Table B-1 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "A"

Date	Sample No.	Flow Rate (m^3/s)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turb. (ppm)	Trans. (cm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Dec. 5	A12051*	7.15	23.0	8.8	210	7.1	22.0	30.0+	3	<0.020	<0.010	0.0051	28	5.5	–	22
Dec. 14	A12142	36.00	26.6	8.8	220	6.5	13.0	30.0+	4	<0.020	<0.010	0.0027	25	5.6	–	22
Feb. 5	A02052	6.70	27.7	8.5	260	6.3	5.0	30.0+	6	<0.010	<0.020	0.0021	37	6.2	<0.01	28
Feb. 15	A02152	23.06	27.0	9.0	230	6.5	5.0	30.0+	8	<0.010	<0.020	0.0026	38	6.0	<0.01	26
Feb. 26	A02262	2.81	27.1	8.1	230	6.8	4.0	30.0+	5	<0.010	<0.020	0.0036	24	5.8	<0.01	24
Mar. 5	A03052	2.66	27.4	8.9	200	7.6	0.0	30.0+	4	<0.010	<0.020	0.0026	29	5.8	<0.01	24
Mar. 15	A03152	37.60	31.5	9.0	220	6.6	8.0	30.0+	3	<0.010	<0.020	0.0023	23	5.7	<0.01	28
Apr. 16	A04162	26.62	31.9	9.0	220	7.0	2.0	30.0+	2	<0.010	0 0.010	0.0032	25	5.9	<0.01	30
Apr. 26	A04262	41.09	31.5	9.0	210	6.7	3.0	30.0+	3	0.005	0.010	0.0034	26	5.6	<0.01	28
May 6	A05062	8.56	30.8	8.8	230	7.3	3.5	30.0+	5	<0.005	0.010	0.0027	27	5.5	0.01**	30
May 16	A05162	12.15	30.0	8.8	240	7.3	3.5	30.0+	2	<0.005	0.007	0.0033	26	6.0	<0.01	32
May 26	A05262	33.68	32.3	8.8	230	6.8	4.5	30.0+	17	<0.005	<0.005	0.0031	32	6.0	<0.01	29
June 5	A06052	59.61	31.8	8.8	240	7.2	5.3	30.0+	8	<0.005	<0.005	0.0028	28	5.8	<0.01	30
June 15	A06152	37.85	31.7	8.9	230	7.2	4.8	30.0+	4	<0.005	<0.005	0.0036	28	6.6	<0.01	30
June 25	A06252	42.13	28.7	8.4	200	7.5	3.5	30.0+	6	<0.005	0.060**	0.0033	26	5.6	<0.01	29
July 5	A07052	44.10	28.5	8.7	240	7.1	3.5	30.0+	3	<0.005	<0.005	0.0035	29	5.7	<0.01	32
July 15	A07152	43.87	31.1	8.7	230	7.1	2.5	30.0+	4	<0.005	<0.005	0.0032	30	6.3	<0.01	28
July 26	A07262	43.29	30.6	8.9	230	7.1	3.5	30.0+	2	<0.005	<0.005	0.0033	28	6.0	<0.01	30
Aug. 5	A08052	64.84	29.1	8.9	220	7.1	2.0	30.0+	3	<0.005	<0.005	0.0028	28	6.0	<0.01	24
Aug. 14	A08142	53.64	25.6	8.9	230	7.3	4.5	30.0+	3	<0.005	<0.005	0.0011	27	5.2	<0.01	21
Aug. 24	A08242	82.95	28.6	8.7	220	6.4	6.0	30.0+	4	<0.005	0.005	0.0021	29	5.5	<0.01	22
Sept. 3	A9032	65.74	27.6	7.6	180	6.1	160.0	2.5	120	<0.005	<0.005	0.0010	19	4.5	<0.01	8
Sept. 13	A9132	67.13	30.5	8.5	160	7.0	42.0	16.0	12	<0.005	<0.005	0.0009	20	5.0	<0.01	17
Sept. 23	A9232	81.91	30.1	9.0	170	7.0	14.5	30.0+	2	<0.005	0.007	0.0010	25	4.8	<0.01	16
Oct. 3	A10032	49.60	28.5	9.2	180	6.9	12.5	30.0	12	<0.005	0.010	<0.0005	25	4.6	<0.01	18
Oct. 13	A10132	69.54	27.6	9.0	160	7.4	5.5	30.0+	8	<0.005	0.005	0.0011	26	4.7	<0.01	20
Oct. 24	A10242	18.10	24.7	8.9	180	7.4	5.5	30.0+	3	<0.005	<0.005	0.0010	23	5.0	<0.01	20
Nov. 2	A11022	87.82	25.8	9.0	190	7.3	4.0	30.0+	2	<0.005	<0.005	0.0011	22	5.0	<0.01	19
Nov. 11	A11112	30.27	27.7	9.2	170	7.3	4.0	30.0+	3	<0.005	<0.005	0.0024	19	5.4	<0.01	21
Nov. 21	A11212	31.93	27.5	9.5	170	7.3	2.5	30.0+	99	<0.005	<0.005	0.0019	22	5.2	<0.01	24

WT : Water Temperature
* : Filtered by No. 3 filter
** : Abnormal Valve
– : No data

Table B-2 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "B"

Date	Sample No.	Flow Rate (m^3/s)	WT (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	Trans. (cm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Dec. 5	B12051*	2.69	25.0	8.3	1300	6.1	370	3.0	250	0.080	<0.01	0.0344	213	5.0	–	513
Dec. 14	B12142	2.91	24.8	8.3	1400	7.7	170	3.5	180	0.070	<0.01	N.D.	300	22.0	–	566
Feb. 5	B02052	1.50	26.7	8.0	1600	7.1	420	2.0	870	0.200	<0.02	0.0170	228	24.5	0.34	741
Feb. 15	B02152	1.84	27.0	8.2	1500	7.2	300	3.0	340	0.450	<0.02	0.380	290	24.5	0.52	747
Feb. 26	B02262	1.52	26.8	7.6	1700	7.0	2000	0.5	810	1.000	<0.02	0.0405	320	24.0	2.60	760
Mar. 5	B03052	1.31	27.1	8.1	1600	7.7	420	2.5	380	–	–	–	–	–	–	N.D.
Mar 15	B03152	1.50	29.0	8.2	1600	7.6	550	2.0	450	0.220	<0.02	0.0380	191	24.4	0.13	841
Apr. 16	B04162	1.16	29.2	8.3	1700	7.2	230	2.5	260	0.200	0.010	0.0620	320	25.2	0.24	809
Apr. 26	B04262	1.28	31.2	8.2	1600	7.6	1100	1.5	970	0.200	0.010	0.0450	354	28.0	0.20	857
May 6	B05062	1.52	28.4	8.1	1500	7.7	330	2.0	630	0.300	0.015	0.0358	312	24.0	0.24	743
May 16	B05162	2.02	30.0	8.2	1300	6.1	230	2.5	370	0.412	0.009	0.0250	188	9.6	0.22	653
May 26	B05262	1.89	30.0	8.2	1300	6.9	850	1.5	1100	0.660	<0.005	0.0132	235	20.9	0.08	645
June 5	B06052	1.57	31.0	8.3	1300	6.7	340	2.0	1300	0.100	<0.005	0.0212	233	20.0	0.03	634
June 15	B06152	1.53	29.4	8.0	1300	7.1	420	2.0	400	0.039	0.006	0.0252	250	20.6	0.02	673
June 25	B06252	3.83	27.0	7.9	930	7.2	950	1.0	890	0.271	0.012	0.0136	164	15.9	0.39	416
July 5	B07052	5.87	26.7	8.3	910	7.7	210	2.5	250	0.222	0.006	0.0112	147	16.8	0.27	404
July 15	B07152	5.29	27.7	8.2	940	7.6	190	2.5	260	0.120	0.005	0.0088	146	19.6	0.14	423
July 26	B07262	3.80	29.3	7.9	1000	7.1	250	2.0	370	0.150	0.007	0.0300	184	27.4	0.18	534
Aug. 5	B08052	3.17	27.5	8.4	1100	7.7	150	3.0	200	0.065	0.006	0.0205	208	20.8	0.07	551
Aug. 14	B08142	4.94	23.8	8.4	980	7.7	2000+	0.0	2300	0.420	<0.005	0.0330	184	18.0	1.10	470
Aug. 24	B08242	14.30	28.7	7.7	740	7.2	260	2.5	460	0.175	0.012	0.0090	121	17.4	0.41	327
Sept. 3	B09032	35.97	29.2	7.4	650	7.4	1200	0.5	2000	0.078	0.007	0.0040	100	21.5	0.12	210
Sept. 13	B09132	11.45	28.6	7.8	830	6.9	340	1.5	510	0.125	0.007	0.0060	124	18.5	0.25	360
Sept. 23	B09232	10.15	29.7	8.1	890	6.7	230	2.5	350	0.350	0.024	0.0058	176	18.4	0.73	402
Oct. 3	B10032	8.38	27.0	8.1	930	6.7	350	2.0	420	0.220	0.075	0.0152	188	18.8	0.43	439
Oct. 13	B10132	3.73	26.8	8.0	94	7.3	280	2.0	520	0.205	0.011	0.0020	184	18.4	0.31	489
Oct. 24	B10242	6.03	25.6	8.0	1000	7.7	230	2.0	360	0.132	0.007	0.0096	164	19.6	0.17	489
Nov. 3	B11032	10.60	25.4	8.2	760	7.6	240	2.0	380	0.152	0.009	0.0103	120	16.0	0.39	1255
Nov. 11	B11112	6.53	25.4	8.1	920	7.4	140	3.0	220	0.150	0.008	0.0102	150	19.2	0.18	408
Nov. 21	B11212	4.99	26.2	8.2	1100	7.5	330	2.5	330	0.068	0.005	0.0270	184	19.2	0.08	482

WT : Water Temperature
* : Filtered by No. 3 filter
– : No data

Table B-3 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "C"

Date	Sample No.	Flow Rate (m^3/s)	WT (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	Trans. (cm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Dec. 6	C12061*	1.14	20.0	8.5	860	7.8	500+	0.0	1300	<0.02	<0.01	0.0012	207	6.7	–	400
Dec. 12	C12122	1.25	23.3	8.4	850	8.1	500+	0.0	5900	<0.02	<0.01	0.0008	168	6.0	–	368
Feb. 8	C02082	0.69	23.7	8.4	1200	8.2	2000+	0.0	13000	<0.01	<0.02	0.0005	224	7.8	<0.01	642
Feb. 18	C02182	0.93	26.1	9.3	1100	6.7	2000+	0.0	7000	0.01	<0.02	0.0005	226	8.2	<0.01	636
Feb. 27	C02272	0.66	27.4	7.7	1500	7.4	2000+	0.0	12000	0.01	<0.02	0.0007	340	8.0	<0.01	856
Mar. 6	C03062	0.71	27.2	8.6	1800	6.8	2000+	0.0	21000	0.02	<0.02	0.0011	342	8.6	<0.01	812
Mar. 16	C03162	0.14	30.3	8.5	1200	7.1	1200	0.5	5100	0.02	<0.02	0.0005	193	8.4	<0.01	626
Apr. 17	C04172	0.36	28.2	8.2	1300	7.8	2000+	0.0	3900	<0.01	<0.01	0.0005	296	10.5	<0.01	738
Apr. 27	C04272	0.46	28.9	8.3	1200	7.7	2000+	0.0	37000	0.014	0.01	0.0007	404	10.5	<0.01	865
May 5	C05052	0.65	27.1	8.1	1500	7.6	2000+	0.0	4300	0.010	0.010	<0.0005	322	9.5	<0.01	750
May 15	C05152	0.75	28.7	8.1	930	7.7	2000+	0.0	5700	<0.005	0.010	<0.0005	176	9.3	<0.01	471
May 25	C05252	0.89	27.4	8.4	1300	7.2	2000+	0.0	25000	0.007	0.010	<0.0005	279	8.8	<0.01	701
June 4	C06042	0.74	30.1	8.6	910	7.3	2000+	0.0	15000	0.007	<0.005	<0.0005	220	6.9	<0.01	499
June 14	C06142	0.87	26.8	8.2	1100	7.3	2000+	0.0	22000	0.009	<0.005	0.0010	250	10.6	<0.01	606
June 24	C06242	4.75	23.5	7.0	670	7.9	2000+	0.0	7200	0.060**	0.011	<0.0005	112	9.2	<0.01	286
July 4	C07042	4.43	24.1	7.5	520	8.1	1500	1.5	4900	0.005	0.005	<0.0005	92	6.7	0.01	211
July 14	C07142	4.09	25.2	7.5	600	7.7	2000+	0.0	6400	<0.005	<0.005	0.0006	100	6.0	<0.01	242
July 25	C07252	3.57	25.8	8.2	660	7.7	2000+	0.0	8800	<0.005	<0.005	<0.0005	110	6.4	<0.01	266
Aug. 3	C08032	2.85	23.7	8.2	740	7.7	2000+	0.0	23000	<0.005	<0.005	0.0005	134	7.6	<0.01	368
Aug. 12	C08122	4.31	21.0	8.1	620	7.8	2000+	0.0	5400	<0.005	0.008	<0.0005	96	6.0	<0.01	204
Aug. 23	C08232	7.82	25.5	7.9	570	7.7	2000+	0.0	5800	<0.005	<0.005	<0.0005	80	8.0	<0.01	187
Sept. 4	C09042	13.36	25.3	6.7	410	7.5	680	1.0	1200	0.006	0.011	<0.0005	52	11.4	<0.01	149
Sept. 12	C09122	5.30	26.8	7.5	480	7.2	1900	0.0	2800	0.007	<0.005	0.0005	64	14.2	<0.01	183
Sept. 22	C09222	4.53	27.4	7.8	820	7.5	2000+	0.0	13000	<0.005	0.0055	<0.0005	176	12.4	<0.01	386
Oct. 2	C10022	3.45	26.3	8.0	650	7.2	2000+	0.0	6300	<0.005	<0.005	0.0005	132	8.8	<0.01	276
Oct. 12	C10122	2.82	27.3	8.4	450	7.5	2000+	0.0	4300	0.005	0.006	0.0013	88	4.4	<0.01	170
Oct. 23	C10232	3.23	21.4	8.9	680	7.9	2000+	0.0	22000	<0.005	<0.005	0.0006	152	4.8	<0.01	400
Nov. 1	C11012	6.19	22.0	8.4	430	7.9	2000+	0.0	4900	0.007	<0.005	0.0006	68	4.8	<0.01	154
Nov. 10	C11102	3.22	21.7	8.5	420	8.1	2000+	0.0	3200	<0.005	<0.005	<0.0005	60	4.4	<0.01	141
Nov. 20	C11202	2.94	21.1	8.7	770	7.9	2000+	0.0	4900	<0.005	<0.005	0.0007	152	5.0	<0.01	334

WT : Water Temperature
* : Filtered by No. 3 Filter
** : Abnormal value
– : No Data

Table B-4 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "D"

Date	Sample No.	Flow Rate (m^3/s)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turb. (ppm)	Trans. (cm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Dec. 3	D12031*	0.63	24.2	8.2	810	8.4	500+	1.5	930	0.02	<0.01	0.0035	213	6.5	–	385
Dec. 13	D12132	0.98	23.2	8.0	1000	7.9	500+	1.5	1400	<0.02	<0.01	0.0005	203	7.6	–	464
Feb. 7	D02072	0.57	24.9	8.4	1400	7.3	500+	0.4	7500	<0.01	<0.02	0.0011	224	8.3	<0.01	638
Feb. 17	D02172	0.58	24.1	8.5	1100	7.1	1400	0.5	4500	<0.01	<0.02	0.0011	228	8.0	<0.01	663
Feb. 27	D02272	0.49	24.7	8.2	880	7.5	2000	0.0	5300	<0.01	<0.02	0.0010	260	7.6	0.01	664
Mar. 6	D03062	0.40	25.5	8.2	940	7.3	1500	0.6	990	<0.01	<0.02	0.0016	197	7.4	<0.01	519
Mar 16	D03162	0.42	26.8	8.3	980	8.0	180	6.5	280	0.01	<0.02	0.0019	196	6.7	<0.01	522
Apr. 17	D04172	0.41	28.2	8.1	1300	7.2	130	6.0	310	<0.01	<0.01	0.0012	328	8.6	<0.01	809
Apr. 27	D04272	0.48	28.2	8.0	1400	7.4	240	3.5	460	<0.005	0.01	0.0014	302	8.3	<0.01	694
May 5	D05052	0.68	26.6	8.0	1400	7.6	580	1.5	1400	0.006	0.012	0.0007	328	8.5	0.03**	771
May 15	D05152	0.89	29.6	8.4	1100	7.3	2000+	0.0	12000	<0.005	0.010	<0.0005	256	10.6	<0.01	667
May 25	D05252	0.59	27.4	7.9	1000	7.3	2000+	0.0	14000	0.005	0.020	0.0027	179	8.4	<0.01	419
June 4	D06042	0.50	28.2	8.1	1300	6.6	1500	0.5	1400	<0.005	0.007	0.0006	272	9.2	<0.01	616
June 14	D06142	0.69	26.9	8.1	1300	7.7	2000+	0.0	33000	<0.005	<0.005	0.0009	280	8.2	<0.01	672
June 24	D06242	3.60	24.3	7.5	550	8.0	2000+	0.0	11000	<0.005	0.006	<0.0005	99	5.7	<0.01	235
July 4	D07042	2.14	25.6	8.0	540	7.9	2000	0.5	3100	<0.005	<0.005	0.0006	94	4.4	<0.01	213
July 14	D07142	1.97	26.5	7.5	760	7.3	2000+	0.0	7800	<0.005	<0.005	0.0007	131	7.3	<0.01	339
July 25	D07252	2.13	26.3	7.9	590	7.4	220	2.5	740	<0.005	<0.005	0.0008	100	5.0	<0.01	248
Aug. 4	D08042	1.62	25.2	7.6	710	7.9	900	0.5	1100	<0.005	<0.005	0.0008	120	5.2	<0.01	270
Aug. 13	D08132	2.43	20.3	8.2	550	8.2	1100	0.5	2100	<0.005	<0.005	0.0005	112	4.6	<0.01	256
Aug. 22	D08222	4.22	20.0	8.1	330	7.2	750	0.5	1700	<0.005	<0.005	<0.0005	46	2.4	<0.01	87
Sept. 5	D09052	4.99	27.7	7.4	320	7.5	34	12.0	56	0.007	0.006	0.0005	48	4.8	<0.01	106
Sept 12	D09122	2.78	27.3	7.7	590	7.3	280	2.0	320	0.005	0.005	0.0007	88	10.7	<0.01	239
Sept. 22	D09222	1.85	27.7	7.5	480	7.3	38	12.0	140	<0.005	0.010	0.0006	94	3.7	<0.01	187
Oct. 2	D10022	1.50	28.6	8.0	810	6.8	91	7.0	210	<0.005	0.005	<0.0005	176	7.6	0.01	388
Oct. 12	D10122	1.43	26.4	8.0	980	7.1	78	7.0	130	0.005	0.006	0.0005	248	5.6	<0.01	531
Oct. 22	D10222	1.17	21.8	8.2	830	8.0	1400	0.5	1600	<0.005	<0.005	0.0006	156	6.0	<0.01	391
Nov. 1	D11012	3.16	23.6	8.3	610	7.6	2000	0.0	4200	<0.005	0.005	0.0006	88	2.8	<0.01	205
Nov. 9	D11092	1.81	23.3	8.0	750	7.6	210	3.0	170	<0.005	<0.005	<0.0005	128	4.0	<0.01	318
Nov. 20	D11202	1.39	23.2	8.3	880	7.4	91	5.5	540	0.006	0.005	0.0008	172	4.4	<0.01	385

WT : Water Temperature
* : Filtered by No. 3 filter
** : Abnormal data
– : No data

Table B-5 COMPARISON OF CHEMICAL ANALYSES OF THE FILTRATES BY GS25 AND NO.3 (A~D POINTS)

Fixed Point	Sampling Date	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)	Filter Name
A	Dec. 14	<0.02	<0.01	0.0029	25	5.5	–	20	No. 3
		<0.02	<0.01	0.0027	25	5.6	–	22	GS25
	Feb. 5	<0.01	<0.02	0.0023	37	6.1	<0.01	27	No. 3
		<0.01	<0.02	0.0021	37	6.2	<0.01	28	GS25
	Feb. 15	<0.01*	<0.02*	0.0023	38	6.0	<0.01	23	No. 3
		<0.01*	<0.02*	0.0026	39	6.0	<0.01	26	GS25
	Aug. 5	0.005	<0.005	0.0024	28	6.0	<0.01	22	No. 3
		<0.005	<0.005	0.0028	28	6.0	<0.01	24	GS25
	Aug. 14	<0.005	<0.005	0.0009	27	5.8	<0.01	22	No. 3
		<0.005	<0.005	0.0011	27	5.2	<0.01	21	GS25
	Aug. 24	<0.005	<0.005	0.0028	29	5.4	<0.01	20	No. 3
		<0.005	0.005	0.0021	29	5.4	<0.01	22	GS25
B	Dec. 14	0.07	<0.01	over	216	19.2	–	591	No. 3
		0.07	<0.01	over	300	22.2	–	566	GS25
	Feb. 5	0.29	0.02	0.022	230	24.5	0.36	757	No. 3
		0.20	0.02	0.017	228	24.5	0.34	741	GS25
	Feb. 15	0.40	0.03*	0.038	295	24.5	0.56	761	No. 3
		0.45	0.03*	0.038	290	24.5	0.52	747	GS25
	Feb. 26	1.2	<0.02	0.047	320	24.0	2.4	828	No. 3
		1.7	<0.02	0.040	320	24.0	2.6	760	GS25
	Aug. 5	0.060	0.008	0.0295	208	21.8	0.07	544	No. 3
		0.065	0.006	0.0205	208	20.8	0.07	551	GS25
	Aug. 14	0.400	<0.005	0.0034	180	18.0	1.1	471	No. 3
		0.420	<0.005	0.0033	184	18.0	1.1	470	GS25
	Aug. 24	0.200	0.016	0.0094	121	17.4	0.42	318	No. 3
		0.175	0.012	0.0090	121	17.4	0.41	327	GS25
C	Dec. 12	0.03	<0.01	0.0005	167	6.0	–	364	No. 3
		<0.02	<0.01	0.0008	168	6.6	–	368	GS25
	Feb. 8	0.02	<0.02	0.0008	222	8.1	<0.01	637	No. 3
		<0.01	<0.02	0.0005	224	7.8	<0.01	642	GS25
	Feb. 18	0.02*	0.02*	0.0005	228	8.3	<0.01	634	No. 3
		0.01*	<0.02*	0.0005	226	8.2	<0.01	636	GS25
	Feb. 27	0.02	<0.02	0.0008	340	8.0	0.01	860	No. 3
		0.01	<0.02	0.0007	340	8.0	0.01	856	GS25
	Aug. 3	<0.005	0.007	<0.0005	132	7.4	<0.01	364	No. 3
		<0.005	<0.005	<0.0005	134	7.6	<0.01	368	GS25
	Aug. 12	<0.005	0.006	<0.0005	110	7.0	<0.01	239	No. 3
		<0.005	0.008	<0.0005	96	6.0	<0.01	204	GS25
	Aug. 23	0.008	<0.005	<0.0005	84	8.0	<0.01	196	No. 3
		<0.005	<0.005	<0.0005	80	8.0	<0.01	187	GS25
D	Dec. 13	<0.02	<0.01	0.0010	199	7.4	–	470	No. 3
		<0.02	<0.01	0.0005	203	7.6	–	464	GS25
	Feb. 7	0.01*	<0.02*	0.0009	232	8.4	<0.01	688	No. 3
		<0.01*	<0.02*	0.0011	224	8.3	<0.01	638	GS25
	Feb. 17	<0.01	<0.02	0.0010	240	8.2	<0.01	626	No. 3
		<0.01	<0.02	0.0010	228	8.0	<0.01	663	GS25
	Feb. 27	<0.01	<0.02	0.0010	260	7.6	0.01	662	No. 3
		<0.01	<0.02	0.0010	260	7.6	0.01	664	GS25
	Aug. 4	0.008	<0.005	0.0008	103	5.1	<0.01	272	No. 3
		<0.005	<0.005	0.0008	120	5.2	<0.01	270	GS25
	Aug. 13	<0.005	<0.005	0.0008	112	4.6	<0.01	247	No. 3
		<0.005	<0.005	0.0005	112	4.6	<0.01	256	GS25
	Aug. 22	0.005	<0.005	<0.0005	46	2.8	<0.01	88	No. 3
		<0.005	<0.005	<0.0005	46	2.4	<0.01	87	GS25

* : Unless marked, Cu and Zn were analyzed from samples condensed to 1/10 by means of solvent extraction in February.
Marked samples were condensed to 1/10 by means of evaporation
No.3 : Filtrate through No.3 filter paper (5μ)
GS25 : Filtrate through GS25 filter paper (0.6μ)

Table B-6 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR DECEMBER, 1983

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC ($\mu S/cm$)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00
1	20.04	17.51	–	35.39	25.9	27.1	–	26.5	8.3	8.3	–	8.3	450	410	–	490	6.7	6.1	–	6.3	+	+	–	+	1.0	1.0	–	1.0
2	21.47	31.87	48.94	23.85	25.4	–	26.9	26.8	8.3	–	8.3	8.3	460	–	560	520	6.4	–	7.2	6.6	+	–	+	+	1.0	–	1.0	1.0
3	26.71	40.79	25.72	25.00	24.5	26.3	27.3	27.3	8.4	8.4	8.4	8.3	460	440	480	440	6.8	6.3	7.5	6.3	+	+	+	+	0.7	0.5	1.0	1.0
4	23.91	25.41	26.52	19.59	25.8	25.1	25.5	25.4	8.4	8.4	8.4	8.3	410	390	450	470	6.9	6.2	6.7	6.7	+	+	+	+	1.7	1.5	1.0	1.5
5	–	24.38	24.54	27.82	25.4	25.8	24.6	24.9	8.3	8.4	8.4	8.4	420	440	810	450	6.4	6.8	6.7	6.5	+	+	+	+	1.0	1.0	1.0	1.0
6	18.26	25.42	21.53	19.83	22.8	24.7	25.1	25.5	8.4	8.3	8.4	8.4	350	370	840	490	–	–	–	–	360	375	+	+	1.5	1.5	1.4	1.1
7	22.80	15.81	23.29	17.37	23.4	25.6	25.8	25.2	8.0	8.2	8.2	8.2	530	550	550	540	–	6.5	6.8	7.1	+	+	+	+	1.0	1.0	1.0	1.0
8	23.87	17.47	27.51	19.42	23.5	25.3	25.9	25.9	8.3	8.3	8.3	8.3	460	540	610	580	6.8	–	6.7	–	+	+	+	+	1.0	1.0	0.5	1.0
9	21.23	17.76	17.54	–	23.2	25.0	25.7	25.2	8.4	8.3	8.5	8.2	860	510	440	530	6.9	7.2	6.9	7.6	+	+	+	+	1.5	1.4	1.0	1.0
10	22.37	18.95	18.11	17.52	23.4	25.2	26.6	26.5	8.2	8.3	8.3	8.3	350	360	450	440	7.2	6.8	6.7	6.7	+	+	+	+	1.0	1.0	1.0	1.0
11	23.98	20.62	19.25	20.05	23.2	24.9	26.2	25.8	8.3	8.4	8.4	8.4	340	390	430	470	7.3	7.2	6.6	7.0	+	+	+	+	1.5	1.5	1.0	1.5
12	21.32	16.85	17.18	17.40	22.8	24.6	25.8	25.4	8.6	8.5	8.4	8.5	320	420	420	490	7.4	7.6	6.5	7.4	+	+	+	+	1.5	1.0	1.0	1.0
13	22.15	17.14	21.76	–	23.1	24.9	26.0	25.3	8.5	8.2	8.5	8.5	340	400	400	400	7.5	7.5	6.8	6.8	+	+	+	435	1.0	1.0	1.0	1.0
14	30.30	19.78	23.93	22.02	23.8	25.7	26.8	26.5	8.1	8.2	8.1	7.9	330	310	320	410	7.5	7.2	7.0	6.7	260	150	180	500	2.5	2.5	1.4	1.0
15	25.97	19.08	20.07	51.82	23.6	25.5	26.3	25.9	8.1	7.8	7.9	7.9	320	320	400	390	7.6	7.1	7.1	7.3	275	460	+	+	2.5	2.0	1.0	1.0
16	23.69	19.53	26.26	21.86	23.4	25.5	26.3	26.0	7.3	8.4	8.4	8.4	450	420	450	530	7.8	7.7	6.9	6.6	460	500	+	+	1.0	1.0	1.0	1.0
17	31.67	19.51	23.98	16.24	24.6	25.6	25.9	26.5	8.4	8.4	8.4	8.4	480	500	490	490	8.0	8.6	8.8	6.5	+	+	+	+	1.0	1.0	1.0	1.0
18	12.39	14.42	10.28	10.51	24.1	25.8	27.3	27.6	8.5	8.4	8.3	8.2	420	190	630	520	7.3	7.7	8.1	7.6	+	+	+	+	1.0	1.0	1.0	1.0
19	9.90	11.67	–	–	22.3	24.9	25.8	25.1	8.3	8.5	8.4	8.4	600	600	520	700	7.3	7.0	7.2	8.6	+	+	+	+	1.0	1.0	1.0	1.0
20	23.03	18.19	29.81	24.41	22.7	25.2	24.7	25.0	7.9	8.2	8.2	8.1	330	400	410	390	7.8	8.3	7.1	7.1	500	+	+	500	1.0	1.0	1.0	1.0
21	19.11	15.97	29.56	26.77	23.2	25.2	25.7	25.7	8.2	8.1	8.1	8.2	400	410	410	330	–	8.1	7.5	7.1	+	+	+	220	1.0	1.0	1.0	2.0
22	33.09	19.15	26.99	17.22	23.1	24.9	25.4	26.3	8.1	8.0	8.2	8.2	510	510	490	490	7.4	7.7	8.3	6.6	+	+	+	+	1.0	1.0	1.0	1.0
23	17.27	14.15	25.38	17.23	23.7	24.8	24.9	25.5	8.3	8.2	8.1	8.0	520	510	490	410	7.4	7.2	8.5	7.8	+	+	+	+	1.0	1.0	1.0	1.5
24	22.39	12.85	11.70	18.78	23.9	24.9	25.1	26.4	7.9	7.8	7.7	7.8	640	620	580	620	7.3	6.9	8.1	6.6	+	+	+	+	1.0	1.0	1.0	1.0
25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
26	20.09	13.03	13.94	12.63	23.7	25.8	27.4	27.0	8.3	8.2	8.3	8.3	660	670	670	630	7.2	7.2	6.8	7.0	+	+	+	+	1.5	2.0	1.5	1.5
27	17.31	13.32	13.83	17.00	22.3	24.8	26.4	25.6	8.4	8.5	8.4	8.3	620	570	620	650	7.7	7.7	7.4	6.9	340	360	325	450	1.0	2.5	2.0	1.5
28	13.79	10.06	9.85	14.10	22.7	24.9	26.0	26.4	8.5	8.3	8.4	8.4	350	410	400	460	7.8	7.1	7.0	6.5	+	+	+	+	2.5	2.5	1.5	2.0
29	12.54	11.60	9.80	9.41	24.5	26.2	27.4	27.2	8.4	8.4	8.4	8.4	560	530	470	410	7.5	7.8	6.6	6.7	+	+	+	500	2.0	2.0	2.5	2.5
30	12.35	14.53	10.59	9.15	24.6	26.2	27.5	26.2	7.9	8.2	8.2	8.1	470	580	600	680	7.4	7.8	7.2	6.7	+	+	+	+	1.5	1.0	1.0	1.5
31	19.04	12.23	10.21	8.98	24.2	25.4	27.4	28.0	8.3	8.2	8.2	8.2	390	460	480	450	7.3	7.9	7.3	7.2	+	+	+	500	2.0	2.0	2.0	2.5

+ : 500 ppm over – : No data

Table B-7 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR JANUARY, 1984

Date	Flow rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00	8:00	11:00	13:00	16:00
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2	13.64	10.56	9.94	20.46	22.6	24.5	27.0	25.8	8.2	8.2	8.1	8.1	480	500	520	560	7.8	7.8	7.2	7.4	+	+	+	+	1.0	1.5	1.5	1.0
3	17.85	13.70	20.55	16.20	22.8	24.3	25.3	25.3	8.3	8.1	8.2	8.1	420	390	420	630	7.8	7.7	7.6	8.2	+	500	+	+	1.5	1.5	1.5	1.0
4	20.07	12.62	9.97	14.82	22.9	24.9	27.0	26.4	8.2	8.3	8.3	8.2	440	400	410	420	8.3	8.1	7.4	6.9	+	+	+	+	1.5	1.5	1.5	1.0
5	23.70	14.65	13.66	14.29	23.0	24.8	26.5	26.3	8.3	8.2	8.2	8.1	530	480	410	450	7.8	8.4	7.5	6.8	+	435	+	+	1.5	2.5	1.5	1.5
6	21.67	13.40	19.97	14.03	22.6	24.8	25.8	26.5	8.3	8.1	8.2	8.2	510	730	540	520	7.1	8.2	8.3	7.0	325	390	+	+	1.5	2.5	1.0	2.0
7	15.23	15.36	14.01	18.32	23.7	25.3	26.8	26.1	8.2	8.3	8.2	8.1	320	320	330	400	8.1	8.0	7.2	7.1	245	405	325	+	5.0	2.5	2.5	2.5
8	28.06	17.33	11.16	9.43	24.7	25.9	27.7	27.6	8.2	8.2	8.0	8.1	700	400	410	500	8.0	8.2	7.2	7.1	+	+	+	+	1.5	1.5	1.5	1.0
9	17.46	13.99	10.42	16.36	23.8	25.9	28.2	27.8	8.2	8.1	8.2	8.2	350	400	390	440	8.2	8.2	7.3	6.9	+	420	390	+	1.5	2.5	1.5	2.5
10	21.83	13.08	10.31	8.86	23.4	25.6	27.2	27.8	8.2	7.7	8.2	8.3	430	320	380	410	8.3	7.4	7.3	7.2	+	220	220	405	1.5	2.5	2.5	2.5
11	21.76	13.01	10.94	10.04	23.6	25.3	26.6	26.9	8.1	8.0	8.1	7.9	390	390	400	410	7.3	7.4	7.2	7.1	+	420	375	+	1.5	1.5	2.0	1.5
12	18.68	13.10	29.19	16.88	23.6	26.0	26.9	26.8	8.1	8.0	7.9	7.9	470	330	400	380	7.6	7.3	7.2	7.1	500	290	+	300	2.0	3.0	1.0	2.5
13	31.87	18.42	–	–	24.0	25.6	27.4	26.0	8.0	7.8	8.0	7.7	350	330	380	410	7.7	7.5	7.3	7.3	500	270	350	460	2.0	3.5	2.5	2.0
14	21.61	19.01	14.51	10.46	23.4	25.3	26.9	27.3	7.9	7.9	7.6	7.6	320	330	330	400	7.9	7.7	7.4	7.8	175	300	340	460	5.0	3.5	3.0	2.5
15	21.23	14.45	11.75	9.11	23.0	25.3	27.5	28.0	7.9	8.0	7.9	8.1	340	400	390	410	7.8	7.7	7.2	7.2	+	+	+	+	1.0	1.0	2.0	2.0
16	16.04	12.63	10.15	15.29	24.2	26.3	28.3	28.4	7.9	8.0	8.0	7.7	720	520	490	570	7.2	7.4	7.2	7.0	+	+	+	+	2.5	2.5	2.0	1.0
17	7.36	12.44	10.82	18.43	23.5	24.9	27.1	27.1	7.9	8.1	7.6	8.2	620	730	610	490	7.6	7.8	7.4	7.5	+	+	+	+	1.0	0.5	1.0	0.5
18	18.11	11.82	23.41	17.49	23.4	25.6	27.7	26.3	8.2	8.0	8.0	8.0	630	420	410	400	7.8	7.6	7.1	7.5	+	+	+	+	1.0	1.5	1.5	2.5
19	15.80	14.48	10.40	13.61	24.3	25.3	27.8	27.6	8.1	7.9	8.1	7.6	630	590	490	490	7.4	7.4	7.2	7.3	+	+	+	+	1.5	1.0	1.0	1.0
20	15.25	15.09	15.65	–	24.2	26.1	28.0	26.8	7.9	8.1	8.2	8.1	500	490	480	520	7.5	7.3	7.1	6.9	+	+	+	+	0.5	1.0	1.0	0.5
21	17.20	15.82	14.41	14.66	24.0	26.3	28.3	27.3	8.0	8.2	8.2	8.2	400	410	420	500	7.7	7.3	7.1	7.1	+	+	+	+	1.0	1.0	1.0	0.5
22	12.83	17.06	12.81	9.56	24.9	26.9	28.7	29.5	8.2	8.2	8.3	7.2	490	490	500	650	7.6	7.2	7.2	6.9	+	+	+	+	1.0	1.0	1.0	1.0
23	15.56	14.65	10.36	17.38	24.6	26.7	28.7	27.9	7.7	8.2	8.3	8.3	520	520	480	490	7.8	7.6	7.3	7.3	+	+	+	+	1.0	1.5	2.0	1.0
24	14.52	11.23	9.04	12.76	24.5	27.0	28.8	29.3	8.2	8.3	7.9	8.4	510	500	490	500	7.8	7.9	7.2	7.6	+	+	+	+	1.5	1.5	1.5	1.0
25	15.48	18.75	21.56	15.74	24.3	25.3	26.1	26.6	7.9	7.8	8.0	8.1	370	410	380	450	7.4	6.7	7.7	7.5	+	+	+	+	2.5	2.0	2.5	1.5
26	18.45	–	10.94	9.67	24.4	25.3	26.4	26.7	8.6	8.5	8.4	8.5	660	530	440	410	7.9	7.6	7.1	7.3	+	+	+	+	1.0	1.0	2.0	2.0
27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
28	27.22	17.77	13.01	12.45	24.0	25.6	27.7	27.7	8.6	8.3	8.4	8.2	400	330	440	490	7.6	7.6	7.2	7.0	+	405	450	+	2.0	2.0	2.0	2.0
29	29.10	17.29	14.19	8.78	24.1	26.0	27.6	28.0	8.3	8.5	8.2	8.5	600	410	420	440	8.1	7.5	7.6	6.9	+	460	435	+	1.5	2.5	2.5	1.5
30	16.58	12.41	10.11	8.59	23.7	25.5	27.4	27.7	8.5	7.9	7.4	7.5	590	520	510	520	7.7	7.6	7.3	7.5	+	+	+	+	1.0	0.5	0.5	0.5
31	19.03	13.41	9.65	15.12	23.2	25.6	28.2	27.4	7.4	7.4	7.3	7.7	420	430	460	480	8.2	7.5	7.1	7.3	+	+	+	+	1.5	1.0	1.5	1.0

+ : 500 ppm over – : No data

Table B-8 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR FEBRUARY, 1984

Date	Flow Rate (m^3/s)				Water Temperature (℃)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	31.82**	16.67	22.16	17.56**	23.9**	26.1	27.8	27.4**	8.0**	7.7	8.9	7.9**	350**	400	400	460**	7.8**	7.2	7.3	7.2**	200**	300	360	+ **	3.0**	2.5	2.0	1.0**
2	17.86**	20.57	24.82	13.52**	23.2**	24.9	26.5	26.9**	8.0**	7.9	7.6	7.8**	580**	440	400	460**	7.5**	7.3	7.4	7.4**	+ **	+	+	+ **	0.5**	1.0	1.0	1.5**
3	16.42**	10.76	9.56	13.18**	23.8**	26.0	28.3	29.0**	7.2**	8.1	7.6	8.2**	490**	430	470	590**	7.6**	7.1	7.3	7.2**	390**	405	+	+ **	2.0**	2.0	1.0	0.5**
4	12.13**	13.31	8.92	14.15**	23.6**	26.4	28.8	28.8**	7.8**	8.0	7.8	7.7**	530**	590	570	580**	7.7**	6.9	7.0	6.9**	+ **	+	+	+ **	1.0**	1.0	0.5	0.5**
5	15.65	12.03	9.81	7.41	25.2	26.3	29.0	29.7	7.4	7.6	7.3	7.3	470	410	460	490	7.4	6.9	7.2	5.8	+	+	+	+	1.0	1.0	1.0	1.0
6	21.75	15.16	11.56	8.24	25.6	27.6	29.4	30.2	7.5	8.1	8.4	8.2	460	430	440	470	7.7	7.2	7.1	6.8	+	+	435	+	1.5	1.5	2.0	1.5
7	19.46	13.97	22.81	–	25.4	27.1	29.0	27.4	7.5	7.2	7.3	7.3	430	420	420	380	7.6	7.3	7.5	7.4	360	290	350	360	2.0	2.5	2.0	2.0
8	16.29	13.15	9.87	46.21	23.6	25.8	27.6	26.4	7.5	7.6	7.3	7.4	560	420	490	460	6.6	7.7	7.9	7.2	+	460	500	+	1.0	2.5	2.0	1.0
9	17.61	13.29	10.18	14.77	23.5	24.6	26.8	26.9	7.1	7.9	7.8	8.4	470	490	500	460	7.7	8.0	7.0	7.3	+	+	460	+	0.5	2.5	2.5	1.0
10	21.08	14.83	11.47	13.54	23.8	26.9	27.9	27.6	8.9	8.5	8.5	8.5	480	460	480	530	7.8	7.3	7.1	7.0	+	+	+	+	1.0	0.5	0.5	0.5
11	19.03	15.57	10.86	14.56	24.2	26.7	29.2	27.3	8.4	8.4	8.1	8.1	570	550	520	530	6.2	6.2	6.4	5.9	+	480	450	500	1.0	1.5	2.0	1.0
12	15.43	12.73	9.68	7.97	24.3	26.6	28.9	29.2	8.6	8.0	8.1	8.1	510	540	520	550	6.7	6.1	5.8	6.2	+	+	+	+	1.5	1.0	1.0	1.0
13	18.29	12.14	9.61	38.50	24.9	27.2	29.5	27.3	8.0	8.4	8.0	8.1	530	440	470	520	6.6	6.1	6.1	6.0	+	+	+	+	1.1	1.5	1.5	0.5
14	19.38	15.44	17.40	43.00*	24.4	26.9	28.5	27.2	8.0	8.1	8.0	8.4	400	390	450	500	6.6	6.0	6.0	6.5	590	480	700	1,100	1.5	2.0	1.5	1.0
15	16.32	10.86	8.98	46.78	25.7	27.1	28.9	27.6	8.4	8.2	8.1	8.2	400	420	450	490	6.7	6.5	6.6	6.9	850	850	750	1,100	1.0	1.0	1.0	0.5
16	19.95	13.32	10.09	47.86	24.8	26.6	28.7	27.2	8.5	7.4	7.7	7.6	430	370	390	480	6.8	6.8	6.5	8.1	800	650	550	1,170	1.5	1.5	2.0	1.0
17	19.89	14.00	17.63	12.48	26.0	27.3	29.2	28.6	7.6	7.5	7.5	7.5	420	510	480	610	8.1	7.1	8.0	7.5	1,150	1,500	1,550	++	0.5	1.0	1.0	0.5
18	18.89	12.51	10.07	11.59	26.0	28.0	29.9	28.6	7.3	7.2	7.2	7.3	610	580	580	560	6.5	7.4	8.0	7.2	1,500	800	700	1,450	0.5	1.0	1.0	0.5
19	19.20	13.51	10.01	7.12	25.3	27.4	29.4	28.7	7.4	7.7	8.8	8.4	550	480	440	350	7.4	7.5	6.6	7.7	750	600	650	1,000	1.0	1.0	1.5	1.0
20	17.36	13.14	9.73	49.16	24.6	26.4	28.0	26.0	8.8	8.5	8.4	8.3	860	710	560	490	7.4	7.5	6.6	7.7	1,300	1,050	1,050	1,200	0.5	1.0	1.0	0.5
21	19.41	14.66	10.53	45.97*	23.2	25.2	27.4	25.6	8.7	8.6	9.0	8.5	450	480	440	490	8.0	7.9	7.4	7.7	870	950	750	1,500	1.0	0.5	1.5	0.5
22	20.06	14.21	10.18	44.69	25.4	25.2	27.7	22.0	8.8	8.6	8.6	7.8	330	420	420	350	7.8	8.0	7.4	7.6	600	980	900	530	2.0	1.5	1.5	3.0
23	18.81	15.52	11.05	43.90	23.8	25.3	27.0	26.9	8.6	8.8	8.3	8.6	400	440	450	590	8.4	7.8	7.4	7.4	530	1,150	1,960	++	1.5	1.0	0.5	0.5
24	21.22	14.07	10.48	71.42*	24.3	26.7	29.0	26.7	8.0	8.1	8.0	8.3	430	510	530	480	8.2	7.4	7.4	7.4	1,600	++	++	850	0.5	0.5	0.5	1.0
25	18.50	16.58	42.27	50.62*	24.4	26.7	26.7	26.0	7.3	7.5	8.0	7.2	370	380	430	470	7.2	6.6	6.7	7.0	780	740	1,700	500	1.0	1.0	0.5	1.5
26	14.25	12.97	10.13	7.06	24.7	25.6	27.4	27.3	7.5	7.3	8.7	7.5	330	390	440	450	7.0	6.1	7.4	6.6	299	580	550	660	2.0	1.5	1.0	1.0
27	17.48	13.21	17.30	64.09*	23.7	25.5	27.0	25.1	7.4	7.2	7.6	7.2	680	600	580	480	7.1	6.6	6.5	7.3	1,100	1,290	900	750	0.5	0.5	1.0	1.0
28	–	20.93	12.87	43.43	23.3	25.3	27.0	26.6	8.0	8.3	8.4	8.0	460	440	490	510	6.9	6.9	6.6	6.9	950	1,070	1,170	1,400	1.0	0.5	0.5	0.5
29	27.57	29.29	24.36	83.15*	24.3	26.3	26.5	26.6	8.9	8.2	8.5	8.0	430	420	440	370	7.1	6.6	6.6	7.2	860	810	800	350	1.0	1.0	1.0	2.5

*: Calculated by the relations between flow rate and water level ** : Measured at 8:00 and 16:00
+ : 500 ppm over ++ : 2,000 ppm over – : No data

Table B-9 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR MARCH, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	20.24	15.32	35.31	94.76*	24.2	26.2	27.9	26.1	8.0	8.1	8.0	8.3	400	380	390	350	7.4	7.1	7.1	7.4	580	400	1,000	210	2.0	2.0	0	3.0
2	14.26	12.44	20.73	125.17*	24.6	25.3	27.2	–	8.3	8.3	8.3	–	380	420	470	–	7.9	7.4	7.1	–	700	900	1,200	–	1.5	1.0	0.5	
3	17.32	16.18	14.05	16.39	27.5	26.3	28.2	27.8	8.4	8.3	8.4	8.4	450	480	420	470	7.6	7.4	6.9	6.9	1,100	1,100	900	1,400	0.5	0.5	1.0	1.0
4	19.23	16.02	11.62	9.19	24.5	27.1	29.5	28.5	8.4	8.4	8.3	8.4	530	590	570	550	7.9	7.0	7.1	6.8	1,100	850	850	900	0.5	1.0	1.0	1.0
5	14.87	11.82	9.06	17.32	25.0	27.6	29.2	27.6	8.4	8.4	8.3	8.4	560	580	780	920	7.9	8.0	7.7	7.7	1,900	1,100	1,000	2,000	0	0	1.0	0
6	17.74	13.70	9.74	20.22	24.9	27.3	29.7	29.0	8.4	8.4	8.0	8.4	1,000	820	610	690	8.3	8.2	7.7	6.8	2,000	++	2,000	++	0.3	0.2	0.4	0.3
7	20.68	16.46	17.39	15.40	24.8	27.5	30.1	29.7	8.4	8.4	8.5	8.4	840	700	560	670	7.7	7.1	6.2	7.0	++	2,000	1,200	1,400	0.3	0.5	0.5	0.5
8	21.52	14.44	9.94	70.21*	26.4	27.9	29.1	28.4	8.2	8.2	8.2	8.2	610	540	510	540	7.3	6.6	6.6	6.8	1,600	1,300	1,300	850	0.5	0.5	0.5	1.0
9	21.24	17.12	14.48	79.23*	25.7	27.9	29.6	28.6	8.2	8.2	8.2	8.3	430	440	430	490	7.0	6.8	6.5	7.3	770	620	750	300	1.0	1.5	1.5	2.0
10	25.66	16.91	29.60	97.25*	25.2	27.5	29.0	28.6	8.3	8.3	8.3	8.3	380	400	430	480	7.5	6.7	6.9	7.0	490	460	910	380	1.5	1.5	1.0	2.0
11	20.62	18.42	15.09	38.29	25.6	28.1	30.5	28.9	8.1	8.2	8.1	8.1	400	400	420	470	7.2	7.7	6.9	7.5	570	460	660	1,200	1.5	2.0	1.5	0.5
12	23.30	17.59	26.97	58.30*	25.9	28.0	29.7	27.5	8.1	8.1	8.2	8.1	470	460	440	470	7.3	7.0	6.9	7.1	1,200	1,100	1,000	660	0.5	0.5	0.5	1.5
13	18.13	15.29	18.80	41.49	26.1	28.7	29.8	29.4	8.0	8.0	8.1	8.0	510	500	520	580	7.2	6.6	6.9	6.8	1,100	++	++	++	0.5	0.3	0.2	0.5
14	46.45	25.42	34.04	60.32	26.3	28.1	29.6	28.1	8.1	8.0	8.1	8.1	460	460	360	380	7.2	7.1	6.9	7.3	590	460	480	440	1.5	2.0	1.5	2.0
15	16.68	56.18	57.46	60.74	26.5	28.0	28.9	28.8	8.2	8.2	8.2	8.3	390	410	380	350	7.3	7.5	7.4	7.2	120	350	200	140	4.5	1.5	3.5	4.0
16	22.49	18.20	58.26	69.87*	26.7	28.8	29.3	28.4	8.4	8.2	8.3	8.4	410	430	390	450	7.4	7.2	7.1	7.0	200	230	900	190	3.5	2.5	1.0	3.5
17	34.76	27.27	33.52	103.90*	25.8	28.0	29.4	28.2	8.3	8.2	8.3	8.4	380	400	380	370	7.8	7.1	6.8	7.2	540	420	540	300	1.0	2.0	1.5	2.5
18	29.38	20.80	14.01	10.38	26.6	28.3	31.3	29.6	8.4	8.4	8.4	8.4	360	380	400	430	7.0	6.5	6.4	6.3	200	390	270	280	2.5	2.0	2.5	2.5
19	14.91	10.10	11.30	8.19	26.4	29.2	31.9	30.2	8.4	8.3	8.4	8.3	510	480	510	500	7.5	6.4	6.0	6.1	330	210	94	94	2.0	2.5	3.0	3.5
20	13.71	12.99	7.01	42.91	26.1	29.5	33.8	32.7	8.2	8.0	8.0	8.1	370	400	390	430	6.4	7.3	6.7	6.9	63	61	88	350	5.0	5.0	4.5	2.0
21	22.15	15.19	10.17	59.25	27.0	29.0	33.6	30.2	8.3	8.2	8.2	8.2	410	440	460	470	7.1	7.4	7.1	7.1	76	84	210	690	4.0	3.5	2.5	1.5
22	17.96	11.06	13.31	21.33	26.4	28.8	30.2	28.8	8.3	8.2	8.2	8.0	380	380	400	460	7.7	7.5	7.1	7.4	70	220	250	810	4.5	3.5	2.0	1.5
23	19.03	14.43	8.47	11.31	27.4	29.7	31.1	30.8	8.2	8.2	8.2	8.2	510	500	530	560	7.6	7.0	7.4	6.9	230	130	63	220	2.5	3.0	4.5	2.5
24	17.14	13.67	8.94	20.63	27.2	30.4	33.3	32.5	8.2	8.2	8.2	8.2	690	560	490	510	7.2	7.4	6.4	6.6	390	220	120	280	1.5	2.5	3.5	2.5
25	23.26	16.29	11.99	14.64	26.9	29.3	31.8	30.3	8.3	8.2	8.3	8.1	450	430	400	400	7.6	7.4	7.0	6.8	110	86	59	69	3.0	3.5	6.0	5.5
26	13.17	12.06	8.62	55.31	27.0	29.9	32.5	30.2	8.2	8.2	8.0	8.2	510	520	530	550	7.6	7.1	6.6	7.2	72	65	46	250	3.5	3.5	5.0	2.5
27	16.88	13.32	9.98	9.04	26.6	29.1	31.6	31.6	8.1	8.2	8.2	8.1	380	350	390	420	7.8	6.7	6.9	6.7	43	42	33	34	7.5	8.0	8.5	8.5
28	20.89	15.30	10.07	49.05	27.0	28.4	32.7	30.6	8.1	7.9	7.8	7.9	390	370	370	400	7.3	7.5	7.3	7.5	40	39	39	81	9.0	9.0	9.0	4.0
29	20.25	16.24	11.05	45.32	27.5	30.1	32.9	30.8	8.1	8.0	8.3	8.1	430	380	400	420	7.9	7.6	7.7	7.1	67	46	29	160	4.5	6.0	7.5	2.5
30	22.71	15.94	37.03	33.61	27.6	30.3	31.0	30.0	8.3	8.3	8.2	8.6	450	420	370	350	7.7	7.0	6.9	7.3	54	69	140	65	5.5	5.0	3.5	4.5
31	37.08	54.62	114.08*	148.43*	28.8	28.2	30.5	29.9	8.3	8.4	8.2	8.2	420	420	460	340	7.6	6.9	6.9	6.9	150	180	89	210	2.5	2.5	3.5	2.5

* : Measured by the Float Method ++ : 2,000 ppm over – : No Data

Table B-10 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR APRIL, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	22.45	18.38	15.34	14.75	27.5	30.6	32.8	32.1	8.3	8.3	8.4	8.5	350	400	420	440	7.6	7.0	7.7	6.8	52	72	52	59	6.0	5.0	6.0	4.5
2	27.78	16.06	92.38*	100.78**	27.5	30.5	31.2	29.5	8.5	8.5	8.5	8.8	390	440	410	320	7.9	7.1	6.5	6.9	36	34	84	74	8.5	9.0	4.5	5.0
3	21.32	15.29	11.40	73.74*	27.4	30.5	32.5	30.0	8.5	8.6	8.6	8.7	370	440	370	350	7.0	7.1	7.1	7.0	39	43	22	57	8.0	7.5	10.5	6.0
4	21.58	16.81	21.37	30.04	26.9	29.9	32.0	31.5	8.3	8.3	8.2	8.5	400	420	410	410	7.3	7.2	7.0	7.1	42	48	50	55	8.5	8.0	8.0	7.0
5	19.98	16.88	13.83	24.09	27.6	30.4	33.1	32.0	8.2	8.3	8.2	8.3	450	390	380	420	7.3	7.0	7.1	6.8	30	48	57	140	9.0	8.5	6.5	4.0
6	21.93	14.80	11.67	22.73	29.2	31.4	33.8	32.4	8.2	8.2	8.2	8.3	440	480	480	530	7.3	7.0	7.0	6.9	76	67	36	86	5.0	6.5	9.0	6.0
7	15.22	11.12	9.64	7.81	29.6	32.1	34.5	33.5	8.4	8.3	8.3	8.4	520	550	460	520	6.4	6.9	6.6	6.2	59	46	36	29	7.0	9.0	10.5	11.0
8	17.29	11.77	9.76	7.21	28.9	31.8	34.0	33.1	8.5	8.3	8.3	8.5	490	540	510	540	7.2	6.4	6.0	6.3	94	78	76	36	5.0	6.0	6.0	11.0
9	34.15	22.11	17.47	51.74	28.3	30.3	31.8	31.1	8.3	8.3	8.4	8.5	670	470	370	490	7.1	6.7	6.7	6.7	190	100	48	170	3.0	5.0	9.0	4.5
10	21.35	18.05	17.67	104.07*	28.3	30.6	32.4	30.0	8.3	8.2	8.2	8.3	510	530	520	470	6.7	7.1	6.1	6.2	50	59	1100	700	9.0	7.0	1.0	2.0
11	21.77	15.90	14.62	16.31	28.6	31.2	33.2	32.2	8.3	8.3	8.3	8.4	640	610	550	550	7.3	6.8	7.1	6.5	160	110	130	650	5.0	5.0	5.0	2.0
12	17.40	13.77	9.70	83.91	28.3	30.4	33.2	30.4	8.2	8.2	8.2	8.1	590	520	480	500	7.0	6.6	6.4	6.8	150	150	120	200	4.0	4.0	4.5	3.5
13	20.79	14.83	13.64	117.74**	28.3	30.9	33.2	30.7	8.1	8.1	8.1	8.4	450	470	430	390	7.3	6.8	7.0	7.3	50	46	38	180	9.0	9.0	11.0	4.0
14	20.75	15.80	11.73	66.07	28.5	30.3	33.8	30.4	8.2	8.2	8.3	8.4	530	410	480	450	7.2	7.3	6.5	6.7	65	63	26	270	7.0	7.0	11.0	3.5
15	24.92	48.99	33.77	22.65	28.9	30.1	32.3	28.8	8.2	8.2	8.3	8.0	480	350	440	330	7.6	7.0	7.4	7.1	34	52	76	170	14.0	10.0	7.0	5.0
16	17.28	13.21	10.63	76.15*	28.5	31.6	34.4	30.0	8.2	8.2	8.3	8.2	420	510	500	470	7.4	7.3	6.5	7.1	54	43	43	130	9.0	10.0	10.0	5.0
17	19.08	14.27	11.09	7.70	28.4	31.3	34.3	33.0	8.0	8.2	8.2	8.1	490	450	450	440	7.1	7.0	7.0	7.0	240	200	170	94	3.5	4.0	4.0	6.0
18	17.32	12.66	11.23	97.97*	29.1	31.6	34.1	31.4	8.1	8.1	8.2	8.0	640	580	550	510	7.2	6.8	7.1	7.1	770	500	390	590	2.0	2.5	3.0	2.0
19	15.95	15.40	16.39	25.30	28.5	30.8	32.2	31.9	8.3	8.2	8.3	8.3	490	530	590	550	7.5	6.9	7.1	6.7	890	1000	1100	1100	1.0	0.5	0.5	0.5
20	13.28	11.92	–	–	29.4	31.7	–	–	8.3	8.4	–	–	380	430	–	–	7.5	7.1	–	–	260	240	–	–	3.0	3.5	–	–
21	16.85	13.81	9.68	6.92	29.3	32.0	34.4	31.6	8.0	8.0	8.2	8.2	730	670	620	600	7.0	6.8	6.5	7.0	1200	840	720	950	0.5	1.0	1.5	1.0
22	22.33	14.73	10.91	13.34	28.8	31.8	32.0	32.1	8.1	8.2	8.0	8.1	650	580	550	570	7.6	7.5	6.8	7.4	380	270	190	700	2.5	3.5	4.5	2.0
23	16.50	13.62	68.53	125.57**	29.2	32.0	32.8	29.8	8.2	8.0	8.1	8.1	510	500	470	340	6.8	6.7	6.6	6.8	78	61	290	450	7.0	7.5	3.0	3.0
24	18.98	13.62	9.91	23.11	28.6	29.9	33.3	32.7	8.1	8.1	8.2	8.2	480	460	470	480	7.8	7.1	6.5	6.4	160	220	250	590	5.0	3.5	3.0	1.5
25	16.26	11.02	8.78	88.67*	28.6	31.5	34.2	30.9	8.4	8.1	8.2	8.1	550	600	550	480	7.1	7.2	6.9	6.6	310	250	200	300	2.0	2.5	3.0	3.0
26	18.17	13.00	9.50	98.76*	29.4	32.0	34.8	31.3	8.1	8.2	8.3	8.1	570	500	480	360	7.0	6.8	6.6	6.7	200	140	100	230	3.5	5.0	5.5	4.0
27	14.25	12.47	20.38	110.46*	29.2	31.7	32.8	30.6	8.4	8.3	8.5	8.4	480	500	400	410	7.5	7.0	6.8	7.5	230	480	750	700	4.0	3.0	1.5	1.5
28	22.00	14.43	44.20	86.42*	29.1	31.7	32.1	31.4	8.5	8.5	8.6	8.3	480	390	390	420	7.0	6.7	7.1	6.3	94	76	160	120	5.0	7.0	4.0	7.0
29	31.61	19.74	25.74	63.82	28.9	30.1	30.8	29.3	8.5	8.4	8.7	8.5	400	470	400	430	7.5	7.3	8.1	7.1	67	72	72	94	8.0	7.5	7.5	7.0
30	18.71	13.24	18.94	51.14	27.6	29.7	32.0	30.2	8.5	8.0	8.5	8.2	470	400	440	360	7.4	7.1	7.1	7.3	100	160	250	170	5.0	4.0	3.0	4.0

– : No data
* : By float method
** : By float method. The section area is forecasted without measuring the depth.

Table B-11 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR MAY, 1984

	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	18.03	13.38	13.13	12.16	28.1	30.1	30.2	28.4	8.2	8.1	8.2	8.2	410	390	440	550	7.2	7.3	7.1	7.5	97	81	74	190	6.0	6.5	7.0	4.0
2	17.94	15.01	14.18	105.30*	29.0	30.6	32.5	30.3	8.1	8.2	8.2	8.2	590	580	540	410	7.5	7.2	7.2	7.3	220	150	150	190	3.0	4.0	4.0	3.5
3	21.47	15.51	14.22	79.11*	28.4	30.7	30.4	29.2	8.4	8.2	8.3	8.4	490	390	610	480	7.7	7.9	7.1	7.6	800	600	550	1200	1.5	2.0	2.0	1.0
4	13.90	11.56	8.54	67.07*	28.9	32.4	34.1	31.6	8.2	8.0	8.2	8.5	430	460	500	470	6.6	6.6	6.6	6.3	260	200	290	850	3.0	3.5	3.0	1.0
5	14.22	11.63	10.30	21.53	29.1	31.2	33.1	30.7	8.7	8.7	8.5	8.4	420	420	440	510	6.8	6.4	6.4	6.6	120	120	110	700	5.0	5.5	5.5	1.5
6	20.65	17.62	20.44	41.05	29.0	30.7	31.8	31.6	8.2	8.4	8.2	8.2	580	490	490	510	7.0	7.4	6.6	6.7	410	300	640	560	2.0	2.5	1.5	2.0
7	13.54	10.91	7.63	52.25	29.4	32.5	34.7	30.7	8.7	8.3	8.4	8.2	490	510	480	520	6.7	6.9	6.7	6.9	740	650	550	2000	1.5	1.5	2.0	0.5
8	16.20	12.45	11.71	87.50*	29.7	32.6	33.8	31.2	8.1	8.3	8.2	8.4	570	560	550	480	7.2	6.6	6.3	6.8	790	780	890	700	1.5	1.5	1.0	2.0
9	16.52	13.54	11.52	84.96*	30.2	32.5	34.0	30.8	8.9	8.5	8.4	8.5	400	420	460	380	6.9	7.3	6.6	7.2	150	130	140	220	3.5	4.0	3.5	2.5
10	20.62	18.26	38.30	86.47*	29.6	31.9	33.0	30.0	8.2	7.8	8.3	8.4	450	420	510	370	6.7	6.4	6.5	7.1	1300	800	1100	1000	0.5	1.5	0.5	1.0
11	17.24	12.48	19.51	78.48*	29.2	32.0	33.4	31.4	8.6	8.0	8.1	8.2	420	460	460	350	6.8	6.2	6.3	7.0	1900	1100	1600	320	1.0	1.0	0.5	2.0
12	21.07	22.43	30.18	55.30*	28.4	30.8	31.2	31.6	8.3	8.1	8.3	8.4	450	420	390	420	7.4	6.8	6.8	6.9	2000	1700	2000	840	0.5	0.5	0.5	1.5
13	25.71	24.71	16.60	58.34	28.7	30.8	32.8	31.4	8.3	8.2	8.1	8.1	430	490	550	450	7.0	6.6	6.5	6.6	780	950	2000	2000+	1.0	1.0	0.5	0.5
14	26.41	16.66	16.54	35.08	28.7	31.0	32.8	31.6	8.3	8.0	8.1	8.2	520	500	550	530	7.3	6.7	6.6	6.6	1800	2000+	2000+	2000+	0.5	0.0	0.0	0.0
15	29.48	27.85	41.32	81.80*	29.5	31.3	31.7	31.5	8.2	8.0	7.9	8.1	650	490	560	390	6.4	7.5	7.8	7.3	1700	1500	2000+	910	0.5	0.5	0.0	1.0
16	17.04	14.91	14.17	51.32	30.1	32.4	34.2	30.9	7.7	8.0	7.9	8.4	440	470	540	470	7.4	7.0	6.6	7.4	900	950	1600	1900	1.0	1.0	0.5	0.5
17	20.64	19.46	19.39	47.24	29.5	31.6	33.3	31.5	7.8	7.7	7.7	8.1	510	500	470	600	7.2	7.3	7.2	6.8	1800	1800	2000	1400	0.5	0.5	0.5	0.5
18	29.36	31.40	78.80*	54.64	28.7	30.7	30.6	32.0	8.2	8.1	8.1	8.2	430	450	420	390	7.5	6.9	7.0	6.8	2000+	2000+	2000	570	0.0	0.0	0.5	1.5
19	52.13	70.42*	77.19*	90.85*	29.2	30.2	31.0	31.0	8.1	8.2	8.1	8.3	360	330	340	330	7.6	7.1	7.2	7.2	200	220	190	260	2.5	2.5	2.5	2.0
20	33.44	30.54	24.19	67.78*	27.1	28.8	31.2	29.7	7.9	8.5	8.8	8.5	370	420	460	380	7.2	6.6	6.7	6.8	300	440	620	260	2.0	1.5	1.5	2.5
21	22.89	22.02	69.57*	72.76*	27.2	29.1	29.6	28.7	8.5	8.0	8.6	8.3	470	470	480	360	6.8	6.7	6.8	7.2	1100	2000	1900	190	0.5	0.5	0.5	2.5
22	25.27	22.68	29.35	76.34*	26.9	27.1	28.5	28.1	8.0	8.5	8.0	8.3	380	430	440	400	6.8	7.2	6.9	6.7	1500	1800	1900	690	0.5	0.5	0.5	1.5
23	19.35	19.66	50.76	88.61*	27.2	28.6	28.8	27.4	8.3	8.3	8.3	8.3	460	450	470	440	7.0	7.0	6.8	7.3	380	380	750	700	2.0	2.0	1.0	1.5
24	19.49	18.70	18.51	60.70*	27.1	28.6	28.9	28.5	8.3	8.3	8.4	8.3	460	520	530	480	7.1	6.9	7.0	7.2	1200	1400	1400	1100	0.5	0.5	0.5	0.5
25	22.50	18.16	18.82	73.71*	27.3	29.6	31.2	29.4	8.2	8.3	8.3	8.4	440	510	480	470	7.1	7.0	6.9	7.0	650	800	1000	640	1.5	1.0	0.5	2.0
26	16.32	15.59	28.60	64.99*	27.4	29.7	30.2	28.3	8.3	8.3	8.3	8.3	460	520	480	450	7.3	7.2	7.2	7.2	1300	1500	1300	550	0.5	0.5	0.5	2.0
27	24.88	39.64	29.19	59.71	27.0	28.0	30.0	30.0	8.3	8.4	8.5	8.4	430	410	450	460	7.3	7.0	6.9	7.0	640	990	770	910	1.5	0.5	1.0	1.0
28	46.45	50.32	81.01*	89.51*	26.9	28.3	28.4	29.3	8.5	8.3	8.4	8.5	350	400	370	330	7.0	6.9	7.3	6.9	350	380	630	310	2.0	2.0	1.5	2.0
29	40.10	76.03*	84.71*	88.38*	26.9	27.5	28.8	29.1	8.4	8.4	8.5	8.5	410	340	350	300	7.1	7.3	7.0	7.4	250	300	190	190	2.5	2.0	2.5	3.5
30	29.86	52.23	96.46*	107.73*	28.6	27.3	29.2	28.0	8.4	8.4	8.6	8.6	420	350	380	310	7.0	7.4	7.3	7.5	450	810	1200	350	1.5	1.0	0.5	2.0
31	19.14	19.84	65.77	98.39	27.4	29.5	30.7	29.3	8.5	8.5	8.5	8.6	350	380	370	390	7.3	6.9	6.8	7.2	150	270	800	230	3.0	2.0	1.0	3.0

* by float method

2000+: 2000 ppm over

Table B-12 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR JUNE, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC ($\mu S/cm$)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	20.54	28.96	85.78*	93.50*	27.9	29.7	29.5	30.2	8.3	8.3	8.3	8.3	390	380	380	340	7.3	6.9	7.3	7.1	190	170	460	220	3.0	3.5	1.5	3.5
2	17.49	14.66	18.80	88.12*	28.1	30.2	32.4	30.2	8.2	8.2	8.2	8.2	350	400	410	460	7.3	7.0	7.2	7.0	250	120	140	210	3.0	3.5	3.0	3.5
3	27.55	19.58	45.70	55.75	28.1	30.3	30.4	30.0	8.2	8.2	8.2	8.3	350	370	380	380	7.3	7.0	7.0	7.0	150	150	300	140	3.5	3.5	2.5	3.5
4	32.26	70.39	82.26*	87.62*	27.3	28.2	28.9	29.7	8.2	8.2	8.2	8.3	400	350	430	320	7.3	6.9	7.1	7.3	270	460	340	140	2.0	1.5	2.0	3.5
5	35.77	55.10	81.17*	96.53*	26.8	28.4	28.7	28.8	8.2	8.3	8.2	8.2	340	400	340	320	7.5	7.8	7.1	7.4	290	920	500	200	2.0	1.0	1.5	3.0
6	31.82	30.69	82.81*	83.69*	27.0	28.3	28.4	28.0	8.2	8.2	8.2	8.3	320	310	380	320	7.3	7.1	7.3	7.0	170	180	900	170	3.0	3.0	1.0	3.5
7	95.40*	88.43	93.78*	91.25*	26.4	27.7	28.8	28.2	8.2	8.2	8.2	8.3	330	310	300	300	7.3	7.3	7.2	7.4	130	150	150	94	3.5	3.0	3.0	5.0
8	19.62	29.24	38.48	92.67*	27.1	28.8	28.7	28.5	8.3	8.2	8.3	8.4	390	390	490	350	7.1	7.2	6.9	7.2	260	380	480	220	3.0	2.0	1.5	3.5
9	26.32	23.13	28.26	78.05*	27.3	28.6	29.4	29.5	8.2	8.2	8.3	8.2	380	340	350	360	7.1	7.0	6.9	7.0	110	130	320	290	4.5	4.0	2.5	2.5
10	21.22	17.64	16.78	18.96	27.2	28.6	30.6	30.1	8.1	8.1	8.2	8.2	380	420	430	450	7.5	7.1	6.9	6.8	1500	1000	840	1000	0.5	0.5	1.0	0.5
11	15.69	14.19	18.39	49.36	27.6	29.4	31.0	29.9	8.1	8.1	8.2	8.2	440	410	430	420	7.1	7.1	6.8	7.1	900	700	910	1200	1.0	1.0	0.5	0.5
12	17.73	13.98	19.86	12.87	25.9	28.6	30.1	29.7	8.0	8.1	8.1	8.1	410	430	380	440	7.2	7.2	6.9	6.7	750	590	690	560	1.0	1.5	1.0	1.5
13	20.11	17.67	20.47	53.22	26.9	29.1	30.0	29.4	8.0	8.0	8.2	8.2	420	370	370	460	7.3	7.2	6.9	7.0	1300	750	810	1200	0.5	1.0	0.5	0.5
14	45.62	55.70	45.39	49.97	26.9	28.3	28.7	28.8	8.2	8.2	8.3	8.3	420	380	310	350	7.2	6.8	7.2	7.0	450	690	480	670	1.5	1.0	1.5	1.0
15	44.03	48.90	45.68	49.99	27.2	28.2	29.0	27.5	8.2	8.2	8.3	8.2	480	340	330	350	7.1	7.3	7.3	7.4	310	420	350	280	2.0	1.5	2.0	2.5
16	52.34	57.23	57.91	33.63	26.0	26.2	26.7	26.4	8.2	8.1	8.2	8.1	360	360	340	370	7.2	7.4	7.4	6.8	330	340	300	230	2.0	2.0	2.5	2.5
17	28.10	20.64	35.52	60.63	26.4	27.9	28.7	27.6	8.0	8.0	7.9	8.0	410	480	430	400	7.4	6.8	6.9	7.2	360	350	450	680	2.0	2.0	1.5	1.0
18	30.42	20.40	49.75	64.91	26.0	26.9	27.1	26.1	7.9	8.0	8.0	8.0	390	450	410	400	7.0	7.0	6.9	6.9	420	210	800	300	2.0	2.5	1.0	2.0
19	61.27	43.83	48.17	57.08	26.1	27.4	27.7	26.8	8.1	8.1	8.1	8.1	410	360	380	390	7.4	7.2	6.8	6.9	390	390	460	560	1.5	1.5	1.5	1.0
20	66.35	62.53	59.19	60.83	25.2	26.5	27.2	27.3	8.0	8.0	8.1	8.2	390	420	500	380	7.3	7.3	7.4	6.9	2000	1800	1500	890	0.5	0.5	0.5	0.5
21	61.92	49.09	43.88	61.44*	25.0	26.9	27.3	25.2	8.2	8.2	8.2	8.2	520	360	420	340	7.4	7.4	6.8	7.3	700	850	1000	800	1.0	0.5	0.5	1.0
22	62.92	60.77	64.40*	61.98*	24.5	25.4	26.3	25.8	8.1	8.1	8.2	8.2	420	490	380	440	7.3	7.4	7.4	6.9	990	950	900	750	0.5	0.5	1.0	1.0
23	67.54*	71.59*	73.07*	75.87	24.5	25.7	25.6	25.4	8.0	8.0	8.1	8.2	570	580	470	380	6.8	7.1	7.4	7.1	1100	1200	950	1200	0.5	0.5	0.5	0.5
24	84.50	79.71	81.45	89.35*	24.6	25.6	25.3	25.4	7.9	8.0	8.0	8.1	440	420	410	390	7.3	6.8	7.2	7.1	2000+	2000+	2000+	1700	0.0	0.0	0.0	0.5
25	77.73	70.93	81.40	87.28*	25.0	25.7	24.6	25.0	8.1	7.9	8.1	8.1	400	870	420	430	7.4	7.5	7.1	7.3	1400	1900	2000+	1900	0.5	0.5	0.0	0.5
26	93.76	82.77	85.70	86.66	24.1	24.6	25.2	25.2	8.2	8.1	8.2	8.2	380	420	380	410	7.4	7.0	7.6	7.1	1400	1100	1500	1300	0.5	0.5	0.5	0.5
27	84.51	97.36*	94.94*	91.49*	24.3	25.5	25.9	26.1	8.0	8.0	8.1	8.1	390	400	390	450	7.2	7.1	7.1	7.3	2000	1600	1100	1100	0.0	0.5	0.5	0.5
28	96.98	91.53	95.36	84.39	24.4	25.6	26.5	27.0	8.1	8.1	8.2	8.2	400	410	400	480	7.1	7.1	6.9	7.2	1400	1300	1200	1400	0.5	0.5	0.5	0.5
29	78.49	85.89	80.43	79.11	25.2	25.9	27.3	27.2	8.2	8.2	8.3	8.3	410	430	490	420	7.5	7.3	7.5	7.5	1400	1800	1400	1200	0.5	0.5	0.5	0.5
30	71.60	75.19	69.94	99.87	25.3	26.0	26.9	25.8	8.3	8.2	8.3	8.2	380	470	400	360	7.5	6.9	7.1	7.8	1300	1200	1200	1100	0.5	0.5	0.5	0.5

* by float method

2000+: 2000 ppm over

Table B-13 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR JULY, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC ($\mu S/cm$)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	69.74	75.45	68.60	74.33	24.0	24.5	25.5	25.3	8.1	7.9	8.1	8.1	450	420	530	470	7.7	8.0	7.9	7.3	1500	1300	1300	1200	0.5	0.5	0.5	0.5
2	65.86	67.85	68.81	68.28	24.7	25.2	25.5	26.2	8.2	8.1	8.2	8.2	530	490	410	390	7.7	7.6	7.4	7.5	860	1200	1000	1000	1.0	0.5	0.5	0.5
3	89.40	90.82	87.94	80.81	24.2	24.7	25.2	24.6	8.0	8.0	8.1	8.1	400	350	370	360	7.4	7.9	7.5	7.6	1800	1300	1000	800	0.5	0.5	0.5	1.0
4	71.33	74.57	69.16	70.09	23.9	24.2	25.2	26.1	8.2	8.2	8.2	8.2	370	370	380	360	7.7	7.3	7.6	7.0	780	840	660	570	1.0	1.0	1.0	1.0
5	76.53	77.39	78.41	65.00	24.4	24.7	25.4	24.5	8.1	8.2	8.2	8.2	470	380	400	360	7.5	7.1	7.3	7.6	660	600	650	360	1.0	1.0	1.0	2.0
6	74.54	70.04	68.07	73.61	24.2	24.7	25.0	25.4	8.2	8.2	8.2	8.3	460	440	440	380	7.8	7.3	7.5	7.5	670	770	700	440	1.0	1.0	1.0	1.5
7	112.45*	111.77*	123.18*	112.96*	23.6	23.9	24.3	25.8	8.0	8.0	8.1	8.1	380	500	470	430	7.6	7.5	7.6	7.8	2000+	2000+	2000+	2000	0.0	0.0	0.0	0.0
8	101.85*	108.65*	90.34*	110.72*	25.9	26.4	27.6	27.1	8.2	8.1	8.3	8.2	400	410	480	350	7.6	7.7	7.5	7.0	1000	1000	940	750	0.5	0.5	0.5	0.5
9	86.41	92.02	88.32	106.55*	25.5	26.3	27.1	24.8	8.2	8.3	8.2	8.2	430	400	380	360	7.5	7.0	7.0	7.6	1100	1400	1400	750	0.5	0.5	0.5	1.0
10	91.41	79.45	77.52	82.22	22.9	24.8	26.5	24.3	8.2	8.3	8.3	8.4	380	390	370	350	7.8	7.6	7.4	7.2	1100	900	920	620	0.5	0.5	0.5	1.0
11	82.77	95.25	81.46	86.22*	23.1	24.9	25.2	24.0	8.1	8.2	8.2	8.2	360	350	380	330	7.9	7.6	7.4	7.4	850	630	810	610	0.5	1.0	0.5	1.0
12	87.60	84.69	86.55	78.01	22.6	22.6	25.6	26.8	8.1	8.1	8.1	8.2	360	380	350	360	7.5	7.6	7.2	7.0	810	760	760	810	0.5	0.5	0.5	0.5
13	75.15	70.66	78.47	77.61	23.3	25.2	25.2	26.3	8.2	8.1	8.2	8.2	250	360	370	380	7.8	7.3	7.0	7.3	850	820	900	650	0.5	0.5	0.5	0.5
14	75.36	77.58	81.07*	74.30*	22.8	24.1	26.1	26.3	8.2	8.3	8.3	8.3	350	480	430	350	7.2	7.6	7.8	7.3	760	760	740	650	0.5	0.5	0.5	0.5
15	93.60	88.54	89.50	79.26	22.6	23.4	24.9	26.6	8.2	8.2	8.3	8.2	420	370	370	430	7.9	7.7	7.8	7.0	760	760	820	660	0.5	0.5	0.5	0.5
16	68.98	74.81	85.30	92.53	23.3	23.7	24.5	23.4	8.2	8.2	8.2	8.3	430	390	440	340	7.4	7.9	7.5	7.9	860	750	690	290	0.5	0.5	0.5	1.5
17	78.62	82.81	72.39	78.42	22.1	22.9	23.2	25.5	8.2	8.2	8.3	8.2	400	400	410	380	7.8	7.5	7.4	7.0	1100	1000	850	760	0.5	0.5	0.5	0.5
18	74.99	74.91	81.34	87.46	23.3	24.9	25.5	27.6	8.3	8.2	8.3	8.3	370	400	420	360	7.5	7.2	7.1	6.9	740	840	830	690	0.5	0.5	0.5	1.0
19	73.61	73.47	86.17	84.85	24.0	25.8	26.1	26.3	8.2	8.2	8.2	8.2	350	360	360	390	7.6	7.1	6.9	7.3	650	640	600	610	1.0	1.0	1.0	1.0
20	80.35	67.12	73.52	66.71	22.8	25.5	26.2	25.9	8.2	8.2	8.3	8.3	380	380	450	340	7.9	7.3	7.0	7.2	850	900	940	440	0.5	0.5	0.5	1.5
21	80.67	72.22	68.33	72.07	22.3	25.0	26.0	25.2	8.2	8.2	8.3	8.2	390	390	380	360	7.7	7.2	7.0	7.1	960	920	850	320	0.5	0.5	0.5	1.5
22	80.01	76.31	70.41	83.53	22.2	25.4	26.3	26.1	8.3	8.3	8.3	8.3	350	360	370	340	7.4	6.7	6.5	6.8	710	700	420	360	0.5	0.5	1.5	1.5
23	78.86	81.60	71.82	84.60	25.8	24.7	24.2	26.6	8.2	8.3	8.3	8.2	420	370	410	400	6.9	7.1	6.9	6.2	950	910	820	480	0.5	0.5	0.5	1.0
24	76.48	80.52	82.65	78.08	23.2	26.2	27.6	26.8	8.2	8.2	8.3	8.3	430	370	390	380	7.3	6.7	6.8	6.4	1100	950	1000	850	0.5	0.5	0.5	0.5
25	70.57	72.39	79.32	75.86	23.7	24.2	26.9	27.8	8.3	8.3	8.3	8.3	420	380	410	360	7.6	7.0	6.6	6.4	2000+	1500	960	630	0.0	0.5	0.5	1.0
26	78.26	76.97	68.70	75.54	23.8	24.5	26.0	26.5	8.2	8.3	8.3	8.3	360	410	360	360	7.0	7.5	6.9	7.1	420	450	450	610	1.0	1.0	1.0	1.0
27	74.47	67.40	72.41	69.30	24.1	24.6	25.9	25.8	8.2	8.2	8.2	8.2	410	350	360	360	7.3	6.9	6.8	6.7	990	850	610	360	0.5	0.5	1.0	1.5
28	78.68	72.62	68.98	75.45	23.8	25.1	25.9	26.3	8.1	8.2	8.2	8.2	350	380	370	350	7.5	7.0	6.9	6.7	1100	710	1000	950	0.5	0.5	0.5	0.5
29	73.87	78.49	78.91	73.51	24.2	24.6	25.9	25.3	8.2	8.2	8.2	8.1	400	380	380	400	7.5	6.9	6.6	7.6	970	1300	700	1400	0.5	0.5	0.5	0.5
30	74.11	83.07	69.42	71.35	24.0	25.8	27.4	26.7	8.1	8.1	8.3	8.2	390	390	410	360	7.2	7.1	7.2	7.0	1400	1000	1400	960	0.5	0.5	0.5	0.5
31	77.33	69.42	72.14	76.32	23.7	25.6	26.0	26.5	8.2	8.3	8.2	8.3	390	380	420	390	7.1	7.4	7.2	7.0	800	1000	1100	850	0.5	0.5	0.5	0.5

*By float method

2000+: 2000 ppm over

Table B-14 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR AUGUST, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC ($\mu S/cm$)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	81.42	78.67	77.60	79.10	24.0	24.3	25.3	25.9	8.3	8.3	8.3	8.3	370	380	380	380	7.5	7.6	7.4	7.2	1000	1200	1100	900	0.5	0.5	0.5	0.5
2	85.57	84.38	88.10	97.95	24.4	24.6	24.5	24.9	8.2	8.2	8.2	8.2	380	360	360	340	7.7	7.3	7.5	7.2	750	650	1000	670	0.5	1.0	0.5	0.5
3	79.99*	84.25*	99.43*	106.19*	24.0	24.6	25.2	25.3	8.2	8.2	8.2	8.2	380	360	320	310	7.5	7.4	7.8	7.2	790	650	700	650	0.5	1.0	0.5	1.0
4	74.82	77.00	75.70	82.23	23.5	25.3	25.9	24.9	8.2	8.2	8.2	8.3	380	340	370	360	7.4	7.2	7.4	7.3	800	810	950	420	0.5	0.5	0.5	1.5
5	82.33*	82.71*	86.89*	85.10*	24.0	24.8	26.2	25.9	8.2	8.2	8.3	8.3	340	320	340	370	7.2	7.4	7.5	7.1	800	700	650	620	0.5	0.5	1.0	1.0
6	98.35*	114.50*	110.19*	111.34*	24.2	24.8	24.5	25.0	8.2	8.2	8.2	8.3	330	300	320	320	7.4	7.0	6.9	6.9	680	340	300	220	1.0	1.5	2.0	2.5
7	129.34*	101.66*	121.31*	122.47*	23.8	24.1	24.6	24.7	8.2	8.2	8.3	8.4	320	330	340	300	7.0	7.1	7.3	7.3	300	300	690	260	2.0	2.0	1.0	2.0
8	100.07*	109.93*	129.03*	105.31*	23.6	24.4	24.8	25.1	8.3	8.3	8.3	8.3	320	340	300	310	7.4	7.9	7.0	7.0	440	360	290	410	1.0	1.5	2.0	1.5
9	119.25*	111.99*	113.14*	135.40*	23.3	25.5	25.2	24.7	8.2	8.3	8.3	8.4	330	320	320	310	7.4	7.3	7.1	8.0	700	670	390	220	0.5	1.0	1.5	2.5
10	108.17*	97.64*	105.89*	100.51*	23.6	25.2	25.1	25.5	8.3	8.3	8.3	8.4	330	330	300	300	7.5	7.4	7.2	7.0	780	700	420	230	0.5	0.5	1.5	2.5
11	105.66*	97.47	78.56	83.47	26.8	27.2	28.2	27.8	8.3	8.3	8.3	8.3	320	330	360	340	7.6	7.4	7.2	7.1	670	480	780	420	0.5	1.0	0.5	1.5
12	36.21	34.67	50.66	77.35	27.2	28.2	30.1	28.5	8.1	8.2	8.2	8.2	400	440	380	480	7.9	7.8	7.5	7.6	880	1300	1300	1800	0.5	0.5	0.5	0.5
13	36.73	92.77	99.41	90.00	26.7	27.3	28.7	27.9	8.2	8.2	8.2	8.3	380	430	440	300	7.9	6.7	7.6	7.3	1000	1400	1200	380	0.5	0.5	0.5	1.5
14	59.88	93.87	103.52*	113.92*	26.8	26.7	27.0	27.2	8.1	8.2	8.2	8.2	400	390	350	330	6.8	7.0	7.0	7.4	700	1300	1000	460	0.5	0.5	0.5	1.0
15	95.79	81.99*	123.16*	162.18*	26.1	26.4	26.7	26.8	8.0	8.1	8.1	8.0	360	370	380	350	7.4	7.1	7.0	7.3	2000	2000	1900	1900	0.5	0.5	0.5	0.5
16	120.49*	103.46*	151.75*	135.66*	25.8	26.6	27.1	27.2	7.9	8.0	8.0	8.0	350	340	330	310	7.3	7.4	7.6	7.5	2000+	1600	1400	1100	0.5	0.5	0.5	0.5
17	211.85*	361.73*	320.45*	304.38*	25.1	25.2	25.4	25.6	7.7	7.7	7.7	7.8	400	340	350	290	8.0	7.8	7.9	8.1	2000+	2000+	2000+	2000+	0.0	0.0	0.0	0.0
18	180.71*	184.67*	177.44*	209.94*	25.6	26.5	26.1	26.0	7.9	8.0	8.0	8.0	280	290	290	290	7.4	7.6	7.2	7.5	1400	1300	1500	1300	0.5	0.5	0.5	0.5
19	232.42*	174.00*	164.65*	172.57*	25.6	25.8	26.5	26.2	8.0	8.0	8.1	8.1	290	300	290	290	8.2	7.3	7.7	7.8	1100	1200	1100	1300	0.5	0.5	0.5	0.5
20	190.08*	161.19*	157.43*	197.11*	25.5	26.7	27.0	27.0	8.0	8.0	8.1	8.1	300	280	290	300	8.1	7.9	7.6	7.3	900	880	850	820	0.5	0.5	0.5	0.5
21	165.79*	164.63*	169.87*	165.51*	25.8	26.5	27.5	27.8	8.1	8.1	8.1	8.1	300	310	310	290	7.7	7.8	7.8	6.8	770	810	810	740	0.5	0.5	0.5	0.5
22	178.68*	171.37*	180.03*	188.37*	25.6	26.2	25.9	26.3	8.1	8.1	8.2	8.2	320	310	310	300	7.4	7.4	7.3	7.6	820	850	760	660	0.5	0.5	0.5	1.0
23	176.99*	178.14*	155.39*	175.79*	25.5	26.1	26.3	26.5	8.3	8.3	8.3	8.4	320	330	320	290	7.8	7.6	7.8	7.1	840	750	670	680	0.5	0.5	1.0	1.0
24	154.61*	153.55*	150.00*	170.78*	26.4	26.8	27.9	27.2	7.9	8.1	8.2	8.3	310	290	310	310	7.6	7.7	6.9	6.8	850	710	700	640	0.5	0.5	0.5	1.0
25	191.78*	211.10*	170.97*	134.61*	26.0	26.1	26.6	27.3	8.3	8.2	8.2	8.3	310	290	270	280	8.0	7.6	7.3	7.9	650	1000	1900	900	1.0	0.5	0.5	0.5
26	150.39*	111.68*	134.79*	101.43*	25.7	26.5	26.8	26.9	8.0	8.1	8.1	8.2	260	260	290	290	7.4	7.0	7.5	7.4	500	650	800	650	1.0	1.0	0.5	1.0
27	183.77*	206.30*	195.17*	223.07*	25.8	26.4	27.1	27.3	7.8	8.0	8.1	8.1	240	250	250	250	7.4	7.0	7.5	7.7	730	650	500	420	0.5	1.0	1.0	1.5
28	147.19*	160.25*	179.52*	164.23*	25.4	25.5	26.0	25.9	8.0	8.0	8.1	7.9	270	260	260	280	7.0	7.5	7.8	7.8	610	500	410	360	1.0	1.0	1.5	1.5
29	–	1957.68	2291.12*	2742.62**	24.5	24.5	24.4	–	7.5	7.6	7.7	–	190	180	180	–	7.2	7.3	6.8	–	2000+	2000+	2000+	–	0.0	0.0	0.0	–
30	2178.85**	1588.16**	1306.06**	1549.44**	24.4	24.5	24.5	24.5	7.8	7.8	7.9	7.9	170	170	160	160	7.3	7.0	7.9	7.1	2000+	2000+	2000+	2000+	0.0	0.0	0.0	0.0
31	670.23**	592.08**	498.29**	463.87**	24.3	24.6	25.0	25.1	7.4	7.5	7.6	7.7	160	170	180	200	6.9	7.0	6.9	7.4	1300	1600	1200	1200	0.5	0.5	0.5	0.5

– : No data
* By float method.
** By float method. The section area is forecasted without measuring the depth.
2000+: 2000 ppm over

Table B-15 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR SEPTEMBER, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	584.53**	523.59**	523.59**	564.34**	25.4	26.5	27.3	25.8	8.0	8.0	8.0	8.1	200	230	240	210	7.1	7.3	7.5	7.6	1000	880	660	850	0.5	0.5	0.5	0.5
2	437.30**	403.90**	449.13**	387.68**	25.6	26.3	27.2	26.2	7.8	7.9	8.0	8.2	220	230	250	260	7.7	7.2	7.5	7.2	740	710	720	650	0.5	0.5	0.5	1.0
3	358.30**	335.61**	370.59**	335.11**	25.2	25.6	26.8	26.6	7.9	8.0	8.2	8.2	220	280	240	260	7.4	6.4	7.0	6.8	660	610	440	680	1.0	1.0	1.5	1.0
4	430.35**	393.23**	345.09**	437.08**	25.9	26.0	27.0	26.2	7.8	8.3	8.4	8.4	220	230	220	220	7.3	7.1	7.0	7.8	760	650	670	600	0.5	1.0	1.0	1.0
5	305.65**	349.94**	450.44**	375.24**	25.6	26.3	26.9	25.8	8.0	8.0	8.1	8.2	270	260	250	230	7.7	7.4	7.6	7.4	270	490	320	900	2.0	1.5	1.5	0.5
6	384.23**	348.82**	248.71*	223.14**	25.2	26.6	26.4	27.2	8.0	8.0	8.0	8.1	230	250	250	220	7.5	6.9	7.6	7.0	330	250	230	230	2.0	2.0	2.5	2.5
7	316.87**	338.66**	361.38**	367.19**	25.3	26.1	26.6	26.4	8.1	8.1	8.2	8.2	220	230	230	230	7.8	7.5	7.5	7.4	270	230	250	240	2.0	2.5	2.5	2.5
8	202.87*	174.27*	203.71*	150.54	25.3	26.1	27.1	27.0	8.0	8.1	8.2	8.3	220	250	250	250	7.4	7.7	7.7	7.7	200	190	160	150	2.5	2.5	3.5	3.5
9	206.52	214.97	226.63	233.27	25.6	26.0	26.9	27.2	8.2	8.2	8.2	8.3	230	220	220	250	7.8	7.8	7.3	7.2	190	140	140	150	2.5	3.5	3.5	3.5
10	194.03	191.99	164.29	147.39	25.3	25.8	26.4	28.2	8.3	8.2	8.3	8.4	230	210	230	250	7.2	7.7	7.6	6.9	210	170	130	140	2.5	5.0	3.5	3.5
11	243.71	224.48	232.83	231.62	25.5	26.8	27.1	27.2	8.3	8.0	8.1	8.1	230	240	230	240	7.0	6.6	6.4	6.3	230	200	200	180	2.5	3.0	3.0	3.5
12	104.41	124.19	116.40	106.36	25.7	26.2	27.3	27.1	8.0	8.1	8.2	8.2	250	240	250	280	7.0	6.9	6.8	6.4	150	140	140	140	3.5	4.0	4.0	4.0
13	211.63	230.52	277.70	288.49	25.7	26.1	27.1	27.6	8.2	8.2	8.3	8.2	230	230	240	240	7.0	6.3	6.1	6.5	180	170	140	150	3.5	3.5	4.0	4.0
14	146.26	148.18	159.56	107.89	25.1	25.7	26.6	27.4	8.1	8.1	8.1	8.0	260	260	260	280	7.8	7.5	7.4	6.6	150	120	160	89	4.0	4.0	4.0	4.5
15	156.84	140.88	159.56	165.63	25.2	25.8	26.5	27.6	8.2	8.2	8.2	8.2	210	220	240	260	7.7	7.0	7.6	6.8	120	160	100	94	3.5	3.0	4.5	4.5
16	143.46	146.22	155.65	152.22	25.9	25.9	26.9	27.4	8.1	8.2	8.2	8.2	260	250	260	260	7.9	7.9	7.8	7.1	160	130	110	130	2.5	3.5	4.0	3.5
17	165.41	159.94	149.78	161.09	25.3	25.9	26.2	26.5	8.0	8.1	8.1	8.1	260	260	260	270	7.5	7.4	7.0	7.1	140	86	84	84	3.0	4.5	4.5	4.5
18	153.58	149.03	150.13	119.86	25.1	25.8	26.6	26.9	8.1	8.1	8.2	8.2	240	260	250	360	7.6	7.4	7.1	6.6	160	100	130	91	2.5	4.5	3.5	4.5
19	121.03	105.40	145.50	295.97	24.9	25.7	26.6	26.8	8.0	8.1	8.1	8.1	67	110	120	320	7.4	7.1	6.9	7.4	230	210	240	1300	2.5	3.0	2.5	0.5
20	136.85	144.55	145.73	144.41	25.3	25.9	26.8	27.3	8.0	8.1	8.1	8.1	270	270	280	270	7.2	7.5	7.0	7.2	230	200	220	210	2.0	2.5	2.5	2.5
21	138.75	147.83	165.21	148.20	25.1	25.9	26.9	26.8	8.0	8.0	8.0	8.1	280	280	280	270	7.6	7.3	7.4	7.3	230	280	190	180	2.5	2.0	3.0	3.0
22	141.59	125.91	131.88	133.48	25.3	25.8	26.4	26.8	8.1	8.3	8.1	8.1	280	280	270	290	7.8	7.4	7.3	7.4	180	230	190	270	3.0	2.5	3.0	2.0
23	149.07	146.53	144.12	152.18	25.2	25.9	26.5	27.0	8.1	8.1	8.1	8.1	270	270	270	280	7.8	7.4	7.0	7.1	230	230	250	250	2.5	2.5	2.0	2.0
24	141.50	133.87	140.97	73.77	25.3	26.1	26.5	26.9	8.0	8.0	8.1	8.1	270	270	270	300	7.6	7.0	7.4	7.3	250	230	310	200	2.0	2.0	1.5	2.5
25	107.15	131.42	133.37	135.55	25.7	26.7	26.8	27.0	8.1	8.1	8.1	8.1	290	300	300	260	7.4	7.4	7.5	7.3	240	270	250	190	2.0	2.0	2.0	3.0
26	143.45	137.45	148.35	157.37	27.0	26.2	26.9	26.9	8.0	8.0	8.0	8.1	270	260	270	270	7.3	7.5	7.2	7.2	810	610	310	230	0.5	1.0	1.5	2.0
27	165.05	154.40	155.28	137.21	25.9	26.1	26.9	27.4	8.3	8.3	8.3	8.4	240	260	260	280	6.9	7.2	7.5	7.2	290	240	230	310	1.5	2.0	2.5	1.5
28	157.33	157.95	152.28	140.71	25.6	26.2	27.0	27.0	7.9	8.0	8.0	8.0	250	260	270	280	7.2	7.4	7.2	6.9	1200	800	350	280	0.5	0.5	1.5	2.0
29	147.34	143.07	126.71	134.32	25.7	26.4	27.2	26.9	8.0	8.0	8.1	8.0	280	270	270	270	7.3	7.4	7.4	7.4	270	260	280	200	2.0	2.0	2.0	3.0
30	131.36	140.68	139.06	137.82	26.1	26.6	26.9	26.9	8.0	8.1	8.1	8.2	330	300	300	280	7.0	7.3	7.3	7.0	350	330	300	300	1.5	1.5	1.5	1.5

* By float method
** By float method. The section area is forecasted without measuring the depth.

Table B-16 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR OCTOBER, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	134.72	103.92	129.53	119.94	25.7	26.3	27.2	27.4	8.1	8.2	8.1	8.2	270	270	290	290	7.3	7.4	7.0	7.0	220	190	150	160	2.5	3.0	4.0	3.5
2	34.31	73.64	124.15	118.95	26.0	27.5	27.5	27.5	8.0	8.1	8.2	8.3	340	350	390	290	7.1	7.3	7.1	7.4	230	320	900	250	2.5	1.5	0.5	2.0
3	49.50	65.19	113.71	106.94	26.4	27.7	28.2	27.6	8.0	8.1	8.1	8.3	300	300	350	390	6.3	7.1	6.7	7.4	240	200	480	320	2.0	2.0	1.0	1.5
4	86.04	105.12	161.41	107.93	26.3	27.0	27.7	27.7	7.9	8.0	8.2	8.4	350	350	330	300	7.0	7.1	7.3	7.3	260	410	330	160	2.0	1.5	1.5	3.0
5	68.95	74.54	101.46	117.17	25.8	27.2	27.6	27.8	8.0	8.0	8.1	8.2	300	310	340	330	7.1	6.9	7.3	7.1	710	410	380	300	1.0	1.5	1.5	1.5
6	53.84	88.10	72.66	142.81	26.0	27.1	27.6	27.0	8.0	8.1	8.2	8.4	300	330	330	330	6.8	7.0	7.2	7.5	1100	500	250	240	0.5	1.5	2.0	2.5
7	45.76	49.28	83.39	81.93	25.5	26.7	27.7	27.5	8.1	8.1	8.1	8.2	310	340	350	420	6.9	6.9	7.0	7.2	690	460	900	260	1.0	1.5	1.0	2.0
8	46.45	89.73	143.68	155.07	25.5	26.5	27.3	27.0	8.2	8.2	8.2	8.2	300	360	330	300	7.1	7.4	7.5	7.4	600	1100	590	200	1.5	0.5	1.0	3.0
9	71.47	60.30	85.37	123.18	25.5	26.6	27.9	27.7	8.1	8.1	8.2	8.2	310	390	350	370	7.0	6.9	7.0	7.5	900	1100	710	420	0.5	0.5	1.0	1.5
10	68.66	70.06	72.50	131.45	26.5	27.3	28.3	28.0	8.0	8.0	8.0	8.2	400	320	320	340	7.3	7.5	7.2	7.2	210	190	330	210	3.0	3.0	1.5	3.0
11	47.41	87.00	136.24	134.50	26.1	27.3	27.9	27.5	8.0	8.0	8.1	8.2	300	300	330	310	6.9	7.2	7.1	7.1	340	180	420	350	2.0	1.5	1.5	1.5
12	51.22	143.13	131.03	158.26	26.3	27.1	28.2	28.0	8.2	8.2	8.3	8.3	300	340	390	270	6.8	6.9	7.1	6.8	250	940	190	97	2.0	0.5	2.5	3.5
13	121.62	112.25	148.28	171.56	26.0	26.4	27.0	27.0	7.9	8.0	8.0	8.1	280	270	290	310	6.9	6.8	7.0	7.3	910	420	360	360	0.5	1.5	1.5	1.5
14	52.65	62.27	72.96	109.06	25.6	26.8	27.4	27.2	8.0	8.1	8.1	8.2	320	350	310	300	7.1	7.3	7.0	7.3	750	910	410	310	1.0	0.5	1.5	2.0
15	115.82	81.70	96.30	136.39	26.0	26.6	27.3	27.0	8.2	8.2	8.3	8.3	300	300	290	300	7.0	7.5	6.8	6.8	240	270	260	130	2.0	2.0	2.0	3.5
16	47.43	101.69	137.13	128.84	26.1	27.0	27.9	27.8	8.0	8.1	8.1	8.2	340	380	320	300	6.9	7.0	7.2	7.1	480	300	280	150	1.0	1.5	2.0	3.0
17	56.81	85.47	76.74	90.52	25.7	26.5	27.2	27.3	8.0	8.1	8.1	8.2	310	340	320	300	7.5	7.3	7.3	7.2	150	280	180	160	3.0	2.5	3.0	3.0
18	40.03	80.44	172.08	125.73	25.5	26.4	26.8	26.8	8.0	8.0	8.1	8.3	350	350	340	300	7.5	7.1	7.2	7.2	390	680	210	120	1.5	1.0	2.5	3.5
19	39.98	36.54	94.43	124.14	25.1	25.2	25.4	25.3	8.0	8.1	8.2	8.1	320	350	330	350	7.3	7.8	7.4	7.6	310	450	660	250	2.0	1.5	1.0	2.5
20	49.26	64.11	54.60	91.34	25.0	26.1	26.0	25.6	8.2	8.2	8.2	8.3	310	390	410	430	7.4	7.1	7.2	7.3	700	850	1200	850	0.5	0.5	0.5	0.5
21	32.22	53.04	48.31	42.55	24.9	25.1	25.4	25.6	8.1	8.1	8.1	8.2	350	380	440	380	7.6	7.7	7.5	7.5	820	700	1000	410	0.5	0.5	0.5	1.5
22	35.71	54.06	95.78	77.79	24.8	24.9	25.0	25.0	8.1	8.2	8.2	8.2	440	410	490	360	7.6	7.7	7.4	7.5	920	1500	1600	760	0.5	0.5	0.5	0.5
23	39.09	39.16	39.32	107.81	24.7	24.9	24.3	25.2	8.2	8.2	8.2	8.2	420	420	380	530	7.3	7.5	7.8	7.7	1800	1500	960	2000	0.5	0.5	0.5	0.5
24	40.93	43.10	42.38	139.56	25.2	26.2	26.1	26.3	8.1	8.1	8.1	8.2	470	440	430	490	7.2	7.0	7.4	7.1	1300	1100	1200	900	0.5	0.5	0.5	0.5
25	41.99	40.41	42.53	62.33	25.3	25.8	26.5	27.0	8.1	8.1	8.1	8.1	360	390	400	460	7.4	7.1	7.2	7.2	550	610	710	770	1.5	1.0	1.0	1.0
26	45.91	70.08	112.90	89.96	25.8	27.0	27.8	27.4	8.1	8.2	8.2	8.2	370	440	370	380	7.4	7.5	7.2	7.4	420	1100	1100	390	1.5	0.5	0.5	1.5
27	42.96	70.42	93.24	123.97	25.5	26.5	26.7	26.6	8.1	8.1	8.1	8.1	380	380	410	300	7.8	7.4	7.3	7.3	440	390	750	230	1.5	1.5	1.0	2.5
28	57.76	92.61	95.14	150.74	25.8	25.8	25.6	25.4	8.2	8.2	8.2	8.2	360	400	340	310	7.0	7.2	7.3	7.8	420	750	380	320	1.5	1.0	1.5	1.5
29	430.72*	457.55*	440.93*	433.50*	24.6	24.6	24.7	24.8	7.8	7.5	7.7	7.8	360	380	270	280	7.7	7.9	7.7	7.7	2000+	2000+	2000+	2000+	0	0	0	0
30	376.35*	296.49*	245.20*	189.38*	25.4	25.8	26.0	25.8	8.0	8.0	8.1	8.1	250	300	300	280	7.6	7.5	7.2	7.1	770	680	590	580	1.0	0.5	1.5	1.5
31	190.91	181.95	188.43	158.28	24.5	24.6	24.8	25.0	8.3	8.3	8.3	8.3	250	260	270	240	7.7	7.4	7.7	7.4	380	410	320	380	1.5	1.5	2.0	1.5

*By Float Method

Table B-17 DAILY RECORDS ON THE WATER QUALITY AT FIXED POINT "E" FOR NOVEMBER, 1984

Date	Flow Rate (m^3/s)				Water Temperature (°C)				pH				EC (μS/cm)				DO (mg/ℓ)				Turbidity (ppm)				Transparency (cm)			
	Time				Time				Time				Time				Time				Time				Time			
	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00	9:00	11:00	13:00	17:00
1	124.29	154.05	134.86	113.30	24.6	25.1	25.6	26.0	8.1	8.2	8.2	8.3	280	270	270	280	7.8	7.7	7.9	7.5	360	390	360	320	1.5	1.5	1.5	1.5
2	147.56	139.56	155.69	136.07	25.5	25.8	26.2	26.5	8.0	8.1	8.1	8.2	280	300	280	260	7.7	7.6	7.3	7.4	350	410	390	260	1.5	1.5	1.5	2.0
3	138.56	143.78	145.16	152.53	25.0	25.7	26.5	27.0	8.2	8.2	8.2	8.2	270	270	260	270	7.6	7.7	7.6	7.5	260	280	220	200	2.0	2.0	2.5	2.5
4	158.45	151.26	173.26	159.36	25.3	25.9	27.0	27.3	8.1	8.2	8.2	8.2	280	280	270	250	7.3	7.5	7.5	7.2	180	180	200	460	2.5	2.5	2.5	1.5
5	127.56	150.84	140.79	145.08	25.4	25.9	26.0	26.7	8.2	8.2	8.2	8.3	310	290	300	290	7.2	7.2	7.3	7.5	190	240	200	250	2.5	2.0	2.5	2.0
6	116.71	112.51	100.34	133.52	25.1	26.0	27.2	27.1	8.2	8.3	8.3	8.3	280	280	270	290	7.4	7.3	7.0	7.6	180	200	160	260	3.0	3.0	3.0	2.0
7	48.68	83.95	96.89	112.79	25.4	26.2	27.0	27.4	8.1	8.2	8.2	8.3	310	310	310	330	7.2	7.6	7.4	7.2	250	390	280	310	2.0	1.5	2.0	2.0
8	62.49	67.21	64.03	69.98	26.2	27.2	27.8	27.5	8.1	8.2	8.2	8.2	380	390	420	370	7.0	7.3	7.0	7.2	420	780	910	300	1.5	1.0	0.5	2.0
9	44.86	52.18	47.80	130.97	25.2	26.7	27.3	27.0	8.1	8.1	8.1	8.2	310	320	370	390	7.2	7.2	7.1	7.2	150	200	300	390	3.0	2.5	2.0	1.5
10	42.62	49.51	44.65	100.08	25.1	25.7	26.6	26.4	8.2	8.2	8.2	8.3	380	390	410	400	7.3	7.1	7.1	7.2	460	440	700	460	1.5	1.5	1.0	1.5
11	47.04	44.15	49.81	82.73	25.4	26.5	27.2	27.2	8.2	8.2	8.2	8.2	390	440	370	430	7.5	7.2	7.1	6.9	610	790	640	460	1.0	0.5	1.0	1.0
12	83.20	113.20	131.55	118.00	25.1	25.9	26.5	27.0	8.2	8.2	8.3	8.3	300	310	290	250	7.5	7.2	7.2	6.9	150	210	190	110	3.0	2.5	3.0	3.5
13	41.44	134.11	126.19	138.25	24.9	25.7	26.3	26.5	8.0	8.1	8.2	8.3	300	330	410	290	7.2	7.1	7.3	7.2	150	650	230	140	3.0	1.0	2.5	3.0
14	87.92	141.89	137.60	129.87	24.3	25.1	26.4	26.5	8.2	8.2	8.3	8.3	290	290	280	280	7.6	7.5	7.1	7.0	240	200	100	100	2.5	2.5	4.5	4.5
15	56.58	140.88	123.88	143.58	24.9	25.5	26.5	26.9	8.2	8.2	8.3	8.3	310	310	320	290	7.6	7.5	7.6	7.1	410	310	150	240	1.5	2.0	3.0	2.5
16	116.26	140.01	147.50	118.93	24.9	26.0	26.0	26.8	8.2	8.2	8.3	8.2	330	310	290	290	7.7	7.5	7.4	7.4	410	450	240	230	1.5	1.5	2.5	2.5
17	37.42	40.19	100.51	118.89	25.2	25.7	25.8	26.2	8.2	8.2	8.2	8.3	370	340	390	320	7.5	7.2	7.0	7.5	850	740	880	200	0.5	0.5	0.5	3.0
18	66.43	66.34	63.80	64.22	25.0	25.7	26.0	26.4	8.1	8.1	8.2	8.2	360	430	370	350	7.7	7.4	7.0	7.1	770	600	410	280	1.0	1.0	1.5	2.0
19	42.11	39.07	41.21	110.11	26.4	26.4	26.8	26.9	8.1	8.1	8.1	8.2	390	360	370	420	7.1	7.1	7.6	7.5	360	290	640	450	1.5	2.0	1.0	1.5
20	36.56	36.65	36.79	103.69	24.7	25.5	26.2	25.9	8.1	8.1	8.0	8.2	370	370	390	430	7.6	7.5	7.6	7.1	650	360	600	240	1.0	1.5	1.0	2.5
21	30.32	44.92	42.37	77.52	24.9	25.9	26.5	26.4	8.2	8.2	8.1	8.2	360	370	360	420	7.3	7.5	7.4	7.5	260	360	380	360	2.0	1.5	1.5	1.5
22	40.72	37.64	36.65	106.65	24.2	25.3	26.2	26.0	8.1	8.1	8.1	8.2	320	350	430	410	7.6	7.4	7.2	7.0	220	350	840	580	2.5	1.5	0.5	1.0
23	37.77	40.69	37.05	100.32	24.1	25.3	25.9	26.0	8.2	8.2	8.1	8.2	340	350	370	440	7.6	7.4	7.5	7.2	310	540	650	410	2.0	1.5	1.0	1.5

Table B-18

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN DECEMBER, 1983

Date		Flow Rate (m^3/s)	Water Tempearture (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
Dec.	1	26.53*	26.3*	8.3*	471*	6.4*	500+	1.0*
	2	26.36	26.2*	8.3*	507*	6.7*	500+	1.0*
	3	27.40	26.1	8.4	452	6.6	500+	0.8
	4	22.63	25.5	8.4	433	6.7	500+	1.5
	5	26.66*	25.2	8.4	506*	6.6*	500+	1.0*
	6	19.97	24.3	8.4	463	–	–	1.3
	7	19.97	24.6	8.1	538	6.9*	500+	1.0
	8	21.82	24.9	8.3	529	6.8*	500+	0.9
	9	20.00*	24.4	8.3	743*	6.9*	500+	1.4*
	10	19.65	25.1	8.3	392	6.9	500+	1.0
	11	21.58	24.7	8.4	401	7.1	500+	1.5
	12	18.87	24.3	8.5	401	7.3	500+	1.2
	13	21.22*	24.5	8.5	359*	7.4*	500+	1.0*
	14	25.26	25.4	8.0	355	7.2	326	1.9
	15	34.87	25.0	8.0	366	7.4	–	1.5
	16	22.80	25.0	8.0	478	7.2	–	1.0
	17	23.49	25.6	8.4	486	7.7	500+	1.0
	18	11.64	26.0	8.4	445	7.5	500+	1.0
	19	10.27*	24.0	8.4	600*	7.2*	500+	1.0*
	20	23.78	24.1	8.0	370	7.5	500+	1.0
	21	22.90	24.7	8.2	370	7.3*		1.5
	22	24.72	24.8	8.1	502	7.3	500+	1.0
	23	17.77	24.7	8.2	472	7.7	500+	1.2
	24	18.85	25.1	7.8	627	7.0	500+	1.0
	25	–	–	–	–	–	–	–
	26	15.76	25.6	8.3	652	7.1	500+	1.5
	27	16.41	24.3	8.4	628	7.3	385	1.4
	28	13.11	24.7	8.4	406	7.1	500+	2.2
	29	10.92	26.0	8.4	497	7.2	500+	2.2
	30	11.13	25.7	8.0	566	7.2	500+	1.4
	31	13.43	26.2	8.2	420	7.3	500+	2.1
1–10		23.04	25.2	8.3	491	6.7		1.1
11–20		22.00	24.9	8.2	409	7.4		1.3
21–31		16.50	25.2	8.2	511	7.3		1.5
1–31		20.38	25.1	8.3	468	7.1		1.3

* : Culculated by insufficient date
500+ : 500 ppm over
– : No data

Table B-19

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN JANUARY, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
Jan. 1	–	–	–	–	–	–	–
2	15.63	24.5	8.2	526	7.6	500+	1.1
3	17.05	24.2	8.2	496	7.9	500+	1.3
4	16.16	24.9	8.2	428	7.7	500+	1.3
5	17.99	24.9	8.2	491	7.5	–	1.6
6	17.61	24.7	8.2	534	7.3	–	1.7
7	16.34	25.1	8.2	356	7.6	–	3.4
8	17.81	26.3	8.1	609	7.8	500+	1.4
9	15.93	26.1	8.2	394	7.6	–	2.0
10	14.58	25.8	8.2	411	7.9	–	1.9
11	15.08	25.4	8.0	396	7.2	–	1.5
12	18.48	25.5	8.0	416	7.3	–	2.1
13	29.07*	25.3	7.9	347*	7.7*	470*	2.2*
14	16.19	25.5	7.8	343	7.8	279	4.0
15	14.74	25.7	8.0	367	7.6	500+	1.3
16	14.77	26.5	7.8	624	7.1	500+	1.8
17	12.63	25.4	8.0	555	7.5	500+	0.7
18	17.76	25.2	8.1	496	7.6	500+	1.7
19	14.23	26.1	7.9	562	7.3	500+	1.2
20	15.29*	25.8	8.0	495*	7.4*	500+	0.7*
21	15.76	26.0	8.1	440	7.4	500+	0.8
22	11.97	27.3	7.8	542	7.3	500+	1.0
23	15.64	26.6	8.1	504	7.5	500+	1.1
24	12.91	27.1	8.3	504	7.7	500+	1.3
25	16.56	25.5	8.0	406	7.4	500+	2.1
26	13.70*	25.6	8.5	562*	7.6*	500+	1.4*
27	–	–	–	–	–	–	–
28	18.91	26.0	8.4	419	7.4	–	2.0
29	18.27	26.2	8.4	536	7.8	–	1.7
30	12.31	25.9	7.9	556	7.6	500+	0.8
31	15.92	25.6	7.5	446	7.7	500+	1.3
1–10	16.57	25.2	8.2	475	7.6		1.7
11–20	16.22	25.6	7.9	456	7.5		1.8
21–31	15.21	26.2	8.1	486	7.5		1.4
1–31	15.97	25.7	8.1	472	7.6		1.6

* : Culculated by insufficient data
500+ : 500 ppm over
– : No data

Table B-20

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN FEBRUARY, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
Feb. 1	24.00	25.9	8.1	389	7.5	–	2.3
2	17.33	25.1	7.9	499	7.4	500+	0.9
3	13.88	26.5	7.7	520	7.4	–	1.4
4	12.58	26.4	7.8	560	7.2	500+	0.7
5	11.53	27.5	7.4	469	6.9	500+	1.0
6	14.90	28.0	7.9	458	7.4	–	1.5
7	19.40*	26.7	7.4	427*	7.5*	351*	2.0*
8	26.45	25.3	7.4	485	7.1	–	1.1
9	15.26	25.3	7.7	470	7.5	–	1.0
10	16.53	26.0	8.7	494	7.5	500+	0.8
11	16.04	26.2	8.3	551	6.1	–	1.1
12	11.69	26.9	8.3	524	6.4	500+	1.3
13	24.27	26.6	8.1	517	6.2	500+	0.8
14	27.66	26.2	8.2	462	6.5	891	1.2
15	26.37	26.9	8.3	463	6.8	1,012	0.7
16	28.63	26.3	8.0	457	7.6	1,015	1.2
17	16.34	27.5	7.5	489	7.8	–	0.6
18	14.52	27.6	7.3	590	6.9	1,365	0.6
19	13.05	27.3	8.0	492	7.4	779	1.0
20	27.98	25.7	8.5	597	7.6	1,213	0.5
21	27.86	24.8	8.7	476	7.8	1,258	0.7
22	27.57	24.4	8.4	350	7.7	588	2.6
23	26.97	25.5	8.6	520	7.7	–	0.8
24	38.11	26.0	8.1	471	7.6	–	0.9
25	33.36	25.5	7.4	437	7.0	765	1.2
26	10.93	26.1	7.6	378	6.9	443	1.6
27	34.58	24.8	7.3	532	7.2	850	0.9
28	33.67*	25.2	8.1	502*	6.9*	1,352*	0.5*
29	48.15	25.6	8.5	391	7.1	523	2.0
1–10	17.10	26.3	7.8	473	7.4	–	1.3
11–20	20.66	26.7	8.0	510	7.0	–	0.9
21–29	31.13	25.3	8.1	452	7.3	841	1.3
1–29	22.63	26.1	8.0	476	7.2	–	1.2

* : Calculated by insufficient data
500+ : 500 ppm over
– : No data

Table B-21

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN MARCH, 1984

Date		Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
Mar.	1	49.66	25.5	8;1	363	7.4	348	2.5
	2	56.51	25.2*	8.3*	409*	7.6*	857*	1.2*
	3	16.47	27.6	8.4	457	7.2	1,191	0.7
	4	14.25	26.8	8.4	545	7.5	1,003	0.7
	5	14.81	26.7	8.4	736	7.8	1,822	0.1
	6	17.33	27.2	8.4	825	7.6	2,000+	0.3
	7	17.94	27.5	8.4	741	7.2	–	0.4
	8	37.74	27.6	8.2	556	6.9	1,057	0.8
	9	41.80	27.5	8.2	473	7.2	430	1.7
	10	52.72	27.1	8.3	454	7.1	442	1.8
	11	26.37	27.7	8.1	440	7.4	913	1.0
	12	36.41	27.2	8.1	467	7.1	853	1.1
	13	26.74	28.0	8.0	551	6.9	–	0.5
	14	48.35	27.5	8.1	414	7.2	504	1.8
	15	41.59	27.8	8.2	369	7.3	171	3.7
	16	44.37	27.8	8.4	431	7.1	310	3.1
	17	59.91	27.3	8.3	374	7.3	379	2.0
	18	19.62	28.5	8.4	379	6.8	239	2.5
	19	11.54	28.9	8.4	505	6.9	230	2.6
	20	23.76	29.8	8.1	413	6.8	258	3.0
	21	33.99	29.2	8.2	452	7.1	483	2.3
	22	18.07	28.0	8.2	417	7.5	422	2.9
	23	14.43	29.3	8.2	525	7.3	206	2.7
	24	17.13	30.2	8.2	587	6.9	311	2.1
	25	18.04	29.0	8.2	429	7.3	91	3.4
	26	28.31	29.5	8.2	540	7.3	194	2.8
	27	12.78	29.4	8.1	389	7.3	40	7.9
	28	29.63	29.2	8.0	394	7.4	65	5.9
	29	28.17	29.6	8.1	420	7.4	120	3.5
	30	28.02	29.2	8.4	390	7.4	74	4.6
	31	89.92	29.4	8.3	377	7.0	179	2.7
	1–10	31.88	27.5	8.3	498	7.2	805	1.3
	11–20	33.87	28.9	8.2	429	7.1	635	2.1
	21–31	28.95	30.1	8.2	417	7.1	199	3.4
	1–31	31.48	28.9	8.2	448	7.1	559	2.4

* : Calculated by insufficient date
2000+ : 2000 ppm over
– : No data

Table B-22

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN APRIL, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	18.33	30.1	8.4	389	7.3	56	5.5
2	62.25	29.0	8.6	352	7.0	68	5.6
3	39.24	29.3	8.6	358	7.0	51	6.7
4	24.33	29.5	8.4	407	7.2	49	7.7
5	20.49	30.2	8.2	427	7.0	82	6.6
6	20.35	31.2	8.2	483	7.1	77	5.8
7	11.40	31.9	8.4	516	6.4	48	8.6
8	12.11	31.4	8.5	507	6.8	78	6.5
9	37.66	30.0	8.4	550	6.9	167	4.2
10	51.64	29.6	8.3	481	6.3	586	3.3
11	18.34	30.7	8.3	599	7.0	317	4.0
12	41.08	29.9	8.2	516	6.8	187	3.6
13	55.76	30.0	8.2	402	7.3	152	5.1
14	36.21	30.0	8.3	469	6.8	204	4.8
15	27.18	29.4	8.1	407	7.3	86	9.5
16	38.19	30.1	8.2	463	7.1	110	6.1
17	13.41	31.1	8.1	472	7.1	198	4.1
18	46.41	30.8	8.1	533	7.1	610	2.0
19	19.47	30.4	8.3	532	7.0	1022	0.7
20	13.05*	29.8*	8.3*	388*	7.4*	257*	3.1*
21	11.98	31.0	8.1	685	6.9	1063	0.8
22	16.90	30.7	8.1	613	7.5	451	2.6
23	63.66	30.1	8.1	379	6.8	381	3.5
24	18.95	30.8	8.2	478	7.0	366	3.2
25	42.04	30.4	8.2	496	6.7	298	2.8
26	46.88	31.0	8.1	400	6.7	220	4.0
27	50.95	30.4	8.4	419	7.5	643	1.8
28	48.30	30.6	8.4	427	6.5	119	6.3
29	41.97	29.4	8.4	420	7.3	83	7.4
30	30.44	29.3	8.3	396	7.3	158	5.2
Average of 1~10	29.78	30.2	8.4	434	6.9	167	5.6
11~20	31.58	30.2	8.2	477	7.1	292	4.5
21~30	37.21	30.4	8.3	438	7.0	326	4.0
Monthly Average	32.96	30.3	8.3	449	7.0	267	4.6

* An average of 3 measurements

Table B-23

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN MAY, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	14.83	28.6	8.2	455	7.3	122	5.5
2	49.99	30.1	8.2	446	7.3	192	3.5
3	41.68	29.1	8.4	485	7.6	1068	1.2
4	32.97	30.9	8.3	464	6.4	709	1.5
5	16.26	30.4	8.6	466	6.6	407	3.3
6	28.02	30.5	8.2	529	6.8	508	2.0
7	27.10	30.8	8.4	512	6.9	1641	0.8
8	42.06	31.0	8.2	499	6.8	723	1.9
9	41.31	31.1	8.7	387	7.1	203	2.7
10	47.33	30.4	8.3	400	6.9	1058	0.9
11	40.09	30.8	8.3	372	6.9	701	1.7
12	35.16	30.2	8.3	424	7.0	1300	1.1
13	36.72	30.4	8.2	452	6.7	1585+	0.7
14	27.62	30.5	8.2	526	6.9	1920	0.2
15	50.44	30.7	8.1	475	7.1	1241+	0.8
16	29.36	31.1	8.0	467	7.3	1600	0.6
17	30.36	30.9	7.9	559	7.0	1583	0.5
18	45.19	30.3	8.2	411	7.0	1352+	0.8
19	71.31	30.2	8.2	340	7.3	229	2.3
20	44.92	28.7	8.3	385	6.9	307	2.2
21	47.35	28.2	8.4	408	7.0	815	1.7
22	44.72	27.6	8.2	400	6.8	1027	1.1
23	49.27	27.6	8.3	447	7.2	643	1.5
24	34.76	28.0	8.3	480	7.1	1157	0.5
25	40.88	28.8	8.3	465	7.0	669	1.8
26	36.05	28.3	8.3	457	7.2	800	1.5
27	39.71	28.6	8.4	447	7.1	833	1.1
28	67.24	28.1	8.5	346.	7.0	374	1.9
29	66.78	28.0	8.5	339	7.3	215	2.9
30	69.25	28.3	8.5	344	7.4	545	1.6
31	54.75	28.7	8.5	381	7.1	305	2.7
Average of 1~10	34.15	30.3	8.3	459	7.0	684	2.1
11~20	41.12	30.4	8.2	427	7.0	1055+	1.2
21~31	50.07	28.2	8.4	399	7.1	617	1.8
Monthly Average	42.05	29.6	8.3	424	7.1	773+	1.7

+ : More than one out of four measurements are over 2000 ppm.

Table B-24

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN JUNE, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	56.76	29.1	8.3	357	7.2	259	3.0
2	43.90	29.6	8.2	437	7.1	210	3.4
3	39.73	29.3	8.2	371	7.1	166	3.4
4	62.45	28.5	8.2	358	7.2	231	2.7
5	65.84	27.9	8.2	333	7.4	317	2.4
6	57.55	27.7	8.2	330	7.1	302	2.9
7	93.06	27.5	8.2	314	7.3	121	3.9
8	50.17	28.0	8.3	372	7.2	259	3.2
9	45.70	28.5	8.2	363	7.0	242	3.0
10	19.52	28.8	8.2	414	7.2	1209	0.6
11	28.53	29.0	8.2	425	7.1	1087	0.6
12	15.86	28.1	8.1	416	7.0	671	1.2
13	32.37	28.4	8.1	438	7.1	1175	0.5
14	48.06	28.0	8.3	376	7.1	562	1.3
15	46.88	27.6	8.2	398	7.3	312	2.2
16	46.43	26.3	8.2	360	7.1	299	2.2
17	40.60	27.3	8.0	410	7.2	549	1.4
18	44.94	26.3	8.0	400	6.9	400	1.9
19	56.61	26.7	8.1	396	7.1	462	1.3
20	63.07	26.3	8.1	402	7.2	1523	0.5
21	58.42	25.5	8.2	428	7.3	778	0.9
22	62.57	25.3	8.2	428	7.2	886	0.8
23	71.69	25.1	8.1	483	7.0	1129	0.5
24	85.54	25.1	8.0	415	7.2	1882+	0.2
25	81.20	25.0	8.1	449	7.3	1713+	0.4
26	89.17	24.7	8.2	394	7.3	1352	0.5
27	89.50	25.3	8.1	414	7.2	1499	0.3
28	91.60	25.7	8.2	428	7.1	1366	0.5
29	79.58	26.3	8.3	426	7.5	1361	0.5
30	82.29	25.7	8.3	380	7.5	1191	0.5
Average of 1~10	53.47	28.5	8.2	355	7.2	266	3.0
11~20	42.33	27.4	8.1	399	7.1	703	1.3
21~30	79.16	25.4	8.1	423	7.3	1349+	0.5
Monthly Average	58.32	27.1	8.2	396	7.2	862+	1.5

+ : More than one out of four measurements are over 2000 ppm.

Table B-25

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN JULY, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	71.79	24.7	8.1	465	7.6	1342	0.5
2	67.30	25.4	8.2	458	7.6	960	0.7
3	86.11	24.5	8.1	378	7.5	1302	0.7
4	70.86	24.9	8.2	368	7.4	693	1.0
5	72.51	24.6	8.2	416	7.5	552	1.3
6	73.01	24.8	8.2	426	7.6	595	1.2
7	113.93	24.5	8.1	421	7.7	2000+	0.0
8	104.30	26.6	8.2	390	7.4	894	0.5
9	94.67	25.5	8.2	392	7.4	1012	0.7
10	85.23	24.0	8.3	369	7.5	890	0.7
11	84.94	23.9	8.2	350	7.6	733	0.7
12	83.63	24.6	8.1	360	7.3	799	0.5
13	76.11	24.8	8.2	324	7.5	778	0.5
14	75.86	24.6	8.3	372	7.4	717	0.5
15	87.29	24.5	8.2	413	7.6	734	0.5
16	80.34	23.5	8.2	389	7.7	583	0.9
17	78.12	23.6	8.2	394	7.4	934	0.5
18	80.45	25.3	8.3	375	7.2	739	0.7
19	79.38	25.3	8.2	368	7.3	626	1.0
20	73.28	24.6	8.3	375	7.5	725	0.8
21	75.20	24.1	8.2	378	7.4	714	0.9
22	79.82	24.4	8.3	349	7.0	450	1.0
23	80.36	25.8	8.2	407	6.6	747	0.7
24	78.19	25.4	8.3	401	6.8	980	0.5
25	73.80	25.7	8.3	392	7.0	1291+	0.5
26	75.94	25.1	8.3	364	7.1	497	1.0
27	71.68	25.0	8.2	381	7.0	703	0.9
28	75.75	25.1	8.2	355	7.1	1001	0.5
29	74.75	24.9	8.2	396	7.4	1122	0.5
30	73.24	25.6	8.2	381	7.1	1201	0.5
31	75.64	25.2	8.2	393	7.1	870	0.5
Average of 1~10	83.97	25.0	8.2	406	7.5	1070+	0.7
11~20	79.94	24.5	8.2	372	7.4	737	0.7
21~31	75.85	25.1	8.2	382	7.0	875+	0.7
Monthly Average	79.79	24.9	8.2	387	7.3	897+	0.7

+ : More than one out of four measurements are over 2000 ppm.

Table B-26

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN AUGUST, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	79.84	24.9	8.3	376	7.4	991	0.5
2	90.43	24.6	8.2	360	7.4	740	0.5
3	92.60	24.7	8.2	340	7.4	707	0.8
4	77.89	24.5	8.2	368	7.3	669	0.9
5	83.97	25.1	8.3	350	7.2	704	0.8
6	106.05	24.6	8.3	322	7.1	419	1.8
7	123.45	24.3	8.3	316	7.2	333	1.9
8	106.48	24.4	8.3	315	7.2	399	1.4
9	123.94	24.2	8.3	320	7.6	466	1.5
10	104.14	24.6	8.3	315	7.3	529	1.4
11	93.27	27.4	8.3	332	7.4	581	0.9
12	53.32	28.1	8.2	443	7.7	1453	0.5
13	69.21	27.5	8.2	357	7.4	778	1.0
14	88.43	27.0	8.2	358	7.1	681	0.7
15	122.96	26.5	8.0	358	7.3	1938	0.5
16	128.67	26.6	8.0	331	7.4	1529	0.5
17	272.61	25.3	7.7	340	8.0	2000+	0.0
18	191.59	25.9	8.0	286	7.4	1362	0.5
19	196.64	26.0	8.1	291	7.9	1173	0.5
20	186.23	26.4	8.1	298	7.7	862	0.5
21	166.10	26.8	8.1	298	7.4	767	0.5
22	181.87	26.0	8.2	310	7.5	753	0.7
23	173.94	26.0	8.3	309	7.5	753	0.7
24	160.01	26.9	8.1	308	7.2	737	0.7
25	169.35	26.6	8.3	294	7.8	919	0.7
26	126.85	26.4	8.1	273	7.4	596	0.9
27	201.81	26.6	8.0	246	7.5	567	1.0
28	158.71	25.7	8.0	272	7.5	475	1.3
29	2533.74*	24.5*	7.6*	180*	7.0*	2000*	0.0*
30	1784.50	24.5	7.9	166	7.3	2000+	0.0
31	564.84	24.7	7.5	175	7.1	1284	0.5
Average of 1~10	98.88	24.6	8.3	335	7.3	570	1.2
11~20	140.29	26.6	8.1	326	7.6	1339+	0.5
21~31	488.13	25.9	8.0	208	7.3	1481+	0.3
Monthly Average	247.12	25.7	8.1	253	7.4	1312+	0.5

+ : More than one out of four measurements are over 2000 ppm.
* : An average of 3 measurements

Table B-27

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN SEPTEMBER, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	564.26	25.9	8.0	211	7.3	895	0.5
2	417.39	26.1	8.0	239	7.5	704	0.7
3	349.25	26.0	8.1	242	7.1	634	1.1
4	419.12	26.2	7.9	221	7.4	680	0.8
5	352.70	25.9	8.1	250	7.5	548	1.3
6	303.93	26.2	8.0	231	7.3	285	2.2
7	343.12	25.9	8.2	226	7.6	252	2.3
8	180.97	26.2	8.1	236	7.6	178	3.0
9	219.77	26.4	8.2	236	7.5	164	3.1
10	172.65	26.6	8.3	235	7.2	174	3.0
11	236.21	26.4	8.2	234	6.6	206	3.0
12	108.29	26.5	8.1	260	6.7	144	3.8
13	253.62	26.6	8.2	236	6.6	161	3.8
14	133.69	26.2	8.1	266	7.3	130	4.2
15	159.15	26.3	8.2	234	7.3	110	4.0
16	148.50	26.6	8.1	259	7.6	139	3.2
17	161.38	25.9	8.1	264	7.3	108	3.9
18	140.16	26.0	8.2	282	7.2	129	3.5
19	188.39	25.9	8.1	223	7.3	860	1.3
20	141.44	26.3	8.1	271	7.2	218	2.3
21	146.36	26.0	8.0	276	7.4	210	2.7
22	136.03	26.0	8.1	282	7.6	218	2.6
23	149.41	26.1	8.1	274	7.4	240	2.2
24	115.40	26.1	8.1	277	7.4	245	2.0
25	123.10	26.4	8.1	280	7.4	223	2.4
26	148.78	26.9	8.0	269	7.3	502	1.3
27	152.50	26.6	8.3	258	7.1	285	1.7
28	150.52	26.4	8.0	264	7.1	735	1.2
29	139.52	26.4	8.0	274	7.4	245	2.4
30	135.52	26.5	8.1	304	7.1	323	1.5
Average of 1–10	332.32	26.1	8.1	231	7.4	532	1.5
11–20	167.08	26.3	8.1	250	7.1	233	3.2
21–30	139.71	26.3	8.1	275	7.3	328	2.0
Monthly Average	213.04	26.3	8.1	245	7.3	409	2.0

Table B-28

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN OCTOBER, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	125.96	26.6	8.1	280	7.2	188	3.1
2	80.56	26.9	8.1	323	7.3	377	1.8
3	80.37	27.2	8.1	354	7.1	320	1.6
4	105.26	27.1	8.1	327	7.2	247	2.2
5	114.06	26.9	8.1	322	7.1	418	1.4
6	92.41	26.7	8.2	323	7.3	470	1.9
7	64.32	26.6	8.1	371	7.1	504	1.5
8	102.94	26.4	8.2	310	7.4	409	2.2
9	91.67	26.7	8.2	349	7.2	647	1.1
10	92.80	27.4	8.1	355	7.2	220	2.9
11	94.47	27.0	8.1	311	7.1	347	1.6
12	109.00	27.2	8.3	302	6.9	233	2.7
13	142.82	26.5	8.0	294	7.1	559	1.1
14	77.14	26.5	8.1	310	7.2	487	1.6
15	118.25	26.6	8.3	299	6.9	196	2.6
16	93.69	27.0	8.1	319	7.1	257	2.3
17	74.33	26.6	8.1	310	7.3	171	3.0
18	92.04	26.2	8.1	322	7.2	231	2.7
19	78.06	25.2	8.1	341	7.5	333	2.1
20	66.95	25.4	8.2	388	7.3	840	0.5
21	39.84	25.2	8.1	379	7.6	670	0.9
22	60.53	24.9	8.2	409	7.5	1021	0.5
23	64.89	24.9	8.2	485	7.6	1846	0.5
24	78.28	25.8	8.1	479	7.1	1017	0.5
25	49.55	26.1	8.1	413	7.3	675	1.2
26	72.82	26.8	8.2	380	7.4	592	1.2
27	81.91	26.1	8.1	339	7.4	361	2.0
28	100.20	25.6	8.2	333	7.5	384	1.5
29	435.27	24.7	7.8	320	7.7	2000+	0.0
30	283.19	25.7	8.1	267	7.4	695	1.1
31	177.62	24.7	8.3	250	7.6	375	1.6
Averaged 1–10	95.04	26.8	8.1	328	7.2	369	2.0
11–20	94.68	26.4	8.1	315	7.1	358	2.0
21–31	131.28	25.5	8.1	331	7.5	1085+	0.8
Monthly Average	107.78	26.2	8.1	326	7.3	675+	1.5

+ : More than one out of four measurements are over 2000 ppm.

Table B-29

DAILY AND MONTHLY AVERAGE OF THE WATER QUALITY AT FIXED POINT "E" IN NOVEMBER, 1984

Date	Flow Rate (m^3/s)	Water Temperature (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
1	123.97	25.3	8.2	278	7.7	349	1.5
2	143.60	26.0	8.1	275	7.5	328	1.7
3	145.06	26.0	8.2	269	7.6	233	2.3
4	160.04	26.3	8.2	267	7.3	287	2.1
5	137.72	26.0	8.2	299	7.3	220	2.3
6	120.62	26.2	8.3	283	7.4	213	2.6
7	81.69	26.4	8.2	320	7.3	298	2.0
8	65.88	27.0	8.2	382	7.1	462	1.5
9	78.13	26.3	8.1	365	7.2	315	2.0
10	65.00	25.8	8.2	395	7.2	479	1.5
11	60.53	26.4	8.2	411	7.1	547	1.0
12	104.79	26.1	8.3	278	7.2	145	3.2
13	96.06	25.7	8.1	316	7.2	216	2.7
14	114.36	25.5	8.3	284	7.3	155	3.7
15	104.64	25.9	8.3	301	7.3	273	2.3
16	123.15	25.8	8.2	308	7.5	323	2.0
17	76.09	25.7	8.2	343	7.4	469	2.0
18	65.27	25.7	8.2	363	7.4	531	1.4
19	67.24	26.6	8.1	405	7.4	433	1.5
20	61.77	25.4	8.1	409	7.3	374	2.0
21	50.74	25.7	8.2	395	7.4	337	1.6
22	64.68	25.2	8.1	385	7.2	493	1.4
23	61.38	25.1	8.2	404	7.3	410	1.6
Average of 1–10	112.17	26.1	8.2	300	7.4	300	2.0
11–20	87.39	25.9	8.2	330	7.3	318	2.3
21–23	58.93	25.4	8.2	394	7.3	419	1.5
Monthly Average	94.45	25.9	8.2	320	7.4	317	2.1

Table B-30 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR DECEMBER, 1983

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Dec. 1	E12012*	17.3	27.1	8.3	410	6.1	+	1,400	<0.02	<0.01	0.0053	82	7.3	–	134
2	E12022*	31.87	25.4	8.3	460	–	–	1,700	<0.02	<0.01	0.0033	87	5.8	–	132
3	E12032*	40.79	26.3	8.4	440	6.3	+	1,900	<0.02	<0.01	0.0038	72	6.7	–	102
4	E12042*	25.41	25.1	8.4	390	6.1	+	1,600	<0.02	<0.01	0.0044	65	6.4	–	102
5	E12052*	24.38	25.8	8.4	440	6.8	+	1,400	<0.02	<0.01	0.0029	80	7.4	–	123
6	E12062*	25.42	24.7	8.3	370	–	375	560	<0.02	<0.01	0.0038	50	6.1	–	38
7	E12072*	15.81	25.6	8.2	550	6.5	+	1,300	<0.02	<0.01	0.0065	104	8.5	–	124
8	E12082*	17.47	25.3	8.3	540	–	+	1,700	<0.02	<0.01	0.0054	104	7.8	–	–
9	E12092*	17.76	25.0	8.3	540	7.2	+	1,000	<0.02	<0.01	0.0040	65	6.4	–	113
10	E12102*	8.95	25.2	8.3	360	6.8	+	770	<0.02	<0.01	0.0032	56	6.6	–	100
11	E12112*	20.62	24.9	8.4	390	7.2	+	880	<0.02	<0.01	0.0048	59	6.8	–	96
12	E12122*	16.85	24.6	8.5	420	7.6	+	820	<0.02	<0.01	0.0049	52	6.3	–	102
13	E12132*	17.14	24.9	8.2	400	7.5	+	1,200	<0.02	<0.01	0.0061	68	7.2	–	110
14	E12142*	19.78	25.7	8.2	310	7.2	150	130	<0.02	<0.01	0.0013	47	6.2	–	73
Monthly Average									<0.02	<0.01	0.0042	71	6.8	–	99

* : Water sample for chemical analysis was taken at 11:00
\+ : Over 500 ppm
– : No data

Table B-31 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR FEBRUARY, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Feb. 4	E02042*	13.31	26.4	8.0	590	6.9	+	1,400	0.01	<0.02	0.0065	106	8.6	<0.01	175
5	E02052*	12.03	26.3	7.6	410	6.9	+	730	0.01	<0.02	0.0044	80	6.6	<0.01	114
6	E02062*	15.16	27.6	8.1	430	7.2	+	810	0.01	<0.02	0.0054	79	6.6	<0.01	111
7	E02072*	13.97	27.1	7.2	420	7.3	290	560	0.01	<0.02	0.0057	79	7.4	<0.01	111
8	E02082*	13.15	25.8	7.6	420	7.7	460	1,000	0.01	<0.02	0.0042	79	6.8	<0.01	109
9	E02092*	13.29	24.6	7.9	490	8.0	+	580	0.01	<0.02	0.0055	89	6.6	<0.01	135
10	E02102*	14.83	26.9	8.5	460	7.3	+	360	0.01	0.03	0.0042	91	7.3	<0.01	125
11	E02112*	15.57	26.7	8.4	550	6.2	480	540	0.01	0.03	0.0056	98	8.2	<0.01	153
12	E02122*	12.73	26.6	8.0	540	6.1	+	420	0.01	<0.02	0.0048	92	7.6	<0.01	126
13	E02132*	12.14	27.2	8.4	440	6.1	+	430	0.01	<0.02	0.0064	79	6.5	<0.01	113
14	E02142*	15.44	26.9	8.1	390	6.0	480	290	0.01	<0.02	0.0031	70	6.8	<0.01	93
15	E02152*	10.36	27.1	8.2	420	6.5	850	1,200	0.01	<0.02	0.0017	74	7.1	<0.01	105
16	E02162*	13.32	26.6	7.4	370	6.8	650	740	0.01	<0.02	0.0040	67	6.5	<0.01	83
17	E02172*	14.00	27.3	7.5	510	7.1	1,500	3,000	<0.01	<0.02	0.0031	92	7.8	0.01	137
18	E02182*	12.51	28.0	7.2	580	7.4	800	860	0.01	<0.02	0.0050	100	7.4	0.01	170
19	E02192*	13.51	27.4	7.7	480	7.5	600	1,200	0.01	<0.02	0.0046	81	6.7	<0.01	113
20	E02202*	13.14	26.4	8.5	710	7.5	1,050	1,300	0.02	0.02	0.0064	139	9.9	0.01	236
21	E02212*	14.66	25.2	8.6	480	7.9	950	1,200	0.01	<0.02	0.0033	73	7.7	<0.01	114
22	E02222*	14.21	25.2	8.6	420	8.0	980	1,400	0.01	<0.02	0.0036	63	6.5	<0.01	102
23	E02232*	15.52	25.3	8.8	440	7.8	1,150	1,000	<0.01	0.04	0.0040	68	8.0	0.01	126
24	E02242*	14.07	26.7	8.1	510	7.4	2,000+	1,100	<0.01	<0.02	0.0033	87	7.8	<0.01	143
25	E02252*	16.58	26.7	7.5	380	6.6	740	800	<0.01	<0.02	0.0046	56	6.5	<0.01	88
26	E02262*	12.97	25.6	7.3	390	6.1	580	1,100	<0.01	<0.02	0.0042	56	6.8	<0.01	99
27	E02272*	13.21	25.5	7.2	600	6.6	1,290		0.11	<0.02	0.0057	106	8.8	0.13	201
28	E02282*	20.93	25.3	8.3	440	6.9	1,070		<0.01	0.02	0.0045	70	7.2	<0.01	112
29	E02292*	29.29	26.3	8.2	420	6.6	810	1,100	<0.01	0.02	0.0044	64	6.5	<0.01	90
Monthly Average									0.01	0.02	0.0044	81	7.3	0.01	125
20	E02202S**	17.36	24.6	8.8	860	7.4	1,300	1,900	0.01	<0.02	0.0054	182	13.0	0.01	339

* Sampled at 11:00
\+ Over 500 ppm
** Sampled at 9:00 to check water of high EC

Table B-32 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR MARCH, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
Mar. 1	E03012•	94.76	26.1	8.3	350	7.4	210	–	0.01	<0.02	0.0053	51	6.1	<0.01	65
2	E03022•	12.44	25.3	8.3	420	7.4	800	–	<0.01	<0.02	0.0039	57	7.2	<0.01	110
3	E03032•	16.39	27.8	8.4	470	6.9	1,400	–	<0.01	<0.02	0.0037	67	7.4	<0.01	135
4	E03042•	16.02	27.1	8.4	590	7.0	850	1,200	<0.01	<0.02	0.0059	81	8.6	<0.01	168
5	E03052•	17.32	27.6	8.4	920	7.7	2,000	2,200	0.02	<0.02	0.0077	150	12.0	0.02	327
6	E03062•	13.70	27.3	8.4	820	8.2	2,000+	4,700	0.01	<0.02	0.0043	143	9.4	<0.01	321
7	E03072•	15.40	29.7	8.4	670	7.0	1,400	1,500	0.01	<0.02	0.0059	107	14.8	<0.01	123
8	E03082•	14.44	27.9	8.2	540	6.6	1,300	3,100	<0.01	<0.02	0.0052	79	8.9	<0.01	183
9	E03092°	79.23	28.6	8.3	490	7.3	300	870	0.02	<0.02	0.0063	62	9.1	<0.01	123
10	E03102•	16.91	27.5	8.3	400	6.7	460	550	0.01	<0.02	0.0015	44	7.5	<0.01	83
11	E03112°	38.29	28.9	8.1	470	7.5	1,200	1,900	<0.01	<0.02	0.0040	61	8.9	<0.01	131
12	E03122•	17.59	28.0	8.1	460	7.0	1,100	1,500	<0.01	<0.02	0.0045	56	6.1	0.02	108
13	E03132°	41.49	29.4	8.0	580	6.8	2,000+	4,000	<0.01	<0.02	0.0059	82	8.1	0.02	179
14	E03142•	25.02	28.1	8.0	460	7.1	460	680	0.01	<0.02	0.0044	49	6.5	<0.01	90
15	E03152°	60.74	28.8	8.3	350	7.2	140	190	0.01	<0.02	0.0042	42	5.9	<0.01	71
16	E03162•	13.20	28.8	8.2	430	7.2	230	240	0.02	<0.02	0.0038	49	6.6	<0.01	81
17	E03172°	03.90	28.2	8.4	370	7.2	300	550	0.02	<0.02	0.0039	46	6.6	0.01	84
Monthly Average									0.01	0.02	0.0047	62	7.6	0.01	118

• : Sampled at 11:00
° : Sampled at 16:30–17:00
– : No data

Table B-33 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR APRIL, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. °C	pH	EC (μS/cm)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E04012°	14.75	32.1	8.5	440	6.8	59	110	0.010	0.030	0.0033	49	6.8	<0.01	91
2	E04022*	16.06	30.5	8.5	440	7.1	34	84	0.012	0.010	0.0035	43	6.2	<0.01	70
3	E04032°	73.74*	30.0	8.7	350	7.0	57	120	0.010	<0.010	0.0046	43	6.5	0.02	70
4	E04042*	16.81	29.9	8.3	420	7.2	48	75	0.010	<0.010	0.0038	47	6.8	<0.01	89
5	E04052°	24.09	32.0	8.3	420	6.8	140	170	0.018	0.010	0.0034	53	6.9	<0.01	87
6	E04062*	14.80	31.4	8.2	480	7.0	67	130	0.010	<0.010	0.0048	54	6.6	<0.01	101
7	E04072°	7.81	33.5	8.4	520	6.2	29	53	0.010	0.010	0.0054	58	6.9	<0.01	118
8	E04082*	11.77	31.8	8.3	540	6.4	78	120	0.010	0.010	0.0041	68	7.2	<0.01	132
9	E04092°	51.74	31.1	8.5	490	6.7	170	190	0.011	<0.010	0.0047	65	7.8	<0.01	138
10	E04102*	18.05	30.6	8.2	530	7.1	59	120	0.100	<0.010	0.0046	62	7.9	0.08	118
11	E04112°	16.31	32.2	8.4	550	6.5	650	440	0.029	<0.010	0.0047	61	7.8	0.03	139
12	E04122*	13.77	30.4	8.2	520	6.6	150	190	0.023	<0.010	0.0052	61	7.3	0.01	116
13	E04132°	117.74*	30.7	8.4	390	7.3	180	290	0.010	<0.010	0.0039	52	7.1	<0.01	105
14	E04142*	15.80	30.3	8.2	410	7.3	63	92	0.010	0.010	0.0029	49	6.8	<0.01	105
15	E04152°	22.65	28.8	8.0	330	7.1	170	360	0.010	0.010	0.0034	39	6.2	<0.01	74
16	E04162*	13.21	31.6	8.2	510	7.3	43	79	0.011	N.D.	0.0035	54	6.7	<0.01	95
17	E04172°	7.70	33.0	8.1	440	7.0	94	110	0.010	<0.010	0.0027	48	6.8	<0.01	92
18	E04182*	12.66	31.6	8.1	580	6.8	500	850	<0.005	<0.010	0.0033	64	7.2	0.04	141
19	E04192°	25.30	31.9	8.3	550	6.7	1100	1200	0.005	<0.010	0.0039	66	7.2	<0.01	143
20	E04202*	11.92	31.7	8.4	430	7.1	240	340	0.022	0.014	0.0018	52	6.7	<0.01	87
21	E04212°	6.92	31.6	8.2	600	7.0	950	890	<0.005	<0.010	0.0029	71	7.7	<0.01	–
22	E04222*	14.73	31.8	8.2	580	7.5	270	630	0.009	<0.010	0.0056	55	6.8	0.01	106
23	E04232°	125.57*	29.8	8.1	340	6.8	450	1100	0.018	<0.010	0.0050	44	5.9	<0.01	73
24	E04242*	13.62	29.9	8.1	460	7.1	220	300	0.007	<0.010	0.0029	54	6.9	<0.01	85
25	E04252°	88.67*	30.9	8.1	480	6.6	300	910	0.007	<0.010	0.0050	59	7.6	<0.01	103
26	E04262	13.00	32.0	8.2	500	6.8	140	250	0.006	<0.010	0.0034	50	6.5	<0.01	76
27	E04272°	110.46*	30.6	8.4	410	7.5	700	870	0.009	<0.010	0.0048	57	7.8	<0.01	109
28	E04282*	14.43	31.7	8.5	390	6.7	76	130	0.010	0.010	0.0031	42	6.4	<0.01	68
29	E04292°	63.82	29.3	8.5	430	7.1	94	280	0.013	0.010	0.0041	42	6.4	<0.01	69
30	E04302*	13.24	29.7	8.0	400	7.1	160	230	0.011	0.010	0.0036	47	6.4	<0.01	81
Monthly Average									0.013	0.006	0.0043	52	6.9	0.01	96

* Sampled at 11:00
° Sampled at 16:30–17:00
– No. Data
* By Float Method

Table B-34 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR MAY, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. °C	pH	EC (μS/cm)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E05012°	12.16	28.4	8.2	550	7.5	190	290	0.012	0.010	0.0030	60	7.4	<0.01	122
2	E05022•	15.01	30.6	8.2	580	7.2	150	340	0.010	0.010	0.0047	72	8.3	<0.01	136
3	E05032°	79.11	29.2	8.4	480	7.6	1200	1900	0.006	0.010	0.0045	57	7.5	<0.01	121
4	E05042•	11.56	32.4	8.0	460	6.6	200	340	0.006	0.010	0.0033	55	7.2	<0.01	111
5	E05052°	21.53	30.7	8.4	510	6.6	700	1200	0.015	0.010	0.0034	61	6.9	<0.01	121
6	E05062•	17.62	30.7	8.4	490	7.4	300	490	0.060	0.010	0.0043	55	6.5	<0.01	93
7	E05072°	52.25	30.7	8.2	520	6.9	2000	3800	0.007	<0.010	0.0046	70	7.3	<0.01	157
8	E05082•	12.45	32.6	8.3	560	6.6	780	880	0.006	0.010	0.0054	71	8.1	<0.01	161
9	E05092°	84.96	30.8	8.5	380	7.2	220	550	0.009	0.010	0.0059	59	8.1	<0.01	114
10	E05102•	18.26	31.9	7.8	420	6.4	800	970	<0.005	0.007	0.0029	47	6.3	<0.01	90
11	E05112°	78.48	31.4	8.2	350	7.0	320	790	0.039	0.007	0.0051	53	7.7	0.05	113
12	E05122•	22.43	30.8	8.1	420	6.8	1700	1500	0.006	<0.005	0.0042	46	7.0	0.01	96
13	E05132°	58.34	31.4	8.1	450	6.6	2000+	3800	<0.005	<0.005	0.0048	67	7.7	<0.01	135
14	E05142•	16.66	31.0	8.0	500	6.7	2000+	3000	0.006	0.005	0.0058	70	8.4	0.02	149
15	E05152°	81.80	31.5	8.1	390	7.3	910	1700	0.020	0.005	0.0047	51	6.7	<0.01	102
16	E05162•	14.91	32.4	8.0	470	7.0	950	1200	<0.005	0.005	0.0031	63	7.5	<0.01	123
17	E05172°	47.24	31.5	8.1	600	6.8	1400	2200	0.024	0.007	0.0037	93	8.6	<0.01	180
18	E05182•	31.40	30.7	8.1	450	6.9	2000+	2300	0.008	<0.005	0.0037	51	7.0	0.02	119
19	E05192°	90.85	31.0	8.3	330	7.2	260	480	0.010	<0.005	0.0042	38	6.4	<0.01	62
20	E05202•	30.54	28.8	8.5	420	6.6	440	720	0.006	<0.005	0.0022	47	7.4	<0.01	92
21	E05212°	72.76	28.7	8.3	360	7.2	290	930	0.008	<0.005	0.0044	40	6.2	<0.01	68
22	E05222•	22.68	27.1	8.5	430	7.2	1800	1500	0.005	<0.005	0.0023	53	7.4	<0.01	110
23	E05232°	88.61	27.4	8.3	440	7.3	700	960	0.030	0.008	0.0045	52	7.2	<0.01	103
24	E05242•	18.70	28.6	8.3	520	6.9	1400	1600	0.006	0.018	0.0031	64	7.4	<0.01	139
25	E05252°	73.71	29.4	8.4	470	7.0	640	1200	0.008	0.006	0.0046	68	7.6	<0.01	138
26	E05262•	15.59	29.7	8.3	520	7.2	1500	1700	0.008	<0.005	0.0027	60	7.2	<0.01	120
27	E05272°	59.71	30.0	8.4	460	7.0	910	1500	0.006	<0.005	0.0032	49	6.6	<0.01	103
28	E05282•	50.32	28.3	8.3	400	6.9	380	730	0.007	<0.005	0.0038	37	5.8	<0.01	59
29	E05292°	88.38	29.1	8.5	300	7.4	190	790	0.007	<0.005	0.0037	42	6.3	<0.01	74
30	E05302•	52.23	27.3	8.4	350	7.4	810	650	0.010	<0.005	0.0037	37	5.6	<0.01	58
31	E05312°	98.39	29.3	8.6	390	7.2	230	450	0.007	<0.005	0.0028	46	6.3	<0.01	74
Monthly Average									0.012	0.005	0.0041	53	7.0	0.01	104

• Sampled at 11:00
° Sampled at 16:30–17:00
* By float method

Table B-35 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR JUNE, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E06012°	93.50*	30.2	8.3	340	7.1	220	290	0.008	0.005	0.0033	41	5.3	<0.01	59
2	E06022•	14.66	30.2	8.2	400	7.0	120	180	0.007	<0.005	0.0025	44	6.4	<0.01	67
3	E06032°	55.75	30.0	8.3	380	7.0	140	460	0.018	<0.005	0.0043	49	6.5	<0.01	85
4	E06042•	70.39	28.2	8.2	350	6.9	460	770	0.005	<0.005	0.0037	46	6.3	<0.01	71
5	E06052°	96.53*	28.8	8.2	320	7.4	200	390	0.010	<0.005	0.0032	40	5.9	<0.01	54
6	E06062•	30.69	28.3	8.2	310	7.1	180	260	0.010	<0.005	0.0032	42	6.0	<0.01	63
7	E06072°	91.25*	28.2	8.3	300	7.4	94	180	0.037	<0.005	0.0041	36	6.2	0.03	50
8	E06082•	29.24	28.8	8.2	390	7.2	380	350	0.007	<0.005	0.0037	42	7.0	<0.01	73
9	E06092°	78.05*	29.5	8.2	360	7.0	290	580	0.008	<0.005	0.0046	48	7.4	<0.01	86
10	E06102•	17.64	28.8	8.1	420	7.1	1000	1000	0.007	<0.005	0.0028	52	7.0	<0.01	92
11	E06112°	49.36	29.9	8.2	420	7.1	1200	1600	0.006	<0.005	0.0038	58	7.2	<0.01	111
12	E06122•	13.98	28.6	8.1	430	7.2	590	520	0.006	<0.005	0.0035	56	7.6	<0.01	110
13	E06132°	53.22	29.4	8.2	460	7.0	1200	1900	0.006	<0.005	0.0035	62	7.8	<0.01	136
14	E06142•	55.70	28.3	8.2	380	6.8	690	910	0.008	<0.005	0.0030	50	7.2	<0.01	84
15	E06152°	49.99	27.5	8.2	350	7.4	280	530	<0.005	<0.005	0.0032	46	6.6	<0.01	72
16	E06162•	57.23	26.2	8.1	360	7.4	340	550	0.007	<0.005	0.0035	44	7.0	<0.01	72
17	E06172•	20.64	27.9	8.0	480	6.8	350	480	0.006	<0.005	0.0045	60	8.6	<0.01	130
18	E06182°	64.91	26.1	8.0	400	6.9	300	1300	<0.005	<0.005	0.0043	50	6.8	<0.01	103
19	E06192•	43.83	27.4	8.1	360	7.2	390	740	<0.005	<0.005	0.0039	44	7.0	<0.01	78
20	E06202°	60.83	27.3	8.2	380	6.9	890	1500	<0.005	<0.005	0.0032	42	5.5	<0.01	79
21	E06212•	49.09	26.9	8.2	360	7.4	850	1900	<0.005	<0.005	0.0034	46	7.2	<0.01	83
22	E06222°	61.98*	25.8	8.2	440	6.9	750	980	0.057	<0.005	0.0030	44	5.8	0.04	79
23	E06232•	71.59*	25.7	8.0	580	7.1	1200	2100	<0.005	<0.005	0.0030	51	6.4	<0.01	98
24	E06242°	89.35*	25.4	8.1	390	7.1	1700	2200	<0.005	<0.005	0.0029	49	6.4	<0.01	104
25	E06252•	70.93	25.7	7.9	870	7.5	1900	2400	<0.005	<0.005	0.0020	81	7.4	<0.01	130
26	E06262°	86.66	25.2	8.2	410	7.1	1300	2400	0.057	<0.005	0.0019	53	6.3	0.05	109
27	E06272•	97.36*	25.5	8.0	400	7.1	1600	3100	0.059	<0.005	0.0030	49	5.2	0.06	103
28	E06282°	84.39	27.0	8.2	480	7.2	1400	2400	0.008	<0.005	0.0029	58	5.9	<0.01	106
29	E06292•	85.89	25.9	8.2	430	7.3	1800	3300	0.081	<0.005	0.0028	55	5.7	0.10	118
30	E06302°	99.87	25.8	8.2	360	7.8	1100	2000	0.006	<0.005	0.0025	41	5.0	<0.01	83
Monthly Average									0.018	0.003	0.0032	49	6.3	0.02	89

• Sampled at 11:00
° Sampled at 16:30–17:00
* By float method

Table B-36 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR JULY, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E07012•	75.45	24.5	7.9	420	8.0	1300	2600	0.095	<0.005	0.0030	52	6.5	0.11	111
2	E07022°	68.28	26.2	8.2	390	7.5	1000	1900	0.018	<0.005	0.0029	48	6.3	0.01	102
3	E07032•	90.82	24.7	8.0	350	7.9	1300	1800	0.052	<0.005	0.0025	44	6.2	0.06	89
4	E07042°	70.09	26.1	8.2	360	7.0	570	1000	0.038	<0.005	0.0031	43	6.0	0.03	90
5	E07052•	77.39	24.7	8.2	380	7.1	600	940	0.058	<0.005	0.0030	47	6.2	0.05	92
6	E07062°	73.61	25.4	8.3	380	7.5	440	860	0.024	0.007	0.0034	44	6.8	0.03	78
7	E07072•	111.77*	23.9	8.0	500	7.5	2000+	6500	0.029	<0.005	0.0014	66	6.8	0.04	149
8	E07082°	110.72*	27.1	8.2	350	7.0	750	1600	0.013	<0.005	0.0034	44	6.4	0.02	78
9	E07092•	92.02	26.3	8.3	400	7.0	1400	2500	0.055	<0.005	0.0026	54	7.4	0.06	92
10	E07102°	82.22	24.3	8.4	350	7.2	620	880	0.028	<0.005	0.0025	46	6.6	0.03	80
11	E07112•	95.25	24.9	8.2	350	7.6	630	940	0.060	<0.005	0.0045	42	7.0	0.07	80
12	E07122°	78.01	26.8	8.2	360	7.0	810	1200	0.054	<0.005	0.0032	46	6.9	0.06	77
13	E07132•	70.66	25.2	8.1	360	7.3	820	1300	0.130	<0.005	0.0021	48	7.0	0.15	76
14	E07142°	74.30	26.3	8.3	350	7.3	650	950	<0.005	<0.005	0.0034	46	6.6	<0.01	79
15	E07152•	88.54	23.4	8.2	370	7.7	760	1100	0.005	<0.005	0.0025	46	6.7	<0.01	72
16	E07162°	92.53	23.4	8.3	340	7.9	290	640	0.009	<0.005	0.0031	40	6.5	<0.01	69
17	E07172•	82.81	22.9	8.2	400	7.5	1000	1800	0.090	<0.005	0.0025	50	7.0	0.09	100
18	E07182°	87.46	27.6	8.3	360	6.9	690	1000	0.027	<0.005	0.0028	48	6.5	0.02	80
19	E07192•	73.47	25.8	8.2	360	7.1	640	1400	0.075	<0.005	0.0031	48	6.7	0.06	82
20	E07202°	66.71	25.9	8.3	340	7.2	440	990	0.010	<0.005	0.0034	48	6.5	<0.01	84
21	E07212•	72.22	25.0	8.2	390	7.2	920	1800	0.014	<0.005	0.0034	54	6.8	<0.01	96
22	E07222°	83.53	26.1	8.3	340	6.8	360	680	0.014	<0.005	0.0040	42	6.4	<0.01	72
23	E07232•	81.60	24.7	8.3	370	7.1	910	1500	<0.005	<0.005	0.0029	50	6.4	<0.01	96
24	E07242°	78.08	26.8	8.3	380	6.4	850	1500	0.017	0.005	0.0038	50	6.8	0.01	91
25	E07252•	72.39	24.2	8.3	380	7.0	1500	2000	0.005	<0.005	0.0032	52	6.5	<0.01	101
26	E07262°	75.54	26.5	8.3	360	7.1	610	880	<0.005	<0.005	0.0036	44	6.5	<0.01	86
27	E07272•	67.40	24.6	8.2	350	6.9	850	1300	0.057	<0.005	0.0039	44	6.2	0.06	79
28	E07282°	75.45	26.3	8.2	350	6.7	950	1100	0.027	<0.005	0.0034	43	6.2	<0.01	79
29	E07292•	78.49	24.6	8.2	380	6.9	1300	1600	0.052	<0.005	0.0036	47	6.4	0.04	90
30	E07302°	71.35	26.7	8.2	360	7.0	960	1700	0.005	<0.005	0.0037	45	6.1	<0.01	85
31	E07312•	69.42	25.6	8.3	380	7.4	1000	1700	0.070	<0.005	0.0034	46	6.3	0.08	93
Monthly Average									0.036	0.003	0.0031	47	6.6	0.04	88

• Sampled at 11:00
° Sampled at 16:30–17:00
* By float method

Table B-37 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR AUGUST, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E08012•	79.10	25.9	8.3	380	7.2	900	1400	0.020	<0.005	0.0028	44	6.3	0.01	91
2	E08022°	84.38	24.6	8.2	360	7.3	650	2100	0.015	<0.005	0.0033	40	6.4	0.01	84
3	E08032•	106.19*	25.3	8.2	310	7.2	650	630	0.014	<0.005	0.0034	34	6.1	0.01	54
4	E08042°	77.00	25.3	8.2	340	7.2	810	1400	0.007	<0.005	0.0022	43	6.5	<0.01	84
5	E08052•	85.10*	25.9	8.3	370	7.1	620	920	0.006	<0.005	0.0030	42	6.2	<0.01	66
6	E08062°	114.50*	24.8	8.2	300	7.0	340	660	0.005	<0.005	0.0034	40	5.9	<0.01	59
7	E08072•	122.47*	24.7	8.4	300	7.3	260	580	0.012	<0.005	0.0034	38	5.8	<0.01	58
8	E08082°	109.93*	24.4	8.3	340	7.9	360	820	0.170	0.005	0.0037	43	6.3	0.21	73
9	E08092•	135.40*	24.7	8.4	310	8.0	220	530	0.007	0.006	0.0042	36	5.7	0.02	52
10	E08102	97.64*	25.2	8.3	330	7.4	700	1000	0.130	0.005	0.0023	42	6.4	0.14	63
11	E08112•	83.47	27.8	8.3	340	7.1	420	780	0.005	0.005	0.0043	42	6.3	<0.01	65
12	E08122°	34.67	28.2	8.2	440	7.8	1300	2000	<0.005	0.005	0.0034	59	5.9	<0.01	122
13	E08132•	90.00*	27.9	8.3	300	7.3	380	950	0.013	<0.005	0.0042	38	5.6	0.01	54
14	E08142°	93.87	26.7	8.2	390	7.0	1300	1800	<0.005	<0.005	0.0041	54	6.6	<0.01	103
15	E08152•	162.18*	26.8	8.0	350	7.3	1900	3400	0.032	<0.005	0.0020	49	5.5	0.05	90
16	E08162°	103.46*	26.6	8.0	340	7.4	1600	2200	0.035	<0.005	0.0020	46	6.2	0.11	84
17	E08172•	304.38*	25.6	7.8	290	8.1	2000+	2700	0.006	<0.005	0.0020	37	5.6	0.01	73
18	E08182°	184.67*	26.5	8.0	290	7.6	1300	1500	0.015	<0.005	0.0021	39	5.8	0.02	68
19	E08192•	172.57*	26.2	8.1	290	7.8	1300	2300	0.011	<0.005	0.0022	41	6.1	0.02	71
20	E08202°	161.19*	26.7	8.0	280	7.9	880	1500	0.015	<0.005	0.0017	40	6.1	0.02	68
21	E08212•	165.51*	27.8	8.1	290	6.8	740	930	0.016	<0.005	0.0024	40	6.0	0.03	66
22	E08222°	171.37*	26.2	8.1	310	7.4	850	1500	0.009	<0.005	0.0021	43	6.3	0.01	73
23	E08232•	175.79*	26.5	8.4	290	7.1	680	730	0.017	<0.005	0.0022	40	6.2	0.03	61
24	E08242°	153.55*	26.8	8.1	290	7.7	710	1300	0.040	<0.005	0.0022	41	6.3	0.05	64
25	E08252•	134.61*	27.3	8.3	280	7.9	900	1400	<0.005	<0.005	0.0047	39	5.8	<0.01	55
26	E08262°	111.68*	26.5	8.1	260	7.0	650	1200	0.013	0.012	0.0040	35	5.7	0.02	47
27	E08272•	223.07*	27.3	8.1	250	7.7	420	880	0.008	0.005	0.0029	33	5.5	<0.01	46
28	E08282°	160.25*	25.5	8.0	260	7.5	500	1100	0.012	<0.005	0.0022	35	5.5	0.01	51
29	E08292•	2472.62**	24.4	7.7	180	6.8	2000+	5000	0.005	<0.005	0.0025	23	4.3	<0.01	32
30	E08302°	1588.16**	24.5	7.8	170	7.0	2000+	3100	0.011	0.005	0.0012	22	4.2	<0.01	29
31	E08312•	463.87**	25.1	7.7	200	7.4	1200	3100	0.010	<0.005	0.0012	25	4.8	<0.01	31
Monthly Average									0.014	0.003	0.0023	31	5.1	0.02	47

• Sampled at 11:00
° Sampled at 16:00–17:00
* By float method
** By float method. The section area is forecast without measuring the depth.

Table B-38 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR SEPTEMBER, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E09012•	523.59**	26.5	8.0	230	7.3	880	800	0.0065	0.01	0.0064	42	5.2	<0.01	33
2	E09022°	387.68**	26.2	8.2	280	7.2	650	640	<0.005	<0.005	0.0013	26	5.2	<0.01	36
3	E09032•	335.61**	25.6	8.0	280	6.4	610	500	0.007	<0.005	0.0012	30	5.9	<0.01	37
4	E09042°	437.08**	26.2	8.4	220	7.8	600	480	0.012	<0.005	0.0014	27	5.5	<0.01	40
5	E09052•	349.94**	26.3	8.0	260	7.4	490	260	0.018	<0.005	0.0015	34	6.4	0.03	63
6	E09062°	223.14**	27.2	8.1	220	7.0	230	270	0.008	<0.005	0.001	26	5.2	<0.01	35
7	E09072•	338.66**	26.1	8.1	230	7.5	230	260	0.014	0.005	0.0017	28	5.5	<0.01	41
8	E09082°	150.54	27.0	8.3	250	7.7	150	130	0.013	0.005	0.0018	32	6.2	0.01	54
9	E09092•	214.97	26.0	8.2	220	7.8	140	140	<0.005	<0.005	0.0012	26	5.4	<0.01	38
10	E09102°	147.39	28.2	8.4	250	6.9	140	120	0.012	<0.005	0.0015	31	6.0	<0.01	53
11	E09112•	224.48	26.8	8.0	240	6.6	200	220	0.016	<0.005	0.0021	30	5.8	0.17	48
12	E09122°	106.36	27.1	8.2	270	6.4	140	110	0.026	<0.005	0.0014	34	6.6	0.24	47
13	E09132•	230.52	26.1	8.2	230	6.3	170	260	0.012	<0.005	0.0016	28	5.6	<0.01	42
14	E09142°	107.89	27.4	8.0	280	6.6	89	°100	0.016	<0.005	0.0016	34	6.1	0.01	55
15	E09152•	140.88	25.8	8.2	220	7.0	160	150	0.007	<0.005	0.0013	27	5.3	<0.01	36
16	E09162°	152.22	27.4	8.1	260	7.1	130	87	0.016	<0.005	0.0020	34	6.2	0.01	57
17	E09172•	159.94	25.9	8.1	260	7.4	86	83	0.009	<0.005	0.0015	32	6.1	0.01	54
18	E09182°	119.86	26.9	8.2	360	6.6	91	°100	0.011	<0.005	0.0020	31	6.0	0.01	51
19	E09192•	105.40	25.7	8.1	110	7.1	210	440	0.007	<0.005	0.0017	32	5.8	0.01	55
20	E09202°	144.41	27.3	8.1	270	7.2	210	410	0.010	<0.005	0.0017	34	5.9	0.01	56
21	E09212•	147.83	25.9	8.0	280	7.3	280	370	0.006	<0.005	0.0018	34	5.9	0.01	54
22	E09222°	133.48	26.8	8.1	290	7.4	270	630	0.025	0.005	0.0014	37	6.0	0.02	64
23	E09232•	146.53	25.9	8.1	270	7.4	230	580	0.038	<0.005	0.0015	34	5.9	0.06	58
24	E09242°	73.77	26.9	8.1	300	7.3	200	520	0.015	0.005	0.0011	44	5.9	0.01	66
25	E09252•	131.42	26.7	8.1	300	7.4	270	710	0.006	0.005	0.0019	45	5.6	0.02	70
26	E09262°	157.37	26.9	8.1	270	7.2	230	450	0.020	0.005	0.0011	42	5.5	0.02	62
27	E09272•	154.40	26.1	8.3	260	7.2	240	470	<0.005	0.006	0.0007	39	5.5	<0.01	53
28	E09282°	140.71	27.0	8.0	280	6.9	280	570	0.005	<0.005	0.0009	40	5.6	0.03	62
29	E09292•	143.07	26.4	8.0	270	7.4	260	710	0.005	<0.005	0.0019	42	5.4	0.03	48
30	E09302°	137.82	26.9	8.2	280	7.0	300	760	0.005	0.006	0.0012	43	5.5	0.02	64
Monthly Average									0.011	0.004	0.0019	33	5.7	0.02	48

• Sampled at 11:00
° Sampled at 16:00–17:00
** By float method. The section area is forecasted without measuring the depth.

Table B-39 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR OCTOBER, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E10012•	103.92	26.3	8.2	270	7.4	190	330	<0.005	<0.005	0.0027	42	5.6	0.01	55
2	E10022°	118.95	27.5	8.3	290	7.4	250	520	0.040	<0.005	0.0021	49	6.2	0.05	86
3	E10032•	65.19	27.7	8.1	300	7.1	200	470	<0.005	<0.005	0.0018	49	5.9	<0.01	84
4	E10042°	107.93	27.7	8.4	300	7.3	160	350	0.017	0.031	0.0029	49	6.1	0.02	80
5	E10052•	74.54	27.2	8.0	310	6.9	410	770	0.008	0.008	<0.0005	50	5.9	0.02	92
6	E10062°	142.81	27.0	8.4	330	7.5	240	840	0.031	0.010	0.0013	48	6.6	0.03	96
7	E10072°	49.28	26.7	8.1	340	6.9	460	760	<0.005	0.007	0.0013	56	5.6	<0.01	101
8	E10082°	155.07	27.0	8.2	300	7.4	200	460	0.021	0.008	0.0012	45	5.7	0.01	71
9	E10092•	60.30	26.6	8.1	390	6.9	1100	1200	0.035	0.007	0.0015	58	6.8	0.05	121
10	E10102°	131.45	28.0	8.2	340	7.2	210	470	0.024	0.007	0.0031	56	6.6	0.02	103
11	E10112•	87.00	27.3	8.0	300	7.2	180	560	0.009	0.006	0.0017	50	5.5	0.01	82
12	E10122°	158.26	28.0	8.3	270	6.8	97	340	0.015	0.006	0.0029	41	5.5	0.01	62
13	E10132•	112.25	26.4	8.0	270	6.8	420	640	0.007	0.007	0.0012	43	5.1	<0.01	63
14	E10142°	109.06	27.2	8.2	300	7.3	310	1000	0.008	0.006	0.0025	46	5.4	<0.01	71
15	E10152•	81.70	26.6	8.2	300	7.5	270	520	0.013	<0.005	0.0016	41	5.7	0.01	68
16	E10162°	128.84	27.8	8.2	300	7.1	150	320	0.008	<0.005	0.0016	41	5.8	<0.01	64
17	E10172•	85.47	26.5	8.1	340	7.3	280	510	0.024	<0.005	0.0020	48	6.1	0.02	93
18	E10182°	125.73	26.8	8.3	300	7.2	120	280	0.010	<0.005	0.0013	40	5.8	<0.01	66
19	E10192•	36.54	25.2	8.1	350	7.8	450	670	<0.005	<0.005	0.0013	47	5.5	<0.01	90
20	E10202°	91.34	25.6	8.3	430	7.3	850	1500	0.006	<0.005	0.0027	61	7.0	<0.01	127
21	E10212•	53.04	25.1	8.1	380	7.7	700	1400	<0.005	<0.005	0.0023	52	6.0	<0.01	105
22	E10222°	77.79	25.0	8.2	360	7.5	760	1800	0.027	<0.005	0.0021	54	6.4	0.03	110
23	E10232•	39.16	24.9	8.2	420	7.5	1500	1700	0.005	<0.005	0.0029	61	5.8	<0.01	127
24	E10242°	139.56	26.3	8.2	490	7.1	900	3300	0.023	<0.005	0.0020	70	7.5	0.02	162
25	E10252•	40.41	25.8	8.1	390	7.1	610	720	<0.005	<0.005	0.0013	53	5.8	<0.01	115
26	E10262°	70.08	27.4	8.2	380	7.4	390	1200	0.039	<0.005	0.0038	52	6.9	0.01	111
27	E10272•	123.97	26.5	8.1	380	7.4	390	820	0.005	<0.005	0.0020	48	6.3	<0.01	107
28	E10282°	92.61	25.4	8.2	310	7.8	320	1200	0.040	0.029	0.0028	49	6.0	0.04	70
29	E10292•	433.50*	24.6	7.5	380	7.9	2000+	13000	0.010	<0.005	0.0005	48	4.3	<0.01	123
30	E10302°	296.49*	25.8	8.1	280	7.1	580	940	0.011	<0.005	0.0015	31	4.9	0.01	45
31	E10312•	158.28	24.6	8.3	260	7.4	410	640	0.008	<0.005	0.0018	31	5.2	0.01	48
Monthly Average									0.015	0.006	0.0018	47	5.7	0.01	88

• Sampled at 11:00
° Sampled at 16:00–17:00
* By float method

Table B-40 CHEMICAL ANALYSES OF THE FILTRATE AT FIXED POINT "E" FOR NOVEMBER, 1984

Date	Sample No.	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	DO (mg/ℓ)	Turb. (ppm)	SS (mg/ℓ)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
1	E11012°	113.30	26.0	8.3	280	7.5	320	480	0.010	<0.005	0.0017	34	5.4	0.01	54
2	E11022•	139.56	25.8	8.1	300	7.6	410	1300	0.018	<0.005	0.0021	36	5.5	<0.01	60
3	E11032°	152.53	27.0	8.2	270	7.5	200	400	0.012	<0.005	0.0019	33	5.5	<0.01	54
4	E11042•	151.26	25.9	8.2	280	7.5	180	600	0.024	<0.005	0.0027	34	5.6	0.02	55
5	E11052°	145.08	26.7	8.3	290	7.5	250	690	0.008	<0.005	0.0014	33	5.7	<0.01	60
6	E11062•	112.51	26.0	8.3	280	7.3	200	570	0.007	<0.005	0.0012	33	5.7	<0.01	59
7	E11072°	112.79	27.4	8.3	330	7.2	310	660	0.012	<0.005	0.0012	40	5.8	0.01	82
8	E11082•	67.21	27.2	8.2	390	7.3	780	990	0.006	<0.005	0.0012	51	5.9	<0.01	123
9	E11092°	130.97	27.0	8.2	390	7.2	390	1600	0.025	<0.005	0.0014	53	6.8	0.02	123
10	E11102•	49.51	25.7	8.2	390	7.1	440	660	<0.005	<0.005	0.0025	48	6.3	<0.01	100
11	E11112°	82.73	27.2	8.3	430	6.9	460	950	0.008	<0.005	0.0035	54	7.0	0.01	124
12	E11122•	113.20	25.9	8.2	310	7.2	210	430	0.005	<0.005	0.0027	38	6.0	<0.01	76
13	E11132°	138.25	26.5	8.3	290	7.2	140	260	0.035	0.006	0.0028	35	5.8	0.04	62
14	E11142•	141.89	25.1	8.2	290	7.5	200	420	0.005	<0.005	0.0016	36	5.8	<0.01	65
15	E11152°	143.58	26.9	8.3	290	7.1	240	450	<0.005	<0.005	0.0024	38	5.5	<0.01	60
16	E11162•	140.01	26.0	8.2	310	7.5	450	900	0.014	<0.005	0.0014	42	5.6	0.01	70
17	E11172°	118.89	26.2	8.3	320	7.5	200	710	0.009	<0.005	0.0027	44	6.0	<0.01	77
18	E11182•	66.34	25.7	8.1	430	7.4	600	1000	0.005	<0.005	0.0035	63	6.9	<0.01	123
19	E11192°	39.07	26.4	8.1	360	7.1	290	380	0.005	<0.005	0.0040	51	6.0	<0.01	95
20	E11202•	36.65	25.5	8.1	370	7.5	360	720	0.005	<0.005	0.0022	53	5.8	<0.01	101
21	E11212°	77.52	26.4	8.2	420	7.5	360	520	<0.005	0.005	0.0033	54	6.2	<0.01	108
22	E11222•	37.64	25.3	8.1	350	7.4	350	150	0.017	<0.005	0.0030	46	5.9	<0.01	84
23	E11232°	100.32	26.0	8.2	440	7.2	410	710	<0.005	<0.005	0.0022	48	5.6	<0.01	86
Monthly Average									0.012	0.003	0.0021	41	5.9	0.01	77

• Sampled at 11:00
° Sampled at 16:00–17:00

Table B-41 HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E" (Feb. 21 – Feb. 23)

Date	Time	Staff Gauge (m)	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC (μs/cm)	DO (mg/ℓ)	Turbidity (ppm)
Feb. 21	9:00	+0.15	19.41	23.2	8.7	450	8.0	870
	10:00	+0.12	16.55	–	–	–	–	–
	11:00	+0.10	14.66	25.2	8.6	480	7.9	950
	12:00	+0.05	–	–	–	–	–	–
	13:00	+0.01	10.53	27.4	9.0	440	7.4	750
	14:00	+0.07	18.57	–	–	–	–	–
	15:00	+0.27	55.51	27.3	7.7	480	7.5	1,400
	16:00	+0.63	>55.51	–	–	–	–	–
	17:00	+0.60	>55.51	25.6	8.5	490	7.7	1,500
	18:00	+0.45	–	25.2	8.6	460	7.7	450
	19:00	+0.32	–	25.0	9.0	370	7.5	370
	20:00	+0.45	–	24.9	8.5	370	7.8	430
	21:00	+0.47	–	24.7	8.3	360	8.1	400
	22:00	+0.48	–	24.5	8.3	340	8.2	350
	23:00	+0.47	–	24.3	8.5	340	7.9	370
	24:00	+0.51	–	24.0	8.2	370	8.1	330
Feb. 22	1:00	+0.42	–	23.4	8.4	350	8.0	330
	2:00	+0.33	–	23.0	8.6	350	7.7	300
	3:00	+0.28	–	22.6	8.2	350	8.2	390
	4:00	+0.23	–	22.3	8.1	370	7.8	500
	5:00	+0.18	–	22.2	8.4	410	7.7	890
	6:00	+0.15	–	22.0	8.2	400	7.7	1,300
	7:00	+0.18	–	21.8	8.2	400	8.3	1,000
	8:00	+0.21	–	22.0	8.5	410	8.4	1,200
	9:00	+0.19	20.06	22.9	8.3	450	8.2	1,200
	10:00	+0.15	17.07	24.0	7.5	420	8.0	1,000
	11:00	+0.10	14.21	25.2	8.6	420	8.0	980
	12:00	+0.07	–	26.7	8.9	420	7.7	900
	13:00	+0.06	10.18	27.7	8.6	420	7.4	900
	14:00	+0.08	9.77	28.6	8.2	450	7.6	950
	15:00	+0.16	20.19	28.5	8.5	480	7.3	1,300
	16:00	+0.23	34.27	27.3	8.8	550	7.6	2,800
	17:00	+0.47	44.69	27.1	8.7	490	7.7	2,600
	18:00	+0.47	–	25.3	8.6	480	7.2	870
	19:00	+0.47	–	25.8	8.8	540	7.6	700
	20:00	+0.49	–	25.5	8.8	480	7.9	650
	21:00	+0.47	–	25.4	8.8	330	7.8	600
	22:00	+0.48	–	25.4	8.9	350	8.0	500
	23:00	+0.49	–	24.8	8.9	320	8.0	500
	24:00	+0.49	–	24.4	8.0	350	8.0	540
Feb. 23	1:00	+0.47	–	24.4	8.5	360	8.0	540
	2:00	+0.48	–	23.7	8.3	360	7.8	530
	3:00	+0.41	–	23.7	8.6	350	7.7	500
	4:00	+0.30	–	22.0	7.8	350	7.6	530
	5:00	+0.23	–	22.8	7.8	370	8.1	500
	6:00	+0.20	–	22.5	8.6	380	8.2	500
	7:00	+0.18	–	22.5	8.0	350	8.3	530
	8:00	+0.11	–	–	8.7	390	–	550
	9:00	+0.17	18.81	23.8	8.6	400	8.4	530
	10:00	+0.20	17.45	24.3	8.6	410	8.0	760
	11:00	+0.16	15.52	25.3	8.8	440	7.8	1,150
	12:00	+0.13	–	26.1	8.8	480	7.4	1,080
	13:00	+0.10	11.05	27.0	8.3	450	7.4	1,960
	14:00	+0.15	16.35	27.9	8.1	450	7.6	950
	15:00	+0.20	20.65	27.4	9.5	480	7.5	1,350
	16:00	+0.17	15.81	–	–	–	–	–
	17:00	+0.43	43.90	26.9	8.6	590	7.4	2,800

– : No data

Table B-42

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(May 3 – May 4)

	Time	Staff gauge (m)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
May 3	9:00	0.55	28.4	8.4	490	7.7	800	1.5
	10:00	0.50	29.3	8.1	380	7.0	420	2.0
	11:00	0.45	30.7	8.2	390	7.4	390	2.0
	12:00	0.42	31.2	8.4	420	6.9	390	2.0
	13:00	0.41	30.4	8.3	610	7.1	360	2.0
	14:00	0.40	29.8	8.1	440	7.1	950	1.5
	15:00	0.85	29.2	8.3	510	7.3	1400	1.0
	16:00	0.95	29.1	8.1	410	7.6	960	1.5
	17:00	0.96	29.2	8.4	480	7.6	1200	1.0
	18:00	1.05	29.1	8.1	370	7.6	1500	1.0
	19:00	0.96	29.0	8.1	350	7.6	990	1.5
	20:00	0.89	28.7	8.2	350	7.6	320	2.5
	21:00	0.78	28.7	8.3	370	7.6	220	3.0
	22:00	0.73	28.3	8.1	380	7.8	230	2.5
	23:00	0.68	28.2	8.3	440	7.8	220	3.0
May 4	0:00	0.60	28.0	8.3	460	7.0	200	3.5
	1:00	0.59	27.9	8.2	450	7.1	200	3.5
	2:00	0.63	27.7	8.2	360	7.0	220	3.0
	3:00	0.61	27.6	8.2	390	7.0	220	3.0
	4:00	0.58	27.6	8.1	420	7.0	330	2.0
	5:00	0.57	27.5	8.3	400	7.2	310	2.5
	6:00	0.50	27.3	8.2	380	7.2	340	2.0
	7:00	0.54	27.4	8.3	420	7.1	330	2.0
	8:00	0.49	28.1	8.1	450	7.0	310	2.5
	9:00	0.42	28.9	8.2	430	6.6	260	3.0
	10:00	0.40	31.6	8.3	460	6.7	200	3.5
	11:00	0.37	32.4	8.0	460	6.6	200	3.5
	12:00	0.33	33.8	8.3	480	6.7	250	3.0
	13:00	0.32	34.1	8.2	500	6.6	290	3.0
	14:00	0.39	34.2	8.2	470	6.8	210	3.5
	15:00	0.47	34.3	8.2	480	6.4	600	1.5
	16:00	0.86	32.3	8.2	470	6.6	1400	0.5
	17:00	0.88	31.6	8.5	470	6.3	850	1.0

WT: Water Temperature

Table B-43

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(June 19 – June 20)

	Time	Staff gauge (m)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
June 19	9:00	0.52	26.1	8.1	410	7.4	390	1.5
	10:00	0.51	26.3	8.1	410	7.1	420	1.5
	11:00	0.42	27.4	8.1	360	7.2	390	1.5
	12:00	0.38	27.1	8.1	390	6.8	420	1.5
	13:00	0.40	27.7	8.1	380	6.8	460	1.5
	14:00	0.45	27.3	8.0	380	6.9	770	1.0
	15:00	0.49	26.9	8.0	400	6.8	790	1.0
	16:00	0.50	26.7	8.1	430	6.8	480	1.0
	17:00	0.52	26.8	8.1	390	6.9	560	1.0
	18:00	0.59	26.9	8.0	350	7.0	580	1.0
	19:00	0.72	26.0	8.2	330	7.2	750	0.5
	20:00	0.68	25.8	8.3	370	7.4	2000+	0
	21:00	0.65	25.8	8.2	340	7.9	2000+	0
	22:00	0.62	25.1	8.2	420	7.3	2000+	0
	23:00	0.61	25.3	8.1	470	7.7	2000+	0
June 20	0:00	0.60	24.9	8.0	400	7.2	2000+	0
	1:00	0.61	24.4	8.1	400	7.9	2000+	0
	2:00	0.63	24.8	8.2	460	7.7	2000+	0
	3:00	0.54	24.3	7.9	640	7.3	2000+	0
	4:00	0.58	24.2	8.0	380	7.4	2000+	0
	5:00	0.59	24.1	8.0	380	7.0	2000+	0
	6:00	0.58	24.9	8.0	420	7.3	2000+	0
	7:00	0.58	24.4	8.0	420	7.4	2000+	0
	8:00	0.58	24.3	7.9	400	7.4	2000+	0
	9:00	0.58	25.2	8.0	390	7.3	2000	0.5
	10:00	0.57	26.0	8.0	380	7.3	2000	0.5
	11:00	0.57	26.5	8.0	420	7.3	1800	0.5
	12:00	0.56	26.8	8.1	380	7.1	1500	0.5
	13:00	0.54	27.2	8.1	500	7.4	1500	0.5
	14:00	0.57	27.0	8.2	370	7.6	1400	0.5
	15:00	0.58	27.7	8.2	410	6.9	1400	0.5
	16:00	0.56	27.2	8.2	380	7.0	950	0.5
	17:00	0.58	27.3	8.2	380	6.9	890	0.5

WT: Water Temperature

Table B-44

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(July 27 – July 28)

	Time	Staff gauge (m)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transprency (cm)
July 27	9:00	0.58	24.1	8.2	410	7.3	990	0.5
	10:00	0.58	24.6	8.2	370	7.7	940	0.5
	11:00	0.59	24.6	8.2	350	6.9	850	0.5
	12:00	0.58	25.0	8.2	380	7.6	770	0.5
	13:00	0.56	25.9	8.2	360	6.8	610	1.0
	14:00	0.56	26.8	8.2	360	6.7	410	1.5
	15:00	0.58	26.5	8.2	350	6.7	350	1.5
	16:00	0.58	26.4	8.2	350	7.0	350	1.5
	17:00	0.58	25.8	8.2	360	6.7	360	1.5
	18:00	0.57	24.3	8.2	350	6.9	340	1.5
	19:00	0.54	25.6	8.2	400	7.2	310	2.0
	20:00	0.55	25.5	8.2	350	6.8	320	2.0
	21:00	0.55	25.1	8.3	360	7.2	300	2.5
	22:00	0.50	25.6	8.3	360	6.7	230	2.5
	23:00	0.58	24.2	8.3	340	7.1	210	3.0
July 28	0:00	0.50	24.4	8.2	360	7.9	210	3.0
	1:00	0.56	24.5	8.2	360	7.0	190	3.0
	2:00	0.57	24.1	8.1	360	6.8	240	2.5
	3:00	0.57	23.7	8.2	370	7.1	660	0.5
	4:00	0.58	23.6	8.2	370	7.5	730	0.5
	5:00	0.57	23.7	8.2	370	7.6	750	0.5
	6:00	0.58	23.3	8.2	360	7.7	850	0.5
	7:00	0.55	23.6	8.2	370	7.5	1000	0.5
	8:00	0.56	24.0	8.2	350	7.5	1000	0.5
	9:00	0.58	23.8	8.1	350	7.5	1100	0.5
	10:00	0.58	24.8	8.2	370	7.3	690	0.5
	11:00	0.59	25.1	8.2	380	7.0	710	0.5
	12:00	0.58	25.0	8.1	370	7.0	610	1.0
	13:00	0.58	25.9	8.2	370	6.9	1000	0.5
	14:00	0.58	26.3	8.2	360	7.4	480	1.0
	15:00	0.58	26.5	8.2	350	6.9	390	1.5
	16:00	0.57	26.5	8.2	340	6.6	460	1.0
	17:00	0.56	26.3	8.2	350	6.7	950	0.5

WT: Water Temperature

Table B-45

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(Sept. 19 – Sept. 20)

	Time	Staff gauge (m)	WT (℃)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transprency (cm)
Sept. 19	9:00	0.38	24.9	8.0	67	7.4	230	2.5
	10:00	0.36	25.3	8.0	98	7.3	250	2.5
	11:00	0.25	25.7	8.1	110	7.1	210	3.0
	12:00	0.19	26.2	8.1	96	6.6	200	3.0
	13:00	0.42	26.6	8.1	120	6.9	240	2.5
	14:00	0.42	27.1	8.1	140	6.9	240	2.5
	15:00	0.81	26.9	8.1	300	7.0	650	1.0
	16:00	0.85	26.7	8.1	250	7.3	480	1.0
	17:00	0.85	26.8	8.1	320	7.4	1300	0.5
	18:00	0.87	26.8	8.1	220	7.8	750	1.0
	19:00	0.85	26.5	8.0	220	7.4	410	1.5
	20:00	0.84	26.2	8.1	230	7.4	330	1.5
	21:00	0.79	25.9	8.1	230	7.6	300	2.0
	22:00	0.55	25.6	8.0	230	7.6	250	2.5
	23:00	0.50	25.5	8.1	240	7.5	260	2.5
Sept. 20	0:00	0.45	25.4	8.1	240	7.6	190	4.0
	1:00	0.42	25.4	8.1	240	7.6	180	4.5
	2:00	0.40	24.0	8.1	230	7.1	200	4.0
	3:00	0.30	25.0	8.1	230	7.1	230	3.5
	4:00	0.26	24.8	8.1	230	6.8	260	2.5
	5:00	0.31	24.8	8.1	230	6.8	650	1.0
	6:00	0.39	24.7	8.1	230	6.4	810	0.5
	7:00	0.40	24.7	8.1	240	7.2	1000	0.5
	8:00	0.40	25.0	8.1	260	6.7	390	1.5
	9:00	0.40	25.3	8.0	270	7.2	230	2.0
	10:00	0.38	25.6	8.1	270	7.6	190	2.5
	11:00	0.41	25.9	8.1	270	7.5	200	2.5
	12:00	0.40	26.1	8.2	270	7.1	220	2.5
	13:00	0.42	26.8	8.1	280	7.0	220	2.5
	14:00	0.41	27.3	8.0	280	7.3	220	2.5
	15:00	0.38	27.1	8.1	280	7.2	190	3.0
	16:00	0.38	27.3	8.1	270	7.4	220	2.5
	17:00	0.40	27.3	8.1	270	7.2	210	2.5

WT: Water Temperature

Table B-46

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(Oct. 19 – Oct. 20)

	Time	Staff gauge (m)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transprency (cm)
Oct. 19	9:00	0.17	25.1	8.0	320	7.3	310	2.0
	10:00	0.16	25.1	8.0	330	7.8	380	1.5
	11:00	0.17	25.2	8.1	350	7.8	450	1.5
	12:00	0.14	25.3	8.2	340	7.7	460	1.0
	13:00	0.20	25.4	8.2	330	7.4	660	1.0
	14:00	0.21	25.4	8.2	370	7.4	610	1.0
	15:00	0.32	25.5	8.2	400	7.3	320	2.0
	16:00	0.34	25.4	8.3	420	7.8	240	2.5
	17:00	0.18	25.3	8.1	350	7.6	250	2.5
	18:00	0.16	25.2	8.1	290	7.5	280	2.0
	19:00	0.11	25.2	8.1	320	7.4	290	2.0
	20:00	0.25	25.1	8.2	320	7.5	460	1.0
	21:00	0.40	25.1	8.2	320	7.5	620	1.0
	22:00	0.42	25.0	8.1	330	7.7	450	1.5
	23:00	0.39	24.9	8.2	340	7.8	450	1.5
Oct. 20	0:00	0.43	24.8	8.2	320	7.5	440	1.5
	1:00	0.20	24.7	8.2	270	7.6	450	1.5
	2:00	0.18	24.7	8.1	290	7.6	390	1.5
	3:00	0.05	24.7	8.1	300	7.7	410	1.5
	4:00	0.15	24.7	8.1	300	7.7	460	1.5
	5:00	0.08	24.6	8.1	300	7.5	460	1.5
	6:00	- 0.05	24.6	8.2	330	7.4	460	1.5
	7:00	- 0.07	24.6	8.2	320	7.3	460	1.5
	8:00	- 0.05	24.8	8.3	320	7.5	420	1.5
	9:00	- 0.14	25.0	8.2	310	7.4	700	0.5
	10:00	- 0.16	25.3	8.2	370	7.5	910	0.5
	11:00	0.09	26.1	8.2	390	7.1	850	0.5
	12:00	0.05	25.3	8.2	390	7.4	1100	0.5
	13:00	- 0.08	26.0	8.2	410	7.2	1200	0.5
	14:00	- 0.05	25.4	8.2	390	7.1	600	1.0
	15:00	0.21	25.5	8.2	380	7.2	450	1.0
	16:00	0.26	25.6	8.2	440	7.1	950	0.5
	17:00	0.22	25.6	8.3	430	7.3	850	0.5

WT: Water Temperature

Table B-47

HOURLY CHANGE OF THE WATER QUALITY AT FIXED POINT "E"

(Nov. 16 – Nov. 17)

	Time	Staff gauge (m)	WT (°C)	pH	EC (μS/cm)	DO (mg/ℓ)	Turbidity (ppm)	Transparency (cm)
Nov. 16	9:00	0.27	24.9	8.2	330	7.7	410	1.5
	10:00	0.18	25.3	8.2	330	7.4	450	1.5
	11:00	0.38	26.0	8.2	310	7.5	450	1.5
	12:00	0.39	26.0	8.3	310	7.5	380	1.5
	13:00	0.40	26.0	8.3	290	7.4	240	2.5
	14:00	0.40	27.0	8.3	290	7.3	150	3.5
	15:00	0.39	27.0	8.3	270	7.1	150	3.5
	16:00	0.28	26.9	8.3	280	7.2	190	2.5
	17:00	0.38	26.8	8.2	290	7.4	230	2.5
	18:00	0.38	26.7	8.2	290	7.5	270	2.0
	19:00	0.38	26.7	8.2	290	7.4	150	3.5
	20:00	0.37	26.6	8.2	300	7.5	130	3.5
	21:00	0.24	26.3	8.3	300	7.6	180	3.0
	22:00	0.38	25.9	8.3	300	7.4	110	4.0
	23:00	0.38	25.6	8.2	310	7.3	320	1.5
Nov. 17	0:00	0.39	25.4	8.3	300	7.8	340	1.5
	1:00	0.39	25.3	8.2	310	7.5	330	1.5
	2:00	0.32	25.2	8.3	280	7.2	340	1.5
	3:00	- 0.13	25.1	8.2	290	7.7	350	1.5
	4:00	- 0.02	25.1	8.2	290	7.4	340	1.5
	5:00	- 0.11	25.0	8.2	300	7.7	380	1.5
	6:00	- 0.06	25.0	8.2	290	7.0	410	1.5
	7:00	- 0.11	25.0	8.2	290	7.5	440	1.0
	8:00	- 0.17	25.1	8.2	350	7.2	750	0.5
	9:00	- 0.20	25.2	8.2	370	7.5	850	0.5
	10:00	- 0.20	25.6	8.2	350	7.7	690	1.0
	11:00	- 0.20	25.7	8.2	340	7.2	740	0.5
	12:00	- 0.15	25.9	8.2	360	7.2	920	0.5
	13:00	0.11	25.8	8.2	390	7.0	880	0.5
	14:00	0.28	26.9	8.2	360	7.1	360	2.0
	15:00	0.35	26.3	8.2	410	7.3	300	2.0
	16:00	0.35	26.2	8.2	360	7.4	230	2.5
	17:00	0.35	26.2	8.3	320	7.5	200	3.0

WT: Water Temperature

Table B-48

CORRELATIONS BETWEEN THE DATA AT FIXED POINT "E"

X (Data 1)	Y (Data 2)	N	R	A	B
Flow Rate	EC	309	-0.400**	4.12418E+02	-2.36239E-01
Flow Rate	Turbidity	237	0.166**	5.87403E+02	5.17903E-01
Flow Rate	SS	304	0.278**	8.89289E+02	1.74005E+00
Flow Rate	Cu	240	-0.042	1.89530E-02	-4.84414E-06
Flow Rate	As	293	-0.270**	-3.42490E-03	-1.99534E-06
Flow Rate	Ca	295	-0.342**	5.56995E+01	-3.47924E-02
Flow Rate	Mg	295	-0.370**	6.76641E+00	-2.14112E-03
Flow Rate	SO_4	294	-0.326**	9.87692E+01	-6.79482E-02
Flow Rate	CN	114	-0.198*	6.03653E-02	-1.71416E-04
EC	Turbidity	287	0.371**	-1.31667E+02	1.99195E+00
EC	SS	304	0.197**	2.31764E+02	2.10629E+00
EC	Cu	240	0.023	1.65018E-02	5.09970E-06
EC	As	293	0.587**	3.42323E-04	7.44179E-06
EC	Ca	295	0.842**	-4.58760E+00	1.46703E-01
EC	Mg	295	0.763**	3.61792E+00	7.58175E-03
EC	SO_4	234	0.848**	-2.59249E+01	3.04933E-01
EC	CN	114	0.078	2.92944E-02	3.83683E-05
Turbidity	SS	282	0.760**	8.15151E+01	1.54234E+00
Turbidity	Cu	233	0.099	1.61203E-02	4.19957E-06
Turbidity	As	271	0.150*	2.89752E-03	3.35841E-07
Turbidity	Ca	273	0.444**	4.16666E+01	1.33361E-02
Turbidity	Mg	273	0.278**	6.18974E+00	5.19830E-04
Turbidity	SO_4	272	0.514**	6.85698E+01	3.40814E-02
Turbidity	CN	108	0.072	3.28535E-02	4.85059E-06
SS	Cu	237	0.098	1.62540E-02	1.81352E-06
SS	As	288	-0.018	3.23342E-03	-2.20278E-08
SS	Ca	290	0.230**	4.80233E+01	3.71281E-03
SS	Mg	290	0.054	6.49323E+00	5.05602E-05
SS	SO_4	289	0.350**	7.91028E+01	1.15562E-02
SS	CN	113	0.069	3.81290E-02	3.65299E-06
Cu	As	238	-0.017	3.19983E-03	-1.03385E-03
Cu	Ca	240	-0.008	5.13260E+01	-7.28009E+00
Cu	Mg	240	0.035	6.51390E+00	1.68580E+00
Cu	SO_4	240	0.040	8.95384E+01	6.86143E+01
Cu	CN	104	0.742**	5.26583E-03	1.04470E+00
As	Ca	293	0.603**	2.53104E+01	8.38090E+03
As	Mg	293	0.616**	5.00069E+00	4.82476E+02
As	SO_4	292	0.504**	4.62938E+01	1.42185E+04
As	CN	113	0.083	3.40533E-02	3.23066E+00
Ca	Mg	295	0.759**	4.29592E+00	4.32624E-02
Ca	SO_4	294	0.860**	-1.29921E-01	1.76606E+00
Ca	CN	114	0.112	2.75938E-02	3.16405E-04
Mg	SO_4	294	0.720**	-7.78915E+01	2.59451E+01
Mg	CN	114	0.105	5.84962E-03	5.80854E-03
SO_4	CN	114	0.038	3.87857E-02	4.96799E-05
Flow Rate	EC	307	-0.601**	4.56784E+02	-8.10941E-01
Flow Rate	Turbidity	285	-0.025*	6.43883E+02	-1.79429E-01
Flow Rate	SS	302	0.173**	8.33662E+02	2.45951E+00
Flow Rate	Cu	238	-0.005	1.86645E-02	-1.46205E-06
Flow Rate	As	291	-0.479**	3.92722E-03	-8.27332E-06
Flow Rate	Ca	293	-0.532**	6.29512E+01	-1.25895E-01
Flow Rate	Mg	293	-0.501**	7.13014E+00	-6.70670E-03
Flow Rate	SO_4	292	-0.492**	1.12436E+02	-2.39051E-01
Flow Rate	CN	114	-0.1984*	6.03653E-02	-1.71416E-04

N : Number of samples
R : Correlation coefficient
A, B : Regression coefficients; Y=A+BX
* : Significant at the level of 5%
** : Significant at the level of 1%
Two records at high flow rate are excluded for the lower 7 rows.

Table B-49 COMPARISON OF CHEMICAL ANALYSES OF THE FILTRATES BY GS25 AND NO. 3 ("E" POINTS)

Fixed Point	Sampling Date	Cu mg/ℓ	Zn mg/ℓ	As mg/ℓ	Ca mg/ℓ	Mg mg/ℓ	CN mg/ℓ	SO_4 mg/ℓ
E	Dec. 12	<0.02	<0.01	0.0049	52	6.3	–	102
		<0.02	<0.01	0.0038	59	7.4	–	98
E	Dec. 13	<0.02	<0.01	0.0061	68	7.2	–	110
		0.02	<0.01	0.0040	65	7.4	–	110
E	Dec. 14	<0.02	<0.01	0.001[illegible]	47	6.2	–	73
		<0.02	<0.01	0.0018	47	6.4	–	75
E	Feb. 9	0.01	<0.02	0.0055	89	6.6	<0.01	135
		0.01	<0.02	0.0044	89	7.6	<0.01	126
E	Feb. 19	0.01	<0.02	0.0046	81	6.7	<0.01	113
		0.01	<0.02	0.0045	75	6.6	<0.01	114
E	Feb. 29	<0.01	0.02	0.0044	64	6.5	<0.01	90
		0.01	<0.02	0.0045	62	6.4	<0.01	91
E	Mar. 6	0.01	<0.02	0.0043	143	9.4	<0.01	321
		<0.01	<0.02	0.0056	142	9.2	<0.01	308
E	Mar. 17	0.02	<0.02	0.0039	46	6.6	0.01	84
		0.02	<0.02	0.0044	46	6.6	0.01	84
E	Apr. 11	0.030	<0.005	0.0039	63	7.6	0.03	137
		0.029	<0.005	0.0047	61	7.8	0.03	139
E	Apr. 18	0.009	<0.005	0.0050	63	7.2	0.01	139
		<0.005	<0.005	0.0033	64	7.2	0.04	141
E	Apr. 20	0.019	0.005	0.0038	52	6.7	0.01	87
		0.022	0.014	0.0018	52	6.7	<0.01	87
E	Apr. 29	0.017	0.007	0.0050	42	6.2	<0.01	71
		0.013	0.005	0.0041	42	6.4	<0.01	69
E	May 10	<0.005	0.006	0.0036	47	6.3	<0.01	91
		<0.005	0.007	0.0029	47	6.3	<0.01	90
E	May 19	0.015	0.005	0.0033	42	6.3	<0.01	61
		0.010	<0.005	0.0042	38	6.4	<0.01	62
E	May 29	0.007	<0.005	0.0040	43	6.3	<0.01	69
		0.007	<0.005	0.0037	42	6.3	<0.01	74
E	Jun 7	0.038	<0.005	0.0040	36	6.2	0.03	51
		0.037	<0.005	0.0041	36	6.2	0.03	50
E	Jun 17	0.008	<0.005	0.0042	61	8.4	<0.01	129
		0.006	<0.005	0.0045	60	8.6	<0.01	130
E	Jun. 26	0.060	<0.005	0.0038	53	6.3	0.05	111
		0.057	<0.005	0.0019	53	6.3	0.05	109
E	Jul. 5	0.063	0.009	0.0026	47	6.3	0.05	90
		0.058	<0.005	0.0030	47	6.2	0.05	92
E	Jul. 14	0.007	<0.005	0.0028	46	6.9	<0.01	79
		<0.005	<0.005	0.0034	46	6.0	<0.01	79
E	Jul. 23	0.005	<0.005	0.0036	50	6.4	<0.01	92
		<0.005	<0.005	0.0029	50	6.4	<0.01	96
E	Aug. 3	0.015	<0.005	0.0022	34	5.9	0.01	57
		0.014	<0.005	0.0035	34	6.1	0.01	54
E	Aug. 14	0.005	<0.005	0.0041	54	6.9	<0.01	102
		<0.005	<0.005	0.0041	54	6.6	<0.01	103
E	Aug. 24	0.040	<0.005	0.0024	59	6.3	0.05	59
		0.040	<0.005	0.0022	64	6.3	0.05	64
E	Sep. 3	0.008	<0.005	0.0013	30	5.9	<0.01	39
		0.007	<0.005	0.0012	30	5.9	<0.01	37
E	Sep. 12	0.027	<0.005	0.0016	34	6.4	0.03	65
		0.026	<0.005	0.0014	34	6.6	0.02	67
E	Sep. 22	0.029	0.008	0.0012	37	6.2	0.02	65
		0.025	0.005	0.0014	37	6.0	0.02	64
E	Oct. 1	<0.005	<0.005	0.0019	40	5.6	0.02	61
		<0.005	<0.005	0.0027	42	5.6	0.01	55
E	Oct. 12	0.016	0.005	0.0023	42	5.4	0.01	61
		0.015	0.006	0.0029	41	5.5	0.01	62
E	Oct. 23	0.006	<0.005	0.0040	62	5.7	<0.01	129
		0.005	<0.005	0.0029	61	5.8	<0.01	127
E	Nov. 1	0.012	<0.005	0.0026	34	5.4	0.01	54
		0.010	<0.005	0.0017	34	5.4	0.01	54
E	Nov. 10	0.005	<0.005	0.0017	48	6.2	<0.01	113
		<0.005	<0.005	0.0025	48	6.3	<0.01	100
E	Nov. 20	0.006	<0.005	0.0020	54	5.8	<0.01	100
		0.005	<0.005	0.0022	53	5.8	<0.01	101

*Lower column: Filtered by GS25 Upper column: Filtered by No.3 filter.
– : No data

Table B-50 CHECK ANALYSES OF RAINWATER

No.	Location	Date	Time	Water Temperature (°C)	pH	EC (μS/cm)	K (mg/ℓ)	Na (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	Cl (mg/ℓ)	SO_4 (mg/ℓ)
1	San Roque	July 31	–	25.0	7.1	11.0						
2	San Manuel	Aug. 7	–	26.0	8.1	–						
3	San Manuel	Aug. 8	14:30	25.0	6.4	13.5						
4	San Manuel	Aug. 8	15:30	23.5	6.6	22.0						
5	San Roque	Aug. 9	15:15	26.0	7.0	39.2						
6	San Roque	Aug. 10	16:00	25.0	6.4	4.8						
7	San Manuel	Aug. 13	–	24.0	6.0–6.9*	5.0	7.3	0.7	7.6	1.2	<1	<1
8	San Roque	Aug. 13	15:00	23.5	7.0	2.9	1.4	2.8	8.6	2.0	<1	6
9	San Roque	Aug. 13	16:20	24	6.7	8.0	0.01	0.05	0.13	0.01	<1	<1

* Unstable

Table B-51

CHEMICAL ANALYSES OF SUSPENDED SOLID

AT FIXED POINT "E"

Sampling Date		SS Size	Analysis No.	Sample No.	Cu (ppm)	Zn (ppm)	As (ppm)	S (%)
Feb.	1–10	0.6μ–5μ	4-S4	ED212	1300	230	5.0	0.10
	11–20	"	5-S5	E0222	1200	180	5.2	0.12
	21–29	"	6-S6	E0232	1300	180	5.0	0.14
Apr.	1–10	"	S-3001	E-041	1600	320	16	<0.10
	11–21	"	S-3002	E-042	1600	310	9.1	<0.10
	21–30	"	S-3003	E-043	1300	280	9.8	<0.10
May	1–10	"	S-3004	E-051	1100	380	12	<0.10
	11–20	"	S-3005	E-052	730	240	8.7	<0.10
	20–31	"	S-3006	E-053	1100	580	5.8	<0.10
June	1–10	"	S-3007	E-061	1100	650	6.8	<0.10
	11–20	"	S-3008	E-062	1100	450	6.2	<0.10
	21–30	"	S-3009	E-063	960	310	5.9	<0.10
July	1–10	"	S-3010	E-071	1100	510	8.1	<0.10
	11–20	"	S-3011	E-072	1100	430	6.7	<0.10
	21–31	"	S-3012	E-073	1100	380	6.1	<0.10
Aug.	1–10	"	S-3013	E-081	1200	550	6.1	<0.10
	11–20	"	S-3014	E-082	900	420	10	<0.10
	21–31	"	S-3015	E-083	660	360	13	<0.10
	3	"	S-3113	E-084*	320	210	20	<0.10
Sept.	1–10	"	S-3016	E-091	510	310	13	<0.10
	11–20	"	S-3017	E-092	830	390	12	<0.10
	21–30	"	S-3018	E-093	1100	330	12	<0.10
Oct.	1–10	"	S-3019	E-101	1200	290	11	<0.10
	11–20	"	S-3020	E-102	1100	330	8.0	<0.10
	21–31	"	S-3021	E-103	1100	280	10	<0.10
Nov.	1–10	"	S-3022	E-111	1300	320	8.5	<0.10
	11–20	"	S-3023	E-112	1300	230	5.9	<0.10
Average					1080	350	9.1	<0.10

* Sample at the high water level

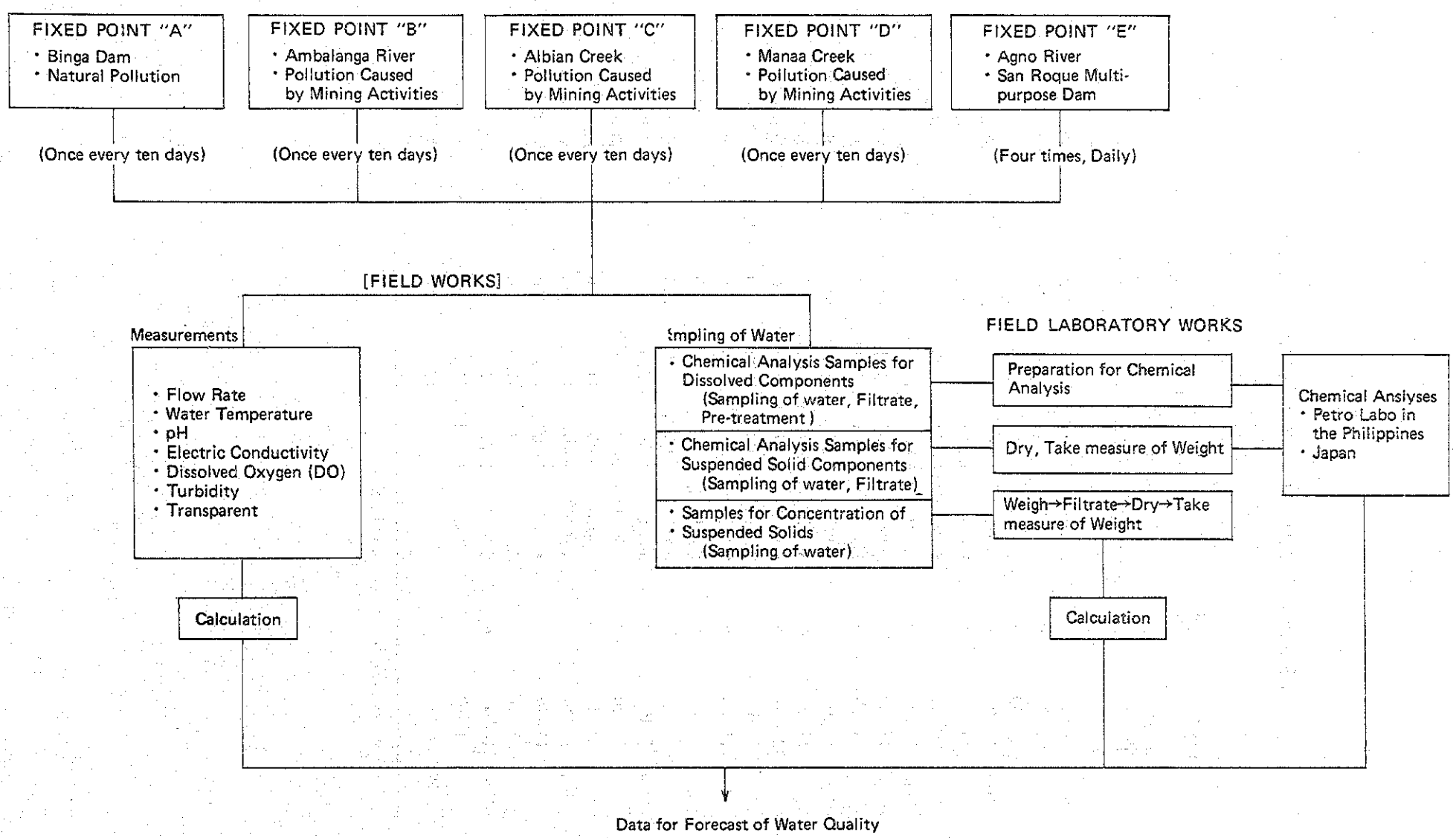

Fig. B-1 Flow Chart of Fixed Points Observation

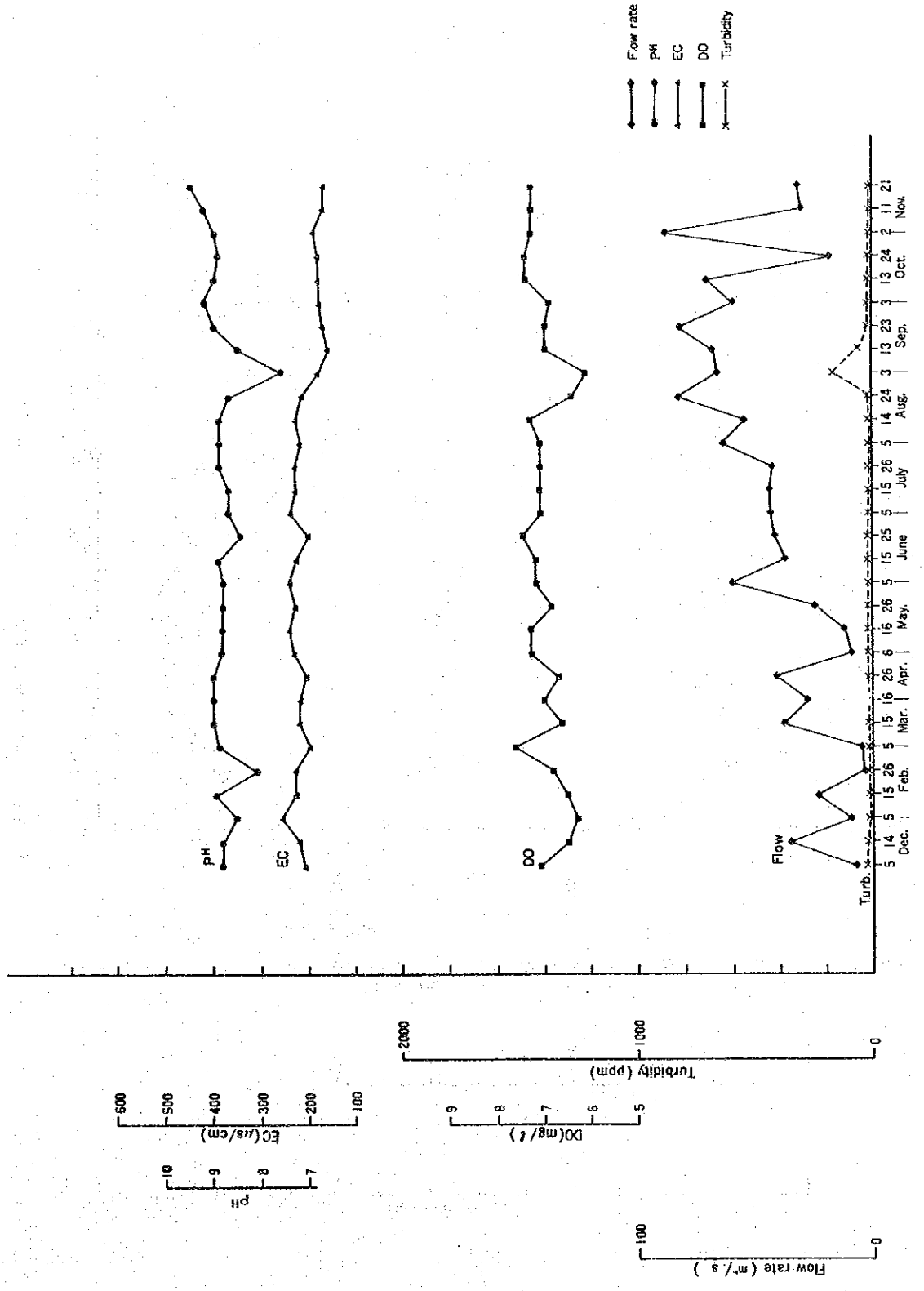

Fig. B-2 Daily Change of the Water Quality at Fixed Point "A"

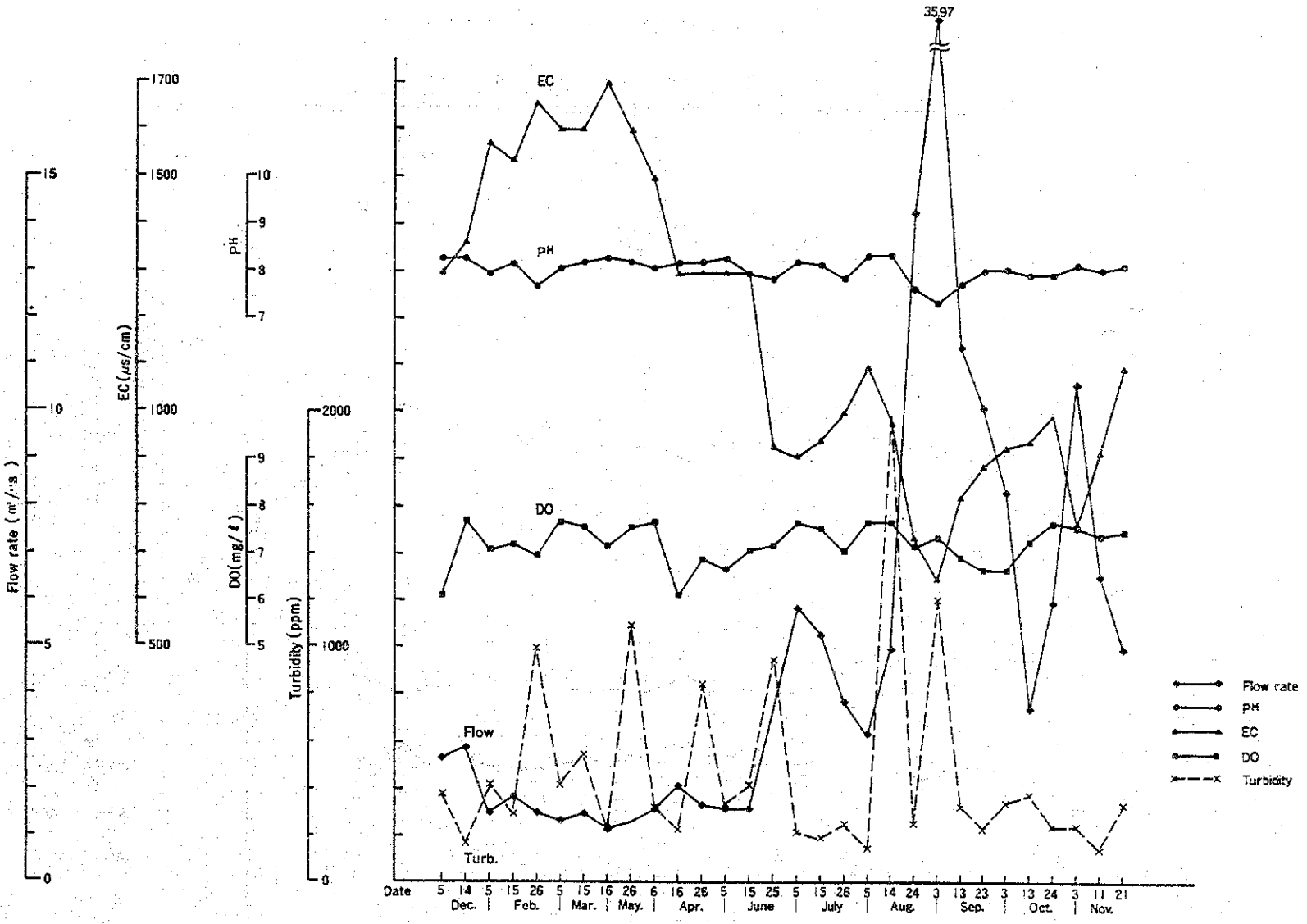

Fig. B-3 Daily Change of the Water Quality at Fixed Point "B"

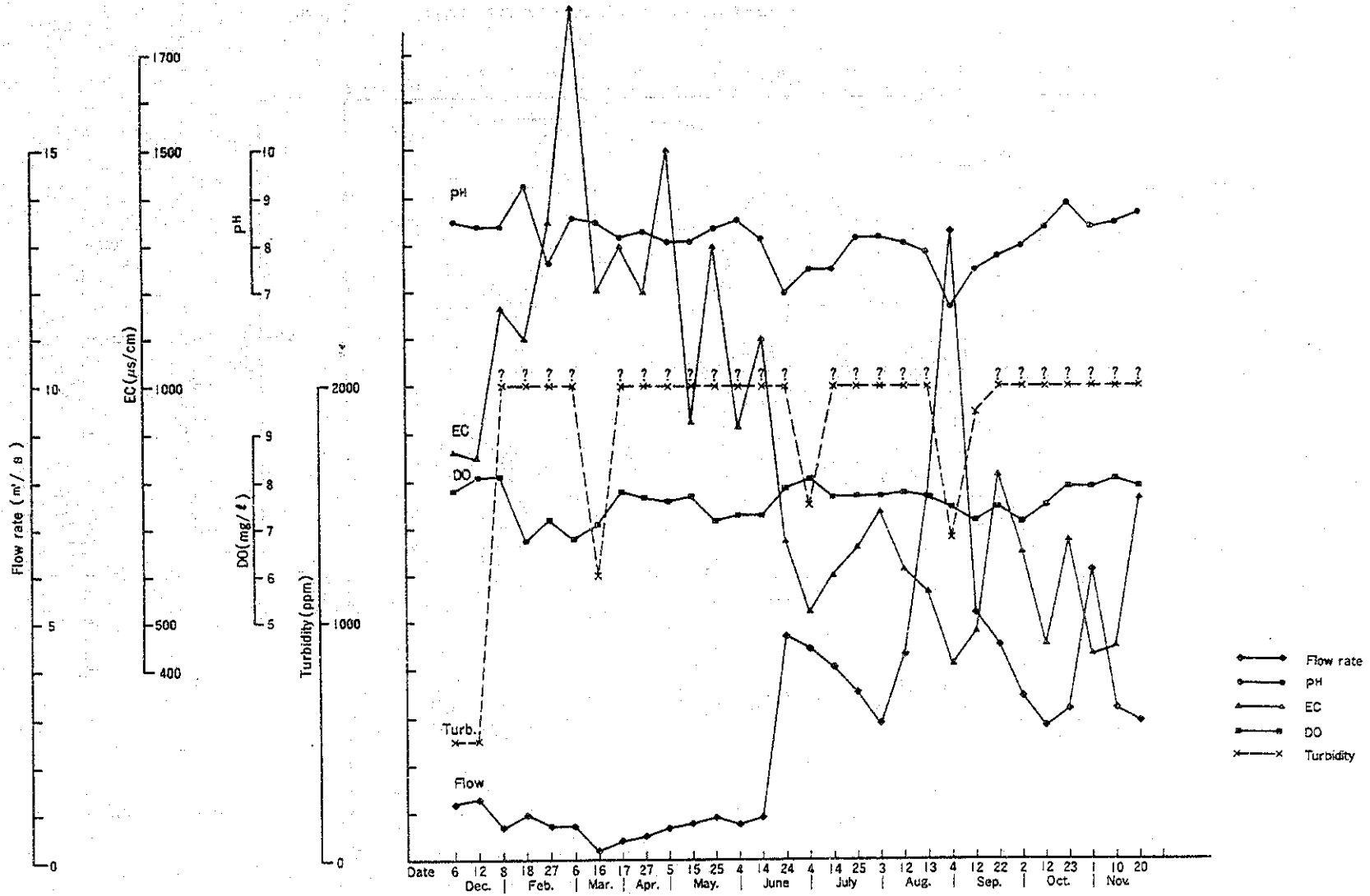

Fig. B-4 Daily Change of the Water Quality at Fixed Point "C"

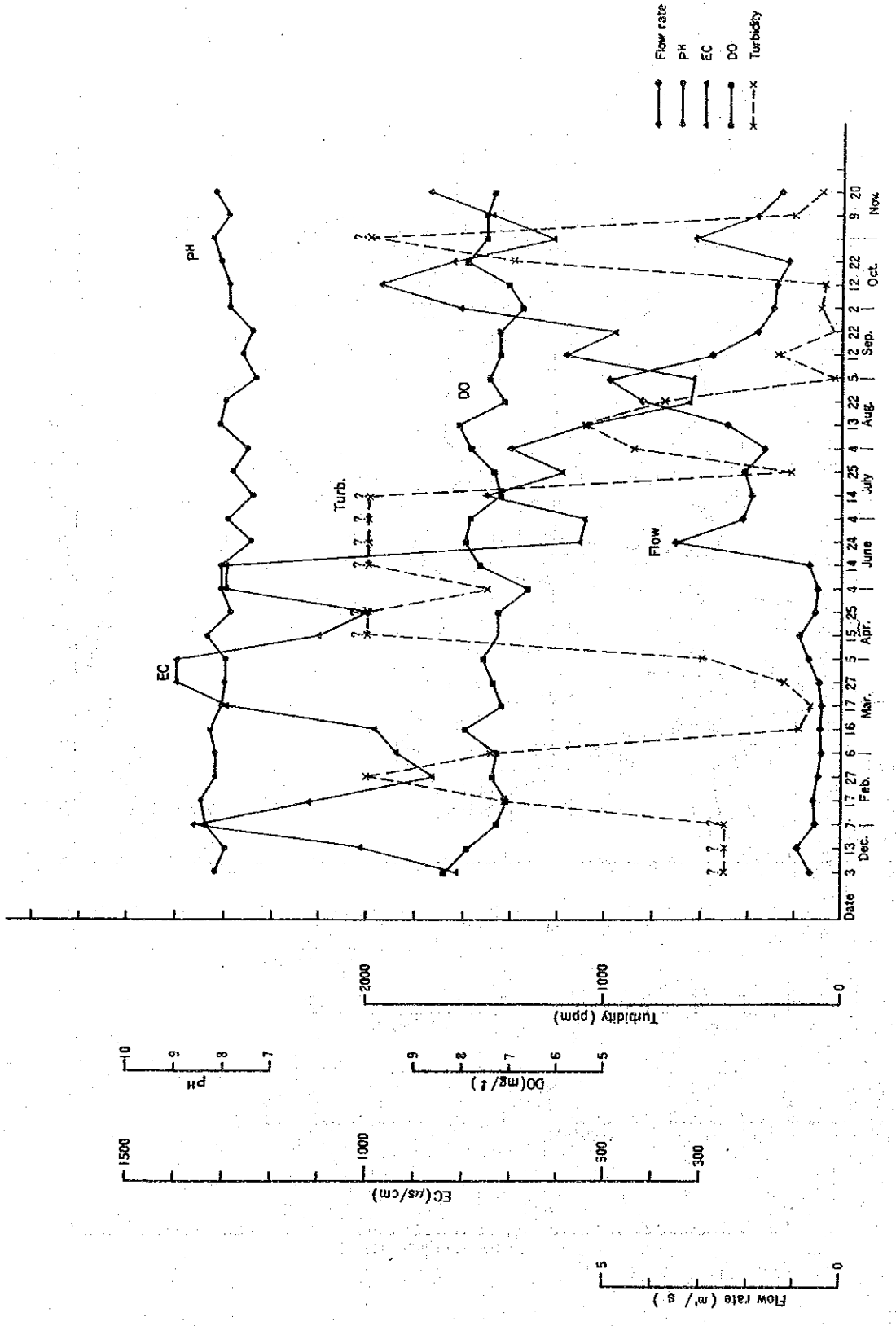

Fig. B-5 Daily Change of the Water Quality at Fixed Point "D"

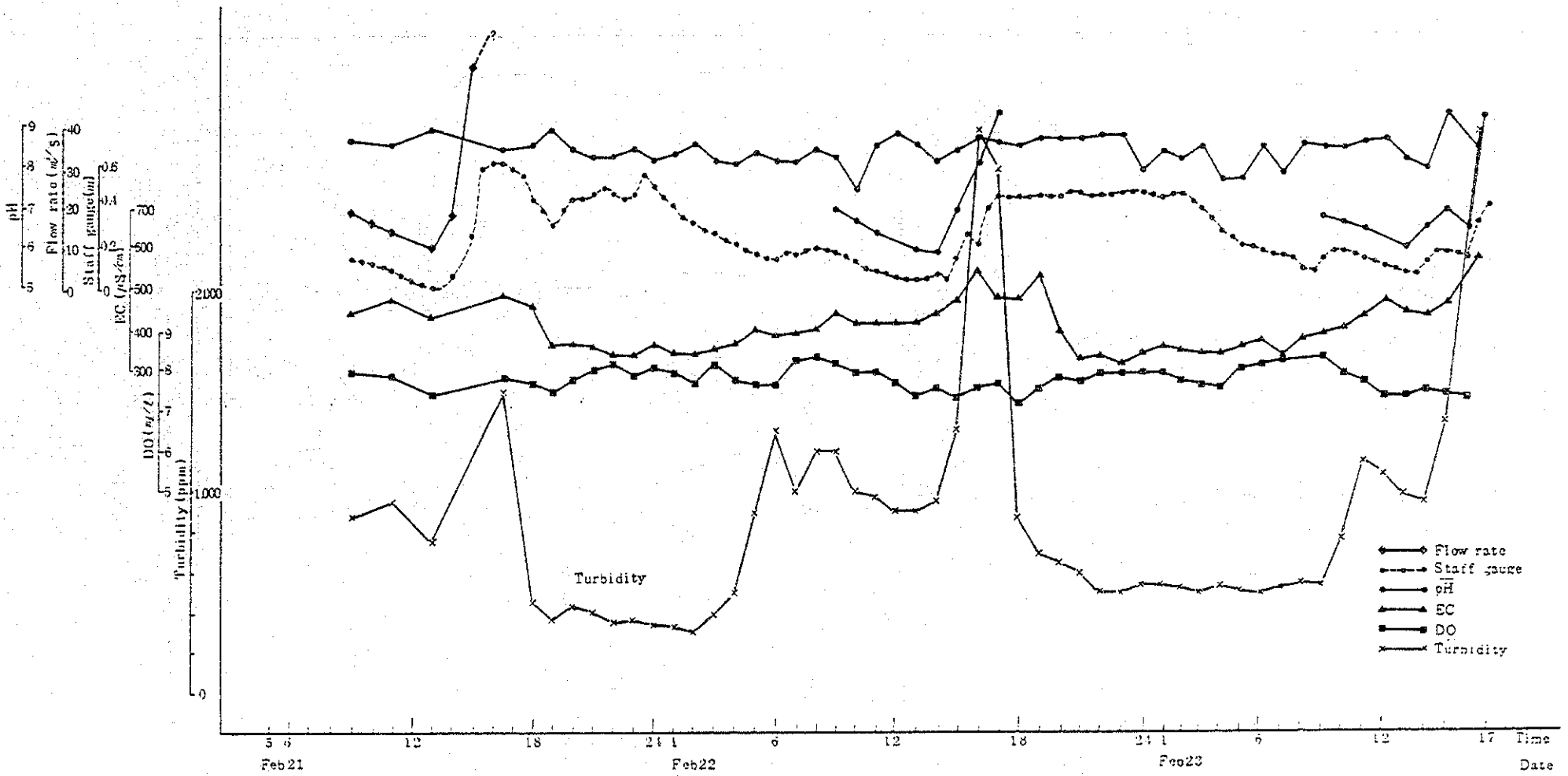

Fig. B-6 Hourly Change of the Water Quality at Fixed Point "E" for February

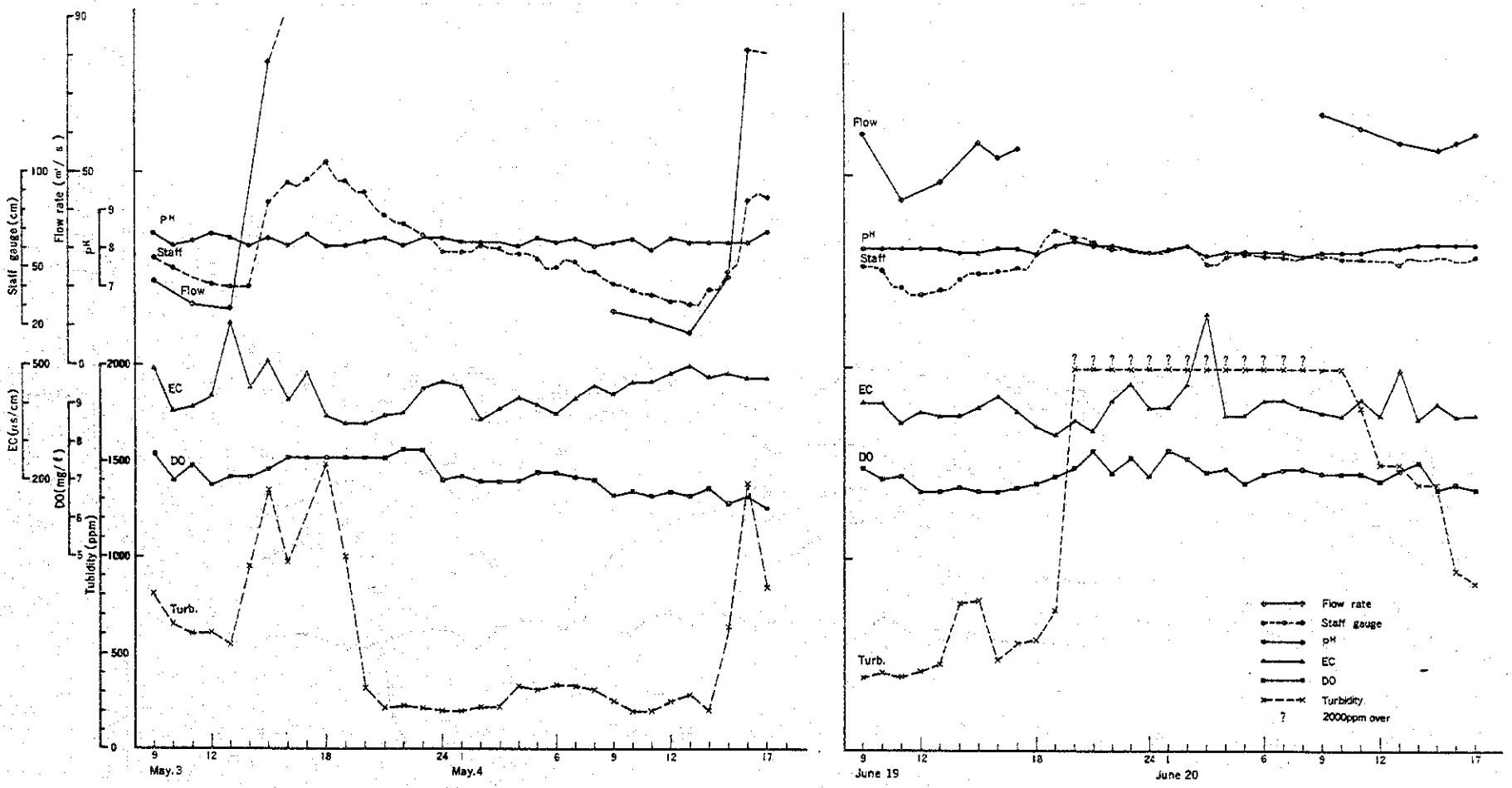

Fig. B-7 Hourly Change of the Water Quality at Fixed Point "E" for May and June

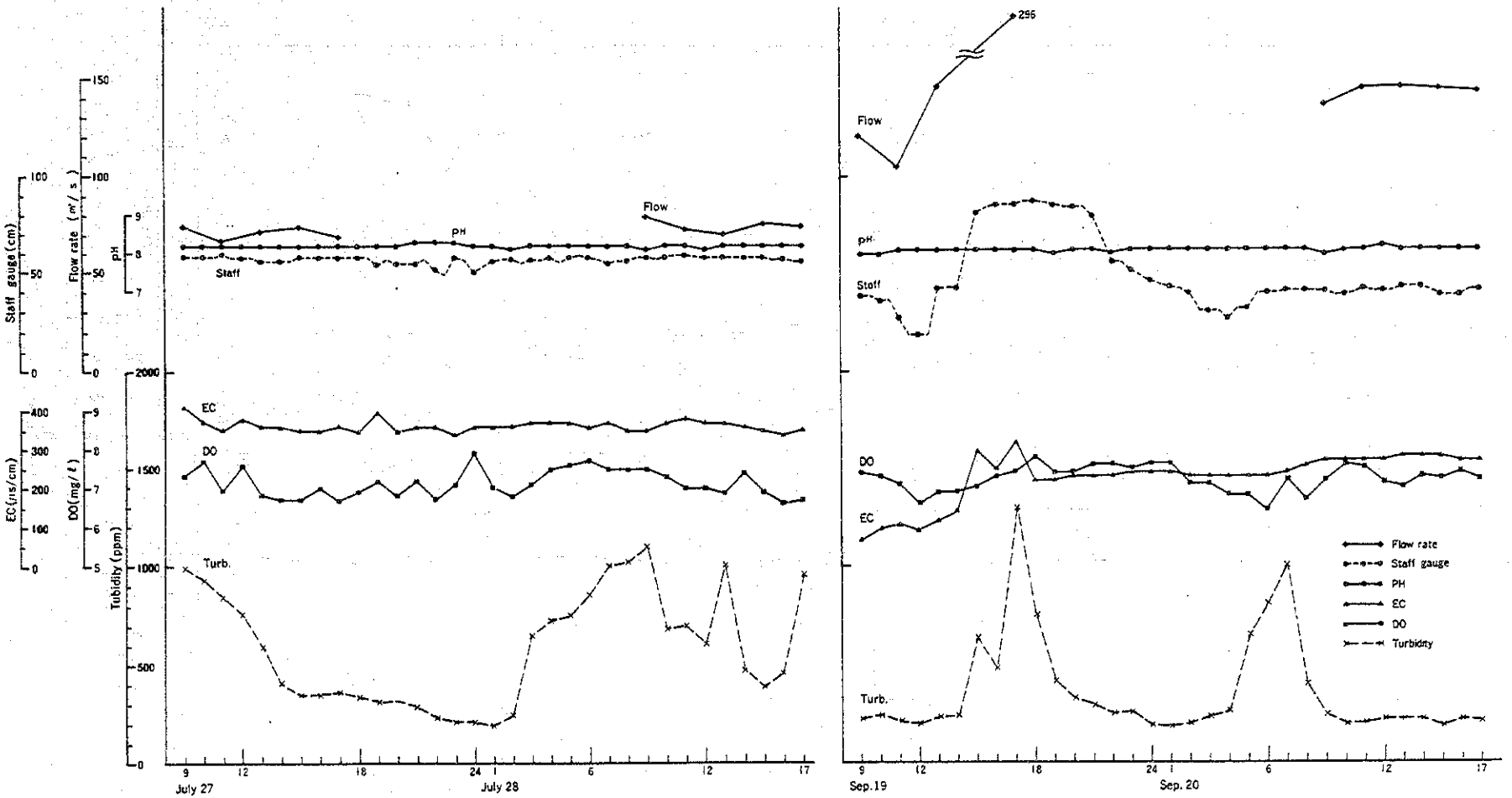

Fig. B-8 Hourly Change of the Water Quality at Fixed Point "E" for July and September

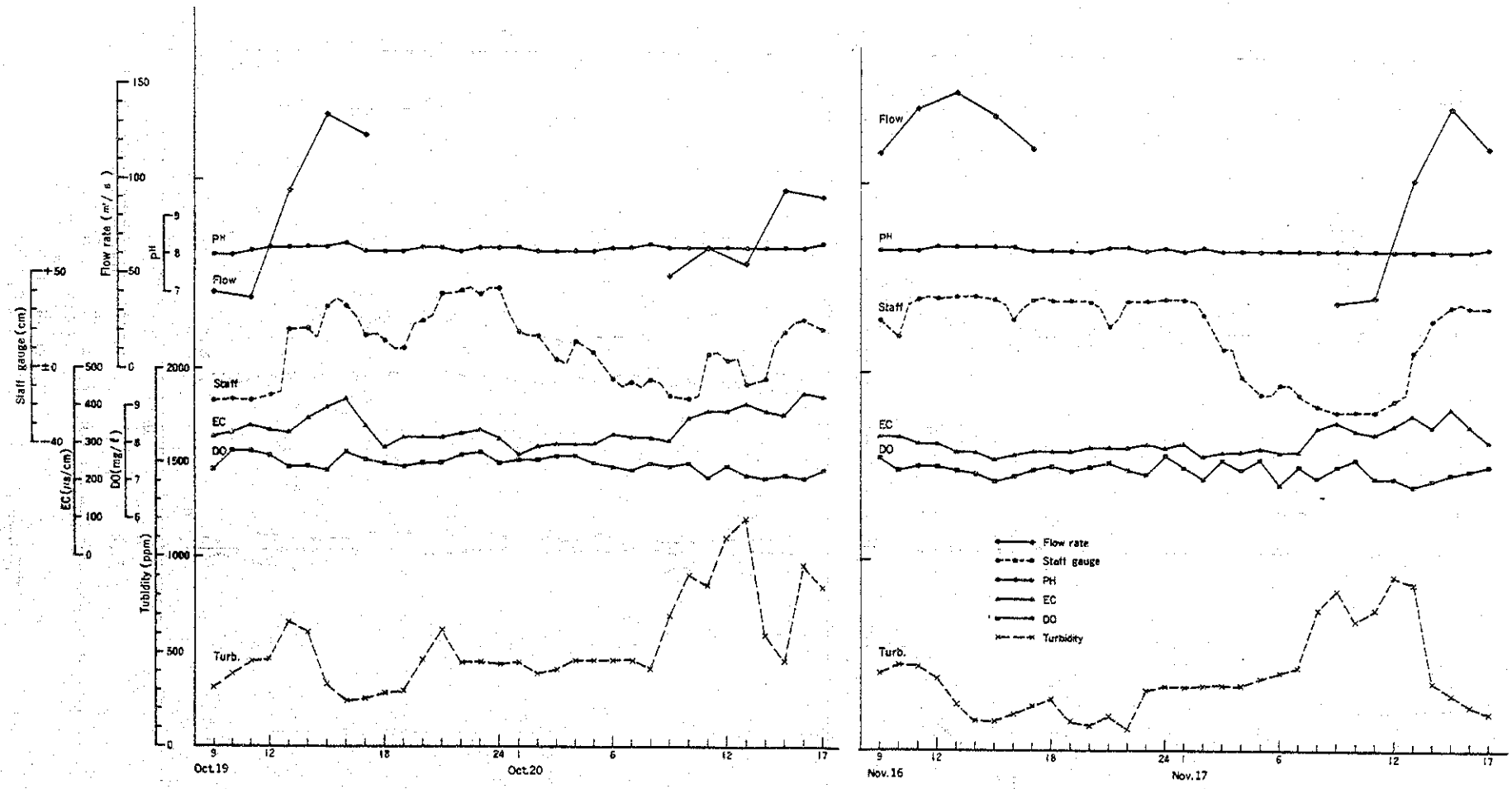

Fig. B-9 Hourly Change of the Water Quality at Fixed Point "E" for October and November

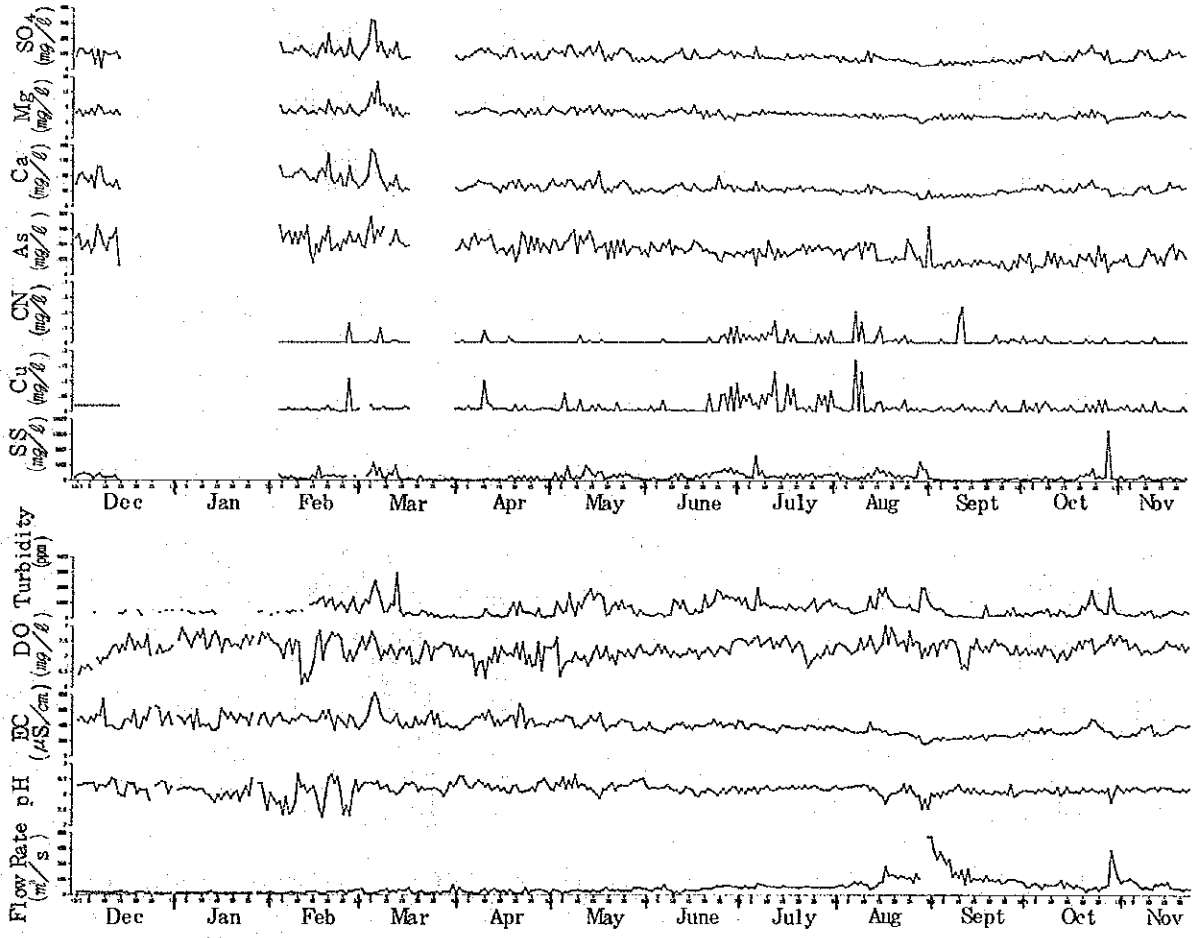

Fig. B-10 Daily Change of the Water Quality at Fixed Point "E"

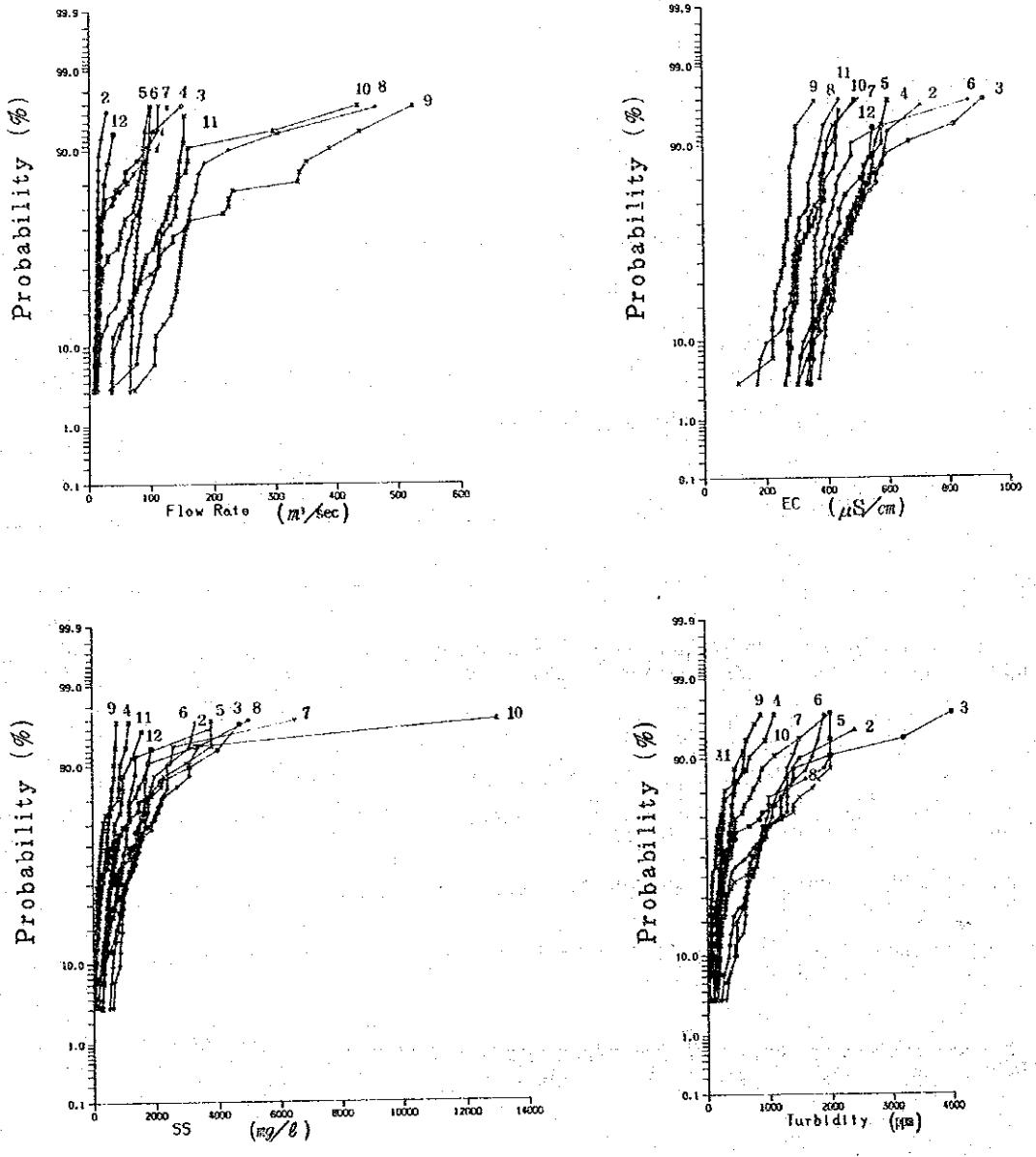

Fig. B-11 Probability Plot of the Water Quality at Fixed Point "E" (1)

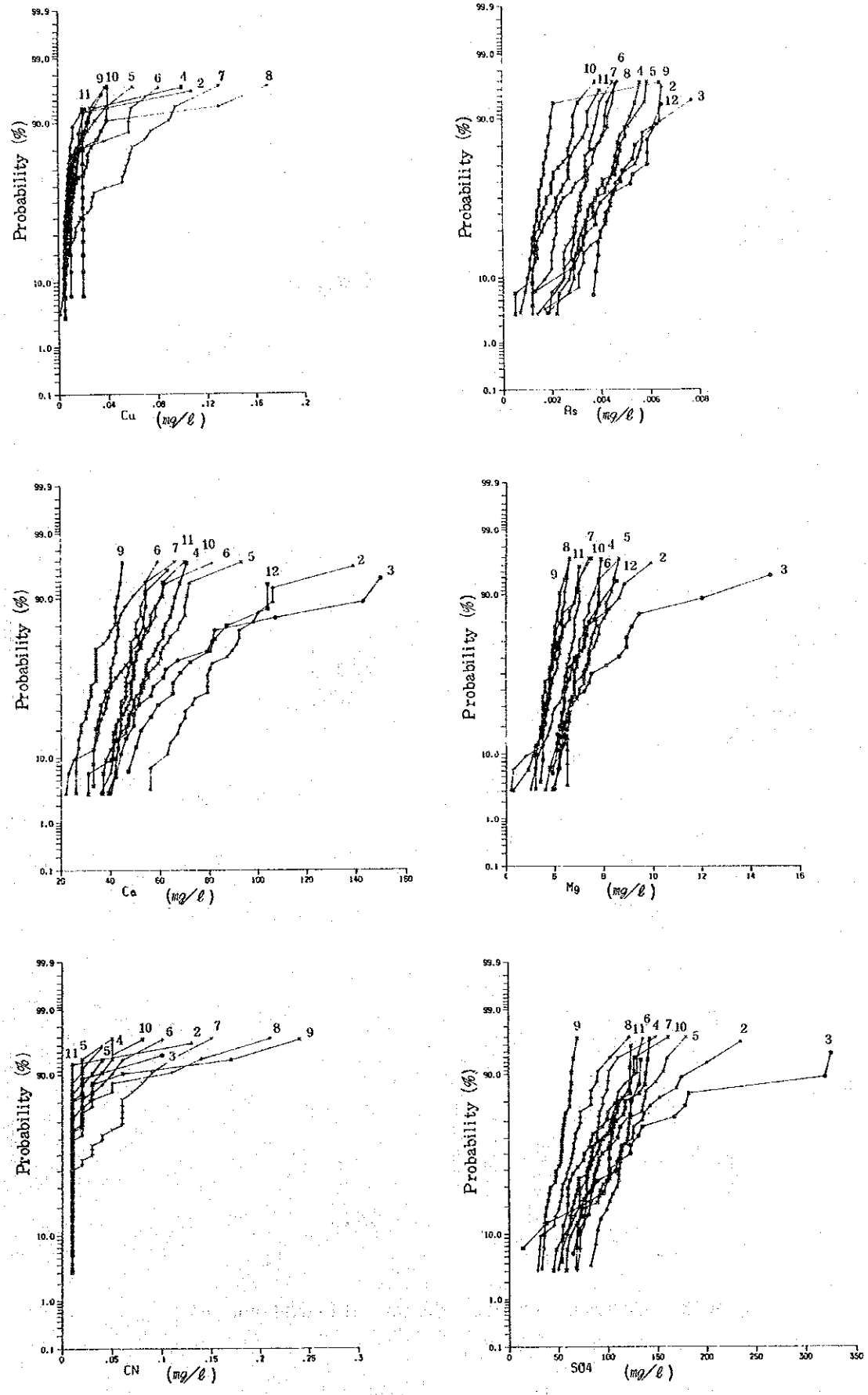

Fig. B-12 Probability Plot of the Water Quality at Fixed Point "E" (2)

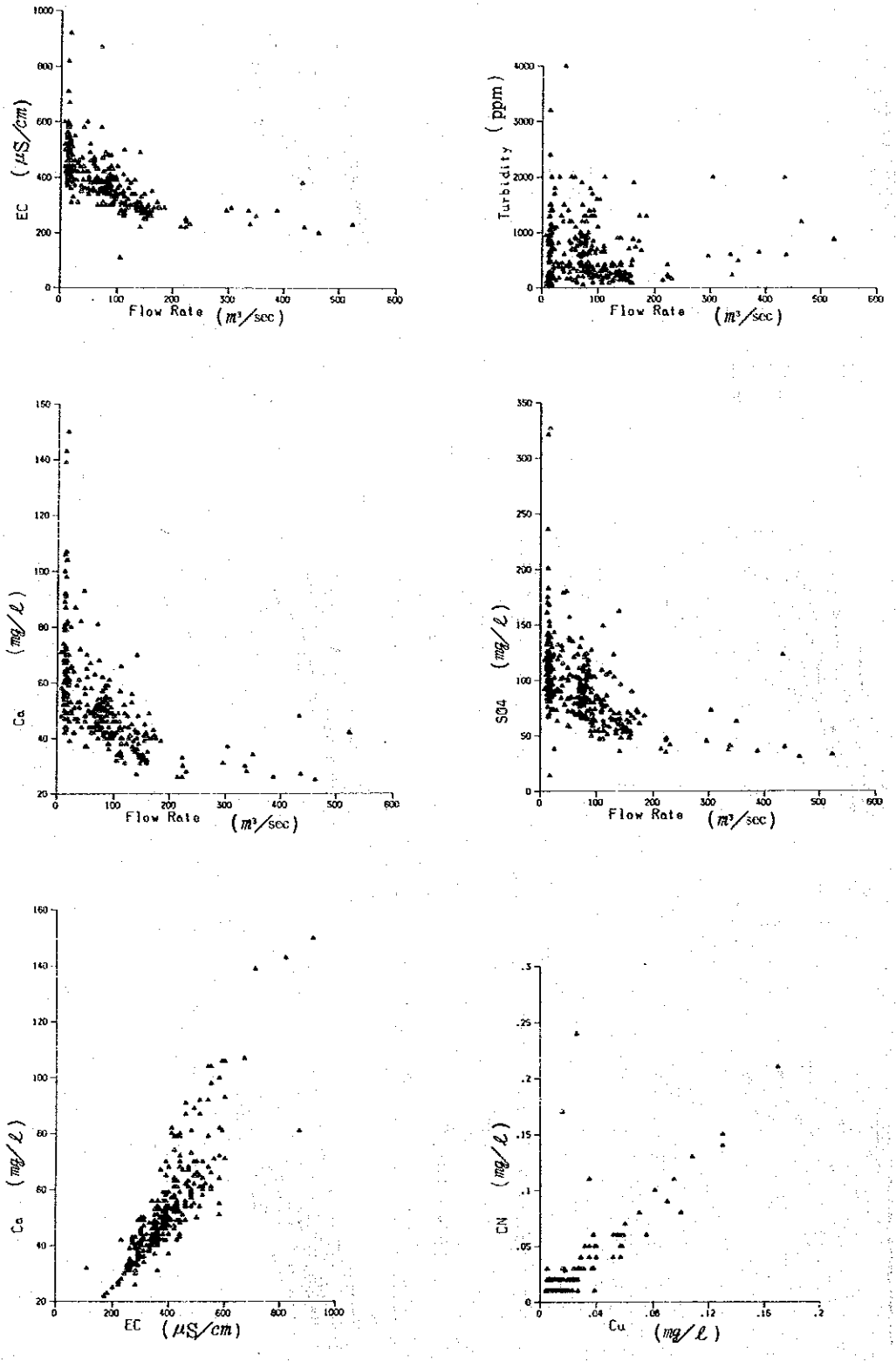

Fig. B-13 Correlations between the Data at Fixed Point "E"

APPENDIX "C"

DATA OF THE INVESTIGATION OF POLLUTION SOURCES

CONTENTS FOR APPENDIX "C"

DATA OF THE INVESTIGATION OF POLLUTION SOURCES

LIST OF TABLES FOR APPENDIX "C"

LIST OF FIGURES FOR APPENDIX "C"

APPENDIX "C" DATA OF THE INVESTIGATION OF POLLUTION SOURCES

1. Scope of the Investigation

Within the framework of the investigation of pollution sources, field observations and samplings were carried out.

In the investigation, the sediments in the Ambuklao and the Binga reservers were considered as the representatives of natural pollution sources. On the other hand, investigation was made into mine drainages from five adits of the mines belonging to Philex, Benguet and Itogon, tailings left in three mill plants, and tailings in the four tailings dams as sources of pollution by mining activities.

2. Natural Pollution

To ascertain the degree of natural pollution, sediments in the Binga reservoir were collected and chemically analyzed in the 1st stage survey. This resulted in Table C-1 "Sample BD103" which shows a high content of Cu (640 ppm) and S (0.14%). This site of observation was judged to be influenced by the mineralized zone including Sto. Niño Mine located above the Laboy River which flows into the Binga reservoir from its right bank.

Therefore, in the 2nd stage survey, the chemical analysis was done on samples taken from the sediments located above the point of inflow of the Laboy River into the Binga reservoir and the one found in the Ambuklao reservoir.

The results of chemical analysis are shown in Table C-1.

The samples subjected to the analysis were made by utilizing a 2mm size sieves.

To determine the grain size distribution of the sediments a sieve analysis and a precipitation test were conducted in the field. The results of the tests are shown in Appendix D together with the results of the field laboratory tests.

3. Pollution Caused by Mining Activities

(1) Mine drainage

Mine waters were mainly drained from five adits in the investigated area. They are: two adits of Philex Mine (1020 ml, 745 ml); two adits of Benguet Mine (Acupan, Antamok); and one adit of Itogon Mine (1300 ml). At the drainage outlets, the flow

rate and the water quality were observed once in the 1st, 2nd and 3rd stage surveys and filtrates were collected for analysis. The results of observations and analysis are given in Table C-2.

A new drainage adit was started in the Acupan 2325 mL in early 1984, and therefore, drainage samples marked "Benguet Acupan" and "Benguet Acupan 2325" in the 3rd stage are equivalent to "Benguet Acupan" in the former stages.

The features of the mine water drained from each of the adits mentioned above are as follows:

Water temperature:

The water temperature is high in the Benguet Acupan, which indicates that this is a geothermal area.

pH:

Neutral to alkaline in general. Acid water which is usually found in mining areas was found only once in the Benguet Antamok on August 1st.

EC:

EC was detected in the water drained from the Benguet, Itogon and Philex Mines in the order of their highness.

Dissolved heavy metals:

Cu and Zn concentrations are high in the water drained from both the Benguet adits, As concentration is particularly high in the water drained from the Acupan adit. Pb, Cd and Hg are all below the limit of detection.

CN:

CN was detected in the water drained from both the Benguet adits. From this it can be deduced that the pollution is caused by the water seeping out of the tailings that filled in the pit. Cu and Zn concentrations were detected probably for the same reason.

(2) Mill tailings

A measurement of water quality and a collection of filtrates and solid samples for analysis were conducted once in the 1st stage survey and twice each in the 2nd and 3rd stage surveys from the mill plants of the Philex, Benguet and Itogon. Samples for field testing were also collected additionally.

i) Observations

The records of the observations are shown in Table C-3.

pH:

The Benguet and Itogon mill plants are refining by cyanidation and for this reason pH is controlled to obtain alkalinity. At the Philex floatation plant pH is also controlled to secure alkalinity in order to suppress pyrite. The tailings from all the 3 mill plants are therefore alkaline.

EC:

EC was detected in the water drained from the Benguet, Philex and Itogon in the order of their highness.

ii) Filtrates (-5μ)

The results of the analysis of the filtrates are given in Table C-4.

Dissolved heavy metals:

Cu- and Zn-concentrations are high in the filtrate from the Benguet and Itogon. As-concentration is high in the filtrate from the Itogon. Pb, Cd and Hg are all below the limit of detection.

CN:

CN concentration is high in the filtrate from the Benguet and Itogon where the refining is done by the cyanidation method.

iii) Solid materials ($+5\mu$)

The results of the analysis of solid materials are shown in Table C-5. As shown in the table, the tailings from the Philex has a slightly higher Cu-content and a lower content of other constituents than those from the other two mills.

The tailings from Benguet have a high content of As, Hg, Zn, Cd and Pb as typical features of an epithermal ore deposit in addition to a high S-content. The tailings from the Itogon indicate similar properties as those of the tailings from the Benguet except that As-content is tendentiously higher and the contents of Zn, Cd and Pb are lower in the former than in the latter.

iv) Coarse grain part in the tailings from the Philex Mine

In the model test mentioned later, the coarse grain part in the tailings from the

Philex mill is used. The results of analysis of these samples indicate Cu 2,800 ppm, Zn 47 ppm, As 26 ppm and S 0.38% so that they have a high Cu degree about 6 times that of the content of the whole solid. Similar tendencies could be observed with the samples taken for the extraction test from the dam body of the Philex Dam No. 1.

Classifying the tailings from the Philex into coarse and fine grain parts indicated that Cu was concentrated in the coarse grain part.

3) Tailing dams

Tailings stored in tailings dam can be considered to be different in the oxidation state from the ones which have just been discliarged from a mill plant. The 1st stage survey studied the Philex Dams No. 1 and No. 2 as well as the Benguet Phase 1 Dam and Phase 2. Iron oxides could be observed on the surface at the Benguet Phase 1 Dam which is now out of operation but no indication of an oxidation could be detected in the other dams at least by a visual inspection, presumably due to a high water level.

The 2nd stage survey was carried out to see changes in proportion to depth. For sampling, 3 holes of 10 m depth were bored each in the Philex Dam No. 1 and the Benguet Phase 1 Dam. The results of sample observation are shown in Fig. C-1.

The samples taken from the body of the Philex Dam consisted of blueish tailings of coarse grain size (cyclone underflow) which did not indicate any substantial qualitative difference. The results of analysis (see the notes on the extraction test) indicate that a higher content of Cu was detected in PS23 than in PS22 and PS21. The samples taken from the side close to the cyclone are of high Cu-content. No remarkable difference could be observed in proportion to depth.

The samples collected from the Benguet tailings dam could be visually classified into 5 layers; namely, from the bottom, a blueish and compacted layer; a blueish and sticky layer; a blueish and compacted layer; a yellowish layer and a relatively recent blueish tailings. Oxidation could be seen visually in the yellowish layer only. The results of analysis indicate that a higher content of Cu was found in BS21 than in BS22 and BS23. This means that the samples taken from the area close to the mill plant have a relatively high Cu-content. No remarkable difference could be seen in proportion to depth.

Each of the tailings dams has a diversion tunnel, a culvert, a penstock or a spillway to discharge seepage water, rain water and clarified water. Seepage water discharged through the culvert at the Philex Tailings Dam No. 1 and Benguet Phase 2 Dam was observed and sampled for reference in 2nd and 3rd stage surveys.

As the results shown in Table C-6, the pH is lowered to neutral and Zn concentration is remarkably decreased on the seepage at the Benguet Phase 2 Dam in comparison with those values of tailings just discharged from the Mill to the Dam.

Table C-1 CHEMICAL ANALYSES OF SEDIMENTS IN THE AMBUKLAO RESERVOIR AND THE BINGA RESERVOIR

Sample No.	Location	Cu (ppm)	Zn (ppm)	As (ppm)	S (%)	Pb (ppm)	Cd (ppm)	Hg (ppm)	Mn ppm	Fe (%)
AD 201	Ambuklao Dam	87	120	6.4	<0.10	15	0.4	0.01	910	4.78
AD 202	–ditto–	100	140	9.9	<0.10	25	0.5	0.02	1,000	5.55
AD 203	–ditto–	110	150	8.4	<0.10	29	0.5	0.01	880	4.72
AD 204	–ditto–	72	110	7.3	<0.10	13	0.3	0.01	780	4.58
AD 205	–ditto–	69	150	2.7	<0.10	23	0.4	0.01	1,100	4.76
AD 206	–ditto–	55	130	2.6	<0.10	17	0.3	<0.01	900	4.14
AD 207	–ditto–	37	76	1.9	<0.10	7.5	0.2	<0.01	520	4.11
BD 201	Binga Dam	45	70	3.3	<0.10	5.6	0.1	<0.01	600	4.37
BD 202	–ditto–	54	85	3.7	<0.10	7.4	0.2	<0.01	710	4.66
BD 203	–ditto–	48	82	3.5	<0.10	6.1	0.2	<0.01	720	4.96
BD 103	–ditto–	640	140	2	0.14	13	<2	<0.1	810	5.0
Average*		68	111	5.0	<0.10	15	0.3	0.01	810	4.66

* BD 103 excluded

Table C-2 CHEMICAL ANALYSES OF MINE DRAINAGES

Sample No.	Locality	Date	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
PT11	Philex 1020 mL adit	Nov. 30	0.082	22.0	8.1	270	<0.02	<0.01	0.0011	39	4.4	–	62
PT21	– ditto –	Feb. 12	0.022	21.0	7.8	280	<0.01	0.02	0.0007	46	5.2	<0.01	59
PT31	– ditto –	July 28	0.15	21.0	6.7	450	<0.005	0.025	0.0020	67	5.3	<0.01	151
PT12	Philex 745 mL adit	Dec. 3	0.30	24.0	8.5	900	0.05	<0.01	0.0030	220	4.4	–	375
PT22	– ditto –	Feb. 11	0.32	20.5	7.9	860	0.02	0.02	0.0013	170	3.8	<0.01	364
PT32	– ditto –	July 28	0.33	21.0	7.4	910	<0.005	0.021	0.0017	166	4.0	<0.01	399
BT11	Benguet Antamok	Nov. 30	0.42	26.0	6.7	1900	0.03	1.20	0.0023	564	42.4	–	1090
BT21	– ditto –	Feb. 15	0.30	29.5	7.0	2300	0.585	0.11	0.0150	670	47.5	0.99	1290
BT31	– ditto –	Aug. 1	0.53	25.0	3.7	2300	1.300	1.60	0.0013	450	59.5	<0.01	1415
BT12	Benguet Acupan	Dec. 1	(0.08)	34.0	8.0	2600	0.03	0.08	0.512	676	17.4	–	1057
BT22	– ditto –	Feb. 15	N.D.	36.5	8.0	2500	0.155	0.02	0.820	610	14.0	0.46	1128
BT32	– ditto –	July 31	N.D.	28.0	7.8	1800	0.055	0.17	0.0020	396	32.2	0.04	1074
BT33	Benguet Acupan 2325	July 30	(0.26)	43.5	8.2	2500	0.008	0.030	0.190	400	17.2	<0.01	1235
IT11	Itogon 1300 mL	Dec. 2	0.095	30.5	8.1	1500	<0.02	0.02	0.0564	392	32.8	–	639
IT21	– ditto –	Feb. 17	0.057	28.0	7.9	1600	<0.01	<0.02	0.0480	272	31.5	<0.01	743
IT31	– ditto –	July 30	0.085	24.0	7.8	1630	0.005	0.018	0.0080	244	30.0	<0.01	743

– : No data

Table C-3 OBSERVATION RECORDS OF MILL TAILINGS

Sample No.	Locality	Date	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	SS (mg/ℓ)
PM11	Philex	Nov. 30	(0.1)	30.0	9.4	2,100	190,000
PM21	–ditto –	Feb. 11	–	26.0	9.3	2,700	440,000
PM22	–ditto–	Feb. 12	–	26.0	9.6	2,500	350,000
PM31	–ditto–	July 27	–	26.0	12.0	2,200	220,000
PM32	–ditto–	Aug. 8	–	23.0	11.4	2,500	200,000
BM11	Benguet	Dec. 1	0.012	25.5	11.3	2,900	290,000
BM21	–ditto–	Feb. 15	0.047	26.0	12.1	4,100	270,000
BM22	–ditto–	Feb. 23	0.043	31.0	10.8	2,800	260,000
BM31	–ditto–	July 30	0.088	24.0	11.3	2,700	60,000
BM32	–ditto–	Aug. 9	0.073	25.0	11.3	2,600	230,000
IM11	Itogon	Dec. 2	–	22.5	10.4	630	66,000
IM21	–ditto–	Feb. 17	–	23.0	11.4	1,400	330,000
IM22	–ditto–	Feb. 24	–	24.0	11.2	820	590,000
IM31	–ditto–	July 30	–	21.0	9.6	910	35,000
IM32	–ditto–	Aug. 10	–	21.0	10.7	880	130,000

– : No data

Table C-4 CHEMICAL ANALYSES OF MILL TAILINGS (FILTRATE)

Sample No.	Locality	Date	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
PM11	Philex	Nov. 30	0.04	<0.01	<0.0005	760	14.0	–	1600
PM21	–ditto –	Feb. 11	<0.01	<0.02	0.001	728	8.8	<0.01	1,584
PM22	–ditto–	Feb. 12	0.01	<0.02	0.001	720	12.0	0.01	1,533
PM31	–ditto–	July 27	0.005	0.014	<0.0005	520	0.3	<0.01	1,465
PM32	–ditto–	Aug. 8	<0.005	0.008	<0.0005	292	0.1	0.04	1,568
BM11	Benguet	Dec. 1	22	10.7	0.0067	840	0.4	–	1,458
BM21	–ditto–	Feb. 15	39	15	0.0039	920	0.4	170	1,443
BM22	–ditto–	Feb. 23	29	25	0.0078	720	0.7	150	1,587
BM31	–ditto–	July 30	13.9	7.5	0.0043	576	0.4	98	1,543
BM32	–ditto–	Aug. 9	22.0	14.0	0.0029	360	0.3	150	1,606
IM11	Itogon	Dec. 2	0.02	3.6	0.1021	92	0.6	–	90
IM21	–ditto–	Feb. 17	17	6.5	0.0505	134	0.6	90	234
IM22	–ditto–	Feb. 24	16	6.0	0.072	122	0.2	65	212
IM31	–ditto–	July 30	3.9	1.0	0.0750	38	0.6	4.4	87
IM32	–ditto–	Aug. 10	5.7	2.1	0.0330	122	0.5	37	298

– : No data

Table C-5 CHEMICAL ANALYSES OF MILL TAILINGS (SOLID)

Sample No.	Locality	Sampling Date	Description	Cu ppm	Zn ppm	As ppm	S %	Pb ppm	Cd ppm	Hg ppm	Mn ppm	Fe %
PM110	Philex	Dec.	No. 3+	470	50	<2	0.26	<5	<2	<0.1	600	5.2
PM210	Philex	Mar.	No. 3+	500	44	1.2	0.23	2.0	<0.1	<0.01	570	5.80
PM220	Philex	Mar.	No. 3+	400	50	1.1	0.27	1.8	<0.1	<0.01	650	5.06
PM310	Philex	July	No. 3+	430	55	<1.0	0.19	2.2	<0.1	<0.01	600	5.00
PM320	Philex	Aug.	No. 3+	1200	55	1.4	0.40	4.7	<0.1	<0.01	780	5.00
PM325	Philex	July	original	910	45	1.1	0.19					
BM110	Benguet	Dec.	No. 3+	270	710	57	2.27	200	2	0.3	3,300	4.0
BM210	Benguet	Mar.	No. 3+	240	880	73	2.36	220	2.6	0.29	3,400	3.28
BM220	Benguet	Mar.	No. 3+	240	640	81	2.50	200	2.0	0.36	3,300	3.44
BM310	Benguet	July	No. 3+	230	580	78	2.86	220	1.9	0.38	2,600	3.55
BM320	Benguet	Aug.	No. 3+	250	700	69	2.86	260	2.3	0.29	2,400	3.85
BM325	Benguet	July	original	230	630	76	2.93					
IM110	Itogon	Dec.	No. 3+	130	270	220	1.29	34	<2	0.5	2,000	5.3
IM210	Itogon	Mar.	No. 3+	130	380	230	1.20	57	1.1	0.25	2,600	4.80
IM220	Itogon	Mar.	No. 3+	130	300	280	2.12	41	0.8	0.25	2,200	5.04
IM310	Itogon	July	No. 3+	120	410	150	1.13	88	1.1	0.28	2,500	4.25
IM320	Itogon	Aug.	No. 3+	120	260	160	1.16	32	0.6	0.47	2,600	4.10
IM325	Itogon	July	original	120	300	170	2.23					

Table C-6 CHEMICAL ANALYSES OF TAILING DAM UNDERDRAINAGES

Sample No.	Locality	Date	Flow Rate (m^3/s)	Water Temp. (°C)	pH	EC ($\mu S/cm$)	Cu (mg/ℓ)	Zn (mg/ℓ)	As (mg/ℓ)	Ca (mg/ℓ)	Mg (mg/ℓ)	CN (mg/ℓ)	SO_4 (mg/ℓ)
PW21	Philex	Feb. 12	(0.05)	26.0	6.9	2200	<0.01	<0.02	0.0007	620	17.0	<0.01	1186
PW31	Philex	Jul. 27	0.23	24.0	6.6	1800	<0.005	0.015	0.0005	328	12.6	<0.01	918
BW21	Benguet	Feb. 23	0.044	27.0	6.8	3200	15	0.04	0.057	700	19.5	21	1474
BW22	Benguet	Feb.	–	–	–	–	14	0.75	0.260	590	18.0	25	1596
BW31	Benguet	Jul. 31	0.026	26	7.1	2800	3.6	0.025	0.100	416	20.0	3.6	1504

– : No data

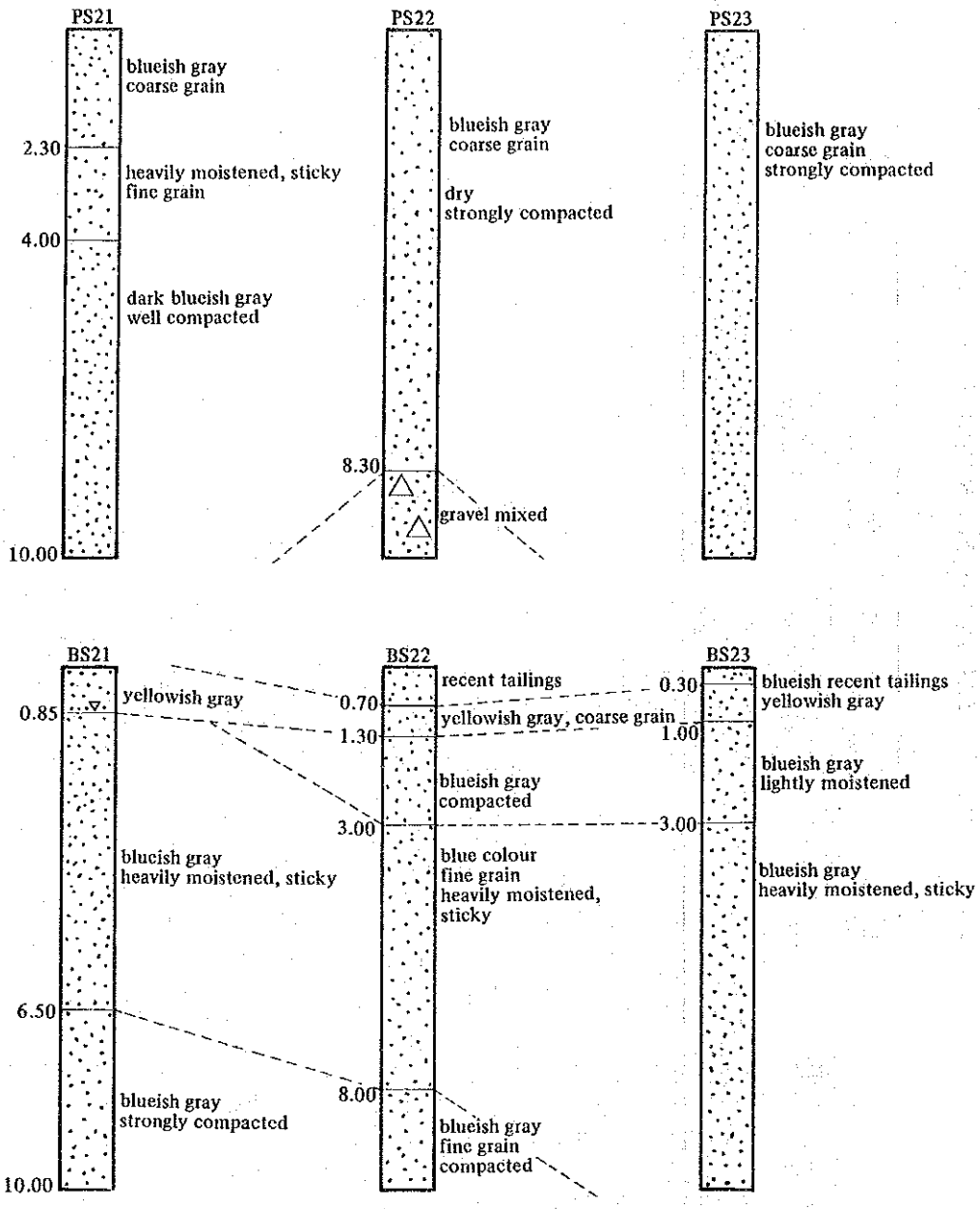

Fig. C-1 Drilling Logs at Philex (PS21–PS23) and Benguet (BS21–BS23) Tailing Dams

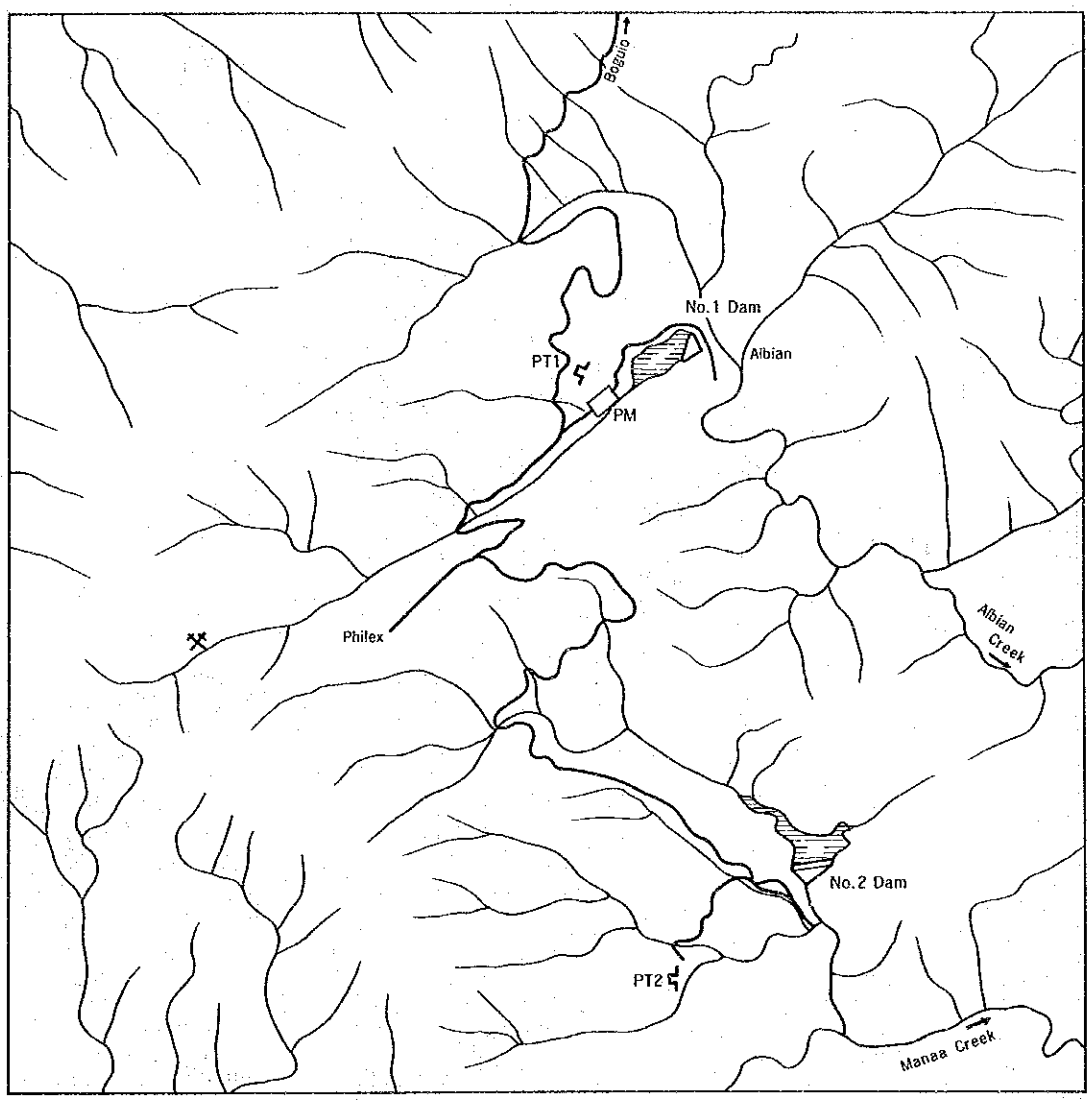

Fig. C-2 Location Map of Philex Mine

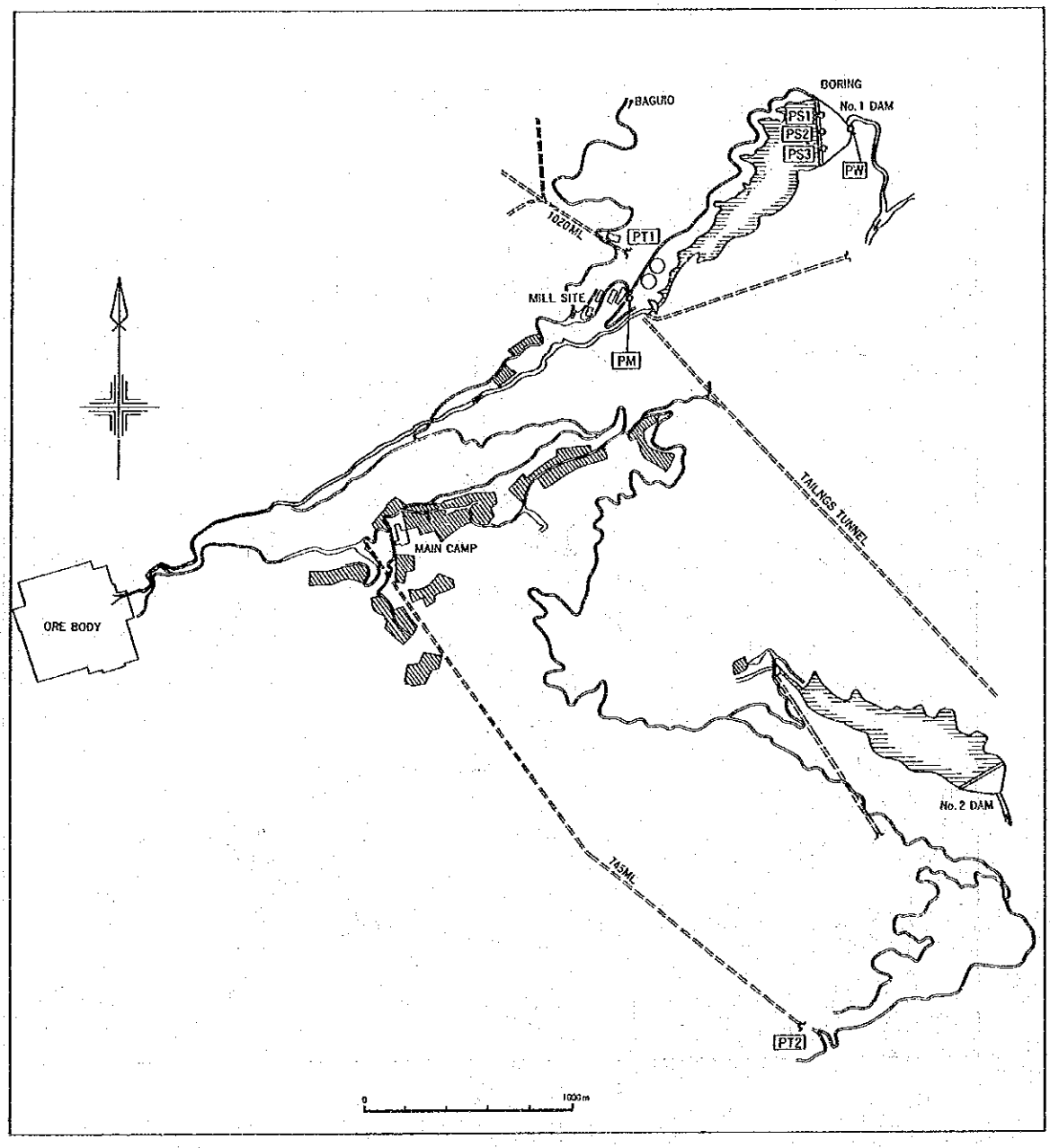

Fig. C-3 Map of Sampling Points in the Philex Mine

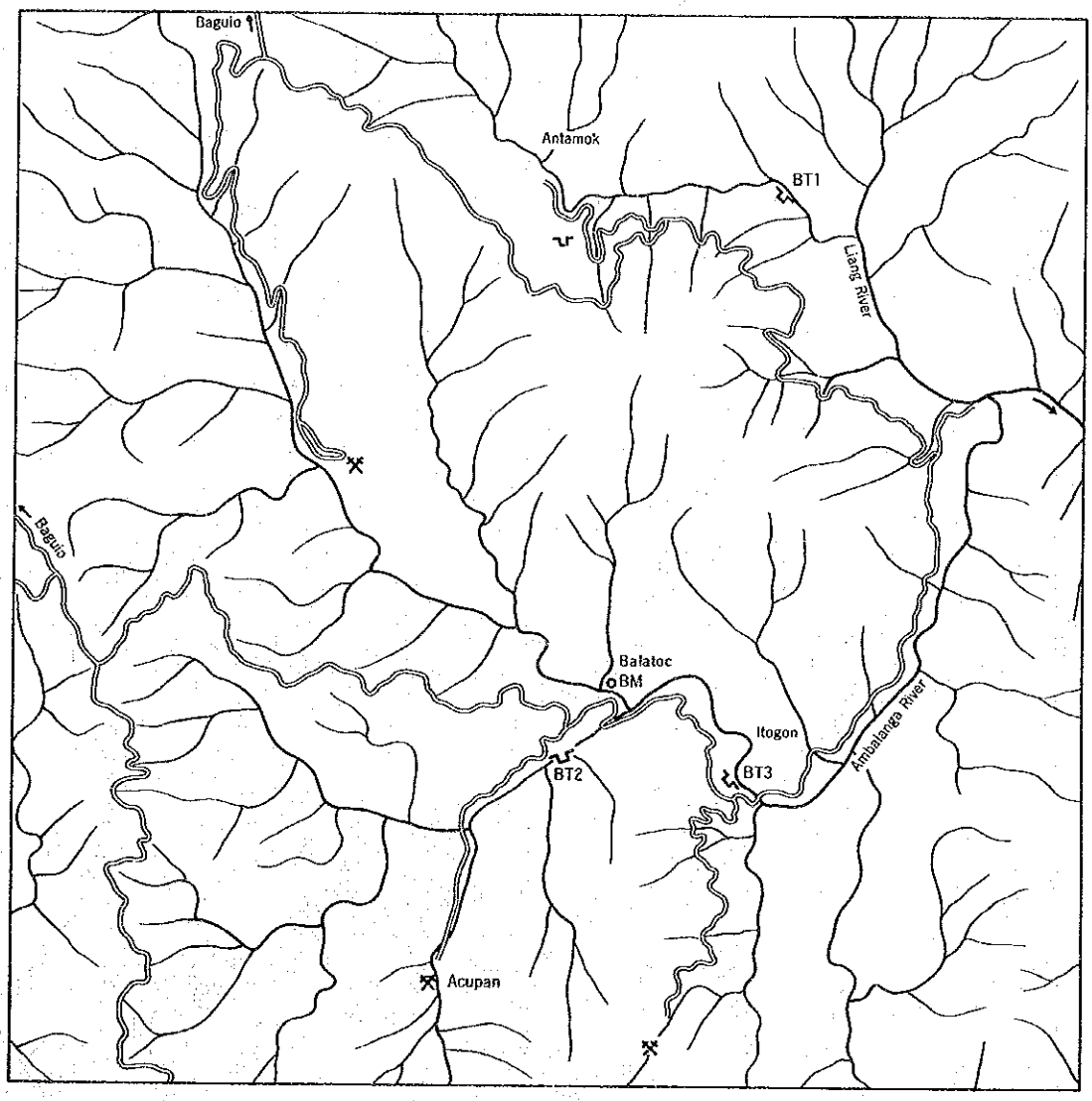

Fig. C-4 Location Map of Benguet Mine

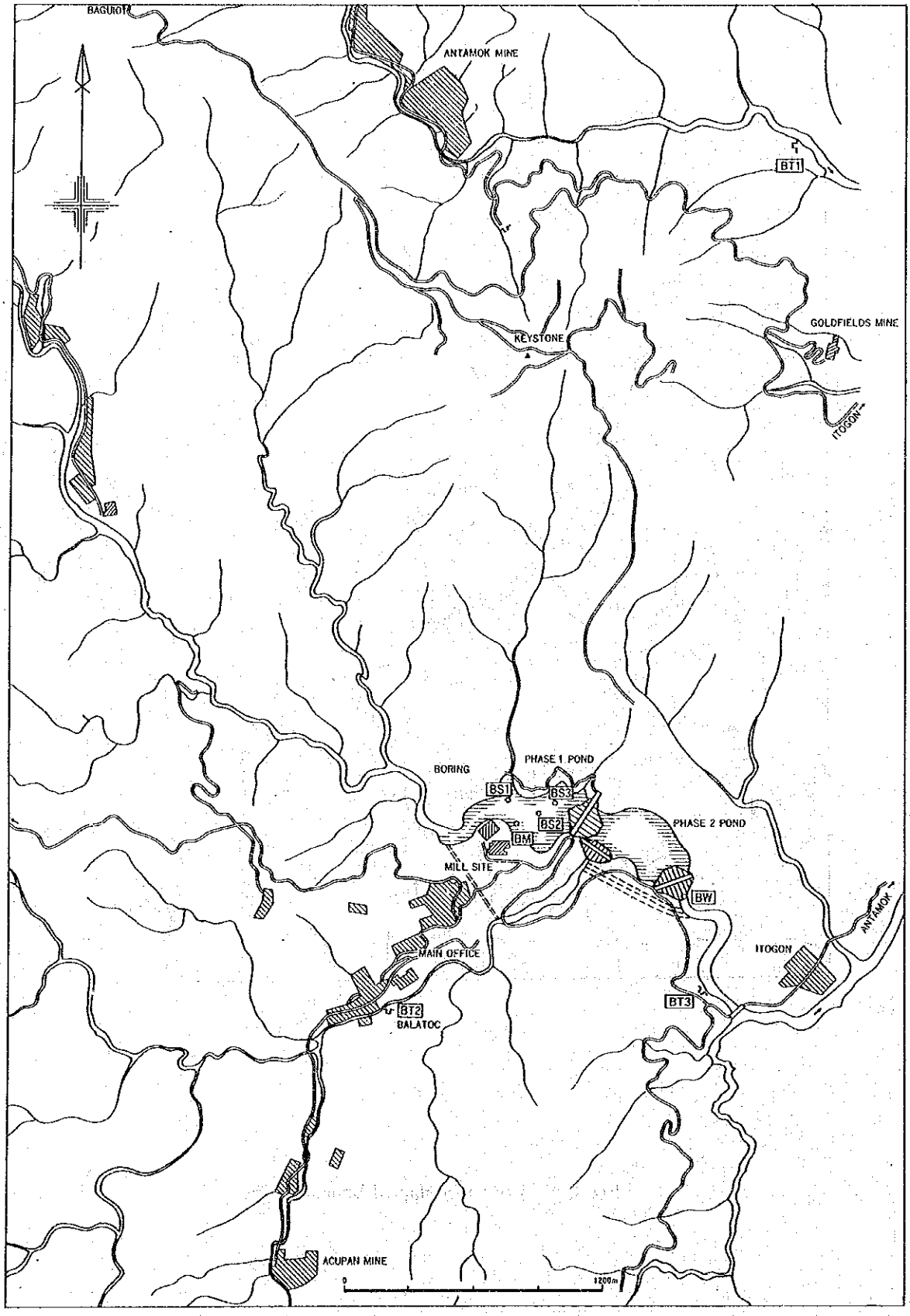

Fig. C-5 Map of Sampling Points in the Benguet Mine

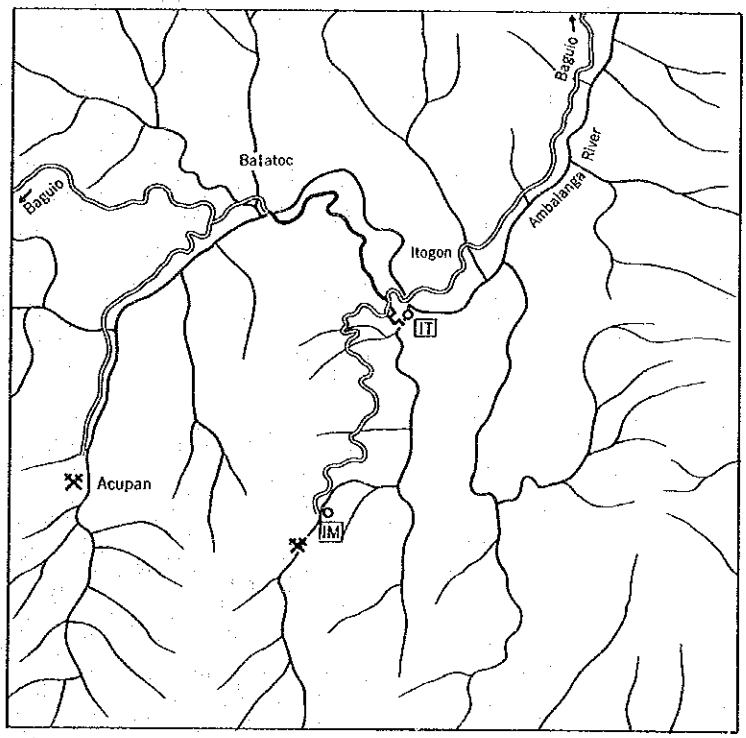

Fig. C-6 Location Map of Itogon Mine

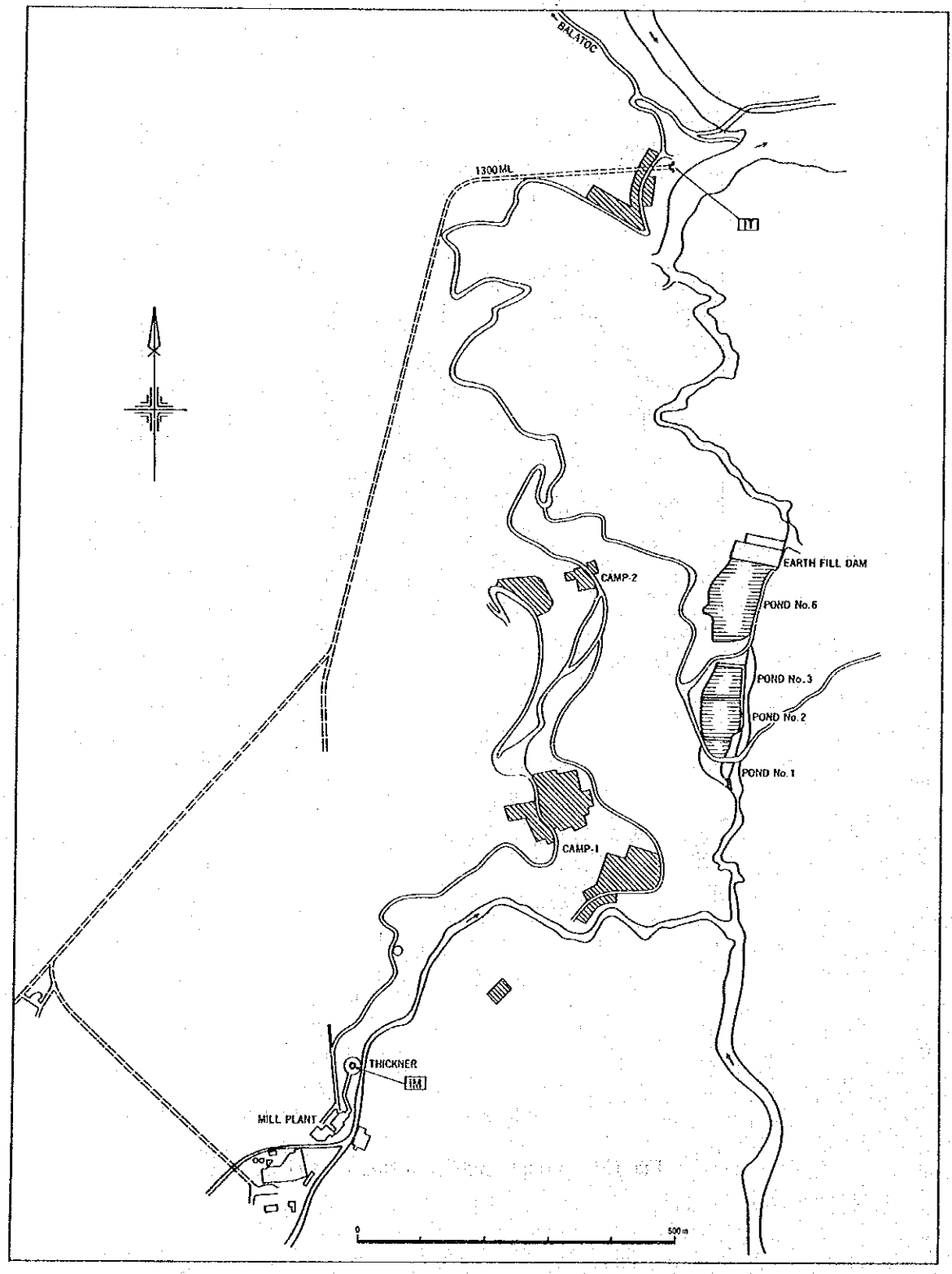

Fig. C-7 Map of Sampling Points in the Itogon Mine

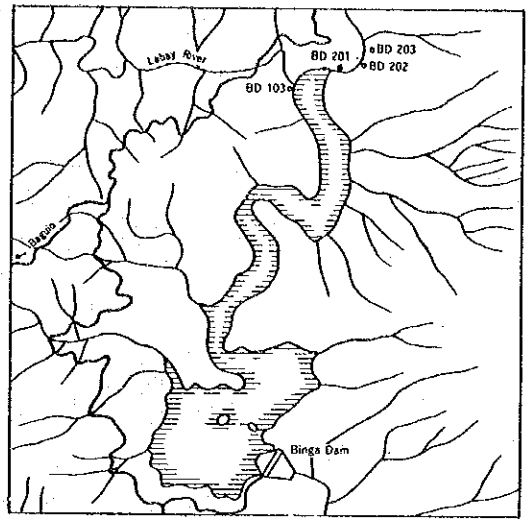

Fig. C-8 Sampling Points of Sediments in the Binga Dam

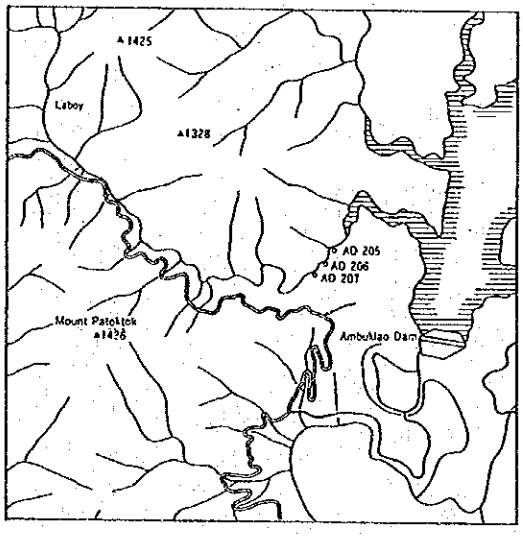

Fig. C-9 Sampling Points of Sediments in the Ambuklao Dam (1)

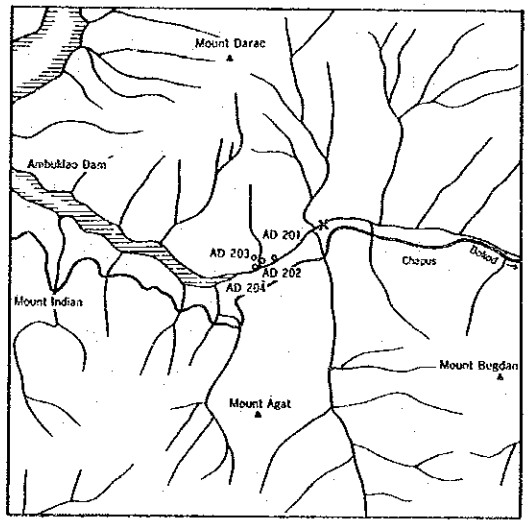

Fig. C-10 Sampling Points of Sediments in the Ambuklao Dam (2)