

**DELOITTE & TOUCHE INC.**

**2000 ANNUAL GEOTECHNICAL EVALUATION  
AND INSTRUMENT REVIEW**

**VOLUME 2 OF 2**

**VARIOUS FACILITIES AT  
FARO MINE, YUKON**

**FINAL**

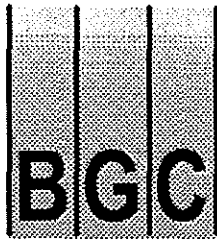
PROJECT NO.: 0257-001-03  
DATE: FEBRUARY 20, 2001

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**APPENDIX I  
FACILITY STATUS MEMO  
SEPTEMBER 25, 2000**

## APPENDIX I

### FACILITY STATUS MEMO – SEPTEMBER 25, 2000



# **BGC ENGINEERING INC.**

**AN APPLIED EARTH SCIENCES COMPANY**

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## **PROJECT MEMORANDUM**

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**To:** Deloitte & Touche Inc. **Fax No.:**  
(Receiver for Anvil Range Mining Corp.)

**Attention:** Mr. Dana Haggart / Mr. Doug Sedgwick **CC:** Mr. Eric Denholm

**From:** Mr. Jim Cassie, P.Eng. **Date:** Sept. 25, 2000

**Subject:** Summary of Facility Status & Maintenance Recommendations  
Geotechnical Inspection of Various Facilities at Faro Mine, Yukon

**No. of Pages (including this page):** 4 Pages **Project No:** 0257-001-01

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### **1. INTRODUCTION**

A geotechnical inspection was carried out from September 9 (Sat.) to 12 (Tues.), 2000 and included the following major components:

- Fresh Water Supply Dam;
- Down Valley Tailings Project;
- North Fork - Rose Creek Rock Drain;
- Certain Waste Rock Dumps (overlooking North Fork Rose Creek);
- Faro Creek Diversion (overlooking Faro Pit).

The purpose of this memo is to highlight concerns requiring maintenance attention, which were observed during this site inspection trip. Nothing of a critical nature was noted and the following comments relate to routine maintenance requirements.

### **2. CERTAIN WASTE ROCK DUMPS**

- Inspected the toe and crest areas for the waste dumps on the west side of North Fork - Rose Creek. No apparent evidence of any recent movement, except for some small slumping in the till on the lower slopes of the "Northeast Dumps" (overlooking the Faro Creek diversion confluence with North Fork – Rose Creek).
- Some small pits have been excavated into the top of the waste dump crest, near the access road that is located at the north end of the Northeast Dumps. These pits should be backfilled to prevent localised water infiltration into the slope.

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BGC Engineering Inc.

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### 3. NORTH FORK - ROSE CREEK ROCK DRAIN

- Water appears to be flowing without trouble through the rock drain. No work required.
- Upstream pond-level monitoring and Faro Creek culvert readings should be reinstated to develop a better predictive data base for assessing performance of the rock drain. An automatic datalogger could be used to monitor the headpond levels. Additionally, a photographic record of the headpond level should be maintained.

### 4. DOWN VALLEY TAILINGS PROJECT

#### 4.1 Diversion Canal

- Several small sinkholes have formed (some noted previously) in the downstream portion of the dyke crest at Sta. 0+800 and 1+900 and hence, some grading should be undertaken.
- Seepage continues to occur at the toe of the backslope, just east of the old spoil piles, situated between the Cross Valley and the Intermediate Dams.
- Remove two small sump ponds situated near the toe of the south abutment of the Intermediate Dam, which are leading to saturation of the fill at the toe of the backslope.
- Consideration should be given to repair of the old slide area, located on the canal backslope at approximately Station 2+000. Excessive surficial drainage this year may saturate the slide mass, leading to possible movement into the canal. Repair of this slide would only be practical when accessing the site from ice formed in the canal.
- Repair final weir in the Weir Section of the canal where flow is escaping around the south side of the weir.

#### 4.2 Intermediate Dam

- Seven distinct seepage discharge points were noted. It is necessary to monitor for any seepage discharge and to ensure that the seepage water does not contain any sediment (very critical if sediment is observed).
- Place some rip rap on the inside of the small soil groin on the left side of the spillway inlet.
- Monitor the new cracking on the crest over near the north abutment.

#### 4.3 Cross Valley Dam

- Monitor the active cracking near the upstream side of the crest, within the centre portion of the dam.
- It is necessary to excavate and clean out both the inlet and outlet end of the culvert located at the south side of the toe berm access road (previously recommended in 1995, 1996, 1997, 1998 and 1999 inspection reports).

#### 4.4 North Valley Wall Interceptor Ditch

- Complete downhill side retention berm, up near gatehouse (work presently started).
- Add some additional fill height to the downstream side retention berm, just below the old "borrow" area.
- The ditch section located downstream from the outfall culverts is likely undersized to pass major flood events (Jim Cassie to check capacity).

## 5. FRESH WATER SUPPLY (FWS) DAM

- Some of cracks on the crest may be still continuing to open. Continue to monitor paint lines across cracks on the crest.
- All vegetation should be removed from the crest, making sure to minimise any disturbance to the placed fill materials.
- The low level pipe condition is still unknown and probably represents the largest liability with the FWS dam. It is understood that divers attempted to locate the upstream end this year, but were unsuccessful. The as-built plan for this pipe has been located and hence, the interior condition of this pipe should be inspected by some remote means.
- Some surficial drainage at the south abutment is being directed (using sandbags) to the downstream face, causing the area to become saturated and slightly eroded. Please redirect this drainage to the upstream side of the dam, being careful to ensure that no erosion occurs.
- Since cracking on the crest appears to be continuing, it is recommended that these crest cracks be backfilled, in order to prevent further damage from occurring. Each of the cracks should be cleaned out by hand to remove loose material, vegetation and rock fragments. Then the cracks should be backfilled with a mixture of sand (-2 mm size) and 10% (by weight) powdered bentonite (a clay mineral likely available from any drilling supply store) and lightly tamped into place. Make sure the crest slope drains properly after backfilling is completed.

## 6. FARO CREEK DIVERSION CHANNEL (OVER FARO PIT)

- The Faro Creek diversion channel condition has deteriorated and likely leaks excessively into the north wall of the Faro Pit. Previous movements on this pitwall were previously initiated by high groundwater levels within this wall. Hence, the downstream side of the diversion channel should be monitored for any potential pit slope movement. It may be useful to install a straight line of stakes which can be visually, even during snowfall conditions.

## 7. INSTRUMENTATION

- All instrumentation (whether operational or not), specifically on all dams, should be inspected for settlement around the instrumentation casing and/or standing water. If any is observed, the casing needs to be backfilled with bentonite chips in order to prevent the infiltration of any surface water along the casing. Please pile the chips up around the casing so that all surface water is directed away from the casing.

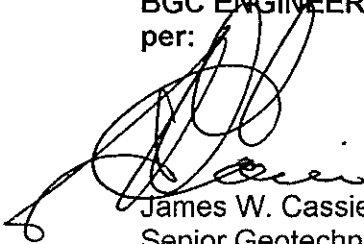
## 8. CONCLUSIONS

In summary, the project components are in satisfactory condition to perform their required function. The inspection of the instrumentation on the dams for settlement (and potential backfilling with bentonite) should be done before the end of September. Other maintenance items listed above should be undertaken before wintertime, if practical.

It should also be noted that regular inspections, by appropriately trained staff, must be undertaken by site personnel, especially given the closure status of the mine. As a minimum, inspections need to be undertaken on a weekly basis. This responsibility must be delegated to an appropriate person during the shutdown period.

Given the closure status of the mine, and the potential for limited visual inspections of the facilities, consideration should be given to automating some of the instrumentation on-site. This may require the linking of instrumentation on-site with staff down in the Faro townsite so that potential precursor information can be obtained. Before this implementation program can occur, it is suggested that a qualitative risk assessment be carried out in order to identify potential failure modes and determine critical instrumentation requirements for the management of those risks.

Respectfully submitted,  
BGC ENGINEERING INC.  
per:



James W. Cassie, P.Eng.  
Senior Geotechnical Engineer

JWC/jwc

**APPENDIX II  
INTERMEDIATE DAM MONITORING  
WELLS - WATER LEVELS**

## APPENDIX II

### INTERMEDIATE DAM MONITORING WELLS - WATER LEVELS

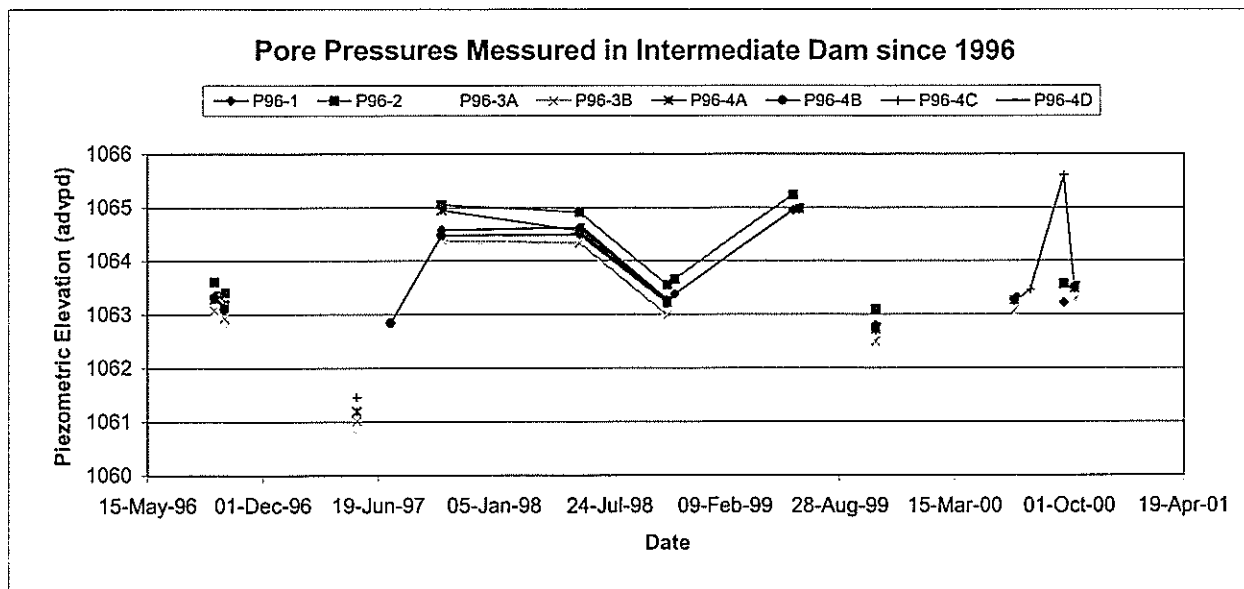
Summary of Static Water Level Measurements in the Intermediate Dam

Piezometer No.	P96-1	P96-2	P96-3A	P96-3B	P96-4A	P96-4B	P96-4C	P96-4D	
Ground Elevation (m)	1049.3	1049.3	1031.4	1031.4	1032.3	1032.3	1032.3	1032.3	
Screened Interval	18.77-21.8	17.13-20.12	7.44-8.97	17.7-19.17	5.7-6.48	9.8-11.3	14.97-16.47	26.84-28.34	
Well Stick-up	0.75	0.75	0.68	0.63	0.8	0.75	0.7	0.7	
Piezometer Readings (m BTOW)	08-Sep-96	20.06	19.74	2.37	2.25	3.11	3.04	2.98	2.88
	26-Sep-96			2.53	2.4	3.27	3.25	3.12	3.05
	27-Sep-96		19.94						
	13-May-97			4.5	4.32	5.21		4.85	
	06-Jun-97								
	11-Jul-97						3.51		
	07-Oct-97	18.77	18.3	1.06	0.95	1.45	1.87	1.82	
	01-Jun-98	18.73	18.44	1.07	0.99	1.84	1.84	1.83	1.62
	31-Oct-98	20.08	19.8	2.44	2.34	3.18	3.15	3.09	3.01
	13-Nov-98	19.97	19.69						
	08-Jun-99	18.4	18.11						
	19-Jun-99			0.7	0.58	1.43	1.38	1.36	1.25
	03-Jul-99								
	29-Oct-99	20.55	20.25	2.94	2.82	3.68	3.62	3.6	3.48
	31-Oct-99								
	31-May-00								
	27-Jun-00			2.41	2.26	3.14	3.08	3.07	2.93
	25-Jul-00							2.84	
	21-Sep-00	20.13	19.78						
	10-Oct-00			2.2	2.05	2.92	2.85	2.83	2.71
Piezometer Readings (m BGS)	08-Sep-96	19.31	18.99	1.69	1.62	2.31	2.29	2.28	2.18
	26-Sep-96			1.85	1.77	2.47	2.5	2.42	2.35
	27-Sep-96		19.19						
	13-May-97			3.82	3.69	4.41		4.15	
	06-Jun-97								
	11-Jul-97						2.76		
	07-Oct-97	18.02	17.55	0.38	0.32	0.65	1.12	1.12	
	01-Jun-98	17.98	17.69	0.39	0.36	1.04	1.09	1.13	0.92
	31-Oct-98	19.33	19.05	1.76	1.71	2.38	2.4	2.39	2.31
	13-Nov-98	19.22	18.94						
	08-Jun-99	17.65	17.36						
	19-Jun-99			0.02		0.63	0.63	0.66	0.55
	03-Jul-99								
	29-Oct-99	19.8	19.5	2.26	2.19	2.88	2.87	2.9	2.78
	31-Oct-99								
	31-May-00								
	27-Jun-00			1.73	1.63	2.34	2.33	2.37	2.23
	25-Jul-00							2.14	
	21-Sep-00	19.38	19.03						
	10-Oct-00			1.52	1.42	2.12	2.1	2.13	2.01

Summary of Static Water Level Measurements in the Intermediate Dam

	P96-1	P96-2	P96-3A	P96-3B	P96-4A	P96-4B	P96-4C	P96-4D	
Piezometric Elevation (m AMSL)	08-Sep-96	1029.99	1030.31	1029.71	1029.78	1029.99	1030.01	1030.12	
	26-Sep-96			1029.55	1029.63	1029.83	1029.8	1029.95	
	27-Sep-96		1030.11						
	13-May-97			1027.58	1027.71	1027.89		1028.15	
	06-Jun-97								
	11-Jul-97						1029.54		
	07-Oct-97	1031.28	1031.75	1031.02	1031.08	1031.65	1031.18	1031.18	
	01-Jun-98	1031.32	1031.61	1031.01	1031.04	1031.26	1031.21	1031.17	
	31-Oct-98	1029.97	1030.25	1029.64	1029.69	1029.92	1029.9	1029.91	
	13-Nov-98	1030.08	1030.36						
	08-Jun-99	1031.65	1031.94						
	19-Jun-99			1031.38		1031.67	1031.67	1031.64	1031.75
	03-Jul-99								
	29-Oct-99	1029.5	1029.8	1029.14	1029.21	1029.42	1029.43	1029.4	1029.52
	31-Oct-99								
	31-May-00								
	27-Jun-00			1029.67	1029.77	1029.96	1029.97	1029.93	1030.07
	25-Jul-00							1030.16	
	21-Sep-00	1029.92	1030.27					1032.3	
	10-Oct-00			1029.88	1029.98	1030.18	1030.2	1030.17	1030.29
Piezometric Elevation (m DVPD)	08-Sep-96	1063.29	1063.61	1063.01	1063.08	1063.29	1063.31	1063.32	1063.42
	26-Sep-96			1062.85	1062.93	1063.13	1063.1	1063.18	1063.25
	27-Sep-96		1063.41						
	13-May-97			1060.88	1061.01	1061.19		1061.45	
	06-Jun-97								
	11-Jul-97						1062.84		
	07-Oct-97	1064.58	1065.05	1064.32	1064.38	1064.95	1064.48	1064.48	
	01-Jun-98	1064.62	1064.91	1064.31	1064.34	1064.56	1064.51	1064.47	1064.68
	31-Oct-98	1063.27	1063.55	1062.94	1062.99	1063.22	1063.2	1063.21	1063.29
	13-Nov-98	1063.38	1063.66						
	08-Jun-99	1064.95	1065.24						
	19-Jun-99			1064.68		1064.97	1064.97	1064.94	1065.05
	03-Jul-99								
	29-Oct-99	1062.8	1063.1	1062.44	1062.51	1062.72	1062.73	1062.7	1062.82
	31-Oct-99								
	31-May-00								
	27-Jun-00			1062.97	1063.07	1063.26	1063.27	1063.23	1063.37
	25-Jul-00							1063.46	
	21-Sep-00	1063.22	1063.57					1065.6	
	10-Oct-00			1063.18	1063.28	1063.48	1063.5	1063.47	1063.59

NOTE: P96-1 AND P96-2 on the crest of the Int. dam drilled into the drainage blanket.  
 96-3 at the toe of the Int. dam near the north abutment.  
 96-4 at the toe of the Int. dam near the south abutment.  
 Readings collected and provided by Deloitte and Touche



**APPENDIX III  
INSTRUMENTATION DATA RECORDS  
AND GRAPHS**

## APPENDIX III

### INSTRUMENTATION DATA RECORDS AND GRAPHS

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### INSTRUMENTATION DATA

1. DIVERSION CANAL  
Canal Dyke
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  - Thermistors
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    - Thermistors
    - Inclinometers
2. BACKSLOPE CANAL DYKE
  - Thermistors
3. CROSS VALLEY DAM
  - Piezometers
  - Thermistors
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  - Piezometers
5. FRESH WATER SUPPLY DAM
  - Piezometers
  - Thermistors

# DIVERSION CANAL

Diversion  
Canal

**LIST OF INSTRUMENTS READ IN 2000**

Reference Number	Reference Line Chainage	Instrument
CD4	0+400	Thermistor
CD5	0+510	Thermistor
CD10	0+990	Thermistor Slope Indicator
CD13	1+350	Shallow pneumatic piezometer tip #350 Deep pneumatic piezometer tip #381
CD15	1+530	Thermistor Slope Indicator Shallow pneumatic piezometer tip #353 Deep pneumatic piezometer tip #362
BH91-CD-1	1+767	Slope Indicator
CD19	1+900	Slope Indicator Shallow pneumatic piezometer tip #365 Deep pneumatic piezometer tip #382
CD21	2+100	Slope Indicator Thermistor Shallow pneumatic piezometer tip #345 Deep pneumatic piezometer tip #366

**LIST OF INSTRUMENTS READ IN 2000**

Reference Number	Reference Line Chainage	Instrument
BH88-07	2+115	Thermistor Shallow pneumatic piezometer tip #11342 Deep pneumatic piezometer tip #11338
BH88-10	2+160	Slope Indicator
BH88-11	2+160	Thermistor Shallow pneumatic piezometer tip #11345 Deep pneumatic piezometer tip #11337
BH94-CD-1	2+300	Slope Indicator
CD26	2+600	Shallow pneumatic piezometer tip #349 Deep pneumatic piezometer tip #356
SP-2	1+530	Slope Indicator Thermistor
SP-3	1+900	Thermistor
SP-5	2+950	Slope Indicator Thermistor

Note: Following inclinometer probes were used to read the slope indicators

Inclinometer Probe	Faro Mine	Golder	RST
Sensor S/N	SI-1000	50303-M	SM 92512
Year of reading	1988 - 1992	1994	1995
Instrument constant	2500	25000	5000

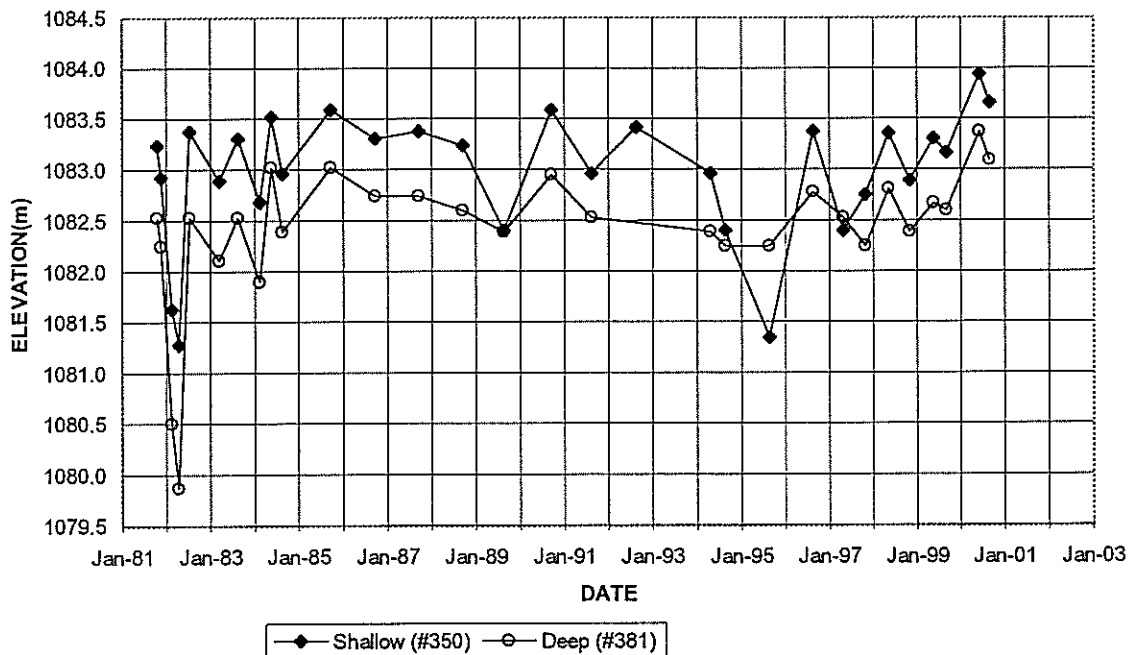
**BGC Engineering Inc.**

**DIVERSION CANAL DYKE  
PIEZOMETERS**

**BGC Engineering Inc.**

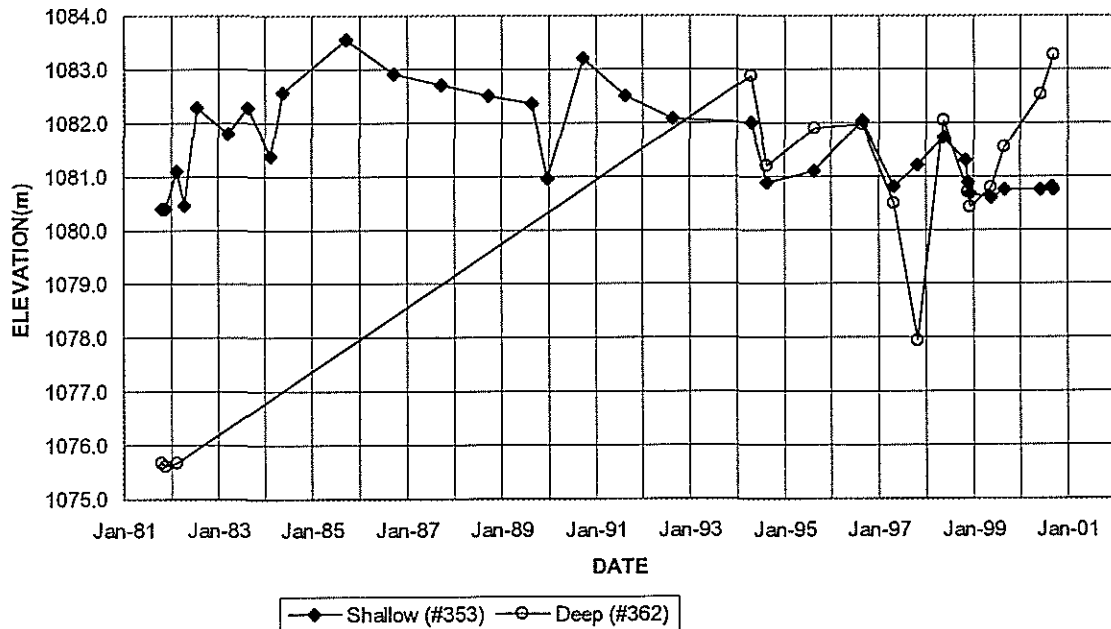
<b>CD-13</b>	<b>Location:</b> Canal Dyke St.1+350		<b>Ground Elevation:</b> 1087.60	<b>Coordinates:</b>
<b>Date Installed:</b> 1981			<b>Shallow Tip Elevation:</b> 1081.00	<b>Surface Deep Tip Elevation:</b> 1077.00
			<b>Protector:</b> yes	
Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow (#350)	Deep (#381)	Shallow	Deep
Nov-81	3.2	7.9	1083.24	1082.53
Dec-81	2.75	7.5	1082.93	1082.25
Mar-82	0.9	5	1081.63	1080.5
May-82	0.4	4.1	1081.28	1079.87
Aug-82	3.4	7.9	1083.38	1082.53
Apr-83	2.7	7.3	1082.89	1082.11
Sep-83	3.3	7.9	1083.31	1082.53
Mar-84	2.4	7	1082.68	1081.9
Jun-84	3.6	8.6	1083.52	1083.02
Sep-84	2.8	7.7	1082.96	1082.39
Oct-85	3.7	8.6	1083.59	1083.02
Oct-86	3.3	8.2	1083.31	1082.74
Oct-87	3.4	8.2	1083.38	1082.74
Oct-88	3.2	8	1083.24	1082.6
Sep-89	2	7.7	1082.40	1082.39
Oct-90	3.7	8.5	1083.59	1082.95
Sep-91	2.8	7.9	1082.96	1082.53
Sep-92	3.45		1083.42	
May-94	2.8	7.7	1082.96	1082.39
Sep-94	2	7.5	1082.40	1082.25
Sep-95	0.5	7.5	1081.35	1082.25
Sep-96	3.4	8.25	1083.38	1082.775
May-97	2.0	7.9	1082.40	1082.53
Nov-97	2.5	7.5	1082.75	1082.25
May-98	3.37	8.30	1083.36	1082.81
Nov-98	2.70	7.70	1082.89	1082.39
May-99	3.30	8.10	1083.31	1082.67
Sep-99	3.10	8.00	1083.17	1082.6
Jun-00	4.20	9.10	1083.94	1083.37
Sep-00	3.80	8.70	1083.66	1083.09

PNEUMATIC PIEZOMETER CD-13



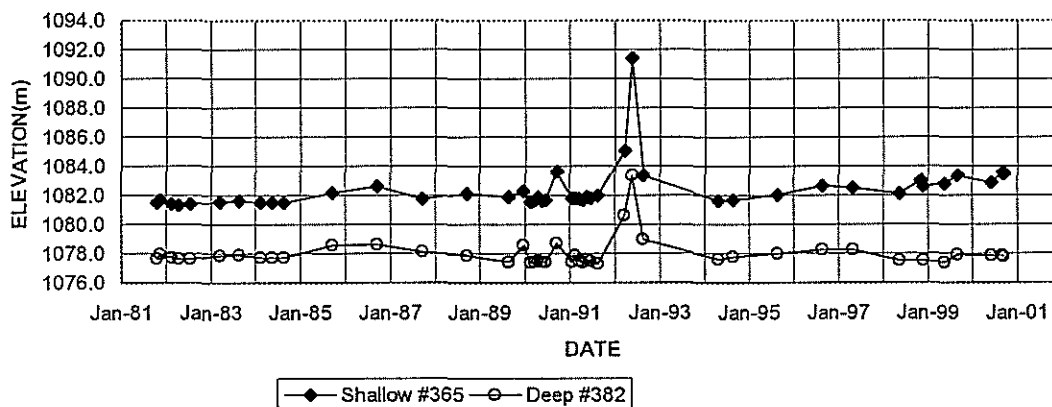
Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow (#353)	Deep (#362)	Shallow	Deep
Nov-81	0	0.1	1080.40	1075.67
Dec-81	0	0.02	1080.40	1075.614
Mar-82	1	0.1	1081.10	1075.67
May-82	0.1		1080.47	
Aug-82	2.7		1082.29	
Apr-83	2		1081.80	
Sep-83	2.7		1082.29	
Mar-84	1.4		1081.38	
Jun-84	3.1		1082.57	
Oct-85	4.5		1083.55	
Oct-86	3.6		1082.92	
Oct-87	3.3		1082.71	
Oct-88	3		1082.50	
Sep-89	2.8		1082.36	
Jan-90	0.8		1080.96	
Oct-90	4		1083.20	
Sep-91	3		1082.50	
Sep-92	2.4		1082.08	
May-94	2.3	10.4	1082.01	1082.88
Sep-94	0.7	8	1080.89	1081.2
Sep-95	1	9	1081.10	1081.9
Sep-96	2.35	9.1	1082.05	1081.97
May-97	0.6	7.0	1080.82	1080.5
Nov-97	1.17	3.35	1081.22	1077.945
May-98	1.90	9.20	1081.73	1082.04
15-Nov-98	1.3	n.r. (no bubbles returned)	1081.31	
04-Dec-98	0.7	7.3	1080.89	1080.71
16-Dec-98	0.4	6.9	1080.68	1080.43
28-May-99	0.30	7.42	1080.61	1080.794
11-Sep-99	0.50	8.5	1080.75	1081.55
14-Jun-00	0.50	9.9	1080.75	1082.53
09-Sep-00	0.60	n.r. (no bubbles returned #362)	1080.82	
19-Sep-00	0.50	10.95 (questionable operation #362)	1080.75	1083.265

PNEUMATIC PIEZOMETER CD-15



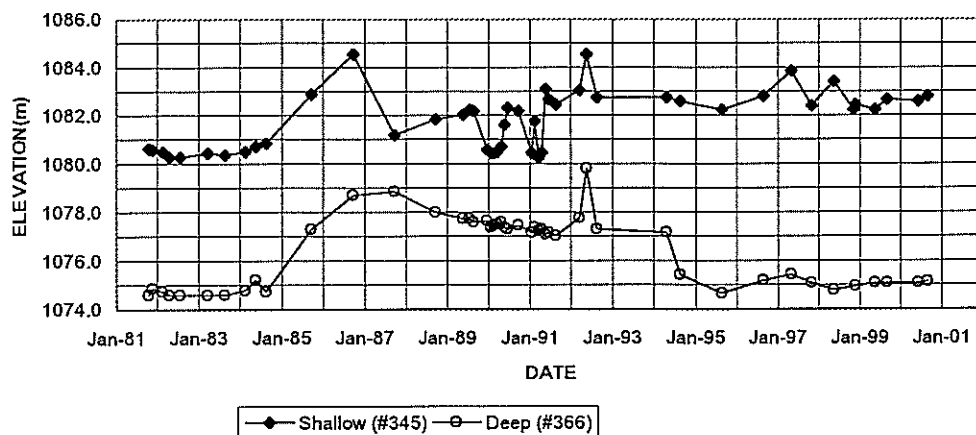
Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow #365	Deep #382	Shallow	Deep
Nov-81	0.7	0.5	1081.49	1077.65
Dec-81	1	0.92	1081.70	1077.944
Mar-82	0.6	0.65	1081.42	1077.755
May-82	0.5	0.5	1081.35	1077.65
Aug-82	0.6	0.5	1081.42	1077.65
Apr-83	0.8	0.8	1081.56	1077.86
Sep-83	0.9	0.9	1081.63	1077.93
Mar-84	0.7	0.6	1081.49	1077.72
Jun-84	0.7	0.6	1081.49	1077.72
Sep-84	0.7	0.6	1081.49	1077.72
Oct-85	1.7	1.8	1082.19	1078.56
Oct-86	2.3	1.9	1082.61	1078.63
Oct-87	1.1	1.2	1081.77	1078.14
Oct-88	1.6	0.8	1082.12	1077.86
Sep-89	1.3	0.2	1081.91	1077.44
Jan-90	1.9	1.8	1082.33	1078.56
Mar-90	0.8	0.1	1081.56	1077.37
Apr-90	0.9	0.2	1081.63	1077.44
May-90	1.3	0.3	1081.91	1077.51
Jun-90	0.9	0.2	1081.63	1077.44
Jul-90	1	0.2	1081.70	1077.44
Oct-90	3.8	2	1083.66	1078.7
Feb-91	1.15	0.2	1081.81	1077.44
Mar-91	1.2	0.8	1081.84	1077.86
Apr-91	1.1	0.24	1081.77	1077.468
May-91	1	0.1	1081.70	1077.37
Jun-91	1.3	0.4	1081.91	1077.58
Jul-91	1.2	0.25	1081.84	1077.475
Sep-91	1.4	0	1081.98	1077.3
Apr-92	5.8	4.75	1085.06	1080.625
Jun-92	14.9	8.7	1091.43	1083.39
Sep-92	3.4	2.4	1083.38	1078.98
May-94	0.9	0.4	1081.63	1077.58
Sep-94	1	0.7	1081.70	1077.79
Sep-95	1.5	1	1082.05	1078
Sep-96	2.35	1.35	1082.65	1078.245
May-97	2.2	1.4	1082.54	1078.28
Nov-97	could not locate			
May-98	1.60	0.30	1082.12	1077.51
15-Nov-98	2.92	n.r. (no bubbles returned; hissing sound)	1083.04	
04-Dec-98	2.30	0.3	1082.61	1077.51
28-May-99	2.60	0.10	1082.82	1077.37
11-Sep-99	3.40	0.90	1083.38	1077.93
14-Jun-00	2.70	0.80	1082.89	1077.86
09-Sep-00	3.70	0.80 (no bubbles #382)	1083.59	1077.86
19-Sep-00	3.50	0.70 (no bubbles #382)	1083.45	1077.79

PNEUMATIC PIEZOMETER CD-19



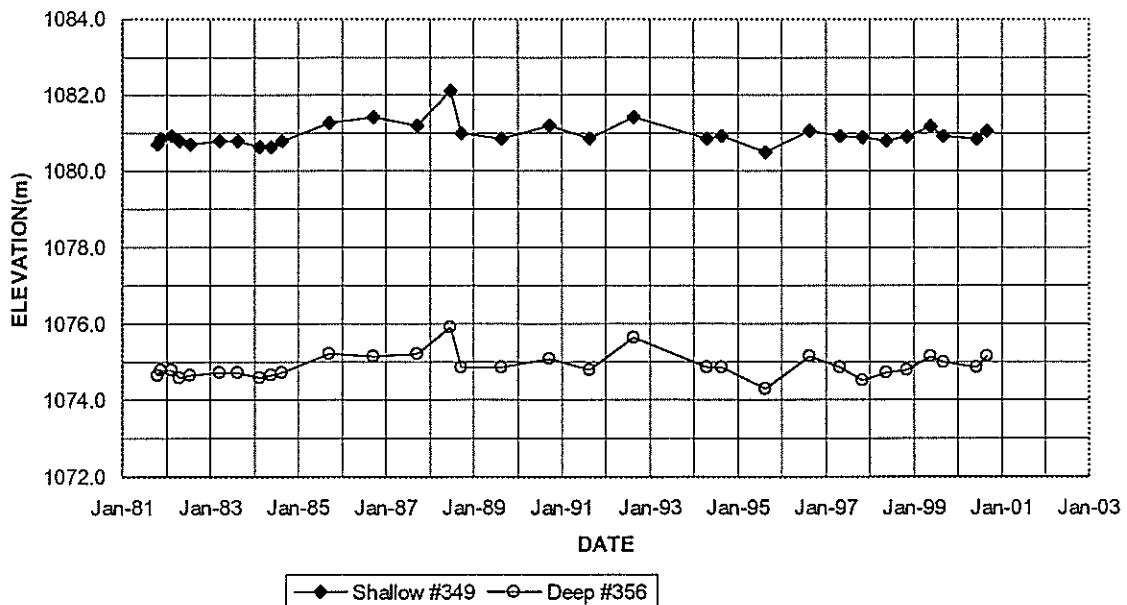
Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow (#345)	Deep (#366)	Shallow	Deep
Nov-81	1.2	0.4	1080.64	1074.58
Dec-81	1.1	0.78	1080.57	1074.85
Mar-82	1	0.6	1080.50	1074.72
May-82	0.7	0.4	1080.29	1074.58
Aug-82	0.7	0.4	1080.29	1074.58
Apr-83	0.9	0.4	1080.43	1074.58
Sep-83	0.8	0.4	1080.36	1074.58
Mar-84	1	0.7	1080.50	1074.79
Jun-84	1.3	1.3	1080.71	1075.21
Sep-84	1.5	0.6	1080.85	1074.72
Oct-85	4.4	4.3	1082.88	1077.31
Oct-86	6.8	6.3	1084.56	1078.71
Oct-87	2	6.5	1081.20	1078.85
Oct-88	2.9	5.3	1081.83	1078.01
Jun-89	3.2	4.9	1082.04	1077.73
Aug-89	3.5	4.9	1082.25	1077.73
Sep-89	3.4	4.7	1082.18	1077.59
Jan-90	1.1	4.8	1080.57	1077.66
Feb-90	0.9	4.4	1080.43	1077.38
Mar-90	0.9	4.5	1080.43	1077.45
Apr-90	1	4.6	1080.50	1077.52
May-90	1.3	4.7	1080.71	1077.59
Jun-90	2.6	4.4	1081.62	1077.38
Jul-90	3.6	4.3	1082.32	1077.31
Oct-90	3.4	4.5	1082.18	1077.45
Feb-91	0.9	4.1	1080.43	1077.17
Mar-91	2.8	4.4	1081.76	1077.38
Apr-91	0.6	4.2	1080.22	1077.24
May-91	0.9	4.3	1080.43	1077.31
Jun-91	4.7	4	1083.09	1077.1
Jul-91	4.1	4.1	1082.67	1077.17
Sep-91	3.8	3.9	1082.46	1077.03
Apr-92	4.65	4.95	1083.06	1077.765
Jun-92	6.8	7.87	1084.56	1079.809
Sep-92	4.2	4.3	1082.74	1077.31
May-94	4.2	4.1	1082.74	1077.17
Sep-94	4	1.6	1082.60	1075.42
Sep-95	3.5	0.5	1082.25	1074.65
Sep-96	4.3	1.25	1082.81	1075.175
May-97	5.8	1.6	1083.86	1075.42
Nov-97	3.7	1.1	1082.39	1075.07
May-98	5.16	0.70	1083.41	1074.79
15-Nov-98	3.50	n.r. (no bubbles after initial charge; falls to 0)	1082.25	
04-Dec-98	3.80	0.90	1082.46	1074.93
28-May-99	3.49	1.10	1082.24	1075.07
11-Sep-99	4.10	1.10	1082.67	1075.07
14-Jun-00	4.00	1.10	1082.60	1075.07
09-Sep-00	4.30	1.20 (no bubbles #366)	1082.81	1075.14

PNEUMATIC PIEZOMETER CD-21



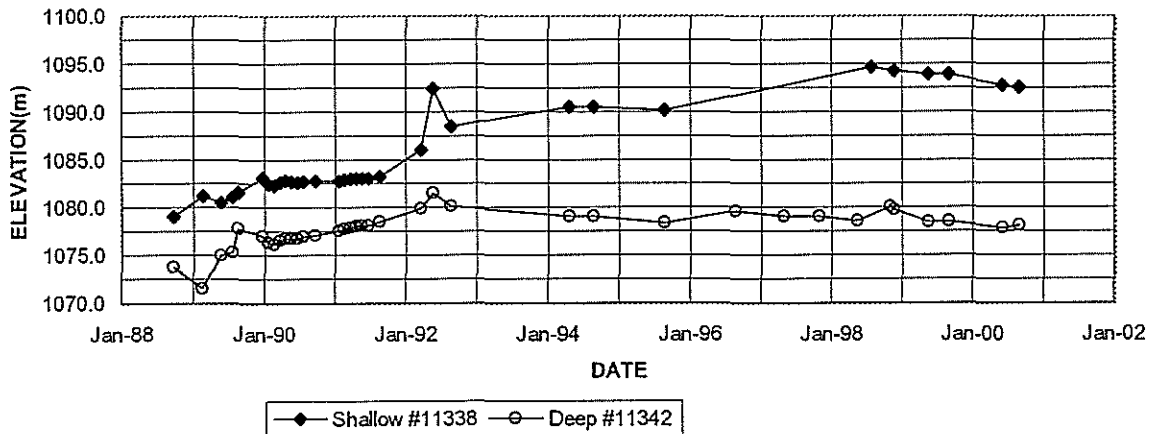
<b>CD-26</b>	<b>Location:</b> Canal Dyke St.2+600		<b>Ground Elevation:</b> 1085.50	<b>Coordinate:</b> 1674.7N, 71.7E
<b>Date Installed:</b> 1981			<b>Shallow Tip Elevation:</b> 1080.50	<b>Surface Deep Tip Elevation:</b> 1074.30
			<b>Protector:</b> yes	
Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow #349	Deep #356	Shallow	Deep
Nov-81	0.3	0.5	1080.71	1074.65
Dec-81	0.5	0.7	1080.85	1074.79
Mar-82	0.6	0.7	1080.92	1074.79
May-82	0.4	0.4	1080.78	1074.58
Aug-82	0.3	0.5	1080.71	1074.65
Apr-83	0.4	0.6	1080.78	1074.72
Sep-83	0.4	0.6	1080.78	1074.72
Mar-84	0.2	0.4	1080.64	1074.58
Jun-84	0.2	0.5	1080.64	1074.65
Sep-84	0.4	0.6	1080.78	1074.72
Oct-85	1.1	1.3	1081.27	1075.21
Oct-86	1.3	1.2	1081.41	1075.14
Oct-87	1	1.3	1081.20	1075.21
Jul-88	2.3	2.3	1082.11	1075.91
Oct-88	0.7	0.8	1080.99	1074.86
Sep-89	0.5	0.8	1080.85	1074.86
Oct-90	1	1.1	1081.20	1075.07
Sep-91	0.5	0.7	1080.85	1074.79
Sep-92	1.3	1.9	1081.41	1075.63
May-94	0.5	0.8	1080.85	1074.86
Sep-94	0.6	0.8	1080.92	1074.86
Sep-95	0	0	1080.50	1074.3
Sep-96	0.8	1.2	1081.06	1075.14
May-97	0.6	0.8	1080.92	1074.86
Nov-97	0.55	0.30	1080.89	1074.51
May-98	0.44	0.60	1080.81	1074.72
Nov-98	0.57	0.70	1080.90	1074.79
May-99	0.98	1.20	1081.19	1075.14
Sep-99	0.60	1.0	1080.92	1075
Jun-00	0.50	0.8	1080.85	1074.86
Sep-00	0.80	1.2	1081.06	1075.14

PNEUMATIC PIEZOMETER CD-26



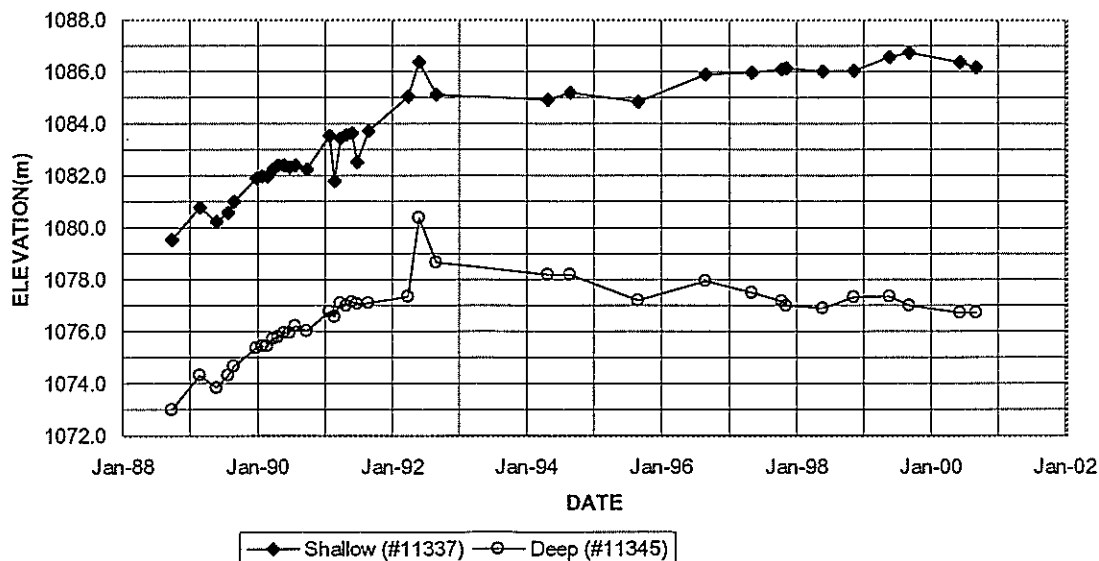
BH88-7		Location: Canal Dyke St. 2+120 (approx)		Ground Elevation: 1086.30		Coordinates:	
Date Installed: 1988		Shallow Tip Elevation: 1078.60		Surface		Protector: yes	
Date		Reading (psi)		Piezometric Elevation (m)			
		Shallow #11338	Deep #11342	Shallow		Deep	
Oct-88		0.7	3.45	1079.09		1073.82	
Mar-89		3.8	0.2	1081.26		1071.54	
Jun-89		2.8	5.2	1080.56		1075.04	
Aug-89		3.6	5.6	1081.12		1075.32	
Sep-89		4.4	9.2	1081.68		1077.84	
Jan-90		6.5	8.1	1083.15		1077.07	
Feb-90		5.5	7.1	1082.45		1076.37	
Mar-90		5.3	6.8	1082.31		1076.16	
Apr-90		5.8	7.4	1082.66		1076.58	
May-90		6.1	7.7	1082.87		1076.79	
Jun-90		5.9	7.7	1082.73		1076.79	
Jul-90		5.8	7.7	1082.66		1076.79	
Aug-90		5.9	8	1082.73		1077	
Oct-90		6	8.2	1082.80		1077.14	
Feb-91		6	8.8	1082.80		1077.56	
Mar-91		6.2	9.1	1082.94		1077.77	
Apr-91		6.3	9.3	1083.01		1077.91	
May-91		6.4	9.5	1083.08		1078.05	
Jun-91		6.4	9.6	1083.08		1078.12	
Jul-91		6.4	9.6	1083.08		1078.12	
Sep-91		6.7	10.2	1083.29		1078.54	
Apr-92		10.6	12.1	1086.02		1079.87	
Jun-92		19.7	14.4	1092.39		1081.48	
Sep-92		14.1	12.5	1088.47		1080.15	
May-94		17	11	1090.50		1079.1	
Sep-94		17	11	1090.50		1079.1	
Sep-95		16.5	10	1090.15		1078.4	
Sep-96			11.7			1079.59	
May-97			11			1079.1	
Nov-97			11			1079.1	
May-98			10.24			1078.6	
Aug-98		22.9		1094.63			
13-Nov-98			12.45			1080.1	
04-Dec-98		22.30	11.90	1094.21		1079.7	
28-May-99		21.90	10.09	1093.93		1078.5	
11-Sep-99		21.90	10.20	1093.93		1078.5	
14-Jun-00		20.20	9.20	1092.74		1077.8	
09-Sep-00		19.90	9.60	1092.53		1078.1	

PNEUMATIC PIEZOMETER BH88-7



Date	Reading (psi)		Piezometric Elevation (m)	
	Shallow (#11337)	Deep (#11345)	Shallow (#11337)	Deep (#11345)
Oct-88	0.9	1	1079.53	1073.00
Mar-89	2.7	2.9	1080.79	1074.33
Jun-89	1.9	2.2	1080.23	1073.84
Aug-89	2.4	2.9	1080.58	1074.33
Sep-89	3	3.4	1081.00	1074.68
Jan-90	4.3	4.4	1081.91	1075.38
Feb-90	4.4	4.5	1081.98	1075.45
Mar-90	4.4	4.5	1081.98	1075.45
Apr-90	4.8	4.9	1082.26	1075.73
May-90	5	5	1082.40	1075.8
Jun-90	5	5.2	1082.40	1075.94
Jul-90	4.9	5.2	1082.33	1075.94
Aug-90	5	5.6	1082.40	1076.22
Oct-90	4.8	5.3	1082.26	1076.01
Feb-91	6.65	6.4	1083.56	1076.78
Mar-91	4.15	6.1	1081.81	1076.57
Apr-91	6.5	6.85	1083.45	1077.10
May-91	6.7	6.7	1083.59	1076.99
Jun-91	6.8	6.9	1083.66	1077.13
Jul-91	5.2	6.8	1082.54	1077.06
Sep-91	6.9	6.85	1083.73	1077.095
Apr-92	8.8	7.2	1085.06	1077.34
Jun-92	10.7	11.55	1086.39	1080.39
Sep-92	8.9	9.1	1085.13	1078.67
May-94	8.6	8.4	1084.92	1078.18
Sep-94	9	8.4	1085.20	1078.18
Sep-95	8.5	7	1084.85	1077.2
Sep-96	10	8.05	1085.90	1077.935
May-97	10.1	7.4	1085.97	1077.48
Oct-97	10.30	6.94	1086.11	1077.16
Nov-97	10.35	6.71	1086.15	1077.00
May-98	10.18	6.55	1086.03	1076.89
Nov-98	10.23	7.15	1086.06	1077.31
May-99	10.98	7.20	1086.59	1077.34
Sep-99	11.20	6.70	1086.74	1076.99
Jun-00	10.70	6.30	1086.39	1076.71
Sep-00	10.40	6.30	1086.18	1076.71

PNEUMATIC PIEZOMETER BH88-11



**DIVERSION CANAL DYKE  
THERMISTORS**

**BGC Engineering Inc.**

<b>CD-4</b>	<b>Location:</b> Canal Dyke St. 0+400	<b>Elevation:</b> 1089.7 m Cantec	<b>Coordinates:</b> 747.2 mN, 2057.0 mE
<b>Thermistor String #12</b>	<b>Date Installed:</b> 1981	<b>Thermistor Type:</b> 44007	<b>Ice-Bath Calibration:</b> applied
<b>Depth Correction</b>	-0.2		<b>Surface Protector:</b> yes

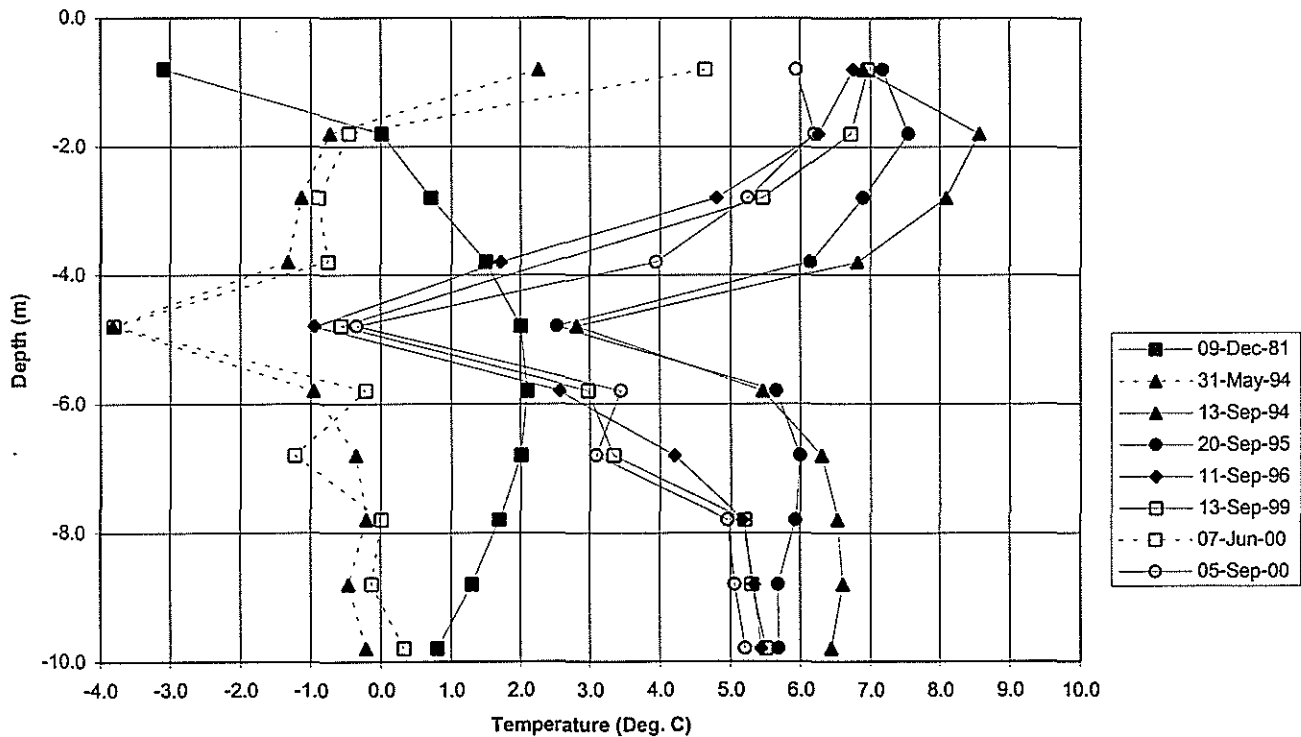
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 11-Sep-96	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-0.8	19.01	14.45	11.48	11.32	11.56	11.44	12.83	12.03	
2.0	-1.8	16.22	16.84	10.59	11.13	11.86	11.59	16.61	11.89	
3.0	-2.8	15.62	17.16	10.82	11.47	12.72	12.31	16.95	12.44	
4.0	-3.8	15.03	17.37	11.54	11.93	14.87		16.87	13.30	
5.0	-4.8	14.58	19.66	14.00	14.20	16.94	16.62	19.65	16.43	
6.0	-5.8	14.52	16.96	12.28	12.16	14.18	13.89	16.33	13.57	
7.0	-6.8	14.64	16.51	11.82	12.00	13.11	13.69	17.26	13.86	
8.0	-7.8	14.86	16.37	11.68	12.03	12.49	12.47	16.19	12.62	
9.0	-8.8	15.16	16.59	11.64	12.18	12.39	12.41	16.31	12.56	
10.0	-9.8	15.53	16.35	11.72	12.16	12.31	12.27	15.91	12.45	

\*The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 11-Sep-96	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C) 00-Jan-00
1.0	-0.8	-3.10	2.26	6.89	7.18	6.75	6.96	4.64	5.94	
2.0	-1.8	0.00	-0.73	8.57	7.55	6.25	6.72	-0.46	6.20	
3.0	-2.8	0.70	-1.14	8.09	6.89	4.79	5.46	-0.90	5.24	
4.0	-3.8	1.50	-1.33	6.81	6.13	1.71		-0.76	3.94	
5.0	-4.8	2.00	-3.82	2.81	2.53	-0.94	-0.57	-3.81	-0.35	
6.0	-5.8	2.10	-0.96	5.45	5.65	2.57	2.98	-0.22	3.44	
7.0	-6.8	2.00	-0.36	6.30	5.99	4.21	3.34	-1.23	3.09	
8.0	-7.8	1.70	-0.21	6.53	5.93	5.17	5.20	0.01	4.96	
9.0	-8.8	1.30	-0.47	6.60	5.68	5.33	5.30	-0.13	5.06	
10.0	-9.8	0.80	-0.21	6.43	5.68	5.44	5.50	0.32	5.21	

\* The 5 metre depth tip is suspect

**THERMISTOR CD-4**  
(installed 1981)



<b>CD-5</b>	<b>Location:</b> Canal Dyke St. 0+510	<b>Elevation:</b> 1089.8 m Cantec	<b>Coordinates:</b> 785.4 mN, 1955.3 mE
<b>Thermistor String #27</b>	<b>Date Installed:</b> 1981	<b>Thermistor Type:</b> 44007	<b>Ice-Bath Calibration:</b> applied
<b>Depth Correction</b>	0.1		<b>Surface Protector:</b> yes

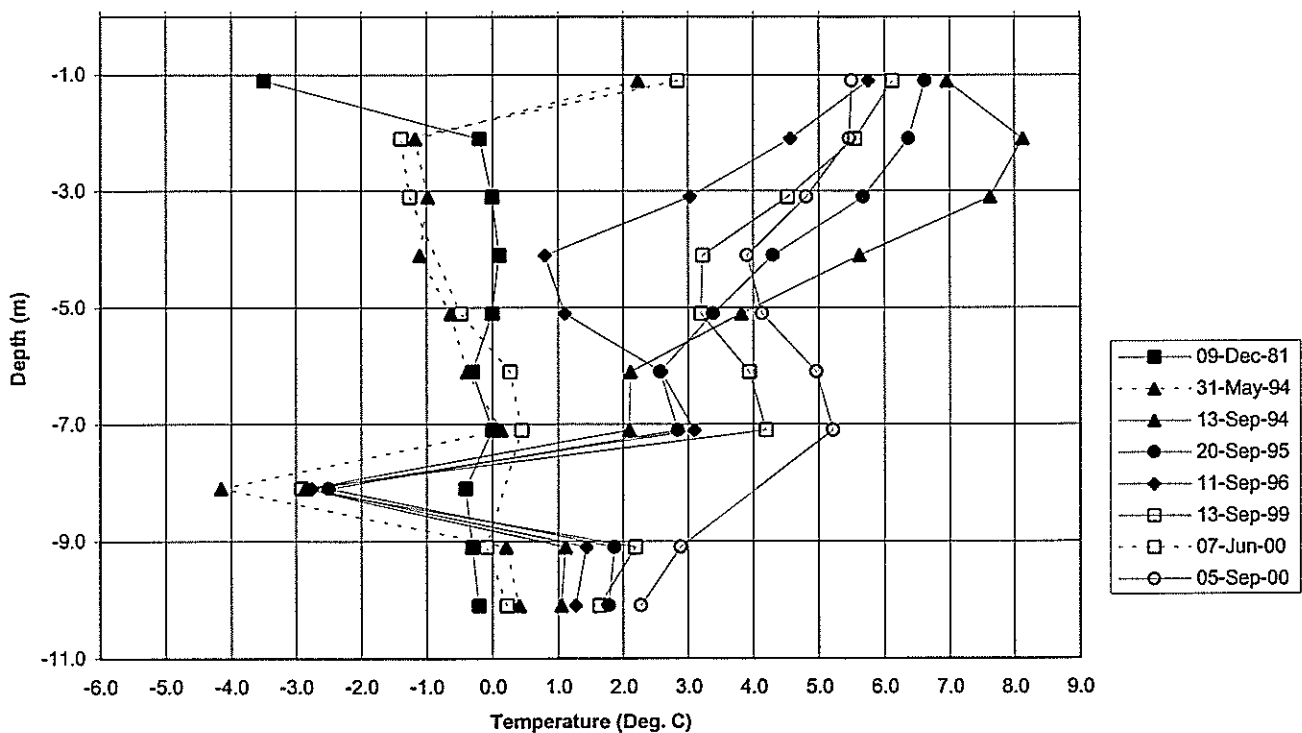
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 11-Sep-96	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-1.1	19.38	14.46	11.43	11.62	12.13	11.91	14.02	12.28	
2.0	-2.1	16.37	17.21	10.81	11.78	12.88	12.27	17.40	12.32	
3.0	-3.1	16.15	16.98	11.04	12.15	13.86	12.86	17.22	12.68	
4.0	-4.1	16.10	17.12	12.21	13.03	15.54	13.75	13.79	13.29	
5.0	-5.1	16.21	16.74	13.37	13.66	15.32	13.79	16.61	13.16	
6.0	-6.1	16.41	16.48	14.52	14.19	14.18	13.25	15.94	12.59	
7.0	-7.1	16.23	16.12	14.60	14.06	13.88	13.14	15.87	12.49	
8.0	-8.1	16.52	20.06	18.75	18.40	18.65	18.80			
9.0	-9.1	16.40	15.98	15.26	14.69	15.01	14.46	16.22	13.96	
10.0	-10.1	16.31	15.81	15.30	14.75	15.13	14.85	15.96	14.39	

\*The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 11-Sep-96	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C)
1.0	-1.1	-3.50	2.22	6.95	6.62	5.74	6.11	2.83	5.49	
2.0	-2.1	-0.20	-1.17	8.12	6.37	4.56	5.54	-1.39	5.46	
3.0	-3.1	0.00	-0.98	7.62	5.67	3.02	4.52	-1.25	4.81	
4.0	-4.1	0.10	-1.10	5.61	4.30	0.79	3.22		3.90	
5.0	-5.1	0.00	-0.63	3.81	3.38	1.11	3.19	-0.48	4.13	
6.0	-6.1	-0.30	-0.39	2.11	2.56	2.58	3.93	0.27	4.96	
7.0	-7.1	0.00	0.13	2.09	2.84	3.09	4.19	0.44	5.21	
8.0	-8.1	-0.40	-4.15	-2.86	-2.50	-2.76	-2.91			
9.0	-9.1	-0.30	0.21	1.11	1.87	1.44	2.18	-0.09	2.88	
10.0	-10.1	-0.20	0.41	1.05	1.77	1.27	1.64	0.22	2.26	

\* The 8 metre depth tip is suspect

**THERMISTOR CD-5**  
(installed 1981)

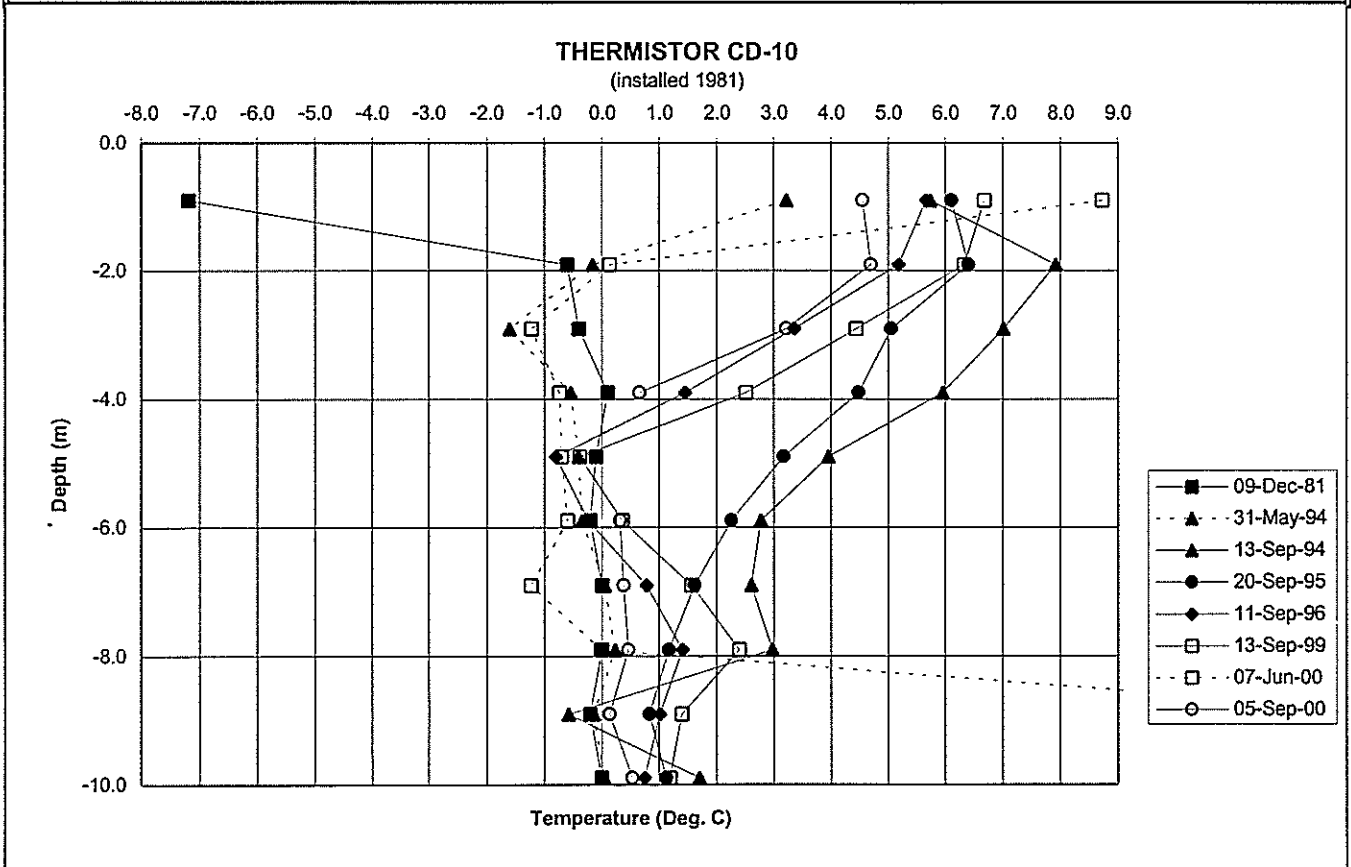


<b>CD-10</b>	<b>Location:</b> Canal Dyke St. 0+990	<b>Elevation:</b> 1088.3 m	<b>Coordinates:</b> 1008.7 mN, 1519.7 mE
<b>Thermistor String #23</b>	<b>Date Installed:</b> 1981	<b>Thermistor Type:</b> Controls YSI 44007	<b>Ice-Bath Calibration:</b> applied
<b>Depth Correction</b>	-0.1	<b>Surface Protector:</b> yes	

Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 11-Sep-96	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-0.9	23.70	13.83	12.20	11.98	12.25	11.65	10.54	12.94	
2.0	-1.9	16.68	16.31	10.90	11.74	12.47	11.78	16.06	12.77	
3.0	-2.9	16.50	17.55	11.39	12.54	13.65	12.93	17.21	13.74	
4.0	-3.9	16.13	16.67	12.03	12.94	15.07	14.28	16.84	15.68	
5.0	-4.9	16.24	16.50	13.24	13.77	16.83	16.48	16.75	15.88	
6.0	-5.9	16.31	16.43	14.03	14.40	16.34	15.85	16.64	15.88	
7.0	-6.9	16.19	16.15	14.19	14.92	15.56	14.96	17.24	15.88	
8.0	-7.9	16.19	16.00	13.93	15.26	15.08	14.34	16.20	15.81	
9.0	-8.9	16.36	16.31	16.68	15.52	15.38	15.09	8.02	16.08	
10.0	-9.9	16.21	16.17	14.87	15.31	15.60	15.26	8.02	15.77	

\*The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 11-Sep-96	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C)
1.0	-0.9	-7.20	3.22	5.74	6.11	5.65	6.67	8.72	4.55	
2.0	-1.9	-0.60	-0.16	7.91	6.40	5.17	6.33	0.14	4.69	
3.0	-2.9	-0.40	-1.60	7.00	5.05	3.35	4.43	-1.22	3.22	
4.0	-3.9	0.10	-0.54	5.95	4.48	1.44	2.51	-0.74	0.66	
5.0	-4.9	-0.10	-0.41	3.95	3.16	-0.80	-0.39	-0.70	0.32	
6.0	-5.9	-0.20	-0.35	2.77	2.25	-0.24	0.36	-0.60	0.32	
7.0	-6.9	0.00	0.05	2.60	1.61	0.78	1.56	-1.23	0.38	
8.0	-7.9	0.00	0.23	2.97	1.16	1.40	2.39	-0.01	0.47	
9.0	-8.9	-0.20	-0.14	-0.58	0.83	1.01	1.38	14.34	0.13	
10.0	-9.9	0.00	0.04	1.69	1.12	0.75	1.18	14.36	0.54	



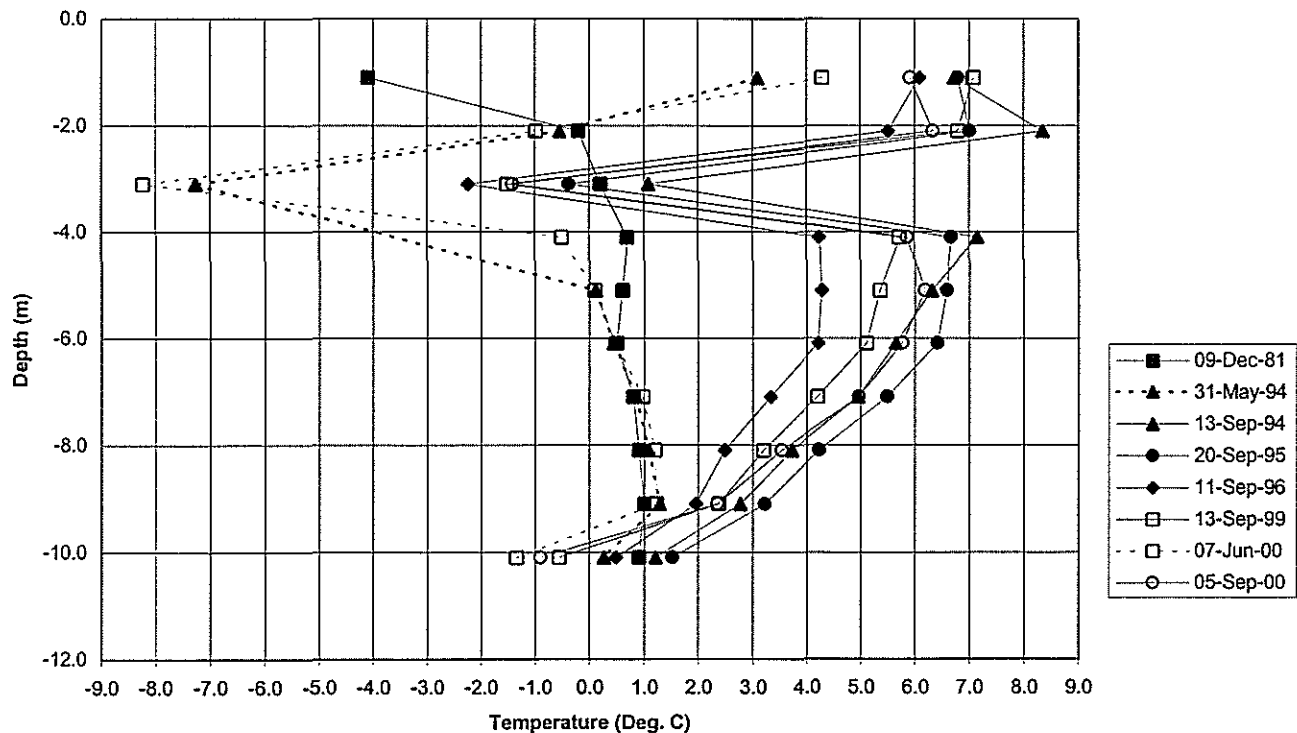
CD-15		Location: Canal Dyke St. 1+530			Elevation: 1087.0 m		Coordinates: 1233.7 mN, 1028.7 mE			
Thermistor String #26	Date Installed: 1981				Thermistor Type: 44007	Controls YSI	Ice-Bath Calibration: applied	Surface Protector: yes		
Depth Correction	0.1									
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 11-Sep-96	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-1.1	20.00	13.84	11.56	11.52	11.93	11.36	13.04	12.03	
2.0	-2.1	16.29	16.58	10.64	11.36	12.23	11.48	16.96	11.74	
3.0	-3.1	15.99	23.62	15.29	16.47	18.13	17.46	24.88	17.37	
4.0	-4.1	15.65		11.34	11.61	13.10	12.17	16.64	12.08	
5.0	-5.1	15.71	16.11	11.81	11.65	13.06	12.38	16.12	11.88	
6.0	-6.1	15.75	15.80	12.17	11.72	13.07	12.50	15.77	12.10	
7.0	-7.1	15.53	15.49	12.61	12.28	13.67	13.09	15.39	12.60	
8.0	-8.1	15.47	15.33	13.42	13.09	14.28	13.78	15.24	13.55	
9.0	-9.1	15.41	15.19	14.09	13.78	14.68	14.38	15.23	14.39	
10.0	-10.1	15.45	15.96	15.21	14.97	15.78	16.64	17.33	16.94	

\*The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 11-Sep-96	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C)
1.0	-1.1	-4.10	3.09	6.72	6.79	6.08	7.08	4.28	5.91	
2.0	-2.1	-0.20	-0.55	8.35	7.01	5.51	6.79	-0.99	6.34	
3.0	-3.1	0.20	-7.27	1.08	-0.38	-2.24	-1.51	-8.24	-1.41	
4.0	-4.1	0.70		7.15	6.67	4.23	5.72	-0.51	5.87	
5.0	-5.1	0.60	0.11	6.31	6.58	4.27	5.35	0.09	6.19	
6.0	-6.1	0.50	0.44	5.65	6.41	4.21	5.11	0.48	5.76	
7.0	-7.1	0.80	0.85	4.95	5.48	3.33	4.20	0.98	4.96	
8.0	-8.1	0.90	1.08	3.73	4.23	2.49	3.20	1.20	3.53	
9.0	-9.1	1.00	1.28	2.77	3.22	1.96	2.37	1.23	2.35	
10.0	-10.1	0.90	0.26	1.21	1.52	0.48	-0.56	-1.35	-0.90	

\* The 3 metre depth tip is suspect

THERMISTOR CD-15  
(installed 1981)

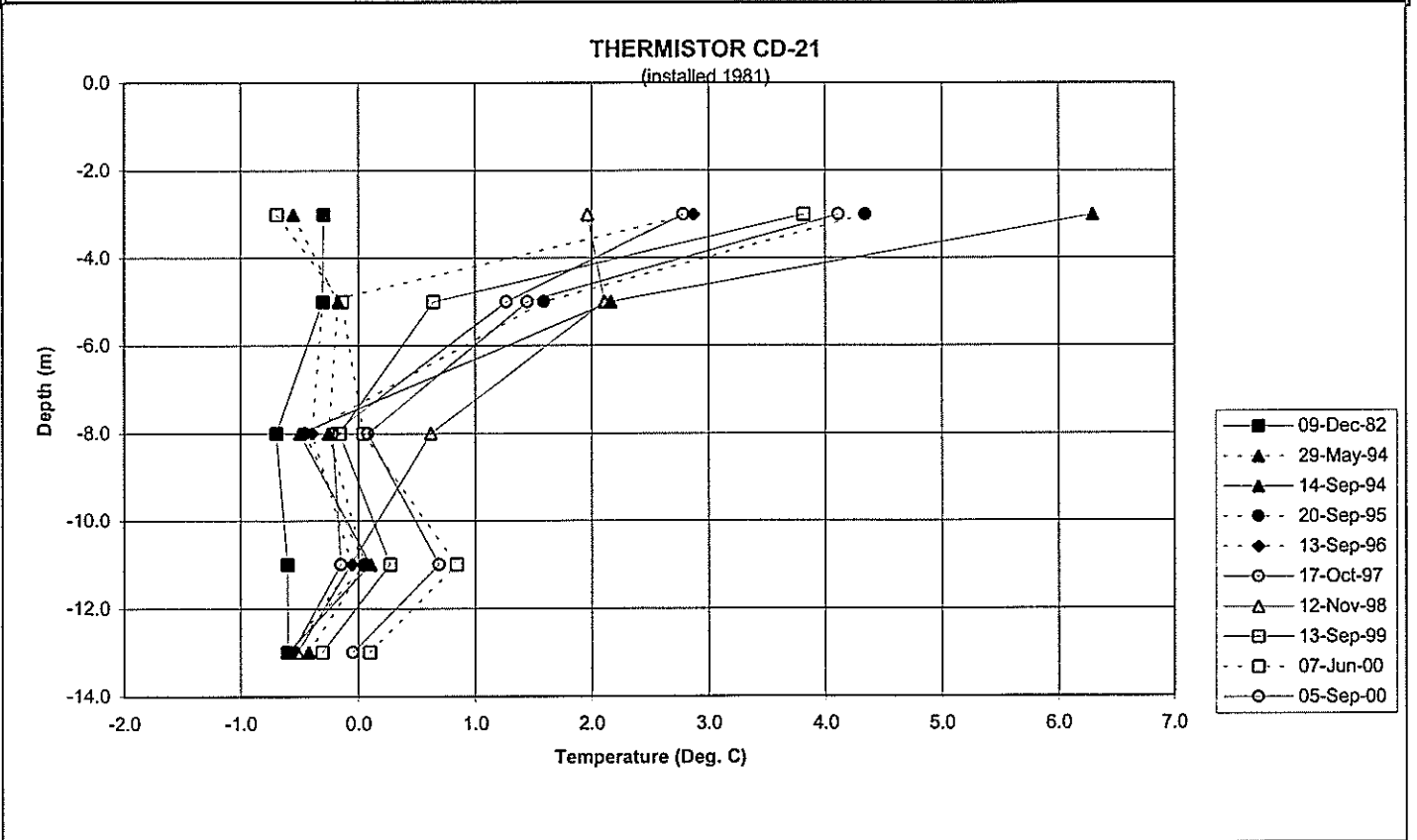


<b>CD-21</b>		Location: Canal Dyke St.2+100		Elevation: 1,085.9 m		Coordinates: 1455.9 mN 509.5 mE						
Thermistor String #12		Date Installed: 1981		Thermistor Type: 44007		Ice-Bath Calibration: NO		Surface Protector: yes				
Depth Correction		0										
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-82	Resistivity (kOhms) 29-May-94	Resistivity (kOhms) 14-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 17-Oct-97	Resistivity (kOhms) 12-Nov-98	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	
3.0	-3.0	16.58	16.80	11.91	13.12	14.12	14.18	14.78	13.47	16.92	13.27	
5.0	-5.0	16.56	16.45	14.61	15.04	16.56	15.29	14.65	15.78	16.42	15.15	
8.0	-8.0	16.89	16.51	16.72	16.68	16.63	16.48	15.79	16.43	16.26	16.23	
11.0	-11.0	16.87	16.31	16.27	16.31	16.40	16.48	nr	16.13	15.67	15.79	
13.0	-13.0	16.84	16.69	16.84	16.84	16.83	16.81	16.77	16.59	16.25	16.37	

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-82	Temperature (C) 29-May-94	Temperature (C) 14-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 17-Oct-97	Temperature (C) 12-Nov-98	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00
1.0	-3.0	-0.30	-0.55	6.29	4.34	2.87	2.79	1.96	3.81	-0.69	4.11
2.0	-5.0	-0.30	-0.17	2.16	1.59	-0.30	1.26	2.11	0.64	-0.14	1.45
3.0	-8.0	-0.70	-0.25	-0.50	-0.45	-0.39	-0.22	0.62	-0.16	0.05	0.08
4.0	-11.0	-0.60	0.06	0.10	0.06	-0.05	-0.15	0.27	0.84	0.69	
5.0	-13.0	-0.60	-0.42	-0.60	-0.60	-0.59	-0.56	-0.52	-0.31	0.10	-0.05

\*tip #4 suspect



### Faro Mine Instrumentation Canal Dyke

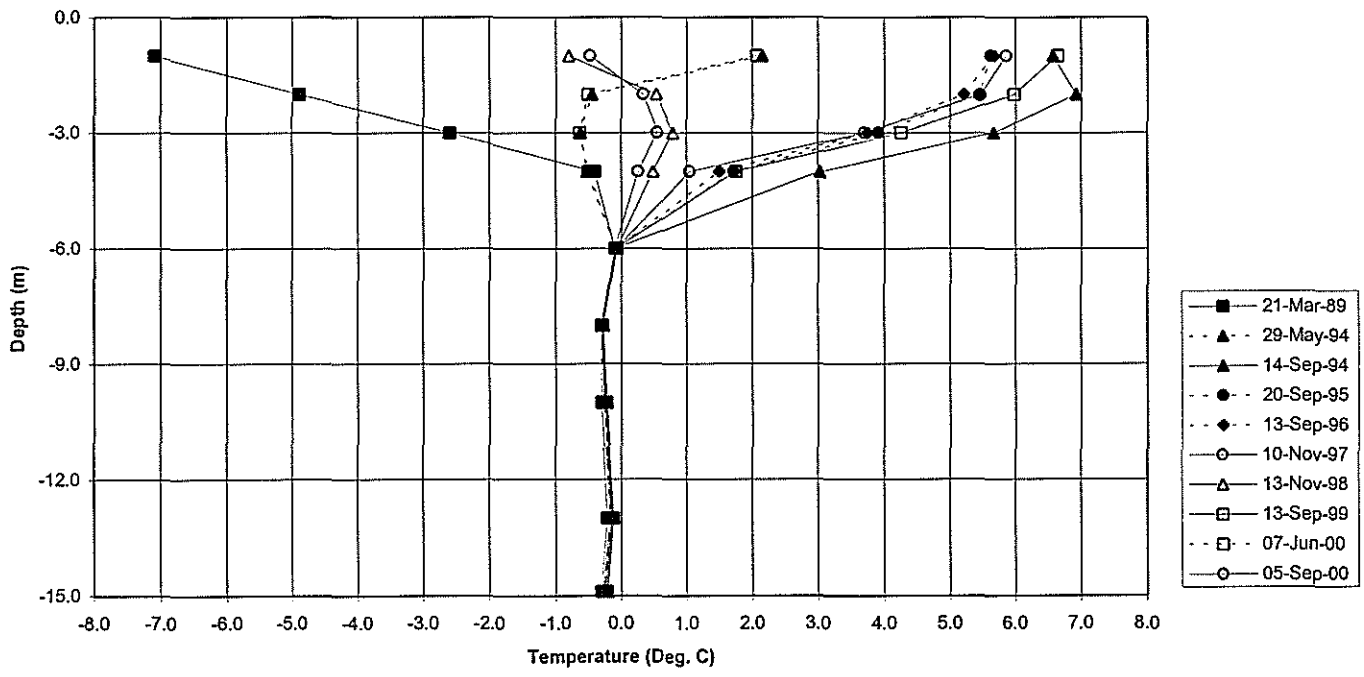
<b>BH88-7</b>	<b>Location:</b> Canal Dyke St.2+115	<b>Elevation:</b> 1,085.9 m Cantec	<b>Coordinates:</b> 1455.9 mN 509.5 mE
<b>Thermistor String #</b>	<b>Date Installed:</b> 1988	<b>Thermistor Type:</b> 44007	<b>Ice-Bath Calibration:</b> NO
<b>Depth Correction</b>	0		<b>Surface Protector:</b> yes

Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 21-Mar-89	Resistivity (kOhms) 29-May-94	Resistivity (kOhms) 14-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 10-Nov-97	Resistivity (kOhms) 13-Nov-98	Resistivity (kOhms) 13-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00
1.0	-1.0	23.60	14.61	11.72	12.28	12.25	16.69	16.97	11.68	14.67	12.14
2.0	-2.0	21.00	16.67	11.52	12.39	12.54	16.02	15.86	12.07	16.72	12.38
3.0	-3.0	18.62	16.81	12.25	13.37	13.48	15.84	15.65	13.14	16.82	13.51
4.0	-4.0	16.62	16.72	13.97	14.92	15.09	16.07	15.89	14.90	16.70	15.44
6.0	-6.0	16.44	16.43	16.44	16.43	16.43	16.44	16.41	16.43	16.42	16.42
8.0	-8.0	16.54	16.53	16.53	16.52	16.52	16.53	16.51	16.53	16.53	16.53
10.0	-10.0	16.58	16.55	16.55	16.54	16.54	16.53	16.51	16.52	16.52	16.52
13.0	-13.0	16.52	16.49	16.49	16.48	16.47	16.47	16.44	16.45	16.45	16.45
14.9	-14.9	16.56	16.53	16.54	16.52	16.52	16.51	16.48	16.49	16.49	16.49

\*The initial reading (Oct 1/88) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 21-Mar-89	Temperature (C) 29-May-94	Temperature (C) 14-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 10-Nov-97	Temperature (C) 13-Nov-98	Temperature (C) 13-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00
1.0	-1.0	-7.10	2.14	6.57	5.62	5.67	-0.47	-0.80	6.64	2.06	5.86
2.0	-2.0	-4.90	-0.45	6.92	5.44	5.20	0.33	0.52	5.97	-0.51	5.46
3.0	-3.0	-2.60	-0.61	5.67	3.91	3.75	0.55	0.79	4.26	-0.63	3.70
4.0	-4.0	-0.40	-0.52	3.02	1.72	1.49	0.26	0.48	1.74	-0.50	1.04
6.0	-6.0	-0.10	-0.09	-0.10	-0.09	-0.09	-0.10	-0.06	-0.09	-0.08	-0.08
8.0	-8.0	-0.30	-0.29	-0.29	-0.27	-0.27	-0.29	-0.26	-0.29	-0.29	-0.29
10.0	-10.0	-0.30	-0.26	-0.26	-0.25	-0.25	-0.24	-0.21	-0.22	-0.22	-0.22
13.0	-13.0	-0.20	-0.17	-0.17	-0.16	-0.15	-0.15	-0.11	-0.12	-0.12	-0.12
14.9	-14.9	-0.30	-0.27	-0.28	-0.25	-0.25	-0.24	-0.21	-0.22	-0.22	-0.22

**THERMISTOR BH88-7**  
(installed 1988)



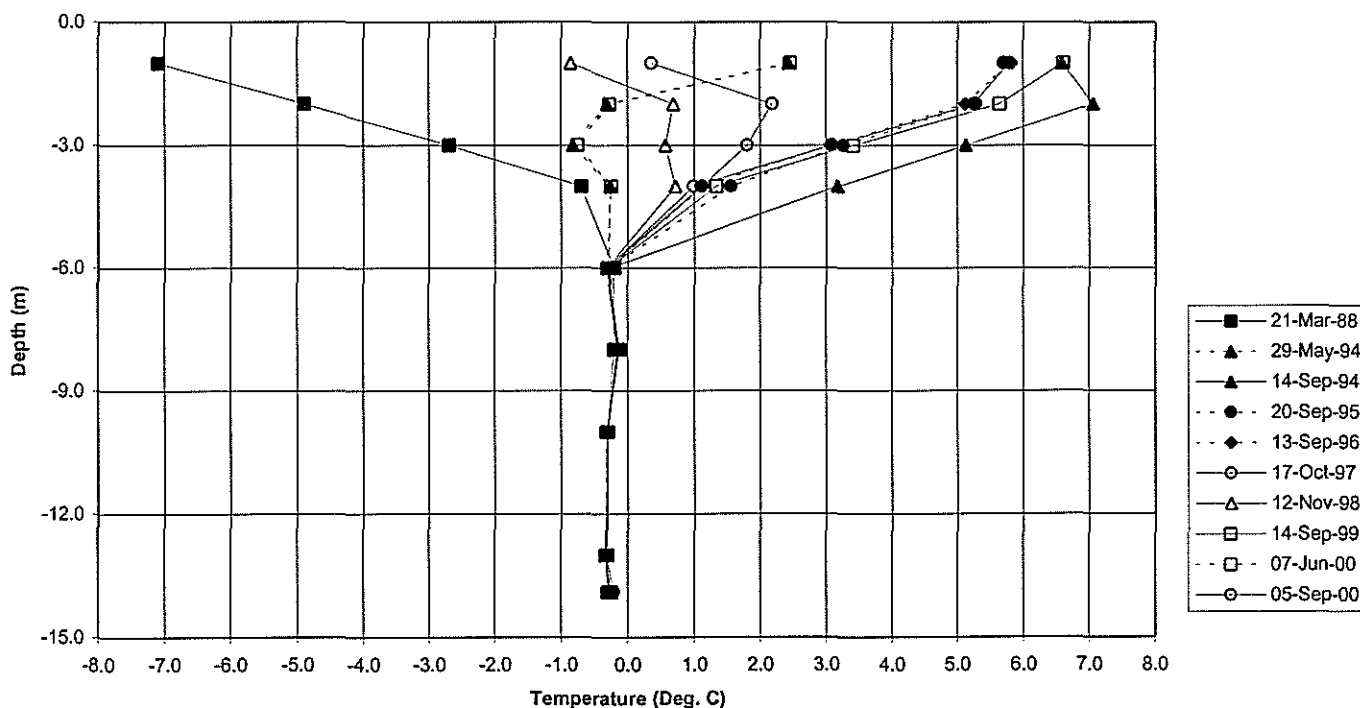
## Faro Mine Instrumentation Canal Dyke

BH88-11		Location: Canal Dyke St.2+160				Elevation: Cantec		1086.2 Coordinates: 1478.8mN, 456.6mE			
Thermistor String #	Date Installed:	1988	Thermistor Type:	44007	Ice-Bath Calibration:	NO	Surface Protector:	yes			
Depth Correction	0										
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 21-Mar-88	Resistivity (kOhms) 29-May-94	Resistivity (kOhms) 14-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 17-Oct-97	Resistivity (kOhms) 12-Nov-98	Resistivity (kOhms) 14-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00
1.0	-1.0	23.60	14.40	11.71	12.23	12.16	15.99	17.02	11.70	14.38	12.18
2.0	-2.0	21.00	16.55	11.44	12.49	12.59	14.58	15.73	12.27	16.52	12.51
3.0	-3.0	18.76	17.03	12.61	13.84	13.98	14.89	15.86	13.74	16.97	13.96
4.0	-4.0	16.92	16.54	13.90	15.08	15.41	15.42	15.74	15.25	16.53	15.52
6.0	-6.0	16.49	16.56	16.55	16.56	16.56	16.59	16.58	16.57	16.58	16.58
8.0	-8.0	16.51	16.47	16.47	16.46	16.45	16.46	16.45	16.44	16.44	16.44
10.0	-10.0	16.58	16.58	16.58	16.58	16.58	16.58	16.58	16.59	16.60	16.59
13.0	-13.0	16.54	16.57	16.57	16.57	16.56	16.56	16.56	16.56	16.56	16.55
13.9	-13.9	16.55	16.54	16.53	16.53	16.52	16.52	16.51	16.51	16.50	16.47

Depth on String (m)	Actual Depth (m)	Temperature (C) 21-Mar-88	Temperature (C) 29-May-94	Temperature (C) 14-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 17-Oct-97	Temperature (C) 12-Nov-98	Temperature (C) 14-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00
1.0	-1.0	-7.10	2.43	6.59	5.71	5.82	0.36	-0.86	6.61	2.46	5.79
2.0	-2.0	-4.90	-0.31	7.06	5.28	5.12	2.18	0.69	5.64	-0.27	5.25
3.0	-3.0	-2.70	-0.83	5.13	3.26	3.06	1.81	0.56	3.41	-0.76	3.09
4.0	-4.0	-0.70	-0.26	3.17	1.56	1.13	1.12	0.71	1.34	-0.25	0.99
6.0	-6.0	-0.20	-0.28	-0.27	-0.28	-0.28	-0.32	-0.31	-0.29	-0.31	-0.31
8.0	-8.0	-0.20	-0.16	-0.16	-0.14	-0.13	-0.14	-0.13	-0.12	-0.12	-0.12
10.0	-10.0	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.31	-0.32	-0.31
13.0	-13.0	-0.30	-0.33	-0.33	-0.33	-0.32	-0.32	-0.32	-0.32	-0.32	-0.31
13.9	-13.9	-0.30	-0.29	-0.28	-0.28	-0.26	-0.26	-0.25	-0.25	-0.24	-0.21

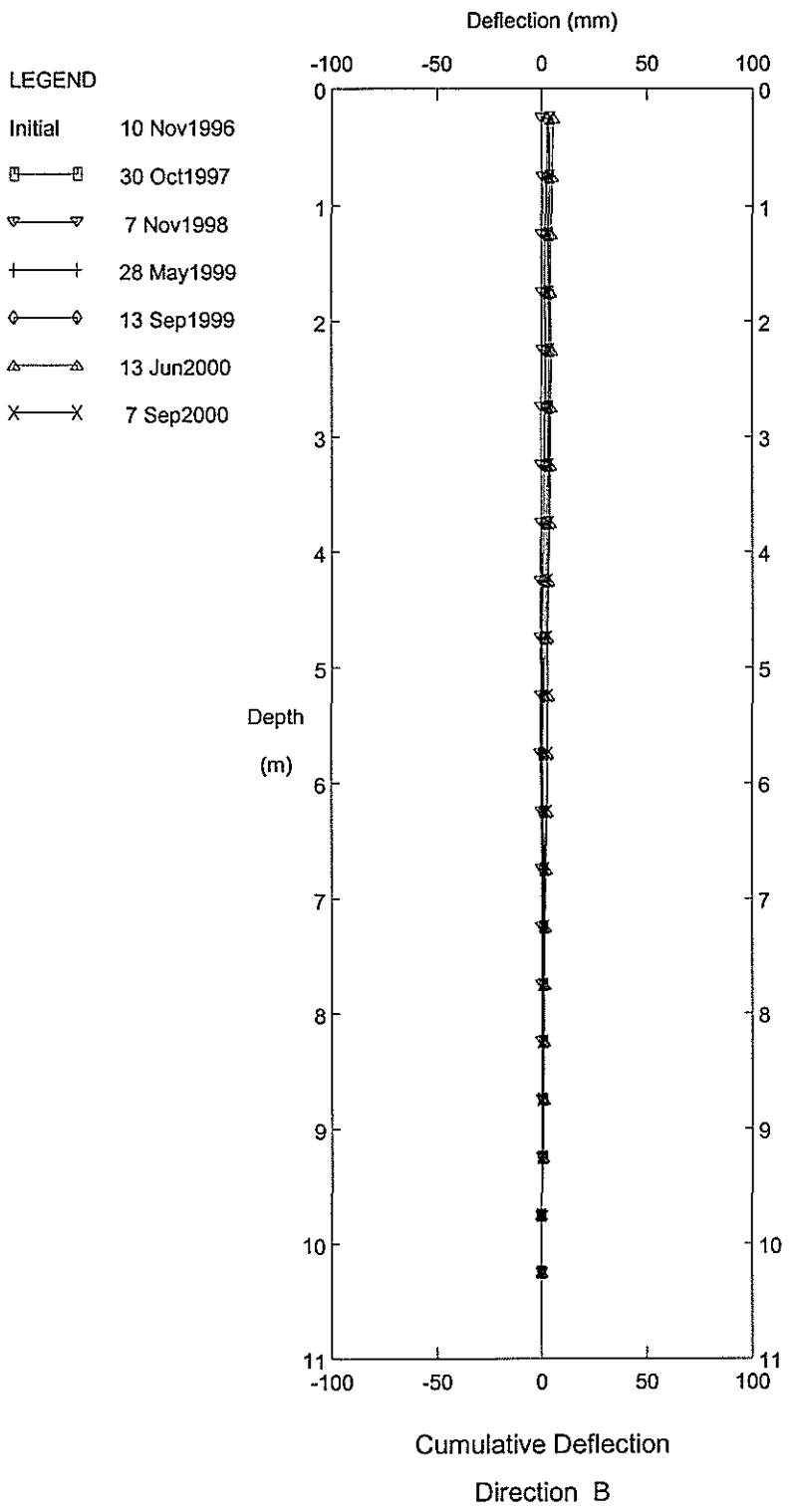
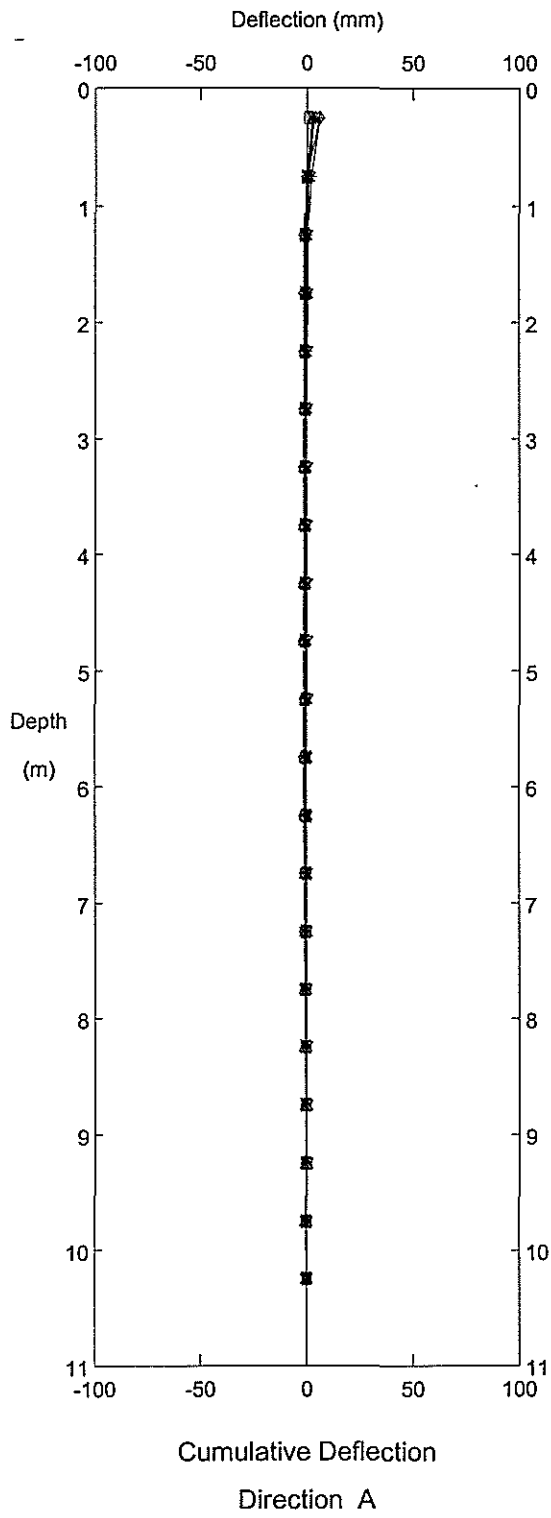
**THERMISTOR BH88-11**  
(installed 1988)



**DIVERSION CANAL DYKE  
INCLINOMETERS**

**BGC Engineering Inc.**

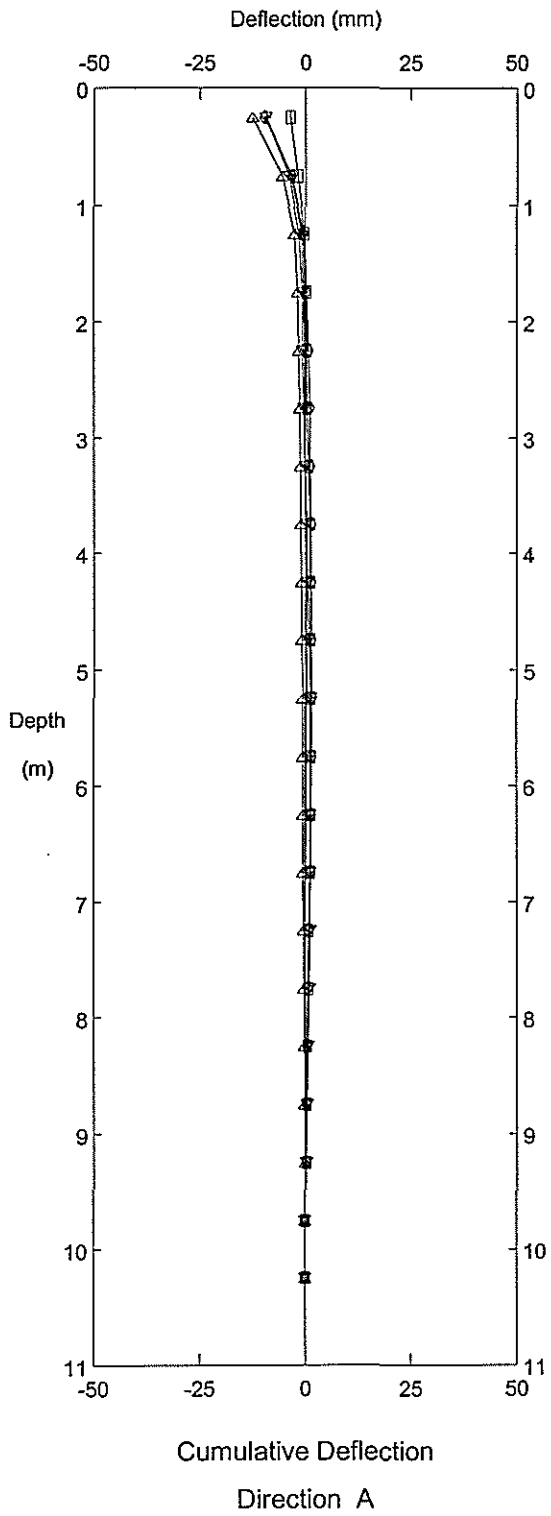
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CD-10, Inclinator 0+990

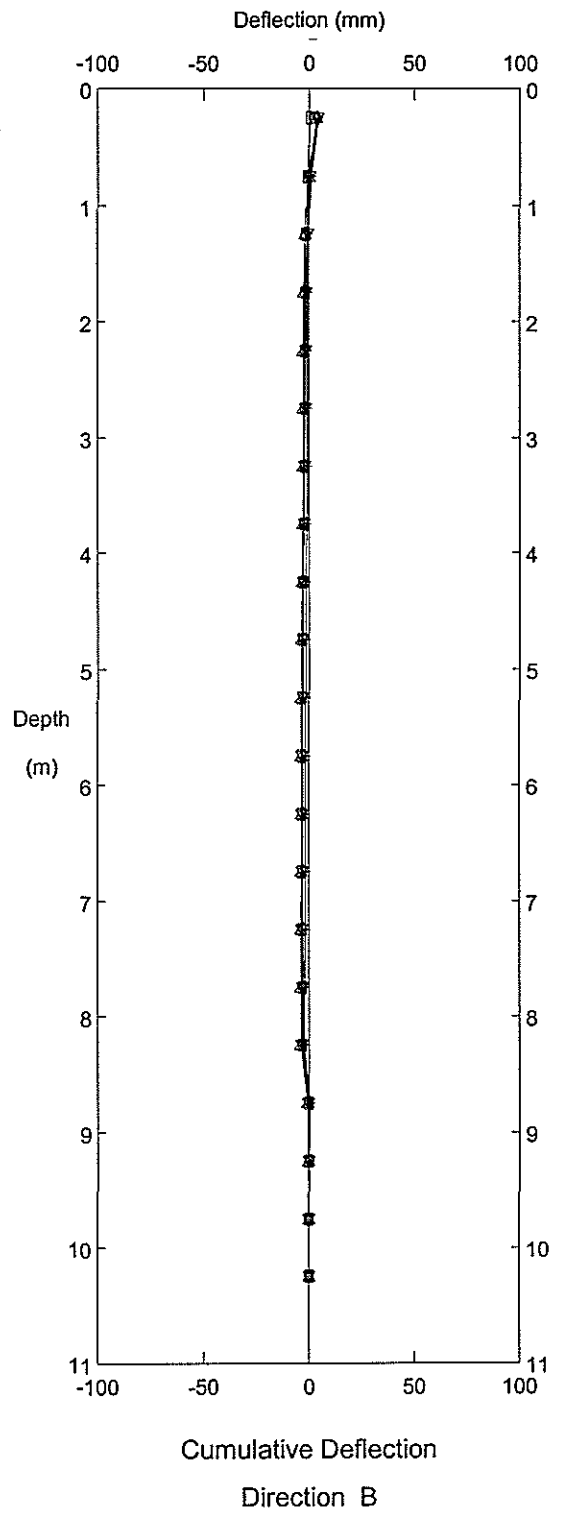
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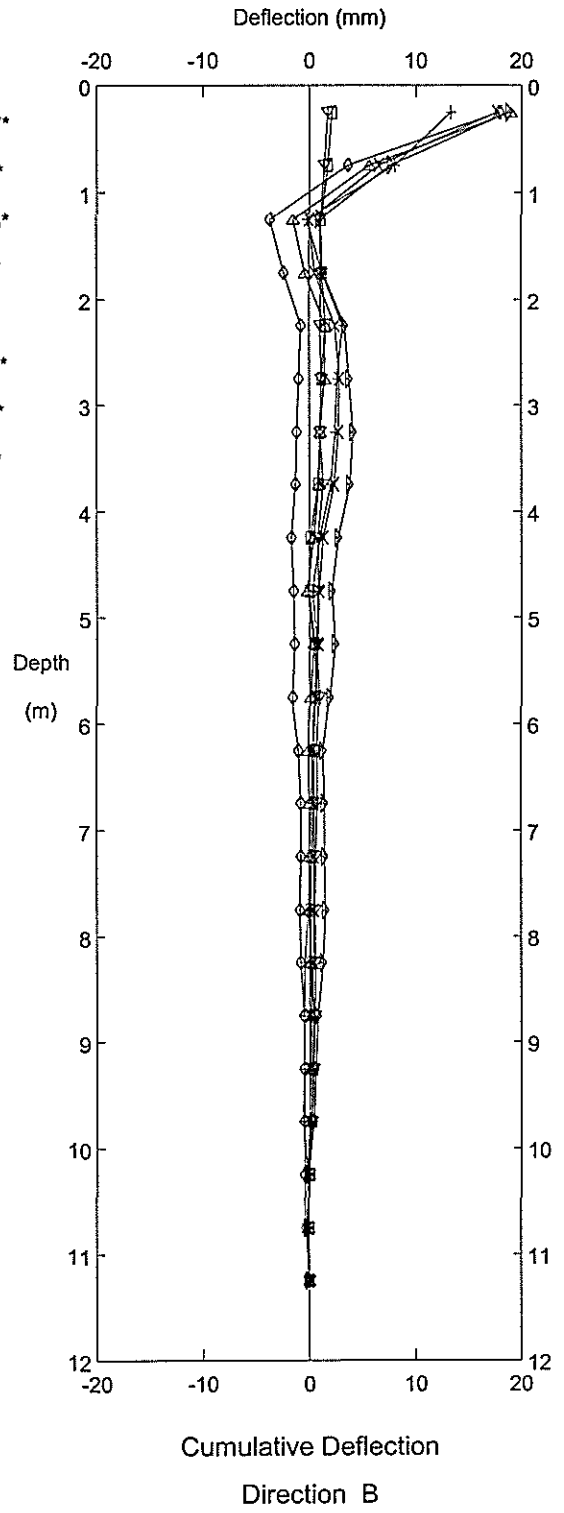
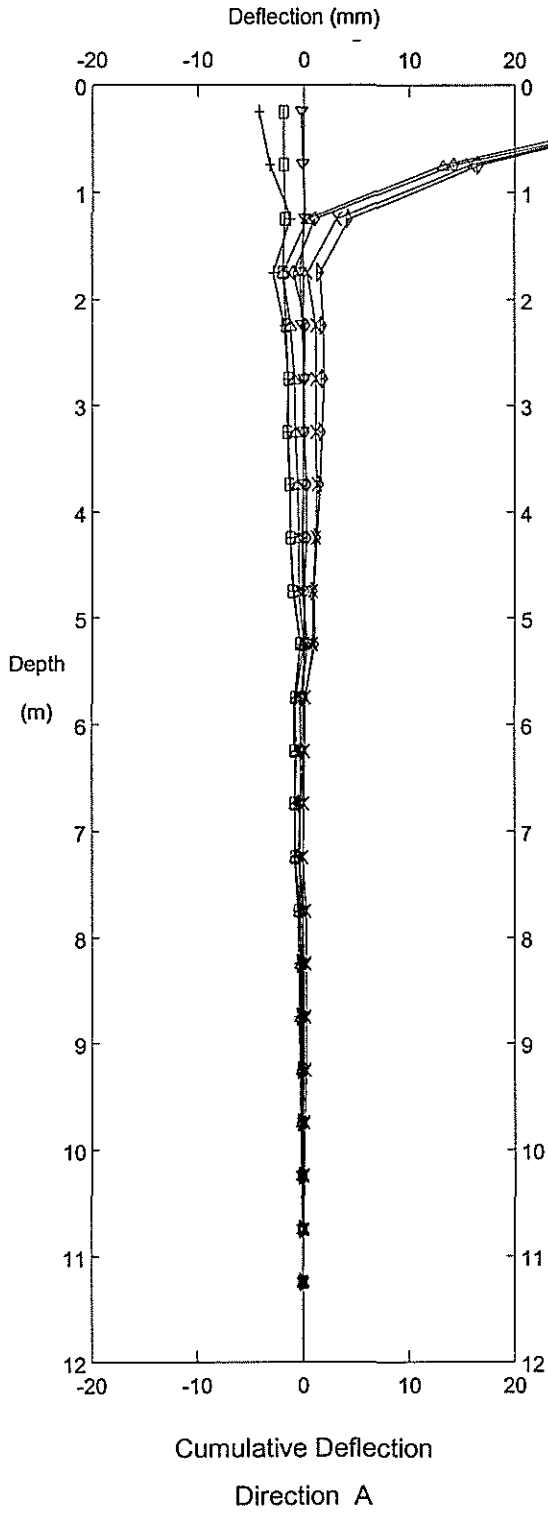
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CD-15, Inclinator 1+530

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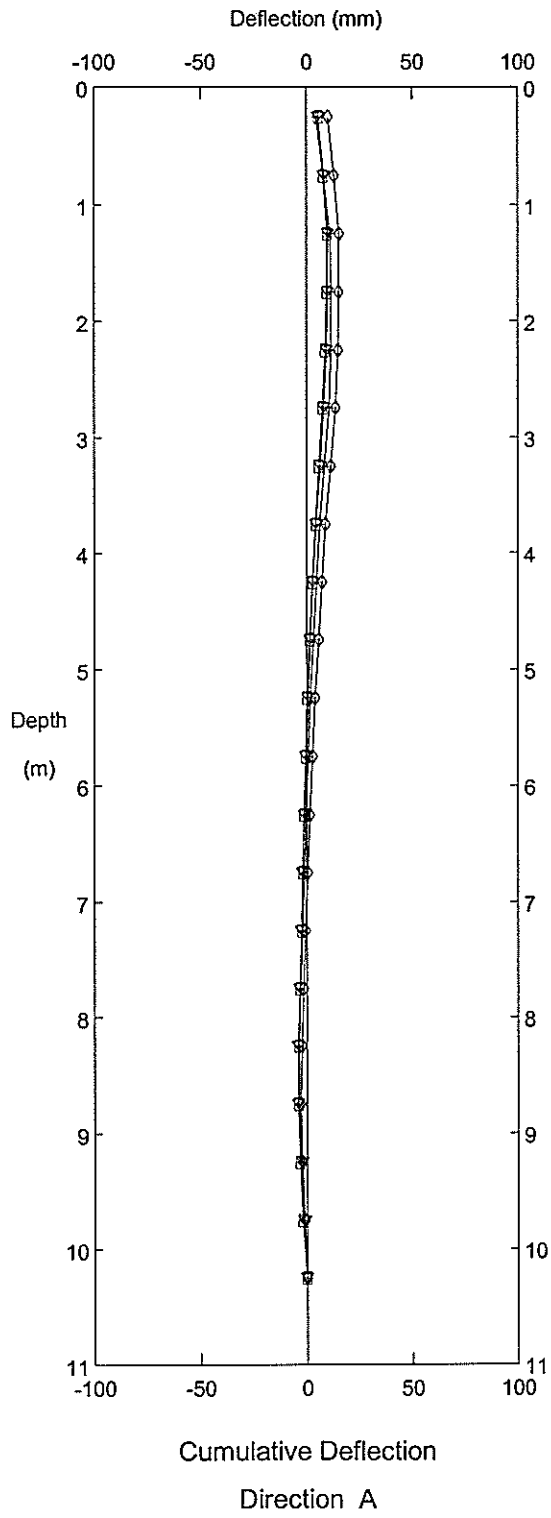
BGC Engineering Inc. - Calgary, AB



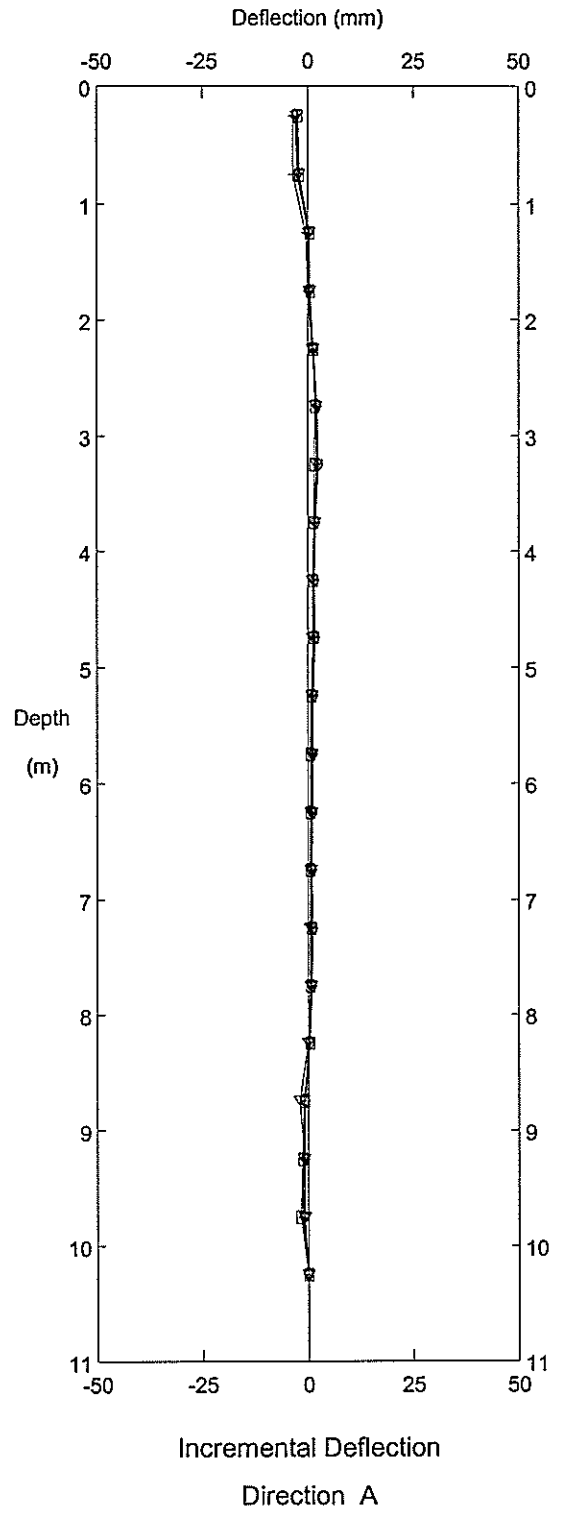
91CD-1, Inclinator 1+767

Sets marked \* include zero shift and/or rotation corrections.

BGC Engineering Inc. - Calgary, AB



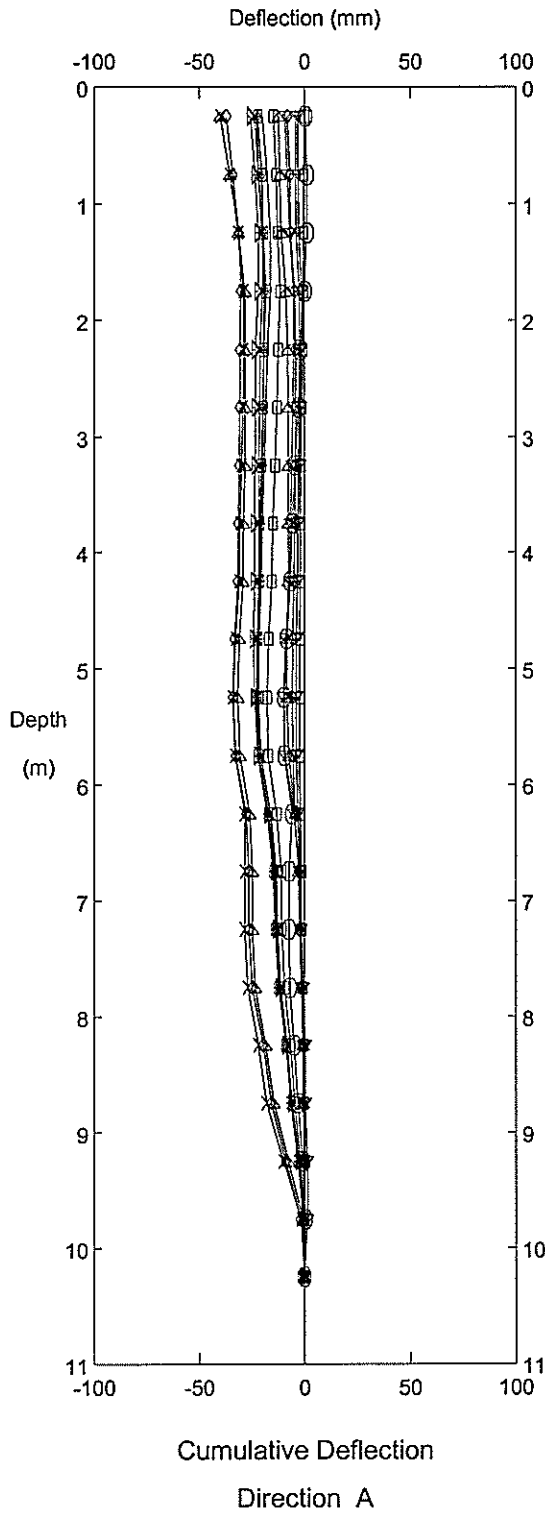
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CD-19, Inclinator 1+900

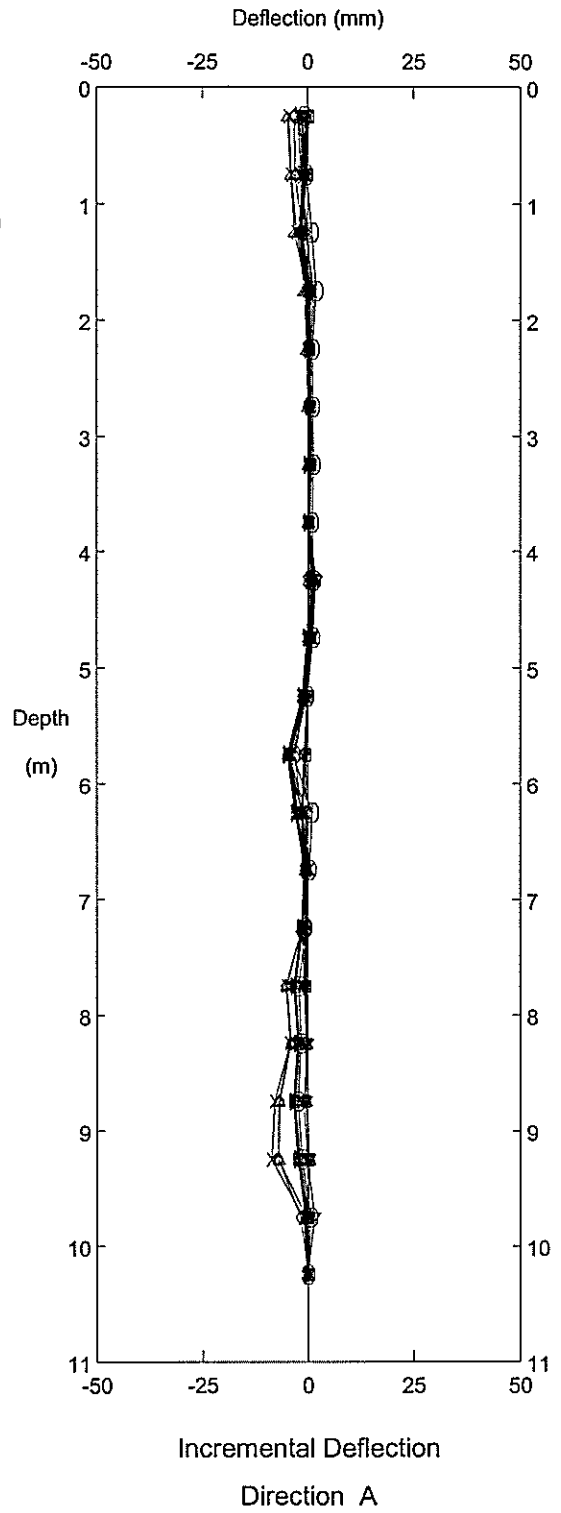
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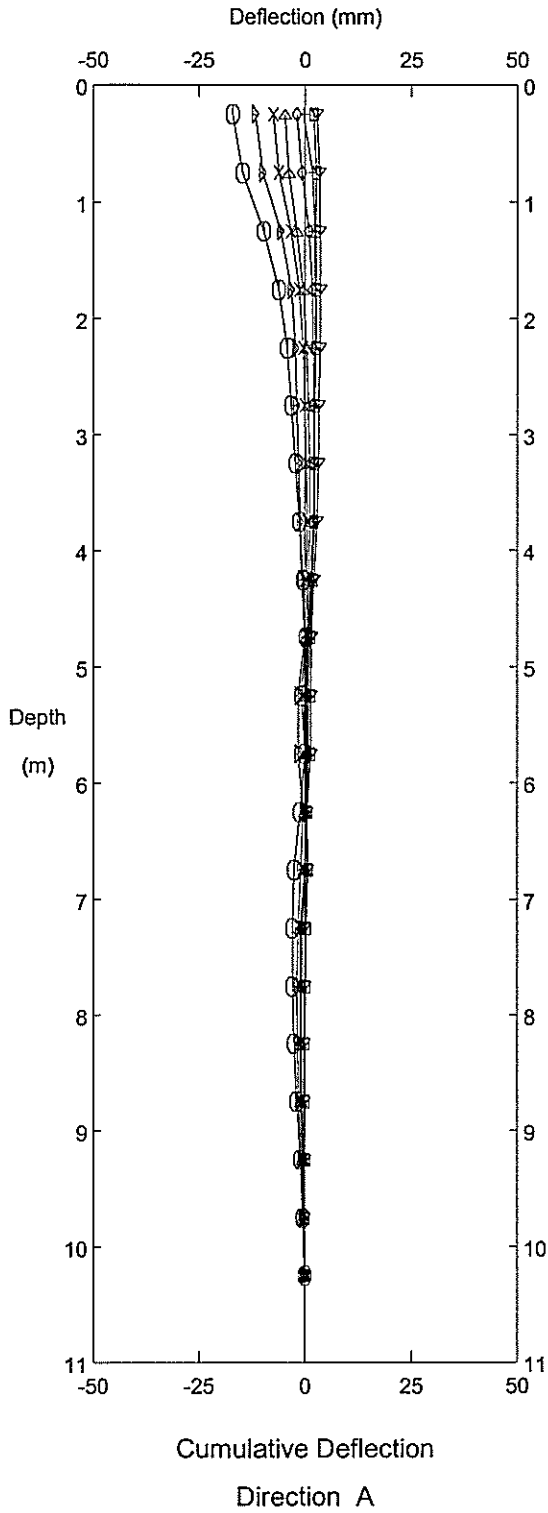
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▷—▷	13 Mar 1991
○—○	9 Apr 1991
—	15 May 1991
■—■	12 Jun 1991
□—□	4 Jul 1991
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CD-19, inclinometer 1+900

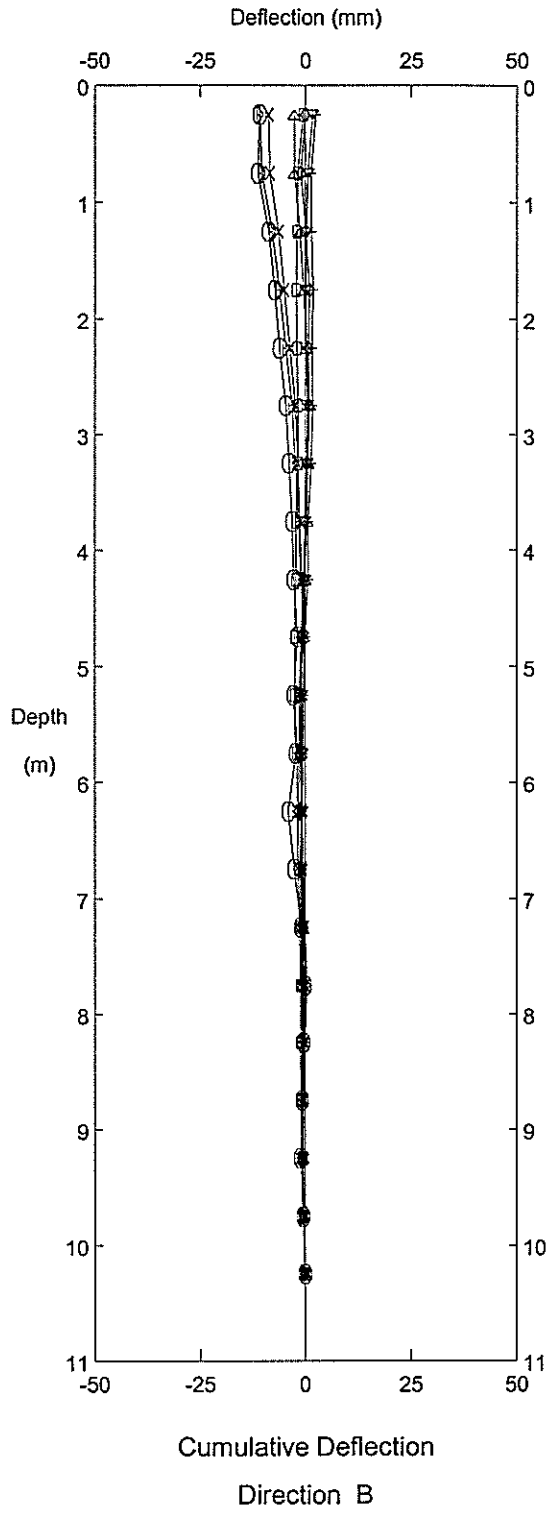
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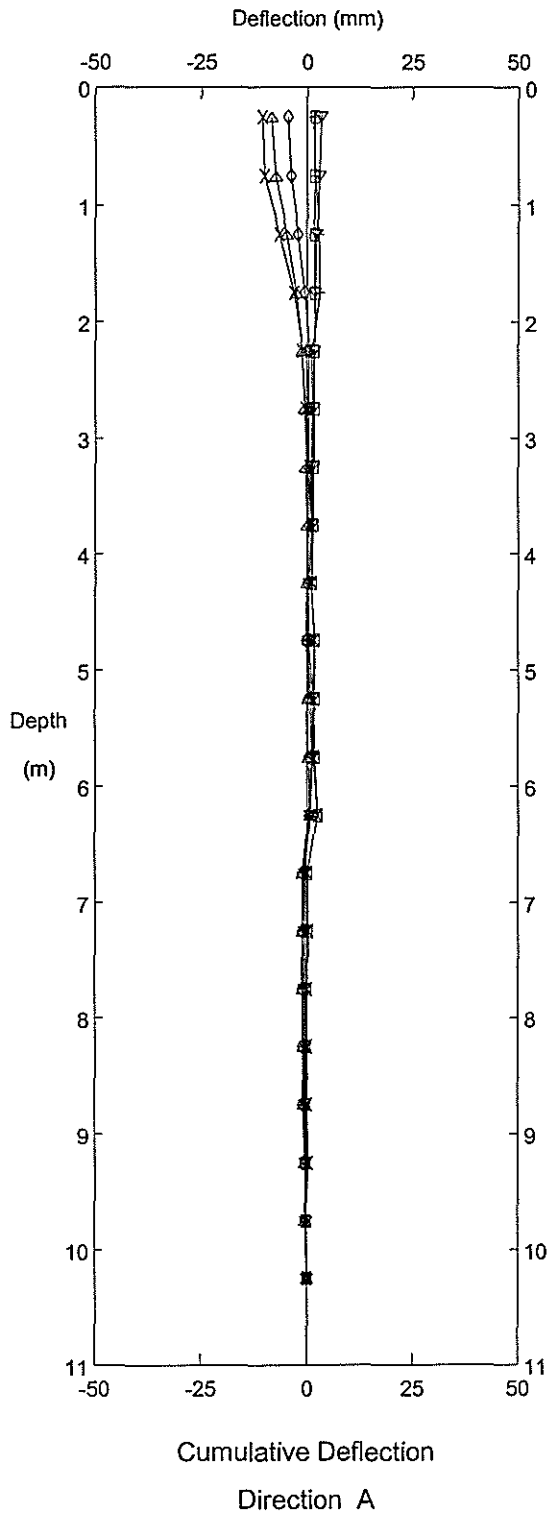
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⊖—⊖	27 Sep 1990



CD-21, Inclinator 2+100

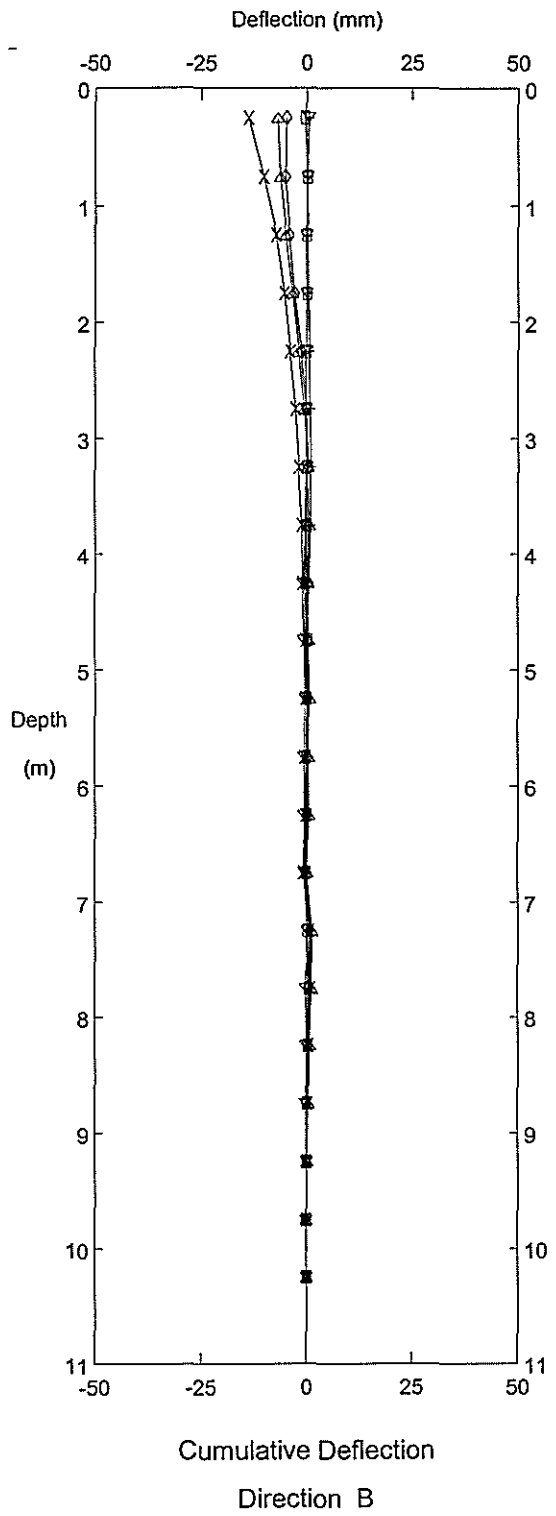
Sets marked \* include zero shift and/or rotation corrections.

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LEGEND

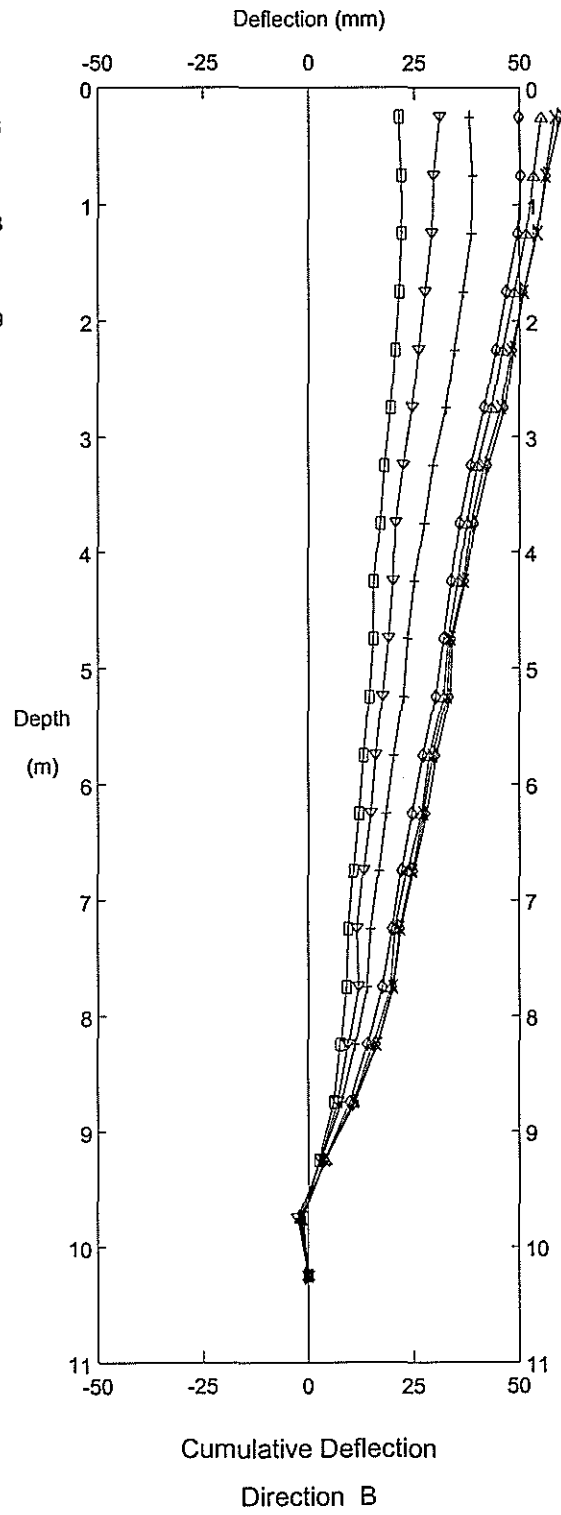
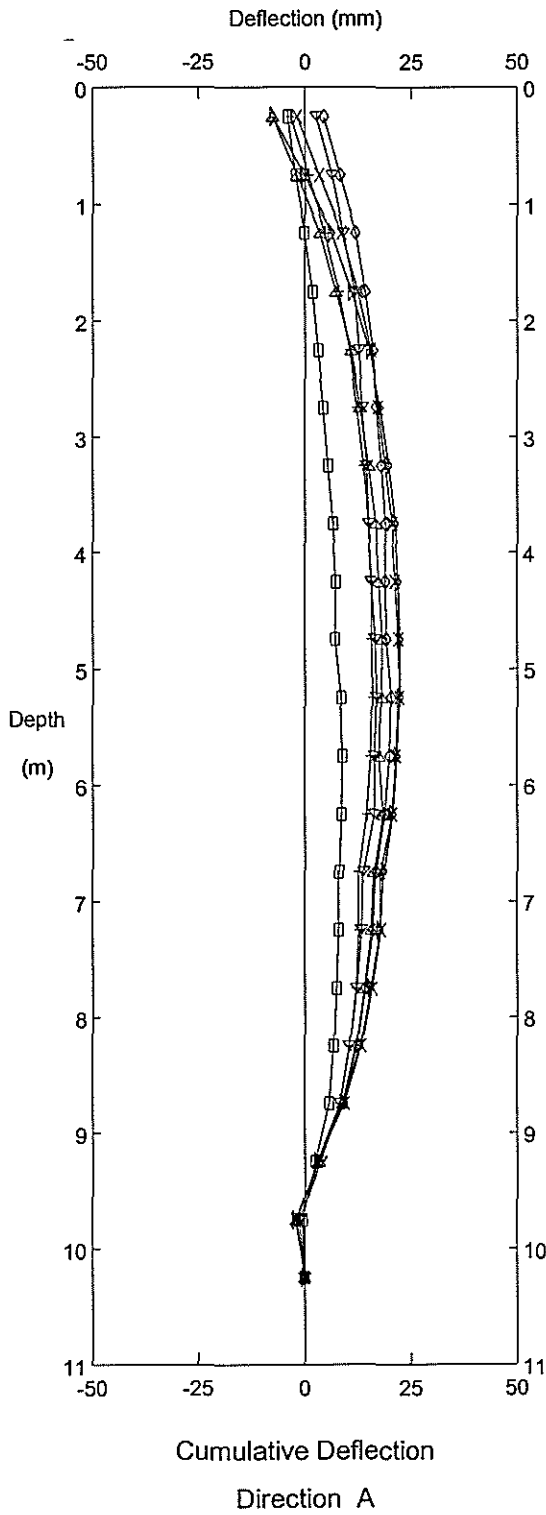
Initial	25 Feb 1991
□	21 Mar 1991
▽	9 Apr 1991
+	15 May 1991
◇	12 Jun 1991
△	4 Jul 1991
X	4 Sep 1991



CD-21, Inclinator 2+100

Sets marked \* include zero shift and/or rotation corrections.

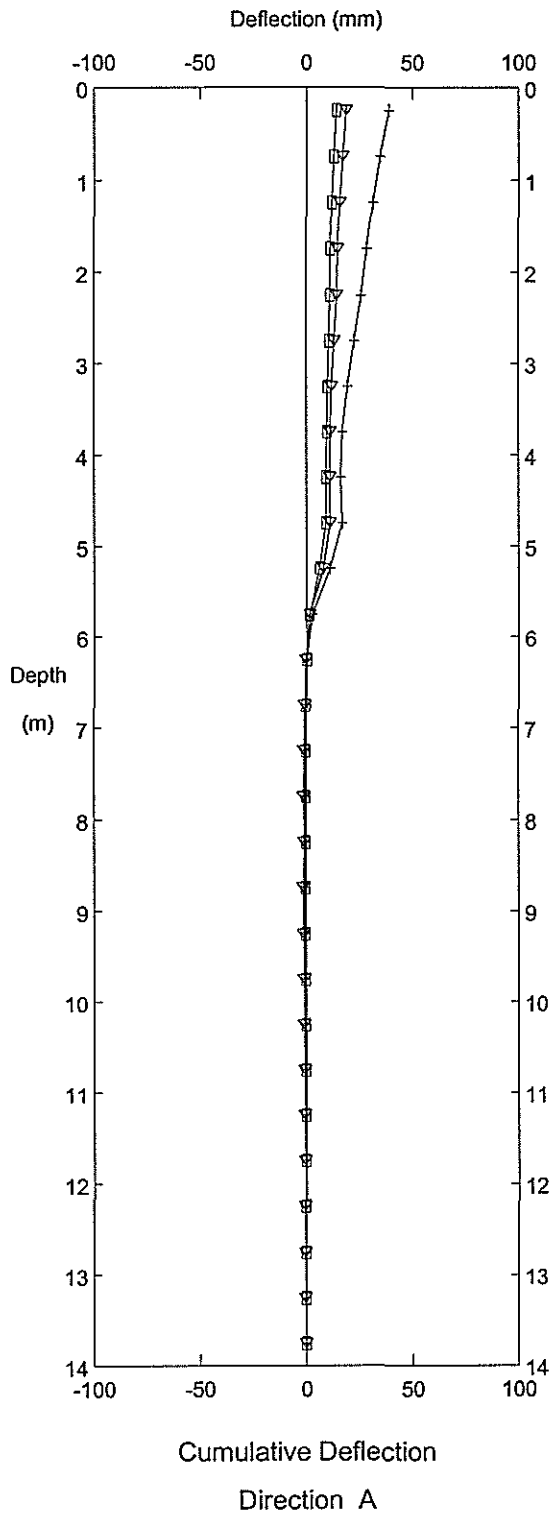
BGC Engineering Inc. - Calgary, AB



CD-21, Inclinator 2+100

Sets marked \* include zero shift and/or rotation corrections.

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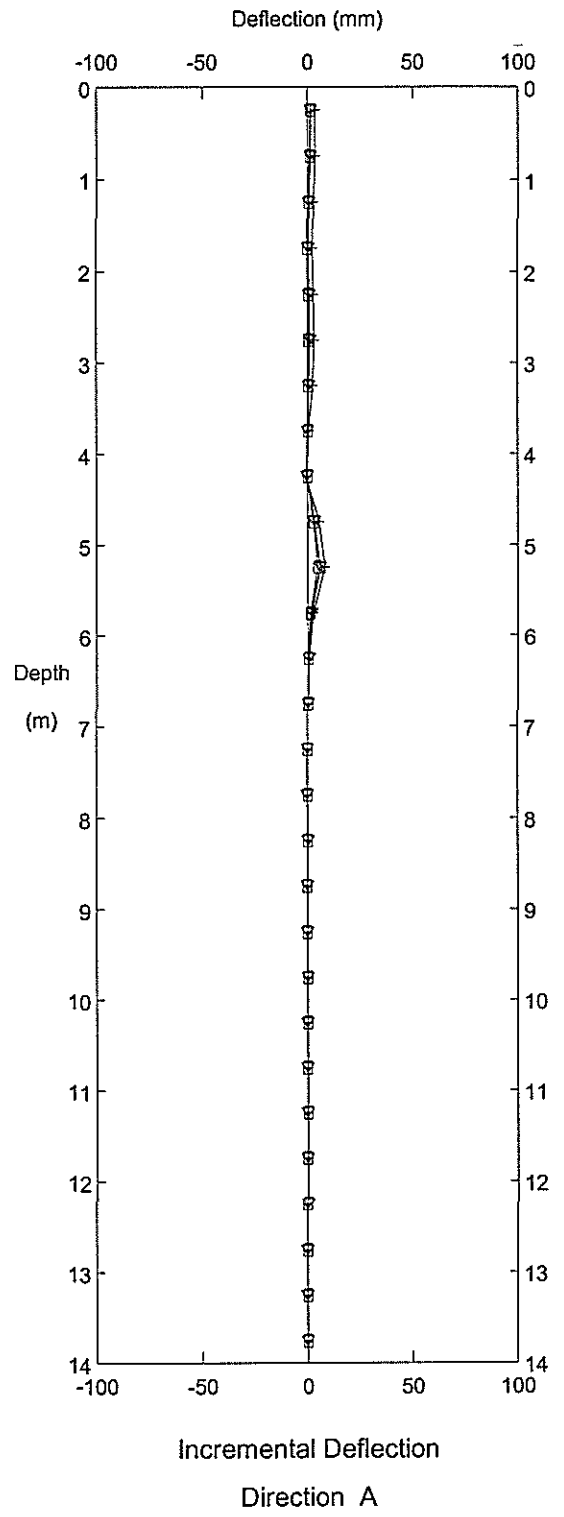
LEGEND

Initial 22 Mar 1989

□ 28 Jun 1989

▽ 1 Aug 1989

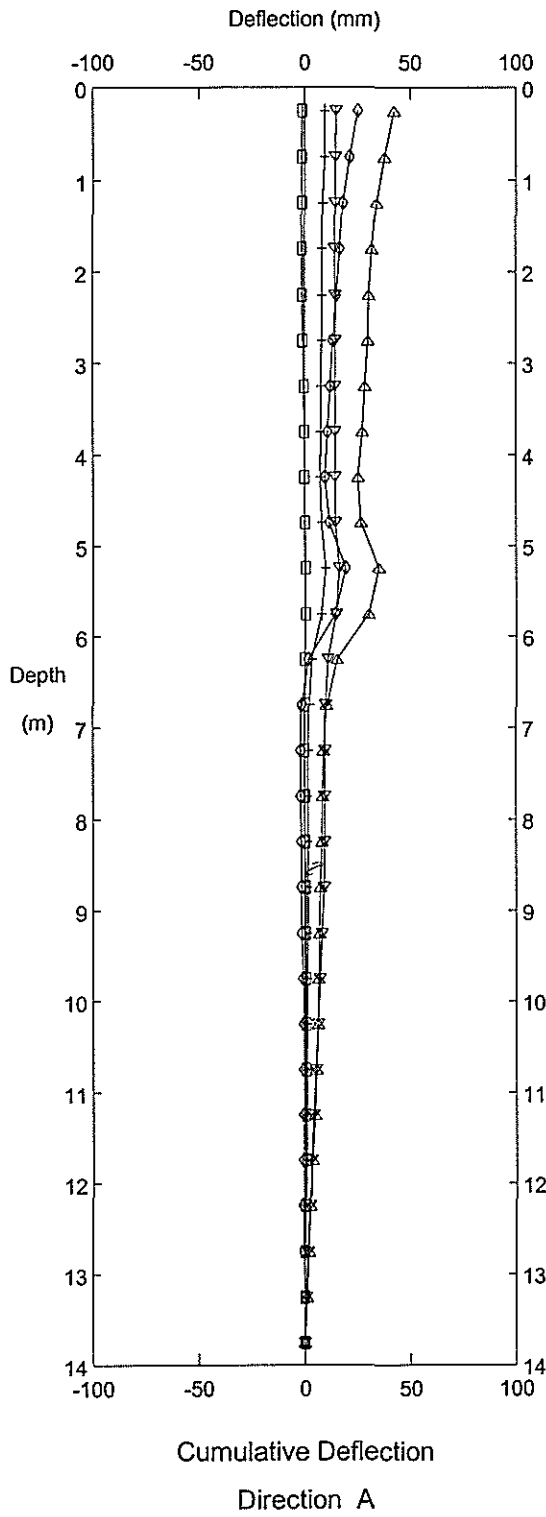
+ 20 Sep 1989



88-10, Inclinator 2+160

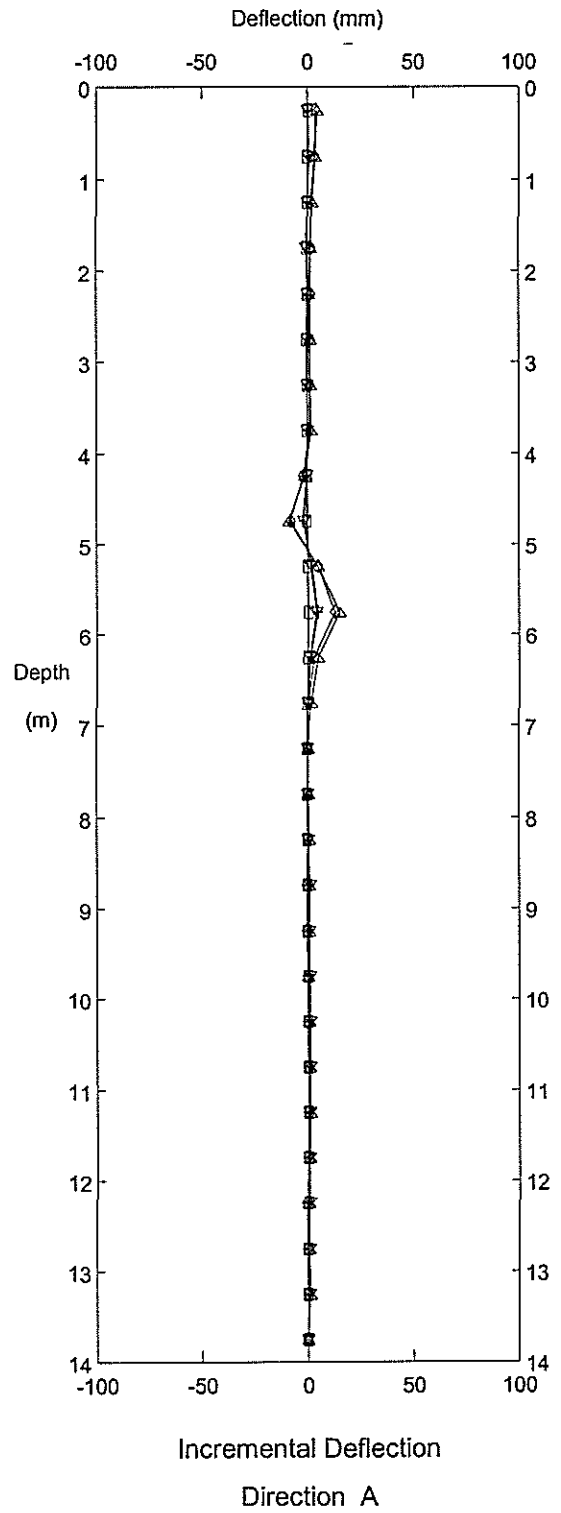
Sets marked \* include zero shift and/or rotation corrections.

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LEGEND

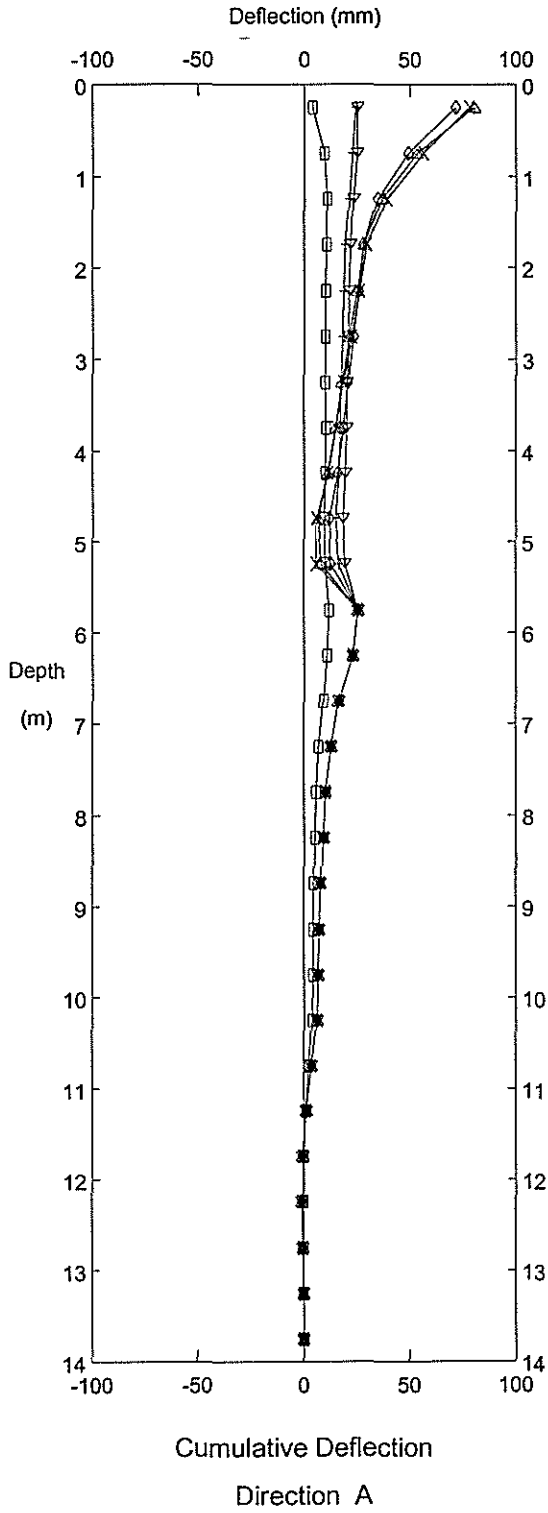
Initial	12 Jun 1991
□	4 Jul 1991
▽	4 Sep 1991
+	24 Sep 1991
◇	26 Apr 1992
△	30 Jun 1992



88-10, Inclinator 2+160

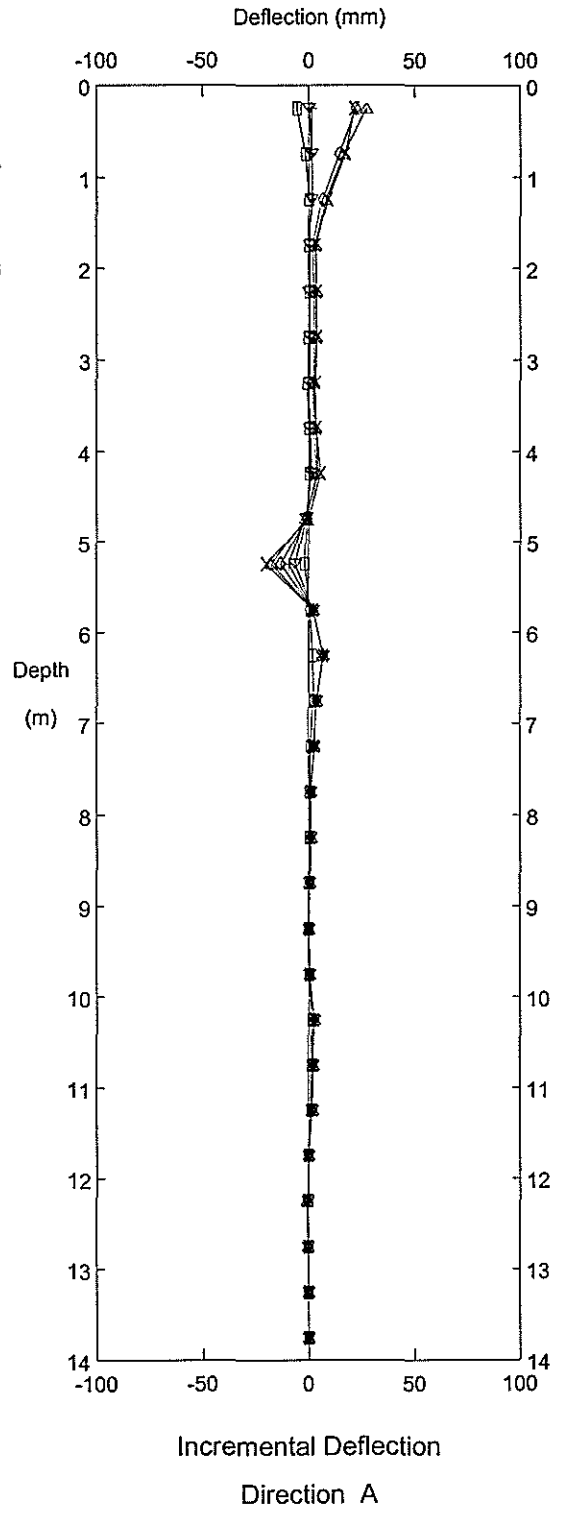
Sets marked \* include zero shift and/or rotation corrections.

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LEGEND

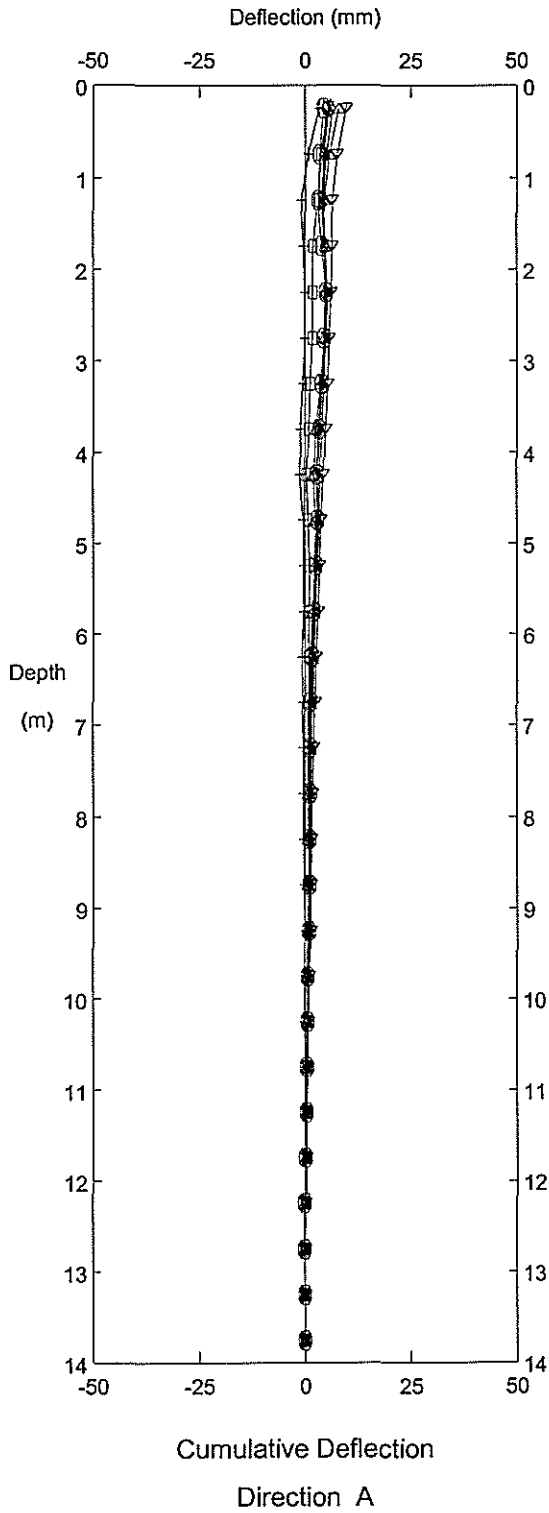
Initial	13 Sep1996
□	16 May1997
▽	3 Nov1997
+	25 May1998
◇	8 Nov1998
△	2 Jun1999
X	14 Sep1999



88-10, Inclinator 2+160

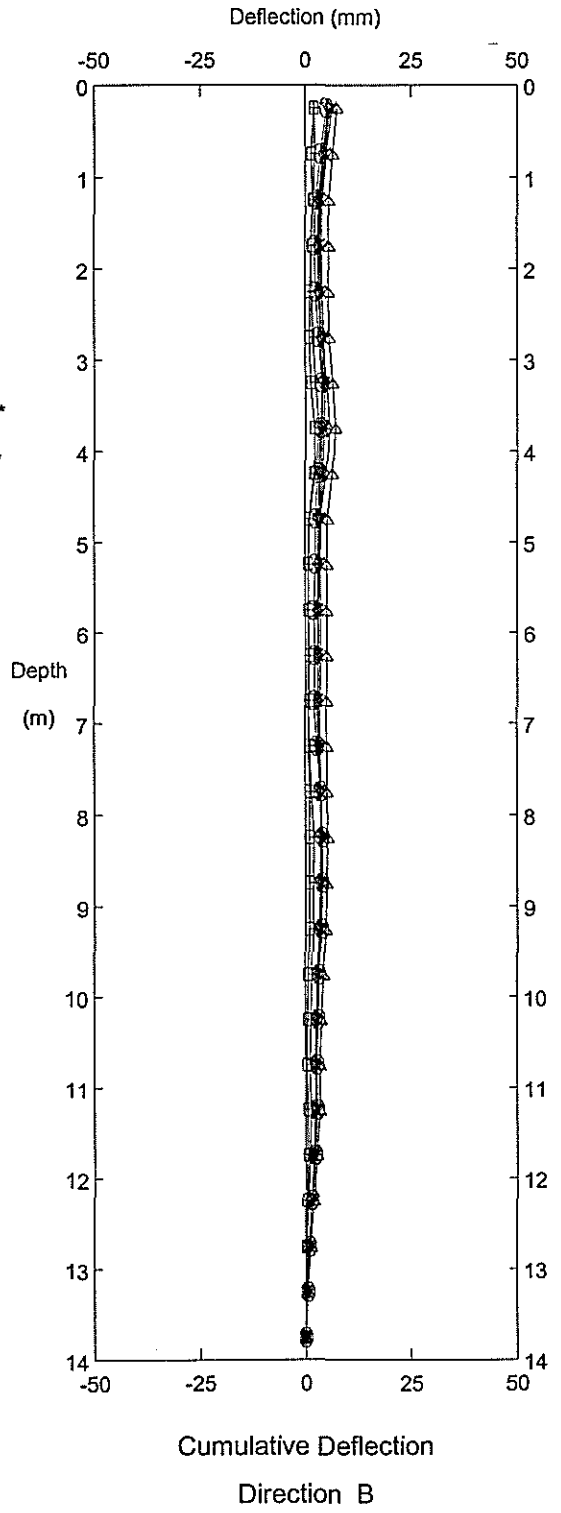
Sets marked \* include zero shift and/or rotation corrections.

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LEGEND

Initial	13 Sep1996
□	16 May1997
▽	3 Nov1997*
+	25 May1998
◇	8 Nov1998*
△	1 Jun1999*
X	14 Sep1999*
▷	13 Jun2000*
⊙	7 Sep2000*



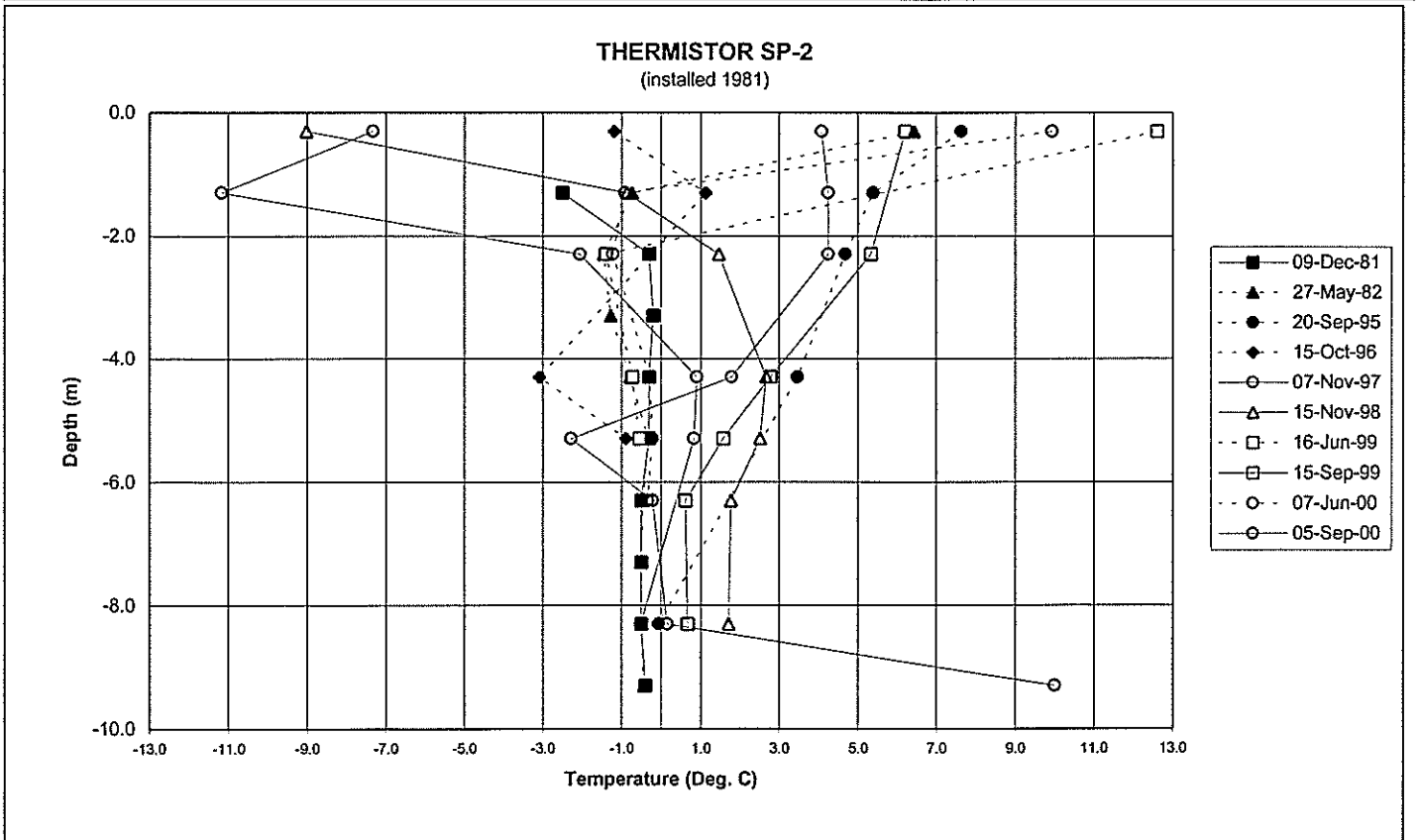
94CD-1, Inclinator

Sets marked \* include zero shift and/or rotation corrections.

**DIVERSION CANAL SPOIL PILES  
THERMISTORS**

**BGC Engineering Inc.**

SP-2		Location: N. of canal dyke St.1+530		Elevation: 1093.1 m Canteq		Coordinates: 1274.1 mN & 1055.7 mE					
Thermistor String #21	Date Installed: 1981	Thermistor Type:	Controls YSI 44007	Ice-Bath Calibration: applied	Surface Protector: yes						
Depth Correction	0.3										
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 27-May-82	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 15-Oct-96	Resistivity (kOhms) 07-Nov-97	Resistivity (kOhms) 15-Nov-98	Resistivity (kOhms) 16-Jun-99	Resistivity (kOhms) 15-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00
0.0	-0.3		11.74	11.07	17.22	23.75	26.03	8.71	11.87	9.90	13.19
1.0	-1.3	18.44	16.84	12.37	15.29	29.29	16.95			17.00	13.09
2.0	-2.3	16.45	17.46	12.80		18.00	15.04	17.41	12.39	17.25	13.08
3.0	-3.3	16.34	17.27						13.3		
4.0	-4.3	16.45	16.87	13.60	18.99	15.47	14.15	16.81	14.07	16.44	14.79
5.0	-5.3	16.40	16.41		16.96	15.48	14.22	16.61	14.91	16.33	18.16
6.0	-6.3	16.60	16.57				14.79		15.68	16.46	16.36
7.0	-7.3	16.62	16.62								
8.0	-8.3	16.62	16.62	16.25		16.63	14.85		15.65		16.07
9.0	-9.3	16.50	16.53								
Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 27-May-82	Temperature (C) 20-Sep-95	Temperature (C) 15-Oct-96	Temperature (C) 07-Nov-97	Temperature (C) 15-Nov-98	Temperature (C) 16-Jun-99	Temperature (C) 15-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00
0.0	-0.3		6.43	7.63	-1.19	-7.32	-9.03	12.61	6.20	9.93	4.07
1.0	-1.3	-2.50	-0.74	5.39	1.13	-11.17	-0.87			-0.92	4.25
2.0	-2.3	-0.30	-1.46	4.68		-2.05	1.46	-1.41	5.33	-1.23	4.24
3.0	-3.3	-0.20	-1.28								
4.0	-4.3	-0.30	-0.79	3.46	-3.08	0.90	2.67	-0.72	2.78	-0.29	1.79
5.0	-5.3	-0.30	-0.31		-0.90	0.83	2.51	-0.55	1.57	-0.22	-2.28
6.0	-6.3	-0.50	-0.46				1.77		0.62	-0.33	-0.21
7.0	-7.3	-0.50	-0.50								
8.0	-8.3	-0.50	-0.50	-0.06		-0.51	1.71		0.68		0.16
9.0	-9.3	-0.40	-0.44								

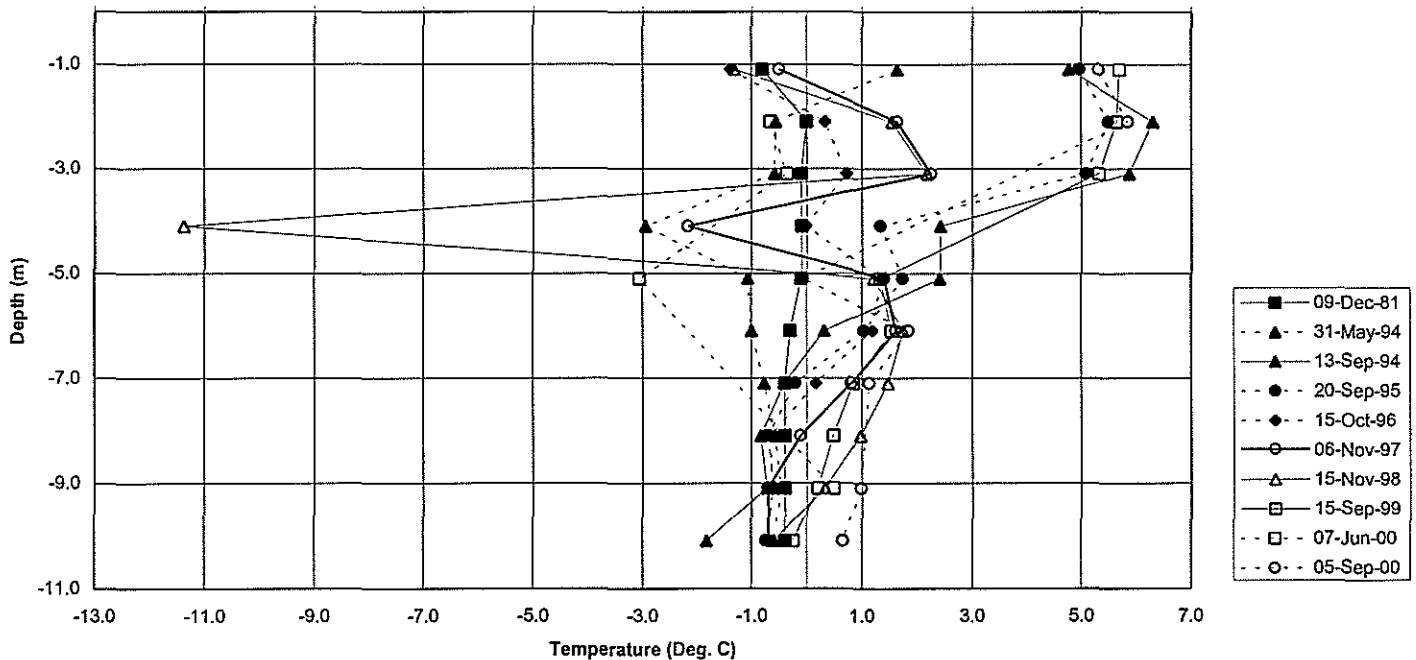


<b>SP-3</b>		<b>Location:</b> N. of canal dyke St.1+900		<b>Elevation:</b> 1083.5 m		<b>Coordinates:</b> 1394.4 mN & 704.5 mE						
<b>Thermistor String#25</b>		<b>Date Installed:</b> 1981		<b>Thermistor Type:</b> 44007		<b>Ice-Bath Calibration:</b> applied		<b>Surface Protector:</b> yes				
<b>Depth Correction</b> 0.1												
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 15-Oct-96	Resistivity (kOhms) 06-Nov-97	Resistivity (kOhms) 15-Nov-98	Resistivity (kOhms) 15-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-1.1	16.85	14.88	12.72	12.60	17.37	16.59	17.30	12.15		12.38	
2.0	-2.1	16.20	16.67	11.81	12.29	15.90	14.88	14.95	12.18	16.73	12.06	
3.0	-3.1	16.25	16.66	12.04	12.52	15.59	14.43	14.48	12.38	16.48		
4.0	-4.1	16.27	18.85	14.32	15.13	16.19	18.09	29.54	nr	nr		
5.0	-5.1	16.27	17.10	14.32	14.82	15.10	15.06	15.20	15.11	18.93	16.23	
6.0	-6.1	16.39	16.99	15.88	15.31	15.23	14.90	14.80	14.96		14.73	
7.0	-7.1	16.49	16.81	16.50	16.33	16.04	15.52	15.01	15.49		15.27	
8.0	-8.1	16.54	16.69	16.91	16.80	16.73	16.27	15.39	15.78		15.38	
9.0	-9.1	16.54	16.60	16.82	16.71	16.70	16.77	15.90	16.01	15.78	15.38	
10.0	-10.1	16.48	16.65	17.74	16.77	16.77	16.75	16.68	16.38		15.64	

\* The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 15-Oct-96	Temperature (C) 06-Nov-97	Temperature (C) 15-Nov-98	Temperature (C) 15-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C)
1.0	-1.1	-0.80	1.64	4.77	4.96	-1.39	-0.50	-1.31	5.70		5.32	
2.0	-2.1	0.00	-0.56	6.31	5.50	0.33	1.64	1.55	5.65	-0.66	5.85	
3.0	-3.1	-0.10	-0.59	5.87	5.08	0.72	2.25	2.18	5.32	-0.37		
4.0	-4.1	-0.10	-2.95	2.42	1.33	-0.02	-2.18	-11.38				
5.0	-5.1	-0.10	-1.07	2.42	1.74	1.35	1.40	1.22	1.34	-3.05	-0.07	
6.0	-6.1	-0.30	-1.00	0.32	1.04	1.18	1.61	1.75	1.54		1.84	
7.0	-7.1	-0.40	-0.77	-0.41	-0.21	0.16	0.81	1.47	0.85		1.13	
8.0	-8.1	-0.40	-0.57	-0.83	-0.70	-0.66	-0.12	0.98	0.48			
9.0	-9.1	-0.40	-0.47	-0.73	-0.60	-0.63	-0.71	0.33	0.20	0.48	0.99	
10.0	-10.1	-0.40	-0.60	-1.83	-0.74	-0.71	-0.68	-0.60	-0.25		0.66	

**THERMISTOR SP-3**  
(installed 1981)



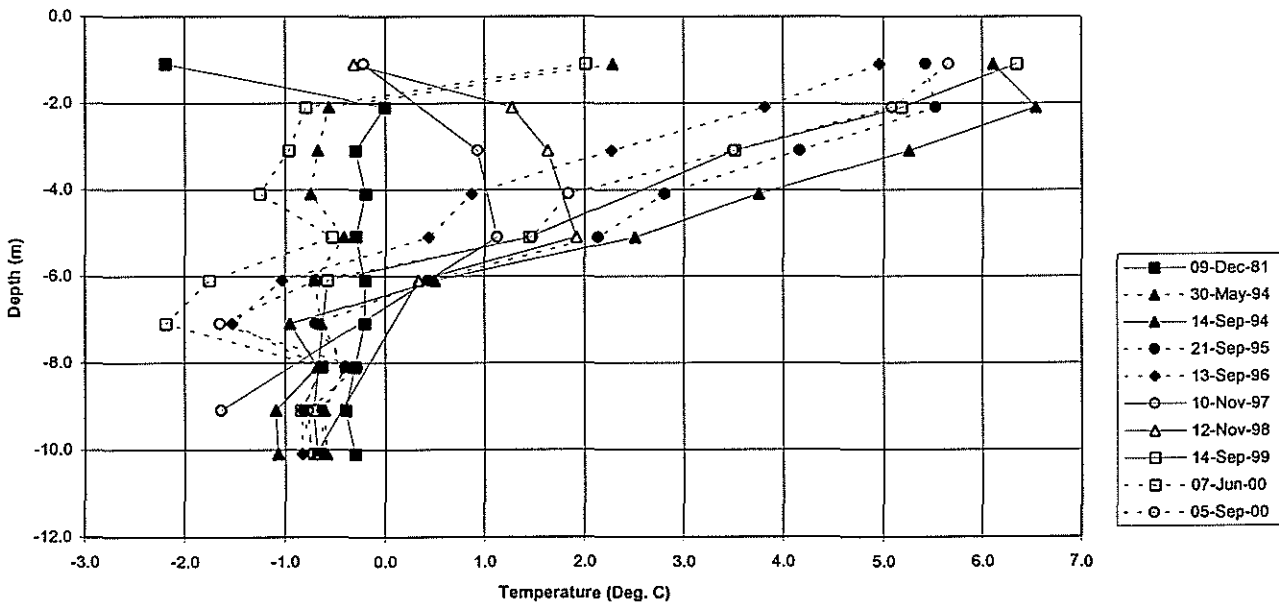
<b>SP-5</b>		<b>Location:</b> N. of canal dyke St.2+950	<b>Elevation:</b> 1079.2 m	<b>Coordinates:</b> 1898.2 mN & 183.1 mW
<b>Thermistor String #24</b>	<b>Date Installed:</b> 1981	<b>Thermistor Type:</b> 44007	<b>Controls YSI</b>	<b>Ice-Bath Calibration:</b> applied
<b>Depth Correction</b>	0.1			<b>Surface Protector:</b> yes

Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 30-May-94	Resistivity (kOhms) 14-Sep-94	Resistivity (kOhms) 21-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 10-Nov-97	Resistivity (kOhms) 12-Nov-98	Resistivity (kOhms) 14-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00
1.0	-1.1	18.19	14.47	11.96	12.37	12.66	16.43	16.51	11.82	14.67	12.23
2.0	-2.1	16.21	16.68	11.68	12.28	13.37		15.19	12.49	16.88	12.55
3.0	-3.1	16.38	16.70	12.39	13.08	14.38	15.39	14.85	13.51	16.95	13.52
4.0	-4.1	16.32	16.79	13.37	14.02	15.46				17.23	14.72
5.0	-5.1	16.38	16.48	14.21	14.48	15.78	15.24	14.64	14.99	16.58	14.97
6.0	-6.1	16.33	16.76	15.76	15.81	17.04		15.89	16.65	17.69	16.75
7.0	-7.1	16.36	16.73	17.00	16.78	17.51				18.12	17.62
8.0	-8.1	16.40	16.48	16.72	16.48	16.68				16.68	16.38
9.0	-9.1	16.54	16.72	17.14	16.74	16.91	17.63		16.81	16.92	16.86
10.0	-10.1	16.40	16.64	17.06	16.67	16.85		16.73	16.72	16.75	16.77

\* The initial reading (Nov 15/81) is excluded from the data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 30-May-94	Temperature (C) 14-Sep-94	Temperature (C) 21-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 10-Nov-97	Temperature (C) 12-Nov-98	Temperature (C) 14-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C) 00-Jan-00
1.0	-1.1	-2.20	2.28	6.11	5.43	4.96	-0.22	-0.31	6.35	2.01	5.66	
2.0	-2.1	0.00	-0.56	6.54	5.52	3.81		1.27	5.18	-0.80	5.08	
3.0	-3.1	-0.30	-0.68	5.25	4.16	2.27	0.93	1.63	3.51	-0.97	3.50	
4.0	-4.1	-0.20	-0.75	3.75	2.80	0.87				-1.25	1.84	
5.0	-5.1	-0.30	-0.42	2.51	2.13	0.43	1.12	1.91	1.45	-0.54	1.47	
6.0	-6.1	-0.20	-0.71	0.50	0.44	-1.03		0.34	-0.58	-1.76	-0.69	
7.0	-7.1	-0.20	-0.64	-0.95	-0.70	-1.53				-2.19	-1.65	
8.0	-8.1	-0.30	-0.40	-0.68	-0.40	-0.63				-0.63	-0.28	
9.0	-9.1	-0.40	-0.61	-1.09	-0.63	-0.83	-1.64		-0.71	-0.84	-0.77	
10.0	-10.1	-0.30	-0.59	-1.07	-0.62	-0.83		-0.69	-0.68	-0.71	-0.74	

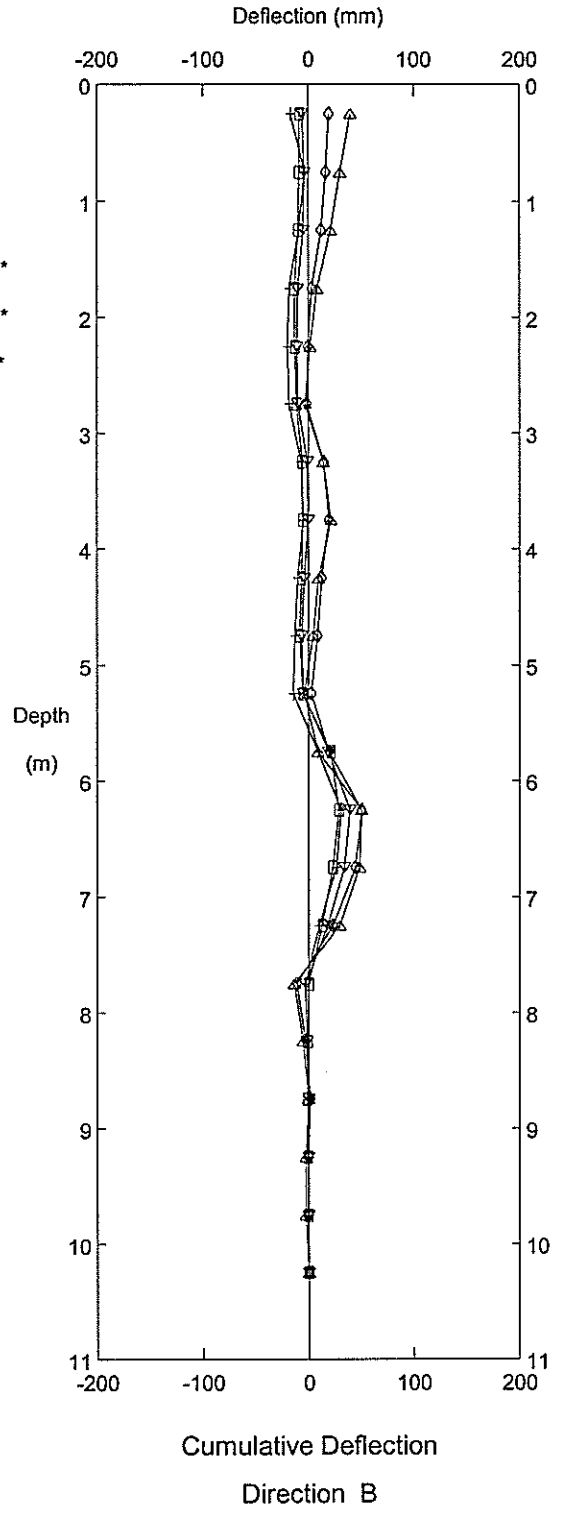
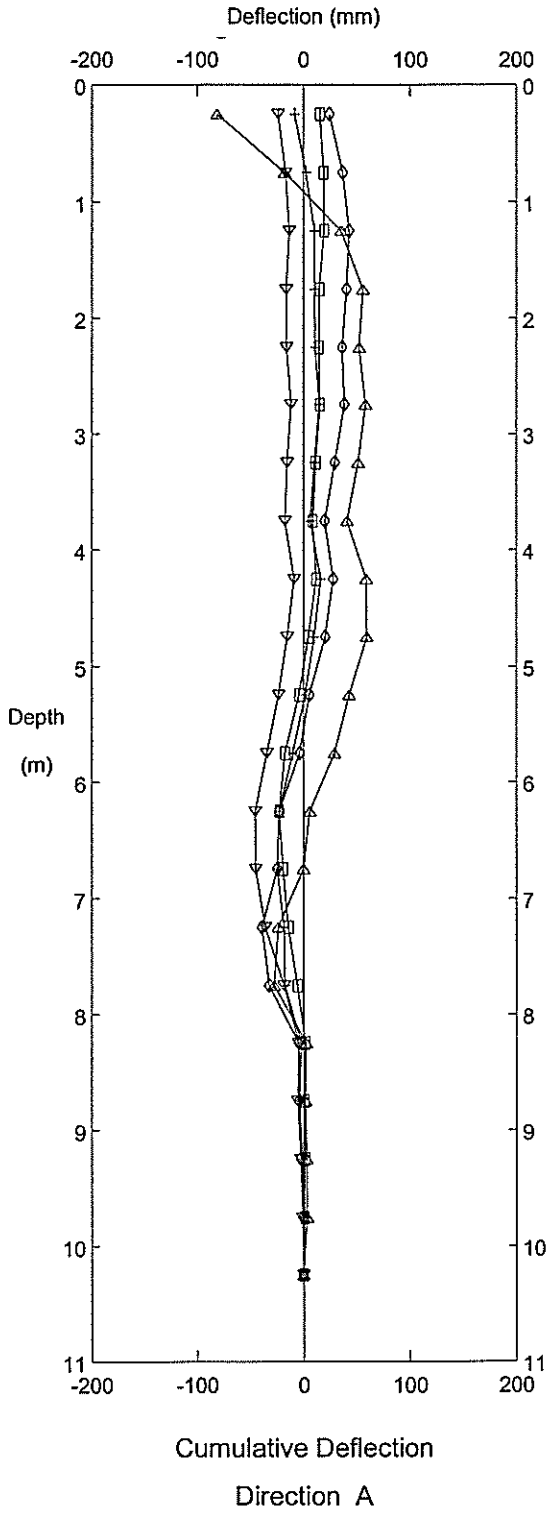
**THERMISTOR SP-5**  
(installed 1981)



**DIVERSION CANAL SPOIL PILES  
INCLINOMETERS**

**BGC Engineering Inc.**

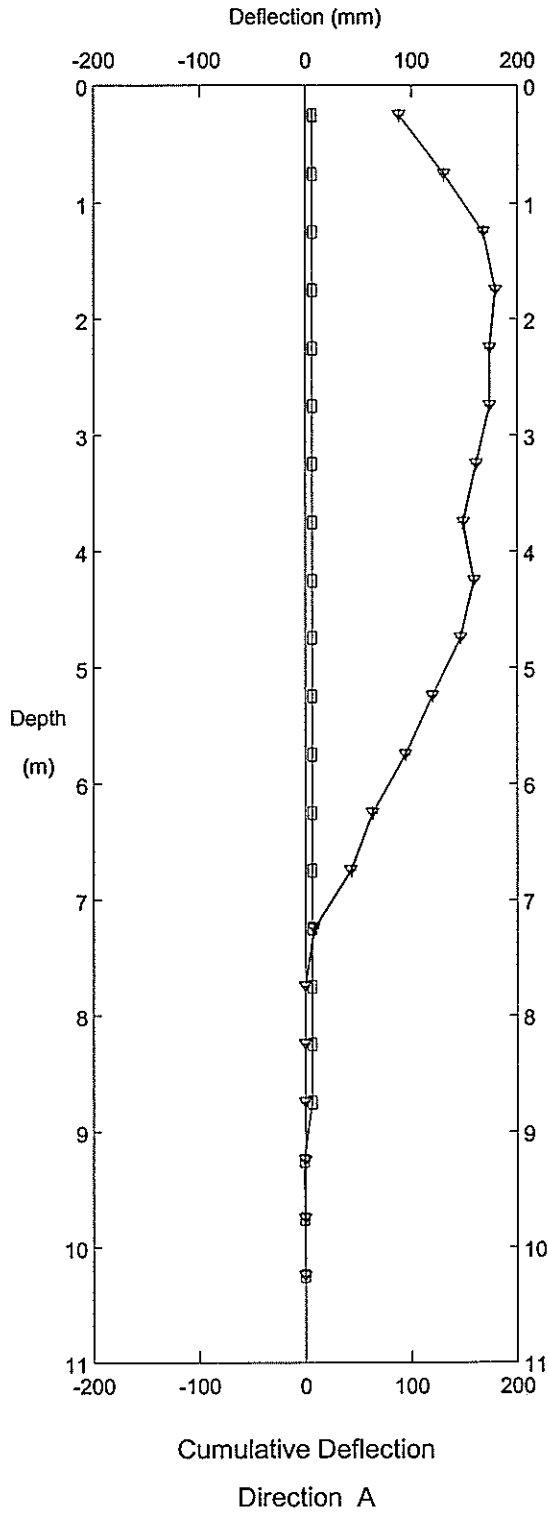
BGC Engineering Inc. - Calgary, AB



SP-2, Inclinator 1+530

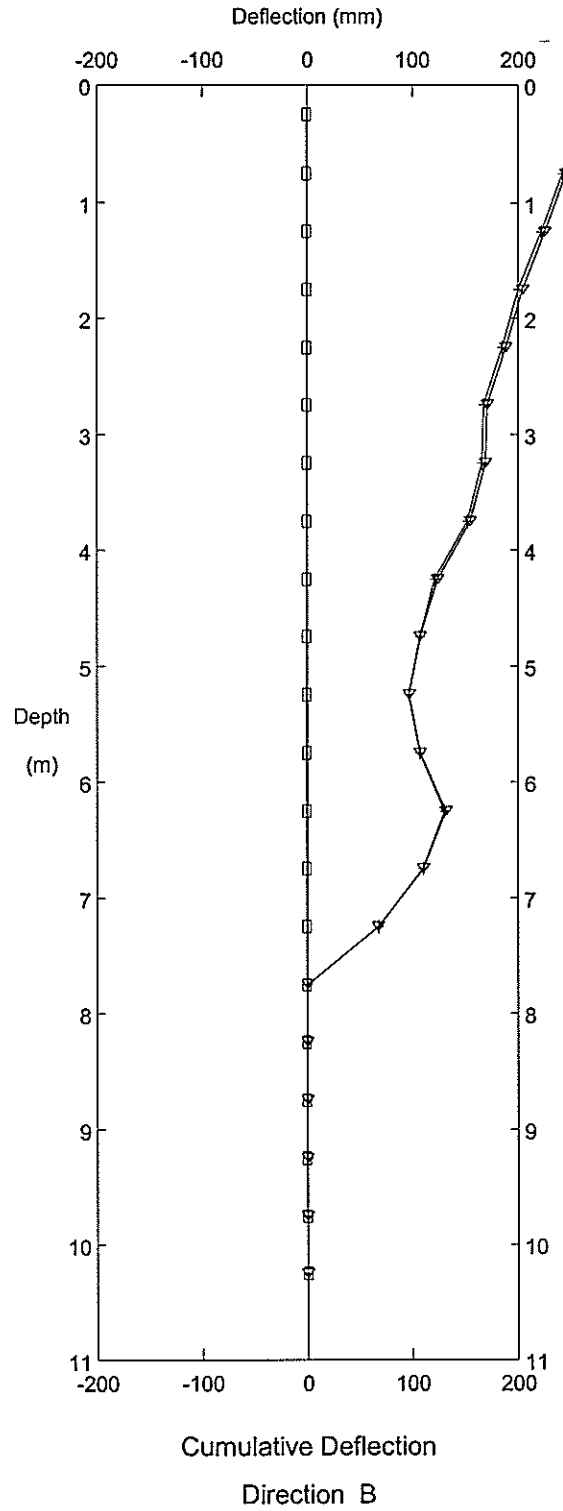
Sets marked \* include zero shift and/or rotation corrections.

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LEGEND

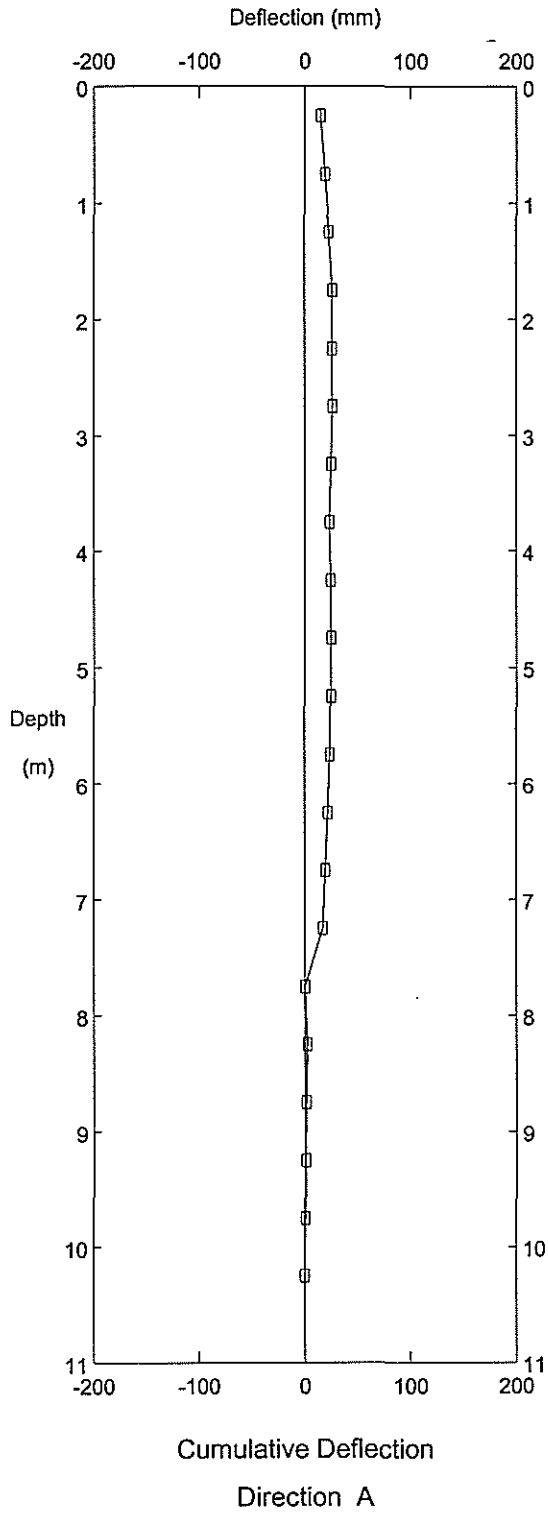
- Initial 15 Jan 1996
- 3 Nov 1999
- ▽—▽ 12 Jun 2000
- +—+ 7 Sep 2000



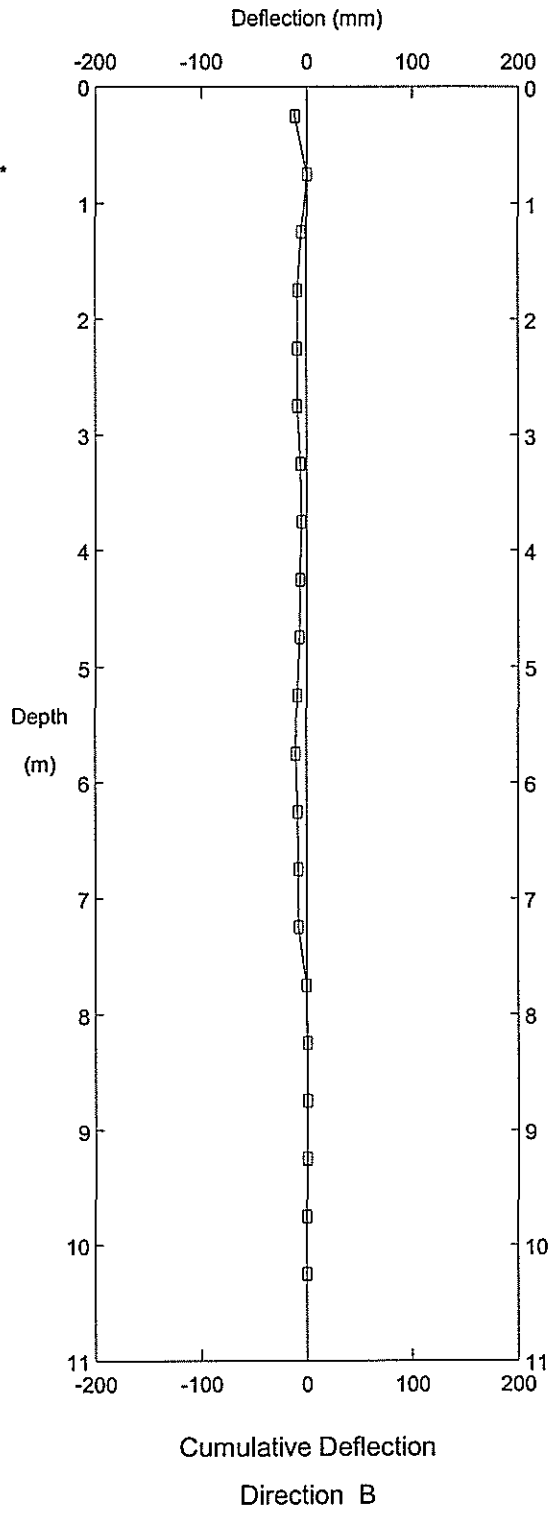
SP-2, Inclinator 1+530

Sets marked \* include zero shift and/or rotation corrections.

BGC Engineering Inc. - Calgary, AB



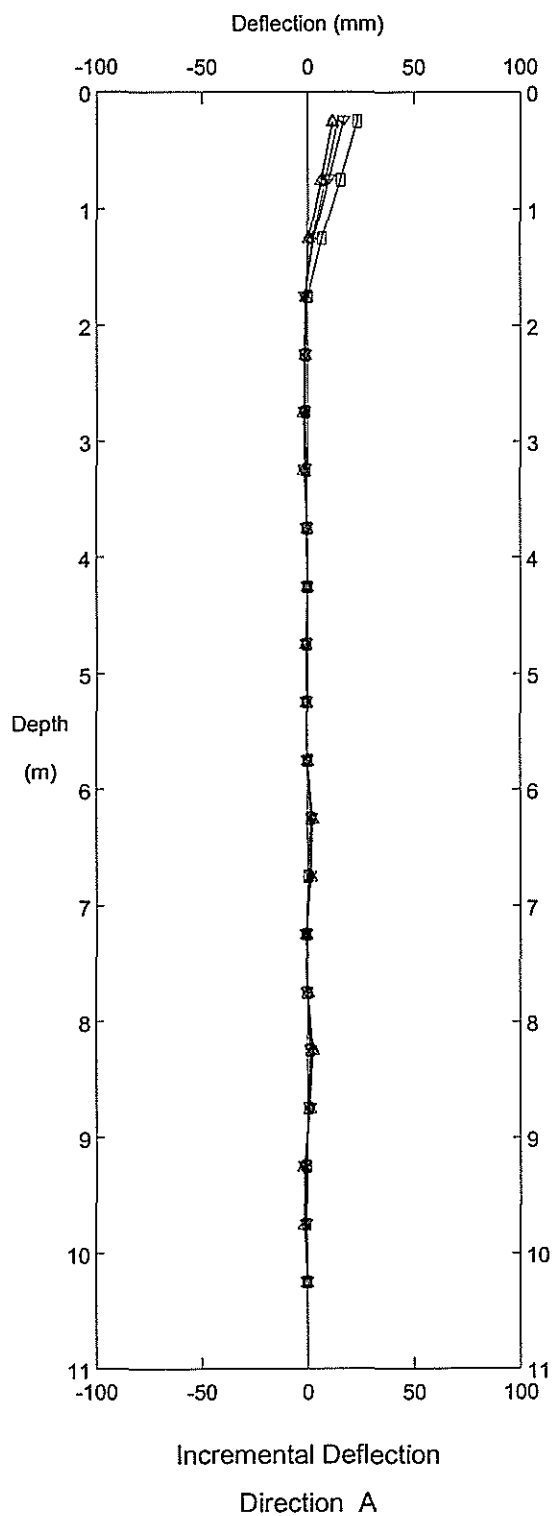
LEGEND  
Initial 23 Jul 1991\*  
□—□ 24 Sep 1991\*



SP-2, Inclinator 1+530

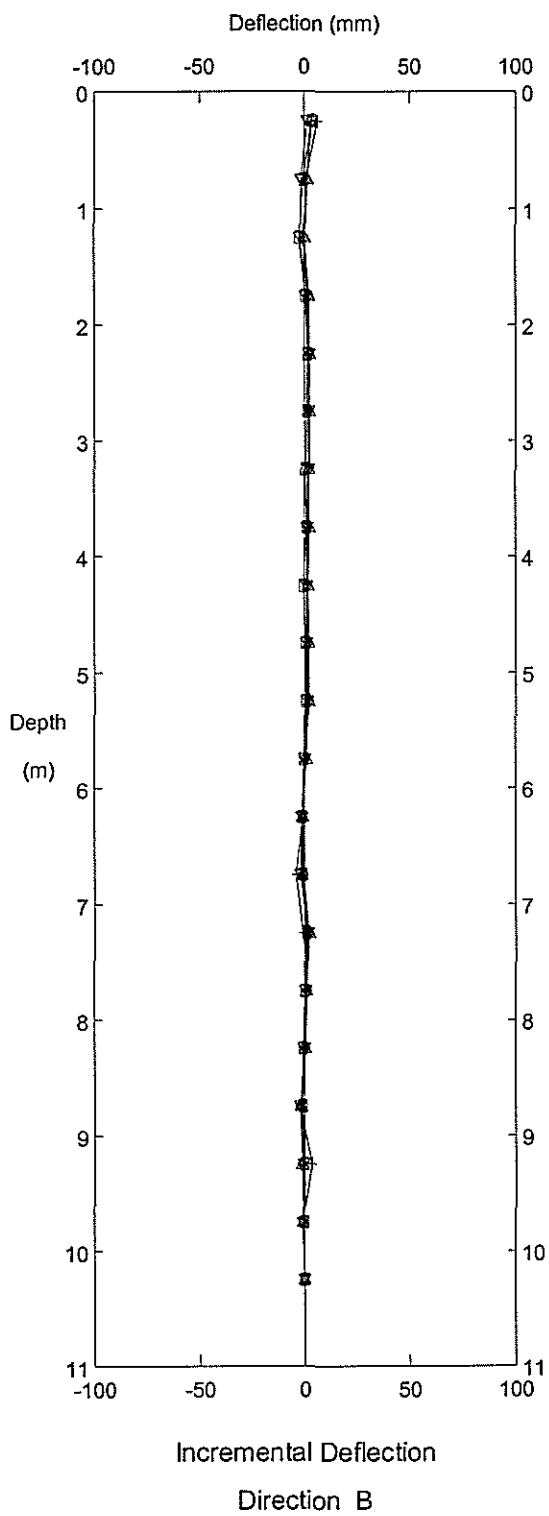
Sets marked \* include zero shift and/or rotation corrections.

BGC Engineering Inc. - Calgary, AB



LEGEND

Initial	13 Sep1996
□—□	3 Nov1997
▽—▽	8 Nov1998
+—+	14 Sep1999
◇—◇	13 Jun2000
△—△	7 Sep2000



SP-5, Inclinator 2+950

Sets marked \* include zero shift and/or rotation corrections.

# BACKSLOPE CANAL DYKE

Backslope  
Canal Dyke

**LIST OF INSTRUMENTS READ IN 2000**

<b>Reference Number</b>	<b>Reference Line Chainage</b>	<b>Instrument</b>
BS9	1+530	Slope Indicator
BS10	1+900	Slope Indicator
BS18	3+000	Slope Indicator

Note: Following inclinometer probes were used to read the slope indicators

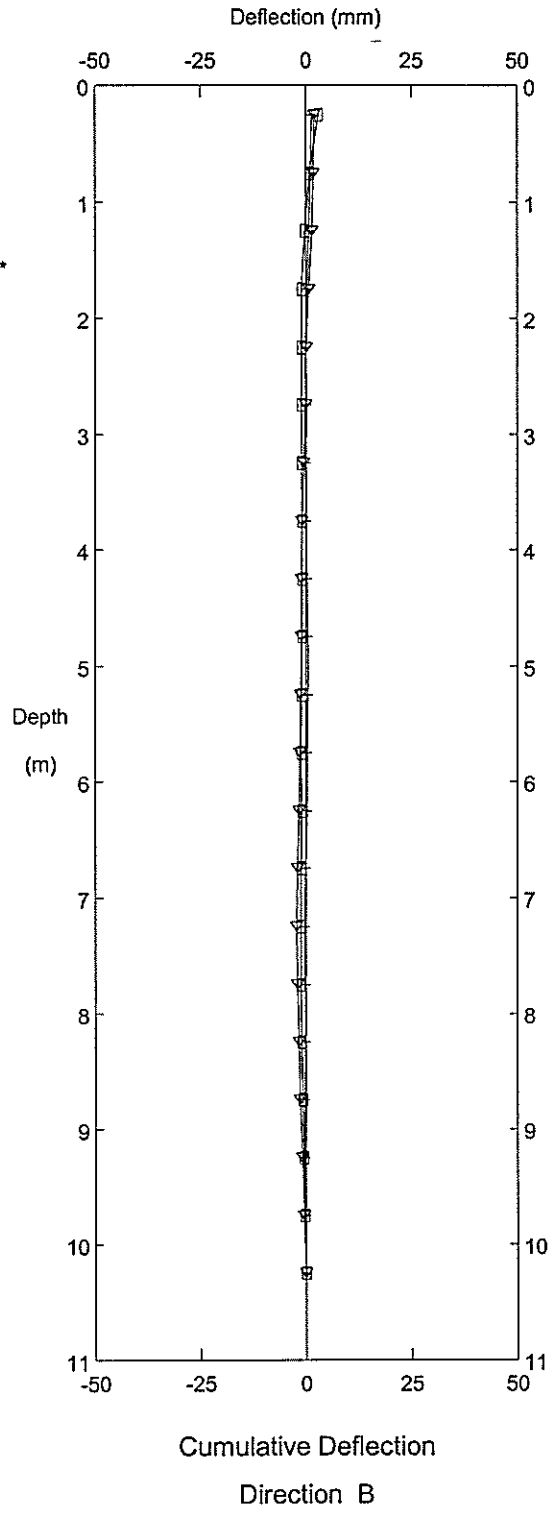
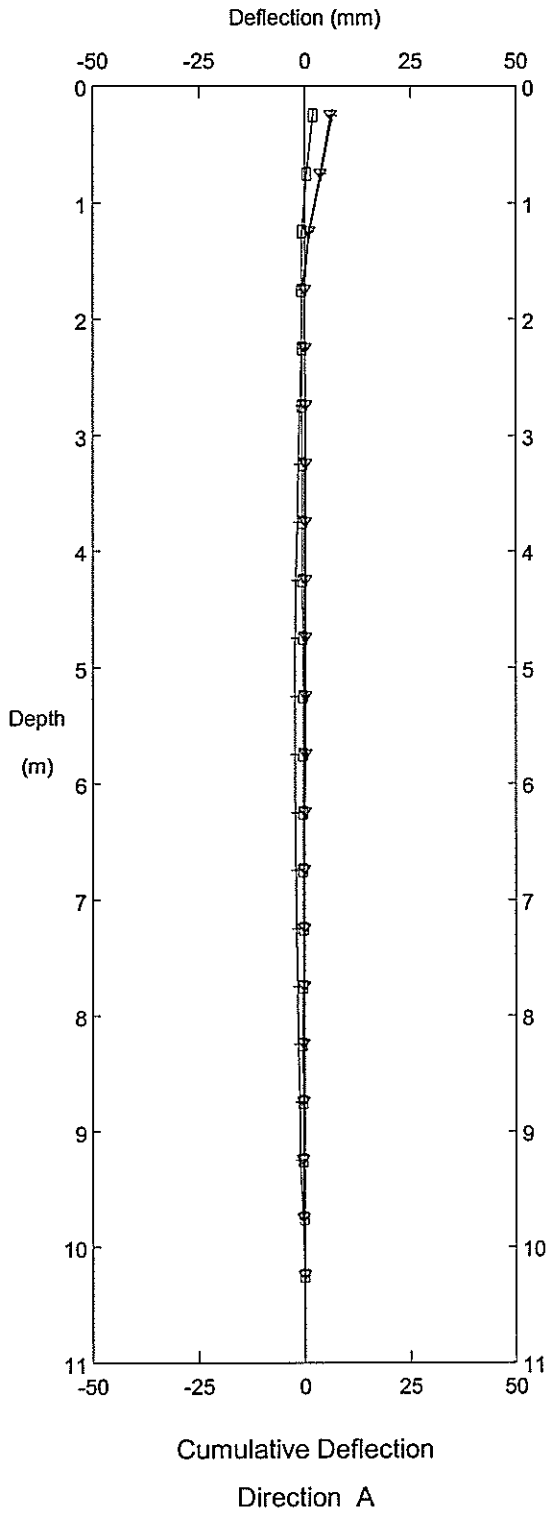
Inclinometer Probe	Faro Mine	Golder	RST
Sensor S/N	SI-1000	50303-M	SM 92512
Year of reading	1988 - 1992	1994	1995
Instrument constant	2500	25000	5000

**BGC Engineering Inc.**

**DIVERSION CANAL BACKSLOPE  
INCLINOMETERS**

**BGC Engineering Inc.**

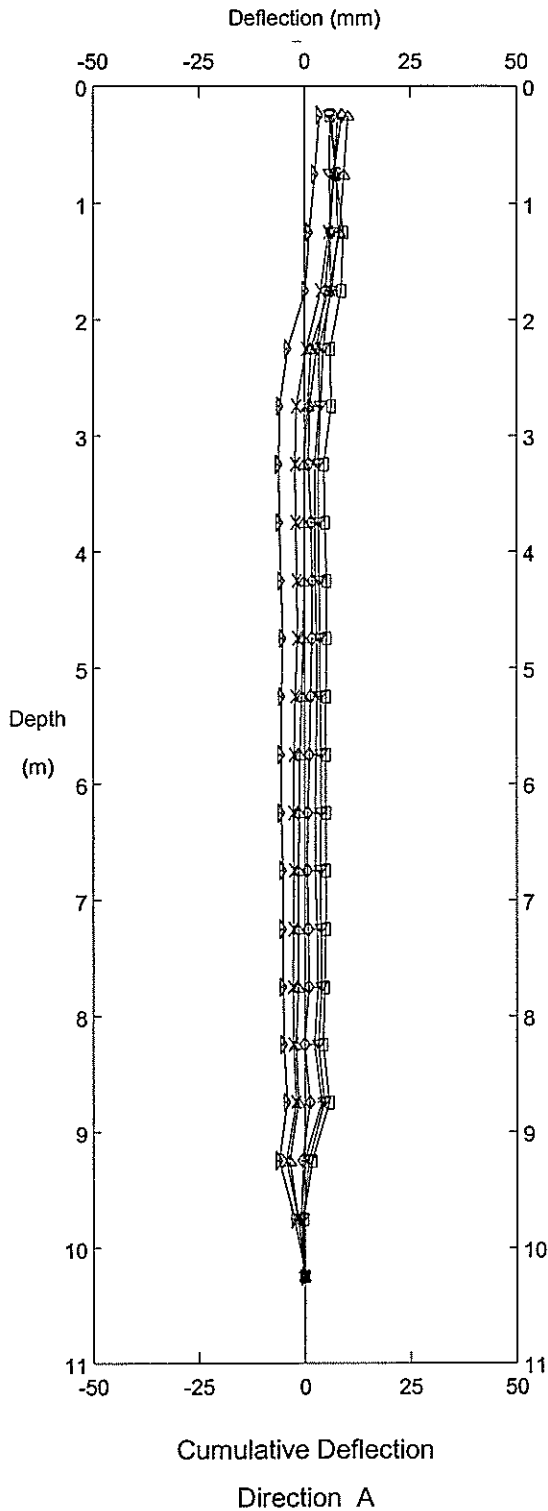
BGC Engineering Inc. - Calgary, AB



BS-9, Inclinator 1+530

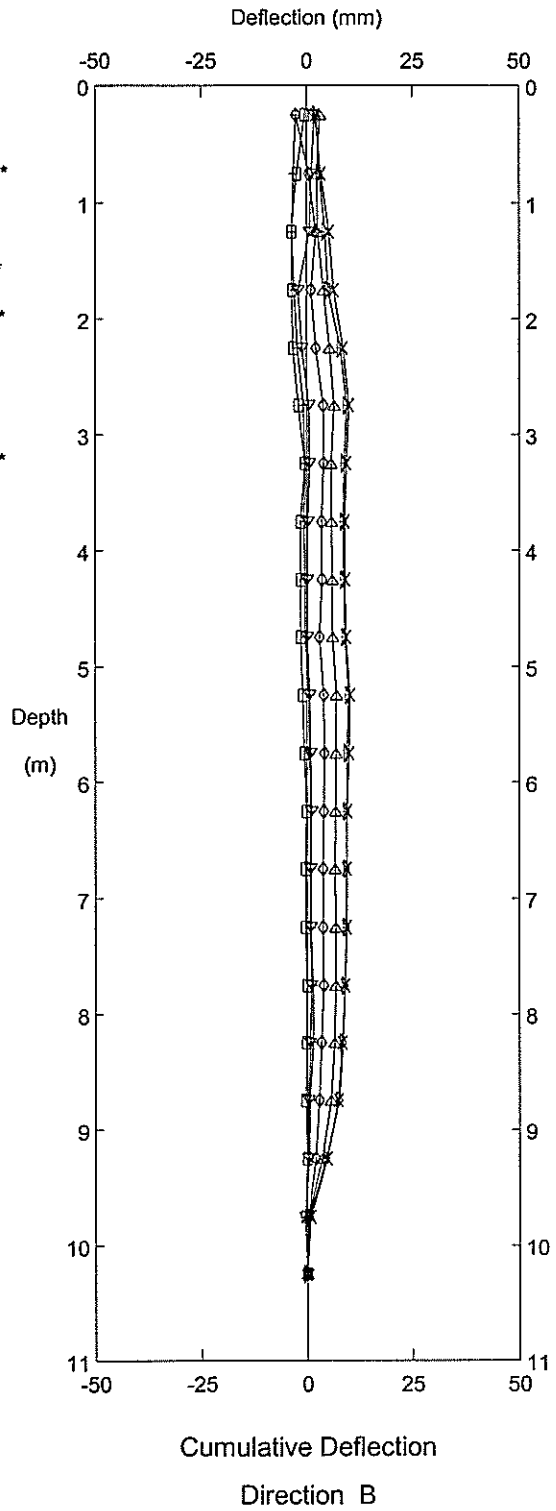
Sets marked \* include zero shift and/or rotation corrections.

BGC Engineering Inc. - Calgary, AB



LEGEND

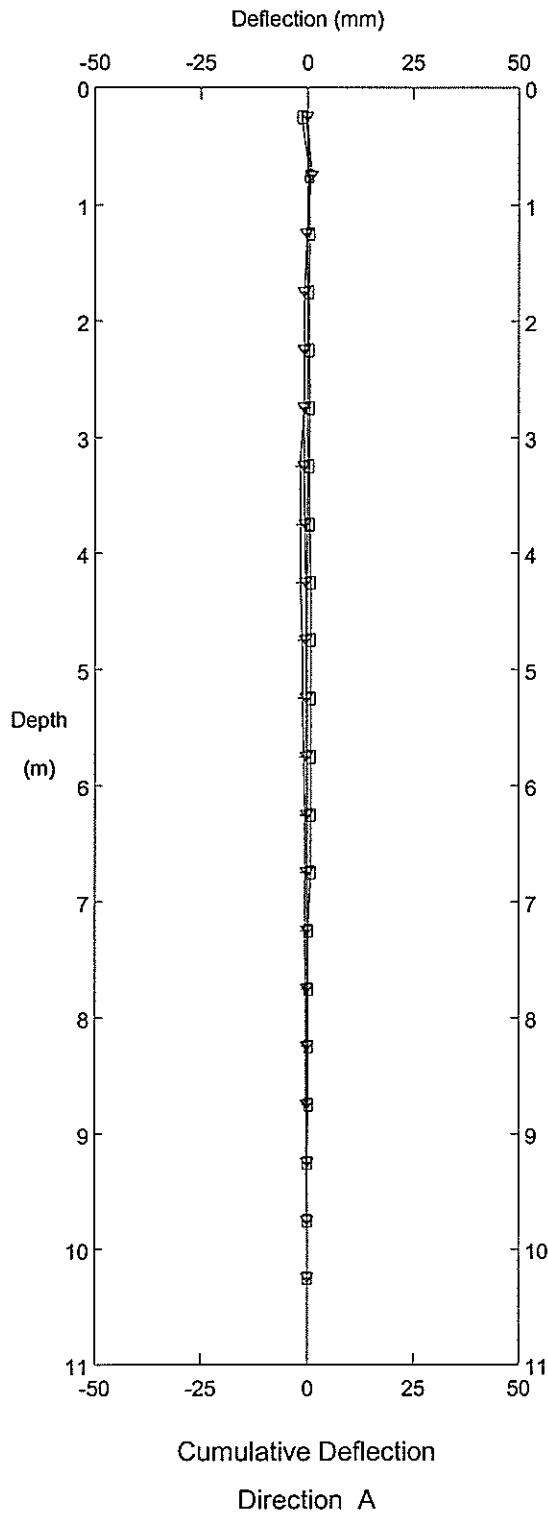
Initial	7 Jan 1997
□—□	15 May 1997*
▽—▽	6 Nov 1997*
+—+	2 May 1998*
◇—◇	10 Nov 1998*
△—△	8 Jun 1999*
X—X	3 Dec 1999*
▷—▷	12 Sep 2000*



BS-10, Inclinator 1+900

Sets marked \* include zero shift and/or rotation corrections.

BGC Engineering Inc. - Calgary, AB



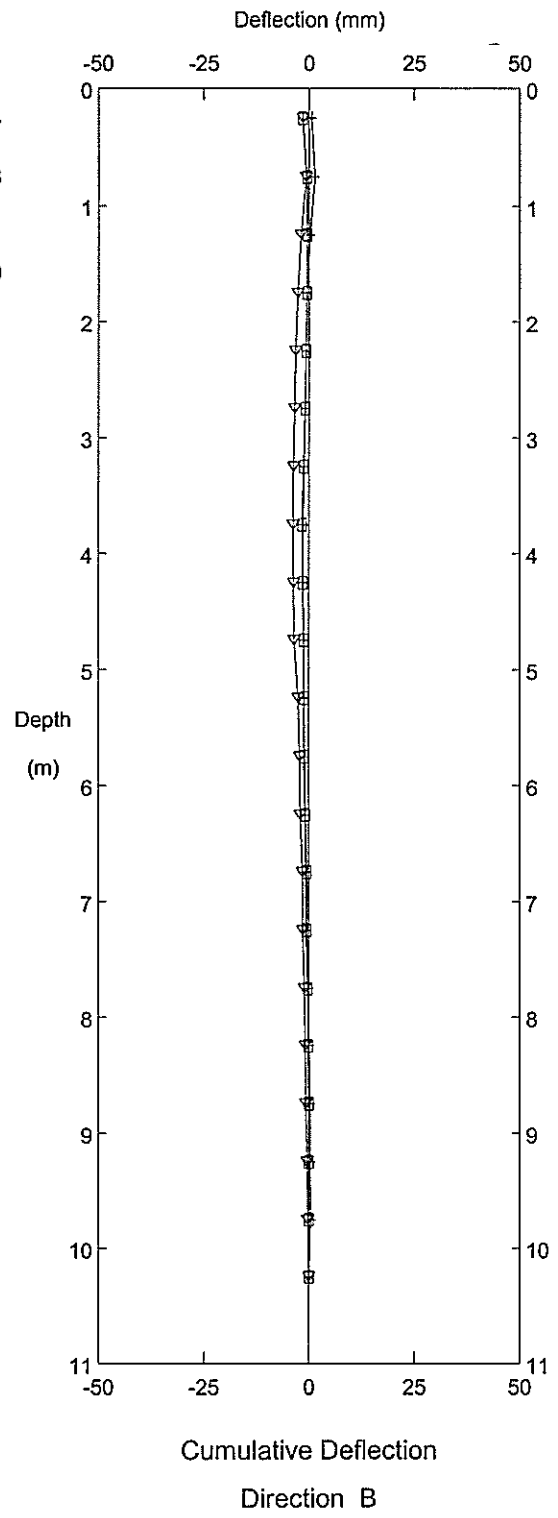
LEGEND

Initial 26 Nov1997

□ 10 Nov1998

▽ 3 Dec1999

† 12 Sep2000



BS-18, Inclinator 3+000

Sets marked \* include zero shift and/or rotation corrections.

# CROSS VALLEY DAM

**LIST OF INSTRUMENTS READ IN 2000**

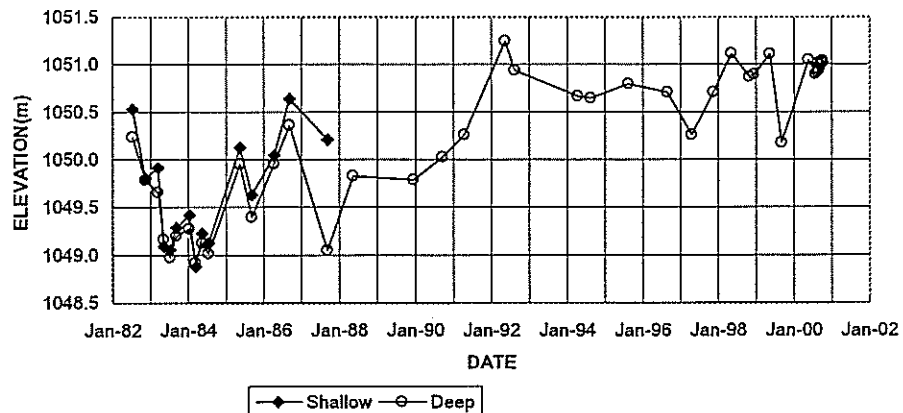
Reference Number	Reference Line Chainage	Instrument
CVDC-4	0+150	Shallow hydraulic piezometer (blocked) Deep hydraulic piezometer
BH94 CVDC-1	0+150	Hydraulic piezometer
CVDP-6	0+210 5m d/s of CL	Pneumatic piezometer
CVDC-6	0+270	Thermistor
CVDC-7	0+450	Shallow hydraulic piezometer Deep hydraulic piezometer
CVDP-3	0+450 7m d/s of CL	Pneumatic piezometer
BH88-4	0+450	Thermistor
CVDC-9	0+490	Shallow hydraulic piezometer Deep hydraulic piezometer
CVDT-1	Cross Valley Dam Toe	Hydraulic piezometer
CVDT-2	Cross Valley Dam Toe	Hydraulic piezometer

**CROSS VALLEY DAM  
PIEZOMETERS**

**BGC Engineering Inc.**

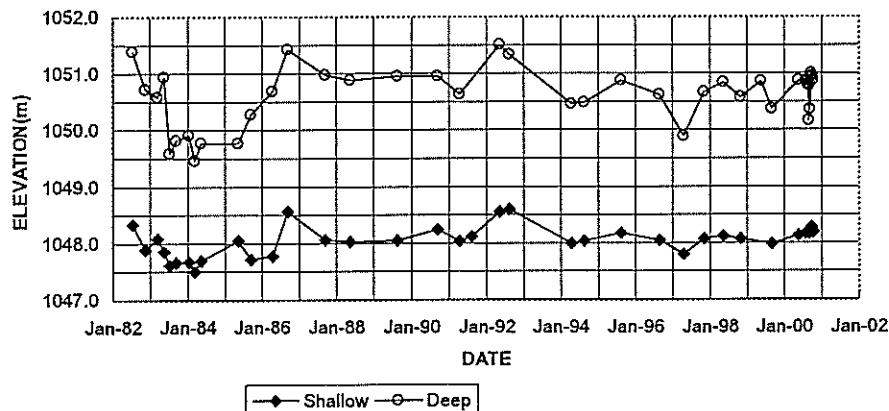
Date	- Water level from top of pipe		Piezometric Elevation(m)		Pond El.(m)
	Shallow	Deep	Shallow	Deep	
Aug-82	15.10	15.26	1050.53	1050.24	
Dec-82	15.82	15.71	1049.81	1049.79	
Apr-83	15.71	15.84	1049.92	1049.66	1061.63
Jun-83	16.54	16.33	1049.09	1049.17	1058.18
Aug-83	16.57	16.52	1049.06	1048.98	
Oct-83	16.34	16.30	1049.29	1049.20	
Feb-84	16.21	16.22	1049.42	1049.28	
Mar-84					1062.90
Apr-84	16.75	16.58	1048.88	1048.92	
Jun-84	16.40	16.37	1049.23	1049.13	1059.10
Aug-84	16.50	16.48	1049.13	1049.02	
Jun-85	15.50	15.55	1050.13	1049.95	1063.50
Oct-85	16.00	16.10	1049.63	1049.40	
May-86	15.58	15.54	1050.05	1049.96	1063.00
Oct-86	14.99	15.14	1050.64	1050.36	1063.20
Oct-87	15.42	16.45	1050.21	1049.05	
Jun-88	dry	15.67		1049.83	
Jan-90		15.78		1049.79	
Oct-90		15.54		1050.03	
May-91		15.31		1050.26	
Jun-92		14.32		1051.25	
Sep-92		14.63		1050.94	
May-94		14.93		1050.67	
Sep-94		14.95		1050.65	
Sep-95		14.80		1050.80	
Sep-96		14.89		1050.71	1062.215
May-97		15.34		1050.26	
Dec-97	plugged	14.89		1050.71	
May-98	plugged	14.66		1051.12	1063.5
13-Nov-98	n.r.	14.91		1050.87	1062.1
29-Dec-98	n.r.	14.89		1050.89	1062.1
03-Jun-99	blocked @ 1.25m	14.671		1051.11	1063.7
18-Sep-99	blocked @ 7.60m	15.60		1050.18	-1061.5
08-Jun-00	blocked @ 7.61m	14.73		1051.05	-1062.5
14-Aug-00	blocked @ 7.61m	14.88		1050.90	
31-Aug-00	blocked @ 7.62m	14.86		1050.92	
07-Sep-00	blocked @ 7.61m	14.83		1050.95	
14-Sep-00	blocked @ 7.61m	14.76		1051.02	
21-Sep-00	blocked @ 7.61m	14.84		1050.94	
28-Sep-00	blocked @ 7.61m	14.79		1050.99	
06-Oct-00	blocked @ 7.61m	14.75		1051.03	
12-Oct-00	blocked @ 7.61m	14.76		1051.02	
20-Oct-00	blocked @ 7.61m	14.74		1051.04	
27-Oct-00	blocked @ 7.61m	14.76		1051.02	

HYDRAULIC PIEZOMETER CVDC-4



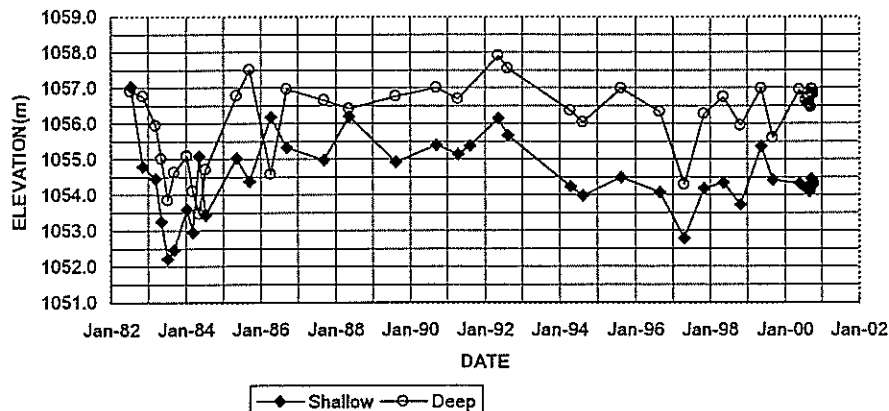
Date	Water level from top of pipe		Piezometric Elevation(m)		Pond El.(m)
	Shallow	Deep	Shallow	Deep	
Aug-82	17.58	14.44	1048.34	1051.39	
Dec-82	18.02	15.10	1047.90	1050.73	
Apr-83	17.83	15.24	1048.09	1050.59	1061.63
Jun-83	18.06	14.88	1047.86	1050.95	1058.18
Aug-83	18.30	16.24	1047.62	1049.59	
Oct-83	18.26	16.01	1047.66	1049.82	
Feb-84	18.24	15.92	1047.68	1049.91	
Mar-84					1062.90
Apr-84	18.41	16.36	1047.51	1049.47	
Jun-84	18.22	16.06	1047.70	1049.77	1059.10
Jun-85	17.87	16.06	1048.05	1049.77	1063.50
Oct-85	18.20	15.55	1047.72	1050.28	
May-86	18.14	15.14	1047.78	1050.69	1063.00
Oct-86	17.35	14.40	1048.57	1051.43	1063.20
Oct-87	17.85	14.85	1048.07	1050.98	
Jun-88	17.90	15.10	1048.03	1050.89	
Sep-89	17.88	15.03	1048.05	1050.96	
Oct-90	17.68	15.03	1048.25	1050.96	
May-91	17.89	15.36	1048.04	1050.63	
Sep-91	17.81		1048.12		
Jun-92	17.37	14.48	1048.56	1051.51	
Sep-92	17.33	14.66	1048.60	1051.33	
May-94	17.99	15.50	1048.00	1050.46	
Sep-94	17.95	15.47	1048.04	1050.49	
Sep-95	17.81	15.08	1048.18	1050.88	
Sep-96	17.93	15.34	1048.06	1050.62	1062.215
May-97	18.19	16.07	1047.80	1049.89	
Nov-97	17.91	15.29	1048.08	1050.67	
May-98	17.87	15.12	1048.12	1050.84	1063.5
Nov-98	17.91	15.38	1048.08	1050.58	1062.1
Jun-99	n.r.	15.10		1050.86	1063.7
Sep-99	18.00	15.59	1047.99	1050.37	~1061.5
Jun-00	17.85	15.08	1048.14	1050.88	~1062.5
14-Aug-00	17.82	15.10	1048.17	1050.86	
31-Aug-00	17.80	15.16	1048.19	1050.80	
07-Sep-00	17.78	15.09	1048.21	1050.87	
14-Sep-00	17.78	15.80	1048.21	1050.16	
19-Sep-00	17.82	15.19	1048.17	1050.77	
21-Sep-00	17.82	15.16	1048.17	1050.80	
28-Sep-00	17.77	15.60	1048.22	1050.36	
06-Oct-00	17.71	14.96	1048.28	1051.00	
12-Oct-00	17.75	15.03	1048.24	1050.93	
20-Oct-00	17.76	15.00	1048.23	1050.96	
27-Oct-00	17.80	15.08	1048.19	1050.88	

HYDRAULIC PIEZOMETER CVDC-7



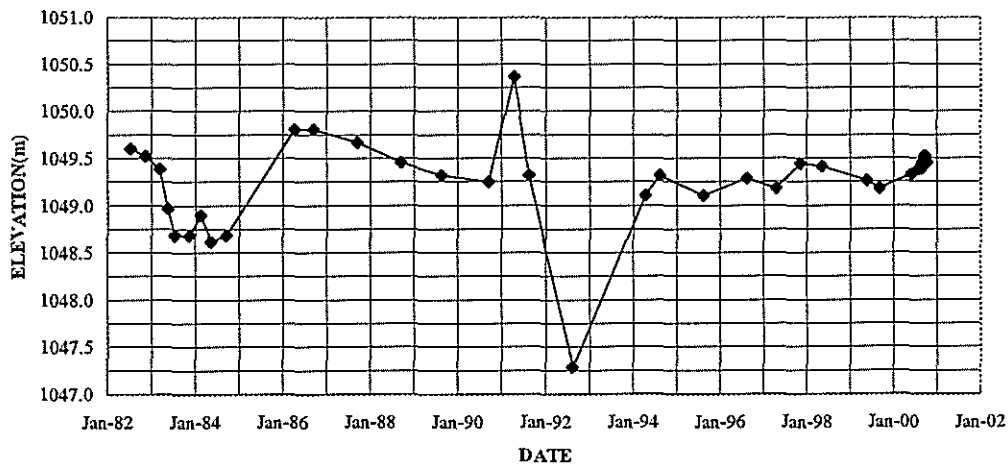
Date	Water level from top of pipe		Piezometric Elevation(m)		Pond El.(m)
	Shallow	Deep	Shallow	Deep	
Aug-82	8.80	8.85	1057.04	1056.91	
Dec-82	11.04	9.00	1054.80	1056.76	
Apr-83	11.38	9.81	1054.46	1055.95	1061.63
Jun-83	12.58	10.74	1053.26	1055.02	1058.18
Aug-83	13.63	11.90	1052.21	1053.86	
Oct-83	13.36	11.13	1052.48	1054.63	
Feb-84	12.24	10.67	1053.60	1055.09	
Mar-84					1062.90
Apr-84	12.87	11.65	1052.97	1054.11	
Jun-84	10.75	12.28	1055.09	1053.48	1059.10
Aug-84	12.41	11.05	1053.43	1054.71	
Jun-85	10.80	8.98	1055.04	1056.78	1063.50
Oct-85	11.45	8.25	1054.39	1057.51	
May-86	9.65	11.18	1056.19	1054.58	1063.00
Oct-86	10.51	8.79	1055.33	1056.97	1063.20
Oct-87	10.85	9.10	1054.99	1056.66	
Jun-88	9.74	9.42	1056.20	1056.41	
Sep-89	11.01	9.07	1054.93	1056.76	
Oct-90	10.54	8.83	1055.40	1057.00	
May-91	10.79	9.14	1055.15	1056.69	
Sep-91	10.56		1055.38		
Jun-92	9.79	7.92	1056.15	1057.91	
Sep-92	10.27	8.29	1055.67	1057.54	
May-94	11.68	9.49	1054.24	1056.36	
Sep-94	11.93	9.82	1053.99	1056.03	
Sep-95	11.42	8.86	1054.50	1056.99	
Sep-96	11.84	9.52	1054.08	1056.33	1062.215
May-97	13.15	11.57	1052.78	1054.29	
Nov-97	11.74	9.58	1054.18	1056.27	
May-98	11.57	9.11	1054.35	1056.74	1063.5
Nov-98	12.19	9.90	1053.73	1055.95	1062.1
Jun-99	10.560	8.868	1055.36	1056.98	1063.7
Sep-99	11.50	10.25	1054.42	1055.60	~1061.5
Jun-00	11.60	8.90	1054.32	1056.95	~1062.5
14-Aug-00	11.73	9.19	1054.19	1056.66	
31-Aug-00	11.77	9.30	1054.15	1056.55	
07-Sep-00	11.66	9.12	1054.26	1056.73	
14-Sep-00	11.65	9.30	1054.27	1056.55	
19-Sep-00	11.83	9.34	1054.09	1056.51	
21-Sep-00	11.78	9.28	1054.14	1056.57	
28-Sep-00	11.61	9.40	1054.31	1056.45	
06-Oct-00	11.46	8.89	1054.46	1056.96	
12-Oct-00	11.57	9.00	1054.35	1056.85	
20-Oct-00	11.53	8.91	1054.39	1056.94	
27-Oct-00	11.62	9.03	1054.30	1056.82	

HYDRAULIC PIEZOMETER CVDC-9



CVDP-3			
Location: Cross Valley Dam St.0+450 7m d/s of CL.		Ground Elevation:	Coordinates:
Date Installed: 1982	Tip Elevation: 1047.01		Surface Protector: yes
Date	Reading (psi)	Piezometric Elevation (m)	Pond El.(m)
Aug-82	3.70	1049.60	
Dec-82	3.60	1049.53	
Apr-83	3.40	1049.39	1061.63
Jun-83	2.80	1048.97	1058.18
Aug-83	2.40	1048.69	
Dec-83	2.40	1048.69	
Mar-84	2.70	1048.90	1062.01
Jun-84	2.30	1048.62	1059.10
Oct-84	2.40	1048.69	
May-86	4.00	1049.81	1063.00
Oct-86	4.00	1049.81	1063.20
Oct-87	3.80	1049.67	
Oct-88	3.50	1049.46	
Sep-89	3.30	1049.32	
Oct-90	3.20	1049.25	
May-91	4.80	1050.37	
Sep-91	3.30	1049.32	
Sep-92	0.40	1047.29	
May-94	3.00	1049.11	
Sep-94	3.30	1049.32	
Sep-95	3.00	1049.11	
Sep-96	3.25	1049.29	1062.215
May-97	3.10	1049.18	
Nov-97	3.48	1049.45	
May-98	3.44	1049.42	1063.5
12-Nov-98	n.r.	no air bubbles returned	
04-Dec-98	n.r.	no air bubbles returned	
Jun-99	3.22	1049.26	1063.7
Sep-99	3.10	very slow	~1061.5
Jun-00	3.31	1049.33	~1062.5
14-Aug-00	3.40	1049.39	
31-Aug-00	3.40	1049.39	
07-Sep-00	3.40	1049.39	
14-Sep-00	3.50	1049.46	
21-Sep-00	3.50	1049.46	
28-Sep-00	3.50	1049.46	
06-Oct-00	3.60	1049.53	
12-Oct-00	3.60	1049.53	
20-Oct-00	3.50	1049.46	
27-Oct-00	3.50	1049.46	

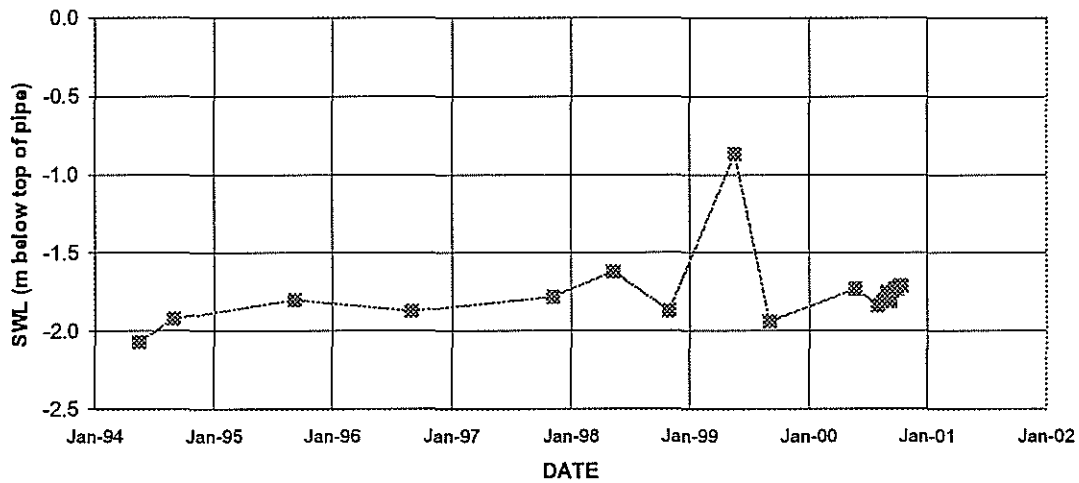
PNEUMATIC PIEZOMETER CVDP-3



<b>CVDT-1</b>	<b>Location:</b> Cross Valley Dam Toe black PVC adj. to X11 channel	<b>Ground Elevation:</b>	<b>Coordinates:</b>
	<b>Date Installed:</b>	<b>Tip Elevation:</b>	<b>Surface Protector:</b>
		<b>Stick-up:</b> 1.50	

Date	Water level from top of pipe (m)	Piezometric Elevation(m)	Pond El.(m)
May-94	-2.07		
Sep-94	-1.92		
Sep-95	-1.80		
Sep-96	-1.87		1062.215
Nov-97	-1.78		
May-98	-1.62		1063.5
Nov-98	-1.87 dry		1062.1
Jun-99	-0.868		1063.7
Sep-99	-1.940		~1061.5
Jun-00	-1.73		~1062.5
14-Aug-00	-1.84		
31-Aug-00	-1.81		
07-Sep-00	-1.80		
14-Sep-00	-1.75		
21-Sep-00	-1.81		
28-Sep-00	-1.76		
06-Oct-00	-1.73		
12-Oct-00	-1.73		
20-Oct-00	-1.71		
27-Oct-00	-1.71 blocked/frozen		

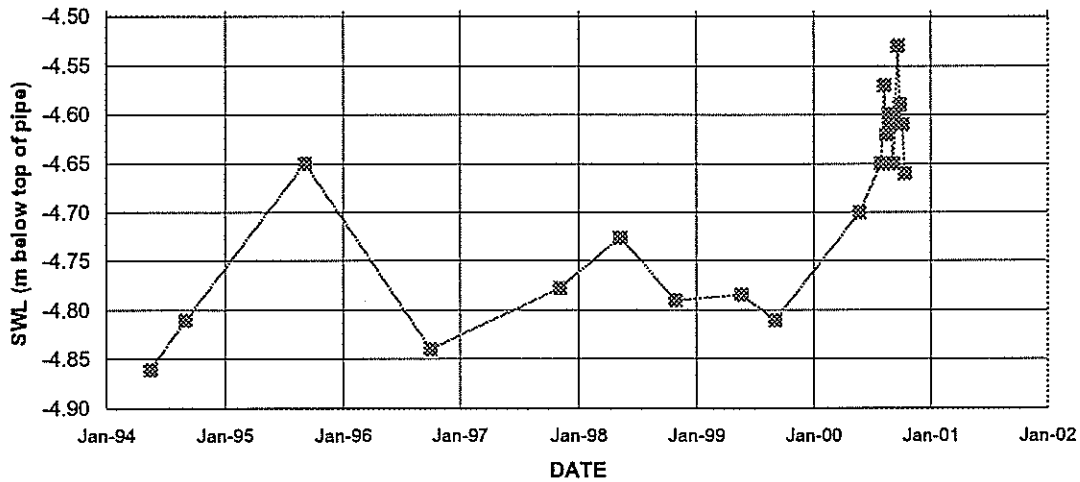
HYDRAULIC PIEZOMETER CVDT-1



<b>CVDT-2</b>	<b>Location:</b> Cross Valley Dam Toe	<b>Ground</b>	<b>Coordinates:</b>
	black PVC adj. to W3 channel	<b>Elevation:</b>	
	<b>Date</b>	<b>Tip Elevation:</b>	<b>Surface</b>
	<b>Installed:</b>	<b>Stick-up:</b> 1.52	<b>Protector:</b>

Date	Water level from top of pipe (m)	Piezometric Elevation(m)	Pond El.(m)
May-94	-4.86		
Sep-94	-4.81		
Sep-95	-4.65		
Oct-96	-4.84		1062.215
Nov-97	-4.78		
May-98	-4.73		1063.5
Nov-98	-4.79		1062.1
Jun-99	-4.784		1063.7
Sep-99	-4.81		~1061.5
Jun-00	-4.70		~1062.5
14-Aug-00	-4.65		
24-Aug-00	-4.57		
31-Aug-00	-4.62		
07-Sep-00	-4.60		
14-Sep-00	-4.61		
21-Sep-00	-4.65		
28-Sep-00	-4.60		
06-Oct-00	-4.53		
12-Oct-00	-4.59		
20-Oct-00	-4.61		
27-Oct-00	-4.66		

HYDRAULIC PIEZOMETER CVDT-2

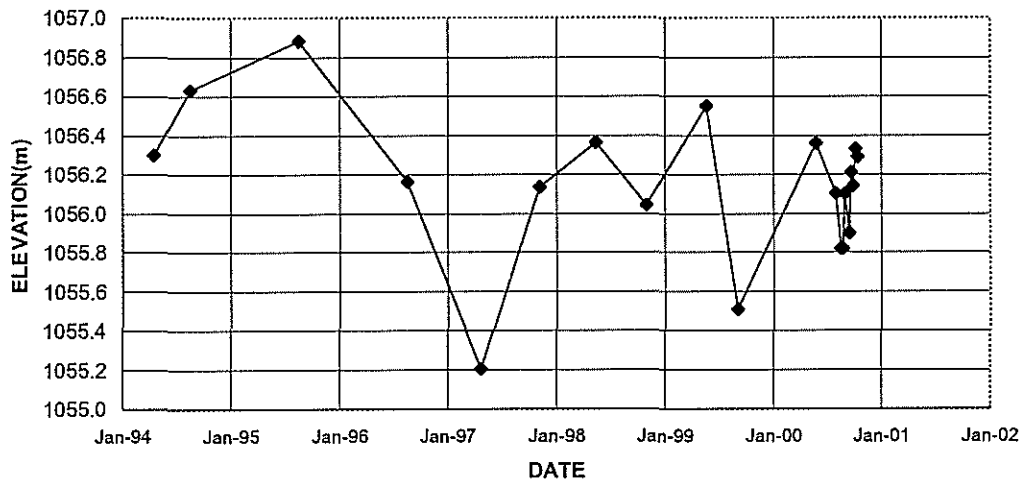


<b>94CVDC-1</b>	<b>Location:</b> Cross Valley Dam St.0+215	<b>Ground Elevation:</b> 1065.5	<b>Coordinates:</b>
<b>Date Installed:</b> 1994		<b>Tip Elevation:</b> 1052.7	<b>Surface Protector:</b> yes
		<b>Stick-up:</b> 0.7m	

Date	Water level from top of pipe	Piezometric Elevation(m)	Pond El.(m)
May-94	9.90	1056.30	
Sep-94	9.57	1056.63	
Sep-95	9.32	1056.88	
Sep-96	10.04	1056.16	1062.215
May-97	11.00	1055.21	
Nov-97	10.07	1056.13	
May-98	9.84	1056.36	1063.5
Nov-98	10.16	1056.04	1062.1
Jun-99	9.650	1056.55	1063.7
Sep-99	10.69	1055.51	-1061.5
Jun-00	9.84	1056.36	-1062.5
14-Aug-00	10.10	1056.10	
31-Aug-00	10.38	1055.82	
07-Sep-00	10.38	1055.82	
14-Sep-00	10.10	1056.10	
21-Sep-00	13.61 frozen?		1052.59
28-Sep-00	10.30	1055.90	
06-Oct-00	9.99	1056.21	
12-Oct-00	10.06	1056.14	
20-Oct-00	9.87	1056.33	
27-Oct-00	9.91	1056.29	

HYDRAULIC PIEZOMETER BH94 CVDC-1



**CROSS VALLEY DAM**  
**THERMISTORS**

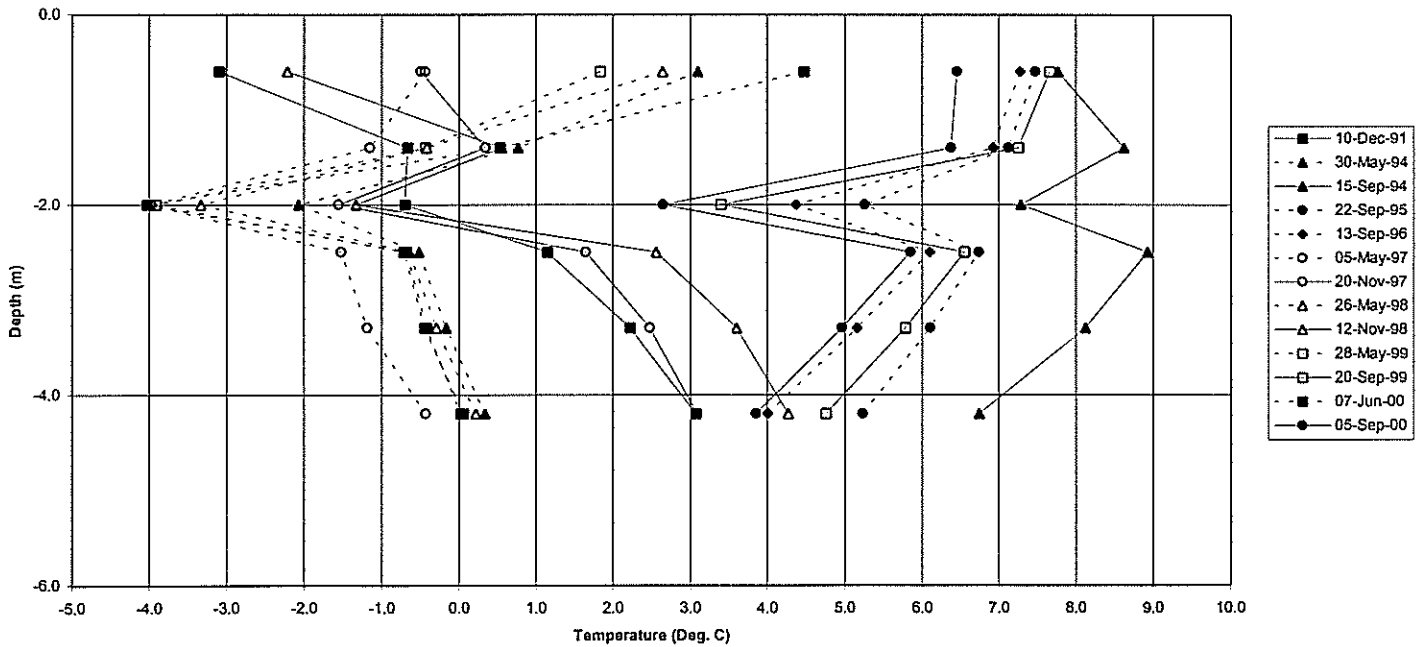
**BGC Engineering Inc.**

BH 88-4 0+450		Location: Cross Valley Dam Crest		Elevation: 1066.9		Coordinates: 2018.3mN, 76.6mW										
Date Installed: 1988		Thermistor Type: 44007		Controls YSI		Ice-Bath Calibration: no		Surface Protector: Yes								
Depth Correction: 0																
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 10-Dec-91	Resistivity (kOhms) 24-Jan-92	Resistivity (kOhms) 30-May-94	Resistivity (kOhms) 15-Sep-94	Resistivity (kOhms) 22-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 05-May-97	Resistivity (kOhms) 20-Nov-97	Resistivity (kOhms) 26-May-98	Resistivity (kOhms) 12-Nov-98	Resistivity (kOhms) 28-May-99	Resistivity (kOhms) 20-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	
0.6	-0.6	19.03	20.60	13.87	11.01	11.17	11.28	16.59	16.64	14.19	18.18	14.78	11.07	12.95	11.74	
1.4	-1.4	16.72	18.54	15.54	10.52	11.32	11.43	17.14	15.88	16.51	15.71	16.52	11.25	15.73	11.74	
2.0	-2.0	16.81	17.93	18.04	11.27	12.45	13.01	19.84	17.50	19.19	17.30	19.78	13.61	19.90	14.13	
2.5	-2.5	15.25	16.14	16.60	10.37	11.54	11.91	17.47	14.86	16.70	14.19	16.76	11.64	16.73	12.05	
3.3	-3.3	14.45	15.36	16.31	10.79	11.91	12.48	17.17	14.25	16.40	13.47	16.53	12.09	16.51	12.59	
4.2	-4.2	13.82	14.69	15.87	11.52	12.41	13.19	16.52	13.82	15.98	13.03	16.11	12.72	16.14	13.30	

Depth on String (m)	Actual Depth (m)	Temperature (C) 10-Dec-91	Temperature (C) 24-Jan-92	Temperature (C) 30-May-94	Temperature (C) 15-Sep-94	Temperature (C) 22-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 05-May-97	Temperature (C) 20-Nov-97	Temperature (C) 26-May-98	Temperature (C) 12-Nov-98	Temperature (C) 28-May-99	Temperature (C) 20-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00
0.6	-0.6	-3.10	-4.61	3.10	7.77	7.47	7.27	-0.44	-0.50	2.64	-2.22	1.83	7.66	4.47	6.46
1.4	-1.4	-0.67	-2.67	0.76	8.62	7.12	6.92	-1.15	0.34	-0.42	0.55	-0.43	7.25	0.53	6.38
2.0	-2.0	-0.70	-1.96	-2.08	7.28	5.26	4.37	-3.97	-1.56	-3.34	-1.33	-3.92	3.40	-4.03	2.65
2.5	-2.5	1.15	0.03	-0.52	8.93	6.74	6.09	-1.52	1.65	-0.65	2.56	-0.72	6.55	-0.68	5.85
3.3	-3.3	2.22	1.01	-0.16	8.12	6.10	5.16	-1.19	2.48	-0.29	3.60	-0.45	5.78	-0.42	4.96
4.2	-4.2	3.07	1.86	0.33	6.74	5.23	4.00	-0.43	3.09	0.22	4.27	0.06	4.75	0.02	3.86

THERMISTOR 88-4-T  
(installed 1988)



<b>CVDC-6</b> Stn 0+340	<b>Location:</b> Cross Valley Dam Crest	<b>Elevation:</b> 1065.8 m Cantec	<b>Coordinates:</b> 2182.1 mN & 4.7 mE		
Thermistor String #32	<b>Date Installed:</b> 1981	Thermistor Type:	Controls YSI 44007	Ice-Bath Calibration: applied	Surface Protector: yes
Depth Correction	0				

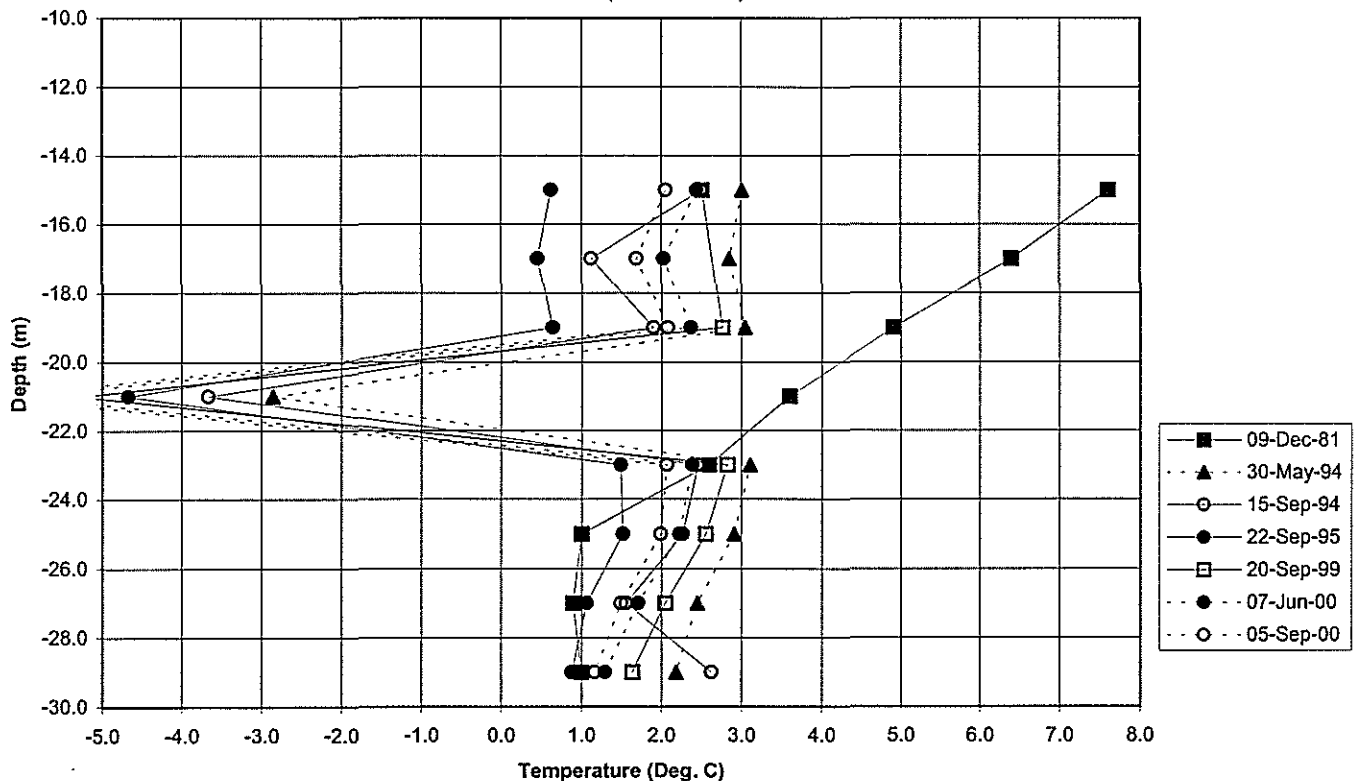
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 30-May-94	Resistivity (kOhms) 15-Sep-94	Resistivity (kOhms) 22-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 20-Sep-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
15.0	-15.0	11.05	13.87	14.23	15.64	All readings fluctuating	14.22	14.27	14.55	
17.0	-17.0	11.70	13.95	15.22	15.74			14.54	14.79	
19.0	-19.0	12.59	13.81	14.63	15.59		14.01	14.29	14.50	
21.0	-21.0	13.48	18.73	19.53	20.59		21.25	22.11	22.55	
23.0	-23.0	14.16	13.80	14.26	14.97		14.00	14.31	14.54	
25.0	-25.0	15.37	13.96	14.42	14.97		14.21	14.45	14.62	
27.0	-27.0	15.42	14.26	14.91	15.29		14.55	14.80	14.96	
29.0	-29.0	15.35	14.46	14.14	15.44		14.86	15.12	15.22	

\* The initial reading (Nov 15/81) is excluded from data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 30-May-94	Temperature (C) 15-Sep-94	Temperature (C) 22-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 20-Sep-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C) 00-Jan-00
15.0	-15.0	7.60	3.01	2.50	0.63		2.51	2.44	2.06	
17.0	-17.0	6.40	2.85	1.12	0.46			2.03	1.69	
19.0	-19.0	4.90	3.04	1.90	0.64		2.76	2.36	2.07	
21.0	-21.0	3.60	-2.86	-3.66	-4.67		-5.27	-6.02	-6.39	
23.0	-23.0	2.60	3.11	2.46	1.49		2.82	2.39	2.07	
25.0	-25.0	1.00	2.91	2.26	1.52		2.56	2.22	1.99	
27.0	-27.0	0.90	2.45	1.56	1.06		2.05	1.71	1.50	
29.0	-29.0	1.00	2.18	2.62	0.88		1.64	1.29	1.16	

The -21 metre depth tip is suspect

**THERMISTOR CVDC-6**  
(installed 1981)



<b>CVDC-11 St0+645</b>	<b>Location:</b> Cross Valley Dam Crest	<b>Elevation:</b> 1065.7 m	<b>Coordinates:</b> 1913.4 mN -133.5mW
<b>Thermistor String #29</b>	<b>Date Installed:</b> 1981	<b>Thermistor Type:</b> 44007	<b>Controls YSI Ice-Bath Calibration:</b> applied
<b>Depth Correction</b>			<b>Surface Protector:</b> yes
	-0.1		

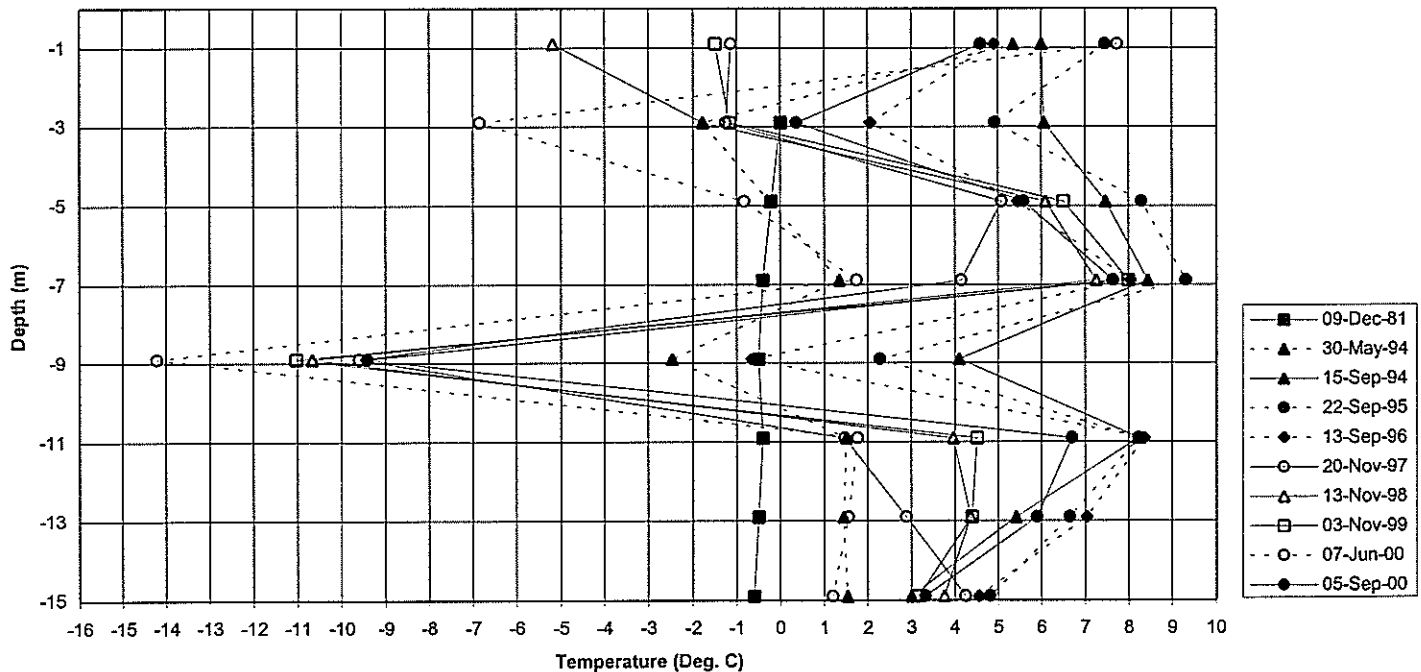
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 09-Dec-81	Resistivity (kOhms) 30-May-94	Resistivity (kOhms) 15-Sep-94	Resistivity (kOhms) 22-Sep-95	Resistivity (kOhms) 13-Sep-96	Resistivity (kOhms) 20-Nov-97	Resistivity (kOhms) 13-Nov-98	Resistivity (kOhms) 03-Nov-99	Resistivity (kOhms) 07-Jun-00	Resistivity (kOhms) 05-Sep-00	Resistivity (kOhms)
1.0	-0.9		12.38	11.99	11.16	12.66	17.17	21.19	17.49	11.01	12.85	
3.0	-2.9	16.21	17.76	11.96	12.65	14.60	17.28	17.75	17.20	23.16	15.91	
5.0	-4.9	16.36	16.40	11.15	10.71	12.32	12.54	11.93	11.69	16.89	12.23	
7.0	-6.9	16.50	15.09	10.62	10.18	10.83	13.11	11.25	10.85	14.79	11.04	
9.0	-8.9	16.64	18.42	13.19	14.45	16.78	26.89	28.51	29.09	34.7	26.62	
11.0	-10.9	16.52	14.99	10.74	10.74	10.67	15.01	13.25	12.89	14.79	11.57	
13.0	-12.9	16.64	15.07	12.36	11.63	11.41	14.02	13.02	13.00	14.99	12.07	
15.0	-14.9	16.67	14.95	13.89	12.69	12.85	13.05	13.37	13.78	15.21	13.67	

\* The initial reading (Nov 15/81) is excluded from data set because post-installation equilibrium may not have been complete.

Depth on String (m)	Actual Depth (m)	Temperature (C) 09-Dec-81	Temperature (C) 30-May-94	Temperature (C) 15-Sep-94	Temperature (C) 22-Sep-95	Temperature (C) 13-Sep-96	Temperature (C) 20-Nov-97	Temperature (C) 13-Nov-98	Temperature (C) 03-Nov-99	Temperature (C) 07-Jun-00	Temperature (C) 05-Sep-00	Temperature (C)
1.0	-0.9		5.35	6.00	7.46	4.90	-1.14	-5.18	-1.50	7.74	4.60	
3.0	-2.9	0.00	-1.78	6.06	4.92	2.06	-1.25	-1.77	-1.16	-6.84	0.36	
5.0	-4.9	-0.20	-0.25	7.47	8.30	5.44	5.08	6.09	6.50	-0.83	5.59	
7.0	-6.9	-0.40	1.35	8.44	9.31	8.04	4.16	7.26	8.00	1.75	7.64	
9.0	-8.9	-0.50	-2.47	4.10	2.28	-0.66	-9.60	-10.67	-11.04	-14.22	-9.41	
11.0	-10.9	-0.40	1.51	8.23	8.23	8.36	1.48	3.96	4.52	1.77	6.70	
13.0	-12.9	-0.50	1.45	5.41	6.65	7.04	2.88	4.36	4.40	1.56	5.89	
15.0	-14.9	-0.60	1.54	3.00	4.81	4.56	4.25	3.76	3.16	1.20	3.32	

The 9 metre depth tip is suspect

**THERMISTOR CVDC-11**  
(installed 1981)



# INTERMEDIATE DAM

**LIST OF INSTRUMENTS READ IN 2000**

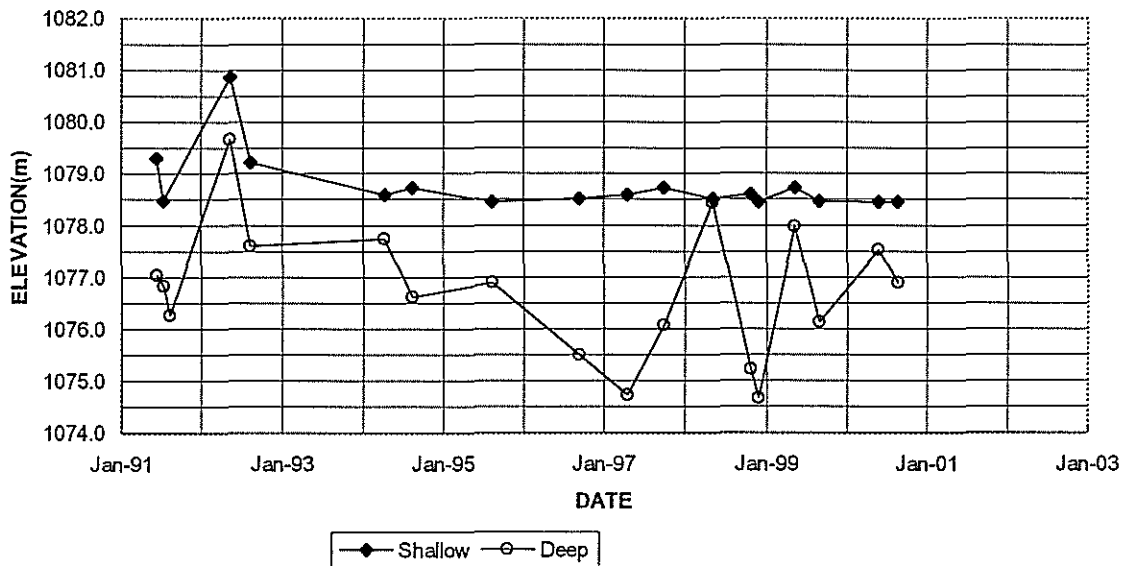
<b>Reference Number</b>	<b>Reference Line Chainage</b>	<b>Instrument</b>
BH91-ID3	Intermediate Dam South Abutment	Shallow pneumatic piezometer Deep pneumatic piezometer
BH91-ID4	0+500	Shallow pneumatic piezometer Deep pneumatic piezometer
BH91-ID5	0+600	Shallow pneumatic piezometer Deep pneumatic piezometer
BH91-ID6	0+600	Shallow pneumatic piezometer Deep pneumatic piezometer
BH91-ID7	0+759	Pneumatic piezometer
BH94-IDC-1	Intermediate Dam Crest	Hydraulic piezometer

**INTERMEDIATE DAM  
PIEZOMETERS**

**BGC Engineering Inc.**

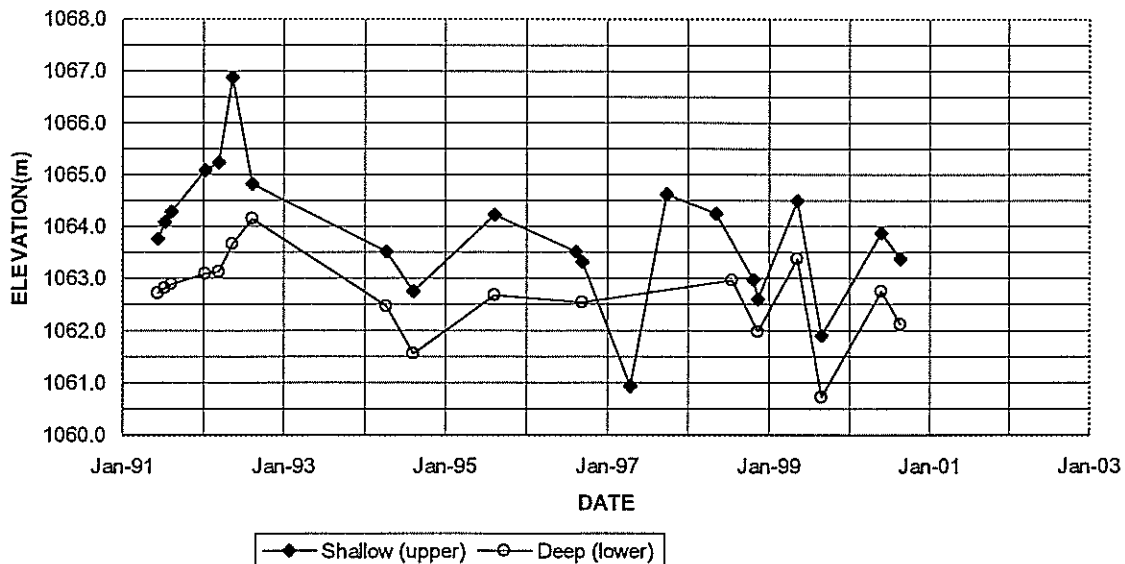
<b>BH91-ID3</b>		<b>Location:</b> Intermediate Dam South Abutment		<b>Ground</b>	<b>Coordinates:</b>	
Stn 0+810				<b>Elevation:</b> 1085.45		
<b>Date</b>			<b>Shallow Tip Elevation:</b> 1078.45		<b>Surface</b>	
<b>Installed:</b>	1991		<b>Deep Tip Elevation:</b> 1070.25		<b>Protector:</b> yes	
Date	Reading (psi)		Piezometric Elevation (m)		Pond El.(m)	
	Shallow	Deep	Shallow	Deep		
Jul-91	1.23	9.71	1079.31	1077.05	~1074.5	
Aug-91	0.04	9.40	1078.48	1076.83	~1074.5	
Sep-91		8.60		1076.27	~1074.5	
Feb-92						
Apr-92						
Jun-92	3.44	13.46	1080.86	1079.67	1080.0	
Sep-92	1.10	10.51	1079.22	1077.61	1080.0	
May-94	0.20	10.70	1078.59	1077.74	1080.0	
Sep-94	0.40	9.10	1078.73	1076.62	1080.0	
Sep-95	0.00	9.50	1078.45	1076.9	1080.0	
Oct-96	0.1	7.5	1078.52	1075.5	1080.4	
May-97	0.2	6.4	1078.59	1074.73		
Oct-97	0.40	8.31	1078.73	1076.07		
May-98	0.10	11.70	1078.52	1078.44	1080.4	
12-Nov-98	0.22	7.10	1078.60	1075.22	1080.1	
16-Dec-98	0.0	6.3	1078.45	1074.66	1080.1	
29-May-99	0.40	11.05	1078.73	1077.99	1080.3	
16-Sep-99	0.02	8.4	1078.46	1076.13	1080.0	
14-Jun-00	0.01	10.4	1078.46	1077.54	1079.9	
09-Sep-00	0.00	9.5	1078.45	1076.90		

PNEUMATIC PIEZOMETER BH91-ID3



BH91-ID4		Location: Intermediate Dam @St.0+567		Ground		Coordinates:	
Date		Installed: 1991		Elevation: 1064.10		Surface	
				Shallow Tip Elevation: 1056.52		Protector: yes	
				Deep Tip Elevation: 1049.38			
Date	Reading (psi)		Piezometric Elevation (m)		Pond El.(m)		
	Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)			
Jul-91	10.34	19.06	1063.76	1062.72	~1074.5		
Aug-91	10.81	19.20	1064.09	1062.82	~1074.5		
Sep-91	11.10	19.30	1064.29	1062.89	~1074.5		
Feb-92	12.24	19.59	1065.09	1063.09	1080.0		
Apr-92	12.44	19.64	1065.23	1063.13	1080.0		
Jun-92	14.80	20.40	1066.88	1063.66	1080.0		
Sep-92	11.86	21.10	1064.82	1064.15	1080.0		
May-94	10.00	18.70	1063.52	1062.47	1080.0		
Sep-94	8.90	17.40	1062.75	1061.56	1080.0		
Sep-95	11.00	19.00	1064.22	1062.68	1080.0		
Sep-96	10.00		1063.52		1080.4		
Oct-96	9.7	18.8	1063.31	1062.54			
May-97	6.3		1060.93				
Oct-97	11.58		1064.63				
May-98	11.04		1064.25		1080.4		
Aug-98		19.4		1062.96	1080.4		
12-Nov-98	9.22		1062.97		1080.1		
04-Dec-98	8.7	18.0	1062.61	1061.98	1080.1		
29-May-99	11.40	20.00	1064.5	1063.38	1080.3		
16-Sep-99	7.7	16.2	1061.91	1060.72	1080.0		
14-Jun-00	10.5	19.1	1063.87	1062.75	1079.9		
09-Sep-00	9.8	18.2	1063.38	1062.12			

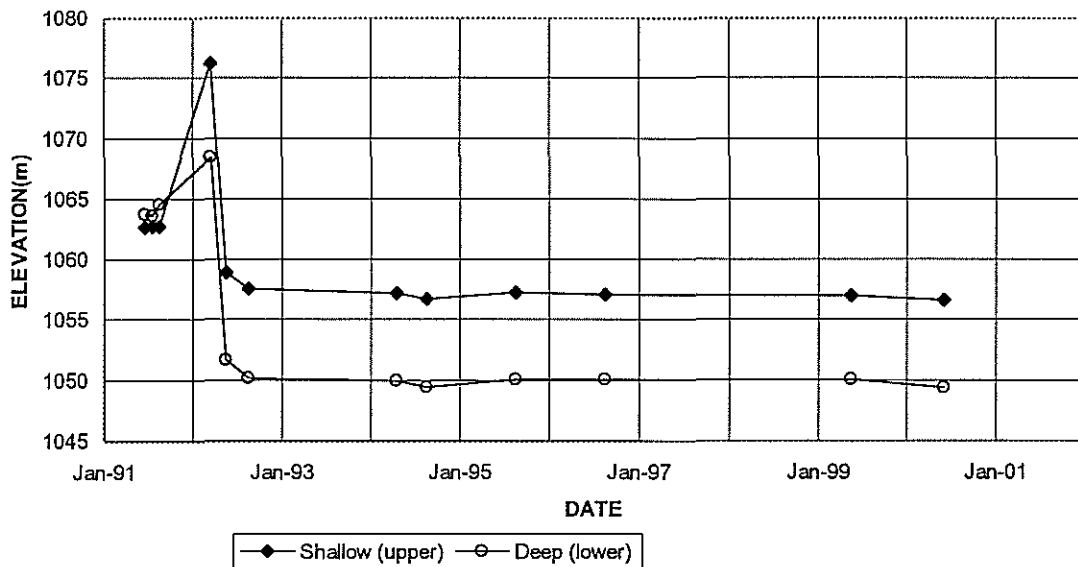
PNEUMATIC PIEZOMETER BH91-ID4



BH91-ID5		Location: Intermediate Dam @ St.0+625		Ground Elevation: 1064.00		Coordinates:	
Date	Installed:	1991	Shallow Tip Elevation:	1056.60	Surface		
		Deep Tip Elevation:	1049.38	Protector:	yes		
Date	Reading (psi)		Piezometric Elevation (m)		Pond El.(m)		
	Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)			
Jul-91	8.67	20.54	1062.67	1063.76	-1074.5		
Aug-91	8.76	20.36	1062.73	1063.63	-1074.5		
Sep-91	8.80	21.70	1062.76	1064.57	-1074.5		
Feb-92							
Apr-92	28.10	27.30	1076.27	1068.49	1080.0		
Jun-92	3.30	3.30	1058.91	1051.69	1080.0		
Sep-92	1.46	1.20	1057.62	1050.22	1080.0		
May-94	0.90	0.90	1057.23	1050.01	1080.0		
Sep-94	0.20	0.10	1056.74	1049.45	1080.0		
Sep-95	1.00	1.00	1057.3	1050.08	1080.0		
Sep-96	0.7	1.05	1057.09	1050.115	1080.4		
May-97	no reading						
Oct-97	no reading						
May-98	n.r.						
May-99	0.60	1.00	1057.02	1050.08	1080.3		
Sep-99	no reading; no bubbles						
Jun-00	0.03	0.03	1056.621	1049.401	1079.9		

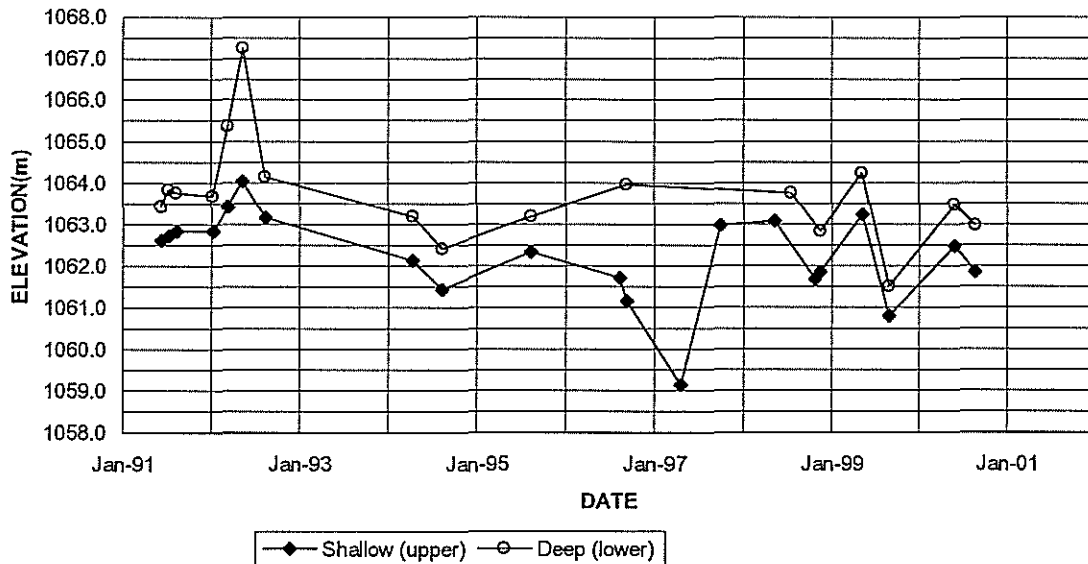
Note: Both tips have leaking leads as of June, 1992.

PNEUMATIC PIEZOMETER BH91-ID5



BH91-ID6		Location: Intermediate Dam @St.0+630		Ground Elevation: 1064.20		Coordinates:	
Date Installed: 1991		Shallow Tip Elevation: 1057.10		Surface Deep Tip Elevation: 1049.20		Protector: yes	
Date	Reading (psi)		Piezometric Elevation (m)		Pond El.(m)		
	Shallow (upper)	Deep (lower)	Shallow (upper)	Deep (lower)			
Jul-91	7.89	20.33	1062.62	1063.43	~1074.5		
Aug-91	8.06	20.91	1062.74	1063.84	~1074.5		
Sep-91	8.20	20.80	1062.84	1063.76	~1074.5		
Feb-92	8.20	20.70	1062.84	1063.69	1080.0		
Apr-92	9.06	23.10	1063.44	1065.37	1080.0		
Jun-92	9.91	25.80	1064.04	1067.26	1080.0		
Sep-92	8.67	21.36	1063.17	1064.15	1080.0		
May-94	7.20	20.00	1062.14	1063.2	1080.0		
Sep-94	6.20	18.90	1061.44	1062.43	1080.0		
Sep-95	7.50	20.00	1062.35	1063.2	1080.0		
Sep-96	6.6		1061.72		1080.4		
Oct-96	5.8	21.1	1061.16	1063.97			
May-97	2.9		1059.13				
Oct-97	8.41		1062.99				
May-98	8.56		1063.09		1080.4		
Aug-98		20.8		1063.76	1080.4		
12-Nov-98	6.57		1061.70		1080.1		
04-Dec-98	6.8	19.5	1061.86	1062.85	1080.1		
29-May-99	8.78	21.50	1063.25	1064.25	1080.3		
16-Sep-99	5.3	17.60	1060.81	1061.52	1080.0		
14-Jun-00	7.7	20.41	1062.49	1063.487	1079.9		
09-Sep-00	6.8	19.70	1061.86	1062.99			

PNEUMATIC PIEZOMETER BH91-ID6

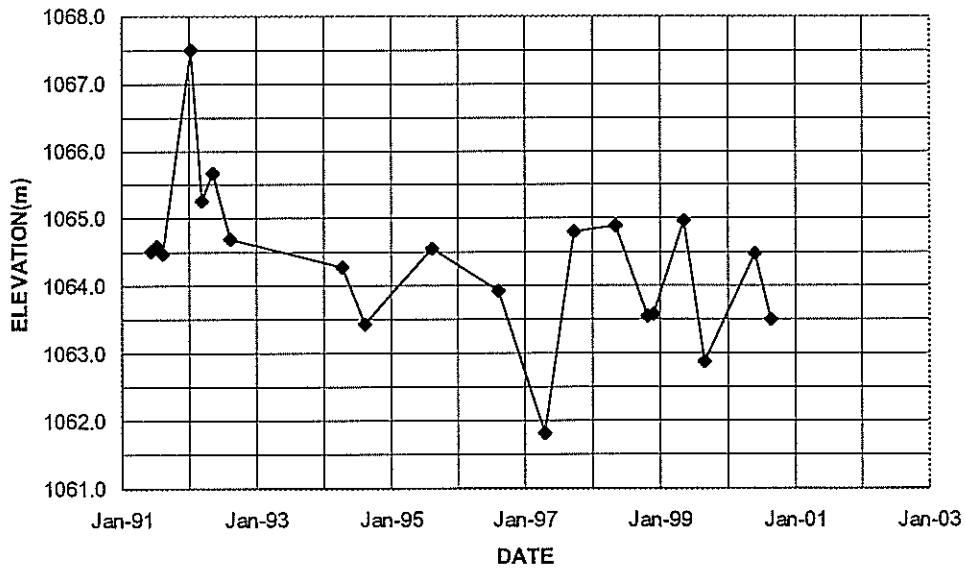


<b>BH91-ID7</b>	<b>Location:</b> Intermediate Dam @St.0+759	<b>Ground Elevation:</b> 1065.75	<b>Coordinates:</b>
<b>Date Installed:</b> 1991		<b>Tip Elevation:</b> 1058.25	<b>Surface Protector:</b> yes

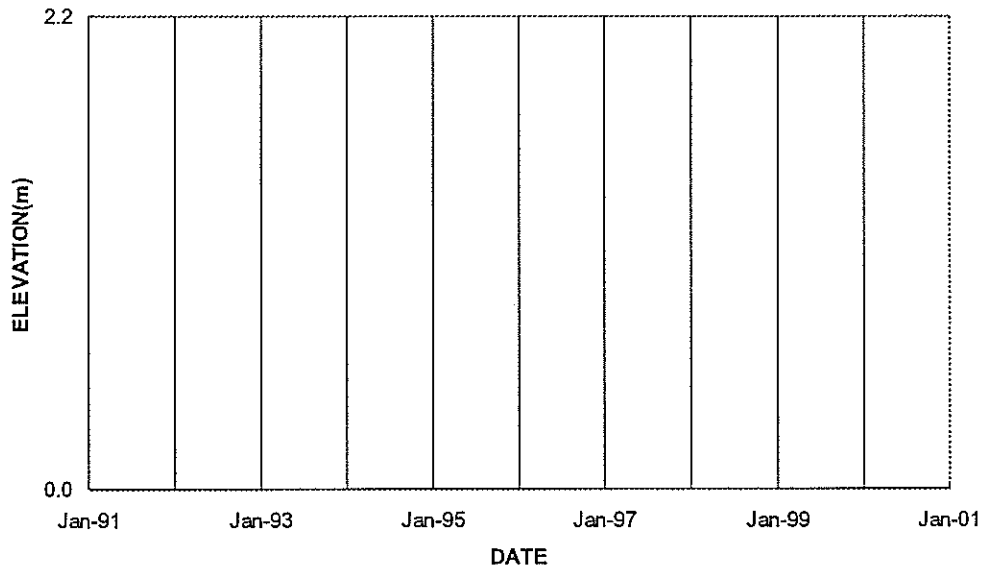
Date	Reading (psi)	Piezometric Elevation (m)	Pond El.(m)
Jul-91	8.94	-	~1074.5
Aug-91	9.06	1064.59	~1074.5
Sep-91	8.90	1064.48	~1074.5
Feb-92	13.21	1067.50	1080.0
Apr-92	10.01	1065.26	1080.0
Jun-92	10.61	1065.68	1080.0
Sep-92	9.21	1064.70	1080.0
May-94	8.60	1064.27	1080.0
Sep-94	7.40	1063.43	1080.0
Sep-95	9.00	1064.55	1080.0
Sep-96	8.1	1063.92	1080.4
May-97	5.1	1061.82	
Oct-97	9.36	1064.80	
May-98	9.49	1064.89	1080.4
12-Nov-98	7.56	1063.54	1080.1
16-Dec-98	7.6	1063.57	1080.1
29-May-99	9.60	1064.97	1080.3
16-Sep-99	6.6	1062.87	1080.0
14-Jun-00	8.9	1064.48	1079.9
09-Sep-00	7.5	1063.50	

PNEUMATIC PIEZOMETER BH91-ID7



<b>BH94-IDC-1</b>	<b>Location:</b> Intermediate Dam Crest	<b>Ground Elevation:</b>	<b>Coordinates:</b>
<b>Date Installed:</b>		<b>Tip Elevation:</b>	<b>Surface Protector:</b>
		<b>Stick Up:</b> 0.37	
Date	Water level from top of pipe (m)	Piezometric Elevation (m)	Pond El.(m)
Jun-94	dry		1080.0
Sep-94	dry		1080.0
Sep-95	dry		1080.0
Sep-96	dry		1080.4
May-98	dry		1080.4
Nov-98	14.10 dry		1080.1
Jun-99	14.10 dry		1080.1
Sep-99	14.18 dry		1080.0
Jun-00	14.11 dry		1079.9
Sep-00	14.11 H2O		

HYDRAULIC PIEZOMETER BH94-IDC-1



# FRESH WATER SUPPLY DAM

**LIST OF INSTRUMENTS READ IN 2000**

<b>Reference Number</b>	<b>Reference Line Chainage</b>	<b>Instrument</b>
BH85-5	1+27	Hydraulic piezometer Thermistor
BH85-3	1+30	Hydraulic piezometer
BH85-6	1+32	Hydraulic piezometer
BH88-16	1+71	Shallow pneumatic piezometer Deep pneumatic piezometer
BH88-15	1+92	Shallow pneumatic piezometer Intermediate pneumatic piezometer Deep pneumatic piezometer
BH85-4	2+03	Hydraulic piezometer
BH85-2	2+04	Hydraulic piezometer
BH85-1	2+04	Hydraulic piezometer

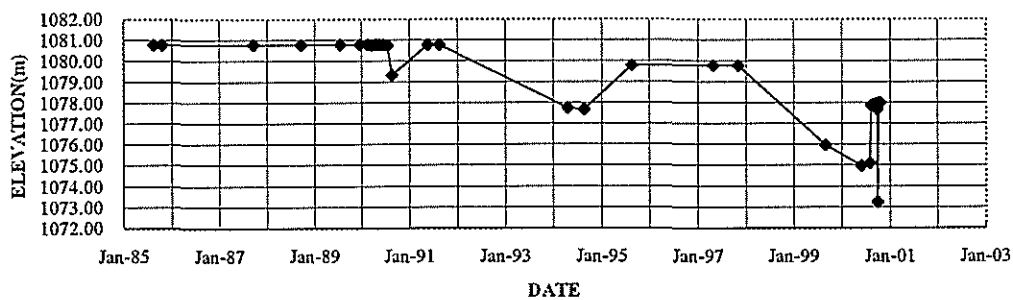
**BGC Engineering Inc.**

**FRESH WATER SUPPLY DAM  
PIEZOMETERS**

**BGC Engineering Inc.**

Date	Water level from top of pipe	Piezometric Elevation(m)
Sep-85	Artesian	1080.78
Nov-85	Frozen	1080.78
Oct-87	Artesian	1080.78
Oct-88	Artesian	1080.78
Aug-89	Artesian	1080.78
Jan-90	Frozen	1080.78
Mar-90	Frozen	1080.78
Apr-90	0.02	1080.76
May-90	Artesian	1080.78
Jun-90	Artesian	1080.78
Jul-90	Artesian	1080.78
Aug-90	0.01	1080.77
Sep-90	1.45	1079.33
Dec-90	-	
Mar-91	dry	
Jun-91	artesian	1080.78
Sep-91	artesian	1080.78
Dec-91	-	
Jan-92	buried	
May-94	2.04	1077.74
Sep-94	2.09	1077.69
Sep-95	artesian	1079.78
May-97	artesian	1079.78
Nov-97	artesian	1079.78
May-98	blocked (frozen?)	
Sep-99	3.81	1075.97
Jun-00	4.79	1074.99
14-Aug-00	4.66	1075.12
24-Aug-00	1.91	1077.87
31-Aug-00	1.87	1077.91
07-Sep-00	1.89	1077.89
14-Sep-00	1.91	1077.87
21-Sep-00	1.92 frozen/blocked	1077.86
28-Sep-00	1.82	1077.96
06-Oct-00	2.11	1077.67
12-Oct-00	6.54 dry	1073.24
20-Oct-00	1.78 frozen/blocked	1078.00
27-Oct-00	1.78 frozen/blocked	1078.00

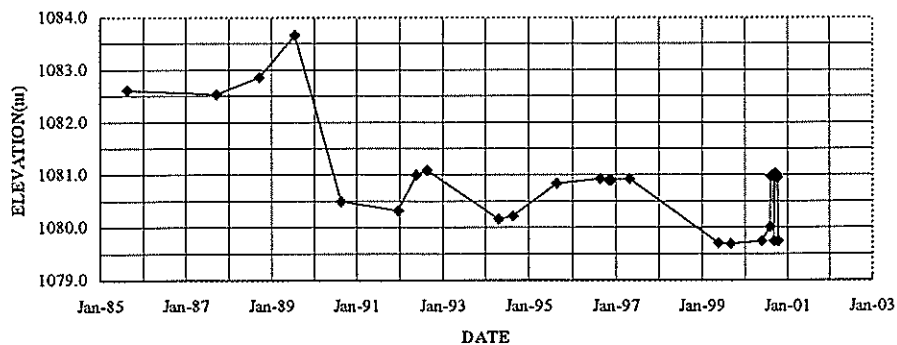
HYDRAULIC PIEZOMETER BH85-1



<b>BH85-2</b>	<b>Location:</b> Fresh Water Supply Dam Toe Berm	<b>Ground Elevation:</b> 1082.4	<b>Coordinates:</b>
<b>Date</b>		<b>Tip Elev.:</b> 1078.75	<b>Surface</b>
<b>Installed:</b> 1985		<b>Stick-up:</b> 2.1m/1.51m	<b>Protector:</b> yes

Date	Water level from top of pipe	Piezometric Elevation(m)	Pond Level
Sep-85	1.89	1082.61	
Nov-85	Frozen		
Oct-87	1.96	1082.54	
Oct-88	1.64	1082.86	
Aug-89	0.83	1083.67	
Jan-90	Frozen		
Mar-90	Frozen		
Apr-90	Dry		
May-90	Dry		
Jun-90	Dry		
Jul-90	Dry		
Aug-90	Dry		
Sep-90	4.00	1080.50	
Mar-91	dry		
Jun-91	blocked		
Sep-91	blocked		
Jan-92	4.18	1080.32	
Apr-92	blocked		
Jun-92	3.50	1081.00	
Sep-92	3.41	1081.09	
May-94	3.75	1080.16	
Sep-94	3.68	1080.23	
Sep-95	3.06	1080.85	
01-Sep-96	2.98	1080.93	6 stop logs
12-Nov-96	3	1080.91	
22-Nov-96	3	1080.91	
03-Dec-96	3 frozen	1080.91	6 logs & overflow
May-97	2.98	1080.93	pond v.v.low
Nov-97	blocked/dry @ 4.18m		3 logs; no overflow
May-98	blocked/dry @ 3.66m		pond mod. low<<sill
Dec-98	frozen/dry @ 3.03m		
May-99	4.21 bottom/blocked	1079.70	pond overflow
Sep-99	4.22 bottom/blocked	1079.69	pond overflow
Jun-00	4.17	1079.74	pond overflow
14-Aug-00	3.89	1080.02	pond overflow
24-Aug-00	2.93	1080.98	pond overflow
31-Aug-00	2.90	1081.01	pond overflow
07-Sep-00	2.90	1081.01	pond overflow
14-Sep-00	2.91	1081.00	pond overflow
21-Sep-00	4.17 frozen/blocked	1079.74	pond overflow
28-Sep-00	2.87	1081.04	pond overflow
06-Oct-00	2.88	1081.03	pond overflow
12-Oct-00	2.93	1080.98	pond overflow
20-Oct-00	2.95	1080.96	pond overflow
27-Oct-00	4.17 frozen/blocked	1079.74	pond overflow

HYDRAULIC PIEZOMETER BH85-2

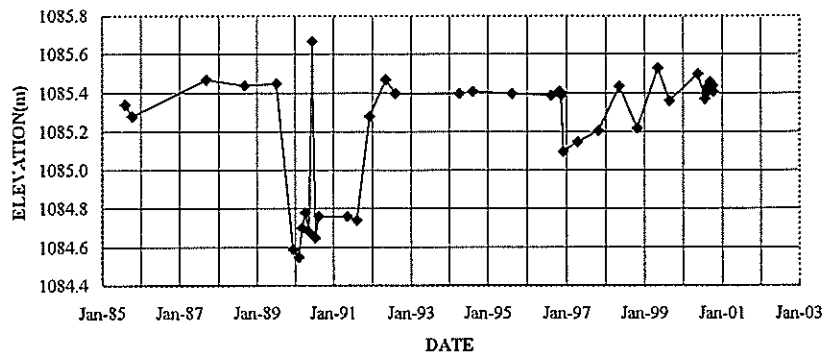


BH85-3 Location: Fresh Water Supply Dam		Ground	Coordinates:
Toe Berm		Elevation: 1087.34	
Date		Tip Elev.: 1083.68	Surface
Installed: 1985		Stick-up: 0.53m/0.46m	Protector: yes

Date	Water level from top of pipe	Piezometric Elevation(m)	Pond El.
Sep-85	2.53	1085.34	
Nov-85	2.59	1085.28	
Oct-87	2.40	1085.47	
Oct-88	2.43	1085.44	
Aug-89	2.42	1085.45	
Jan-90	3.28	1084.59	
Mar-90	3.32	1084.55	
Apr-90	3.17	1084.70	
May-90	3.09	1084.78	
Jun-90	3.19	1084.68	
Jul-90	2.20	1085.67	
Aug-90	3.22	1084.65	
Sep-90	3.11	1084.76	
Mar-91	dry		
Jun-91	3.11	1084.76	
Sep-91	3.13	1084.74	
Jan-92	2.59	1085.28	
Jun-92	2.40	1085.47	
Sep-92	2.47	1085.40	
May-94	2.40	1085.40	
Sep-94	2.39	1085.41	
Sep-95	2.40	1085.40	
01-Sep-96	2.41	1085.39	6 stop logs
12-Nov-96	2.39	1085.41	
22-Nov-96	2.39	1085.41	
03-Dec-96	2.41	1085.39	6 logs&overflow
20-Dec-96	2.7 frozen	1085.10	
May-97	2.65	1085.15	pond v.v. low
Nov-97	2.60	1085.21	3 logs; no af
May-98	2.37	1085.44	pond mod. low<<sill
Nov-98	2.58	1085.22	-0.005m>sill
May-99	2.27	1085.53	pond overflow
Sep-99	2.44	1085.36	pond overflow
Jun-00	2.30	1085.50	pond overflow
14-Aug-00	2.43	1085.37	pond overflow
24-Aug-00	2.40	1085.40	pond overflow
31-Aug-00	2.37	1085.43	pond overflow
07-Sep-00	2.37	1085.43	pond overflow
14-Sep-00	2.36	1085.44	pond overflow
21-Sep-00	2.36	1085.44	pond overflow
28-Sep-00	2.34	1085.46	pond overflow
06-Oct-00	2.36	1085.44	pond overflow
12-Oct-00	2.37	1085.43	pond overflow
20-Oct-00	2.36	1085.44	pond overflow
27-Oct-00	2.39	1085.41	pond overflow

HYDRAULIC PIEZOMETER BH85-3

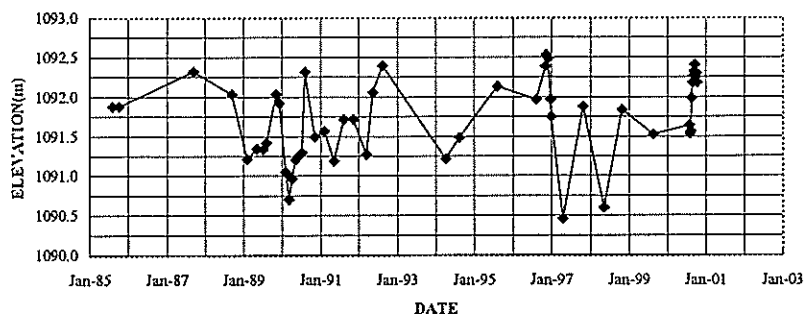


BH85-4 Location: Fresh Water Supply Dam		Ground	Coordinates:
	Dam Crest	Elevation: 1098.89	
Date		Tip Elev.: 1089.2	Surface
Installed: 1985		Stick-up: 0.61/0.46/0.75/0.0	Protector: yes

Date	Water level from top of pipe	Piezometric Elevation(m)	Water El.
Sep-85	7.62	1091.88	
Nov-85	7.62	1091.88	
Oct-87	7.17	1092.33	
Oct-88	7.46	1092.04	
Mar-89	8.13	1091.22	
Jun-89	8.00	1091.35	
Aug-89	8.01	1091.34	
Sep-89	7.93	1091.42	
Dec-89	7.31	1092.04	
Jan-90	7.43	1091.92	
Mar-90	8.30	1091.05	
Apr-90	8.64	1090.71	
May-90	8.38	1090.97	
Jun-90	8.14	1091.21	
Jul-90	8.09	1091.26	
Aug-90	8.05	1091.30	
Sep-90	7.03	1092.32	
Dec-90	7.85	1091.50	
Mar-91	7.78	1091.57	
Jun-91	8.16	1091.19	
Sep-91	7.63	1091.72	
Dec-91	7.63	1091.72	
Apr-92	8.08	1091.27	
Jun-92	7.29	1092.06	
Sep-92	6.95	1092.40	
May-94	8.42	1091.22	
Sep-94	8.15	1091.49	
Sep-95	7.50	1092.14	
01-Sep-96	7.67	1091.97	6 stop logs
22-Nov-96	7.25	1092.39	
03-Dec-96	7.11	1092.53	6 logs & overflow
20-Dec-96	7.15	1092.49	
10-Jan-97	7.67	1091.97	
20-Jan-97	7.89	1091.75	
May-97	9.18	1090.46	pond v.v.low
Nov-97	7.76	1091.88	3 logs; no overflow
May-98	9.04	1090.60	pond mod. low<<sill
Nov-98	7.05	1091.84	~.005m>sill
Jun-99	n.r.	blocked at 1.67 metres	
Sep-99	7.36	1091.53	pond overflow
Jun-00	1.3 frozen		pond overflow
14-Aug-00	7.25	1091.64	pond overflow
24-Aug-00	7.35	1091.54	pond overflow
31-Aug-00	7.32	1091.57	pond overflow
07-Sep-00	6.90	1091.99	pond overflow
14-Sep-00	6.70	1092.19	pond overflow
21-Sep-00	6.62	1092.27	pond overflow
28-Sep-00	6.56	1092.33	pond overflow
06-Oct-00	6.48	1092.41	pond overflow
12-Oct-00	6.64	1092.25	pond overflow
20-Oct-00	6.59	1092.30	pond overflow
27-Oct-00	6.70	1092.19	pond overflow

HYDRAULIC PIEZOMETER BH85-4

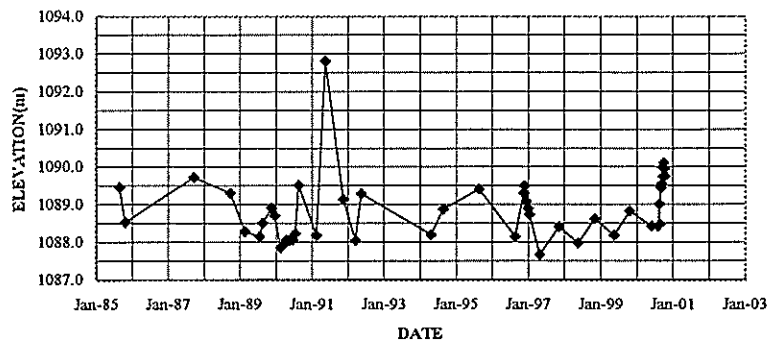


BH85-5 Location: Fresh Water Supply Dam		Ground	Coordinates:
Date		Elevation: 1098.74	
Installed: 1985		Tip Elev.: 1087.31	Surface
		Stick-up: 0.49/0.16/0.56	Protector: yes

Date	Water level from top of pipe	Piezometric Elevation(m)	Pond El.
Sep-85	9.75	1089.48	
Nov-85	10.70	1088.53	
Oct-87	9.50	1089.73	
Oct-88	9.91	1089.32	
Mar-89	10.61	1088.29	
Aug-89	10.74	1088.16	
Sep-89	10.38	1088.52	
Dec-89	9.98	1088.92	
Jan-90	10.19	1088.71	
Mar-90	11.03	1087.87	
Apr-90	10.95	1087.95	
May-90	10.83	1088.07	
Jun-90	10.85	1088.05	
Jul-90	10.83	1088.07	
Aug-90	10.66	1088.24	
Sep-90	9.38	1089.52	
Mar-91	10.70	1088.20	
Jun-91	6.10	1092.80	
Sep-91	dry		
Dec-91	9.75	1089.15	
Apr-92	10.84	1088.06	
Jun-92	9.60	1089.30	
Sep-92	frozen		
May-94	11.09	1088.21	
Sep-94	10.41	1088.89	
Sep-95	9.88	1089.42	
01-Sep-96	11.15	1088.15	6 stop logs
22-Nov-96	9.98	1089.32	
03-Dec-96	9.80	1089.50	6 logs & overflow
20-Dec-96	10.20	1089.10	
10-Jan-97	10.40	1088.90	
20-Jan-97	10.55	1088.75	
May-97	11.62	1087.68	pond v.v. low
Nov-97	10.88	1088.42	3 logs; no overflow
May-98	11.32	1087.98	pond mod. low<<sill
Nov-98	10.67	1088.63	~.005m>sill
May-99	11.11	1088.19	pond overflow
Nov-99	10.47	1088.83	pond overflow
Jun-00	10.86	1088.44	pond overflow
14-Aug-00	10.87	1088.43	pond overflow
24-Aug-00	10.27	1089.03	pond overflow
31-Aug-00	10.81	1088.49	pond overflow
07-Sep-00	9.83	1089.47	pond overflow
14-Sep-00	9.85	1089.45	pond overflow
21-Sep-00	9.74	1089.56	pond overflow
28-Sep-00	9.31	1089.99	pond overflow
06-Oct-00	9.56	1089.74	pond overflow
12-Oct-00	9.19	1090.11	pond overflow
20-Oct-00	9.34	1089.96	pond overflow
27-Oct-00	9.53	1089.77	pond overflow

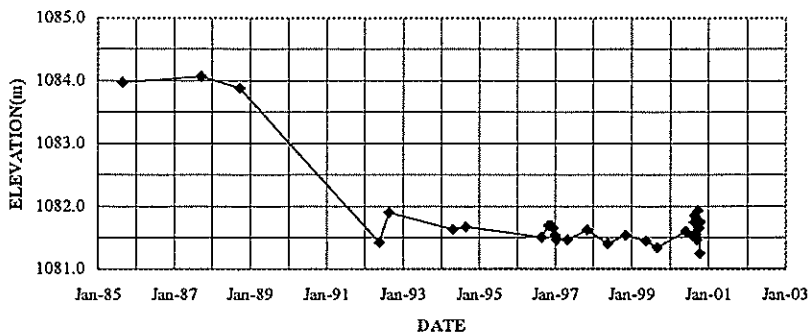
HYDRAULIC PIEZOMETER BH85-5



<b>BH85-6</b>	<b>Location:</b> Fresh Water Supply Dam	<b>Ground</b>	<b>Coordinates:</b>
	Toe Berm	<b>Elevation</b> 1083.74	
<b>Date</b>		<b>Tip Elev.:</b> 1078.26	<b>Surface</b>
<b>Installed:</b> 1985		<b>Stick-up:</b> 0.48m/1.11m	<b>Protector:</b> yes

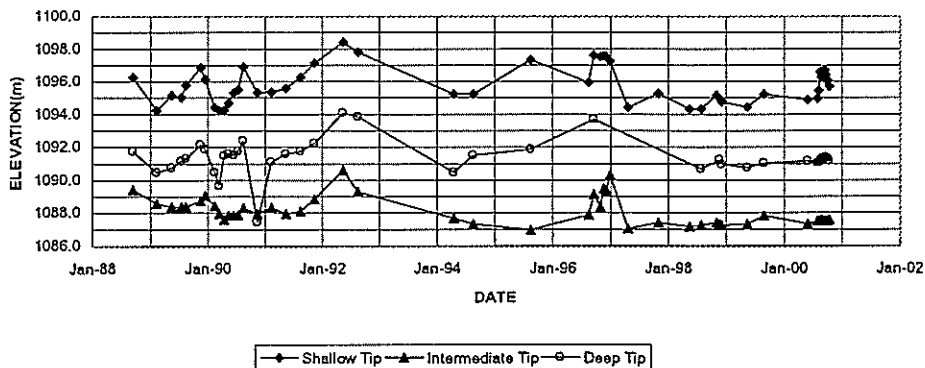
Date	Water level from top of pipe	Piezometric Elevation(m)	Pond Level
Sep-85	0.25	1083.97	
Nov-85	Frozen		
Oct-87	0.15	1084.07	
Oct-88	0.34	1083.88	
Aug-89	Gels stuck		
Jan-90	Frozen		
Mar-90	Frozen		
Apr-90	Dry		
Jun-90	Dry		
Jul-90	Dry		
Aug-90	Dry		
Sep-90	Blocked		
Mar-91	dry		
Jun-91	blocked		
Sep-91	dry		
Dec-91	-		
Jan-92	blocked		
Apr-92	blocked		
Jun-92	2.80	1081.42	
Sep-92	2.32	1081.90	
May-94	3.22	1081.63	
Sep-94	3.18	1081.67	
01-Sep-96	3.34	1081.51	6 stop logs
12-Nov-96	3.16	1081.69	
22-Nov-96	3.16	1081.69	
03-Dec-96	3.16	1081.69	6 logs & overflow
20-Dec-96	3.20	1081.65	
10-Jan-97	3.31	1081.54	
20-Jan-97	3.38 frozen	1081.47	
May-97	3.38	1081.47	pond v.v.low
Nov-97	3.23	1081.62	3 logs; no overflow
May-98	3.45 dry	1081.40	pond mod. low<<sill
Nov-98	3.31	1081.54	~.005m>sill
May-99	3.405	1081.45	pond overflow
Sep-99	3.51	1081.34	pond overflow
Jun-00	3.25	1081.60	pond overflow
14-Aug-00	3.32	1081.53	pond overflow
24-Aug-00	3.10	1081.75	pond overflow
31-Aug-00	2.99	1081.86	pond overflow
07-Sep-00	3.02	1081.83	pond overflow
14-Sep-00	3.30	1081.55	pond overflow
21-Sep-00	3.38	1081.47	pond overflow
28-Sep-00	2.92	1081.93	pond overflow
06-Oct-00	3.20	1081.65	pond overflow
12-Oct-00	3.20	1081.65	pond overflow
20-Oct-00	3.60	1081.25	pond overflow
27-Oct-00	3.10	1081.75	pond overflow

HYDRAULIC PIEZOMETER BH85-6



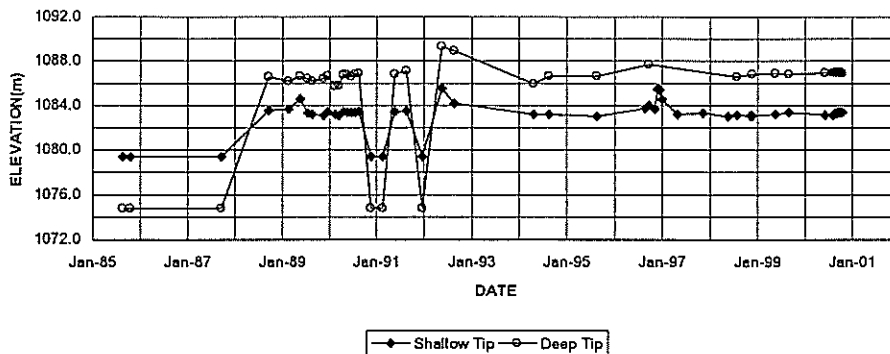
Date	Reading (psi)			Piezometric Elevation (m)			Approx. Pond El.
	Shallow #11340	Int #11339	Deep #11334	Shallow	Intermediate	Deep	
Sep-85							
Oct-88	3.00	3.50	17.80	1096.3	1089.45	1091.76	
Mar-89	0.10	2.30	16.00	1094.27	1088.61	1090.5	
Jun-89	1.40	2.00	16.40	1095.18	1088.40	1090.78	
Aug-89	1.25	2.00	17.00	1095.08	1088.40	1091.2	
Sep-89	2.30	2.00	17.20	1095.81	1088.40	1091.34	
Dec-89	3.80	2.50	18.40	1096.86	1088.75	1092.18	
Jan-90	2.80	3.00	18.00	1096.16	1089.10	1091.9	
Mar-90	0.30	2.10	16.00	1094.41	1088.47	1090.5	
Apr-90	0.10	1.40	14.80	1094.27	1087.98	1089.66	
May-90	0.10	0.90	17.40	1094.27	1087.63	1091.48	
Jun-90	0.70	1.20	17.60	1094.69	1087.84	1091.62	
Jul-90	1.60	1.20	17.50	1095.32	1087.84	1091.55	
Aug-90	1.90	1.30	17.80	1095.53	1087.91	1091.76	
Sep-90	3.90	1.90	18.70	1096.93	1088.33	1092.39	
Dec-90	1.60	1.40	11.65	1095.32	1087.98	1087.455	
Mar-91	1.70	1.95	16.90	1095.39	1088.37	1091.13	
Jun-91	2.00	1.40	17.60	1095.60	1087.98	1091.62	
Sep-91	3.00	1.65	17.80	1096.30	1088.16	1091.76	
Dec-91	4.20	2.70	18.50	1097.14	1088.89	1092.25	
Jun-92	6.05	5.20	21.15	1098.44	1090.64	1094.105	
Sep-92	5.20	3.30	20.80	1097.84	1089.31	1093.86	
May-94	1.50	1.00	16.00	1095.25	1087.70	1090.5	
Sep-94	1.50	0.50	17.50	1095.25	1087.35	1091.55	
Sep-95	4.50	0.00	18.00	1097.35	1087.00	1091.9	
01-Sep-96	2.55	1.30		1095.985	1087.91		6 stop logs
01-Oct-96	4.9	3.10	20.6	1097.63	1089.17	1093.72	
12-Nov-96	4.80	1.95		1097.56	1088.37		
03-Dec-96	4.85	3.60		1097.595	1089.52		6 logs & overflow
20-Dec-96	4.80	3.45		1097.56	1089.42		
10-Jan-97	4.40	4.80		1097.28	1090.36		
May-97	0.3	0.10		1094.41	1087.07		pond v.v.low
Nov-97	1.55	0.60		1095.285	1087.42		3 logs; no overflow
27-May-98	0.19	0.24		1094.333	1087.17		pond mod. low<<sill
07-Aug-98	0.2	0.40	16.3	1094.34	1087.28	1090.71	-0.2m>sill
16-Nov-98	1.37	0.60		1095.159	1087.42		~.005m>sill
04-Dec-98	1.1	0.5	17.1	1094.97	1087.35	1091.27	~.005m<sill
16-Dec-98	0.8	0.4	16.7	1094.76	1087.28	1090.99	ice covered <sill
28-May-99	0.40	0.50	16.41	1094.48	1087.35	1090.787	pond overflow
11-Sep-99	1.50	1.20	16.80	1095.25	1087.84	1091.06	pond overflow
14-Jun-00	1.00	0.50	17.00	1094.9	1087.35	1091.2	pond overflow
14-Aug-00	1.10	0.80	16.80	1094.97	1087.56	1091.06	pond overflow
24-Aug-00	1.80	0.70	16.80	1095.46	1087.49	1091.06	pond overflow
31-Aug-00	3.40	0.80	17.00	1096.58	1087.56	1091.2	pond overflow
07-Sep-00	3.00	0.90	17.10	1096.3	1087.63	1091.27	pond overflow
14-Sep-00	3.10	0.90	17.20	1096.37	1087.63	1091.34	pond overflow
21-Sep-00	3.10	0.70	17.00	1096.37	1087.49	1091.2	pond overflow
28-Sep-00	3.60	0.80	17.20	1096.72	1087.56	1091.34	pond overflow
06-Oct-00	3.20	0.80	17.30	1096.44	1087.56	1091.41	pond overflow
12-Oct-00	2.70	0.70	17.20	1096.09	1087.49	1091.34	pond overflow
20-Oct-00	2.70	0.80	17.20	1096.09	1087.56	1091.34	pond overflow
27-Oct-00	2.20	0.90	17.00	1095.74	1087.63	1091.2	pond overflow

PNEUMATIC PIEZOMETER BH88-15



Date	Reading (psi)		Piezometric Elevation (m)		Pond Level
	Shallow #11343	Deep #11341	Shallow	Deep	
Sep-85			1079.4	1074.8	
Nov-85			1079.4	1074.8	
Oct-87			1079.4	1074.8	
Oct-88	6.00	16.90	1083.6	1086.63	
Mar-89	6.10	16.30	1083.67	1086.21	
Jun-89	7.50	17.00	1084.65	1086.7	
Aug-89	5.60	16.60	1083.32	1086.42	
Sep-89	5.50	16.30	1083.25	1086.21	
Dec-89	5.30	16.60	1083.11	1086.42	
Jan-90	5.80	17.00	1083.46	1086.7	
Mar-90	5.50	15.60	1083.25	1085.72	
Apr-90	5.30	15.70	1083.11	1085.79	
May-90	5.80	17.10	1083.46	1086.77	
Jun-90	5.70	17.10	1083.39	1086.77	
Jul-90	5.70	16.90	1083.39	1086.63	
Aug-90	5.70	17.20	1083.39	1086.84	
Sep-90	5.80	17.30	1083.46	1086.91	
Dec-90			1079.4	1074.8	
Mar-91			1079.4	1074.8	
Jun-91	5.80	17.20	1083.46	1086.84	
Sep-91	5.90	17.60	1083.53	1087.12	
Jan-92			1079.4	1074.8	
Apr-92	buried	buried			
Jun-92	8.80	20.80	1085.56	1089.36	
Sep-92	6.90	20.20	1084.23	1088.94	
May-94	5.50	16.00	1083.25	1086	
Sep-94	5.50	17.00	1083.25	1086.7	
Sep-95	5.20	17.00	1083.04	1086.7	
01-Sep-96	6.2		1083.74		6 stop logs
01-Oct-96	6.6	18.5	1084.02	1087.75	
12-Nov-96	6.10		1083.67		
03-Dec-96	8.70		1085.49		6 logs & overflow
20-Dec-96	8.65		1085.455		
10-Jan-97	7.40		1084.58		
May-97	5.5		1083.25		pond v.v. low
Nov-97	5.6		1083.32		3 logs; no overflow
27-May-98	5.19		1083.03		pond mod. low<<silt
07-Aug-98	5.4	16.9	1083.18	1086.63	~0.2m>silt
16-Nov-98	5.30		1083.11		~.005m>silt
04-Dec-98	5.3	17.2	1083.11	1086.84	~.005m<silt
28-May-99	5.50	17.30	1083.25	1086.91	pond overflow
11-Sep-99	5.70	17.20	1083.39	1086.84	pond overflow
14-Jun-00	5.40	17.40	1083.18	1086.98	pond overflow
14-Aug-00	5.40	17.40	1083.18	1086.98	pond overflow
24-Aug-00	5.50	17.40	1083.25	1086.98	pond overflow
31-Aug-00	5.60	17.40	1083.32	1086.98	pond overflow
07-Sep-00	5.60	17.50	1083.32	1087.05	pond overflow
14-Sep-00	5.60	17.40	1083.32	1086.98	pond overflow
21-Sep-00	5.70	17.50	1083.39	1087.05	pond overflow
28-Sep-00	5.60	17.50	1083.32	1087.05	pond overflow
06-Oct-00	5.70	17.50	1083.39	1087.05	pond overflow
12-Oct-00	5.70	17.50	1083.39	1087.05	pond overflow
20-Oct-00	5.70	17.40	1083.39	1086.98	pond overflow
27-Oct-00	5.70	17.30	1083.39	1086.91	pond overflow

PNEUMATIC PIEZOMETER BH88-16



**FRESH WATER SUPPLY DAM  
THERMISTOR**

**BGC Engineering Inc.**

BH 85-5		Location: Fr. Water Supply Dam		Crest Elevation: 1098.74		Coordinates: not available							
Date Installed: 1985		Thermistor Type: 44007		Controls YSI Ica-Bath Calibration: not applied		Surface Protector: yes							
Correction: 0													
Depth on String (m)	Actual Depth (m)	Resistivity (kOhms) 20-Apr-89	Resistivity (kOhms) 31-May-94	Resistivity (kOhms) 13-Sep-94	Resistivity (kOhms) 20-Sep-95	Resistivity (kOhms) 11-Sep-96	Resistivity (kOhms) 05-May-97	Resistivity (kOhms) 14-Nov-97	Resistivity (kOhms) 27-May-98	Resistivity (kOhms) 16-Nov-98	Resistivity (kOhms) 29-May-99	Resistivity (kOhms) 11-Sep-99	Resistivity (kOhms) 08-Jun-00
0.2	-0.2	16.54	12.63	13.07	11.96	12.21	16.07	23.92	10.55	25.56	13.79	11.70	13.53
0.6	-0.6	17.89	14.34	11.61	12.03	12.50	16.87	16.89	14.09	17.41	15.31	11.99	15.76
1.2	-1.2	18.45	15.74	11.32	12.10	12.89	17.24	16.20	16.44	16.04	16.63	12.45	16.97
1.6	-1.6	18.53	16.69	11.36	12.32	13.38	17.50	15.80	16.95	15.48	17.03		
2.2	-2.2	18.22	16.68	11.40	12.42	13.66	17.26	15.23	16.79	14.82		13.81	16.80
3.1	-3.1	16.93	16.64	12.47	13.33	15.20	17.03	14.90	16.81	14.47	16.87	14.66	16.35
4.1	-4.1	15.94	16.02	13.39	13.86	15.57	16.34	14.53	16.27	14.12	16.37		
6.2	-6.2	14.96	15.22									15.13	15.05
8.1	-8.1	14.18	14.22	14.16	14.25	14.72	14.77	14.38	14.87	14.12	14.90		

Depth on String (m)	Actual Depth (m)	Temperature (C) 20-Apr-89	Temperature (C) 31-May-94	Temperature (C) 13-Sep-94	Temperature (C) 20-Sep-95	Temperature (C) 11-Sep-96	Temperature (C) 05-May-97	Temperature (C) 14-Nov-97	Temperature (C) 27-May-98	Temperature (C) 16-Nov-98	Temperature (C) 29-May-99	Temperature (C) 11-Sep-99	Temperature (C) 08-Jun-00
0.2	-0.2	-0.30	5.06	4.37	6.16	5.74	0.27	-7.35	8.73	-8.58	3.29	6.61	3.67
0.6	-0.6	-1.90	2.43	6.68	5.96	5.27	-0.68	-0.71	2.86	-1.30	1.22	6.03	0.57
1.2	-1.2	-2.40	0.69	7.30	5.94	4.65	-1.11	0.11	-0.18	0.30	-0.40	5.37	-0.78
1.6	-1.6	-2.50	-0.47	7.21	5.56	3.90	-1.40	0.60	-0.78	1.00	-0.87		
2.2	-2.2	-2.10	-0.38	7.22	5.48	3.48	-1.13	1.32	-0.59	1.86		3.34	-0.52
3.1	-3.1	-0.70	-0.37	5.36	4.02	1.36	-0.87	1.75	-0.61	2.33	-0.68	2.13	-0.02
4.1	-4.1	0.50	0.40	3.95	3.26	0.89	-0.06	2.25	0.02	2.82	-0.10		
6.2	-6.2	1.70	1.35									1.47	1.58
8.1	-8.1	2.80	2.74	2.83	2.70	2.00	1.93	2.46	1.79	2.82	1.75		

THERMISTOR BH 85-5  
(installed 1985)

