L as P)
8-Jan-03	1450	50		20	30
26-Feb-03	1440	50	1900	10	40
26-Mar-03	1140	50		30	90
15-Apr-03	241	15		15	112
duplicate	523	117	812	25	201
21-May-03	527	90	821	25	112
25-Jun-03	612	24		30	69
2-Jul-03	534	22		27	62
3-Sep-03	675	8		32	87
17-Sep-03	0	6		8	30
8-Oct-03	399	7		16	30
duplicate	2207	147	2927	17	120
18-Nov-03	2098	147	2779	18	108
22-Dec-03	2045	230		22	79

"duplicate" is a duplicate of the sample immediately below

TABLE 9
 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO
 (FIELD CODE - PC; USGS STATION 06709530)
 METALS ANALYSES

DATE	Arsenic, total (mg/l)	Cadmium, dissolved (mg/l)	Calcium, dissolved (mg/l)	Copper, dissolved (mg/l)	Hardness dissolved (mg/l)	Iron, dissolved (mg/l)
8-Jan-03			58.5		182	
26-Feb-03			60.1		185	
26-Mar-03			48.0		148	
15-Apr-03					118	
21-May-03					104	
21-May-03					114	
25-Jun-03					140	
2-Jul-03					148	
17-Sep-03					180	
8-Oct-03					170	
18-Nov-03					172	
18-Nov-03					174	
22-Dec-03					168	

a zero indicates non-detect reported by laboratory

TABLE 9
 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO
 (FIELD CODE - PC; USGS STATION 06709530)
 METALS ANALYSES

DATE	Lead, dissolved (mg/l)	Magnesium, dissolved (mg/l)	Manganese, dissolved (mg/l)	Mercury, dissolved (mg/l)	Nickel, dissolved (mg/l)	Selenium, dissolved (mg/l)	Silver, dissolved (mg/l)	Zinc, dissolved (mg/l)	Chromium, dissolved (mg/l)
8-Jan-03		8.7							
26-Feb-03		8.5							
26-Mar-03		6.7							
15-Apr-03									
21-May-03									
21-May-03									
25-Jun-03									
2-Jul-03									
17-Sep-03									
8-Oct-03									
18-Nov-03									
18-Nov-03									
22-Dec-03									

a zero indicates non-detect reported by laboratory

TABLE 10
 CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO
 (FIELD CODE - SO; USGS STATION 06709601)
 FIELD MEASUREMENTS

DATE	TIME	Instantaneous Streamflow (CFS) ¹⁾	Specific Conductance Field (uS/cm)	Oxygen, Dissolved (mg/l)	pH Field (Std. Units)	Temperature (Deg C)
01-08-2003	755	nm	438	14.11	6.5	0.9
02-26-2003	1030	nm	408	13.68		3.1
03-26-2003	1200	214.0	389	11.76	7.7	7.5
04-15-2003	1135	197.0	402	11.06	7.2	10
05-21-2003	840	14.5	351	13.17	7.2	12.9
06-25-2003	820	258.0	285	8.15	6.8	17.6
07-02-2003	830	202.0	283	7.68	6.4	18.7
07-16-2003	840	92.7	284		7.3	19.6
08-06-2003	1150	60.8	282	8.40	7.0	23.5
08-20-2003	940	27.0	249		6.6	21.4
09-03-2003	940	155.0	297	6.45	7.1	20.5
09-17-2003	945	29.1	295	9.54	7.9	16.4
10-08-2003	910	0.9	334	8.66	6.2	12.3
11-18-2003	845	0.9	396	12.92	6.7	1.3
12-22-2003	1310	4.75	285		7.7	3.6

1) STREAMFLOW DATA SOURCE: Colorado Division of Water Resources website ID: PLACHACO. (U.S. Army Corps of Engineers co-operators)
 uS = micro Siemens

TABLE 11
CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO
(FIELD CODE - SO; USGS STATION 06709601)
MISCELLANEOUS ANALYSES

Date	Bicarbonate as CaCO ₃ (mg/L)	E. Coli Colonies (#/100 ML)	Cyanide, WAD (mg/L)	Total Suspended Solids (TSS) (gm/M ³)	Total Alkalinity (mg/L)
8-Jan-03		8		0	
duplicate	107		0	0	107
26-Feb-03	107		0	0	107
26-Mar-03		2		0	
15-Apr-03		1		9	
21-May-03		2	0	0	
25-Jun-03		2		5	
2-Jul-03		1		0	
16-Jul-03		2		19	
duplicate		1		20	
6-Aug-03		1		21	
20-Aug-03		0		19	
3-Sep-03		1		18	
17-Sep-03		1		13	
8-Oct-03		1		14	
18-Nov-03		1	0	9	
12-Dec-02		1		5	

duplicate is a duplicate of the sample immediately below
a zero indicates non-detect reported by laboratory

TABLE 12
 CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO
 (FIELD CODE - SO; USGS STATION 06709601)
 NUTRIENT ANALYSES

DATE	Nitrate/ Nitrite (ug/L as N)	Nitrogen, ammonia (ug/L)	Nitrogen, total (ug/L)	Phosphorus ortho, total (ug/L as P)	Phosphorus, total (ug/L as P)
8-Jan-03	20	0		5	40
duplicate	10	0	400	5	20
26-Feb-03	10	100	400	5	20
26-Mar-03	30	0		5	5
15-Apr-03	64	28		4	21
21-May-03	129	88	496	4	33
25-Jun-03	36	102		4	46
2-Jul-03	35	127		3	44
16-Jul-03	32	216		33	88
duplicate	0	17		4	52
6-Aug-03	5	16		4	33
20-Aug-03	5	22		0	44
3-Sep-03	0	5		18	43
17-Sep-03	0	6		0	43
8-Oct-03	0	12		0	32
18-Nov-03	53	27	411	0	21
22-Dec-03	97	22		0	22

"duplicate" is a duplicate of the sample immediately below

TABLE 13
 CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO
 (FIELD CODE - SO; USGS STATION 06709601)
 METALS ANALYSES

DATE	Arsenic, total (mg/l)	Cadmium, dissolved (mg/l)	Calcium, dissolved (mg/l)	Copper, dissolved (mg/l)	Hardness dissolved (mg/l)	Iron, dissolved (mg/l)
8-Jan-03			48.9		173	
duplicate			49.2		171	
26-Feb-03			49.4		172	
26-Mar-03			49.2		170	
15-Apr-03					168	
21-May-03					144	
25-Jun-03					112	
2-Jul-03					116	
16-Jul-03						
duplicate	0.00089	0		0	114	0
6-Aug-03	0.00096	0		0	116	0
20-Aug-03					118	
3-Sep-03						
17-Sep-03					124	
8-Oct-03					134	
18-Nov-03					140	
22-Dec-03					140	

a zero indicates non-detect reported by laboratory

TABLE 13
 CHATFIELD RESERVOIR OUTFLOW NEAR LITTLETON, CO
 (FIELD CODE - SO; USGS STATION 06709601)
 METALS ANALYSES

DATE	Lead, dissolved (mg/l)	Magnesium, dissolved (mg/l)	Manganese, dissolved (mg/l)	Mercury, dissolved (mg/l)	Nickel, dissolved (mg/l)	Selenium, dissolved (mg/l)	Silver, dissolved (mg/l)	Zinc, dissolved (mg/l)	Chromium, dissolved (mg/l)
8-Jan-03		12.4							
duplicate		11.7							
26-Feb-03		11.8							
26-Mar-03		11.4							
15-Apr-03									
21-May-03									
25-Jun-03									
2-Jul-03									
16-Jul-03									
duplicate	0		0	0	0	0	0	0.01	0
6-Aug-03	0		0.005	0	0	0	0	0.01	0
20-Aug-03									
3-Sep-03									
17-Sep-03									
8-Oct-03									
18-Nov-03									
22-Dec-03									

a zero indicates non-detect reported by laboratory

TABLE 14
 CHATFIELD RESERVOIR NEAR DAM
 (FIELD CODE - RM)
 FIELD MEASUREMENTS

DATE	TIME	Sampling depth (Meters)	Total depth (Meters)	Transparency Secchi disk (Meters)	pH, Field (Std. Units)	Specific Conductance (us/cm)	Oxygen, dissolved (mg/l)	Temperature (deg. C)
8-Jan-03	1110	1.0	11		7.54	405	15.21	1.9
8-Jan-03	1055	1.5		2.5	7.57	405	15.20	1.9
8-Jan-03	1045	11.0	13		7.52	396	16.03	2.1
26-Mar-03	920	1.0			7.55	397	13.45	6.1
26-Mar-03	910	4.0		2	7.42	398	14.25	6.1
26-Mar-03	900	10.0	12		6.95	395	14.39	5.5
15-Apr-03	1015	0.8			7.61	403	13.76	11.5
15-Apr-03	1000	3.0		1.5	7.60	404	14.24	11.3
15-Apr-03	950	12.0	13		7.26	384	10.60	8.5
21-May-03	1100	1.3			7.57	339	11.75	14.4
21-May-03	1056	5.0		2.5	7.73	340	11.02	13.8
21-May-03	1045	11.0	12		7.68	327	8.64	11.4
23-Jun-03	1045	1.3			7.16	279	7.13	19.1
25-Jun-03	1035	5.0		2.5	6.79	283	7.61	18.8
25-Jun-03	1025	10.0	11		6.68	281	2.97	16.1
2-Jul-03	1050	1.0			7.41	280	6.60	21.7
2-Jul-03	1030	4.0		2.25	7.11	279	3.72	20.4
2-Jul-03	1030	11.0	12		7.13	270	1.74	16.7
16-Jul-03	1045	1.3			7.62	279	8.53	23.0
16-Jul-03	1030	5.0		2.5	7.21	281	8.33	22.7
16-Jul-03	1045	9.0	10		6.85	271		18.9
6-Aug-03	1415	0.9			7.62	285	9.54	23.9
6-Aug-03	1400	3.5		1.75	7.18	280	7.60	22.7
6-Aug-03	1340	10.0	12		6.94	272	5.08	21.6
20-Aug-03	1115	0.8			7.41	288	0.55	22.0
20-Aug-03	1100	3.0		1.5	7.28	288	0.56	21.7
20-Aug-03	1050	9.0	10		6.91	290	2.03	21.2
3-Sep-03	1115	0.8			7.54	298	6.00	20.5
3-Sep-03	1105	0.8		1.5	7.35	298	6.00	3.0
3-Sep-03	1055	8.0	9		7.01	292	6.23	18.9
17-Sep-03	1130	0.6			7.93	475	9.91	16.6
17-Sep-03	1115	2.5		1.25	7.91	477	10.11	16.4
17-Sep-03	1100	9.0	10		7.65	535	9.27	16.3
8-Oct-03	1115	0.8			7.44	320	11.40	14.8
8-Oct-03	1100	3.0		1.5	7.31	321	10.92	14.7
8-Oct-03	1045	7.0	8		6.53	319	10.38	14.4
18-Nov-03	1130	0.8			7.95	355	13.81	6.1
18-Nov-03	1115	3.0		1.5	7.91	355	13.77	6.1
18-Nov-03	1100	9.0	11		7.90	350	13.83	5.9

TABLE 15
 CHATFIELD RESERVOIR NEAR DAM
 (FIELD CODE - RM)
 MISCELLANEOUS ANALYSES

DATE	Sampling depth (Meters)	Total Oranic Carbon mg/L	Chlorophyll_a (ug/L)	Coliform, Fecal (#/100 ML)	Cyanide, WAD (mg/L)	Total Suspended Solids (TSS) (gm/M ³)
8-Jan-03	1	4	12.9	8		0
8-Jan-03	2	4		8		0
8-Jan-03	11	4		4		6
Duplicate	1	4	4.7	1		0
26-Mar-03	1	4	5.3	1		0
26-Mar-03	4	4		1		6
26-Mar-03	10	4		1		6
15-Apr-03	1	5	12.4	2		12
15-Apr-03	3	5		1		6
Duplicate	12	5		1		25.6
15-Apr-03	12	6		1		19
Duplicate	1		3.2	1		
21-May-03	1	6	3.8	1	0.01	0
21-May-03	5	5		1	0.01	0
21-May-03	11	5		1	0.01	0
25-Jun-03	1	29		1		0
Duplicate	5	4		1		0
25-Jun-03	5	5		1		6
25-Jun-03	10	4		1		7
2-Jul-03	1	5	3.2	1		0
2-Jul-03	11	5		1		0
16-Jul-03	1		8.4	1		13
Duplicate	5			1		13
16-Jul-03	5			1		10
16-Jul-03	9			1		11
6-Aug-03	1		8.4	1		15
6-Aug-03	4			1		15
6-Aug-03	10			1		19
Duplicate	1		8.7	0		
20-Aug-03	1	2	9.2	0		12
Duplicate	3	4		0		12
20-Aug-03	3	3		0		16
20-Aug-03	9	3		0		17
3-Sep-03	1		14.3	2		14
Duplicate	1			1		13
3-Sep-03	1			1		15
3-Sep-03	8			2		19
17-Sep-03	1	5	16.5	1		14
17-Sep-03	3	5		1		16
17-Sep-03	9	5		1		16
Duplicate	1		16.3	2		
8-Oct-03	1	5	18.6	2		16
8-Oct-03	3	5		1		16
Duplicate	7	5		1		12
8-Oct-03	7	4		1		14
Duplicate	1		15.0	1		
18-Nov-03	1	4	15.2	1	0.01	12
18-Nov-03	3	3		2	0.01	15
18-Nov-03	9	4		2	0.005	15

"duplicate" is a duplicate of the sample immediately below

TABLE 16
CHATFIELD RESERVOIR NEAR DAM
(FIELD CODE - RM)
NUTRIENT ANALYSES

DATE	Sampling depth (Meters)	Nitrogen, total (ug/L)	Phosphorus ortho, total (ug/L as P)	Phosphorus, total (ug/L as P)
8-Jan-03	1	400	5	20
8-Jan-03	1.5	400	5	20
8-Jan-03	11	400	5	20
duplicate	1	500	5	10
26-Mar-03	1	400	5	5
26-Mar-03	4	400	5	5
26-Mar-03	10	400	5	5
15-Apr-03	0.75	406	3	19
15-Apr-03	3	435	3	27
duplicate	12	487	4	24
15-Apr-03	12	462	4	24
21-May-03	1.25	454	4	18
21-May-03	5	513	4	24
21-May-03	11	587	6	24
25-Jun-03	1.25	382	0	24
duplicate	5	401	0	36
25-Jun-03	5	414	0	22
25-Jun-03	10	652	0	61
2-Jul-03	1	395	0	16
2-Jul-03	11	676	10	32
16-Jul-03	1.25	280	4	35
duplicate	5	267	6	9
16-Jul-03	5	270	4	10
16-Jul-03	9	628	109	83
6-Aug-03	0.85	332	0	34
6-Aug-03	3.5	314	3	29
6-Aug-03	10	348	3	44
20-Aug-03	0.75	400	0	39
20-Aug-03	3	389	0	34
20-Aug-03	9	442	0	40
3-Sep-03	0.75	457	0	38
3-Sep-03	3	481	0	39
3-Sep-03	8	462	0	46
17-Sep-03	0.625	484	0	40
17-Sep-03	2.5	546	0	45
17-Sep-03	9	594	0	45
8-Oct-03	0.75	527	0	41
8-Oct-03	3	486	0	39
duplicate	7	607	0	41
8-Oct-03	7	465	0	40
18-Nov-03	0.75	606	0	73
18-Nov-03	3	486	0	29
18-Nov-03	9	578	0	45

"duplicate" is a duplicate of the sample immediately below

TABLE 17
 CHATFIELD RESERVOIR NEAR DAM
 (FIELD CODE - RM)
 METALS ANALYSES

DATE	Sampling depth (Meters)	Arsenic, total (mg/l)	Cadmium, dissolved (mg/l)	Chromium, dissolved (mg/l)	Copper, dissolved (mg/l)	Cyanide, WAD (mg/l)	Hardness dissolved (mg/l)
8-Jan-03	1						168
8-Jan-03	1.5						171
8-Jan-03	11						169
Duplicate	1						171
26-Mar-03	1						171
26-Mar-03	4						157
26-Mar-03	10						169
15-Apr-03	0.75						169
15-Apr-03	3						166
Duplicate	12						166
15-Apr-03	12						166
Duplicate	1.25						172
21-May-03	1					0	172
21-May-03	5					0	174
21-May-03	11					0	108
25-Jun-03	1.25						110
Duplicate	5						112
25-Jun-03	5						112
25-Jun-03	10						112
2-Jul-03	1						114
2-Jul-03	11						118
16-Jul-03	1.25						114
Duplicate	5						115
16-Jul-03	5						116
16-Jul-03	9						114
6-Aug-03	0.85	0.0007	0	0	0		122
6-Aug-03	3.5	0.00061	0	0	0		120
6-Aug-03	10	0.00157	0	0	0		120
Duplicate	1						121
20-Aug-03	0.75						122
Duplicate	3						128
20-Aug-03	3						122
20-Aug-03	9						130
3-Sep-03	0.75						134
Duplicate	1						138
3-Sep-03	0.75						136
3-Sep-03	8						134
17-Sep-03	0.625						140
17-Sep-03	2.5						144
17-Sep-03	9						138
Duplicate	1						130
8-Oct-03	0.75						134
8-Oct-03	3						138
Duplicate	7						136
8-Oct-03	7						134
Duplicate	0.75						140
18-Nov-03	1					0	140
18-Nov-03	3					0	144
18-Nov-03	9					0	138

"duplicate" is a duplicate of the sample immediately below
 a zero indicates non-detect reported by laboratory

TABLE 17
 CHATFIELD RESERVOIR NEAR DAM
 (FIELD CODE - RM)
 METALS ANALYSES

DATE	Sampling depth (Meters)	Iron, dissolved (mg/l)	Lead, dissolved (mg/l)	Magnesium, dissolved (mg/l)	Manganese, dissolved (mg/l)	Mercury, dissolved (mg/l)	Nickel, dissolved (mg/l)	Selenium, dissolved (mg/l)	Silver, dissolved (mg/l)	Zinc, dissolved (mg/l)
8-Jan-03	1			11.9						
8-Jan-03	1.5			12.3						
8-Jan-03	11			12.1						
Duplicate	1			10.7						
26-Mar-03	1			11.5						
26-Mar-03	4			11.4						
26-Mar-03	10			11.4						
15-Apr-03	0.75									
15-Apr-03	3									
Duplicate	12									
15-Apr-03	12									
Duplicate	1.25									
21-May-03	1									
21-May-03	5									
21-May-03	11									
25-Jun-03	1.25									
Duplicate	5									
25-Jun-03	5									
25-Jun-03	10									
2-Jul-03	1									
2-Jul-03	11									
16-Jul-03	1.25									
Duplicate	5									
16-Jul-03	5									
16-Jul-03	9									
6-Aug-03	0.85	0	0		0.01	0	0	0	0	0.02
6-Aug-03	3.5	0	0		0.0025	0	0	0	0	0.02
6-Aug-03	10	0	0		0.623	0	0	0	0	0.03
Duplicate	1									
20-Aug-03	0.75									
Duplicate	3									
20-Aug-03	3									
20-Aug-03	9									
3-Sep-03	0.75									
Duplicate	1									
3-Sep-03	0.75									
3-Sep-03	8									
17-Sep-03	0.625									
17-Sep-03	2.5									
17-Sep-03	9									
Duplicate	1									
8-Oct-03	0.75									
8-Oct-03	3									
Duplicate	7									
8-Oct-03	7									
Duplicate	0.75									
18-Nov-03	1									
18-Nov-03	3									
18-Nov-03	9									

"duplicate" is a duplicate of the sample immediately below
 a zero indicates non-detect reported by laboratory

TABLE 18
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

JANUARY 8, 2003, 1015 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.54	405	15.21	1.9
2	7.57	405	15.20	1.9
3	7.57	405	15.77	1.9
4	7.54	372	15.73	1.9
5	7.56	404	16.09	1.9
6	7.59	410	15.99	2.0
7	7.57	404	16.04	2.0
8	7.57	398	16.27	2.0
9	7.56	397	16.12	2.0
10	7.48	356	16.35	2.0
11	7.52	396	16.03	2.1

MARCH 23, 2003, 0800 hours				
DEPTH (meters)	pH	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.55	397	13.45	6.1
2	7.45	397	14.68	6.1
3	7.52	397	14.31	6.1
4	7.42	398	14.25	6.1
5	7.44	398	14.52	6.1
6	7.30	393	14.80	6.0
7	7.14	363	14.59	6.0
8	7.01	394	14.42	5.5
9	6.95	395	14.39	5.5

TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

APRIL 15, 2003, 0920 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.61	403	13.76	11.5
2	7.57	404	13.36	11.4
3	7.60	404	14.24	11.3
4	7.71	404	14.90	11.3
5	7.76	404	14.51	11.2
6	7.76	405	14.48	11.1
7	7.47	402	13.85	9.1
8	7.32	402	13.47	8.4
9	7.15	401	12.74	7.9
10	7.26	384	10.60	8.5

MAY 21, 2003, 1030 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.57	339	11.75	14.4
2	7.64	340	11.80	14.1
3	7.71	340	11.56	13.9
4	7.65	340	11.65	13.9
5	7.73	340	11.02	13.8
6	7.51	341	11.62	13.7
7	7.40	337	9.14	12.6
8	7.50	326	8.58	11.7
9	7.58	327	8.32	11.5
10	7.68	327	8.64	11.4

TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

JUNE 25, 2003, 1000 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.16	279	7.13	19.1
2	7.11	279	7.71	18.9
3	7.02	280	7.74	18.8
4	6.95	280	8.01	18.8
5	6.79	283	7.61	18.7
6	6.71	283	6.84	18.5
7	6.66	277	6.32	18.1
8	6.67	277	7.37	17.5
9	6.63	278	3.57	16.6
10	6.68	281	2.97	16.1

JULY 2, 2003, 1000 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.41	280	6.60	21.7
2	7.41	280	9.24	21.4
3	7.41	278	7.87	21.1
4	7.11	279	3.72	20.4
5	6.89	283	2.13	19.8
6	6.84	283	3.40	19.2
7	6.80	278	3.64	18.6
8	6.81	276	4.06	18.1
9	6.88	268	2.26	17.0

TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

JULY 16, 2003, 1000 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.62	279	8.53	23.0
2	7.46	280	8.61	22.9
3	7.47	280	8.53	22.8
4	7.39	281	8.47	22.7
5	7.21	281	8.33	22.7
6	7.02	280	4.70	21.9
7	7.02	268	2.62	20.9
8	7.02	266	1.84	20.4
9	6.98	267	1.04	19.5
10	6.85	271	0.86	18.9

AUGUST 6, 2003, 1330 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.62	285	9.54	23.9
2	7.43	285	9.07	23.0
3	7.33	283	8.10	22.8
4	7.25	283	7.60	22.7
5	7.18	280	6.80	22.7
6	6.98	280	6.00	22.6
7	7.21	270	5.91	22.6
8	7.10	268	5.64	22.6
9	7.01	270	5.08	22.5
10	6.94	272	0.95	21.6

TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

AUGUST 20, 2003, 1040 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.41	288		22.0
2	7.33	288		21.8
3	7.28	288		21.7
4	7.17	288		21.7
5	7.09	288		21.6
6	7.04	292		21.5
7	6.97	288		21.5
8	6.67	288	2.05	21.5
9	6.66	290	3.67	21.2
10	6.91	290	2.03	21.2

SEPTEMBER 3, 2003, 1040 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.54	298		20.5
2	7.48	298		20.5
3	7.35	298		20.4
4	7.29	299		20.3
5	7.19	299		20.3
6	7.02	300		20.1
7	6.97	294	6.34	19.5
8	7.01	292	6.23	18.9

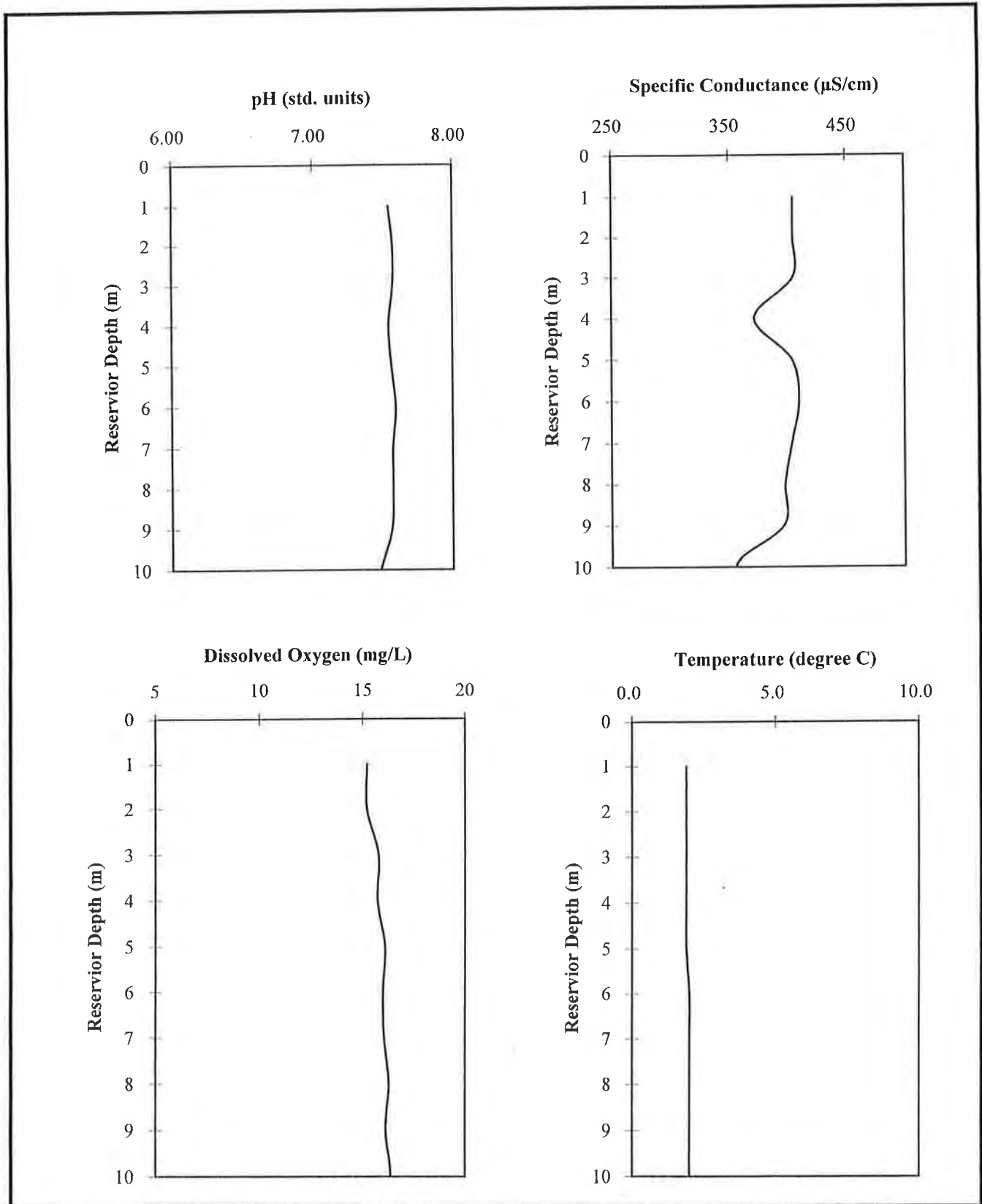
TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

SEPTEMBER 17, 2003, 1030 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.93	475	9.91	16.6
2	7.93	476	10.10	16.5
3	7.91	477	10.11	16.4
4	7.88	491	10.35	16.4
5	7.87	493	10.19	16.4
6	7.83	504	10.13	16.4
7	7.76	502	10.14	16.3
8	7.62	506	10.12	16.3
9	7.53	519	9.47	16.2
10	7.65	535	9.27	16.3

OCTOBER 8, 2003, 1040 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.44	320	11.40	14.8
2	7.37	320	11.30	14.7
3	7.31	321	10.92	14.7
4	7.24	322	10.87	14.6
5	7.15	322	10.87	14.5
6	7.03	322	10.90	14.5
7	6.88	317	10.31	14.4
8	6.53	317	10.38	14.4
9				

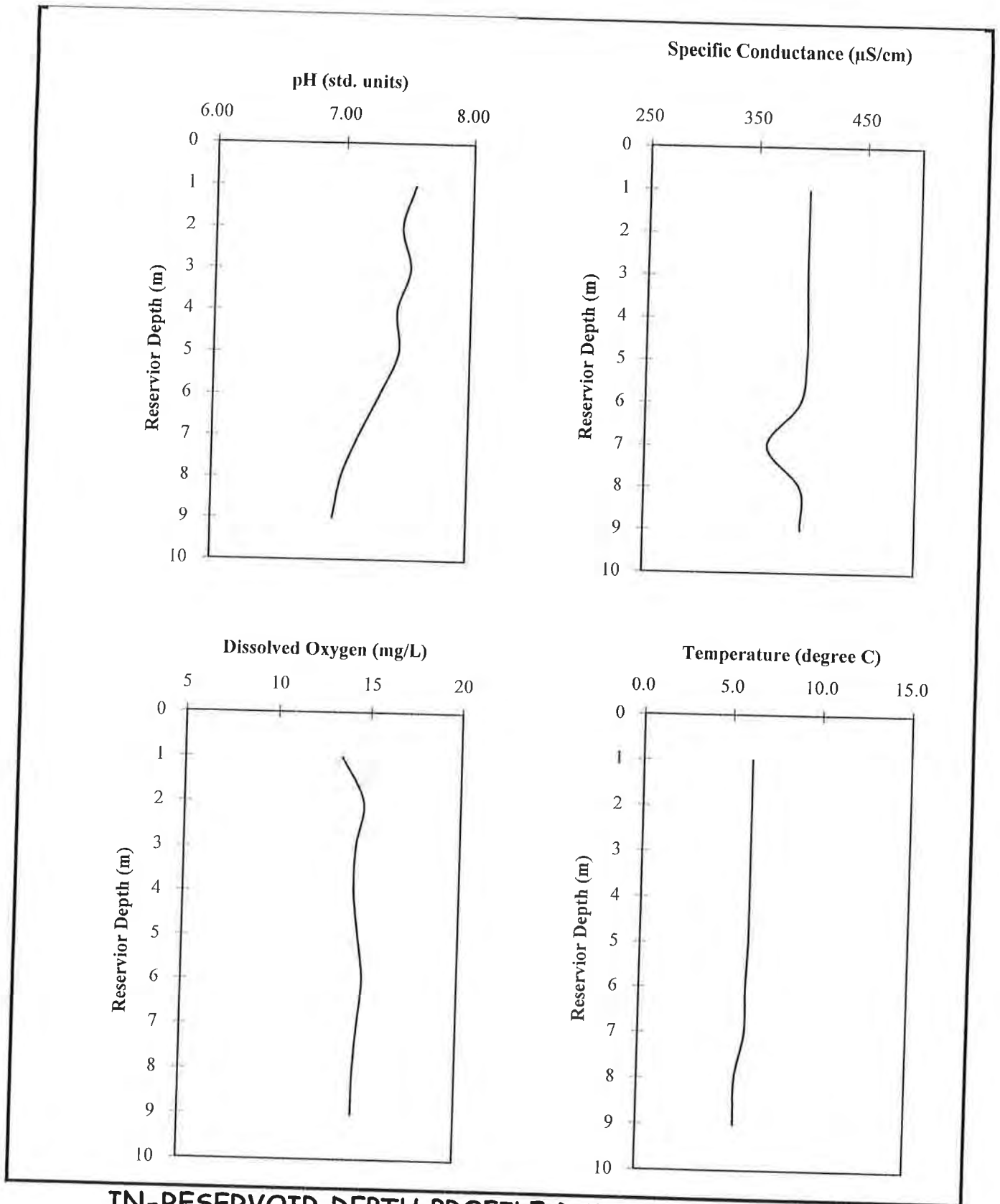
TABLE 18 (Continued)
CHATFIELD IN-RESERVOIR DEPTH-PROFILE DATA
(FIELD CODE RM)

NOVEMBER 18, 2003, 1045 hours				
DEPTH (meters)	pH (s.u.)	SC (uS/cm)	DO (mg/L)	TEMP. (deg C)
1	7.95	355	13.87	6.1
2	7.92	355	13.71	6.1
3	7.91	355	13.77	6.0
4	7.91	355	13.91	6.0
5	7.91	355	13.98	6.0
6	7.92	355	13.98	6.0
7	7.91	349	13.92	6.0
8	7.92	349	13.86	6.0
9	7.9	350	13.83	5.9
10	7.79	350	13.70	5.9



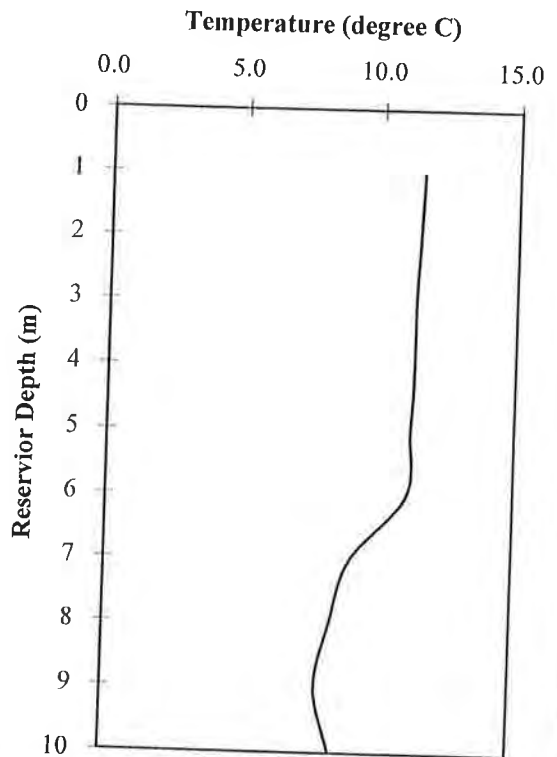
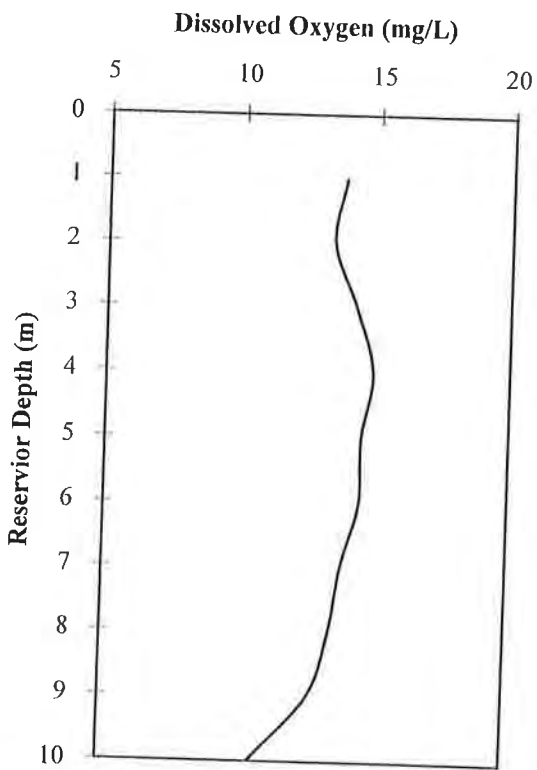
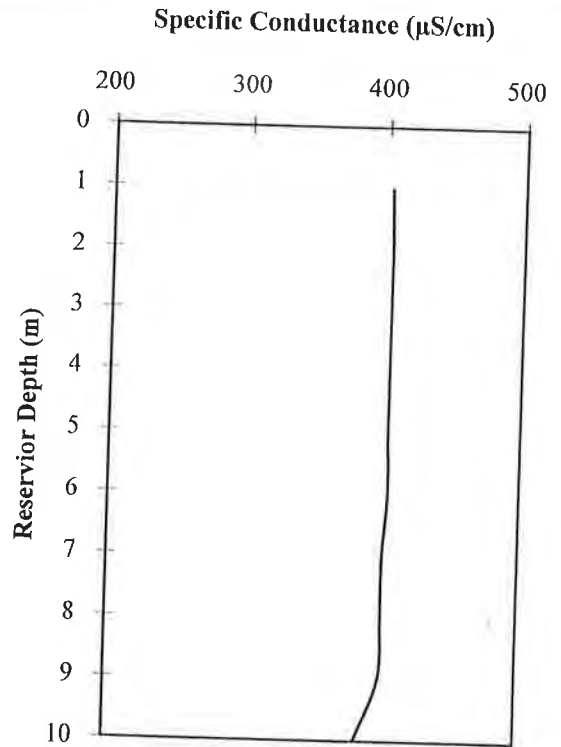
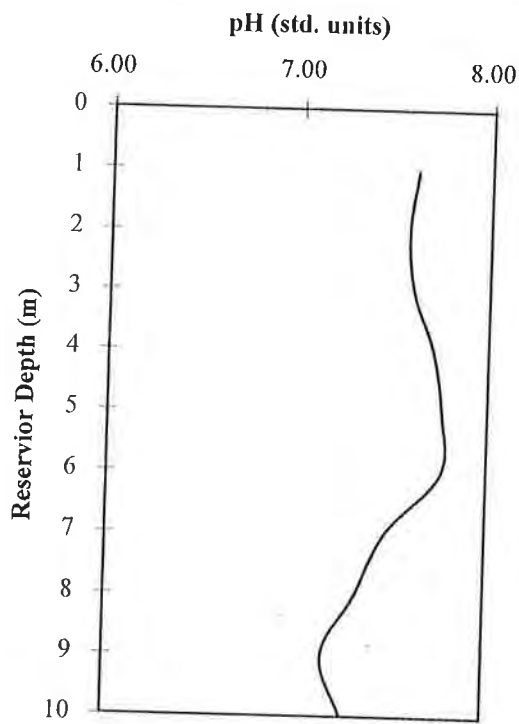
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - JANUARY 8, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



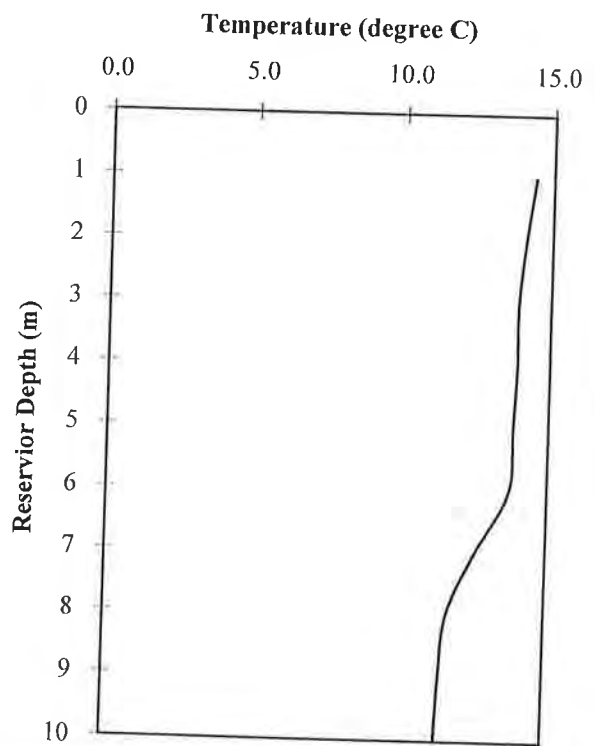
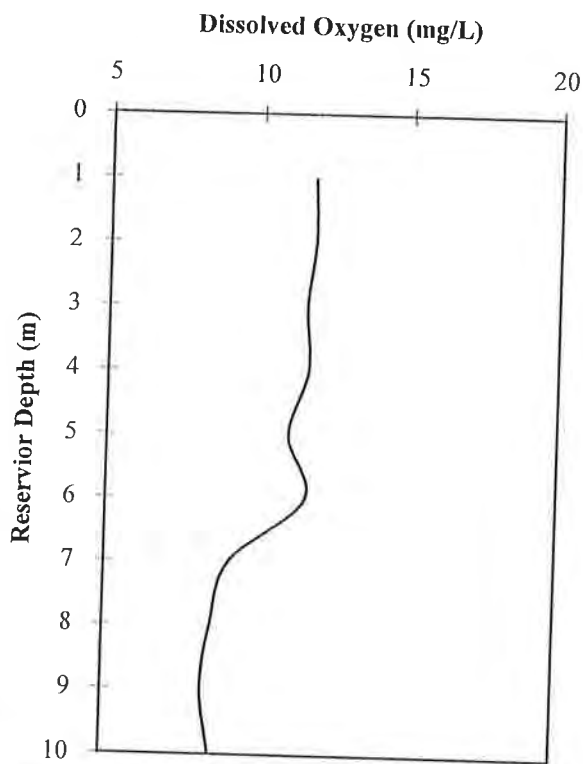
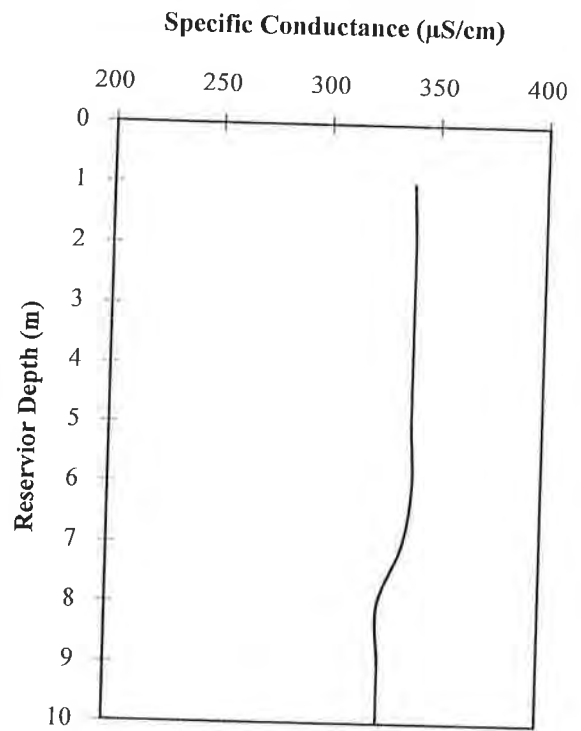
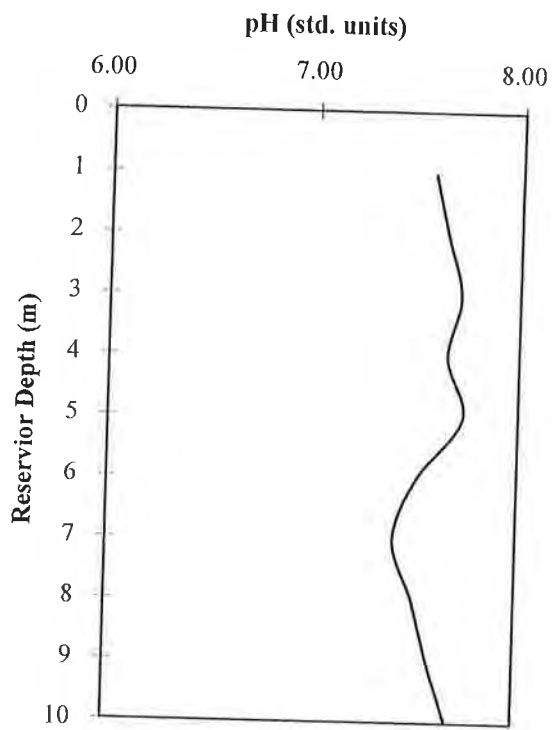
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - MARCH 23, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



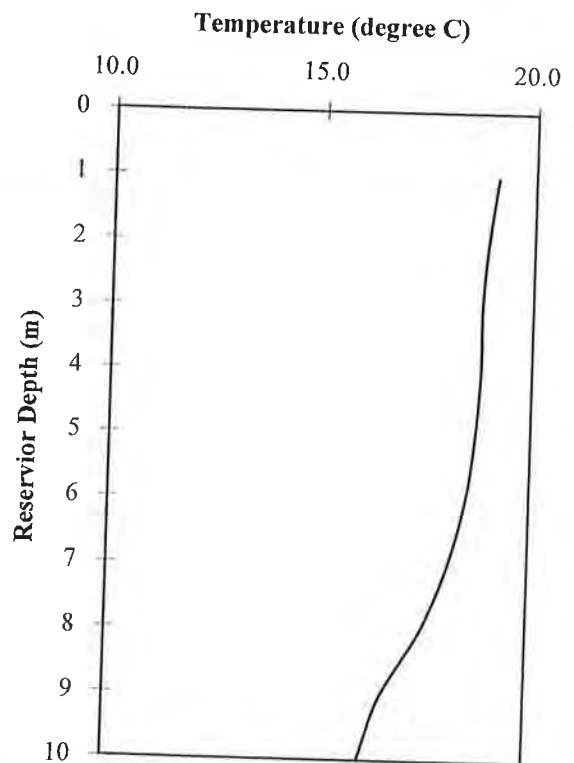
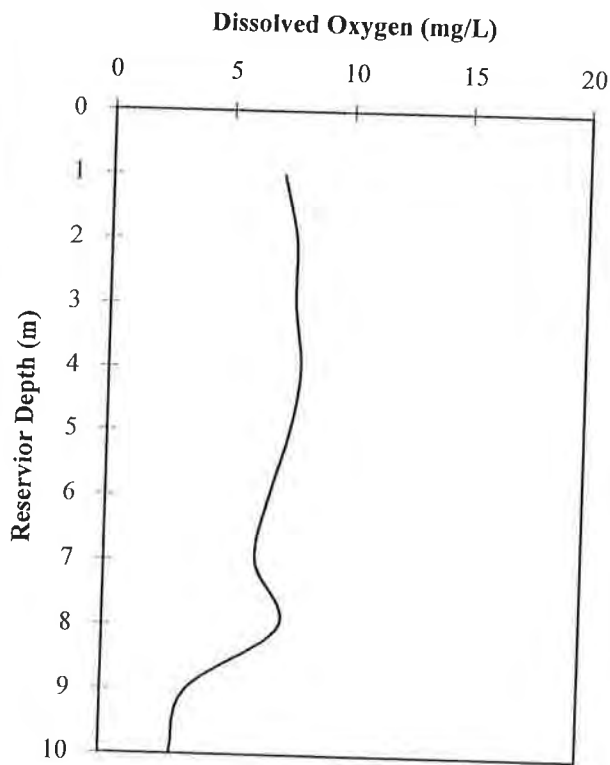
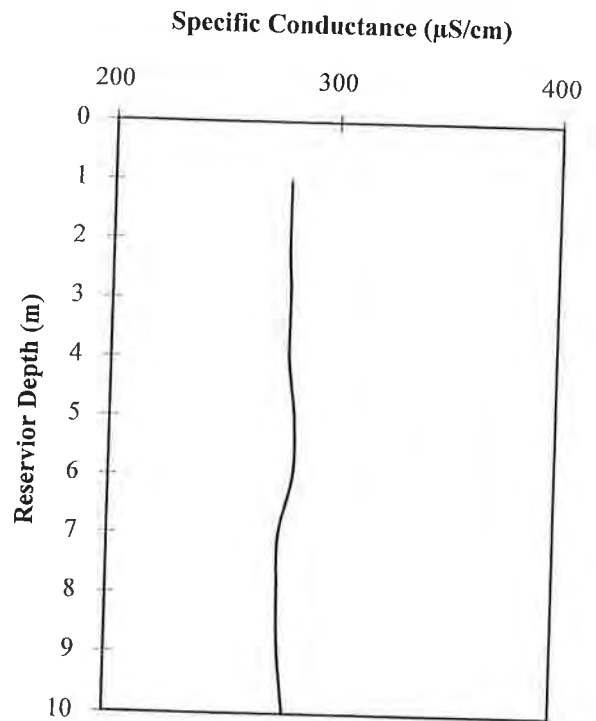
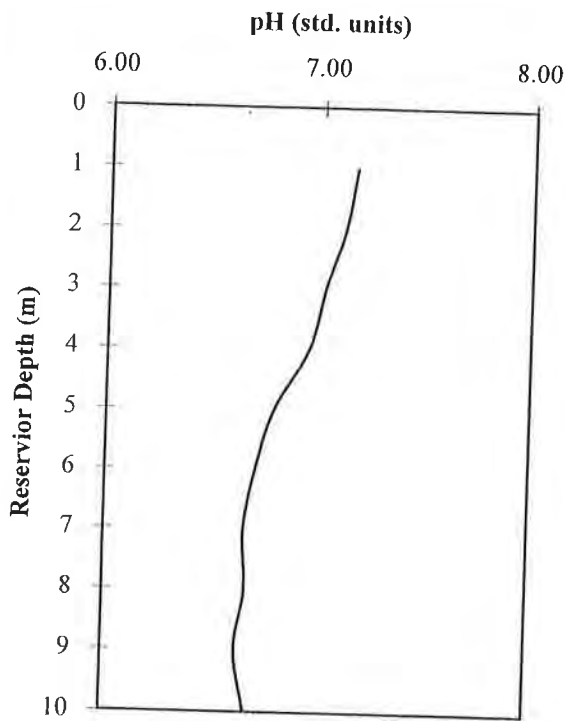
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - APRIL 15, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



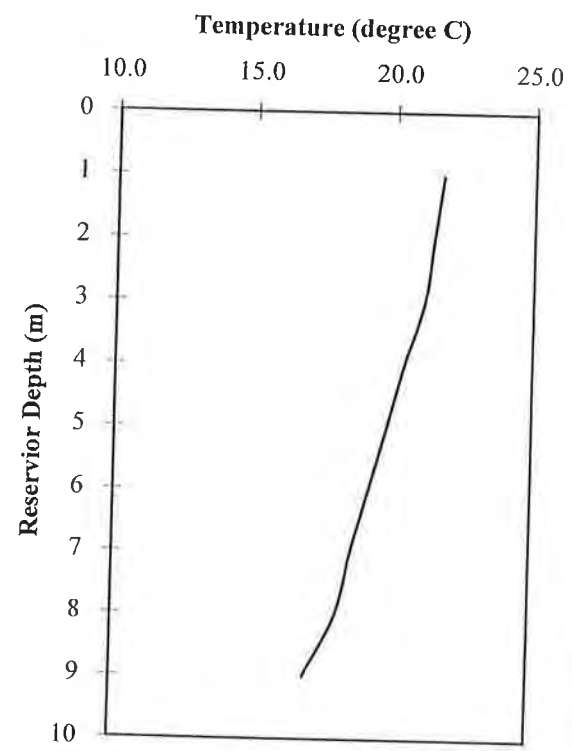
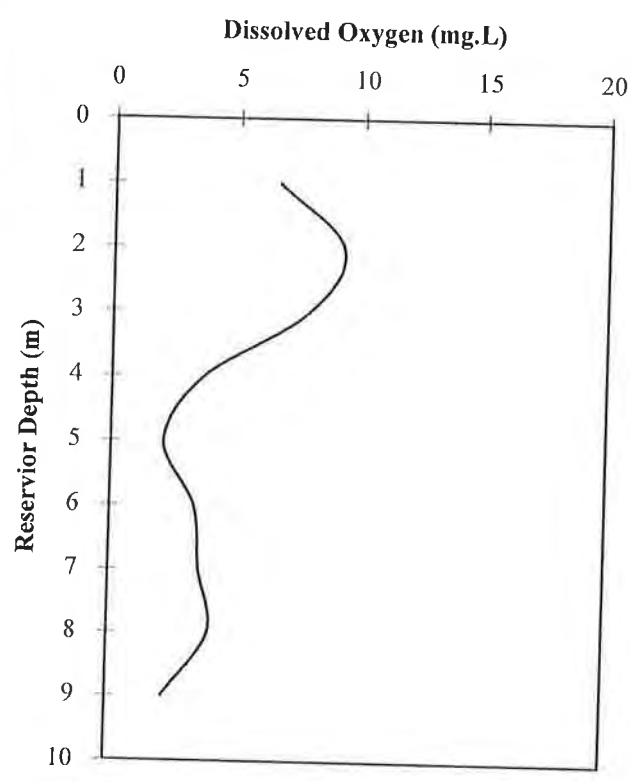
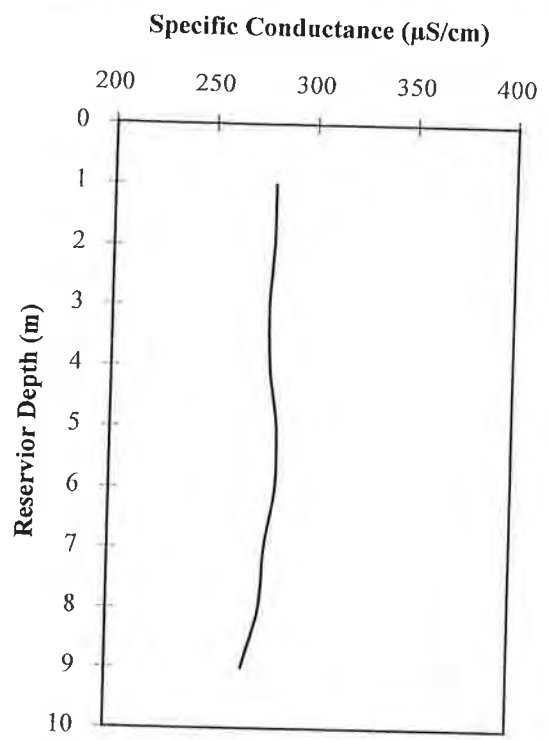
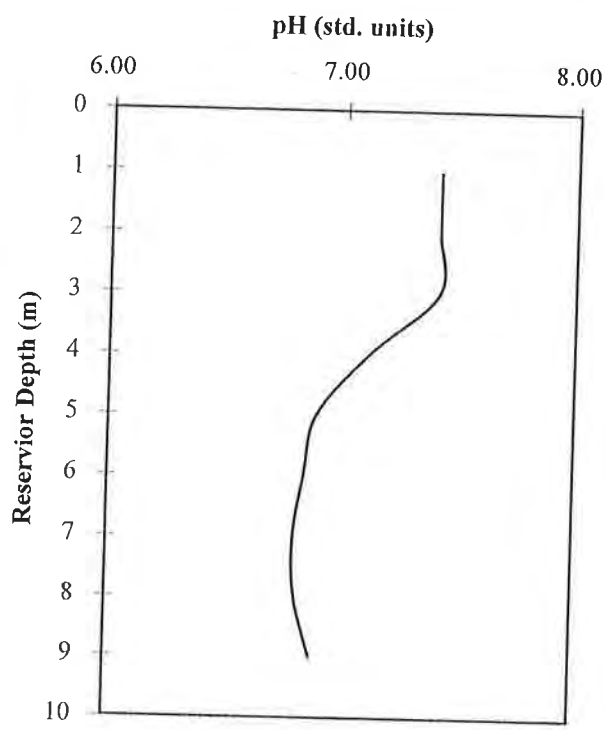
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - MAY 21, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



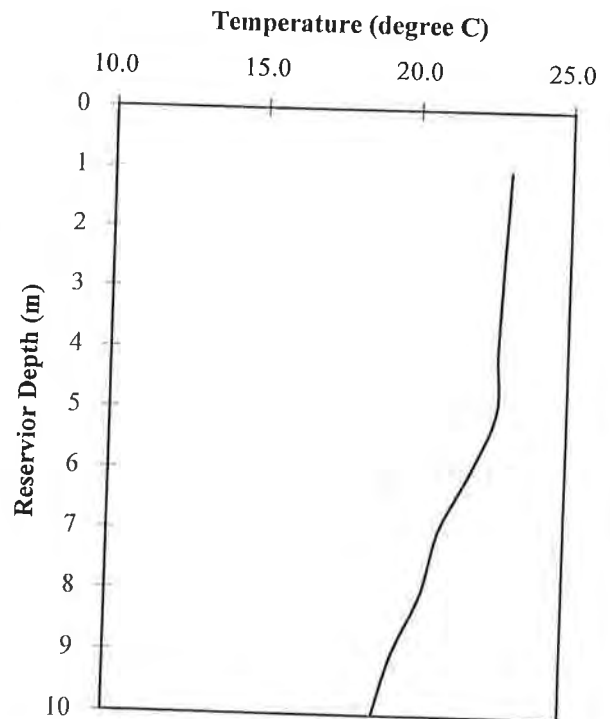
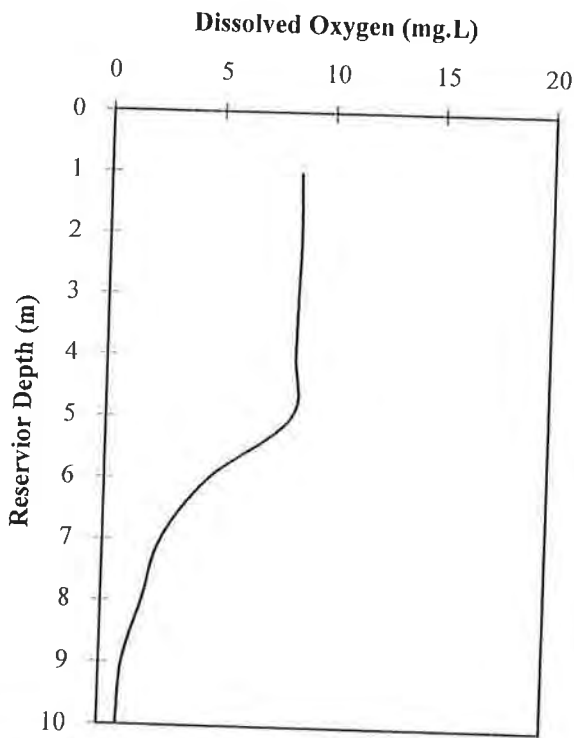
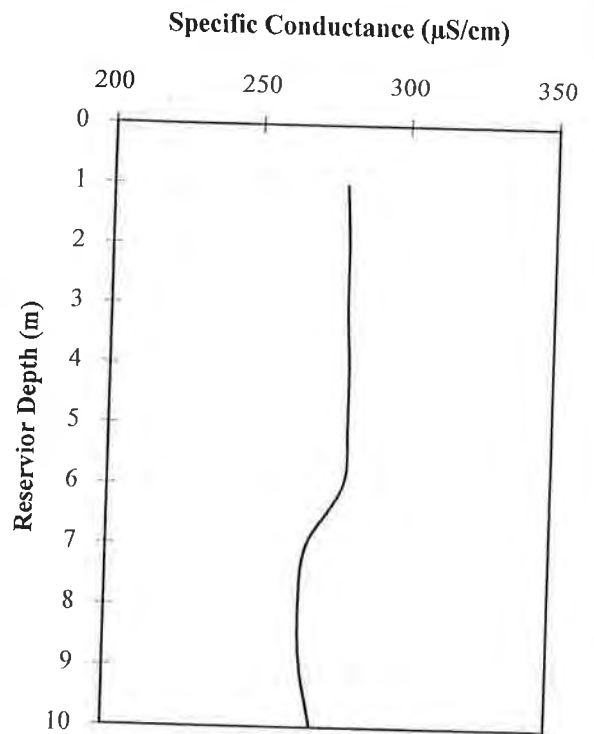
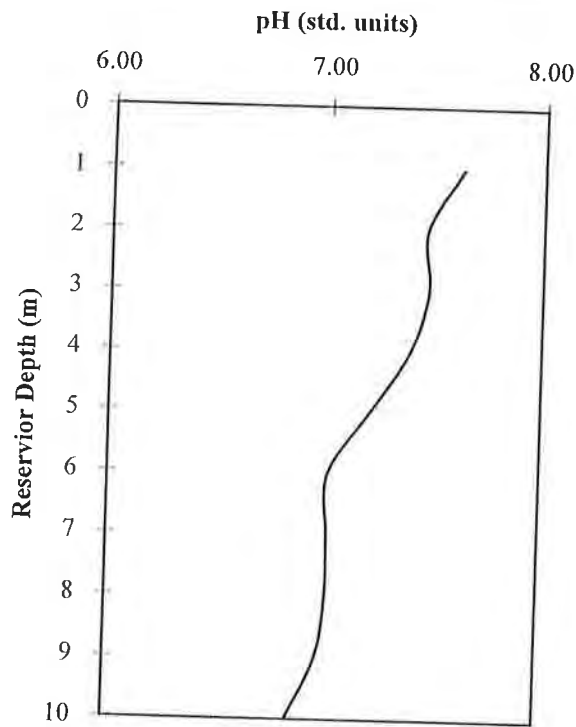
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - JUNE 25, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



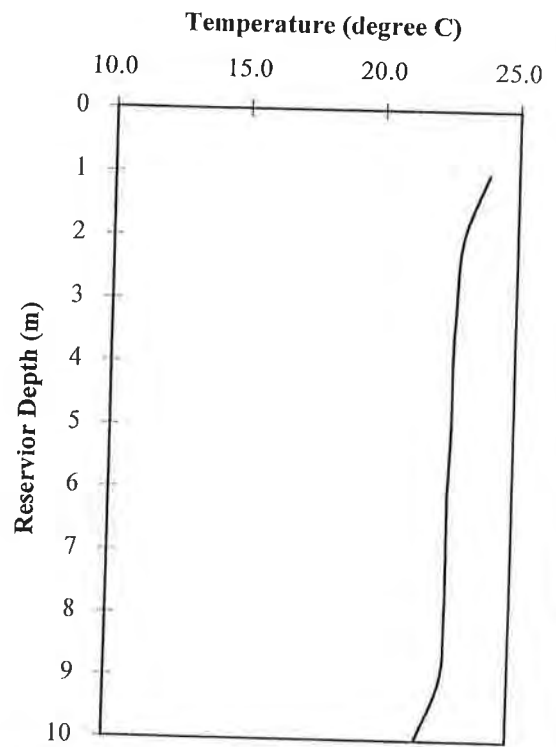
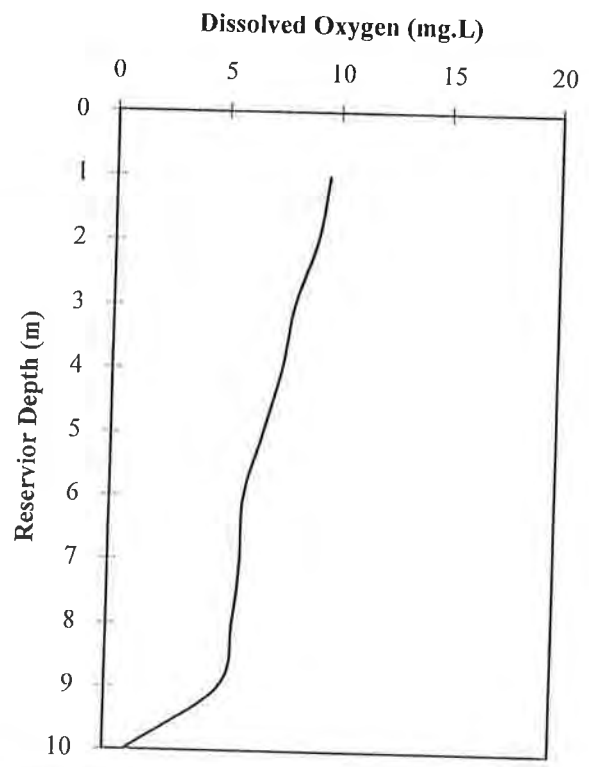
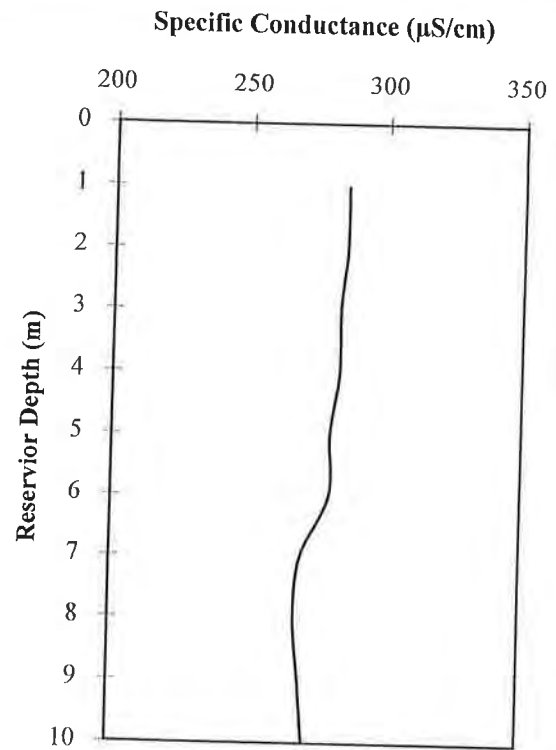
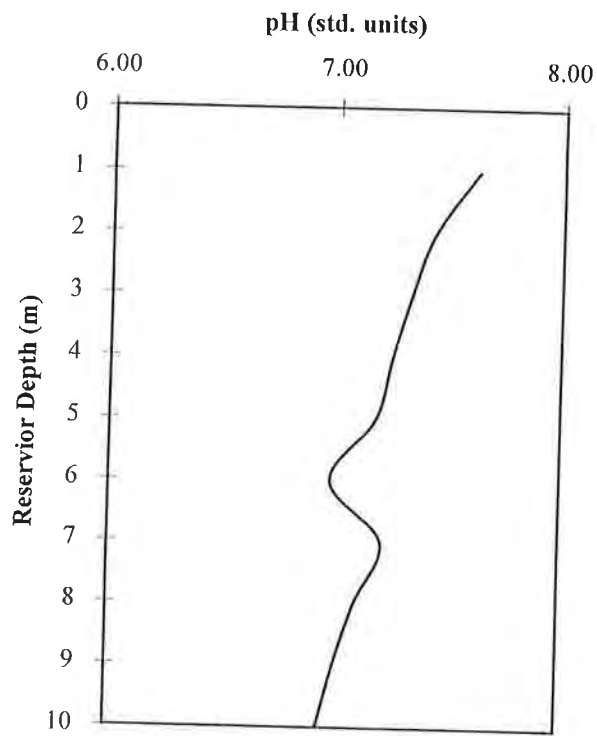
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - JULY 2, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



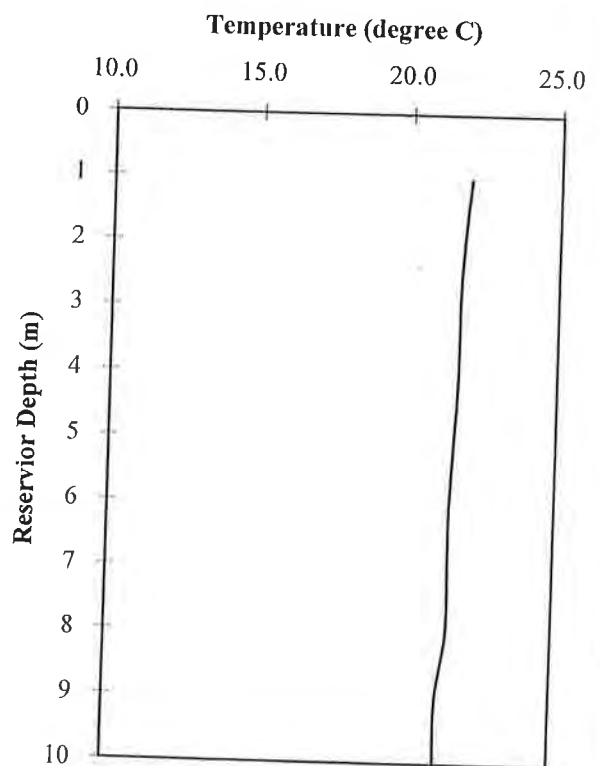
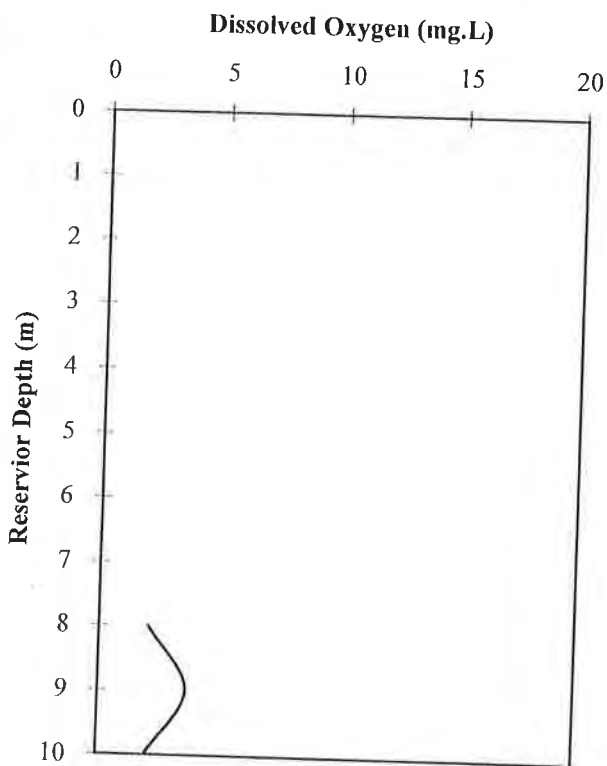
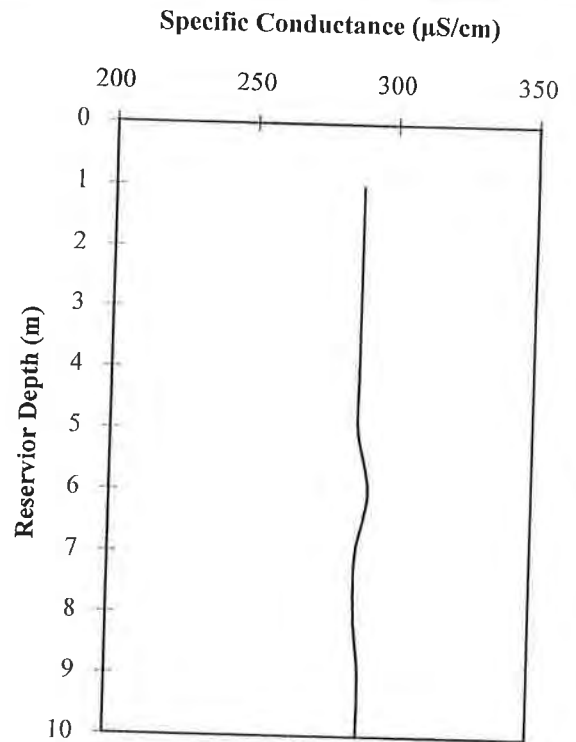
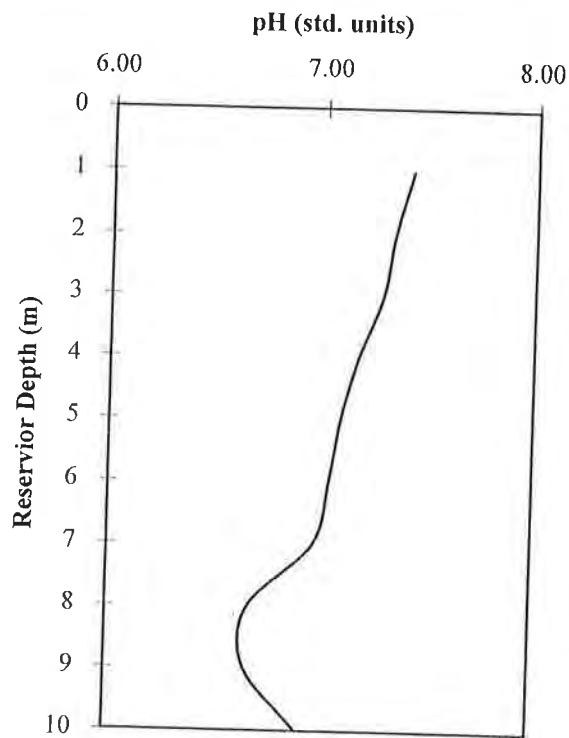
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - JULY 16, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



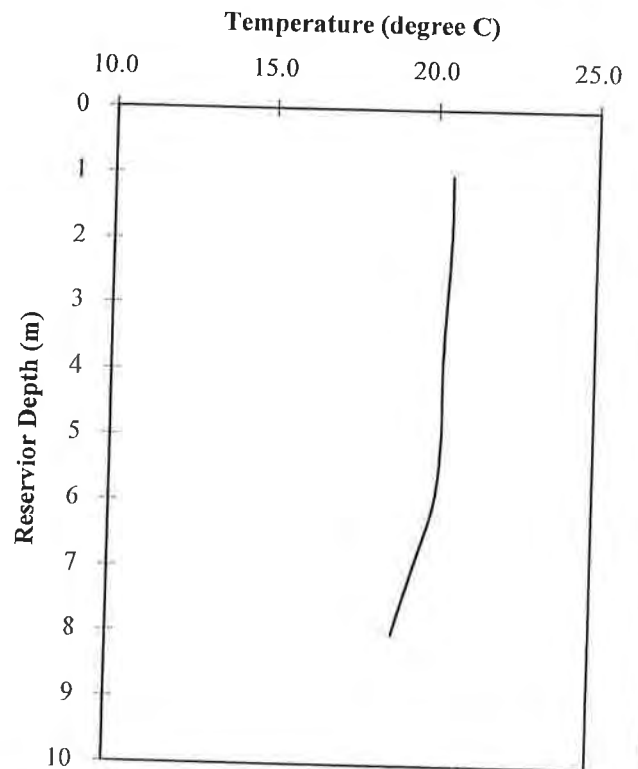
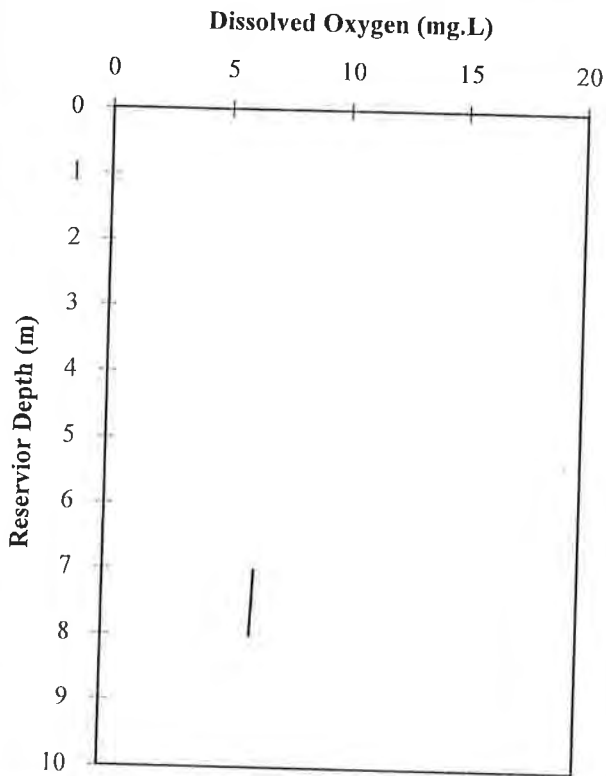
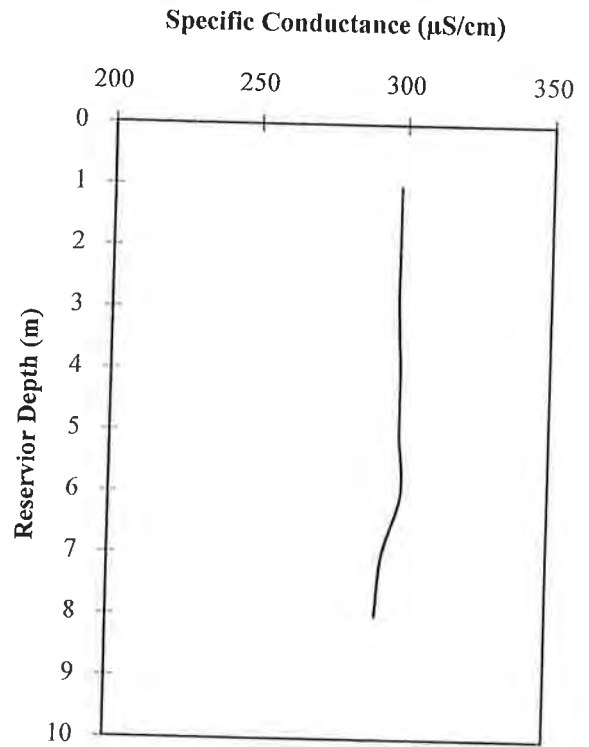
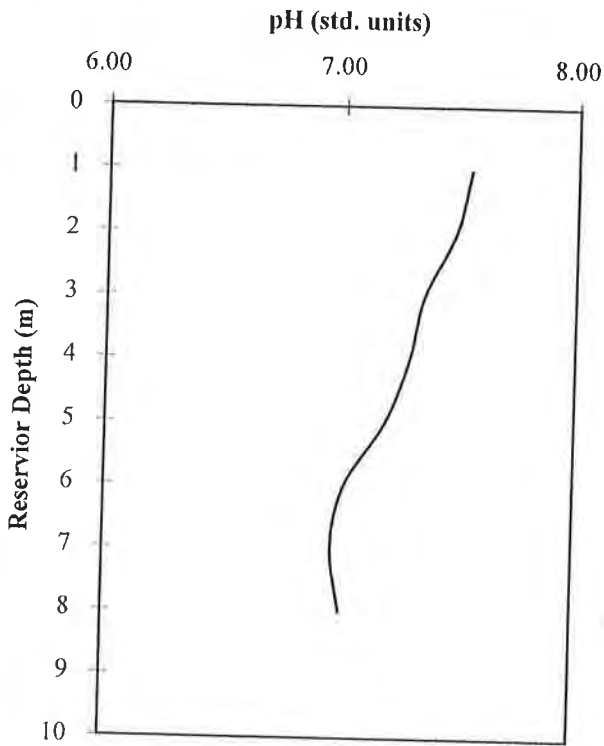
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - AUGUST 6, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



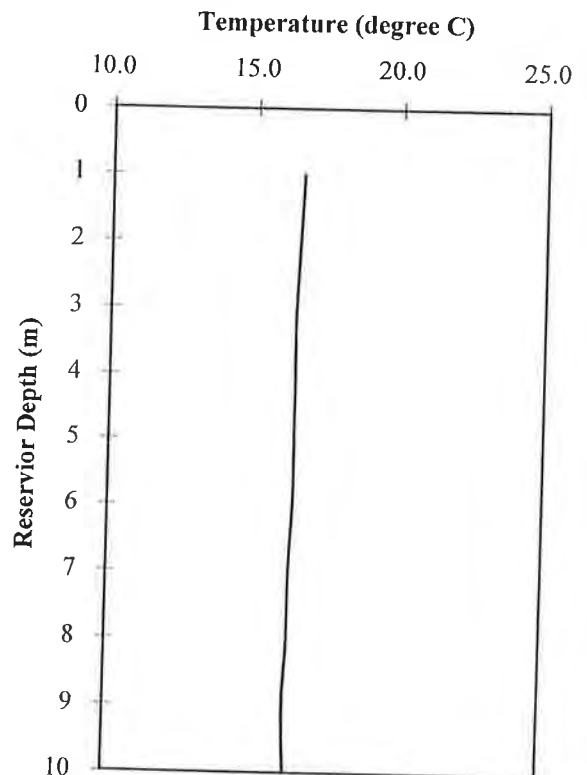
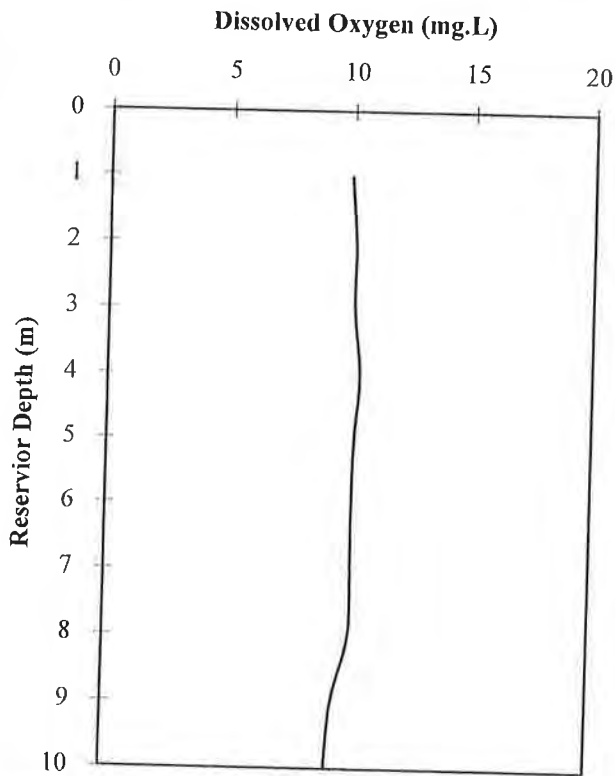
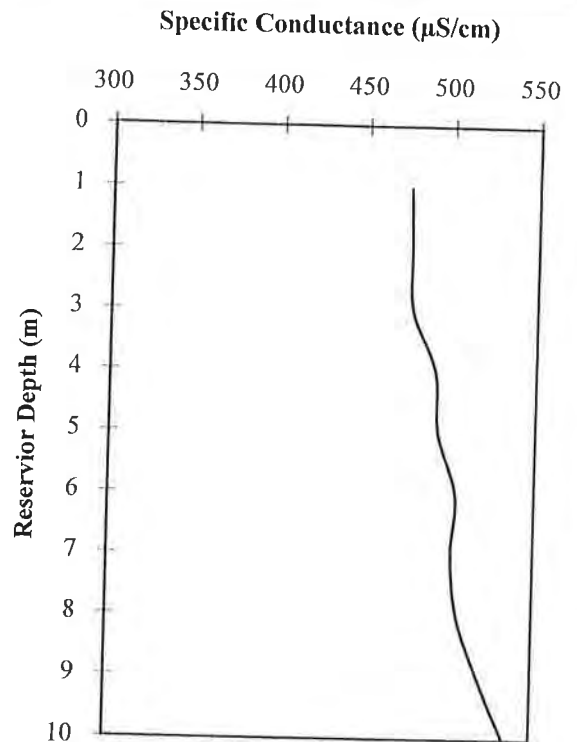
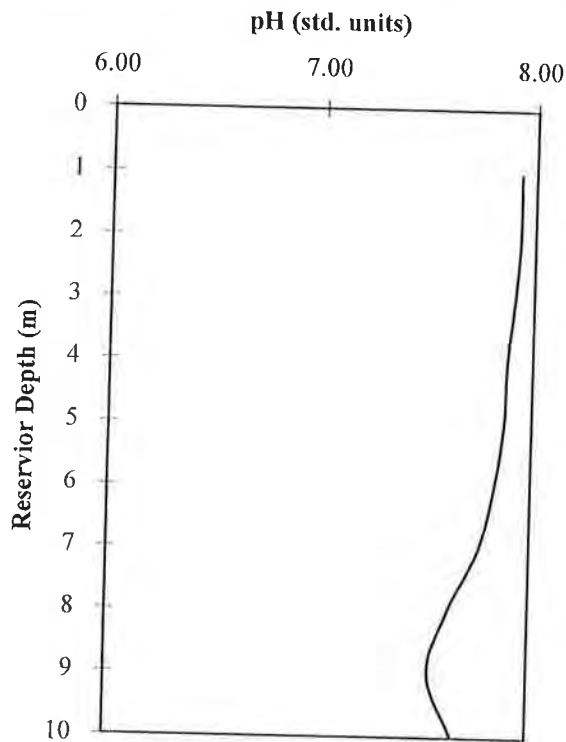
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - AUGUST 20, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



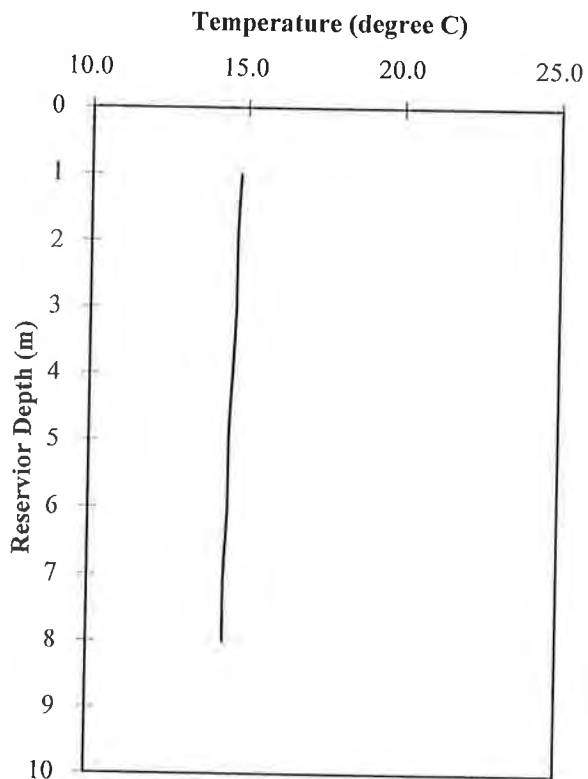
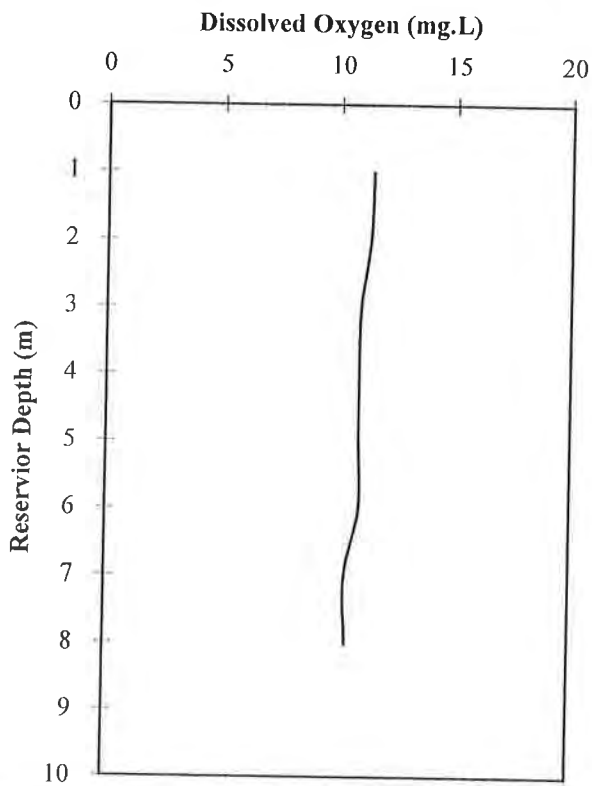
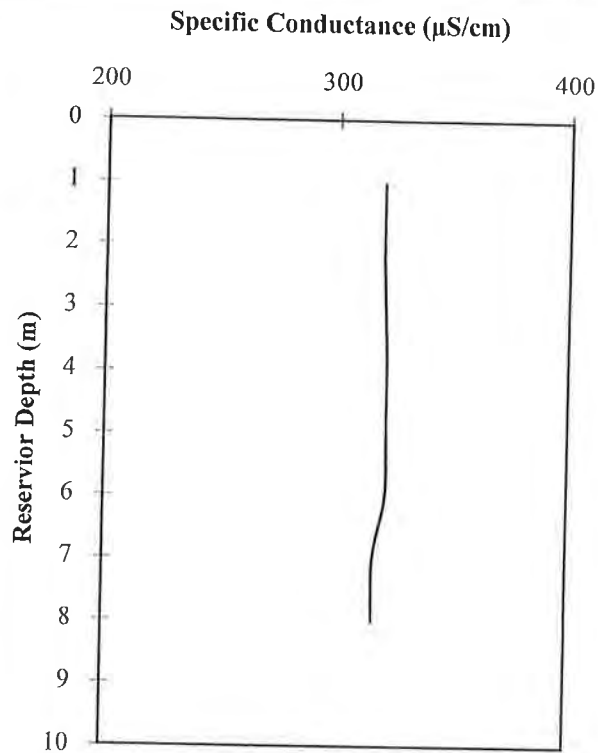
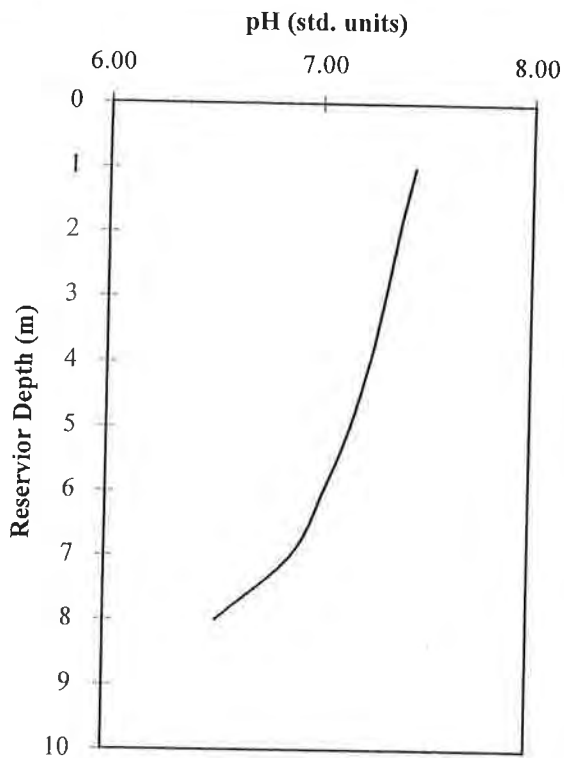
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - SEPTEMBER 3, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



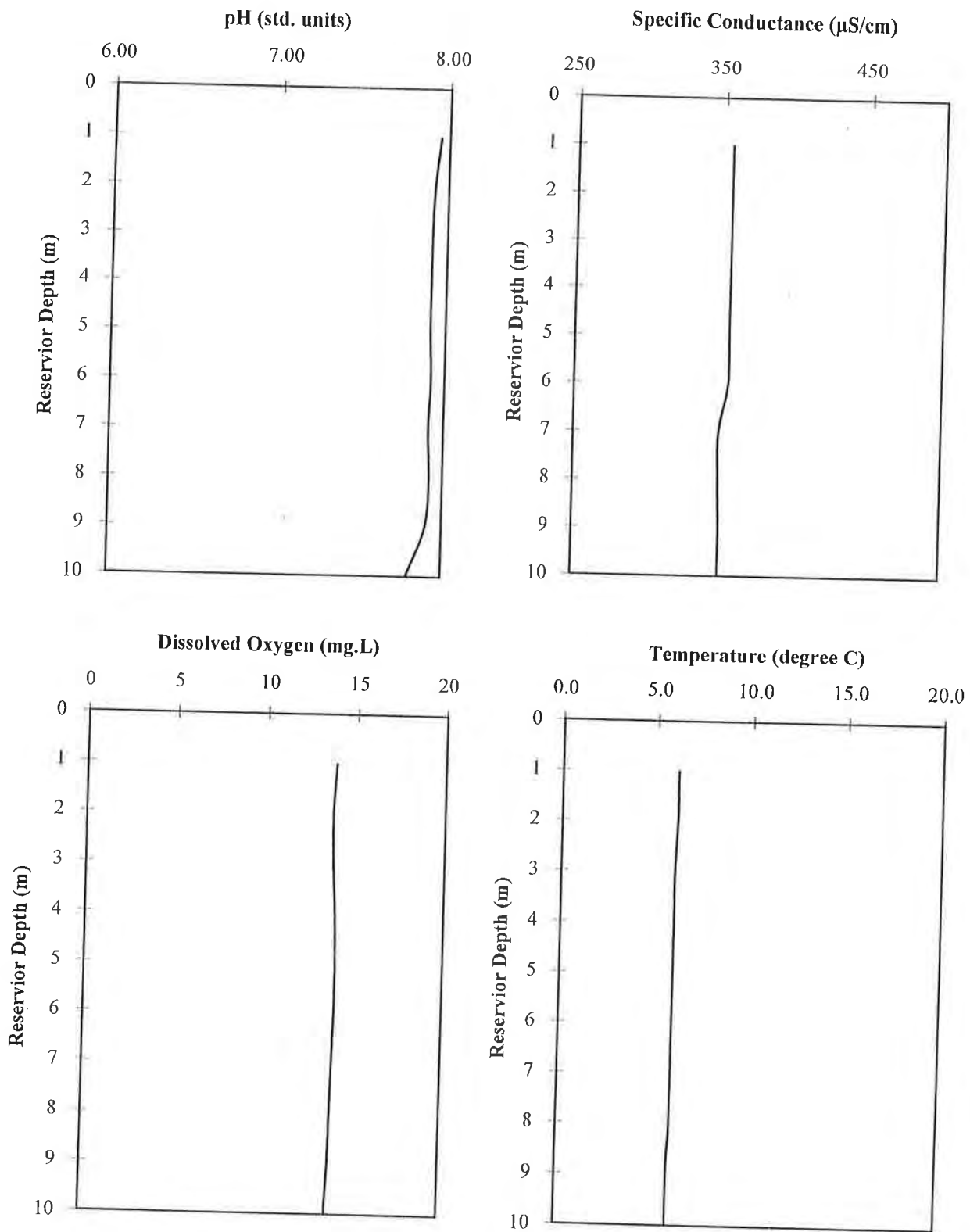
**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - SEPTEMBER 17, 2003**

**.CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
CHATFIELD RESERVOIR - OCTOBER 8, 2003**

**CHATFIELD BASIN AND RESERVOIR
WATER-QUALITY MONITORING PROGRAM**



**IN-RESERVOIR DEPTH PROFILE DATA, SITE RM
 CHATFIELD RESERVOIR - NOVEMBER 18, 2003**

**CHATFIELD BASIN AND RESERVOIR
 WATER-QUALITY MONITORING PROGRAM**

TABLE 19
CHATFIELD RESERVOIR NEAR DAM
(FIELD CODE - RM)
SEDIMENT-QUALITY DATA

DATE	Arsenic, total mg/Kg	Cadmium, total (mg/Kg)	Copper, total (mg/Kg)	Lead, total (mg/Kg)	Mercury, total (mg/Kg)	Phosphorus, total %	Selenium, total (mg/Kg)
20-Aug-03		0.82	33.6	42.4	0.08	0.027	2.25

DATE	Carbon, total organic (TOC) %	Texture by Hydrometer		
		Silt %	Clay %	Solids (percent)
20-Aug-03	2.4	31.3	65	21.9

TABLE 20
PHYTOPLANKTON DATA, 2002 SURVEY RESULTS
CHATFIELD RESERVOIR (Field Code RM)

Date	3/26/2003	5/21/2003	8/6/2003	9/3/2003
BACILLARIOPHYTA				
<i>Asterionella formosa</i>	140	124		
<i>Aulacoseira granulata</i> var. <i>angustissima</i>			103	40
<i>Aulacoseira granulata</i>			71	
<i>Aulacoseira italica</i> var. <i>tenuissima</i>			9	
<i>Cyclotella bodanica</i>	3	106		
<i>Cyclotella distinguenda</i>	280		200	1,280
<i>Cyclotella ocellata</i>		30	480	400
<i>Diatoma tenuis</i>	15		4	
<i>Fragilaria crotonensis</i>		25	14	8
<i>Nitzschia acicularis</i>	5			
<i>Nitzschia gracilis</i>	25		10	40
<i>Nitzschia nana</i>	25			
<i>Nitzschia paleacea</i>				
<i>Nitzschia reversa</i>				
<i>Nitzschia</i> sp.			240	440
<i>Stephanodiscus hantzschii</i>				
<i>Stephanodiscus niagarae</i>				
<i>Synedra acus</i>			1	
<i>Synedra cyclopus</i>		1		
<i>Synedra delicatissima</i>	5		2	5
<i>Synedra rumpens</i> var. <i>familiaris</i>	535			
<i>Synedra ulna</i> var. <i>chaseana</i>				
<i>Synedra ulna</i> var. <i>fragilarioides</i>	15			
CHLOROPHYTA				
<i>Ankistrodesmus hantzschii</i>	16			
<i>Ankistrodesmus falcatus</i>				80
<i>Ankistrodesmus gracilis</i>				
<i>Ankyra judayi</i>		3		
<i>Chlamydomonas angulosa</i>				
<i>Chlamydomonas</i> sp.				
<i>Chlorella minutissima</i>	5,500	2,000	2,500	3,000
<i>Chlorella vulgaris</i>				
<i>Chlorogonium</i> sp.				5
<i>Choricystis minor</i>				
<i>Closterium</i> sp.				
<i>Coenochloris polycocca</i>				
<i>Crucigenia smithii</i>				
<i>Crucigenia tetrapedia</i>				480
<i>Crucigeniella apiculata</i>				
<i>Dictyosphaerium ehrenbergianum</i>				
<i>Dictyosphaerium pulchellum</i>		40		
<i>Eudorina elegans</i>				

TABLE 20
 PHYTOPLANKTON DATA, 2002 SURVEY RESULTS
 CHATFIELD RESERVOIR (Field Code RM)

Date	3/26/2003	5/21/2003	8/6/2003	9/3/2003
<i>Fusola viridis</i>		6	80	
<i>Kirchneriella lunaris</i>				
<i>Lagerheimia genevensis</i>				280
<i>Micractinium pusillum</i>				
<i>Monoraphidium contortum</i>				
<i>Monoraphidium minutum</i>				20
<i>Necphrocytium sp.</i>				10
<i>Monoraphidium sp.</i>				
<i>Oocystis borgeii</i>		4		
<i>Oocystis lacustris</i>		11		
<i>Oocystis sp.</i>		4		
<i>Pandorina morum</i>				
<i>Pediastrum duplex, var gracillium</i>				45
<i>Raphidocelis contorta</i>			40	480
<i>Scenedesmus armatus</i>	2	4		
<i>Scenedesmus acuminatus</i>				
<i>Scenedesmus communis</i>		4	5	60
<i>Scenedesmus intermedius</i>				880
<i>Scenedesmus linearis</i>		4		
<i>Schroederia setigera</i>				40
<i>Staurastrum sp.</i>		1		
<i>Tetrastrum elegans</i>				
<i>Treubaria triappendiculata</i>				
CHRYSOPHYTA				
<i>Chromulina sp.</i>	3,500	63		
<i>Dinobryon bavaricum</i>				
<i>Dinobryon cylindricum</i>				
<i>Dinobryon divergens</i>	15			
<i>Dinobryon sociale var. A25 americanum</i>				5
<i>Ochromonas minuscula</i>				
CRYPTOPHYTA				
<i>Campylomonas reflexa</i>	15	94	10	25
<i>Campylomonas sp.</i>		25		
<i>Chroomonas nordstedii</i>			760	3,120
<i>Cryptomonas rostratiformis</i>		6		10
<i>Cyathomonas truncata</i>				
<i>Plagioselmis nannoplanctica</i>	80	840	200	1,520
<i>Storeatula rhinosa</i>				

TABLE 20
 PHYTOPLANKTON DATA, 2002 SURVEY RESULTS
 CHATFIELD RESERVOIR (Field Code RM)

Date	3/26/2003	5/21/2003	8/6/2003	9/3/2003
CYANOPHYTA				
<i>Anabaena flos-aquae</i>				
<i>Anabaena perturbata</i>				
<i>Anabaenopsis elenkinii</i>				570
<i>Aphanizomenon flos-aquae</i>				130
<i>Aphanocapsa delicatissima</i>	2,500			
<i>Aphanothece clathrata</i>				
<i>Aphanothece minutissima</i>	2,640		58,750	45,000
<i>Aphanothece smithii</i>	6,280	188		
<i>Cyanobium sp.</i>	125		500	750
<i>Dactylococcopsis fascicularis</i>	255		40	680
<i>Dactylococcopsis sp.</i>				
<i>Planktolyngbya (Lyngbya limnetica) subtilis</i>				
<i>Merismopedia tenuissima</i>				
<i>Oscillatoria sp.</i>				
<i>Pseudanabaena limnetica</i>	50		2,080	
<i>Rhabdogloea smithii</i>				
<i>Synechococcus sigmoideus</i>				
EUGLENOPHYTA				
<i>Euglena acus</i>				10
<i>Euglena sp.</i>				15
<i>Euglena viridis</i>			2	
<i>Trachelomonas sp.</i>				15
HAPTOPHYTA				
<i>Chrysochromulina sp.</i>	11,440		20	
PYRROPHYTA				
<i>Ceratium hirundinella</i>			1	10
<i>Peridiniopsis penardiforme</i>			1	
<i>Peridiniopsis sp.</i>	15			
<i>Peridinium aciculiferum</i>				115
<i>Peridinium umbonatum</i>				
TOTAL DENSITY (cells/mL)	33,481	3,583	66,123	59,568

TABLE 21
 ZOOPLANKTON DATA, 2003 SURVEY RESULTS
 CHATFIELD RESERVOIR (FIELD CODE RM) - August 6, 2003

Taxa	Organisms per sample	Relative % concentration
ROTIFERA (rotifers)		
<i>Keratella cochlearis</i> (Gosse)	17,898	72%
<i>Lecane</i> sp.	785	3%
<i>Polyarthra vulgaris</i>	314	1%
<i>Trichocerca</i> sp.	5,181	21%
CRUSTACEA		
CLADOCERA (water fleas)		
<i>Bosmina longirostris</i>	2	1%
<i>Chydorus</i> sp.	2	1%
COPEPODA (copepods)		
<i>Diacyclops thomasi</i> (S.A. Forbes)	78	0%
<i>Mesocyclops edax</i> (Forbes)	11	0%
Nauplii	471	2%
TOTAL DENSITY	24742	102%
TOTAL NUMBER OF TAXA	9	

TABLE 22
 GROWING SEASON (JULY-THROUGH-SEPTEMBER)*
 TOTAL-PHOSPHORUS AND CHLOROPHYLL-a CONCENTRATIONS
 CHATFIELD RESERVOIR

Year	Total- Phosphorus Concentration (ug/L) ¹⁾²⁾	Chlorophyll-a Concentration (ug/L) ¹⁾³⁾
1982	23	15
1983	50	16
1984	35	7
1985	28	9
1986	4)	4)
1987	77	6
1988	23	8
1989	11	4
1990	15	7
1991	25	3
1992	15	4
1993	15	4
1994	13	3
1995	10	4
1996	34	4
1997	12	2
1998	16	4
1999	21	5
2000	12	8
2001	23	10
2002	8	9
2003	38	10
Mean	24	7
Std. Dev.	16	4
Maximum	77	16
Minimum	8	2
N	21	21

* growing season defined as July-Sept

1) Average Reservoir values.

2) Growing-season standard = 27 ug/L.

3) Growing-season goal = 17 ug/L.

4) No data.

TABLE 23
CHATFIELD WATERSHED
SUMMARY OF METALS DATA, 1997 - 2003

Site RM - Reservoir

Metal	Summary 1997 - 2002		2003*
	Maximum (ug/l)	% Detect	Maximum (ug/l)
Arsenic (Total)	1.5	100%	1.57
Cadmium	4	0%	0
Chromium	5	0%	0
Copper	15	0%	0
Iron	590	100%	350
Lead	200	33%	0.1
Manganese	486	66%	623
Mercury	171	0%	0
Nickel	0	0%	0
Selenium	18	0%	0
Silver	0	0%	0
Zinc	60	100%	30

*Metals were sampled once in 2003, at three reservoir depths, resulting in 0%, 33%, 66%, or 100% det

Site SO - Reservoir Outfall

Metal	Summary 1997 - 2002		2003*
	Maximum (ug/l)	% Detect	Maximum (ug/l)
Arsenic (Total)	2	100%	0.96
Cadmium	4	0%	0
Chromium	5	0%	0
Copper	10	0%	0
Iron	370	100%	10
Lead	0	0%	0
Manganese	198	100%	5
Mercury	0	0%	0
Nickel	0	0%	0
Selenium	1	0%	0
Silver	0	0%	0
Zinc	40	100%	10

*Reservoir outflow was sampled for metals once in 2002, resulting in detection rates of 0% or 100%.

TABLE 23 (Continued)
CHATFIELD WATERSHED
SUMMARY OF METALS DATA, 1997 - 2003

Site PC - Plum Creek at Titan Road

Metal	Summary 1997 - 2002		2003*
	Maximum (ug/l)	% Detect	Maximum (ug/l)
Arsenic (Total)	3	NO FLOW	NO FLOW
Cadmium	4		
Chromium III	5		
Chromium VI	5		
Copper	10		
Iron	600		
Lead	nd		
Manganese	1120		
Mercury	nd		
Nickel	nd		
Selenium	2		
Silver	nd		
Zinc	200		

*No flow in Plum Creek when metals were sampled, resulting in detection rates of 0%.

Site SP - South Platte at Waterton

Metal	Summary 1997 - 2002		2003*
	Maximum (ug/l)	% Detect	Maximum (ug/l)
Arsenic (Total)	1	100%	0.79
Cadmium	nd	100%	0.1
Chromium	5	0%	0
Copper	10	0%	0
Iron	240	100%	1540
Lead	nd	100%	0.1
Manganese	42	0%	0
Mercury	0.2	0%	0
Nickel	nd	0%	0
Selenium	2	0%	0
Silver	nd	0%	0
Zinc	40	100%	20

*South Platte River inflow was sampled once for metals, resulting in detection rates of 0% or 100%.

TABLE 24
MASSEY DRAW STORMWATER SAMPLING
2002-2003

DATE	TIME	Lab Analyses		
		Total Nitrogen (ug/L)	Total Phosphorus (ug/L)	Total Suspended Solids (TSS) (mg/L)
<i>May 21, 2003 (dry)</i>	900	936	40	2
July 27, 2003	1633	8265	2	267
July 27, 2003	1648	3719	532	236
July 27, 2003	1733	4093	426	475
average		5359	320	326
September 18, 2002	1845	3100	1240	790
September 18, 2002	2045	1400	330	216
September 18, 2002	2200	1200	250	112
average		1900	607	373
September 9, 2002	1015	400	60	14
September 9, 2002	1045	500	60	8
September 9, 2002	1120	500	50	8
average		467	57	10
August 27, 2002	1630	500	80	12
August 27, 2002	1710	300	60	20
August 27, 2002	1740	400	30	6
average		400	57	13

all data are results of stormwater runoff except May 21, 2003