



March 4, 1999

Philippe di Pizzo, Executive Director
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NT
X0E 1J0

Dear Mr. di Pizzo;

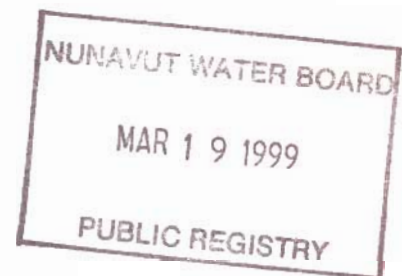
Re: Cullaton Lake - Water Licence N6L2-0940

Pursuant to the terms of our Water Licence, we are pleased to submit the 1998 Annual Report. The report summarizes A & R activities undertaken at the Cullaton property during the past year, as well as water sampling results and thermistor data.

I trust the above is satisfactory. Should you require additional information, or if you have any questions, please contact the undersigned.

Sincerely,
HOMESTAKE CANADA INC.

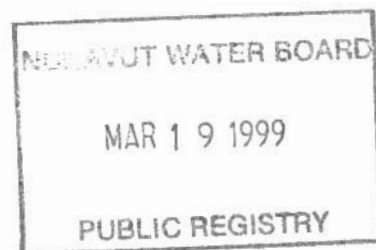
Sharon Meyer
Environmental Analyst



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CULLATON LAKE GOLD MINES LTD

WATER LICENCE N6L2-0940



ANNUAL

WATER LICENCE REPORT

1998

PREPARED BY:
HOMESTAKE CANADA INC
P.O. BOX 11115, 1100 - 1055 WEST GEORGIA STREET
VANCOUVER, B.C.
V6E 3P3

March 1999

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PREAMBLE

Cullaton Lake Gold Mines Ltd. is wholly owned by Homestake Canada Inc. (Homestake).

The Cullaton Lake Gold Mines property is located in the southern part of the District of Keewatin in the Northwest Territories. The property is 250 km west of Arviat, N.W.T., 400 km northwest of Churchill, Manitoba and 645 km north of Thompson, Manitoba. The mine was in operation for four years, from 1981 to 1985. Since September 1985 the mine has remained in a care, maintenance and decommissioning phase.

Decommissioning began in 1991/92 with the rehabilitation of the Tailings Pond #1 dam including construction of a spillway in the dam, covering of the exposed tailings with water or with till/mine rock, and the elimination of Tailings Pond #2 (the polishing pond).

The fresh water intake, pump house and pipelines at the old diamond drill camp on the Kognak River were dismantled and removed in 1991. By 1993, all buildings and debris around the drill camp had been removed. In 1995 and 1996 the mill buildings were dismantled. Inert, non-salvageable material was crushed and placed in the quarry pit. In 1997, additional cover material was placed over the tailings material and the tailings area was seeded and fertilized with a specialized arctic seed mix. The former mill site was also seeded and fertilized.

Homestake applied for a water licence renewal on April 28, 1995. A revised 'B' Licence was granted effective September 1, 1995, expiring August 31, 1999. As part of the licence renewal, Homestake submitted a revised Abandonment and Restoration Plan in 1996 to DIAND, to the NWT Water Board and to the Nunavut Water Board. In July 1996 the water licence was transferred to the jurisdiction of the Nunavut Water Board.

As per this Water Licence, Homestake is required to file a yearly report pursuant to Section 13(2) of the Northern Inland Waters Act and Section 15(1) of the Regulations, outlining details on water use and/or waste disposal at Cullaton Lake Gold Mine.

1.0 HIGHLIGHTS

KIMEX, a subsidiary of Decommissioning and Reclamation International (DRI) Inc., was on site twice in 1998, once in June for water sampling and thermistor reading and again in September to complete the remainder of the decommissioning work. This consisted of the burial of inert, non-salvageable materials in the quarry pit, the removal of culverts, the reclamation of the quarry pit and Shear Lake areas, and the preparation of the salvageable material and equipment for removal by ice train.

Water samples were taken in June and in September. Thermistor readings were taken on June 30 and September 23 as part of ongoing monitoring of the temperature regime in the tailings.

2.0 DETAILED SUMMARY

2.1 WATER QUALITY MONITORING

Water sampling continued at Cullaton Lake in 1998. Duplicate sampling is required at 7 stations, once in the spring peak flow period (June) and once again after August 1. Samples were collected on June 26th and again on September 23rd (see photographs attached).

Station 940-2 (Pond #1 discharge to Pond #2) Water was sampled twice during the summer season, duplicate samples in June and in September. All parameters were well below the limits prescribed in the water licence.

Station 940-3 (Pond #2 discharge) Duplicate water samples were taken during the summer season, in June and again in September. All parameters were well below the limits prescribed in the water licence.

Station 940-18 (Pond #1 spillway) Duplicate water samples were taken during the summer season, in June and again in September. All parameters were well below the limits prescribed in the water licence.

Station 940-19 (Tailings #1 piesometer) Water was sampled twice during the summer season, with duplicate samples in June, and again in September. All parameters were well below the limits prescribed in the water licence.

Station 940-20 (Seepage at E side of tailings) Duplicate samples were taken in June and in September. All parameters were well below the limits prescribed in the water licence.

Station 940-22 (Seepage at NE corner of tailings) was dry during 1998 and could not be sampled.

Station 940-Q (Quarry Pit) Water was sampled at the quarry pit as agreed. Duplicate samples were taken in June and again in September. All sampling results were well within the limits prescribed in the water licence.

See Appendix 1 for water quality results.

2.2 TAILINGS

In 1997, Homestake graded, seeded and fertilized the tailings cover material to provide a vegetation cover for the tailings area. The seed mix chosen was recommended by our arctic vegetation consultant - *Alaska Biological Research, ABR Inc.* (Table 1). A site inspection in 1998 revealed that a number of grass species had established on the tailings, showing better survival in the protected furrows and tracks. At the time of the September inspection, the grasses had matured and produced seed heads (see photographs attached).

2.3 THERMISTORS

In order to prevent possible acid generation, reclamation of the tailings area has involved two oxygen-limiting methods; a water cover overlying the eastern portion of the tailings impoundment area and a till/mine-rock cover on the remaining Shear and B-Zone tailings area. The application of the till/mine-rock cover was intended to reduce oxygen infiltration and, as a Mine Environment Neutral Drainage (MEND) project, to raise the level of permafrost in the tailings. Raising the permafrost level in the tailings was expected to help to retain them in a permanently frozen condition, which may prevent development and migration of acid drainage. Thermistors were installed in the covered tailings in August 1991 in order to monitor any rise in permafrost levels.

Thermistor readings (Station 940-21) have been taken during the spring and late summer months since 1991. Readings from 1992 to 1994 show an upward trend in the permafrost level. In 1995 the level remained steady. At the end of the 1996 summer season, the depth of the active zone remained stationary with respect to 1995 readings. Additional cover was placed on the tailings in 1997. During that construction period, the thermistor readings remained stationary when compared to 1995 and 1996 data. As a result of the placement of additional cover on the tailings, Homestake and MEND had hoped to see a resumption of the previous upward trend in permafrost levels with 1998 thermistor results. However, permafrost levels have remained at 1995 readings (see data in Appendix 1). Homestake will continue to monitor the temperature in the tailings in 1999, and will analyze the data after collecting next year's results.

2.4 ROCK QUARRY

During a 1995 meeting in Yellowknife with DIAND and the NWT Water Board, agreement was reached to use the quarry pit for disposal of non-salvageable materials. During 1995, some of the non-salvageable materials from the dismantling of the primary mill building were placed in the quarry. Other non-salvageable materials were crushed and buried in the pit in 1996 and 1997.

The remainder of the inert, non-salvageable material at the site was crushed and placed in the quarry pit in 1998. As agreed earlier in 1998, the crushed material was placed around the edges of the quarry pit and covered with one metre of overburden as outlined in the Abandonment & Restoration Plan. This overburden was sloped down to the floor of the pit at an angle of ~22°. A drainage ditch, or swale, was constructed to allow any ponded water from the pit to flow towards the tailings pond. The quarry pit and drainage ditch were ripped at the water line, where required, to provide a permanent structure at the site.

2.5 MILL COMPLEX DISMANTLING

The buildings located at the mill site were removed in 1995/96, with the exception of the machine shop building. This building was used for repair and maintenance of the equipment required for decommissioning and tailings work. It was removed in 1998. Salvageable equipment was either flown to Thompson, Manitoba or Arviat, NWT, or remained stacked at the airstrip for removal by ice train during the winter. The ice train will travel between Cullaton and Churchill, Manitoba in February 1999.

In 1997, the entire mill site was graded, seeded and fertilized with the same seed mix used on the tailings area. Mature grasses covered a large portion of the mill area during the 1998 site inspection in September. Snow geese were on the mill site and the tailings area, browsing the grasses during the site visit.

Table 1

Percentage	Seed
10%	Oxley Cicer Milkfetch
20%	Alpine Bluegrass
10%	Fowl Bluegrass
15%	Nugget Kentucky Bluegrass
30%	Arctared Crested Red Fescue
15%	Tufted Hairgrass

2.6 OTHER DECOMMISSIONING ACTIVITIES

Additional decommissioning work at Cullaton Lake in 1998 consisted of the removal of the roadway culverts (see attached photograph) and the disposal of remaining remote fuel barrels and assorted debris.

The contractor, DRI, is negotiating the donation of the remaining Atco buildings at the Shear Lake camp to the local Kivalliq Inuit Association (KIA). These trailers will be removed from the Cullaton Lake property by the KIA, or disposed of by DRI if the donation is not possible.

2.7 FIELD OBSERVATIONS

While on site during the summer and early fall, the work crew noted no erosion or sloughing of material from the tailings dam. No areas of acid generation or seepage were noted. Field pH and temperatures are presented in Appendix 1.

3.0 1999 PROPOSED WORK SCHEDULE

Homestake Canada Inc. intended to complete the remaining decommissioning work by the end of 1998. The mill site, Shear Lake site, tailings area and quarry pit decommissioning and reclamation is now complete. However, the salvageable material and equipment remains on site for removal by ice train early in 1999. Once that is completed, a Company site inspection will be conducted to verify that the decommissioning work has been completed.

A geotechnical inspection of the tailings dam, and water sampling have been scheduled for 1999, as per our Water Licence requirements.

APPENDIX 1

Water Quality Data
Thermistor Data
Field Data

CULLATON GOLD MINES LTD.

EFFLUENT WATER QUALITY REQUIREMENTS (LICENCE N6L2-0940)

All wastes discharged by the Licensee from the Tailings Containment Area shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Arsenic	0.30 mg/L	0.60 mg/L
Total Copper	0.20 mg/L	0.40 mg/L
Total Cyanide	0.80 mg/L	1.60 mg/L
Total Lead	0.20 mg/L	0.40 mg/L
Total Nickel	0.30 mg/L	0.60 mg/L
Total Zinc	0.30 mg/L	0.60 mg/L
Total Suspended Solids	25 mg/L	50 mg/L

The waste discharged shall have a pH between 6.0 and 9.5, and no visible sheen of oil and grease.

**Cullaton Lake Water Quality
1998**

940-2: POND #1 DISCHARGE

<u>DATE</u>	<u>LAB PH</u> <u>pH unit</u>	<u>SUSPENDED</u> <u>SOLIDS</u> <u>mg/l</u>	<u>TOTAL</u> <u>CYANIDE</u> <u>mg/l</u>	<u>TOTAL</u> <u>ARSENIC</u> <u>mg/l</u>	<u>TOTAL</u> <u>COPPER</u> <u>mg/l</u>
06/26/CC98	7.7	2	0.066	0.0020	0.003
06/26/CC98	7.7	<2	0.072	0.0021	0.003
09/23/CC98	7.7	7	0.015	0.0037	0.009
09/23/CC98	7.7	6	0.015	0.0038	0.008
Mean	7.7	4	0.042	0.0029	0.006
Minimum	7.7	2	0.015	0.0020	0.003
Maximum	7.7	7	0.072	0.0038	0.009

<u>DATE</u>	<u>TOTAL</u> <u>LEAD</u> <u>mg/l</u>	<u>TOTAL</u> <u>NICKEL</u> <u>mg/l</u>	<u>TOTAL</u> <u>MERCURY</u> <u>mg/l</u>	<u>TOTAL</u> <u>ZINC</u> <u>mg/l</u>
06/26/CC98	<0.005	0.002	<0.0002	0.041
06/26/CC98	<0.005	<0.002	<0.0002	0.029
09/23/CC98	<0.005	0.005	<0.0002	0.048
09/23/CC98	<0.005	<0.002	<0.0002	0.016
Mean	0.005	0.003	0.0002	0.034
Minimum	0.005	0.002	0.0002	0.016
Maximum	0.005	0.005	0.0002	0.048

**Cullaton Lake Water Quality
1998**

940-3: POND #2 DISCHARGE

<u>DATE</u>	<u>LAB PH</u> <u>pH unit</u>	<u>SUSPENDED</u> <u>SOLIDS</u> <u>mg/l</u>	<u>TOTAL</u> <u>CYANIDE</u> <u>mg/l</u>	<u>TOTAL</u> <u>ARSENIC</u> <u>mg/l</u>	<u>TOTAL</u> <u>COPPER</u> <u>mg/l</u>
06/26/CC98	7.7	<2	0.002	0.0042	0.006
06/26/CC98	7.7	<2	0.002	0.0042	0.005
09/23/CC98	7.6	5	0.002	0.0040	0.006
09/23/CC98	7.7	5	0.002	0.0023	0.007
Mean	7.7	4	0.002	0.0037	0.006
Minimum	7.6	2	0.002	0.0023	0.005
Maximum	7.7	5	0.002	0.0042	0.007

<u>DATE</u>	<u>TOTAL</u> <u>LEAD</u> <u>mg/l</u>	<u>TOTAL</u> <u>NICKEL</u> <u>mg/l</u>	<u>TOTAL</u> <u>MERCURY</u> <u>mg/l</u>	<u>TOTAL</u> <u>ZINC</u> <u>mg/l</u>
06/26/CC98	<0.005	0.005	<0.0002	0.024
06/26/CC98	<0.005	0.005	<0.0002	0.017
09/23/CC98	<0.005	<0.002	<0.0002	0.034
09/23/CC98	<0.005	0.002	<0.0002	0.017
Mean	0.005	0.004	0.0002	0.023
Minimum	0.005	0.002	0.0002	0.017
Maximum	0.005	0.005	0.0002	0.034

**Cullaton Lake Water Quality
1998**

940-18: TAILINGS POND #1 SPILLWAY

<u>DATE</u>	<u>LAB PH</u> <u>pH unit</u>	<u>SUSPENDED</u> <u>SOLIDS</u> <u>mg/l</u>	<u>TOTAL</u> <u>CYANIDE</u> <u>mg/l</u>	<u>TOTAL</u> <u>ARSENIC</u> <u>mg/l</u>	<u>TOTAL</u> <u>COPPER</u> <u>mg/l</u>
06/26/CC98	7.8	3	0.024	0.0019	0.012
06/26/CC98	7.8	<2	0.025	0.0018	0.003
09/23/CC98	7.9	6	0.050	0.0022	0.008
09/23/CC98	7.9	3	0.047	0.0035	0.002
Mean	7.8	4	0.036	0.0024	0.006
Minimum	7.8	2	0.024	0.0018	0.002
Maximum	7.9	6	0.050	0.0035	0.012

<u>DATE</u>	<u>TOTAL</u> <u>LEAD</u> <u>mg/l</u>	<u>TOTAL</u> <u>NICKEL</u> <u>mg/l</u>	<u>TOTAL</u> <u>MERCURY</u> <u>mg/l</u>	<u>TOTAL</u> <u>ZINC</u> <u>mg/l</u>
06/26/CC98	<0.005	<0.002	<0.0002	0.025
06/26/CC98	<0.005	<0.002	<0.0002	0.017
09/23/CC98	<0.005	0.015	<0.0002	0.030
09/23/CC98	<0.005	0.010	<0.0002	0.034
Mean	0.005	0.007	0.0002	0.027
Minimum	0.005	0.002	0.0002	0.017
Maximum	0.005	0.015	0.0002	0.034

**Cullaton Lake Water Quality
1998**

940-19: TAILINGS POND #1 PIESOMETER

<u>DATE</u>	<u>LAB PH pH unit</u>	<u>SUSPENDED SOLIDS mg/l</u>	<u>TOTAL CYANIDE mg/l</u>	<u>TOTAL ARSENIC mg/l</u>	<u>TOTAL COPPER mg/l</u>
06/26/CC98	7.7	19	0.080	0.0070	0.005
06/26/CC98	7.7	18	0.080	0.0031	0.003
09/23/CC98	7.8	<2	0.015	0.0038	0.003
09/23/CC98	7.8	3	0.015	0.0033	0.004
Mean	7.8	10	0.047	0.0043	0.004
Minimum	7.7	2	0.015	0.0031	0.003
Maximum	7.8	19	0.080	0.0070	0.005

<u>DATE</u>	<u>TOTAL LEAD mg/l</u>	<u>TOTAL NICKEL mg/l</u>	<u>TOTAL MERCURY mg/l</u>	<u>TOTAL ZINC mg/l</u>
06/26/CC98	<0.005	0.005	<0.0002	0.022
06/26/CC98	<0.005	0.002	<0.0002	0.011
09/23/CC98	<0.005	<0.002	<0.0002	0.038
09/23/CC98	<0.005	0.010	<0.0002	0.033
Mean	0.005	0.005	0.0002	0.026
Minimum	0.005	0.002	0.0002	0.011
Maximum	0.005	0.010	0.0002	0.038

**Cullaton Lake Water Quality
1998**

940-20: EAST SIDE OF TAILINGS POND #1

<u>DATE</u>	LAB PH <u>pH unit</u>	SUSPENDED SOLIDS <u>mg/l</u>	TOTAL CYANIDE <u>mg/l</u>	TOTAL ARSENIC <u>mg/l</u>	TOTAL COPPER <u>mg/l</u>
06/26/CC98	8.2	3	0.005	0.0026	0.008
06/26/CC98	8.2	5	0.005	0.0028	0.007
09/23/CC98	7.8	8	0.015	0.0037	0.003
09/23/CC98	7.7	11	0.006	0.0037	0.009
Mean	8.0	7	0.008	0.0032	0.007
Minimum	7.7	3	0.005	0.0026	0.003
Maximum	8.2	11	0.015	0.0037	0.009

<u>DATE</u>	TOTAL LEAD <u>mg/l</u>	TOTAL NICKEL <u>mg/l</u>	TOTAL MERCURY <u>mg/l</u>	TOTAL ZINC <u>mg/l</u>
06/26/CC98	<0.005	0.009	<0.0002	0.096
06/26/CC98	<0.005	0.005	<0.0002	0.010
09/23/CC98	<0.005	0.013	<0.0002	0.033
09/23/CC98	<0.005	0.013	<0.0002	0.017
Mean	0.005	0.010	0.0002	0.039
Minimum	0.005	0.005	0.0002	0.010
Maximum	0.005	0.013	0.0002	0.096

**Cullaton Lake Water Quality
1998**

940-Q

<u>DATE</u>	LAB PH <u>pH unit</u>	SUSPENDED SOLIDS <u>mg/l</u>	TOTAL CYANIDE <u>mg/l</u>	TOTAL ARSENIC <u>mg/l</u>	TOTAL COPPER <u>mg/l</u>
06/26/CC98	7.6	10	0.001	0.0053	0.007
06/26/CC98	7.6	14	0.001	0.0056	0.008
09/23/CC98	8.0	17	0.006	0.0091	0.008
09/23/CC98	8.0	25	0.006	0.0085	0.008
Mean	7.8	16	0.004	0.0071	0.008
Minimum	7.6	10	0.001	0.0053	0.007
Maximum	8.0	25	0.006	0.0091	0.008

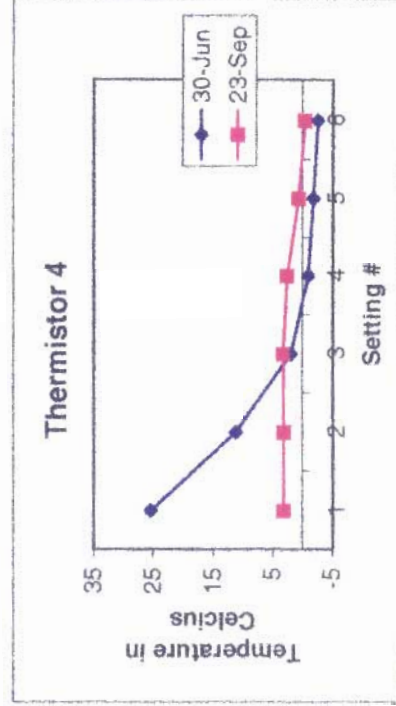
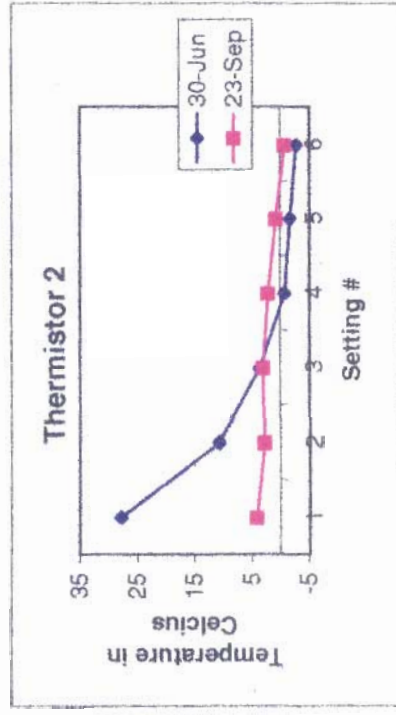
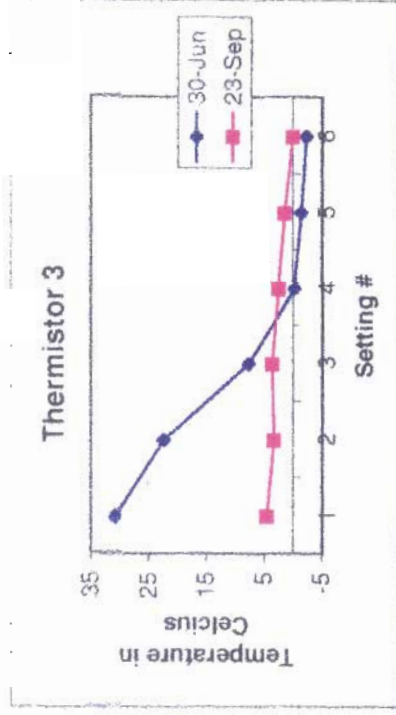
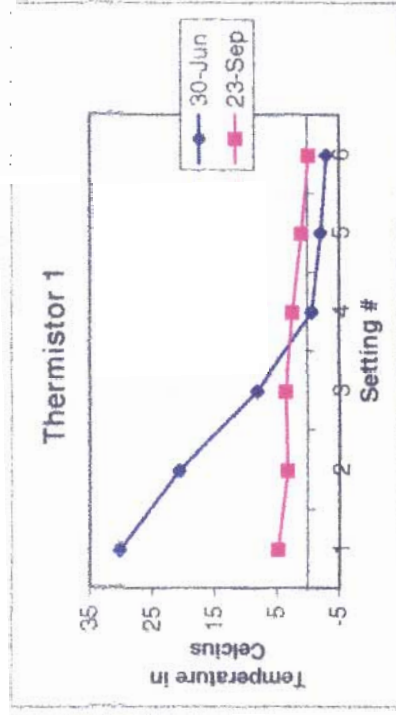
<u>DATE</u>	TOTAL LEAD <u>mg/l</u>	TOTAL NICKEL <u>mg/l</u>	TOTAL MERCURY <u>mg/l</u>	TOTAL ZINC <u>mg/l</u>
06/26/CC98	<0.005	0.009	<0.0002	0.219
06/26/CC98	<0.005	0.009	<0.0002	0.252
09/23/CC98	<0.005	0.022	<0.0002	0.105
09/23/CC98	<0.005	0.015	<0.0002	0.101
Mean	0.005	0.014	0.0002	0.169
Minimum	0.005	0.009	0.0002	0.101
Maximum	0.005	0.022	0.0002	0.252

APPENDIX 2

Thermistor Temperatures - 1998 (940-21)

		0	1	2	3	4	5
No. 1	30-Jun	30.2	20.6	8.1	-0.7	-2.1	-3
	23-Sep	4.7	3.2	3.5	2.4	0.9	-0.2
No. 2	30-Jun	27.9	10.8	3.6	-0.7	-1.7	-2.8
	23-Sep	4.2	2.8	3.1	2.2	0.8	-0.7
No. 3	30-Jun	30.8	22.4	7.7	-0.3	-1.5	-2.3
	23-Sep	4.5	3.3	3.6	2.5	1.4	0
No. 4	30-Jun	25.5	11.2	2	-0.9	-1.8	-2.5
	23-Sep	3.1	3.2	3.3	2.6	0.7	-0.4

Thermistor Temperatures - 1998



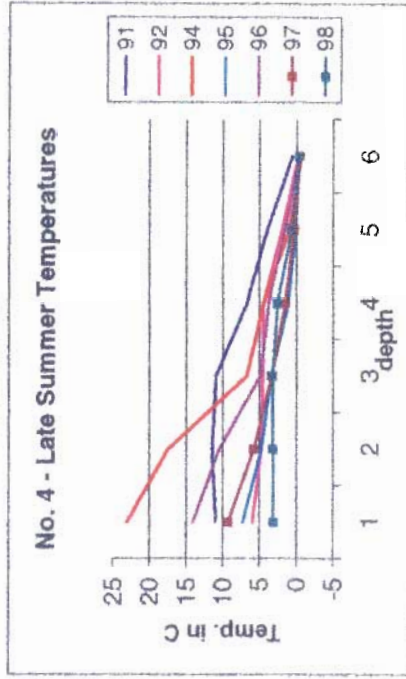
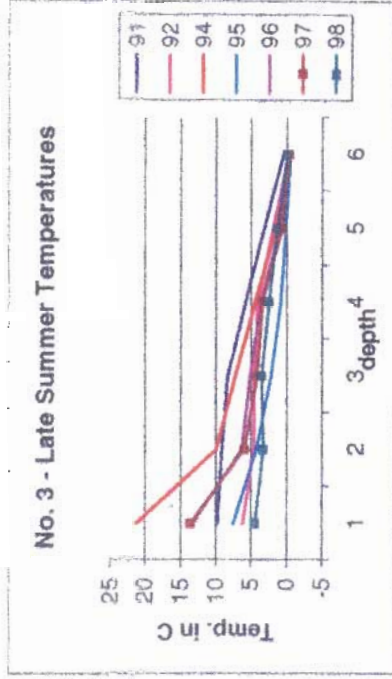
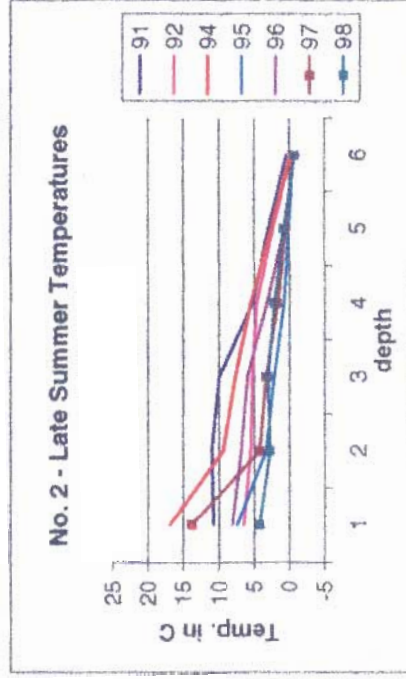
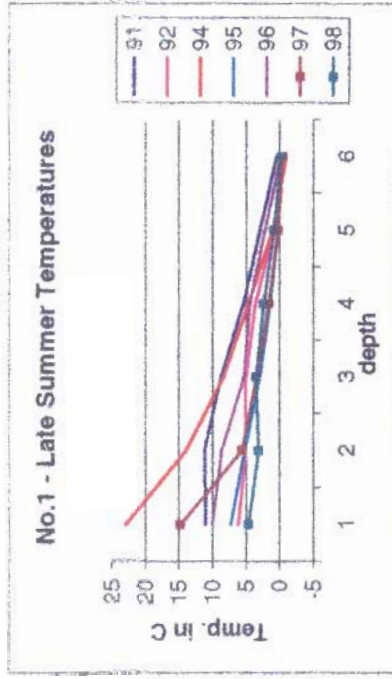
Depth below surface	
1	0.3 m
2	0.8 m
3	1.3 m
4	1.8 m
5	2.3 m
6	2.8 m

CULLATON LAKE THERMISTORS (1991 TO 1998)
Temperature in Celcius

No.1	1	2	3	4	5	6	No.2	1	2	3	4	5	6
Aug-91	13.2	12.8	10.8	7.2	5.2	0.8	Aug-91	13.0	13.0	13.2	10.2	6.0	0.5
Sep-91	11.0	11.2	8.8	5.4	3.0	0.5	Sep-91	10.8	11.0	10.0	5.2	3.0	0.4
Jul-92	13.5	13.6	13.5	4.4	-0.9	-2.1	Jul-92	13.3	13.6	13.4	6.2	-0.5	-2.0
Aug-92	6.2	5.1	5.1	3.6	0.9	-0.4	Aug-92	6.5	5.5	5.2	4.7	2.3	-0.2
Jul-93	33.1	16.0	6.8	0.0	-1.3	-2.1	Jul-93	34.5	29.4	12.4	5.2	-0.5	-1.8
Jun-94	13.7	12.0	7.6	1.5	-1.0	-1.8	Jun-94	13.7	13.4	12.3	7.8	0.6	-1.4
Jul-94	15.6	11.3	5.0	-0.2	-2.1	-3.3	Jul-94	15.4	15.3	9.3	2.4	-1.1	-3.0
Jun-94	15.6	11.3	4.6	-0.7	-2.6	-3.6	Jun-94	15.4	15.2	8.0	1.7	-1.8	-3.4
Jul-94	19.6	14.0	9.2	4.9	-0.2	-1.3	Jul-94	20.2	19.3	11.1	9.1	2.2	-1.0
Sep-94	23.0	14.0	8.4	4.7	1.1	-0.9	Sep-94	16.9	9.4	7.7	5.5	2.6	-0.2
Jun-95	36.0	18.5	3.7	-0.8	-2.2	-3.1	Jun-95	29.4	7.1	0.6	-1.2	-2.2	-3.4
Sep-95	7.4	5.3	3.0	1.4	0.3	-0.3	Sep-95	7.5	3.3	2.2	0.8	0.1	-0.6
Oct-95	3.4	1.6	1.7	1.3	0.4	-0.3	Oct-95	3.1	1.2	1.5	0.8	-0.4	-0.6
Jun-96	12.1	7.4	2.1	-0.3	-2.0	-3.2	Jun-96	11.8	3.1	1.2	-0.7	-2.2	-3.6
Sep-96	7.9	6.4	7.7	4.8	1.8	-0.2	Sep-96	8.1	6.9	5.9	3.3	0.7	-0.6
Sep-96	10.1	8.6	5.3	4.5	2.2	-0.1	Sep-96	14.4	4.7	4.9	3.5	1.1	-0.6
Jul-97	15.2	12.1	6.2	1.8	-0.9	-1.9	Jul-97	9.7	9.3	6.2	0.9	-0.9	-2.1
Sep-97	6.3	1.9	3.2	2.6	0.7	-0.6	Sep-97	6.2	1.8	3.8	3.1	1.2	-0.7
Sep-97	14.9	5.7	3.5	1.7	0.3	-0.4	Sep-97	13.8	4.2	3.3	1.7	0.5	-0.6
Jun-98	30.2	20.6	8.1	-0.7	-2.1	-3.0	Jun-98	27.9	10.8	3.6	-0.7	-1.7	-2.8
Sep-98	4.7	3.2	3.5	2.4	0.9	-0.2	Sep-98	4.2	2.8	3.1	2.2	0.8	-0.7

No.3	1	2	3	4	5	6	No.4	1	2	3	4	5	6
Aug-91	12.8	13.0	12.8	11.0	6.5	0.8	Aug-91	15.0	14.2	16.8	12.0	6.2	1.0
Sep-91	9.8	9.2	8.4	5.8	3.2	0.5	Sep-91	11.0	11.5	11.0	6.8	4.0	0.6
Jul-92	12.8	12.6	12.5	5.2	-0.6	-1.9	Jul-92	12.9	13.3	12.7	5.2	-0.7	-1.7
Aug-92	6.2	4.7	4.6	4.1	2.0	-0.2	Aug-92	6.0	4.8	4.6	4.5	2.0	-0.2
Jul-93	32.5	22.0	9.2	1.2	-0.9	-1.9	Jul-93	32.9	22.0	9.2	1.0	-1.0	-1.0
Jun-94	13.8	13.1	10.0	3.4	-0.6	-1.5	Jun-94	13.4	12.9	10.5	-3.0	-0.7	-1.5
Jul-94	15.3	13.6	7.0	0.1	-1.7	-3.3	Jul-94	15.4	13.3	6.7	-0.1	-2.0	-3.1
Jul-94	15.3	13.6	6.8	0.0	-1.8	-3.5	Jul-94	15.4	13.2	6.7	-0.2	-2.0	-3.2
Jul-94	20.2	18.5	10.1	5.7	0.1	-1.3	Jul-94	19.5	14.5	6.8	4.2	-0.4	-1.5
Sep-94	21.3	10.0	7.3	4.5	1.6	-0.4	Sep-94	23.1	17.5	6.8	4.5	1.0	-0.6
Jun-95	32.4	8.7	-0.2	-1.9	-3.2	-4.2	Jun-95	36.3	25.0	5.8	-1.0	-2.4	-3.5
Sep-95	7.5	4.3	2.3	0.9	0.1	-0.5	Sep-95	7.3	4.8	3.4	1.1	0.2	-0.4
Oct-95	3.5	1.8	1.6	1.0	0.1	-0.4	Oct-95	3.6	2.2	1.3	1.0	0.2	-0.4
Jun-96	11.7	4.9	1.3	-0.8	-2.5	-3.8	Jun-96	11.6	9.2	3.2	-0.5	-2.1	-3.4
Sep-96	8.5	7.5	6.5	3.3	0.7	-0.5	Sep-96	9.3	7.8	7.2	4.2	1.3	-0.4
Sep-96	13.3	6.4	5.2	3.7	1.1	-0.4	Sep-96	14.1	10.5	5.0	3.9	1.6	-0.4
Jul-97	14.9	13.1	7.4	1.6	-0.9	-1.9	Jul-97	13.3	11.0	7.6	1.9	-1.1	-2.1
Sep-97	5.7	3.1	3.5	3.3	1.3	-0.3	Sep-97	2.1	1.9	3.3	2.8	1.0	-0.7
Sep-97	13.6	6.0	4.2	3.5	0.7	-0.3	Sep-97	9.3	5.8	3.3	1.6	0.3	-0.5
Jun-98	30.8	22.4	7.7	-0.3	-1.5	-2.3	Jun-98	25.5	11.2	2.9	-0.9	-1.8	-2.5
Sep-98	4.5	3.3	3.6	2.5	1.4	0	Sep-98	3.1	3.2	3.3	2.6	0.7	-0.4

Cullaton Lake Thermistors



Depth below surface
 0.3 m
 0.8 m
 1.3 m
 1.8 m
 2.3 m
 2.8 m

APPENDIX 3

Cullaton Lake Field Data 1998

Station	Date	pH	Temperature C°
940-2	June	lab pH 7.7*	20.0
	September	7.8	5.0
940-3	June	lab pH 7.7	21.0
	September	7.6	5.0
940-18	June	lab pH 7.8	22.0
	September	8.0	5.2
940-19	June	lab pH 7.7	20.0
	September	8.0	5.2
940-20	June	lab pH 8.2	22.0
	September	7.9	4.9
940-22	June	no seepage	no seepage
	September	no seepage	no seepage
Quarry Pit	June	lab pH 7.6	21.0
	September	7.4	5.0

* The pH meter malfunctioned during the June water sampling. Laboratory figures have been substituted for the June field readings for pH.